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MEGGiTT

INSTALLATION MANUAL

vibro-meter®

# Vibration measurement chains using CAxxx piezoelectric accelerometers (with external signal conditioners)

**Ex**

**This document contains important information about products that are intended for use in potentially explosive atmospheres.**

Document reference MACA/E
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# REVISION RECORD SHEET

| Edition | Date of issue | Written by / modified by | Description | Signature |
|---|---|---|---|---|
| 1 | 23.07.97 | R. Meyer /ew | Original edition in English language (translated from French version of manual) | RM |
| 2 | 28.07.99 | R. Meyer / jlb | Cable layout diagrams modified to better show grounding technique (Figs 6-11, 6-23, 6-35) | RM |
| 3 | - - - | - - - | (Edition 3 skipped for English version to keep numbering consistent in all languages) | - - - |
| 4 | 06.09.04 | R. Meyer | General revision.<br>Updated “Ex” information according to directive 94/9/CE. | RM |
| 5 | 08.04.08 | D. Evans | Major restructuring<br>Ex certificates updated | DE |
| 6 | 25.03.09 | S. Trono | Ex certificates and wiring diagrams updated | ST |
| 7 | 01.07.09 / 02.02.2010 | S. Trono / P. Ward | Ex certificates and wiring diagrams updated due to new certificate for the IPC704.<br>Ex certificates and wiring diagrams updated due to new “Ex nA” certificates for the CA134, CA20x, CA28x, CA30x, CA901, CE134, CE28x, and CE31x. | ST / PW |
| 8 | 11.10.2011 | Peter Ward | This is the new CA manual (generated from the existing CA and CE manual, which was divided into two).<br>Added new Ex certificates for CA134, CA20x, CA28x, CA30x and CA901.<br>Reintroduced a maintenance section.<br>Updated in accordance with the latest Meggitt brand guidelines. | PW |
| 9 | 18.07.2013 | Peter Ward | Added the GSI127 galvanic separation unit (5 Installing galvanic separation units) and updated the mechanical diagrams (1 Introduction to CAxxx-based vibration measurement chains) and the electrical diagrams (7 Electrical connections). Updated the Ex certificates. | PW |
| 10 | 06.03.2014 | Peter Ward | Clarified the permitted installation areas for the GSI122, GSI124 and GSI127.<br>Updated 7 Electrical connections: updated the electrical diagrams in Figure 7-4, Figure 7-5 and Figure 7-6.<br>Also updated Appendix B: ATEX certifications: updated PTB 01 ATEX 1061 U, LCIE 02 ATEX 6110 X and LCI 06.0008X, removed TÜV 03 ATEX 2153 X, and added PTB 02 ATEX 1125.<br>Also updated Appendix C: cCSAus certifications: updated 1636188. | PW |

| Edition | Date of issue | Written by / modified by | Description | Signature |
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| 11 | 12.09.2014 | Peter Ward | Added a note to 5.3 Replacing a GSI124 galvanic separation unit with a GSI127, clarifying that cable lengths might have to be adjusted.<br>Updated 7 Electrical connections: updated the electrical diagrams in Figure 7-4, Figure 7-5 and Figure 7-6.<br>Updated Appendix B: ATEX certifications: updated PTB 01 ATEX 1061 U, LCIE 02 ATEX 6179 X, KEMA 04 ATEX 1055, KEMA 04 ATEX 1294, LCIE 08 ATEX 6017 X, LCIE 05 ATEX 6033 X and LCIE 02 ATEX 6085 X.<br>Updated Appendix C: cCSAus certifications: updated 1636188, 1514310, 1550831, 1545315, 1699234 and 1243981, and added 70004630 and 70001999.<br>Updated Appendix D: IECEx certifications: updated IECEx LCI 08.0041 X.<br>Updated Appendix E: KGS certifications: added 14-GA4BO-0130X.<br>Updated old Appendix E: NEPSI certifications: updated GYJ12.1448X. | PW |
| 12 | 02.02.2015 | Peter Ward | Updated 7 Electrical connections: updated the electrical diagrams in Figure 7-4, Figure 7-5 and Figure 7-6.<br>Updated Appendix B: ATEX certifications: updated LCIE 09 ATEX 1043 X, LCIE 09 ATEX 1044 X, LCIE 09 ATEX 1047 X, LCIE 09 ATEX 1048 X, LCIE 09 ATEX 1046 X and LCIE 09 ATEX 1027 X.<br>Updated Appendix D: IECEx certifications: updated IECEx LCI 10.0021X and added IECEx LCIE 13.0053X. | PW |
| 13 | 24.10.2018 | Peter Ward | Changed all Vibro-Meter® product names to not use spaces in order to be consistent with the latest product naming convention.<br>Added a statement that Meggitt SA product certifications and warranties are valid only for products purchased directly from Meggitt SA or an authorised distributor (see IMPORTANT NOTICES).<br>Added important safety-related information (see Hot surfaces and the risk of burning and Replacement parts and accessories).<br>Removed most ABA15x industrial housing information (as no longer available – replaced by ABA17x industrial housings).<br>Removed most GSI124 galvanic separation unit information (as no longer available – replaced by the GSI127 galvanic separation unit).<br>Updated 2.2.2 Mounting procedure to include tightening torque values and information for CAxxx piezoelectric accelerometers (see Table 2-1).<br>Updated 5 Installing galvanic separation units to clarify that a GS127 should be installed vertically but can be installed right-side-up or upside-down (inverted) (see 5.2.1 Mounting procedure).<br>Updated 7 Electrical connections to use the latest electrical diagrams (see Figure 7-4, Figure 7-5 and Figure 7-6).<br>Added information on cleaning a CAxxx-based vibration measurement chain (see 8.3 Cleaning).<br>Added end-of-life product disposal information (see 9 End-of-life product disposal).<br>… | PW |

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| 13 (*cont.*) | 29.10.2018 | Peter Ward | …<br>Updated the Energy product return procedure and form to be consistent with the Meggitt Vibro-Meter® website (see 10 Service and support).<br>Updated Appendix B: ATEX certifications:<br>Added PTB 98 ATEX 3101 U (ABA161).<br>Added BVS 15 ATEX E 112 U and Presafe 14 ATEX 5378 U (ABA17x).<br>Updated KEMA 04 ATEX 1055 (CA28x, CE28x and CE31x).<br>Removed LCIE 02 ATEX 6093 X (GSI122).<br>Removed LCIE 05 ATEX 6033 X (GSI124).<br>Updated LCIE 13 ATEX 3037 X (GSI127).<br>Removed PTB 02 ATEX 1125 (cable fitting/stuffing glands).<br>Added LCIE 02 ATEX 0038 U, LCIE 03 ATEX 0033 U, PTB 98 ATEX 3130, PTB 11 ATEX 1007 X, SIRA 10 ATEX 1224 X, SIRA 10 ATEX 1225 X, SEV 15 ATEX 0151 and SEV 15 ATEX 0152 X (cable fitting/stuffing glands).<br>Updated Appendix C: cCSAus certifications:<br>Updated cCSAus 1636188 (CA134).<br>Updated cCSAus 70004630 (CA20x).<br>Updated cCSAus 1514310 (CA28x, CE28x and CE31x).<br>Updated cCSAus 1550831 (CA30x).<br>Removed cCSAus 1545315 (CE134 and GSI122).<br>Removed cCSAus 1699234 (GSI124).<br>Updated cCSAus 70001999 (GSI127).<br>Updated cCSAus 1243981 (IPC704).<br>Updated Appendix D: IECEx certifications:<br>Added IECEx PTB 08.0003U (ABA160, JB116 and JB118).<br>Added IECEx PTB 08.0005U (ABA161).<br>Added IECEx BVS 16.0026U and IECEx PRE 14.0042U (ABA17x).<br>Added IECEx DEK 15.0029 (CA28x, CE28x and CE31x).<br>Removed IECEx LCI 06.0010X (GSI124).<br>Updated IECEx LCIE 13.0026X (GSI127).<br>Added IECEx LCI 10.0009U, IECEx PTB 03.0000, IECEx PTB 11.0019X, IECEx SEV 15.0018, IECEx SEV 15.0019 X, IECEx SIR 07.0009X and IECEx SIR 07.0010X (cable fitting/stuffing glands).<br>Updated Appendix E: KGS certifications:<br>Added KGS 17-GA4BO-0551X (CA20x).<br>Added KGS 17-GA4BO-0323X (CA28x).<br>Added KGS 17-GA4BO-0550X (CA901).<br>Added KGS 17-GA4BO-0325X (GSI127).<br>Removed old Appendix E: NEPSI certifications:<br>Removed NEPSI GYJ12.1448X (CA134).<br>Removed NEPSI GYJ12.1451X (GSI124).<br>Removed NEPSI GYJ12.1450X (IPC704).<br>Added new Appendix F: TIIS certifications:<br>Added TIIS TC 20432 (CA134).<br>Added TIIS TC 20544 (CA134).<br>Added Appendix H: EAЭC RU certifications:<br>Added TC RU C-CH.МШ06.B.00134 (ABA160, CA134, CA20x, CA28x, CA30x, CA901, GSI12x, IPC704 and JB11x). | PW |

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| 14 | 26.03.2019 | Peter Ward | Added the ABA17x industrial housings (see 1.2.6 ABA17x and ABA160 industrial housings, 4 Installing junction boxes, industrial housings and signal conditioners).<br>Added the IPC707 signal conditioner (see Equipment installed in potentially explosive atmospheres, 1.2.4 IPC707 signal conditioner, 4 Installing junction boxes, industrial housings and signal conditioners), a reference to the *IPC707 signal conditioner safety manual* (see Related documentation and publications) and information on configuring an external monitoring and/or protection system for operation with an IPC707 (see 6 Configuring an external monitoring system). Also updated the mechanical diagrams (see 1 Introduction to CAxxx-based vibration measurement chains) and the electrical diagrams (see 7 Electrical connections) accordingly.<br>Updated Appendix B: ATEX certifications:<br>Added LCIE 18 ATEX 3026 X and LCIE 18 ATEX 1012 X (IPC707).<br>Updated Appendix C: cCSAus certifications:<br>Added cCSAus 70198728 (IPC707).<br>Updated Appendix D: IECEx certifications:<br>Added IECEx LCIE 18.0023X (IPC707).<br>Updated Appendix E: KGS certifications:<br>Added KGS 18-GA4BO-0548X and KGS 18-GA4BO-0549X (IPC707). | PW |
| 15 | 18.11.2019 | Peter Ward | Updated 7 Electrical connections to use the latest electrical diagrams (see Figure 7-1, Figure 7-2 and Figure 7-3).<br>Updated Appendix F: TIIS certifications:<br>Updated TIIS TC 20432 (CA134).<br>Updated to use the latest Meggitt brand identity. | PW |
| 16 | 10.05.2022 | Peter Ward | Added 3.2.2 Soft-line “low-noise” cable minimum bend radius to provide information on the minimum bend radius for cables with flexible stainless-steel protection tubes.<br>Updated 4.4.2.1 Grounding to remove any specific recommendations as operation of an IPC707 signal conditioner either with or without a direct electrical connection to ground (GND) results in equivalent electromagnetic (EMC) performance.<br>Updated Figure 4-5 to use the latest IPC707 signal conditioner and MA130 DIN-rail mounting adaptor drawing.<br>Updated 7 Electrical connections to use the latest electrical diagrams (see Figure 7-1, Figure 7-2 and Figure 7-3).<br>Updated the Energy product return procedure and form to be consistent with the Meggitt vibro-meter® Energy website (see 10 Service and support).<br>Added new Appendix A: Tightening torque values for cable fittings in order to provide the recommended tightening torque values for the proper assembly of cable fittings (stuffing glands) on ABA17x industrial housings.<br>… | PW |

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| 16 *(cont.)* | 10.05.2022 | Peter Ward | …<br>Updated Appendix B: ATEX certifications:<br>Added ITS 16 ATEX 101335 X and<br>ITS 16 ATEX 101336 X (cable fittings / stuffing glands).<br>Updated LCIE 02 ATEX 6179 X (CA20x).<br>Updated PTB 01 ATEX 1061 U (ABA160, JB116 and JB118) and PTB 98 ATEX 3101 U (ABA161).<br>Updated LCIE 18 ATEX 1012 X and<br>LCIE 18 ATEX 3026 X (IPC707).<br>Updated SEV 15 ATEX 0151 and<br>SEV 15 ATEX 0152 X (cable fittings / stuffing glands).<br>Removed LCIE 02 ATEX 6085 X and<br>LCIE 09 ATEX 1027 X (IPC704).<br>Removed SIRA 10 ATEX 1224 X and<br>SIRA 10 ATEX 1225 X (cable fittings / stuffing glands).<br>Updated Appendix C: cCSAus certifications:<br>Updated cCSAus 1550831 (CA30x).<br>Removed cCSAus 1243981 (IPC704).<br>Updated Appendix D: IECEx certifications:<br>Added IECEx ITS 16.0011X and<br>IECEx ITS 16.0012X (cable fittings / stuffing glands).<br>Updated IECEx PTB 08.0003U (ABA160, JB116 and JB118) and IECEx PTB 08.0005U (ABA161).<br>Updated IECEx BVS 16.0026U (ABA17x).<br>Updated IECEx LCIE 18.0023X (IPC707).<br>Updated IECEx PTB 11.0019X, IECEx SEV 15.0018 and IECEx SEV 15.0019X (cable fittings / stuffing glands).<br>Removed IECEx LCI 06.0009X and<br>IECEx LCIE 13.0053X (IPC704).<br>Removed IECEx SIR 07.0009X and<br>IECEx SIR 07.0010X (cable fittings / stuffing glands).<br>Updated Appendix E: KGS certifications:<br>Updated KGS 17-GA4BO-0551X (CA20x).<br>Added KGS 21-GA4BO-0276X (CA20x).<br>Removed KGS 12-GA4BO-0396X (IPC704).<br>Updated Appendix F: TIIS certifications:<br>Updated TIIS TC 20544 (CA134).<br>Added Appendix G: UK certifications:<br>Added CML 21 UKEX 4542 X (GSI127).<br>Added CML 21 UKEX 2543 X and<br>CML 21 UKEX 4544 X (IPC707).<br>Updated Appendix H: EAЭC RU certifications:<br>Added EAЭC RU C-CH.АД07.B.02998/21 (ABA17x).<br>Added EAЭC RU C-CH.АД07.B.03042/21 (CA134, CA20x, CA28x, CA30x and CA901).<br>Added EAЭC RU C-CH.АД07.B.03008/21 (GSI127).<br>Added EAЭC RU C-CH.АД07.B.00357/20 (IPC707).<br>Removed TC RU C-CH.МШ06.B.00134 (ABA160, CA134, CA20x, CA28x, CA30x, CA901, GSI12x, IPC704 and JB11x).<br>Added Appendix I: INMETRO certifications:<br>Added INMETRO BVC20.3862-X (CA134).<br>Added INMETRO BVC20.3863-X (CA134).<br>Added INMETRO BVC20.3861-X (IPC707). | PW |

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| 17 | 16.01.2023 | Peter Ward | Updated Appendix B: ATEX certifications:<br>Updated LCIE 09 ATEX 1044 X (CA20x).<br>Updated Appendix F: TIIS certifications:<br>Updated TIIS TC 20432 and TIIS TC 20544 (CA134).<br>Updated Appendix H: EAЭC RU certifications:<br>Added EAЭC RU C-CH.АД07.B.04681/22 (IPC707).<br>Removed EAЭC RU C-CH.АД07.B.00357/20 (IPC707).<br>Added Appendix J: CNEx / CCC Ex certifications:<br>Added CNEx 22.2014X (CA134).<br>Added CCC Ex 2022312310000425 (IPC707).<br>Updated CCC Ex 2022312310000425 (IPC707). | PW |

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*The duly signed master copy of this page is stored by the Technical publications department of Meggitt SA and can be obtained by writing to Technical publications.*

## IMPORTANT NOTICES

All statements, technical information, and recommendations in this document which relate to the products supplied by Meggitt vibro-meter® (Meggitt SA) are based on information believed to be reliable, but unless otherwise expressly agreed in writing with Meggitt SA the accuracy or completeness of such data is not guaranteed. Before using this product, you must evaluate it and determine if it is suitable for your intended application. You should also check our website at www.meggittsensing.com/energy for any updates to data sheets, Ex certificates, product drawings, user manuals, service bulletins and/or other instructions affecting the product.
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# PREFACE

## About this manual

This manual describes how to install vibration measurement chains using CAxxx piezoelectric accelerometers (that is, vibration sensors) with external signal conditioners (IPC70x), from Meggitt's vibro-meter® product line.

It also introduces the general use of these CAxxx-based vibration measurement chains.

**NOTE:** Refer to the *Vibration measurement chains using CExxx piezoelectric accelerometers and PVxxx piezoelectric velocity sensors installation manual* for information on piezoelectric accelerometers that use attached or integrated signal conditioning electronics, from Meggitt's vibro-meter® product line.

## About Meggitt and vibro-meter®

Meggitt PLC is a global engineering group, headquartered in the UK, specialising in the design and manufacture of high-performance components and systems for aerospace and energy markets.

The Meggitt facility in Fribourg, Switzerland, operates as the legal entity Meggitt SA (formerly Vibro-Meter SA). vibro-meter® is a product line of Meggitt that applies our core sensing and monitoring technologies to power generation, oil & gas and other industrial markets.

Meggitt SA produces a wide range of vibration, dynamic pressure, proximity, air-gap and other sensors capable of operation in extreme environments, electronic monitoring and protection systems, and innovative software for aerospace and land-based turbomachinery.

vibro-meter® products and solutions have been at the forefront of sensing and monitoring for more than 65 years and help keep machinery and equipment working safely, reliably and efficiently. This includes the CAxxx-based vibration measurement chains produced for the Meggitt vibro-meter® product line.

To learn more about Meggitt Switzerland, our proud tradition of innovation and excellence, and our solutions for energy markets and applications, visit the www.meggittsensing.com/energy website.

## Who should use this manual?

The manual is intended for use by qualified personnel, such as mechanical and electrical fitters, and operators of monitoring/control systems.

**NOTE:** Personnel involved in the installation, operation and maintenance of Meggitt vibro-meter® equipment are assumed to have the necessary technical training in electronics and/or mechanical engineering (professional certificate/diploma or equivalent) to enable them to install, operate and/or maintain the equipment correctly and safely.

## Adhere to the instructions!

The procedures described in this manual should be strictly adhered to in order to ensure that CAxxx piezoelectric accelerometers and their associated equipment are properly installed. This ensures that measurement signals are reliable and systems function as intended.

The user should adhere to general safety procedures as well as general and specific machine constructor guidelines and instructions.

## Limitations of this document

Not all installation and connection possibilities are described in this manual. Nevertheless, several specific configurations are described in detail. These can often be adapted to specific applications (contact your local Meggitt representative or Meggitt SA for further information).

## Related documentation and publications

Further information on products can be found in their corresponding data sheets, which are available from our website at www.meggittsensing.com/energy or can be obtained from your local Meggitt representative.

Operators of safety-related systems using CAxxx-based vibration measurement chains containing an IPC707 signal conditioner with diagnostics should also refer to the following document:

- *IPC707 signal conditioner safety manual*
  (document reference MAIPC707-FS/E).

**USE OF AN IPC707 SIGNAL CONDITIONER IN A SAFETY-RELATED APPLICATION ASSUMES THAT THE INSTRUCTIONS AND RECOMMENDATIONS IN THE *IPC707 SIGNAL CONDITIONER SAFETY MANUAL* ARE IMPLEMENTED AS APPROPRIATE BY THE END USER.**

**FAILURE TO FOLLOW THE INSTRUCTIONS AND IMPLEMENT THE RECOMMENDATIONS IN THE SAFETY MANUAL MIGHT RESULT IN INJURY TO THE OPERATOR AND/OR THIRD PARTIES, AND/OR RESULT IN DAMAGE TO EQUIPMENT AND WILL INVALIDATE ANY WARRANTY.**

**NOTE:** To ensure that the latest version of documentation is being used, visit the Meggitt vibro-meter® Energy website at www.meggittsensing.com/energy and check for any updates. Alternatively, contact your local Meggitt representative.

# SAFETY

## Symbols and styles used in this manual

The following symbols are used in this manual where appropriate:

**The WARNING safety symbol**

**THIS INTRODUCES DIRECTIVES, PROCEDURES OR PRECAUTIONARY MEASURES WHICH MUST BE EXECUTED OR FOLLOWED. FAILURE TO OBEY A WARNING MIGHT RESULT IN INJURY TO THE OPERATOR AND/OR THIRD PARTIES, AND/OR RESULT IN DAMAGE TO EQUIPMENT.**

**The CAUTION safety symbol**

**This draws the operator's attention to information, directives or procedures which must be executed or followed. Failure to obey a caution can result in damage to equipment.**

**The ELECTROSTATIC SENSITIVE DEVICE symbol**

**This indicates that the device or system being handled can be damaged by electrostatic discharges.**
**See Handling precautions for electrostatic sensitive devices on page xiv for further information.**

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**NOTE:** This is an example of the NOTE paragraph style. This draws the operator's attention to complementary information or advice relating to the subject being treated.

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## Important remarks on safety

**FAILURE TO FOLLOW THE INSTRUCTIONS AND IMPLEMENT THE RECOMMENDATIONS IN THIS MANUAL MIGHT RESULT IN INJURY TO THE OPERATOR AND/OR THIRD PARTIES, AND/OR RESULT IN DAMAGE TO EQUIPMENT AND WILL INVALIDATE ANY WARRANTY.**

**Read this manual carefully and observe the safety instructions before installing and using the equipment described.**

**By doing this, you will be aware of the potential hazards and be able to work safely, ensuring your own protection and also that of the equipment.**

Every effort has been made to include specific safety-related procedures in this manual using the symbols described above. However, operating personnel are expected to follow all generally accepted safety procedures.

All personnel who are liable to install, operate and/or maintain the equipment described in this manual should be trained in the correct safety procedures.

Meggitt does not accept any liability for injury or material damage caused by failure to obey any safety-related instructions or due to any modification, transformation or repair carried out on the equipment without written permission from Meggitt SA. Any modification, transformation or repair carried out on the equipment without written permission from Meggitt SA will invalidate any warranty.

## Equipment installed in potentially explosive atmospheres

**THIS MANUAL COVERS EQUIPMENT THAT CAN BE USED IN POTENTIALLY EXPLOSIVE ATMOSPHERES (HAZARDOUS AREAS), AS WELL AS EQUIPMENT THAT IS SUITABLE FOR ORDINARY APPLICATIONS (NON-EXPLOSIVE ATMOSPHERES) ONLY.**

**TO ENSURE THAT EQUIPMENT / SYSTEM COMPONENTS CAN BE USED SAFELY IN POTENTIALLY EXPLOSIVE ATMOSPHERES (EX ZONES), IT IS ESSENTIAL TO:**

- **VERIFY THAT IT HAS THE SPECIAL MARKING DESCRIBED IN THE EX CERTIFICATES FOR THE PRODUCT.**
- **ADHERE TO THE CRITERIA DEFINED IN THE SAME EX CERTIFICATES.**

**AN "X" OR A "U" PLACED AFTER AN EX CERTIFICATE NUMBER INDICATES THAT THE EQUIPMENT IS SUBJECT TO SPECIAL CONDITIONS FOR SAFE USE. THESE CONDITIONS ARE DEFINED IN THE APPROPRIATE SECTIONS OF THE CORRESPONDING EX CERTIFICATES.**

**FOR FURTHER INFORMATION, SEE THE EX CERTIFICATES IN THE APPENDICES OF THIS MANUAL. (EX CERTIFICATES ARE ALSO AVAILABLE FROM OUR WEBSITE AT WWW.MEGGITTSENSING.COM/ENERGY)**

**IF A CAXXX PIEZOELECTRIC ACCELEROMETER WITH PROTECTION MODE "EX NA" IS LOCATED IN AN EX ZONE 2 (HAZARDOUS AREA), THE ELECTRICAL INSTALLATION MUST PROVIDE PROTECTION AGAINST VOLTAGE TRANSIENTS GREATER THAN 119 V.**

**AN IPC707 SIGNAL CONDITIONER WITH PROTECTION MODE "EX EC" OR "EX NA", AN IPC704 SIGNAL CONDITIONER WITH PROTECTION MODE "EX NA" OR A GSI127 GALVANIC SEPARATION UNIT WITH PROTECTION MODE "EX NA" LOCATED IN AN EX ZONE 2 (HAZARDOUS AREA) MUST BE INSTALLED INSIDE AN ENCLOSURE WITH A PROTECTION RATING OF AT LEAST IP54 (OR EQUIVALENT), WITH DUE CONSIDERATION FOR THE MAXIMUM THERMAL DISSIPATION STATED IN THE CORRESPONDING EX CERTIFICATES.**

**FOR AN IPC707 OR IPC704 SIGNAL CONDITIONER LOCATED IN AN EX ZONE 2 IN NORTH AMERICA (CCSAUS), THE FINAL ENCLOSURE IN WHICH THE IPC707 OR IPC704 IS INSTALLED MUST HAVE THE SPECIFIC CAUTION AND WARNING DESCRIBED IN THE CORRESPONDING CCSAUS EX CERTIFICATE (REFER TO THE CCSAUS EX CERTIFICATE FOR FURTHER INFORMATION).**

**SEE ALSO 8 MAINTENANCE.**

**If a CAxxx piezoelectric accelerometer is to be used in a potentially explosive atmosphere (hazardous area), then it is essential to use a version of the vibration measurement chain that is intrinsically safe.**

**Accordingly, all "sensor-side" components such as piezoelectric accelerometers, signal conditioners, transmission cables, galvanic separation units, power supplies, safety barriers and junction boxes are available in Ex versions.**

## Hot surfaces and the risk of burning

**HOT SURFACES CAN EXIST WITHIN AND ON A CAXXX-BASED VIBRATION MEASUREMENT CHAIN.**

**DEPENDING ON THE AMBIENT OPERATING TEMPERATURE, AND THE INSTALLATION AND COOLING OF A CAXXX-BASED MEASUREMENT CHAIN, THE COMPONENTS CAN BECOME HOT TO TOUCH AND THERE IS THE RISK OF BURNING WHEN HANDLING.**

**REGARD THE COMPONENTS OF A CAXXX-BASED MEASUREMENT CHAIN AS HOT SURFACES AND DO NOT TOUCH UNLESS COOL.**

**FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY.**

## General handling precautions

Meggitt's vibro-meter® piezoelectric accelerometers are rugged devices which can withstand a certain amount of careless handling. Nevertheless, certain precautions should be taken.

**Read the following recommendations carefully before handling CAxxx piezoelectric accelerometers.**

- Do not drop the sensor onto a hard surface or subject it to violent shocks.
- Protect the body/head of the sensor with plastic protective netting when it is being handled, stored or transported. Remove this protection only when installing the sensor or when inspecting or testing it.
- Check for dents when inspecting the sensor as this is a sign that it could have suffered a physical shock by impact. This could have caused damage to components within the sensor.
- Do not excessively bend the sensor cable or associated cables. Adhere to the minimum bend radius quoted in this manual and/or the appropriate data sheet.
- When storing and using the equipment, adhere to the environmental specifications (temperature, humidity) quoted in the appropriate data sheet.
- See also Handling precautions for electrostatic sensitive devices on page xiv.

## Handling precautions for electrostatic sensitive devices

Certain devices used in electronic equipment can be damaged by electrostatic discharges resulting from built-up static electricity. Because of this, special precautions must be taken to minimize or eliminate the possibility of these electrostatic discharges occurring.

**Read the following recommendations carefully before handling electronic circuits, printed circuit boards or modules containing electronic components.**

- Before handling electronic circuits, discharge the static electricity from your body by touching and momentarily holding a grounded metal object, such as a pipe or cabinet.
- Avoid the build-up of static electricity on your body by not wearing synthetic clothing materials, as these tend to generate and store static electric charges. Cotton or cotton blend materials are preferred because they do not store static electric charges.
- Do not handle electronic circuits unless it is absolutely necessary. Only hold modules by their front panel handles.
- Do not touch printed circuit boards, their connectors or their components with conductive devices or with your hands.
- Put the electronic circuit, printed circuit board or module containing electronic components into an antistatic protective bag immediately after removing it from the system rack.

## Replacement parts and accessories

**Use only approved replacement parts and accessories.**

**Do not connect with incompatible products or accessories.**

**Only use replacement parts and accessories intended for use with CAxxx-based vibration measurement chains that have been approved by Meggitt SA.**

**Using incompatible replacement parts and accessories could be dangerous and may damage the equipment or result in injury.**

For information on replacement parts and accessories:

- Visit the Meggitt vibro-meter® Energy website at www.meggittsensing.com/energy
- Contact your local Meggitt representative.

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# 1 INTRODUCTION TO CAXXX-BASED VIBRATION MEASUREMENT CHAINS

## 1.1 Overview

This chapter provides an overview of vibration measurement chains using CAxxx piezoelectric accelerometers (that is, vibration sensors), from Meggitt's vibro-meter® product line. The range of CAxxx-based measurement chains is summarised in Table 1-1.

**Table 1-1:** Examples of CAxxx-based vibration measurement chains

| CAxxx-based vibration measurement chain components | Type | | |
|---|---|---|---|
| Piezoelectric accelerometer with MI cable and soft-line "low-noise" cable | CAxxx | ✓ | |
| Piezoelectric accelerometer with soft-line "low-noise" cable | | | ✓ |
| Cable assembly (soft-line) | ECxxx | ✓ | ✓ |
| Junction box | JB116 | * | * |
| Signal conditioner | IPC707 or IPC704 | ✓ | ✓ |
| Industrial housing | ABA17x or ABA160 | * | * |
| 2-wire transmission cable (current) | K2xx | ** | ** |
| 3-wire transmission cable (voltage) | K3xx | ** | ** |
| Galvanic separation unit | GSI127 | * | * |
| Power supply | APFxxx or ASPS | * | * |
| Mechanical diagram (see Figure *x*) | | **1-1 (a)** | **1-1 (b)** |

Notes:

*Optional.

**Either a K2xx or K3xx must be installed in the measurement chain.

**NOTE:** MI = mineral-insulated hard-line cable.

## 1.2 Component descriptions

### 1.2.1 CAxxx piezoelectric accelerometers

Meggitt vibro-meter® offers a full range of CAxxx piezoelectric accelerometers including:

- CAxxx piezoelectric accelerometers with MI cable and matching soft-line “low-noise” cable for very high temperature applications.
- CAxxx piezoelectric accelerometers with soft-line “low-noise” cable for medium temperature applications.

**NOTE:** Further information on a specific CAxxx piezoelectric accelerometer can be found in the corresponding data sheet.

**IF A CAXXX PIEZOELECTRIC ACCELEROMETER IS TO BE USED IN A POTENTIALLY EXPLOSIVE ATMOSPHERE, READ AND OBSERVE THE IMPORTANT SAFETY INFORMATION IN EQUIPMENT INSTALLED IN POTENTIALLY EXPLOSIVE ATMOSPHERES ON PAGE XII.**

**If a CAxxx piezoelectric accelerometer is to be used in a potentially explosive atmosphere (hazardous area), then it is essential to use a version of the vibration measurement chain that is intrinsically safe.**

**Accordingly, all “sensor-side” components such as piezoelectric accelerometers, signal conditioners, transmission cables, galvanic separation units, power supplies, safety barriers and junction boxes are available in Ex versions.**

All CAxxx piezoelectric accelerometers require an external signal conditioner.

**NOTE:** Refer to the *Vibration measurement chains using CExxx piezoelectric accelerometers and PVxxx piezoelectric velocity sensors installation manual* for information on piezoelectric accelerometers that use attached or integrated signal conditioning electronics, from Meggitt’s vibro-meter® product line.

### 1.2.2 ECxxx cable assemblies

An ECxxx cable assembly is a soft-line “low-noise”, screened, 2-wire cable assembly used to connect a CAxxx piezoelectric accelerometer to an IPC707 or IPC704 signal conditioner. Some ECxxx cable assemblies have a flexible stainless-steel protection tube in order to provide additional mechanical protection.

### 1.2.3 JB116 junction box

A JB116 junction box provides a protection rating of IP65 to the connection between an integral cable and an extension cable in measurement chains. These junction boxes are made of polyester and are available with a range of cable fittings (stuffing glands) for operation with cables of different diameters.

### 1.2.4 IPC707 signal conditioner

**IF AN IPC707 SIGNAL CONDITIONER IS TO BE USED IN A POTENTIALLY EXPLOSIVE ATMOSPHERE, READ AND OBSERVE THE IMPORTANT SAFETY INFORMATION IN EQUIPMENT INSTALLED IN POTENTIALLY EXPLOSIVE ATMOSPHERES ON PAGE XII.**

An IPC707 signal conditioner transforms the charge-based signal from a CAxxx piezoelectric accelerometer into a current output or a voltage output signal suitable for transmission to an external monitoring and/or protection system. Optionally, the IPC707 signal conditioner supports diagnostics (that is, built-in test equipment (BITE) circuitry) that are used to indicate problems with a measurement chain consisting of a sensor, cabling and the IPC707 signal conditioner.

The output signal from the IPC707 consists of a dynamic measurement component (AC) and a quasi-static diagnostic component (DC). With the optional diagnostics, the nominal value of the diagnostic component is one value to indicate normal operation, and other values to indicate problems with the sensor and/or cabling, the signal conditioner, the signal conditioner's power supply or other problems. The external machinery protection and/or condition monitoring system connected to the IPC707 can monitor the nominal value of the diagnostic component (DC) of the IPC707's output signal and provide an alarm to indicate a problem (non-normal operation). See 4.4 Installing an IPC707 signal conditioner for further information.

**NOTE:** Like all configurable IPC707 product options, the choice of environment (standard or Explosive ("Ex")), diagnostics (with or without) and output signal (current or voltage) must be made at the time of ordering.

**NOTE:** The metal housing (electrically conductive) of an IPC707 is connected to its "COM" and "SHD" terminals. Accordingly, an IPC707 can be installed and operated either with or without a direct electrical connection between the IPC707 and ground (GND).
For further information, see 4.4 Installing an IPC707 signal conditioner and 4.4.2 Mounting procedure.

**NOTE:** A CAxxx-based vibration measurement chain using an IPC707 signal conditioner with a current-modulated output signal, a 2-wire transmission cable and a GSI127 galvanic separation unit, allows higher-quality signal transmission over longer distances than any other solution, and is therefore strongly recommended.

An IPC707 signal conditioner with diagnostics is suitable for use in safety-related systems, such as SIL 2 in accordance with IEC 61508 and PL c Cat 1 in accordance with ISO 13849.

**NOTE:** Refer to the *IPC707 signal conditioner safety manual* for further information on using the IPC707 in safety-related systems (functional-safety contexts).

### 1.2.5 IPC704 signal conditioner

**IF AN IPC704 SIGNAL CONDITIONER IS TO BE USED IN A POTENTIALLY EXPLOSIVE ATMOSPHERE, READ AND OBSERVE THE IMPORTANT SAFETY INFORMATION IN EQUIPMENT INSTALLED IN POTENTIALLY EXPLOSIVE ATMOSPHERES ON PAGE XII.**

An IPC704 signal conditioner transforms the charge-based signal from a CAxxx piezoelectric accelerometer into a current-modulated or a voltage-modulated output signal suitable for transmission to an external monitoring and/or protection system.

**NOTE:** Like all configurable IPC704 options, the choice of environment (standard or Explosive ("Ex")) and output signal type (current or voltage) must be made at the time of ordering.

**NOTE:** The metal housing (electrically conductive) of an IPC704 is connected to its "COM" signal/terminals. Accordingly, the housing of an IPC704 must be electrically isolated from ground (GND) in order to eliminate earth loops and help ensure the correct operation of the measurement chain.

**NOTE:** A CAxxx-based vibration measurement chain using an IPC704 signal conditioner with a current-modulated output signal, a 2-wire transmission cable and a GSI127 galvanic separation unit, allows high-quality signal transmission over long distances.

### 1.2.6 ABA17x and ABA160 industrial housings

ABA17x and ABA160 industrial housings can be used to enclose and protect IPC70x signal conditioners.

The ABA17x industrial housings are available in different sizes to contain and protect different numbers of IPC70x signal conditioners: ABA171 for up to two signal conditioners, ABA172 for up to four signal conditioners and ABA173 for up to eight signal conditioners. An ABA17x contains one or more DIN rails and an IPC70x is mounted using a DIN-rail mounting adaptor.

The ABA160 industrial housing can contain and protects one IPC704 signal conditioner. The ABA160 uses a base plate to mount an IPC704.

The ABA17x and ABA160 industrial housings offer a protection rating of IP66 and versions for use in a hazardous area (potentially explosive atmosphere) are available.

### 1.2.7 K209 and K210 cables

A K209 or K210 cable is used as a current transmission cable to connect an IPC707 or IPC704 signal conditioner to the electronic monitoring system, either directly or via a GSI127 galvanic separation unit when current transmission is required. The K209 and K210 are shielded 2-wire cables designed for use in harsh industrial environments. An optional protection tube (for example, a KS107) can be used to provide additional mechanical protection to the cable if required.

**K209 cables can only be used in ordinary applications (that is, in non-explosive atmospheres).**

**K210 cables can be used in potentially explosive atmospheres, for example, when a GSI127 is installed in the measurement chain.**

A K209 or K210 cable can also be used to connect a GSI127 galvanic separation unit to the electronic monitoring system.

### 1.2.8 K309 and K310 cables

A K309 or K310 cable is used as a voltage transmission cable to connect an IPC707 or IPC704 signal conditioner to the electronic monitoring system, either directly or via a GSI127 galvanic separation unit acting as a safety barrier, when voltage transmission is required (sufficient). The K309 and K310 are shielded 3-wire cables designed for use in harsh industrial environments. An optional protection tube (for example, a KS107) can be used to provide additional mechanical protection to the cable if required.

**K309 cables can only be used in ordinary applications (that is, in non-explosive atmospheres).**

**K310 cables can be used in potentially explosive atmospheres, for example, when a GSI127 (or other safety barrier – not available from Meggitt) is installed in the measurement chain.**

### 1.2.9 GSI127 galvanic separation unit

A GSI127 galvanic separation unit is used by CAxxx-based measurement chains to supply power to the sensor/signal conditioning circuitry, including those located in potentially explosive atmospheres, while providing galvanic isolation between the “sensor-side” circuitry and the power supply and between the “sensor-side” circuitry and the ground of the “monitor-side” circuitry. It also converts the measured current (2-wire transmission system) or voltage (3-wire transmission system) signal from the signal conditioner into a proportional voltage-based (floating) output signal, for subsequent use by “monitor-side” circuitry such as an electronic monitoring system.

For use in potentially explosive atmospheres, the GSI127 has a certification that allows installation in an Ex Zone 2, that is, it is an “Ex nA [ia]” safety barrier. As such, the GSI127 is an associated apparatus which can be connected to intrinsically safe apparatus that is located in potentially explosive atmospheres.

**The GSI127 is permitted to be installed in an Ex Zone 2 (hazardous area). For further information, see 7.2 General wiring diagrams.**

In ordinary applications (non-explosive atmospheres), the GSI127 can be used where galvanic isolation is not required but transmission distance or noise reduction is a concern, as it rejects the frame voltage that appears between the sensor ground and the electronic monitoring system ground (thereby helping to reduce noise in the measurement chain).

A GSI127 is usually installed on a DIN rail outside the rack, generally in a cubicle housing. The GSI127 galvanic separation unit requires an external power source such as an APFxxx power supply (see 1.2.10 APFxxx power supplies) or ASPS auxiliary sensor power supply (see 1.2.11 ASPS auxiliary sensor power supply).

**NOTE:** The GSI127 galvanic separation unit has replaced the GSI124.

### 1.2.10 APFxxx power supplies

An APF19x or APF20x power supply could be required to power external hardware requiring a 24 $V_{DC}$ power supply, such as a GSI127 galvanic separation unit (see 1.2.9 GSI127 galvanic separation unit). An APFxxx requires uses a mains AC (or high-voltage DC) input and is usually installed on a DIN rail outside the rack, generally in a cubicle housing.

### 1.2.11 ASPS auxiliary sensor power supply

An ASPS auxiliary sensor power supply can be used to power external hardware requiring a 24 $V_{DC}$ power supply, such as a GSI127 galvanic separation unit (see 1.2.9 GSI127 galvanic separation unit).

When a VM600 rack is used as the electronic monitoring system, an ASPS can be installed in the VM600 rack if an AC input version of the RPS6U rack power supply unit is used. It can replace an APFxxx power supply mounted externally, thereby reducing wiring and simplifying the installation.

## 1.3 Mechanical diagram

Figure 1-1 shows some examples of the CAxxx-based vibration measurement chains available.

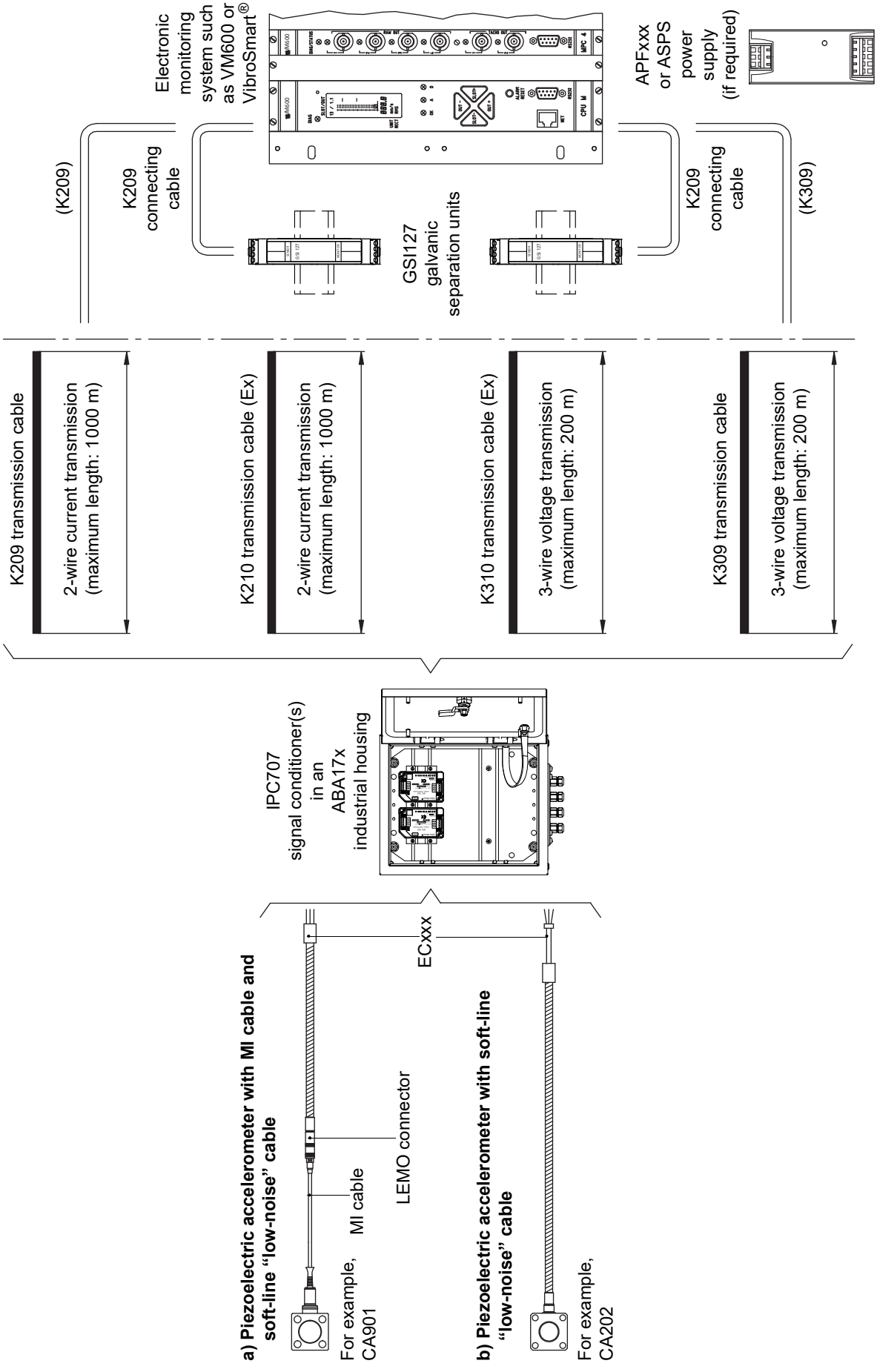


**Figure 1-1:** Example CAxxx-based vibration measurement chains

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# 2 INSTALLING PIEZOELECTRIC ACCELEROMETERS

This chapter provides general guidelines on mounting and installing CAxxx piezoelectric accelerometers (that is, vibration sensors). In general, this information applies to all piezoelectric accelerometers in measurement chains.

**NOTE:** Further product specific information can be found in the corresponding CAxxx piezoelectric accelerometer data sheet.

**NOTE:** Special precautions must be taken when mounting piezoelectric accelerometers with integral cables. See 3.3 Installing an MI cable and 3.1.1 Cables in potentially explosive atmospheres.

## 2.1 General precautions

### 2.1.1 Equipment installed in potentially explosive atmospheres

**TO ENSURE THAT THE EQUIPMENT CAN BE USED SAFELY IN POTENTIALLY EXPLOSIVE ATMOSPHERES (EX ZONES), IT IS ESSENTIAL TO RESPECT THE CRITERIA OUTLINED IN THE EX CERTIFICATES FOR THE PRODUCT.**

**AN "X" OR A "U" PLACED AFTER AN EX CERTIFICATE NUMBER INDICATES THAT THE EQUIPMENT IS SUBJECT TO SPECIAL CONDITIONS FOR SAFE USE. THESE CONDITIONS ARE DEFINED IN THE APPROPRIATE SECTIONS OF THE CORRESPONDING EX CERTIFICATES.**

**FOR FURTHER INFORMATION, SEE THE EX CERTIFICATES IN THE APPENDICES OF THIS MANUAL. (EX CERTIFICATES ARE ALSO AVAILABLE FROM OUR WEBSITE AT WWW.MEGGITTSENSING.COM/ENERGY)**

### 2.1.2 Recommended mounting points

Piezoelectric accelerometers and associated hardware must be mounted very carefully in order to improve the quality of data collected and increase product durability. Piezoelectric accelerometers can be mounted on various parts of a machine (see Figure 2-1).

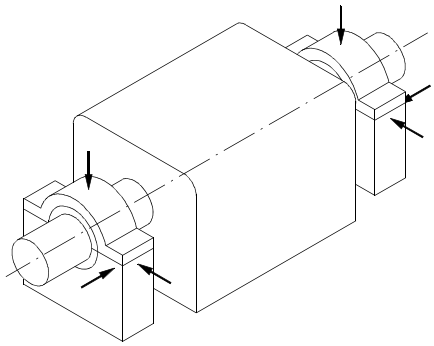


**Figure 2-1:** Recommended mounting points

**Install piezoelectric accelerometers as close as possible to the bearings. A piezoelectric accelerometer installed on a surface with low mechanical stiffness could generate erroneous measurements.**

Care should be taken to avoid placing the accelerometer at resonant locations on the structure if one wants to measure the motion of the entire structure. Typical mounting locations would be on motor end bells as close as possible to the bearing. Fan and pump pillow blocks are other acceptable locations that are commonly used.

**NOTE:** The procedures described should be strictly followed to ensure that equipment is properly installed.

**NOTE:** Adhere to general safety procedures, as well as general and specific machine constructor instructions and guidelines.

**NOTE:** Not all mounting and installation options are described in this manual. Nevertheless, several specific configurations are described in detail, which can often be adapted for specific applications. Contact your local Meggitt representative or Meggitt SA for further information.

**NOTE:** Always adhere to the machining tolerances to eliminate the possibility of vibration signals being contaminated by deformations in the base of the accelerometer.

#### 2.1.2.1 Mass effects

Any sensor attached to a structure affects the motion of the structure. The mass of the structure should be at least 10 times that of the sensor, in order for this effect to have an error of less than 10%.

**NOTE:** Further information on the weight of a sensor can be found in the corresponding CAxxx piezoelectric accelerometer data sheet.

### 2.1.3 Operating temperature range

**The ambient temperature where a piezoelectric accelerometer is installed must be permanently within its operating temperature range.**

**NOTE:** Further information on the operating temperature range of a sensor can be found in the corresponding CAxxx piezoelectric accelerometer data sheet.

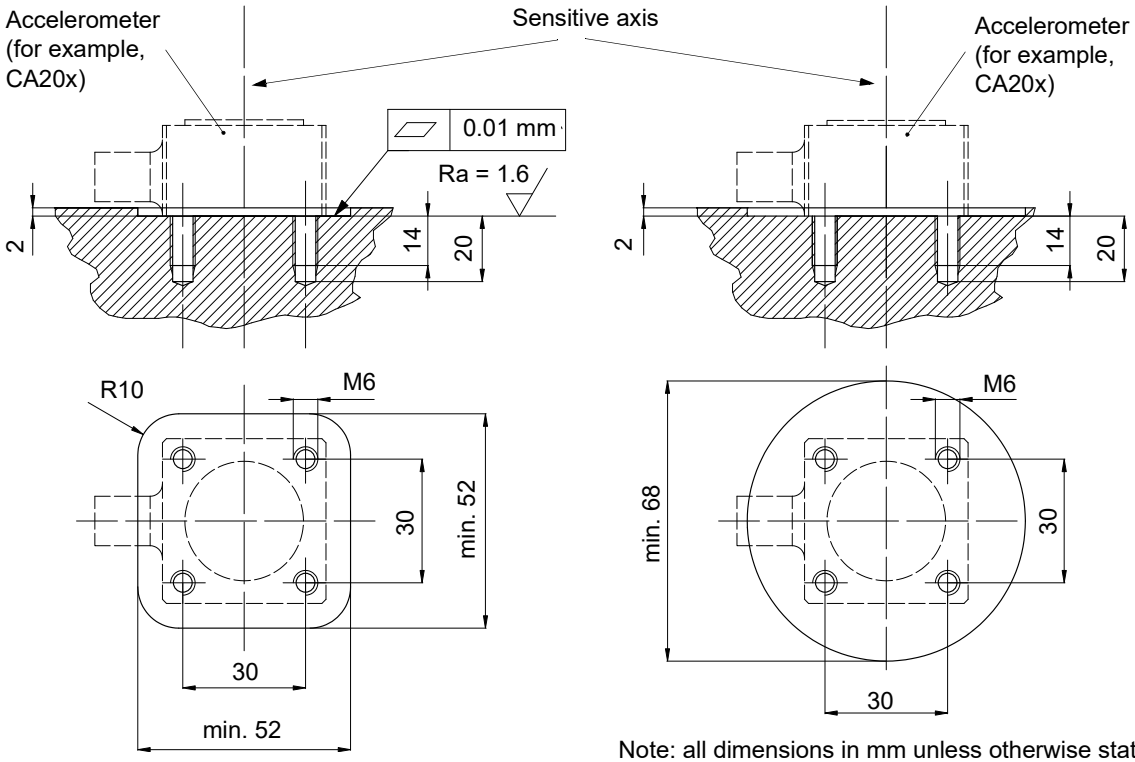
## 2.2 Mounting piezoelectric accelerometers

### 2.2.1 Preparing the machine surface

Accurate measurements, and especially the higher frequency components, are only possible when an piezoelectric accelerometer is properly mounted on the target machine. The base of the accelerometer and the mounting surface must maintain good contact during the measurement. Ideally, the sensor should be mounted as close as possible to the source of vibration, for example, the bearing housing.

Before mounting a piezoelectric accelerometer the machine surface should be prepared at the mounting location. The surface should be even and perpendicular to the desired axis of sensitivity. The machined surface should have a maximum surface waviness of 0.01 mm and a maximum surface roughness of Ra 1.6. Figure 2-2 shows examples of required mounting surfaces.

All mounting holes should be carefully drilled and tapped in accordance with the required mounting screws or adaptor stud.




Note: all dimensions in mm unless otherwise stated.

**Figure 2-2:** Mounting surface for a CA20x piezoelectric accelerometer

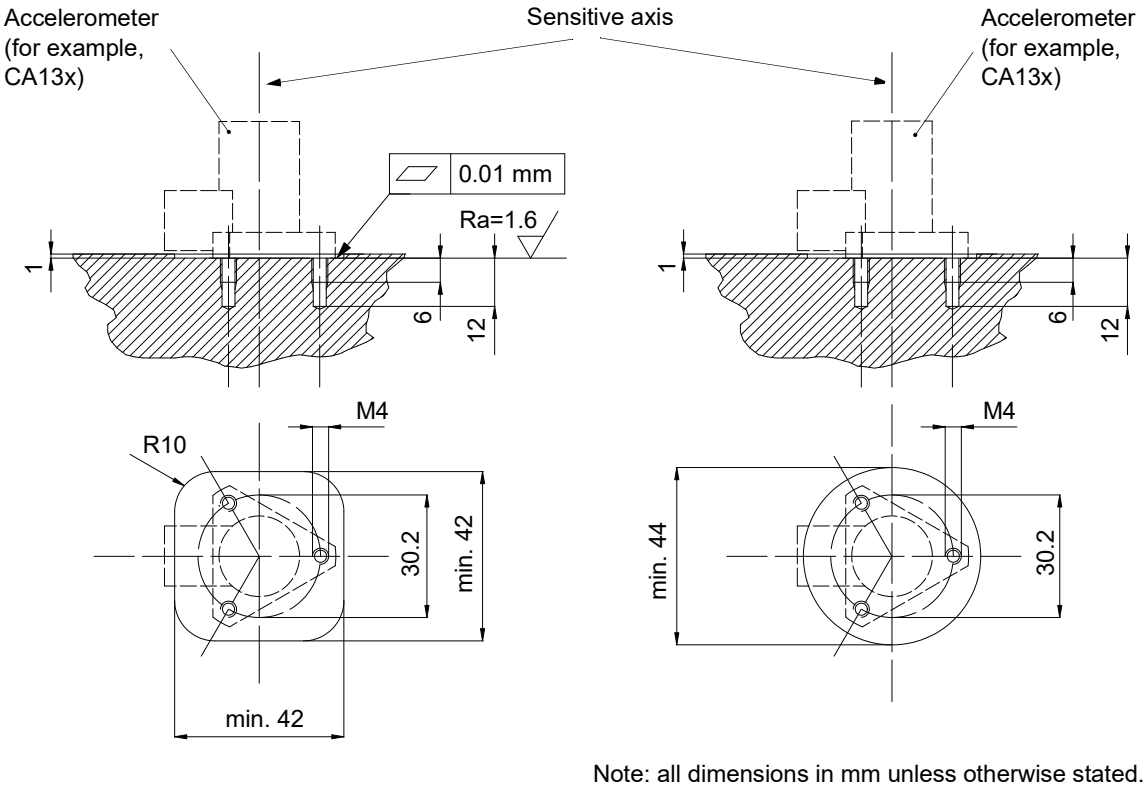



**Figure 2-3:** Mounting surface for a CA13x piezoelectric accelerometer

### 2.2.2 Mounting procedure

The mounting procedure is similar regardless of the type of piezoelectric accelerometer (see Figure 2-4 for an overview).

**NOTE:** Piezoelectric accelerometers vary in dimensions. Further information can be found in the corresponding CAxxx piezoelectric accelerometer data sheet.

To mount a piezoelectric accelerometer:

**1-** Prepare the part of the machine surface where the piezoelectric accelerometer will be mounted (see 2.2.1 Preparing the machine surface).

**2-** Clean the mounting surface to remove any residual particles (metal shavings, dust).

**3-** Position the piezoelectric accelerometer on the mounting surface (see Figure 2-4).

**4-** Coat the fixing screws with a thread-locking adhesive that is suitable for the operating temperature of the application.

**NOTE:** Thread-locking adhesives, such as LOCTITE® 241 or equivalent, stop screws becoming loose due to vibration. Such thread-lockers allow parts to be disassembled at a later time, if necessary.

**5-** Fix the piezoelectric accelerometer using a torque wrench.

The tightening torque to use depends on the size and strength grade of the screws used to fix the sensor, in accordance with the values defined in Table 2-1.

**Table 2-1:** Tightening torque values for different mounting screws

| Screws | | Torque (minimum) | | Torque (nominal) | |
|---|---|---|---|---|---|
| **Metric** | **Imperial** | **Metric** | **Imperial** | **Metric** | **Imperial** |
| M3.5 | 6-40 UNF (or 6-32 UNC) | 1 N•m | 0.7 lb-ft | 2 N•m | 1.5 lb-ft |
| M4 | 8-36 UNF | 2 N•m | 1.5 lb-ft | 4 N•m | 3 lb-ft |
| M5 | 10-32 UNF | 4 N•m | 3 lb-ft | 9 N•m | 6.6 lb-ft |
| M6 | 1/4″-28UNF | 7 N•m | 5.2 lb-ft | 15 N•m | 11.1 lb-ft |

Notes:
Refer also to the corresponding CAxxx piezoelectric accelerometer data sheet.
In order to optimise the contact surface and help ensure that the assembly does not become loose due to vibration, appropriately sized spring-lock washers should be used and the tightening torque should be maximized within the mechanical limits (strength grade) of the specific screws used.

**Piezoelectric accelerometer (for example, CA20x) with external signal conditioner**

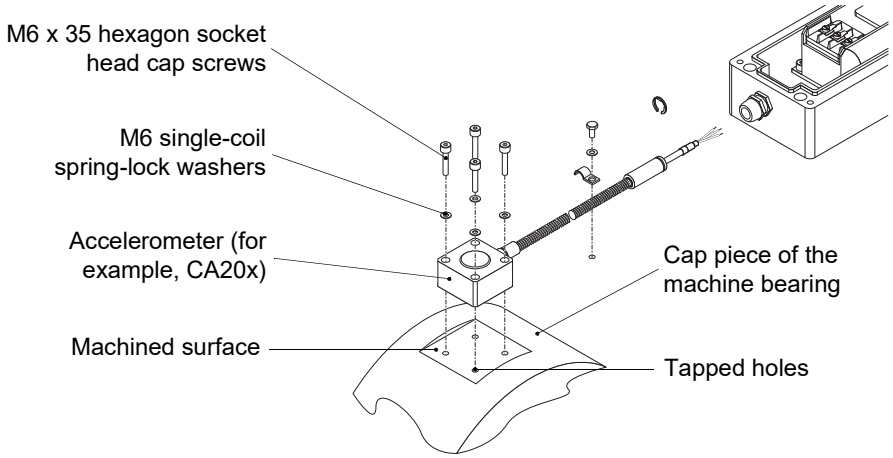
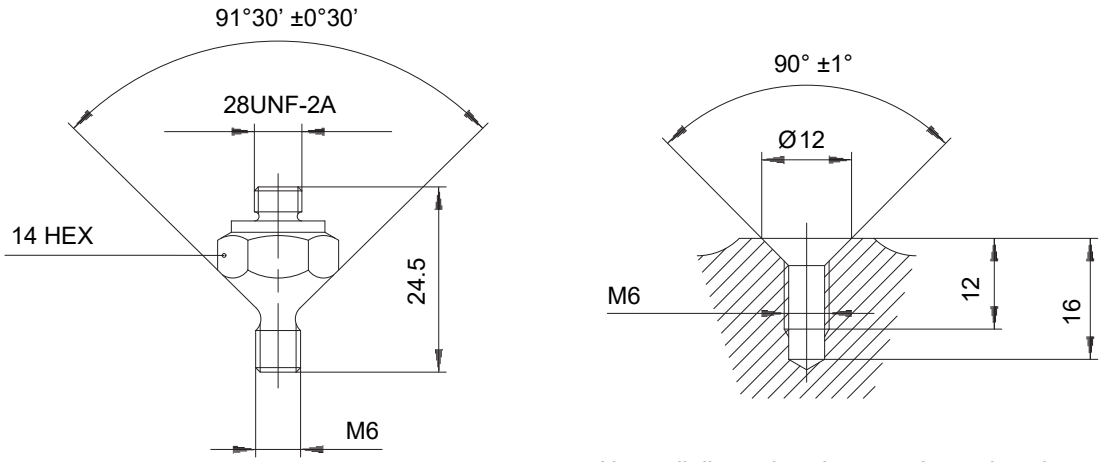



**Figure 2-4:** Mounting a piezoelectric accelerometer on a machined surface

### 2.2.3 Mounting accessories

**NOTE:** For further information on mounting accessories, contact your local Meggitt representative or Meggitt SA.

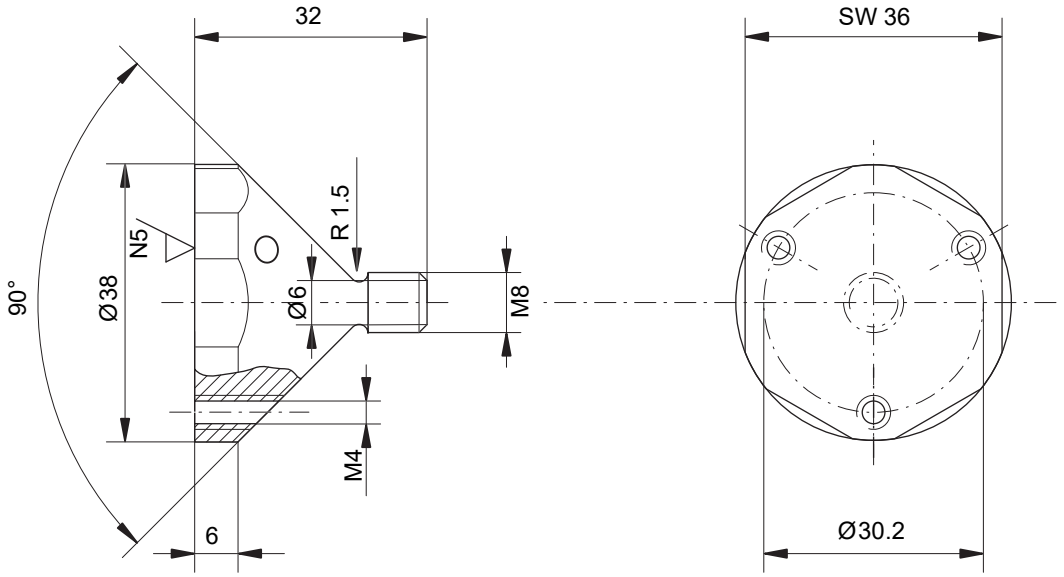
#### 2.2.3.1 MA122 mounting adaptor




Note: all dimensions in mm unless otherwise stated.

**Figure 2-5:** MA122 mounting adaptor

#### 2.2.3.2 TA104 mounting stud




Note: all dimensions in mm unless otherwise stated.

**Figure 2-6:** TA104 mounting stud

### 2.2.3.3 TA101 electrically isolating support

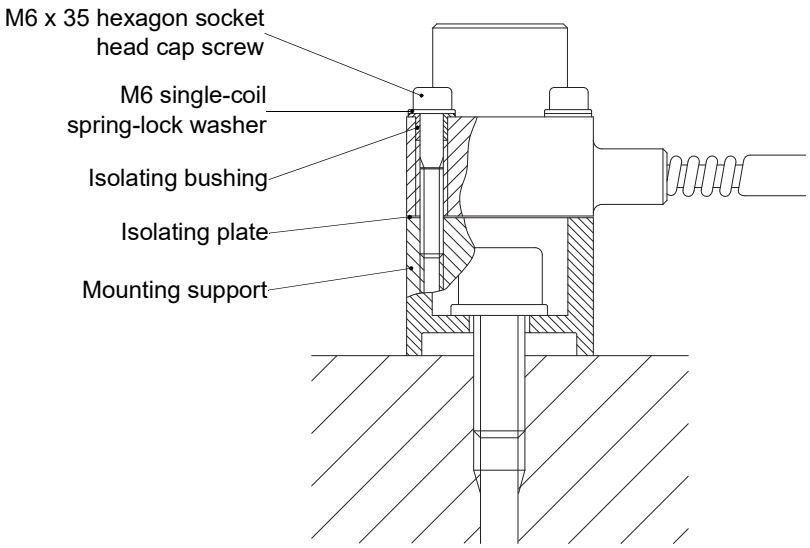
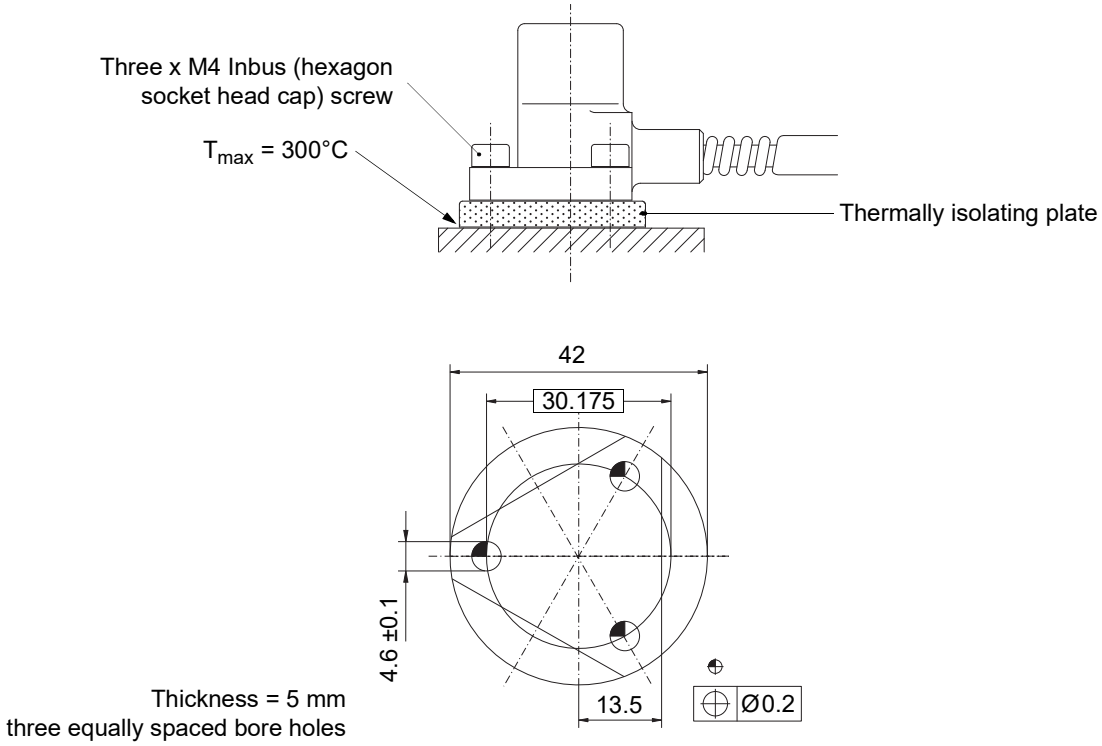



**Figure 2-7:** TA101 electrically isolating support

### 2.2.3.4 TA105 thermally isolating support




Note: all dimensions in mm unless otherwise stated.

**Figure 2-8:** TA105 thermally isolating support

# 3 INSTALLING CABLES

This chapter provides guidelines on installing cables in CAxxx-based vibration measurement chains.

**NOTE:** Further product specific information can be found in the corresponding data sheet.

This information applies to any of the following cables in the chain:

- Cables connected directly or indirectly to a piezoelectric accelerometer that carry charge-based signals. This includes integral cables, connecting cable assemblies (ECxxx) and extension cables.
- Other transmission cables and connecting cables (K2xx and K3xx).

**NOTE:** The requirements for soft-line “low-noise” cables and MI cables are outlined in 3.2 Installing soft-line “low-noise” cables and 3.3 Installing an MI cable respectively.

Further information on connecting transmission and connecting cables is described in 5 Installing galvanic separation units.

## 3.1 General precautions

### 3.1.1 Cables in potentially explosive atmospheres

**ONLY CABLES APPROPRIATE FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES (EX ZONES) SHOULD BE INSTALLED IN SUCH ENVIRONMENTS.**

**THE LENGTHS OF ALL CABLES (INTEGRAL CABLES AND/OR CABLE ASSEMBLIES) INSTALLED IN POTENTIALLY EXPLOSIVE ATMOSPHERES MUST BE DETERMINED AS PER THE CRITERIA DEFINED IN THE APPROPRIATE SECTIONS OF THE CORRESPONDING EX CERTIFICATES.**

**FOR FURTHER INFORMATION, SEE THE EX CERTIFICATES IN THE APPENDICES OF THIS MANUAL. (EX CERTIFICATES ARE ALSO AVAILABLE FROM OUR WEBSITE AT WWW.MEGGITTSENSING.COM/ENERGY)**

### 3.1.2 Operating temperature range

**The ambient temperature where a cable is installed must be permanently within its operating temperature range.**

**NOTE:** Further information on the operating temperature range of a cable can be found in the corresponding data sheet.

### 3.1.3 Minimum bend radius

It is essential that the minimum bend radius is respected when connecting and fixing an integral cable, extension cable, transmission cable or connecting cable.

**NOTE:** Further specific information on the minimum bend radius of a specific cable can be found in the corresponding data sheet. See also 3.2.2 Soft-line “low-noise” cable minimum bend radius and 3.3.3 MI cable minimum bend radius, as required.

**Failure to respect the minimum bend radius of a cable can lead to permanent cable damage.**

### 3.1.4 Minimizing sources of electromagnetic interference

Signals in a measurement chain are sensitive to electromagnetic interference (EMI) at low frequencies and radio frequency interference (RFI). This is particularly true near a piezoelectric accelerometer, where signal levels are low. Interference can come from a variety of sources including power cables, strong magnetic fields, motors, switching gear, portable phones and walkie-talkies.

The following precautions must be taken to reduce the effects of EMI:

**1-** Use appropriate grounding techniques. Always conform to the electrical wiring diagrams (see 7 Electrical connections).

**2-** Electrically isolate (shield) each measurement chain from all others.

**3-** When possible, place cables in a grounded steel protection tube to provide additional electrical and mechanical protection.

**4-** Do not run signal cables through conduits used for other purposes such as power cables or communications lines.

### 3.1.5 Using cable conduits

Cable conduits provide mechanical and electrical protection to cables. All signal wiring should be run through conduits that are reserved for only one type of cable. Do not mix signal wiring with power or communications cables.

Cable conduits must be well grounded according to industry standards in order to provide protection against EMI (see 3.1.4 Minimizing sources of electromagnetic interference). They should prevent water or other liquids entering. If there is a risk of this happening, or of condensation forming in the conduit, adequate drainage should be provided.

### 3.1.6 Preparation of a soft-line “low-noise” cable

#### 3.1.6.1 Structure of a soft-line “low-noise” cable

A soft-line “low-noise” cable is made of 2 groups of conductors wrapped into a number of different coatings. The numbers below correspond to the reference numbers shown on the illustrations Figure 3-1 and Figure 3-2.

**1-** Each conductor is coated with a PTFE sleeve, that together make a wire.

**2-** A wire is coated with a thin carbon film.

**3-** The 2 wires are twisted together with 2 cords.

**4-** The twisted wires and cords are coated with another carbon film, that makes the core of the cable.

**5-** The core of the cable is covered with a metallic shielding net.

**6-** The core and its shield are covered with a PTFE sleeve.

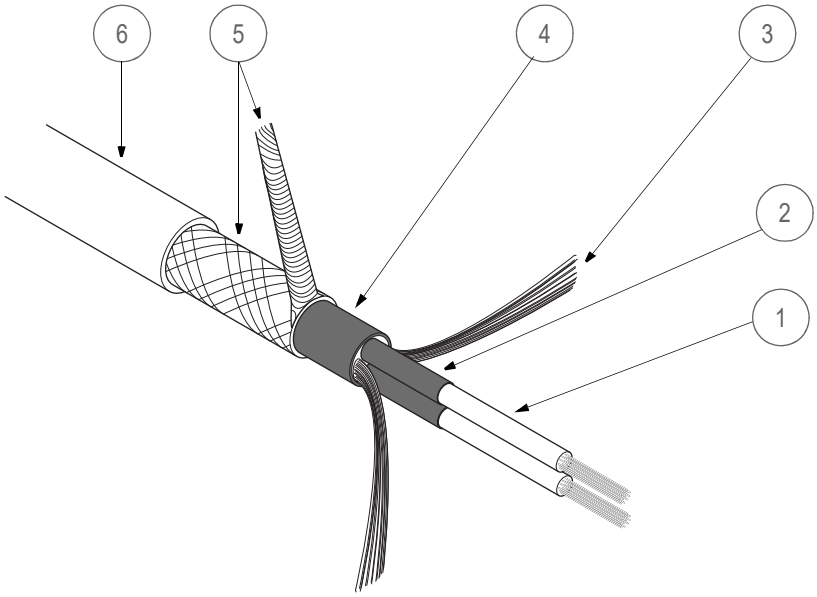



**Figure 3-1:** Structure of a soft-line “low-noise” cable

#### 3.1.6.2 Preparing a soft-line “low-noise” cable

Figure 3-2 shows how to prepare a soft-line “low-noise” cable.

**No traces of carbon must remain in the region of the connection.**

**Use alcohol and fine steel wool to remove ALL traces of carbon.**

**A-** Strip the PTFE sleeve (6).

**B-** Unknot the metallic shielding net (5) and twist it in order to make it into a lead.

**C-** Strip the carbon film (4) off the core of the cable.

**Use alcohol and fine steel wool to remove ALL traces of carbon.**

**D-** Cut the cords (3) and strip the thin carbon film (2) off each wire.

**Use alcohol and fine steel wool to remove ALL traces of carbon.**

**E-** Strip each wire (1) to the desired length.

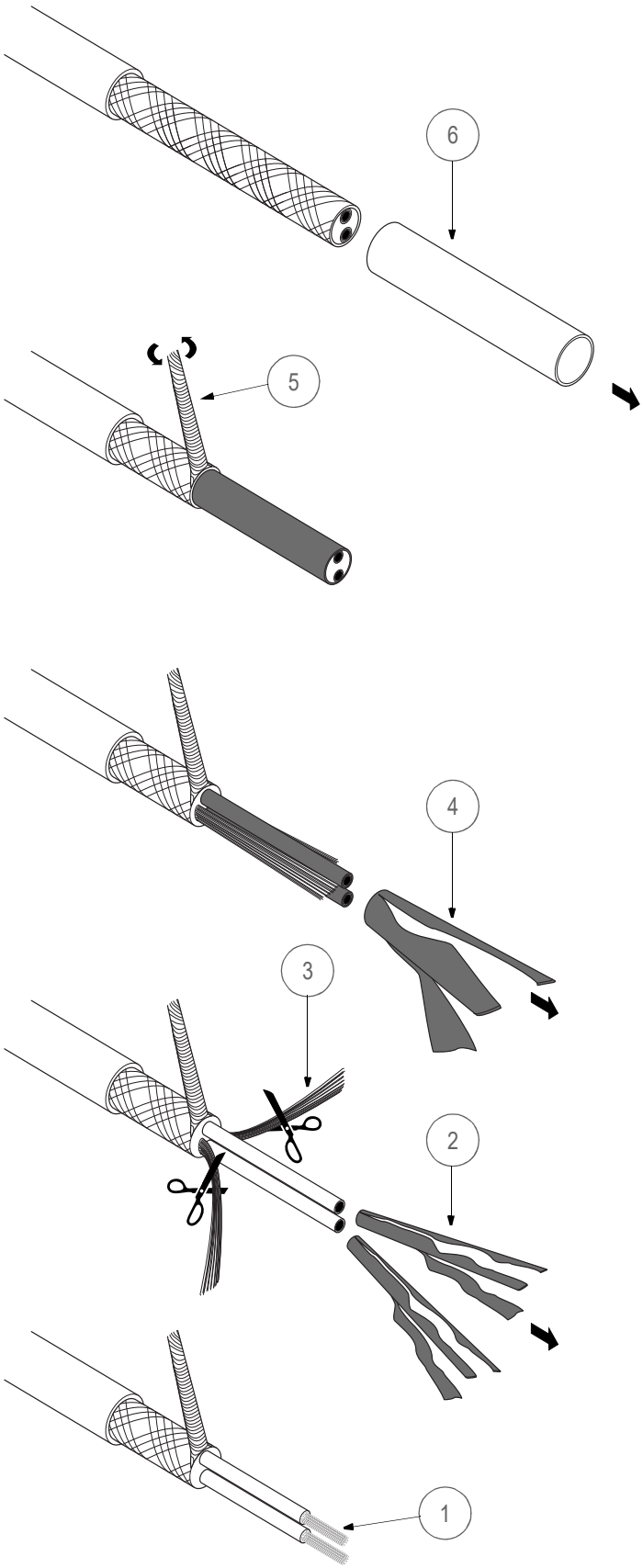



**Figure 3-2:** Preparation of a soft-line “low-noise” cable

## 3.2 Installing soft-line "low-noise" cables

This section applies to all cables (with or without flexible protection tubes) carrying charge-based signals, including integral cables and connecting cable assemblies (ECxxx).

**SEE 3.1 GENERAL PRECAUTIONS BEFORE INSTALLING SOFT-LINE "LOW-NOISE" CABLES.**

### 3.2.1 Importance of cable clamping

Since piezoelectric accelerometers transmit weak charged-based signals, it is essential to clamp ALL cables connected to them. Cable movement (such as vibration or resonance) can cause a charge to be generated in the cable, thereby producing interference in the measured signal (due to the triboelectric effect).

Charge-carrying cables must therefore be clamped at regular intervals to limit movements, as shown in Figure 3-3. The following maximum intervals are recommended:

- 125 mm for cables mounted on a vibrating structure (>10 g).
- 250 mm for cables mounted on a non-vibrating structure.

**NOTE:** Transmission cables (K2xx or K3xx) installed after the IPC70x signal conditioner in a measurement chain carry signals that are current-based or voltage-based. These are not as sensitive to the triboelectric effect so clamping is not so vital. Nevertheless, precautions must be taken to reduce EMI (see 3.1.4 Minimizing sources of electromagnetic interference).

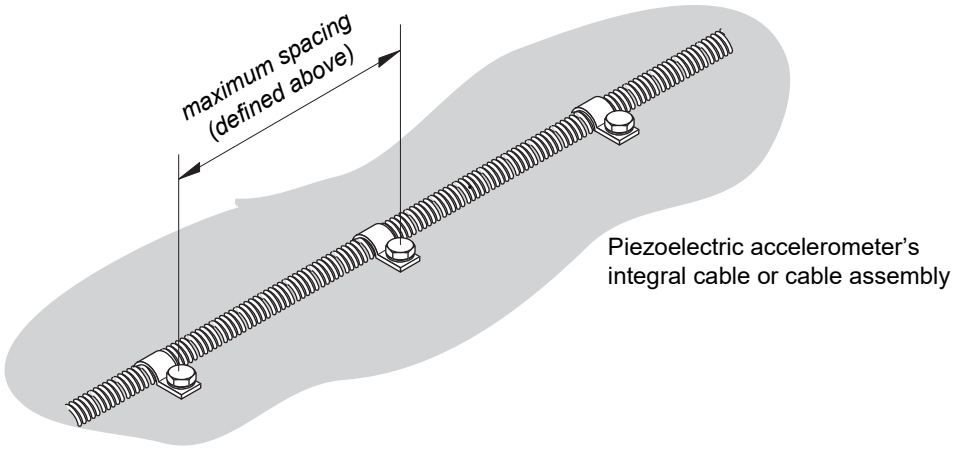



**Figure 3-3:** Cable clamping at regular intervals with a flexible protection tube

### 3.2.2 Soft-line "low-noise" cable minimum bend radius

The minimum bend radius of soft-line "low-noise" cables depends on the diameter of any associated flexible stainless-steel protection tube, and whether the cable / protection tube is expected to experience a single movement (static bend radius / fixed applications) or multiple movements (dynamic bend radius / movable applications).

The relationship between the cable protection tube's outer diameter and the minimum bend radius is given in Table 3-2.

**Table 3-1:** Minimum bend radius of soft-line "low-noise" cable with protection tube

| | **Minimum bend radius** | |
|---|---|---|
| **Cable protection outer diameter (Ø)** | **Static bend radius – for single movement / fixed applications** | **Dynamic bend radius – for multiple movements / movable applications** |
| 5.0 mm (0.20 in) | 15 mm (0.59 in) | --- |
| 6.0 mm (0.24 in) | 16 mm (0.63 in) | --- |
| 7.0 mm (0.28 in) | 17 mm (0.67 in) | --- |
| 8.7 mm (0.34 in) | 15 mm (0.59 in) | 105 mm (4.1 in) |

**The minimum bend radius of a soft-line "low-noise" cable with protection tube must be adhered to at all times. Failure to respect the minimum bend radius of a cable with protection tube can lead to permanent cable / protection tube damage.**

### 3.2.3 Soft-line "low-noise" cable mounting procedure

**1-** As shown in Figure 3-4, clamp the cable as close as possible to the piezoelectric accelerometer, taking care not to create stress in the cable.

The cable should be as straight as possible to the first cable clamp at 2 to 3 cm from the sensor.

**NOTE:** Further information on the minimum bend radius of a cable can be found in the corresponding data sheet. See also 3.3.3 MI cable minimum bend radius.

**2-** Clamp the remainder of the cable at regular intervals (see 3.2.1 Importance of cable clamping).

**3-** Coat the fixing screws with a thread-locking adhesive that is suitable for the operating temperature of the application.

**NOTE:** Thread-locking adhesives, such as LOCTITE® 241 or equivalent, stop screws becoming loose due to vibration. Such thread-lockers allow parts to be disassembled at a later time, if necessary.

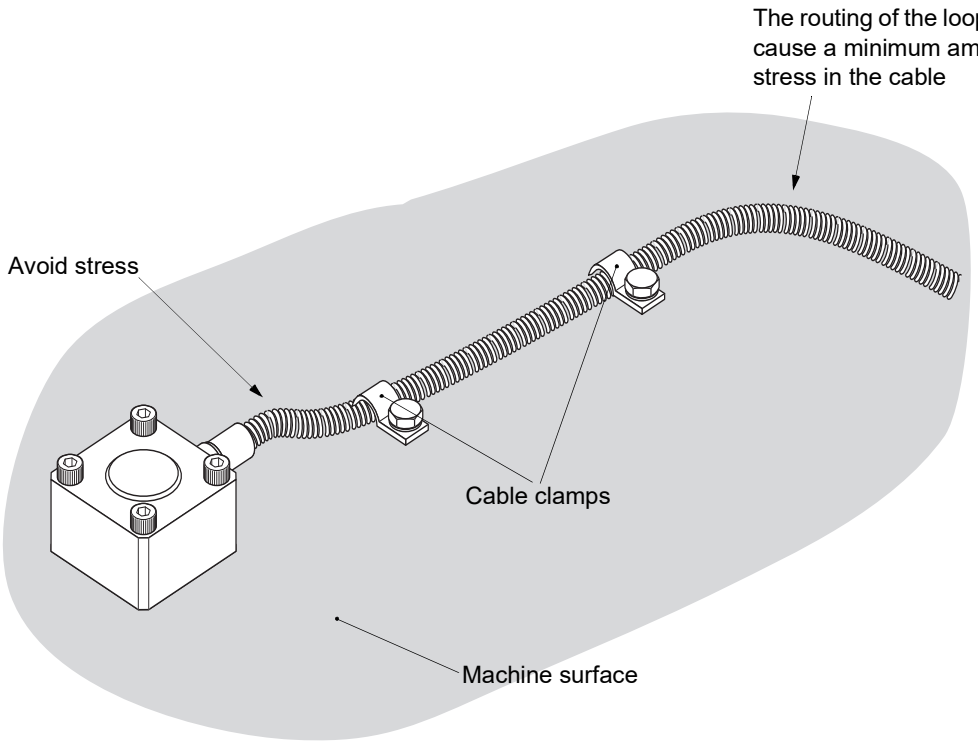



**Figure 3-4:** Installing a soft-line “low-noise” cable

**NOTE:** The mechanical design of piezoelectric accelerometers varies for different sensors. Further information can be found in the corresponding CAxxx piezoelectric accelerometer data sheet.

## 3.3 Installing an MI cable

**NOTE:** Ensure that the integral MI cable is long enough for the application before installing a piezoelectric accelerometer.
For example, the last 3 digits of a part number (PNR) can contain a code indicating the cable length. Further information can be found in the corresponding CAxxx piezoelectric accelerometer data sheet.

**SEE 3.1 GENERAL PRECAUTIONS BEFORE INSTALLING AN INTEGRAL MI CABLE.**

### 3.3.1 General

These instructions complement, and replace where necessary, the general instructions given in 3.1 General precautions.

### 3.3.2 Handling

An MI cable is an important part of the measurement chain, since it transmits the charge signal to the conditioning electronics. Therefore, MI cables must be handled with care. They should not be unnecessarily bent or handled harshly (see 3.3.3 MI cable minimum bend radius).

### 3.3.3 MI cable minimum bend radius

The minimum bend radius of MI cables depends on the cable diameter and whether the cable has been bent only once at a given point, or already several times (up to a maximum of 20 times).

The relationship between the cable diameter and the minimum bend radius is given in Table 3-2.

**Table 3-2:** Minimum bend radius of MI cables

| | Minimum bend radius | |
|---|---|---|
| **Cable diameter** | **Single bend** | **Up to 20 bends** |
| 1.0 mm (0.039 in) | 6 mm (0.25 in) | 30 mm (1.20 in) |
| 1.6 mm (0.063 in) | 8 mm (0.30 in) | 35 mm (1.30 in) |
| 2.0 mm (0.078 in) | 10 mm (0.40 in) | 45 mm (1.70 in) |
| 3.2 mm (0.125 in) | 16 mm (0.60 in) | 75 mm (2.90 in) |

**The minimum bend radius of an MI cable must be adhered to at all times. Failure to respect the minimum bend radius of a cable can lead to permanent cable damage.**

### 3.3.4 MI cable mounting procedure

**SEE 3.1.1 CABLES IN POTENTIALLY EXPLOSIVE ATMOSPHERES BEFORE PERFORMING FURTHER STEPS.**

**1-** Uncoil the integral MI cable.

**2-** As shown in Figure 3-5, clamp the cable to the machine surface, ensuring that the minimum bend radius is not exceeded (see 3.3.3 MI cable minimum bend radius).

**NOTE:** The piezoelectric accelerometer and the first cable clamp must be mounted on the same vibrating surface.

**3-** Clamp down the entire cable. Any excess cable should be coiled and clamped down.

**Lengths of cable not properly clamped could become damaged, which could lead to irreversible damage to the piezoelectric accelerometer.**

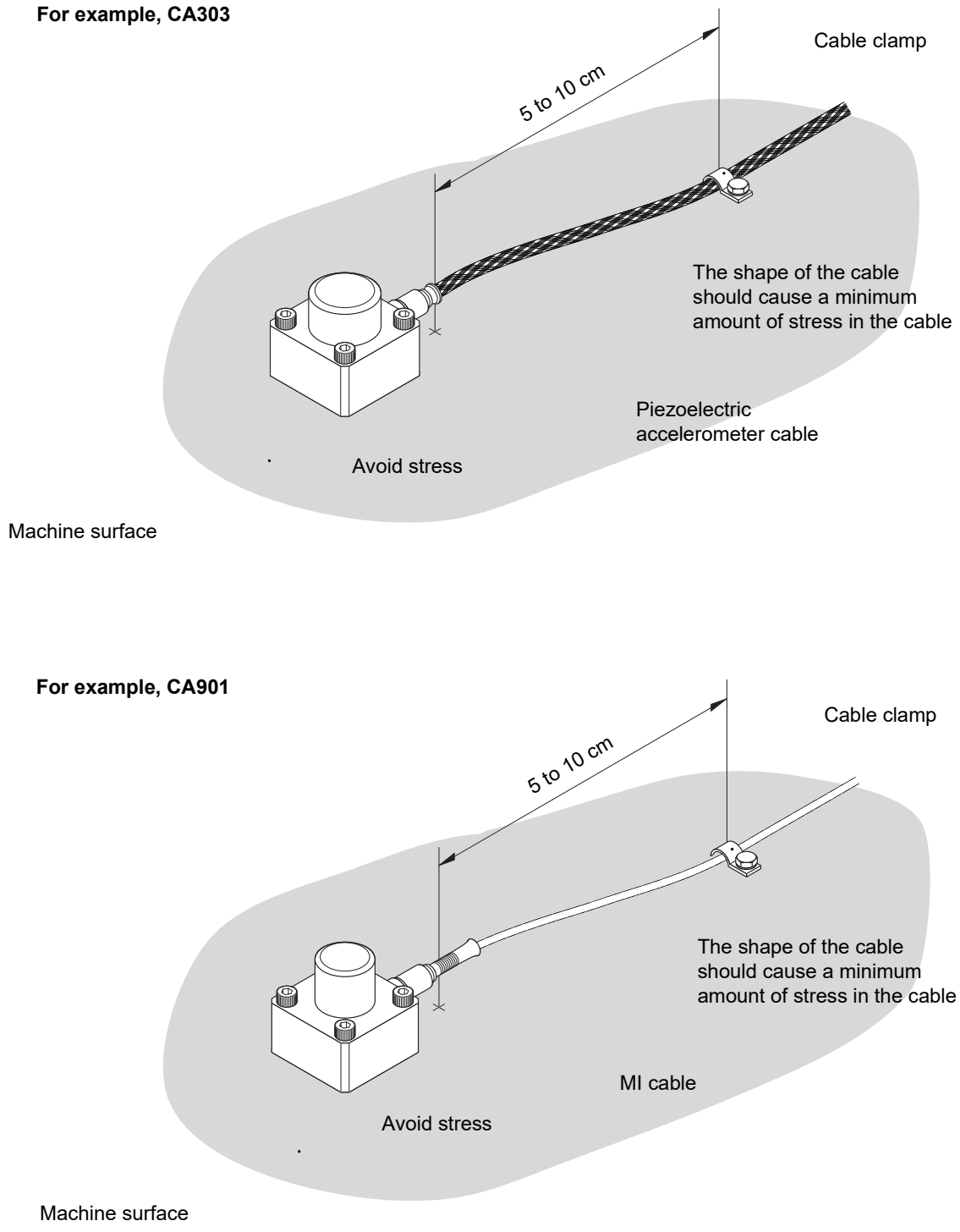



**Figure 3-5:** Installing a piezoelectric accelerometer cable (adapted from ISO 5348 standard) or an integral MI cable

**NOTE:** The mechanical design of piezoelectric accelerometers varies for different sensors. Further information can be found in the corresponding CAxxx piezoelectric accelerometer data sheet.

## 3.4 MI cable connectors

### 3.4.1 Connectors

Two types of connector can be fitted to an MI cable:

- Meggitt vibro-meter® / LEMO type 0 connector.
- Meggitt vibro-meter® high-temperature connector.

### 3.4.2 General precautions

**The following precautions with regard to connectors must be adhered to at all times.**

- Protect all types of connector against physical and environmental (such as humidity) damage by means of a protection cap when not in use. Damage to connector pins or to the connector thread could lead to erroneous measurements.
- Do not place an undue load on the connector when the mating halves are in position. Torque or stress loading on the two halves could damage the connector points or threads and cause invalid data transmission. Take special care to ensure the soft-line to hard-line connections are adequately supported and free from stress.
- Ensure that the screw threads are not cross-threaded or misaligned when connecting connectors with screw thread connections.

### 3.4.3 Check procedure

Visually inspect the two connector halves for the following:

- Check the outer casing for damaged areas, scratches or dents.
- Check the connector pins to ensure that they are not bent or loose.
- Ensure that no dust, dirt or particles are present on the connector pins, threads or housing.

The Meggitt vibro-meter® / LEMO type connector is a push-fit device, which is separated by pulling back the outer casing.

The Meggitt vibro-meter® high-temperature connector must be connected together and the two halves mated with a torque of 9 N•m ±2 N•m (6.6 lb-ft ±1.5 lb-ft).

## 3.5 Installing transmission cables and connecting cables

**SEE 3.1 GENERAL PRECAUTIONS BEFORE INSTALLING CONNECTING CABLES OR TRANSMISSION CABLES.**

Transmission cables (located after an IPC70x signal conditioner) and connecting cables (located after a GSI12x galvanic separation unit) can be mounted according to standards for low-voltage installations.

However, care should be taken to minimize the effects of interference (3.1.4 Minimizing sources of electromagnetic interference).

# 4 INSTALLING JUNCTION BOXES, INDUSTRIAL HOUSINGS AND SIGNAL CONDITIONERS

This chapter provides general guidelines on mounting and installing junction boxes, ABA17x industrial housings and IPC707 signal conditioners in CAxxx-based vibration measurement chains.

**NOTE:** Further product specific information can be found in the corresponding data sheet.

The information applies to the following products in the chain:

- Junction boxes used to connect a piezoelectric accelerometer cable to an extension cable (see 4.2 Installing a junction box).
- ABA17x industrial housings (see 4.3 Installing an ABA17x industrial housing).
- IPC707 signal conditioners (see 4.4 Installing an IPC707 signal conditioner).

## 4.1 General precautions

### 4.1.1 Junctions boxes in potentially explosive atmospheres

**JB116 JUNCTION BOXES CAN BE INSTALLED IN POTENTIALLY EXPLOSIVE ATMOSPHERES.**

**FOR FURTHER INFORMATION, SEE THE EX CERTIFICATES IN THE APPENDICES OF THIS MANUAL. (EX CERTIFICATES ARE ALSO AVAILABLE FROM OUR WEBSITE AT WWW.MEGGITTSENSING.COM/ENERGY)**

**ALL OTHER JUNCTION BOXES THAT ARE NOT EX CERTIFIED MUST NOT BE INSTALLED IN EXPLOSIVE ATMOSPHERES.**

### 4.1.2 Industrial housings and signal conditioners in potentially explosive atmospheres

**ABA17X INDUSTRIAL HOUSINGS CAN BE INSTALLED IN POTENTIALLY EXPLOSIVE ATMOSPHERES.**

**FOR FURTHER INFORMATION, SEE THE EX CERTIFICATES IN THE APPENDICES OF THIS MANUAL. (EX CERTIFICATES ARE ALSO AVAILABLE FROM OUR WEBSITE AT WWW.MEGGITTSENSING.COM/ENERGY)**

**ALL OTHER INDUSTRIAL HOUSINGS THAT ARE NOT EX CERTIFIED MUST NOT BE INSTALLED IN POTENTIALLY EXPLOSIVE ATMOSPHERES.**

**AN IPC707 SIGNAL CONDITIONER WITH PROTECTION MODE "EX EC" OR "EX NA", AN IPC704 SIGNAL CONDITIONER WITH PROTECTION MODE "EX NA" OR A GSI127 GALVANIC SEPARATION UNIT WITH PROTECTION MODE "EX NA" LOCATED IN AN EX ZONE 2 (HAZARDOUS AREA) MUST BE INSTALLED INSIDE AN ENCLOSURE WITH A PROTECTION RATING OF AT LEAST IP54 (OR EQUIVALENT), WITH DUE CONSIDERATION FOR THE MAXIMUM THERMAL DISSIPATION STATED IN THE CORRESPONDING EX CERTIFICATES.**

**FOR AN IPC707 OR IPC704 SIGNAL CONDITIONER LOCATED IN AN EX ZONE 2 IN NORTH AMERICA (CCSAUS), THE FINAL ENCLOSURE IN WHICH THE IPC707 OR IPC704 IS INSTALLED MUST HAVE THE SPECIFIC CAUTION AND WARNING DESCRIBED IN THE CORRESPONDING CCSAUS EX CERTIFICATE (REFER TO THE CCSAUS EX CERTIFICATE FOR FURTHER INFORMATION).**

**NOTE:** Refer to the corresponding data sheet to determine whether an industrial housing can be installed in potentially explosive atmospheres.

In potentially explosive atmospheres, live installation and replacement is not permitted because in these hazardous areas it is necessary to power down an electronic device before any electrical connection can be safely separated.

**WARNING – DO NOT SEPARATE WHEN ENERGISED.**

**FOR AN IPC70X SIGNAL CONDITIONER WITH PROTECTION MODE "EX EC" OR "EX NA" LOCATED IN AN EX ZONE 2 (HAZARDOUS AREA), DO NOT INSTALL OR REPLACE THE IPC70X AND DO NOT SEPARATE (BREAK OR OPEN) ANY ELECTRICAL CONNECTIONS WHEN DEVICES OR CIRCUITS ARE ENERGISED.**

### 4.1.3 Operating temperature ranges

**The ambient temperature where a junction box, industrial housing or signal conditioner is installed must be permanently within its operating temperature range.**

**NOTE:** Further information on the operating temperature range of a junction box, industrial housing or signal conditioner can be found in the corresponding data sheet.

**Only install a junction box at a location where the temperature is permanently within the temperature range of the cables connected within it.**

**Only install an industrial housing at a location where the temperature is permanently within the temperature range of the signal conditioner housed within it.**

**NOTE:** Further information on the operating temperature range of a cable or a signal conditioner can be found in the corresponding data sheet.

## 4.2 Installing a junction box

**SEE 4.1 GENERAL PRECAUTIONS BEFORE INSTALLING A JUNCTION BOX.**

### 4.2.1 Mounting a junction box

The JB116 junction box has internal mounting holes for easy and safe installation on walls or other mounting surfaces.

**1-** Choose a vibration-free location to mount the junction box.

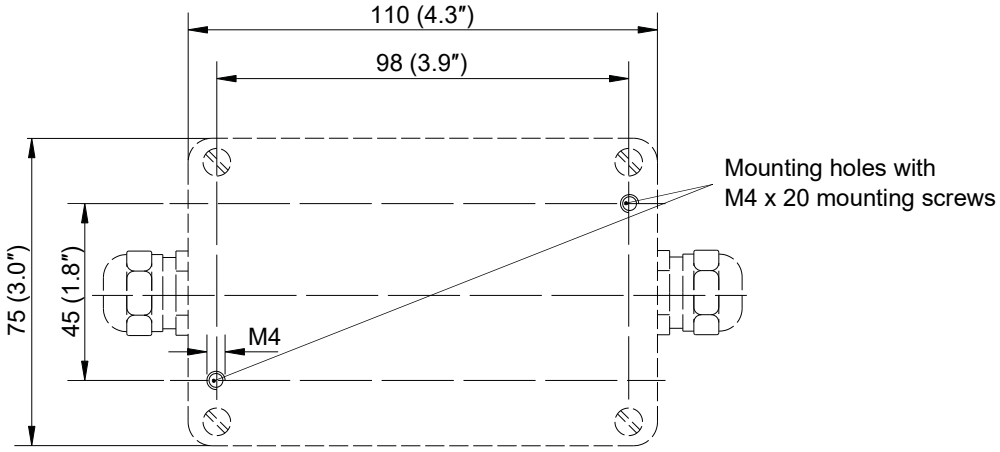
**2-** Check the distance between the mounting holes on the junction box, then drill and prepare appropriate holes in the mounting surface (see Figure 4-1 for dimensions of a JB116 junction box).

**NOTE:** For the dimensions of a different junction box refer to the corresponding data sheet.

**3-** Remove the cover of the junction box (see Figure 4-2).

**4-** Mount the junction box on the mounting surface using the screws provided.

**5-** Connect the cables within the junction box (see 4.2.2 Connecting cables within a junction box).




Note: All dimensions are in mm (in) unless otherwise stated.

**Figure 4-1:** Dimensions of a JB116 junction box

### 4.2.2 Connecting cables within a junction box

**1-** Mount the junction box (see 4.2.1 Mounting a junction box).

**2-** Loosen the cable fittings (stuffing glands) on the junction box and feed the cables through.

**3-** Make the electrical connections within the junction box (see Figure 4-2).

**4-** Tighten the cable fittings (stuffing glands) and check that the cables are securely fastened by the fittings (stuffing glands). This helps ensure that the junction box is waterproof.

**5-** If the cable has a flexible stainless-steel protection tube, place the Ø8 circlip into the groove in the cable bushing (see Figure 4-2). This helps prevent the cable from slipping out of the cable fitting (stuffing gland).

**6-** Screw the cover back on the junction box.

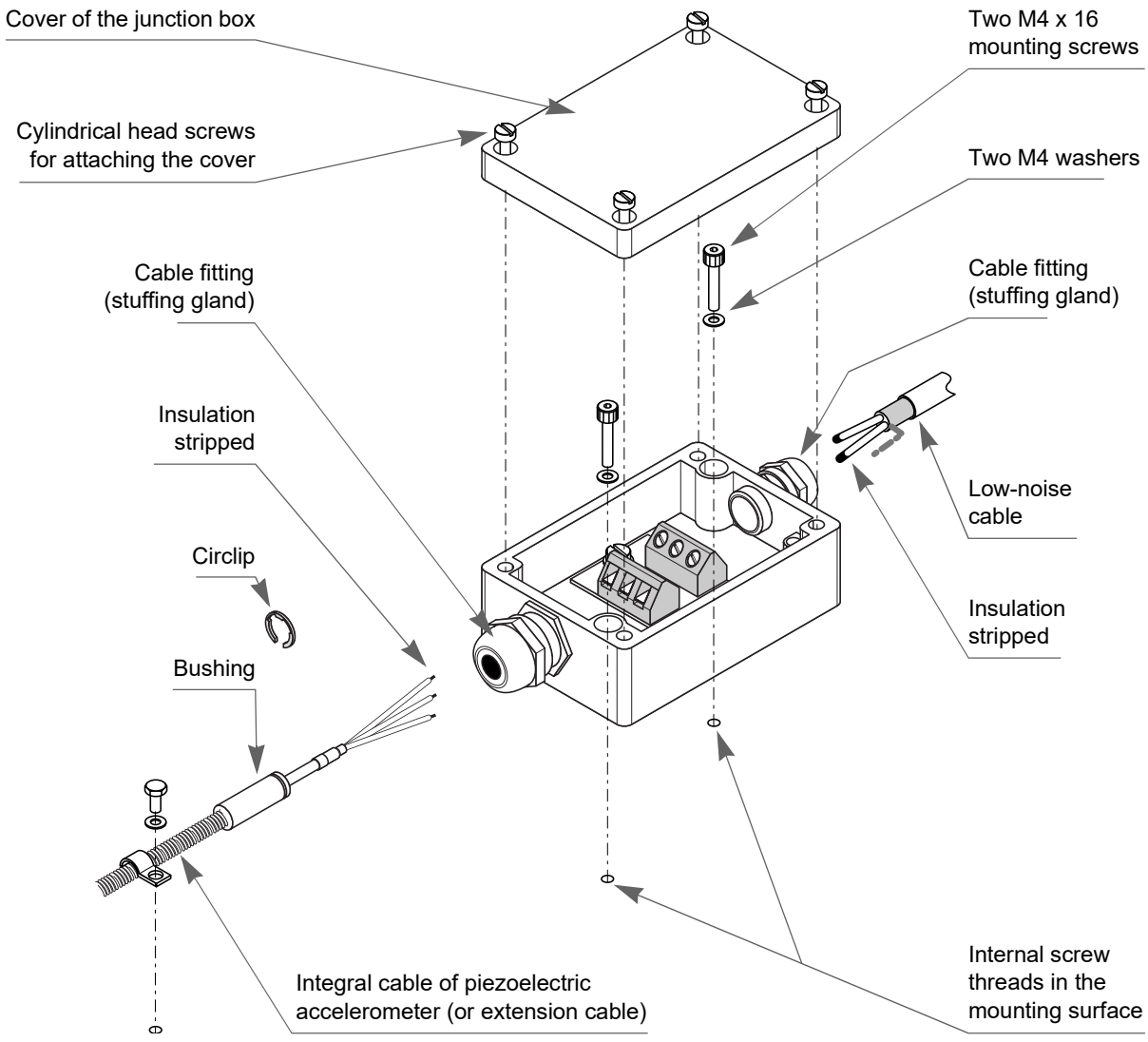



**Figure 4-2:** Mounting a JB116 junction box

## 4.3 Installing an ABA17x industrial housing

**SEE 4.1 GENERAL PRECAUTIONS BEFORE INSTALLING AN INDUSTRIAL HOUSING.**

### 4.3.1 Mounting an ABA17x industrial housing

ABA17x industrial housings have external mounting brackets for easy and safe installation on walls or other mounting surfaces.

**1-** Choose a vibration-free location to mount the ABA17x industrial housing.

**2-** Check the distance between the mounting brackets on the industrial housing, then drill and prepare appropriate holes in the mounting surface (see Figure 4-7).

**NOTE:** ABA17x industrial housings vary in dimensions. Further information can be found in the ABA17x industrial housings data sheet.

**3-** Mount the industrial housing on the mounting surface using appropriate screws and fixings such as walls plugs (anchors) for the underlying material.

**NOTE:** When mounting heavy loads, the screws and fixings used must be suitable for the mounting surface and underlying material.

**4-** Install the signal conditioner or conditioners and connect the cables within the industrial housing (see 4.4 Installing an IPC707 signal conditioner and 4.4.4 Connecting cables).

## 4.4 Installing an IPC707 signal conditioner

### 4.4.1 About the IPC707 signal conditioner

The IPC707 signal conditioner is a highly-configurable product that can be ordered with different product options – such as choice of environment (standard or Explosive (“Ex”)), diagnostics (with or without), transfer function and output signal (current or voltage), filtering (low-pass and high-pass cutoff frequencies), and installation (with or without DIN-rail mounting adaptor) – which effectively result in different versions of the product.

When ordering an IPC707, the part number (PNR) and ordering option codes are used to specify the complete configuration of the signal conditioner. For example, a complete IPC707 ordering number including part number (PNR) and ordering option codes is:
244-707-000-012-Ax-Bx-Cxxxxx-Dx-Exx-Fxxxxx-Gx.

**NOTE:** Refer to the *IPC707 signal conditioner data sheet* for further information on ordering option codes.

**NOTE:** All configurable product options for an IPC707 signal conditioner must be made at the time of ordering.
All IPC707 signal conditioners are configured in the factory as part of the manufacturing process, so the configuration is fixed and cannot be changed later.

#### 4.4.1.1 With or without diagnostics

Importantly, when ordering an IPC707 signal conditioner, it can either be without or with the optional diagnostics circuitry (that is, built-in self-test (BIST)).

For an IPC707 signal conditioner without diagnostics, the quasi-static component (DC) of the output signal is simply a nominal bias value to facilitate the dynamic component (AC) of the output signal. (An IPC707 without diagnostics does not check the integrity of the measurement chain.)

For an IPC707 signal conditioner with diagnostics, the quasi-static component (DC) of the output signal has a diagnostic function and indicates the status of the CAxxx-based measurement chain.

An IPC707 with diagnostics continuously checks the integrity of the measurement chain (sensor, cabling and the IPC707 signal conditioner itself) and updates the nominal value of the quasi-static diagnostic component (DC) of the IPC707's output signal to indicate the health/status of the measurement chain. In other words, the output signal from an IPC707 with diagnostics changes to indicate the validity of a measurement, so that you always know when it is safe to run your machinery.

The ordering option code **Bx** is used to specify the configuration of an IPC707's optional diagnostics as follows:

- Ordering number 244-707-000-012-Ax-**B1**-Cxxxxx-Dx-Exx-Fxxxxx-Gx
  for an IPC707 **without diagnostics**.
- Ordering number 244-707-000-012-Ax-**B2**-Cxxxxx-Dx-Exx-Fxxxxx-Gx
  for an IPC707 **with diagnostics**.

**NOTE:** Only an IPC707 signal conditioner with diagnostics (ordering option code **B2**) is suitable for use in safety-related applications.

#### 4.4.1.2 Identifying different versions

As shown in Figure 4-3, the product label on the top of an IPC707 signal conditioner shows the complete ordering number – including part number (PNR) and ordering option codes.

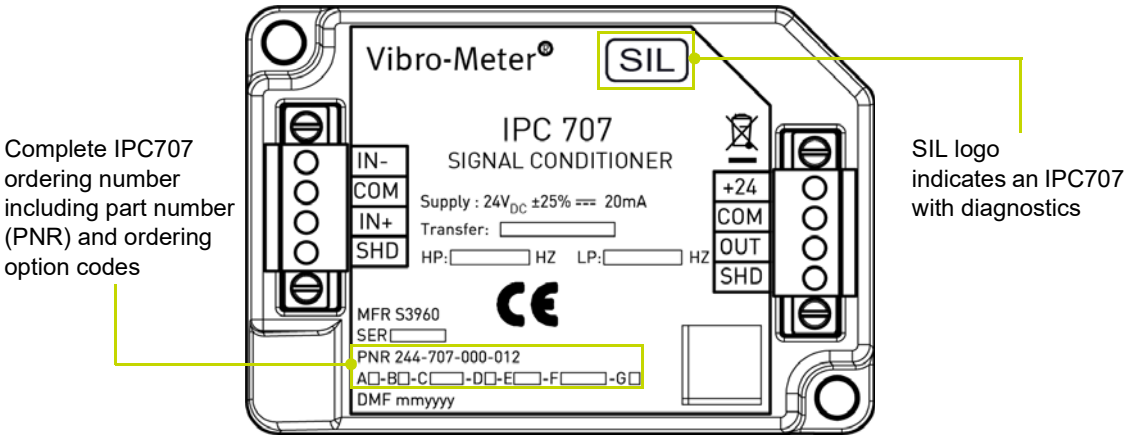



**Figure 4-3:** Top view of an IPC707 signal conditioner
with a typical product label showing the complete ordering number (PNR)

**NOTE:** An IPC707 signal conditioner with diagnostics, suitable for use in safety-related applications, is identified by the ordering option code **B2** and a **SIL** logo.

Always check an IPC707 product label to ensure that the part number (PNR) and ordering option codes are correct for the application before installing or replacing the signal conditioner.

#### 4.4.1.3 Overview of operation

As shown in Figure 4-4, the output from an IPC707 signal conditioner is an analogue signal consisting of a dynamic measurement component (AC) and a quasi-static diagnostic component (DC).

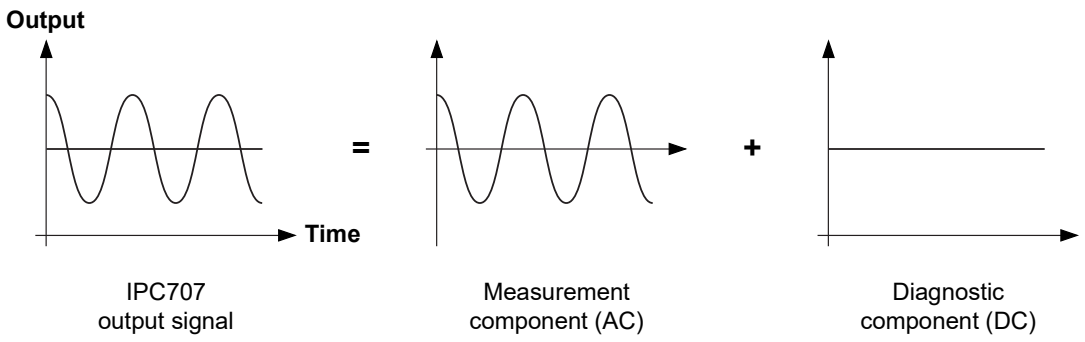



**Figure 4-4:** Output signal from an IPC707 signal conditioner

For the output signal from an IPC707 signal conditioner in a CAxxx-based vibration measurement chain:

- The measurement component (AC) corresponds to the measured vibration.
- The diagnostic component (DC) corresponds to the status of the measurement chain, as follows:
  - For an IPC707 with diagnostics, the nominal value of the diagnostic component (DC) of the output signal changes to indicate the health of the IPC707 measurement chain, as described in Table 4-1.
  - For an IPC707 without diagnostics, the nominal value of the diagnostic component (DC) of the output signal does not change, as described in Table 4-2.

Table 4-1 lists the permitted values for the diagnostic component (DC) of the output signal from an IPC707 with diagnostics.

**Table 4-1:** Permitted values for the diagnostic component (DC) of the output signal from an IPC707 with diagnostics

| Diagnostic component (DC) value | Measurement chain OK? | Description |
|---|---|---|
| 13 $mA_{DC}$ ±0.5 $mA_{DC}$ or 8 $V_{DC}$ ±0.5 $V_{DC}$ | Yes | Normal operation. The measurement component (AC) of the output signal from the IPC707 chain can be trusted. |
| 11 $mA_{DC}$ ±0.5 $mA_{DC}$ or 6 $V_{DC}$ ±0.5 $V_{DC}$ | No | Problem with the sensor and/or cabling |
| 10 $mA_{DC}$ ±0.5 $mA_{DC}$ or 5 $V_{DC}$ ±0.5 $V_{DC}$ | | Problem with the signal conditioner |
| <8 $mA_{DC}$ or <3 $V_{DC}$ | | Other problem with the measurement chain or power supply |
| Other current or voltage value | | Problem with the signal conditioner not detected by internal diagnostics |

Notes
The output signal from an IPC707 can be either a current (mA) or a voltage (V) signal, depending on the configured transfer function and output signal.
Although the output signal from an IPC707 has a maximum tolerance of ±0.5 $mA_{DC}$ or ±0.5 $V_{DC}$ to allow for operation in all circumstances (including strong electromagnetic interference), a typical tolerance of ±0.2 $mA_{DC}$ or ±0.2 $V_{DC}$ is seen during normal operating conditions.

**NOTE:** Refer to the latest version of the *IPC707 signal conditioner safety manual* for more information on an IPC707 with diagnostics.

Table 4-2 lists the permitted value for the diagnostic component (DC) of the output signal from an IPC707 without diagnostics.

**Table 4-2:** Permitted values for the diagnostic component (DC) of the output signal from an IPC707 without diagnostics

| Diagnostic component (DC) value | Measurement chain OK? | Description |
|---|---|---|
| 12 $mA_{DC}$ ±0.5 $mA_{DC}$ or 7 $V_{DC}$ ±0.5 $V_{DC}$ | Yes | Normal operation |
| Other current or voltage value | No | Problem with the measurement chain (sensor, cabling and/or signal conditioner) |
| Notes<br>The output signal from an IPC707 can be either a current (mA) or a voltage (V) signal, depending on the configured transfer function and output signal.<br>Although the output signal from an IPC707 has a maximum tolerance of ±0.5 $mA_{DC}$ or ±0.5 $V_{DC}$ to allow for operation in all circumstances (including strong electromagnetic interference), a typical tolerance of ±0.2 $mA_{DC}$ or ±0.2 $V_{DC}$ is seen during normal operating conditions. | | |

#### 4.4.1.4 Sensor compatibility

In order to support the correct operation of an IPC707 signal conditioner with diagnostics, the CAxxx piezoelectric accelerometer, the cabling and the complete measurement chain must meet specific electrical requirements (see 4.4.1.5 Valid IPC707 measurement chains).

Table 4-3 lists the CAxxx piezoelectric accelerometers that are compatible with an IPC707 signal conditioner with diagnostics.

**Table 4-3:** CAxxx piezoelectric accelerometers compatible with an IPC707 signal conditioner with diagnostics

| CAxxx piezoelectric accelerometer | Part number (PNR) | Comments / Notes |
|---|---|---|
| CA134 | 144-134-000-2xx | CA134 sensors with an integral MI cable are not compatible |
| CA202 | 144-202-000-xxx | |
| CA280 | 144-280-000-xxx | |
| CA30x | 144-30x-000-0xx | CA30x sensors with an integral MI cable are not compatible |
| Other | | Contact Meggitt for further information |
| Notes<br>In general, CAxxx piezoelectric accelerometers with integral mineral-insulated (MI) cables longer than 0.5 m (19.7″) are not compatible with an IPC707 signal conditioner with diagnostics. This is because the conductors of mineral-insulated (MI) cables are usually not individually shielded, resulting in a relatively high capacitance between the conductors of the cabling that prevents the detection of problems with the sensor (as the capacitance of the cabling becomes larger than and “swamps” the capacitance of the sensor). | | |

#### 4.4.1.5 Valid IPC707 measurement chains

In order to support the correct operation of an IPC707 signal conditioner with diagnostics, the IPC707 measurement chain must be “valid”, that is, the sensor (CAxxx piezoelectric accelerometer), the cabling and the complete measurement chain must meet specific electrical requirements.

**NOTE:** Refer to the *IPC707 signal conditioner safety manual* for further information on the specific electrical requirements for “valid” IPC707 measurement chains.

#### 4.4.1.6 IPC707 measurement chains in safety-related applications

When an IPC707 measurement chain is used in a safety-related application, certain conditions/restrictions apply.

**AS AN INPUT (SENSOR) TO AN EXTERNAL SAFETY INSTRUMENTED SYSTEM (SIS) PERFORMING A SAFETY INSTRUMENTED FUNCTION (SIF), AN IPC707 MEASUREMENT CHAIN MUST CONSIST OF AN IPC707-COMPATIBLE SENSOR, IPC707-COMPATIBLE CABLING AND AN IPC707 SIGNAL CONDITIONER WITH DIAGNOSTICS.**

It is the end-user’s responsibility to ensure that the recommendations in the *IPC707 signal conditioner safety manual* are implemented as appropriate.

**NOTE:** Refer to the *IPC707 signal conditioner safety manual* for further information on using the IPC707 in safety-related systems (functional-safety contexts).

### 4.4.2 Mounting procedure

**SEE 4.1 GENERAL PRECAUTIONS BEFORE INSTALLING AN IPC707 SIGNAL CONDITIONER.**

An IPC707 signal conditioner can be installed in different ways, depending on its configured installation option:

- IPC707 with DIN-rail mounting adaptor
  An IPC707 with a DIN-rail mounting adaptor (ordering option **G2**) should be installed on a 35 mm wide symmetrical DIN rail such as a TH 35-7.5.
- IPC707 without DIN-rail mounting adaptor
  An IPC707 without a DIN-rail mounting adaptor (ordering option **G1**) should be installed on a base plate or other mounting surface.

An IPC707 is generally mounted in an industrial housing, rack or cabinet/cubicle installed in a vibration-free location, although it can also be mounted directly on a machine (without DIN-rail option).

The IPC707’s housing features removable screw-terminal connectors that can be unplugged from the main body of the housing to simplify installation of the signal conditioner (see Figure 4-7).

#### 4.4.2.1 Grounding

**NOTE:** The metal housing (electrically conductive) of an IPC707 is connected to its "COM" and "SHD" terminals. Accordingly, an IPC707 can be installed and operated either with or without a direct electrical connection between the IPC707 and ground (GND).

Installation and operation of an IPC707 with *or* without a direct electrical connection between the IPC707 and ground (GND) both result in measurement chains that comply with required CE and SIL electromagnetic compatibility (EMC) standards.

See 7.2 General wiring diagrams.

#### 4.4.2.2 Installing on a DIN rail

An IPC707 signal conditioner with a DIN-rail mounting adaptor is easily installed on or removed from a DIN rail (see Figure 4-5). No screwdrivers or special tools are required.

To install an IPC707 signal conditioner with a DIN-rail mounting adaptor on a DIN rail:

**1-** Hook the spring-loaded end of the DIN-rail mounting adaptor onto one edge of the DIN rail.

**2-** Push against the spring-loaded end of the DIN-rail mounting adaptor (thereby compressing the springs), while pivoting the IPC707 signal conditioner in order to hook the opposite end of the mounting adaptor over the other edge of the DIN rail.

**3-** Connect the cables to the signal conditioner (see 4.4.4 Connecting cables and 7.2 General wiring diagrams).

Similarly, to remove an IPC707 signal conditioner from a DIN rail:

**1-** Disconnect the cables to the signal conditioner (see 4.4.4 Connecting cables).

**2-** Push against the spring-loaded end of the DIN-rail mounting adaptor (thereby compressing the springs), while pivoting the IPC707 signal conditioner in order to unhook the opposite end of the mounting adaptor from one edge of the DIN rail.

**3-** Unhook the spring-loaded end of the DIN-rail mounting adaptor from the other edge of the DIN rail.

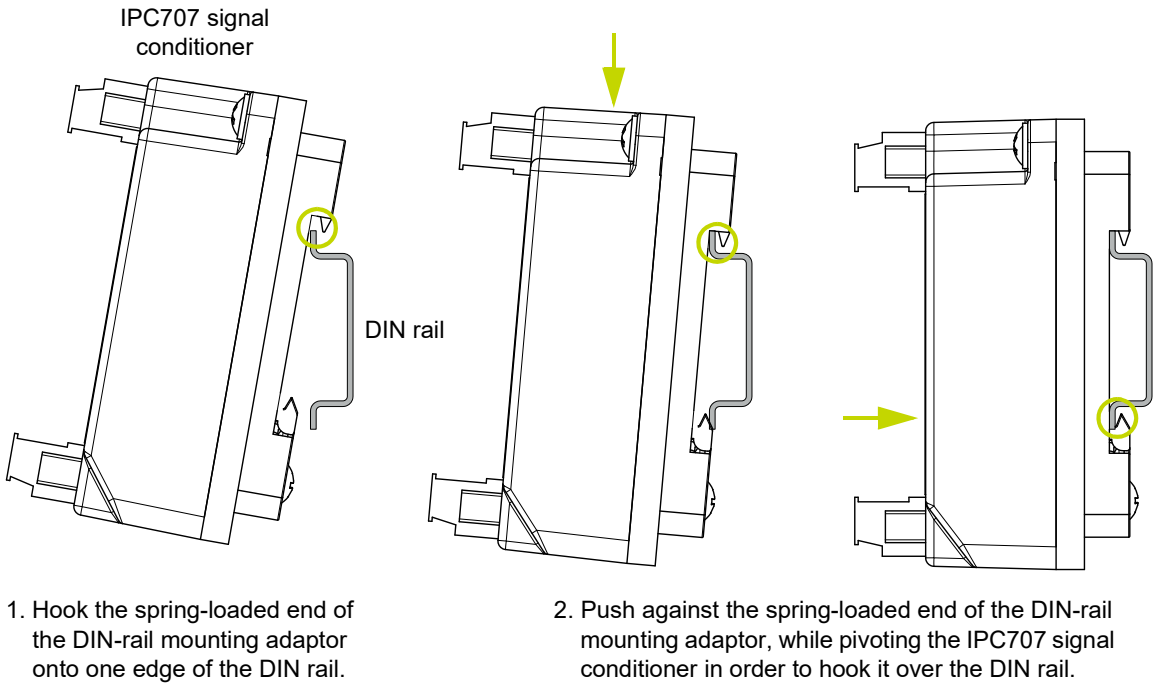



**Figure 4-5:** Installing an ABA17x signal conditioner on a DIN rail

For an IPC707 signal conditioner installed on a DIN-rail, a direct electrical connection between the IPC707 and ground (GND) can be made by clamping a cable shield to a grounding bracket at the entrance of the industrial housing, rack or cabinet/cubicle, *or* by adding a dedicated ground wire (flying lead) to the “SHD” terminal at the input to the IPC707.

#### 4.4.2.3 Installing on a base plate or other mounting surface

To install an IPC707 signal conditioner without a DIN-rail mounting adaptor on a base plate or other mounting surface:

**1-** Mount the IPC707 signal conditioner on an industrial housing's base plate or other mounting surface using the mounting screws provided.

**2-** Fasten two M4 mounting screws (or equivalent) through the two mounting holes in the body of the IPC707 housing.

**3-** Connect the cables to the signal conditioner (see 4.4.4 Connecting cables and 7.2 General wiring diagrams).

**NOTE:** The IPC707 signal conditioner has two mounting holes, while the IPC704 signal conditioners has four mounting holes. The mounting hole dimensions are equivalent as the IPC707 replaces the IPC704.

Similarly, to remove an IPC707 signal conditioner from a base plate or other mounting surface:

**1-** Disconnect the cables to the IPC707 signal conditioner (see 4.4.4 Connecting cables).

**2-** Unfasten the two mounting screws.

**3-** Remove the IPC707 signal conditioner.

For an IPC707 signal conditioner installed on a base plate or other mounting surface (for example, in an industrial housing, rack or cabinet/cubicle or directly on a machine), a direct electrical connection between the IPC707 and ground (GND) can be made through the metal housing of the IPC707 and the metal of the enclosure/machine on which it is mounted.

### 4.4.3 Removing and inserting screw-terminal connectors

To remove a screw-terminal connector from the main body of an IPC707 signal conditioner:

**1-** Unfasten the two captive fixing screws. These are found at the outside edge of the screw-terminal connector.

**2-** Pull the screw-terminal connector to remove it from the main body of the unit.

To reinsert a screw-terminal connector in the body of an IPC707 signal conditioner:

**1-** Push the screw-terminal connector into the main body of the unit.

**2-** Fasten the two captive fixing screws.

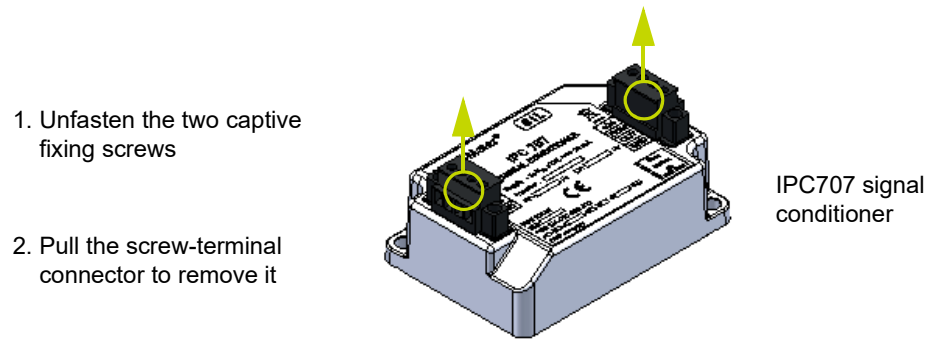



**Figure 4-6:** Removing a screw-terminal connector from the main body of an IPC707 signal conditioner

### 4.4.4 Connecting cables

**SEE 4.1 GENERAL PRECAUTIONS BEFORE CONNECTING CABLES TO AN IPC707 SIGNAL CONDITIONER.**

A soft-line “low-noise” sensor cable assembly is used to connect a CAxxx piezoelectric accelerometer to the input of an IPC707 signal conditioner.

A transmission cable is used to connect the output of the IPC707 signal conditioner to “monitor-side” circuitry such as a GSI127 galvanic separation unit or a monitoring system such as VM600 or VibroSmart®.

The sensor cabling from the “sensor-side” and the transmission cable to the “monitor-side” are connected to the IPC707 using removable screw-terminal connectors (see Figure 4-6 and Figure 4-7).

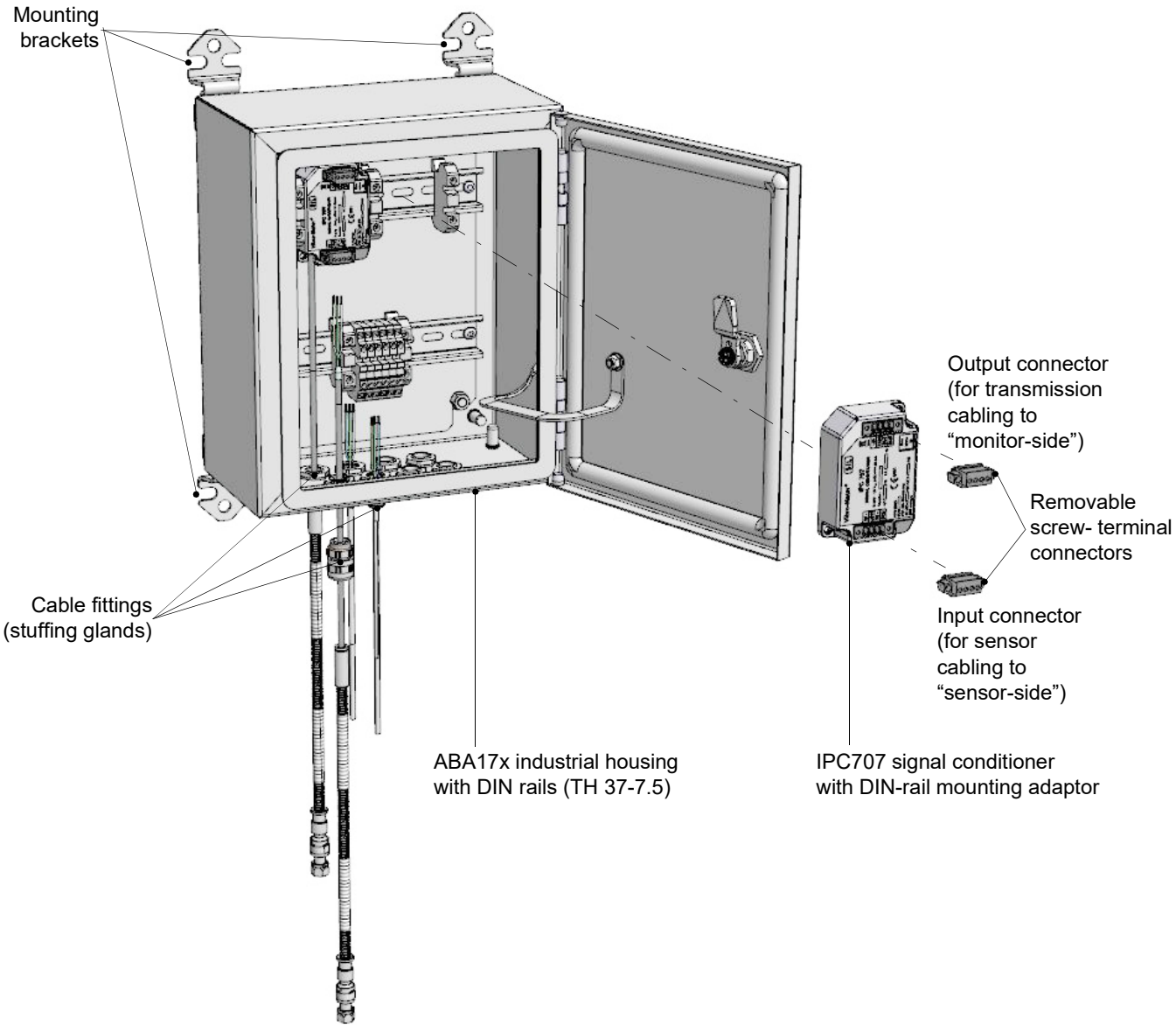



**Figure 4-7:** IPC707 signal conditioners in an ABA17x industrial housing

**NOTE:** The IPC707’s housing features removable screw-terminal connectors that can be unplugged from the main body of the housing to simplify installation of the signal conditioner.

The screw-terminal connector at the input to an IPC707 signal conditioner has connections labelled “IN−”, “COM”, “IN+” and “SHD”, which are used for connection to the “low-noise” sensor cable assembly that connects to the “sensor-side”.

**NOTE:** The shield of the “low-noise” sensor cable assembly from the “sensor-side” must be connected to the “SHD” input of the IPC707 signal conditioner.

The screw-terminal connector at the output from an IPC707 signal conditioner has connections labelled “+24”, “COM”, “OUT” and “SHD”, which are used for connection to the transmission cable that connects to the “monitor-side”, as follows:

- For operation with an IPC707 signal conditioner configured with a current output signal (2-wire transmission system), three of the output screw terminals are used (“+24”, “COM” and “SHD”). The other screw terminal is not connected (“OUT”).
- For operation with an IPC707 signal conditioner configured with a voltage output signal (3-wire transmission system), all of the output screw terminals are used (“+24”, “COM”, “OUT” and “SHD”).

**NOTE:** The shield of the transmission cable to the “monitor-side” must be connected to the “SHD” output of the IPC707 signal conditioner.

See 4.4.2.1 Grounding for information on grounding and 7.2 General wiring diagrams for detailed wiring diagrams of CAxxx-based vibration measurement chains using an IPC707 signal conditioner.

To connect cables to an IPC707 signal conditioner:

**1-** Ensure that the power supply to the equipment is turned off.

**2-** Mount the industrial housing and IPC707 signal conditioner (see 4.3 Installing an ABA17x industrial housing and 4.4 Installing an IPC707 signal conditioner).

**3-** Strip the insulation off the wires of the soft-line “low-noise” cable assembly and the transmission cable (see 3 Installing cables).

**4-** Open the door (cover) of the industrial housing.

**5-** Loosen the cable fittings (stuffing glands) on the industrial housing and feed the cables through.

**6-** Make the electrical connections within the industrial housing, that is, connect the wires of the sensor cabling to the input of the IPC707 signal conditioner and the transmission cable to the output of the signal conditioner (see Figure 4-7 and 7.2 General wiring diagrams).

**7-** Tighten the cable fittings (stuffing glands) and check that the cables are securely fastened by the fittings (stuffing glands). This helps ensure that the industrial housing is waterproof.

**8-** If a cable has a flexible stainless-steel protection tube, place the Ø8 circlip into the groove in the cable bushing (see example in Figure 4-2 for an ABA160 industrial housing). This helps prevent the cable from slipping out of the cable fitting (stuffing gland).

**9-** Close the door (or fix the cover) of the industrial housing.

If required, see 4.5 Replacing an IPC704 signal conditioner with an IPC707 or 4.6 Replacing an IPC620 signal conditioner with an IPC707.

### 4.4.5 Configuring the external monitoring system

The external monitoring and/or protection system used with a CAxxx-based vibration measurement chain using an IPC707 signal conditioner must be configured to use the appropriate nominal bias value or values provided by the IPC707 (that is, the diagnostic component (DC) of the IPC707's output signal).

**NOTE:** The nominal bias values provided by an IPC707 with diagnostics are different to the nominal bias value provided by an IPC707 without diagnostics.

See 6 Configuring an external monitoring system.

## 4.5 Replacing an IPC704 signal conditioner with an IPC707

**SEE 4.1 GENERAL PRECAUTIONS BEFORE REPLACING AN IPC704 SIGNAL CONDITIONER WITH AN IPC707.**

An IPC707 signal conditioner is typically mounted in an ABA17x industrial housing, while an IPC704 signal conditioner is typically mounted in an ABA160 or ABA17x industrial housing.

**NOTE:** When replacing an IPC704 signal conditioner with an IPC707, the length of the cables to the signal conditioner might have to be adjusted in order to allow for different mountings (with or without DIN-rail adaptor) and different industrial housings (ABA17x, ABA160 or equivalent).

### 4.5.1 Uninstalling the IPC704

An IPC704 signal conditioner is generally mounted in an ABA160 or ABA17x industrial housing. The sensor cabling from the "sensor-side" and the transmission cable to the "monitor-side" are connected to the IPC704 using screw terminals (see Figure 4-8).

To uninstall an IPC704 signal conditioner:

**1-** Ensure that the power supply to the equipment is turned off.

**2-** Open the door or remove the cover of the industrial housing (see example in Figure 4-8 for an ABA160 industrial housing).

**3-** Identify each wire for both the sensor cabling from the "sensor-side" and the transmission cable to the "monitor-side" that are connected to the IPC704. See Figure 4-8 and use Table 4-4 to record the number and/or colour for each wire.

**4-** On the IPC704, unscrew the screw terminals on the left/bottom of the signal conditioner enclosure in order to disconnect the sensor cabling from the "sensor-side" circuitry (measurement chain).

**5-** On the IPC704, unscrew the screw terminals on right/top of the signal conditioner enclosure in order to disconnect the transmission cable to the "monitor-side" circuitry (electronic monitoring system).

**6-** Remove the cables from the cable fittings (stuffing glands) of the industrial housing.

**7-** Remove the IPC704 from the device mounting plate or DIN rail.

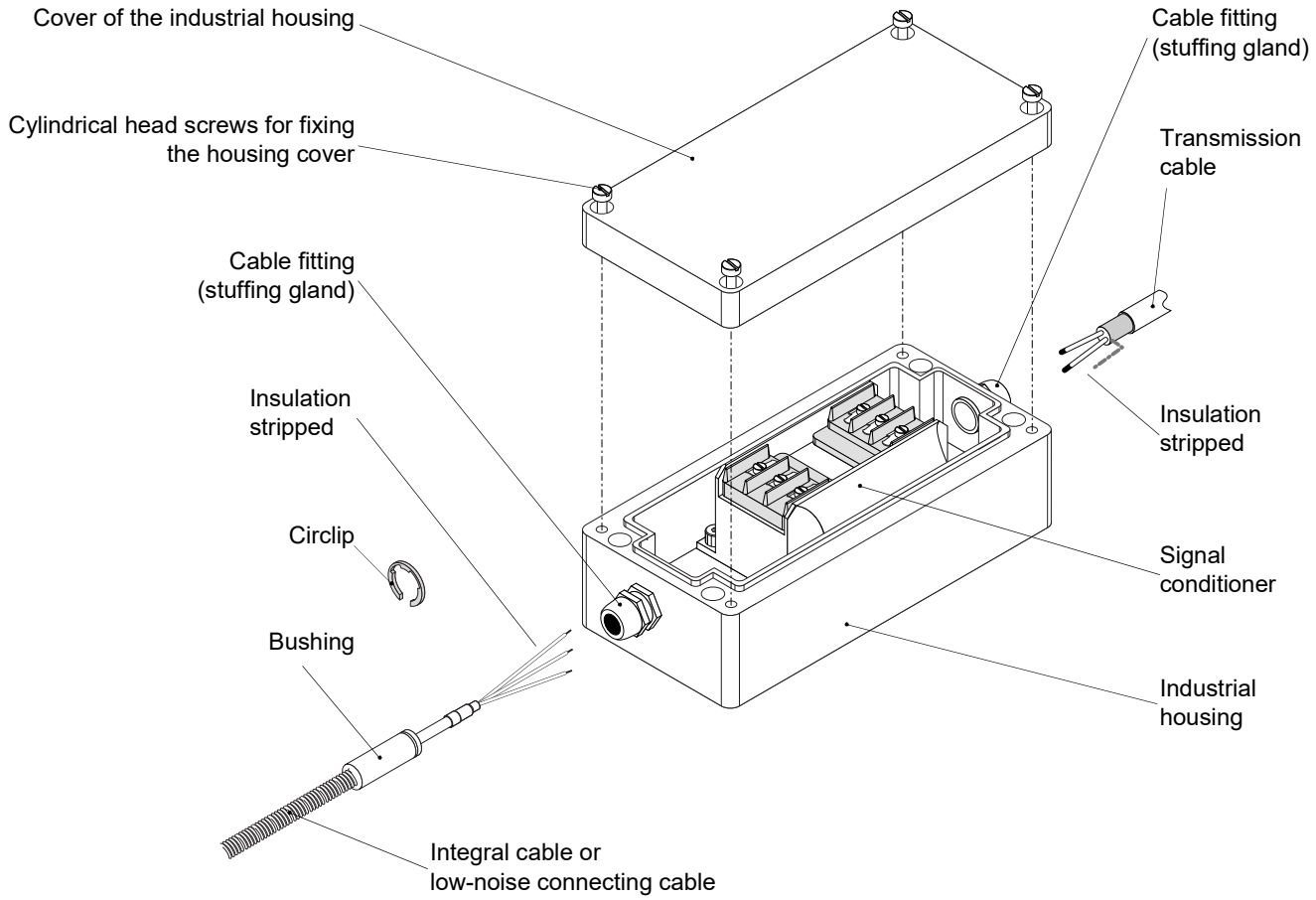



**Figure 4-8:** An IPC704 signal conditioner in an ABA160 industrial housing

**Table 4-4:** IPC704 wire identification and mapping to an IPC707

| Sensor cabling ("sensor-side") | | | | Transmission cable ("monitor-side") | | | |
|---|---|---|---|---|---|---|---|
| **IPC704[1] terminal** | **Wire no.** | **Wire colour** | **IPC707[2] terminal** | **IPC704[1] terminal** | **Wire no.** | **Wire colour** | **IPC707[2] terminal** |
| I/P+ | | | **IN+** | +24 | | | **+24** |
| COM | | | **COM[3]** | COM | | | **COM** |
| I/P− | | | **IN−** | OUT | | | **OUT** |
| | | | **SHD[3]** | | | | **SHD** |

Notes

1. The metal housing of an IPC704 is connected to its COM inputs/terminals. Therefore, an IPC704 must be electrically isolated from ground (GND), for example, by installing the IPC704 on or in a device that insulates it from ground.
2. The metal housing (electrically conductive) of an IPC707 is connected to its COM and SHD input terminals as follows: the COM and SHD inputs and COM output are connected directly to the metal housing for all versions; the SHD output is connected to the metal housing via a capacitor for standard and "Ex ec/nA" versions, and is connected directly to the metal housing for "Ex ia" versions. Accordingly, an IPC707 can be installed and operated either with or without a direct electrical connection between the IPC707 and ground (GND). However, a direct electrical connection between an IPC707 and ground (GND) is recommended for improved immunity to electromagnetic interference (EMI). See 4.4.2 Mounting procedure and 7.2 General wiring diagrams.
3. For improved performance and interfacing flexibility, the IPC707 has separate COM input and output terminals and SHD input and output terminals, so any separate shield connection/wire from the sensor cabling (typically a green flying lead) should be connected to the SHD input of the IPC707, and any separate shield connection/wire to the transmission cable should be connected to the SHD output of the IPC707 (see 7.2 General wiring diagrams). In contrast, the IPC704 has only COM input and output terminals that are used as a common reference for both grounding and shielding.

### 4.5.2 Installing and connecting the IPC707

An IPC707 signal conditioner is generally mounted in an ABA17x industrial housing. The sensor cabling from the "sensor-side" and the transmission cable to the "monitor-side" are connected to the IPC707 using removable screw-terminal connectors (see Figure 4-6).

To replace an IPC704 with an IPC707 signal conditioner:

**1-** Ensure that the procedure outlined in 4.5.1 Uninstalling the IPC704 has been followed and that the power supply to the equipment is turned off.

**2-** Either reuse the existing industrial housing or install a new one (see 4.3 Installing an ABA17x industrial housing).

**3-** Mount the IPC707 in the industrial housing (see 4.4.2 Mounting procedure).

**4-** If necessary, adapt the length of the sensor cabling and transmission cable.

**NOTE:** The dimensions of ABA17x industrial housings may not the same as those of the existing industrial housing. If a cable is too short to be connected, then slacken it.

**NOTE:** If a cable is still too short after slackening, install an extension cable and a junction box. Contact your local Meggitt representative or Meggitt SA for further information.

**5-** Loosen the cable fittings (stuffing glands) on the ABA17x industrial housing and feed the cables through (see 4.3.1 Mounting an ABA17x industrial housing).

**6-** Strip the end of each wire to expose approximately 5 mm of conductor.

**7-** For each wire to be connected:

- Determine which IPC707 screw-terminal connector and terminal each wire has to be connected to using the information recorded in Table 4-4.
- Connect each wire by inserting the conductor into the corresponding screw-terminal connector and tightening the fixing screw until tight.

**NOTE:** The IPC707's housing features removable screw-terminal connectors that can be unplugged from the main body of the housing to simplify installation of the signal conditioner.

See also 4.4.4 Connecting cables.

### 4.5.3 Configuring the external monitoring system

When an IPC704 signal conditioner is replaced with an IPC707 signal conditioner, the external monitoring and/or protection system used with the CAxxx-based vibration measurement chain must be updated to use the appropriate nominal bias value or values provided by the IPC707 (that is, the diagnostic component (DC) of the IPC707's output signal).

**NOTE:** The nominal bias value (diagnostic component (DC)) provided by an IPC707 can be different to the nominal bias value ("standing" current or voltage) provided by an IPC704.

See 6 Configuring an external monitoring system.

## 4.6 Replacing an IPC620 signal conditioner with an IPC707

**SEE 4.1 GENERAL PRECAUTIONS BEFORE REPLACING AN IPC620 SIGNAL CONDITIONER WITH AN IPC707.**

An IPC707 signal conditioner is typically mounted in an ABA17x industrial housing, while an IPC620 signal conditioner is typically mounted in an IPC620 specific box (industrial housing).

**NOTE:** When replacing an IPC620 signal conditioner with an IPC707, the length of the cables to the signal conditioner might have to be adjusted in order to allow for different mountings (with or without DIN-rail adaptor) and different industrial housings (ABA17x, ABA160 or equivalent).

### 4.6.1 Uninstalling the IPC620

An IPC620 signal conditioner is generally mounted in an IPC620 specific box (industrial housing). The sensor cabling from the “sensor-side” and the transmission cable to the “monitor-side” are connected to the IPC620 using screw terminals (see Figure 4-9).

To uninstall an IPC620 signal conditioner:

**1-** Ensure that the power supply to the equipment is turned off.

**2-** Remove the cover of the IPC620 box and the protective cover (see Figure 4-9).

**3-** Identify each wire for both the sensor cabling from the “sensor-side” and the transmission cable to the “monitor-side” that are connected to the IPC620. See Figure 4-9 and use Table 4-5 to record the number and/or colour for each wire.

**4-** On the IPC620, unscrew the screw terminals on the left/bottom of the IPC620 box in order to disconnect the sensor cabling from the “sensor-side” circuitry (measurement chain) and remove the circlip from the sensor cabling bushing (behind the cable fitting (stuffing gland)).

**5-** On the IPC620, unscrew the screw terminals on right/top of the IPC620 box in order to disconnect the transmission cable to the “monitor-side” circuitry (electronic monitoring system).

**6-** Remove the cables from the cable fittings (stuffing glands) of the IPC620 box.

**7-** Remove the IPC620 and the IPC620 box.

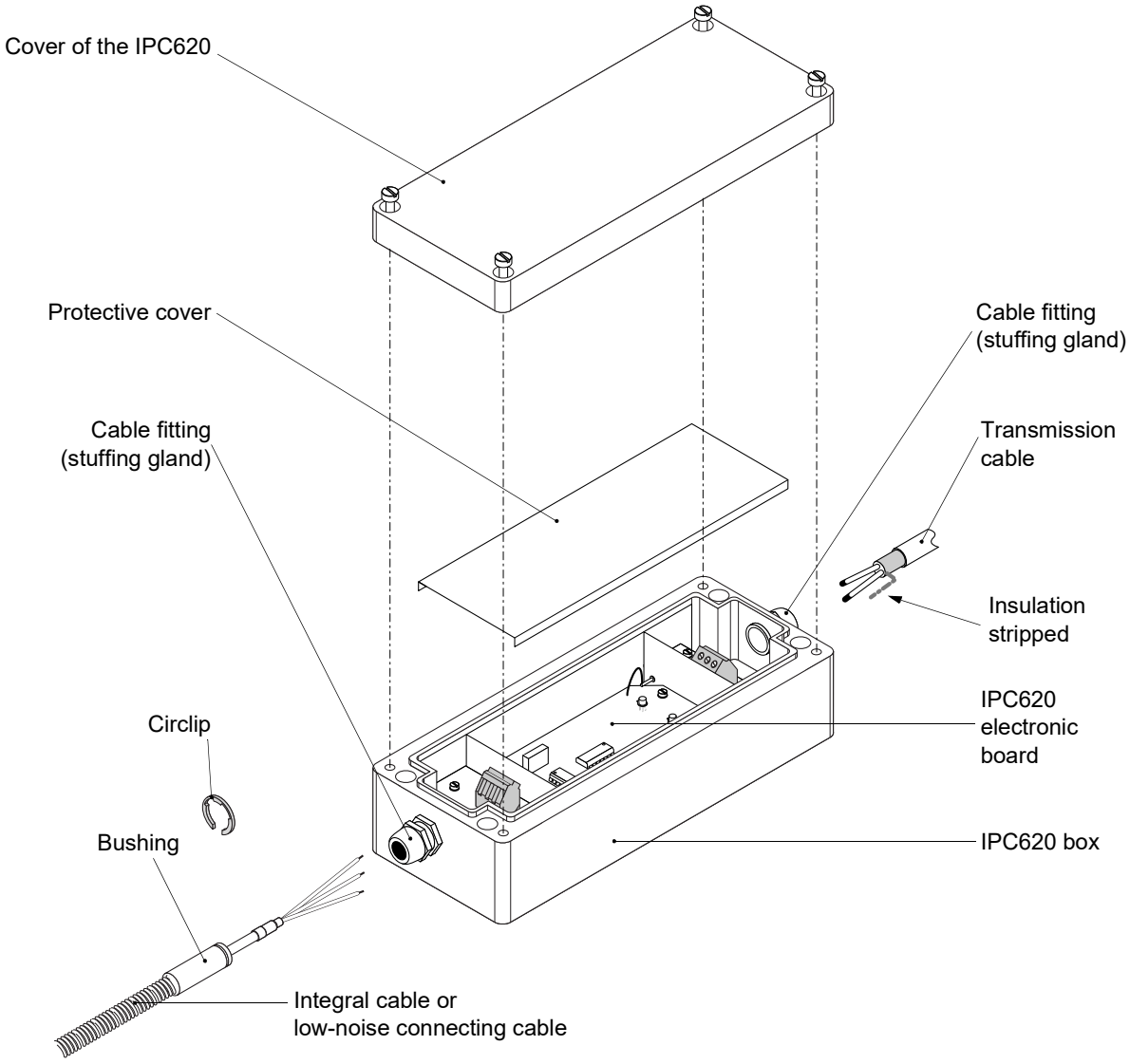



**Figure 4-9:** An IPC620 signal conditioner

**Table 4-5:** IPC620 wire identification and mapping to an IPC707

| Sensor cabling ("sensor-side") | | | | Transmission cable ("monitor-side") | | | |
|---|---|---|---|---|---|---|---|
| **IPC620[1] terminal** | **Wire no.** | **Wire colour** | **IPC707[2] terminal** | **IPC620[1] terminal** | **Wire no.** | **Wire colour** | **IPC707[2] terminal** |
| 1 | | | **IN+** | 4 | | | **+24** |
| 2 | | | **COM[3]** | 5 | | | **COM** |
| 3 | | | **IN−** | 6 | | | |
| | | | **SHD[3]** | | | | **OUT** |
| | | | | | | | **SHD** |

Notes

1. The IPC620 signal conditioner is enclosed inside an IPC620 specific box (industrial housing) which is a sealed die-cast polyester box and the IPC620 electronics is fully floating.
2. The metal housing (electrically conductive) of an IPC707 is connected to its COM and SHD input terminals as follows: the COM and SHD inputs and COM output are connected directly to the metal housing for all versions; the SHD output is connected to the metal housing via a capacitor for standard and "Ex ec/nA" versions, and is connected directly to the metal housing for "Ex ia" versions. Accordingly, an IPC707 can be installed and operated either with or without a direct electrical connection between the IPC707 and ground (GND). However, a direct electrical connection between an IPC707 and ground (GND) is recommended for improved immunity to electromagnetic interference (EMI). See 4.4.2 Mounting procedure and 7.2 General wiring diagrams.
3. For improved performance and interfacing flexibility, the IPC707 has separate COM input and output terminals and SHD input and output terminals, so any separate shield connection/wire from the sensor cabling (typically a green flying lead) should be connected to the SHD input of the IPC707, and any separate shield connection/wire to the transmission cable should be connected to the SHD output of the IPC707 (see 7.2 General wiring diagrams). In contrast, the IPC620 has only COM input and output terminals (pins 2 and 5) that are used as a common reference for both grounding and shielding. Also, the IPC620 does not have an OUT output terminal as it only supports current (2-wire) signal transmission.

### 4.6.2 Installing and connecting the IPC707

An IPC707 signal conditioner is generally mounted in an ABA17x industrial housing. The sensor cabling from the "sensor-side" and the transmission cable to the "monitor-side" are connected to the IPC707 using removable screw-terminal connectors (see Figure 4-6).

To replace an IPC620 with an IPC707 signal conditioner:

**1-** Ensure that the procedure outlined in 4.6.1 Uninstalling the IPC620 has been followed and that the power supply to the equipment is turned off.

**2-** Install a new industrial housing (see 4.3 Installing an ABA17x industrial housing).

**3-** Mount the IPC707 in the industrial housing (see 4.4.2 Mounting procedure).

**4-** If necessary, adapt the length of the sensor cabling and transmission cable.

**NOTE:** The dimensions of ABA17x industrial housings are not the same as those of an IPC620. If a cable is too short to be connected, then slacken it.

**NOTE:** If a cable is still too short after slackening, install an extension cable and a junction box. Contact your local Meggitt representative or Meggitt SA for further information.

**5-** Loosen the cable fittings (stuffing glands) on the ABA17x industrial housing and feed the cables through (see 4.3.1 Mounting an ABA17x industrial housing).

**6-** Strip the end of each wire to expose approximately 5 mm of conductor.

**7-** For each wire to be connected:

- Determine which IPC707 screw-terminal connector and terminal each wire has to be connected to using the information recorded in Table 4-5.
- Connect each wire by inserting the conductor into the corresponding screw-terminal connector and tightening the fixing screw until tight.

**NOTE:** The IPC707's housing features removable screw-terminal connectors that can be unplugged from the main body of the housing to simplify installation of the signal conditioner.

See also 4.4.4 Connecting cables.

### 4.6.3 Configuring the external monitoring system

When an IPC620 signal conditioner is replaced with an IPC707 signal conditioner, the external monitoring and/or protection system used with the CAxxx-based vibration measurement chain must be updated to use the appropriate nominal bias value or values provided by the IPC707 (that is, the diagnostic component (DC) of the IPC707's output signal).

**NOTE:** The nominal bias value (diagnostic component (DC)) provided by an IPC707 can be different to the nominal bias value ("standing" current) provided by an IPC620.

See 6 Configuring an external monitoring system.

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# 5 INSTALLING GALVANIC SEPARATION UNITS

This chapter provides guidelines on installing GSI127 galvanic separation units in CAxxx-based vibration measurement chains.

The GSI127 is a drop-in replacement for the GSI122, GSI123, GSI124 and GSI130 galvanic separation units and for the GSV14x power supply and safety barrier unit.

**NOTE:** A GSI127 with ordering options B02 (for IPCxxx using current transmission (2-wire)) or B04 (for IPCxxx using voltage transmission (3-wire)) can be used in CAxxx-based vibration measurement chains.

**NOTE:** Further information on the GSI127 galvanic separation unit can be found in its data sheet.

## 5.1 General precautions

### 5.1.1 Galvanic separation units in potentially explosive atmospheres

**GSI12X GALVANIC SEPARATION UNITS MUST BE INCLUDED IN CAXXX-BASED VIBRATION MEASUREMENT CHAINS THAT ARE INSTALLED IN POTENTIALLY EXPLOSIVE ATMOSPHERES (EX ZONES) USING PROTECTION MODE "EX I" (INTRINSIC SAFETY).**

**THE GSI127 IS AN ASSOCIATED APPARATUS WITH AN ADDITIONAL PROTECTION MODE THAT PERMITS AN INSTALLATION IN AN EX ZONE 2 (HAZARDOUS AREA) WHEN IT IS INSTALLED INSIDE AN ENCLOSURE WITH A PROTECTION RATING OF AT LEAST IP54 (OR EQUIVALENT), WITH DUE CONSIDERATION FOR THE MAXIMUM THERMAL DISSIPATION STATED IN THE CORRESPONDING EX CERTIFICATES.**

**FOR FURTHER INFORMATION, SEE THE EX CERTIFICATES IN THE APPENDICES OF THIS MANUAL. (EX CERTIFICATES ARE ALSO AVAILABLE FROM OUR WEBSITE AT WWW.MEGGITTSENSING.COM/ENERGY)**

**OTHER ASSOCIATED APPARATUS WITHOUT SUCH AN ADDITIONAL PROTECTION MODE MUST NOT BE INSTALLED IN HAZARDOUS AREAS.**

**NOTE:** Galvanic separation units can also be used in ordinary applications (non-explosive atmospheres), for example, in order to allow the transmission of signals over long distances (2-wire current transmission) and/or to reduce the noise in the measurement chain due to frame voltage.

### 5.1.2 Operating temperature range

**The ambient temperature where a galvanic separation unit is installed must be permanently within its operating temperature range.**

**NOTE:** Further information on the operating temperature range of a galvanic separation unit can be found in the corresponding data sheet.

## 5.2 Installing a GSI127 galvanic separation unit

**SEE 5.1 GENERAL PRECAUTIONS BEFORE INSTALLING A GSI127 GALVANIC SEPARATION UNIT.**

### 5.2.1 Mounting procedure

A GSI127 galvanic separation unit should be installed on a 35 mm wide symmetrical DIN rail such as a TH 35-7.5 (see Figure 5-1) and is generally mounted in an industrial housing, rack or cabinet.

**NOTE:** A GSI127 galvanic separation unit should be installed vertically on the DIN rail, as this orientation maximises the air flow available to cool devices.
As shown in Figure 5-1, a GSI127 is typically installed right-side-up (with the mounting adaptor latch at the bottom of the unit), but it can equally be installed upside-down (inverted, with the mounting adaptor latch at the top of the unit) for ease of installation and wiring.

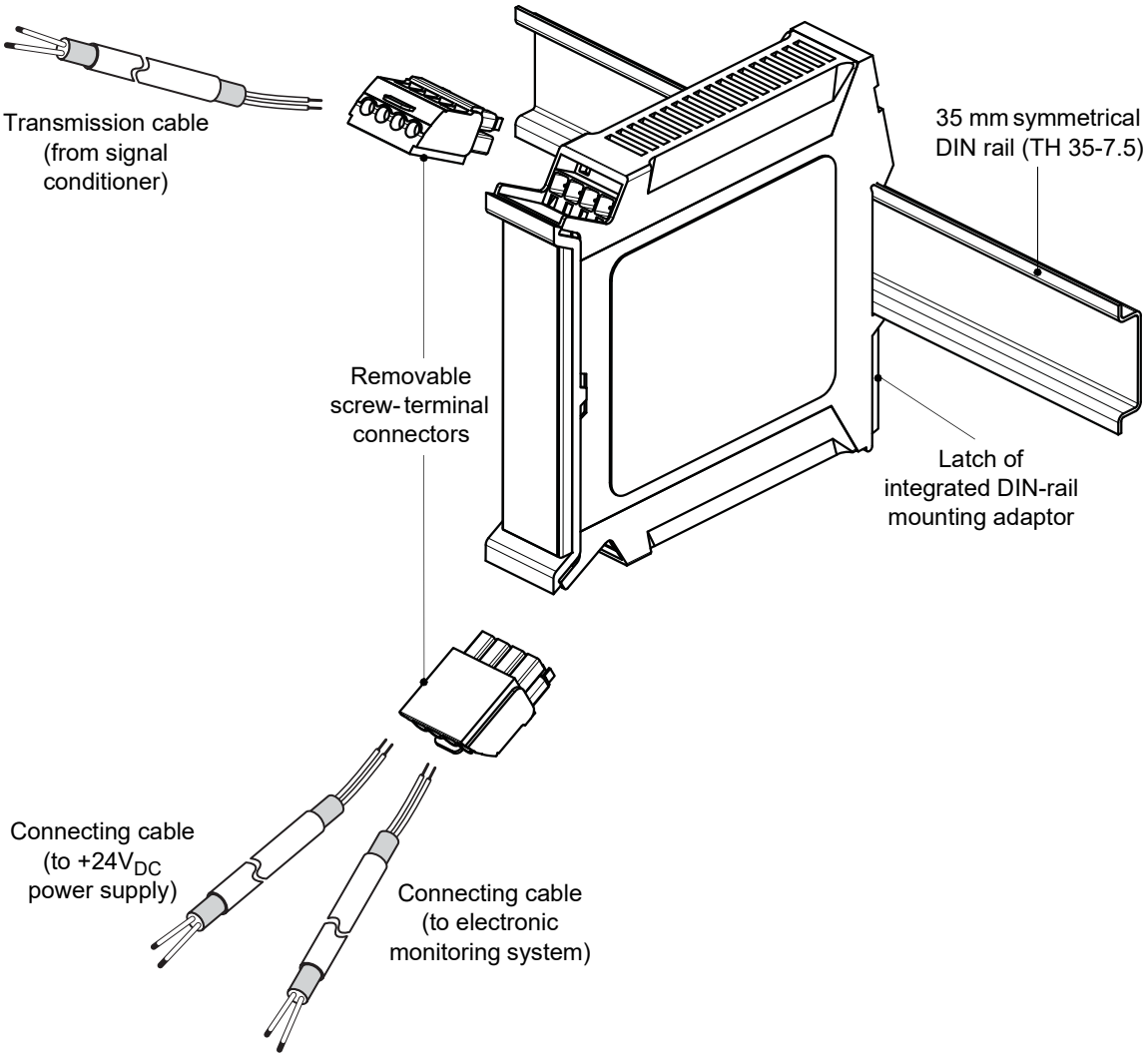


**Figure 5-1:** GSI127 galvanic separation unit on a DIN rail
(shown with connections for a 2-wire current transmission system)

The GSI127's housing features removable screw-terminal connectors that can be unplugged from the main body of the housing to simplify installation of the unit.

### 5.2.2 Removing and inserting screw-terminal connectors

To remove a screw-terminal connector from the main body of a GSI127 unit:

**1-** Push the raised tab on the front of the screw-terminal connector (which acts as a lever) away from the main body of the unit to overcome the retaining force and separate the screw-terminal connector and the unit (see Figure 5-2). Use enough force to separate the connector from the body of the unit by approximately 5 mm.

**2-** Pull the screw-terminal connector to remove it from the main body of the unit.

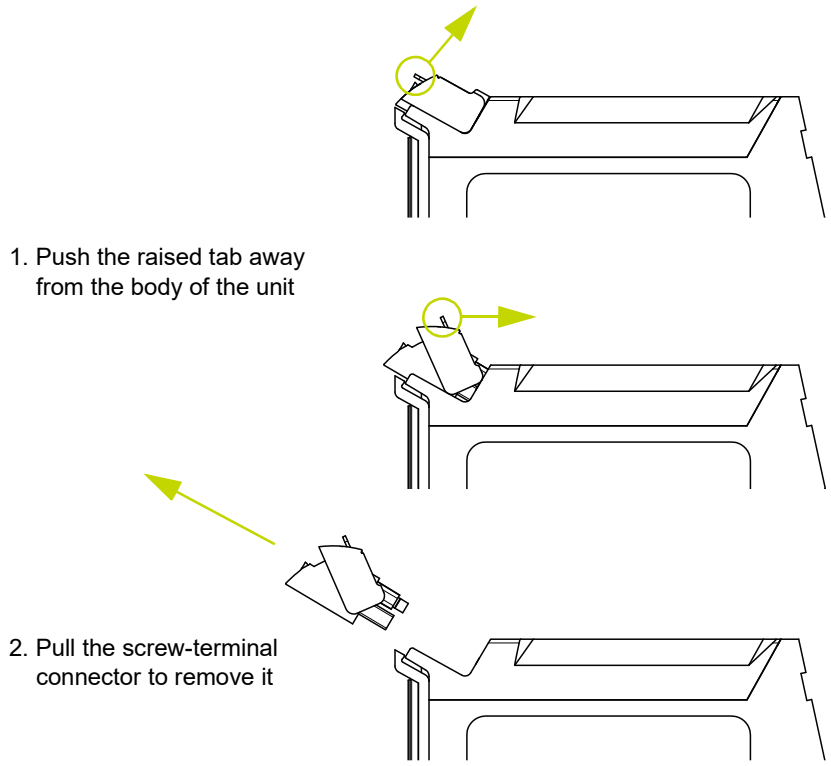


**Figure 5-2:** Removing a screw-terminal connector from the main body of a GSI127 unit

To reinsert a screw-terminal connector in the body of a GSI127 unit:

**1-** Ensure that the raised tab on the front of the screw-terminal connector is pushed down flat so that the rear of the connector is not obstructed.

**2-** Align the screw-terminal connector with the main body of the unit, ensuring that the guide-rails of both parts are aligned, and push the connector into the main body of the unit.

**3-** When the screw-terminal connector is approximately 1-2 mm from the main body of the unit, more force is required to overcome the mechanical locking mechanism and the friction of the connectors.

There should be an audible click when the connector is properly inserted.

### 5.2.3 Connecting cables

The transmission cable from the “sensor-side” circuitry (IPC70x signal conditioner) and the connecting cable to the “monitor-side” circuitry are connected to the GSI127 galvanic separation unit using removable screw-terminal connectors (see Figure 5-1 and Figure 5-2).

**NOTE:** The screw-terminal connector on the top of the GSI127, labelled “SENSOR”, is for connection to the transmission cable that connects to the “sensor-side” circuitry, that is, to front-end circuitry such as sensors and/or signal conditioners.

**NOTE:** The screw-terminal connector on the bottom of the GSI127, labelled “MONITOR”, is for connection to the connecting cable that connects to the “monitor-side” circuitry, such as a VM600 or VibroSmart® monitoring system.

There is a block of four screw terminals on the top front of the GSI127, labelled “SENSOR”, up to three of which are used for connection to the transmission cable that connects to the “sensor-side” circuitry:

- For operation with current signals from an IPC70x signal conditioner (2-wire transmission system), a GSI127 with ordering option B02 should be used. This option uses two of the SENSOR screw terminals, labelled “+” and “−”. The other two SENSOR screw terminals, labelled “NC”, are not connected.
- For operation with voltage signals from an IPC70x signal conditioner (3-wire transmission system), a GSI127 with ordering option B04 should be used. This option uses three of the SENSOR screw terminals, labelled “+”, “COM” and “I/P”. The other SENSOR screw terminal, labelled “NC”, is not connected.

There is a block of four screw terminals on the bottom front of the GSI127, labelled “MONITOR”, all of which are used for connection to the connecting cable that connects to the “monitor-side” circuitry:

- The connection of the voltage output signal is the same for all GSI127s (ordering options B01 to B21) and uses all of the MONITOR screw terminals, labelled “24 VDC +”, “24 VDC −”, “SIGNAL 0V” and “SIGNAL O/P”.

See 7 Electrical connections for detailed wiring diagrams of CAxxx-based vibration measurement chains using the GSI127.

**NOTE:** The shield of the transmission cable from the “sensor-side” circuitry should not be connected to the GSI127 galvanic separation unit (“open screening”).
Instead, the transmission cable from the “sensor-side” circuitry must be connected to the mandatory grounding bracket at the entrance to the cubicle that contains the GSI127.

**NOTE:** The GSI127 galvanic separation unit does not require a ground connection and should not be grounded to its DIN rail.

If required, see 5.3 Replacing a GSI124 galvanic separation unit with a GSI127 or 5.4 Replacing a GSI122 or GSI130 galvanic separation unit with a GSI127.

## 5.3 Replacing a GSI124 galvanic separation unit with a GSI127

For a GSI124 galvanic separation unit:

- The connections at the top of the housing are for the connecting cable to the electronic monitoring system.
- The connections at the bottom of the housing are for the transmission cable from the front-end circuitry such as sensors and/or signal conditioners.

For a GSI127 galvanic separation unit:

- The connections at the top of the housing are for the transmission cable from the front-end circuitry such as sensors and/or signal conditioners.
- The connections at the bottom of the housing are the connecting cable to the electronic monitoring system.

**NOTE:** When replacing a GSI124 galvanic separation unit with a GSI127, the length of the cables to the unit might have to be adjusted in order to allow for this change of position.

### 5.3.1 Uninstalling the GSI124

**SEE 5.1 GENERAL PRECAUTIONS BEFORE REPLACING A GSI124 GALVANIC SEPARATION UNIT WITH A GSI127.**

A GSI124 galvanic separation unit is generally mounted in an industrial housing, rack or cabinet. The transmission cable from the “sensor-side” circuitry and the connecting cable to the “monitor-side” circuitry are connected to the GSI124 using screw terminals (see Figure 5-3).

To uninstall a GSI124:

**1-** Turn off the power supply to the equipment.

**2-** Identify each wire for both the transmission cable from the “sensor-side” and the connecting cable to the “monitor-side” that are connected to the GSI124. See Figure 5-3 and use Table 5-1 to record the number and/or colour for each wire.

**3-** On the GSI124, unscrew the screw terminals on the upper half of the unit in order to disconnect the connecting cable to the “monitor-side” circuitry (electronic monitoring system).

**4-** On the GSI124, unscrew the screw terminals on the lower half of the unit in order to disconnect the transmission cable from the “sensor-side” circuitry (signal conditioner).

**5-** Disconnect the grounding. That is, disconnect the black flying lead terminated with a crimp from the underside of the GSI124 and then remove this lead from the DIN rail, as it is not required by the GSI127 (see Figure 5-3).

**6-** Remove the GSI124 from the DIN rail.

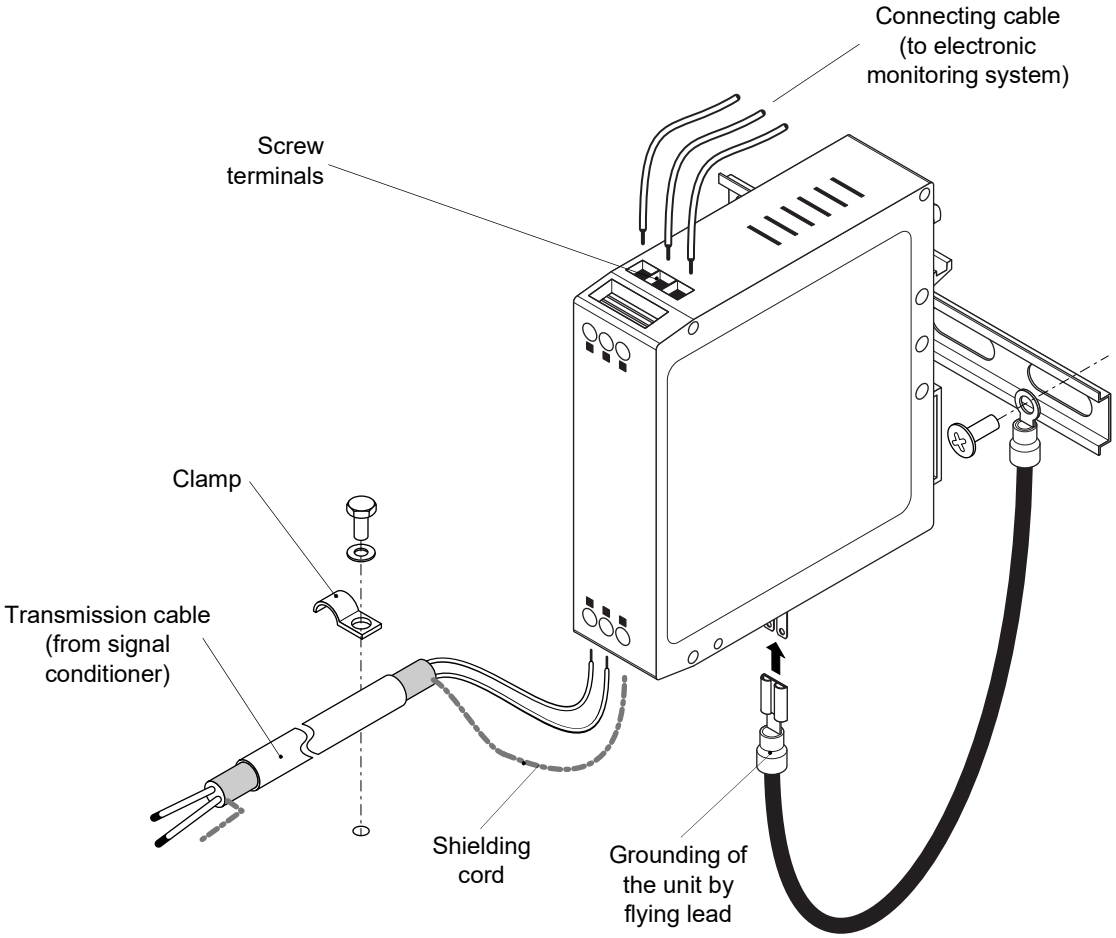


**Figure 5-3:** GSI124 galvanic separation unit

**Table 5-1:** GSI124 wire identification and mapping to a GSI127

| Transmission cable ("sensor-side") | | | | Connecting cable ("monitor-side") | | | | |
|---|---|---|---|---|---|---|---|---|
| **GSI124 terminal** | **Wire no.** | **Wire colour** | **GSI127 terminal** | **GSI124 terminal** | **Wire no.** | **Wire colour** | **GSI127 terminal** | |
| + | | | **+** | OUT | | | **O/P** | **SIGNAL** |
| – | | | **–** | 0V[2] | | | **0V** | |
| SHIELD[1] | | | | +24V | | | **+** | **24 VDC** |
| | | | | 0V[2] | | | **–** | |

Notes

1. The shield of the transmission cable from the "sensor-side" circuitry must not be connected to the GSI127 galvanic separation unit ("open screening"). Instead, the shield must be connected to the mandatory grounding bracket at the entrance to the cubicle that contains the GSI127. See 7 Electrical connections.
2. For improved performance and interfacing flexibility, the GSI127 has a separate differential ("floating") output with two dedicated screw terminals (O/P and 0V) and a separate 24 $V_{DC}$ power supply input with two dedicated screw terminals (+ and −), whereas the GSI124 has a single terminal (0V) that is used as a common reference for both the signal output and the power supply input. When replacing a GSI124 with a GSI127, separate wires are required for the connection between the GSI127's 0V (SIGNAL) terminal and the connecting cable to the electronic monitoring system and for the connection between the GSI127's − (24 VDC) terminal and the connecting cable to the power supply.

### 5.3.2 Installing and connecting the GSI127

To replace a GSI124 with a GSI127:

**1-** Ensure that the procedure outlined in 5.3.1 Uninstalling the GSI124 has been followed and that the power supply to the equipment is turned off.

**2-** Either reuse the existing DIN rail or install a new one.

**3-** Clip the GSI127 to the DIN rail.

**4-** If necessary:

- Adapt the length of the transmission cable and connecting cable.
- Strip the transmission cable from the "sensor-side" circuitry in order to get a sufficient length of shielding cord for connection to the mandatory grounding bracket at the entrance to the cubicle that contains the GSI127 (see 7 Electrical connections).

**5-** Strip the end of each wire to expose approximately 5 mm of conductor.

**6-** For each wire to be connected:

- Determine which terminal each wire has to be connected to using the information recorded in Table 5-1.
- Connect each wire by inserting the conductor into the corresponding screw terminal and tightening the fixing screw until tight.

**NOTE:** The GSI127's housing features removable screw-terminal connectors that can be unplugged from the main body of the housing to simplify installation of the unit.

## 5.4 Replacing a GSI122 or GSI130 galvanic separation unit with a GSI127

### 5.4.1 Uninstalling the GSI122 or GSI130

**SEE 5.1 GENERAL PRECAUTIONS BEFORE REPLACING A GSI122 OR GSI130 GALVANIC SEPARATION UNIT WITH A GSI127.**

A GSI122 or GSI130 galvanic separation unit is generally mounted in an industrial housing, rack or cabinet. These units are normally installed on a dedicated mounting plate using a locating pin and a fixing screw (see Figure 5-5). The transmission cable from the "sensor-side" circuitry and the connecting cable to the "monitor-side" circuitry are connected to a GSI122 or GSI130 using AMP Faston 6.3 lugs (see Figure 5-4) that are crimped to the wires.

To uninstall a GSI122 or GSI130:

**1-** Turn off the power supply to the equipment.

**2-** Identify each wire for both the transmission cable from the "sensor-side" and the connecting cable to the "monitor-side" that are connected to the GSI122 or GSI130. See Figure 5-4 and use Table 5-2 to record the number and/or colour for each wire.

**3-** On the GSI122 or GSI130, pull the three AMP Faston 6.3 lugs free from the upper half of the unit in order to disconnect the connecting cable to the "monitor-side" circuitry (electronic monitoring system).

**4-** On the GSI122 or GSI130, pull the two AMP Faston 6.3 lugs free from the lower half of the unit in order to disconnect the transmission cable from the "sensor-side" circuitry (signal conditioner).

**5-** Undo the M4 fixing screw until the GSI122 or GSI130 has been uninstalled and disassemble the mounting plate from the DIN rail (see Figure 5-5).

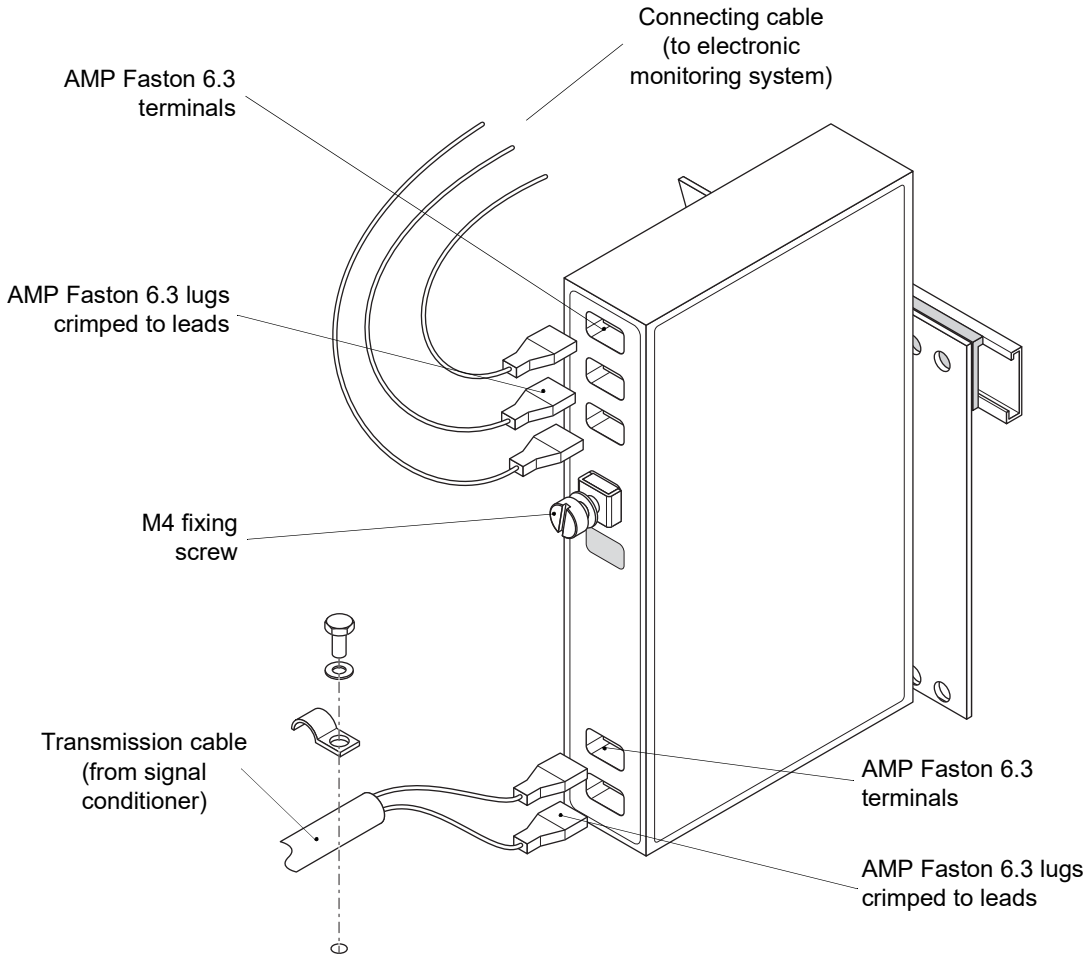


**Figure 5-4:** GSI122 or GSI130 galvanic separation unit

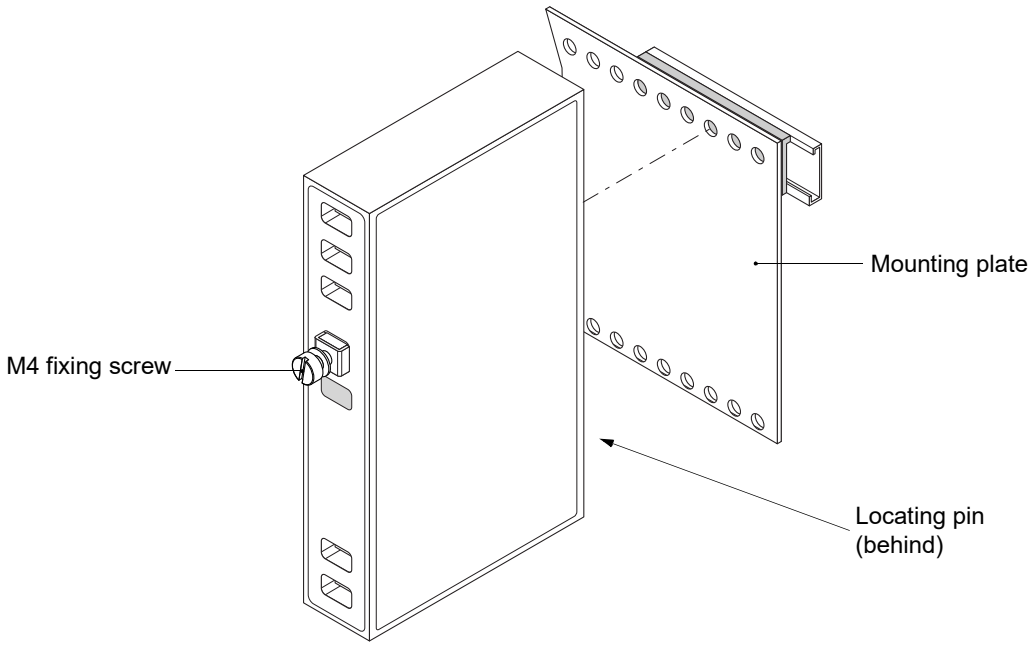


**Figure 5-5:** The mounting plate used by GSI122 and GSI130 galvanic separation units

**Table 5-2:** GSI122 or GSI130 wire identification and mapping to a GSI127

| Transmission cable ("sensor-side") | | | | Connecting cable ("monitor-side") | | | | |
|---|---|---|---|---|---|---|---|---|
| **GSI122 or GSI130 terminal** | **Wire no.** | **Wire colour** | **GSI127 terminal [1]** | **GSI122 or GSI130 terminal** | **Wire no.** | **Wire colour** | **GSI127 terminal** | |
| + | | | **+** | SIGNAL | | | **O/P** | **SIGNAL** |
| − | | | **−** | 0V [2] | | | **0V** | |
| | | | | +24V | | | **+** | **24 VDC** |
| | | | | 0V [2] | | | **−** | |

Notes

1. The shield of the transmission cable from the "sensor-side" circuitry must not be connected to the GSI127 galvanic separation unit ("open screening"). Instead, the shield must be connected to the mandatory grounding bracket at the entrance to the cubicle that contains the GSI127. See 7 Electrical connections.
2. For improved performance and interfacing flexibility, the GSI127 has a separate differential ("floating") output with two dedicated screw terminals (O/P and 0V) and a separate 24 $V_{DC}$ power supply input with two dedicated screw terminals (+ and −), whereas the GSI122 and GSI130 have a single terminal (0V) that is used as a common reference for both the signal output and the power supply input. When replacing a GSI122 or GSI130 with a GSI127, separate wires are required for the connection between the GSI127's 0V (SIGNAL) terminal and the connecting cable to the electronic monitoring system and for the connection between the GSI127's − (24 VDC) terminal and the connecting cable to the power supply.

### 5.4.2 Installing and connecting the GSI127

To replace a GSI122 or GSI130 with a GSI127:

**1-** Ensure that the procedure outlined in 5.4.1 Uninstalling the GSI122 or GSI130 has been followed and that the power supply to the equipment is turned off.

**2-** Either reuse the existing DIN rail or install a new one.

**3-** Clip the GSI127 to the DIN rail.

**4-** Cut each wire close to where they are crimped to the AMP Faston 6.3 lugs.

**5-** If necessary:

- Adapt the length of the transmission cable and connecting cable.
- Strip the transmission cable from the "sensor-side" circuitry in order to get a sufficient length of shielding cord for connection to the mandatory grounding bracket at the entrance to the cubicle that contains the GSI127 (see 7 Electrical connections).

**6-** Strip the end of each wire to expose approximately 5 mm of conductor.

**7-** For each wire to be connected:

- Determine which terminal each wire has to be connected to using the information recorded in Table 5-2.
- Connect each wire by inserting the conductor into the corresponding screw terminal and tightening the fixing screw until tight.

**NOTE:** The GSI127's housing features removable screw-terminal connectors that can be unplugged from the main body of the housing to simplify installation of the unit.

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# 6 CONFIGURING AN EXTERNAL MONITORING SYSTEM

For the external monitoring and/or protection system – such as a VM600 or VibroSmart® system – used with a CAxxx-based measurement chain containing an IPC707 signal conditioner, it is important that the alarm levels (alert and/or danger) configured for the vibration measurements are appropriate for both the configuration of the IPC707 (with or without diagnostics) and the machinery/system under protection.

In addition, the external monitoring and/or protection system used with a CAxxx-based vibration measurement chain using an IPC707 signal conditioner should be capable of detecting and reporting the status of the measurement chain as communicated by the diagnostic component (DC) of the IPC707 signal conditioner's output signal, as described in 6.1 IPC707 with diagnostics and 6.2 IPC707 without diagnostics.

See also 4.4.1.3 Overview of operation.

For example, the VM600 MPSx software (used by VM600 machinery protection cards) and the VibroSight® software (used by VM600 condition monitoring cards and VibroSmart® monitoring and/or protection modules) support sensor measurement chain "OK" functionality, whereby the software indicates if the nominal bias value (diagnostic component (DC)) of the signal measured by the monitoring system goes outside the region defined by upper and lower OK levels.

**NOTE:** Refer to the monitoring and/or protection system documentation for further information.

## 6.1 IPC707 with diagnostics

In a CAxxx-based measurement chain using an IPC707 signal conditioner with diagnostics, the IPC707 continuously:

- Runs health checks on the components of the IPC707 measurement chain (sensor, cabling and signal conditioner).
- Updates the diagnostic component (DC) of its output signal to communicate the integrity of the IPC707 measurement chain and indicate the source of detected problems.
- Updates the measurement component (AC) of its output signal corresponding to the measured vibration.

Accordingly, the external monitoring and/or protection system used with an IPC707 signal conditioner with diagnostics should monitor the diagnostic component (DC) of the IPC707's output signal for the values described in Figure 6-1 and Table 4-1).

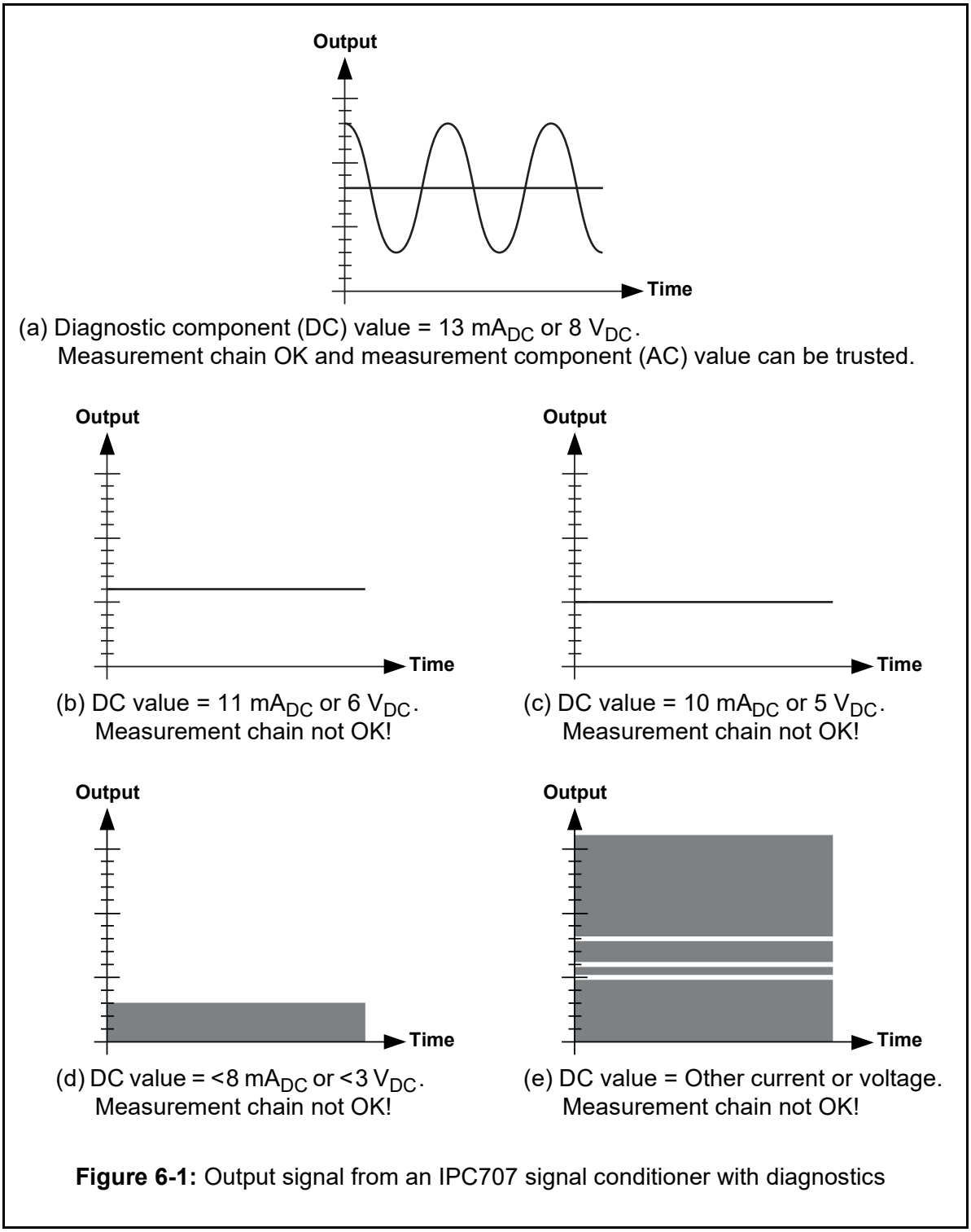



**Figure 6-1:** Output signal from an IPC707 signal conditioner with diagnostics

### 6.1.1 Defining the alarm levels

As shown in Figure 6-1 (a), during normal operation, an IPC707 signal conditioner with diagnostics will update its output signal as follows:

- Diagnostic component (DC) to 13 mA$_{DC}$ ±0.5 mA$_{DC}$ or 8 V$_{DC}$ ±0.5 V$_{DC}$.
- Measurement component (AC) to a value <±5 mA$_{DC}$ or <±5 V$_{DC}$ corresponding to the measured physical quantity (vibration), depending on the transfer function configured for the IPC707 (see 4.4.1 About the IPC707 signal conditioner).

As shown in Figure 6-1 (b), (c) and (d), after the detection of a known problem, an IPC707 signal conditioner with diagnostics will update its output signal as follows:

- Diagnostic component (DC) to one of the following values:
  - 11 $mA_{DC}$ ±0.5 $mA_{DC}$ or 6 $V_{DC}$ ±0.5 $V_{DC}$
  - 10 $mA_{DC}$ ±0.5 $mA_{DC}$ or 5 $V_{DC}$ ±0.5 $V_{DC}$
  - <8 $mA_{DC}$ or <3 $V_{DC}$.

Similarly, as shown in Figure 6-1 (e), after the detection of an unknown problem, an IPC707 signal conditioner with diagnostics will update its output signal as follows:

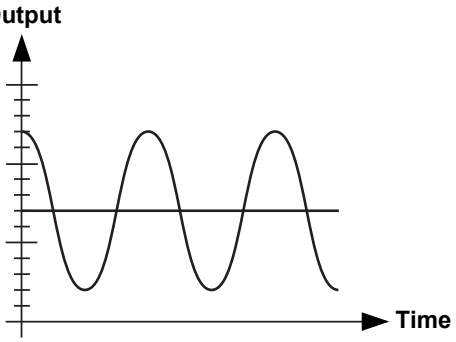
- Diagnostic component (DC) to one of the following values:
  - Other current value or other voltage value
    (that is, not 13 $mA_{DC}$ or 8 $V_{DC}$, not 11 $mA_{DC}$ or 6 $V_{DC}$, not 10 $mA_{DC}$ or 5 $V_{DC}$ and not <8 $mA_{DC}$ or <3 $V_{DC}$).

## 6.2 IPC707 without diagnostics

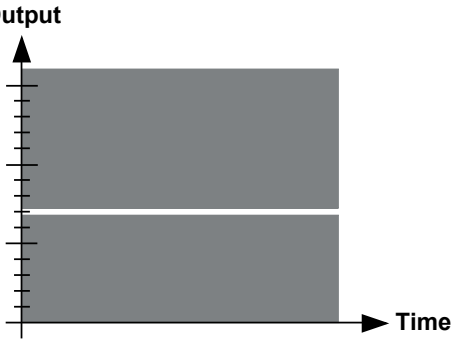
In a CAxxx-based measurement chain using an IPC707 signal conditioner without diagnostics, the IPC707:

- Maintains the diagnostic component (DC) of its output signal at a fixed nominal bias value (to indicate the normal operation of the IPC707 signal conditioner only).
- Continuously updates the measurement component (AC) of its output signal corresponding to the measured vibration.

Accordingly, the external monitoring and/or protection system used with an IPC707 signal conditioner without diagnostics should monitor the diagnostic component (DC) of the IPC707's output signal for the values described in described in Figure 6-2 and Table 4-2).




(a) Diagnostic component (DC) value = 12 $mA_{DC}$ or 7 $V_{DC}$.
Measurement chain OK and measurement component (AC) value can be trusted.




(b) DC value = Other current or voltage.
Measurement chain not OK!

**Figure 6-2:** Output signal from an IPC707 signal conditioner without diagnostics

### 6.2.1 Defining the alarm levels

As shown in Figure 6-2 (a), during normal operation, an IPC707 signal conditioner without diagnostics will update its output signal as follows:

- Diagnostic component (DC) to 12 $mA_{DC}$ ±0.5 $mA_{DC}$ or 7 $V_{DC}$ ±0.5 $V_{DC}$.
- Measurement component (AC) to a value <±5 $mA_{DC}$ or <±5 $V_{DC}$ corresponding to the measured physical quantity (vibration), depending on the transfer function configured for the IPC707 (see 4.4.1 About the IPC707 signal conditioner).

As shown in Figure 6-1 (b), after the detection of a problem, an IPC707 signal conditioner without diagnostics will update its output signal as follows:

- Diagnostic component (DC) to one of the following values:
  - Other current value or other voltage value
    (that is, not 12 $mA_{DC}$ or 7 $V_{DC}$).

# 7 ELECTRICAL CONNECTIONS

## 7.1 General precautions

**IN ORDINARY APPLICATIONS (NON-EXPLOSIVE ATMOSPHERES), NO CERTIFICATIONS ARE REQUIRED FOR THE USE OF CAXXX-BASED VIBRATION MEASUREMENT CHAINS.**

**HOWEVER, IN POTENTIALLY EXPLOSIVE ATMOSPHERES, EX CERTIFICATIONS ARE REQUIRED FOR THE USE OF THESE MEASUREMENT CHAINS. THE ACTUAL EX CERTIFICATION REQUIRED FOR EACH PRODUCT IN THE MEASUREMENT CHAIN DEPENDS ON THE ATEX/IECEX ZONE IN WHICH THE PRODUCT IS INSTALLED.**

**THE "REQUESTED CERTIFICATIONS FOR EXPLOSIVE ZONES (ATEX/IECEX)" TABLE INCLUDED IN EACH WIRING DIAGRAM (FIGURE 7-4 AND FIGURE 7-5) OUTLINES THE EX CERTIFICATIONS REQUIRED FOR EACH PRODUCT IN THE MEASUREMENT CHAIN ACCORDING TO THE ATEX/IECEX ZONE IN WHICH IT IS INSTALLED. THAT IS, THE TABLES SPECIFY THE EX CERTIFICATION REQUIRED FOR A PRODUCT FROM AN AREA OF THE WIRING DIAGRAM (AREA A, AREA B OR AREA C) WHEN THAT AREA OF THE WIRING DIAGRAM CORRESPONDS TO THE DIFFERENT ATEX/IECEX ZONES IN WHICH THE PRODUCT CAN BE INSTALLED.**

**THE LENGTHS OF ALL CABLES (INTEGRAL CABLES AND/OR CABLE ASSEMBLIES) INSTALLED IN POTENTIALLY EXPLOSIVE ATMOSPHERES MUST BE DETERMINED AS PER THE CRITERIA DEFINED IN THE APPROPRIATE SECTIONS OF THE CORRESPONDING EX CERTIFICATES, WHICH ARE SUMMARISED IN FIGURE 7-6.**

**FOR FURTHER INFORMATION, SEE THE EX CERTIFICATES IN THE APPENDICES OF THIS MANUAL. (EX CERTIFICATES ARE ALSO AVAILABLE FROM OUR WEBSITE AT WWW.MEGGITTSENSING.COM/ENERGY)**

## 7.2 General wiring diagrams

**NOTE:** Information on connecting equipment to the electronic monitoring system can be found in the project-specific wiring diagram delivered with a system.

For use in potentially explosive atmospheres, the GSI127 has a certification that allows installation in an Ex Zone 2 (hazardous area), that is, it is an "Ex nA [ia]" safety barrier.

Additional information is given in the wiring diagrams listed in Table 7-2.

**Table 7-1:** Index of wiring diagrams with an IPC707 and a GSI127

| CAxxx-based vibration measurement chain details | Wiring diagram | Figure |
|---|---|---|
| CAxxx piezoelectric accelerometer with or without integral cable, cable assembly, IPC707 signal conditioner in an ABAxxx housing, transmission cabling, optional GSI127 galvanic separation unit and optional APFxxx power supply – using a single cubicle for industrial applications.<br> <br>**THESE MEASUREMENT CHAINS ARE SUITABLE FOR NON-EXPLOSIVE OR POTENTIALLY EXPLOSIVE ATMOSPHERES IN ACCORDANCE WITH THE INFORMATION GIVEN IN THE "REQUESTED CERTIFICATIONS FOR EXPLOSIVE ZONES (ATEX/IECEX)" TABLE INCLUDED IN THE WIRING DIAGRAM.** | 044-001-000E211 (sheet 1 of 3) | 7-1 |
| As above, but using two cubicles for industrial applications. The cubicles are separated by a maximum of 50 m of connecting cable.<br> <br>**THESE MEASUREMENT CHAINS ARE SUITABLE FOR NON-EXPLOSIVE OR POTENTIALLY EXPLOSIVE ATMOSPHERES IN ACCORDANCE WITH THE INFORMATION GIVEN IN THE "REQUESTED CERTIFICATIONS FOR EXPLOSIVE ZONES (ATEX/IECEX)" TABLE INCLUDED IN THE WIRING DIAGRAM.** | 044-001-000E211 (sheet 2 of 3) | 7-2 |
| As above, but summarising the Ex parameters for the measurement chain calculations. | 044-001-000E211 (sheet 3 of 3) | 7-3 |

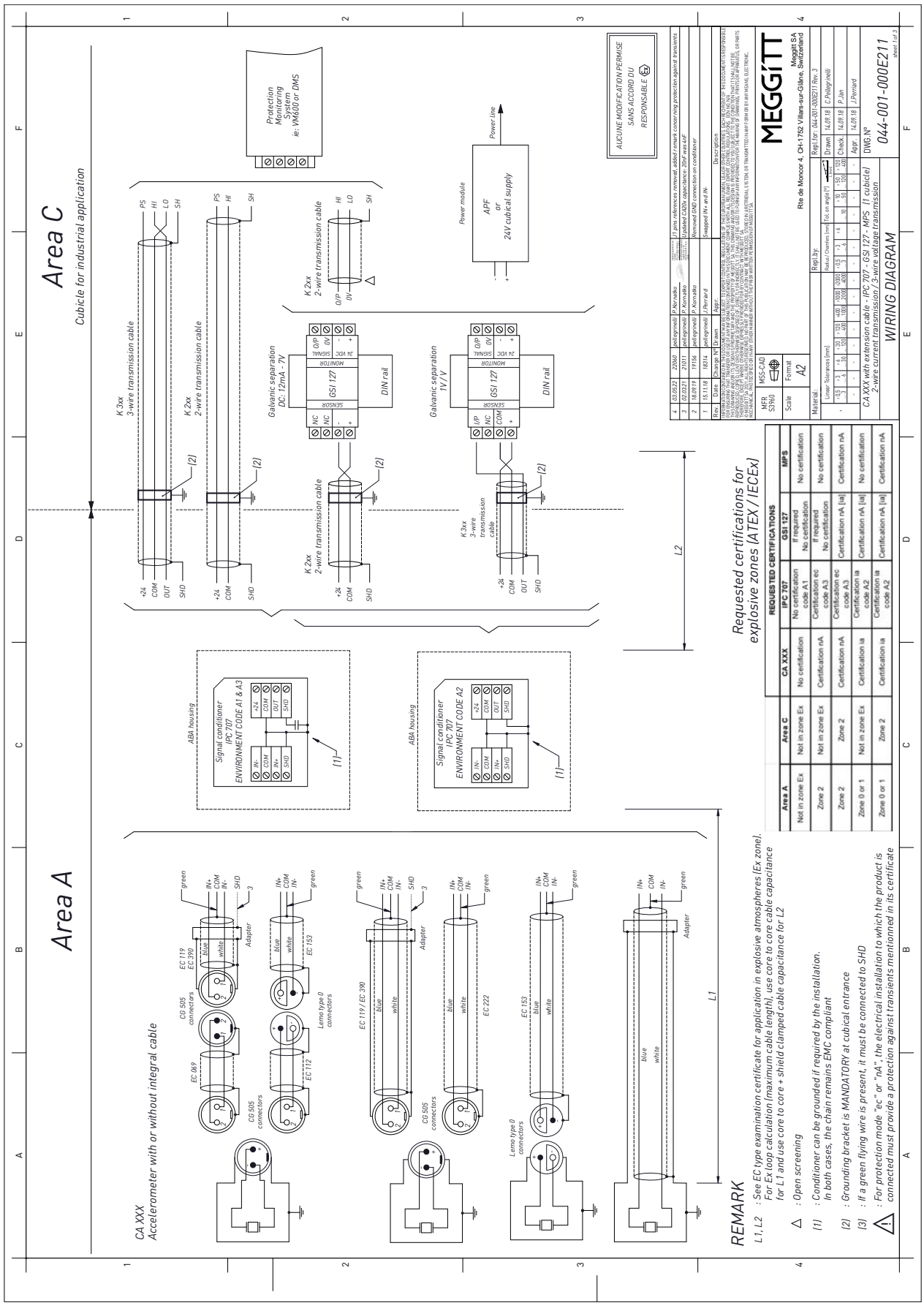



**Figure 7-1:** CAxxx-based vibration measurement chains suitable for use in non-explosive or potentially explosive atmospheres – using a single cubicle for industrial applications

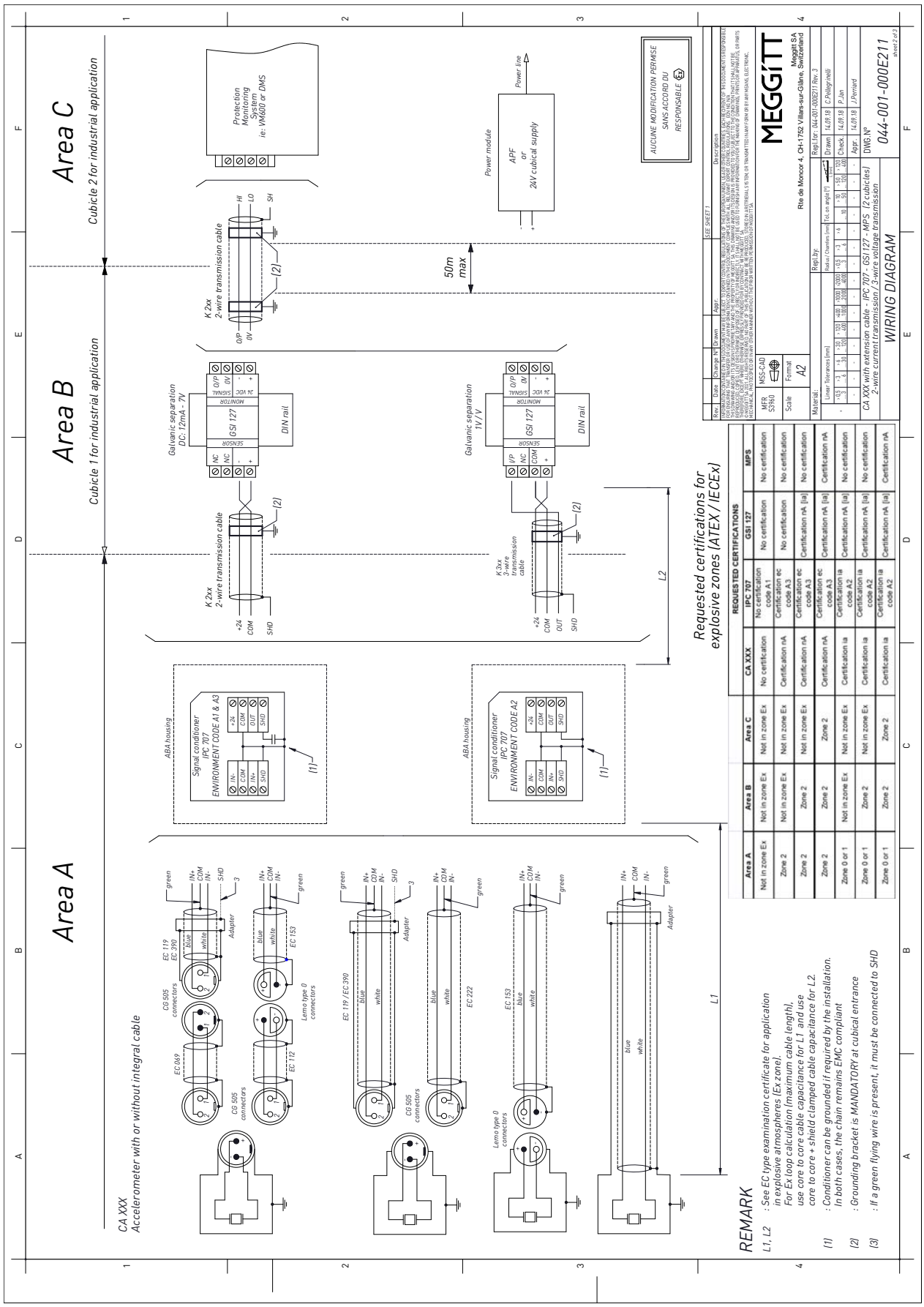



**Figure 7-2:** CAxxx-based vibration measurement chains suitable for use in non-explosive or potentially explosive atmospheres – using two cubicles for industrial applications

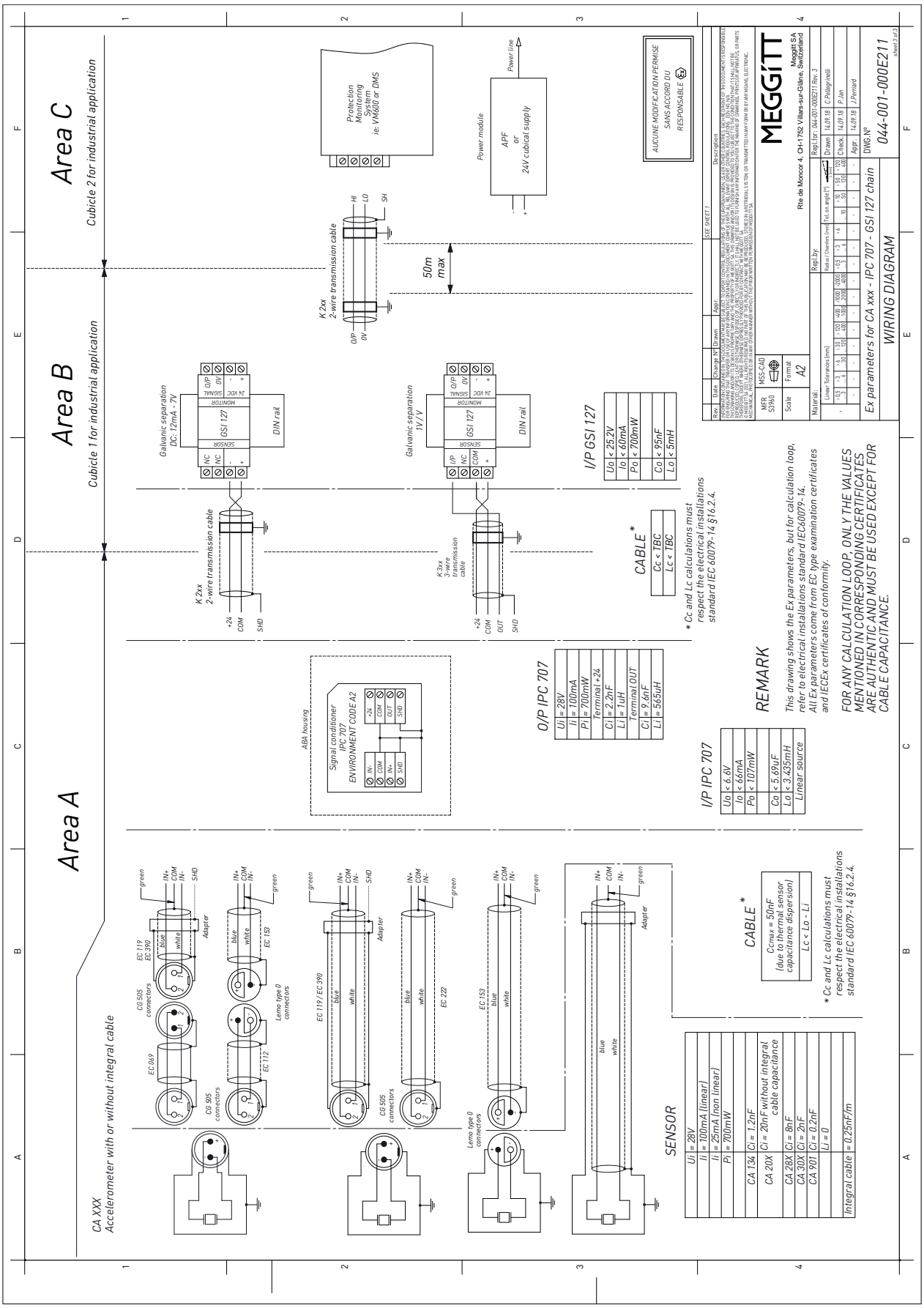



**Figure 7-3:** CAxxx-based vibration measurement chains suitable for use in non-explosive or potentially explosive atmospheres – summarising the Ex parameters for the measurement chain calculations

## 7.3 General wiring diagrams with an IPC704 signal conditioner

**NOTE:** The IPC707 signal conditioner has replaced the IPC704, so the following wiring diagrams are provided for reference only.

Additional information is given in the wiring diagrams listed in Table 7-2.

**Table 7-2:** Index of wiring diagrams with an IPC704 and a GSI127

| CAxxx-based vibration measurement chain details | Wiring diagram | Figure |
|---|---|---|
| CAxxx piezoelectric accelerometer with or without integral cable, cable assembly, IPC704 signal conditioner in an ABAxxx housing, transmission cabling, optional GSI127 galvanic separation unit and optional APFxxx power supply – using a single cubicle for industrial applications.<br><br>STOP **THESE MEASUREMENT CHAINS ARE SUITABLE FOR NON-EXPLOSIVE OR POTENTIALLY EXPLOSIVE ATMOSPHERES IN ACCORDANCE WITH THE INFORMATION GIVEN IN THE "REQUESTED CERTIFICATIONS FOR EXPLOSIVE ZONES (ATEX/IECEx)" TABLE INCLUDED IN THE WIRING DIAGRAM.** | 044-001-000E121 (sheet 1 of 3) | 7-4 |
| As above, but using two cubicles for industrial applications. The cubicles are separated by a maximum of 50 m of connecting cable.<br><br>STOP **THESE MEASUREMENT CHAINS ARE SUITABLE FOR NON-EXPLOSIVE OR POTENTIALLY EXPLOSIVE ATMOSPHERES IN ACCORDANCE WITH THE INFORMATION GIVEN IN THE "REQUESTED CERTIFICATIONS FOR EXPLOSIVE ZONES (ATEX/IECEx)" TABLE INCLUDED IN THE WIRING DIAGRAM.** | 044-001-000E121 (sheet 2 of 3) | 7-5 |
| As above, but summarising the Ex parameters for the measurement chain calculations. | 044-001-000E121 (sheet 3 of 3) | 7-6 |

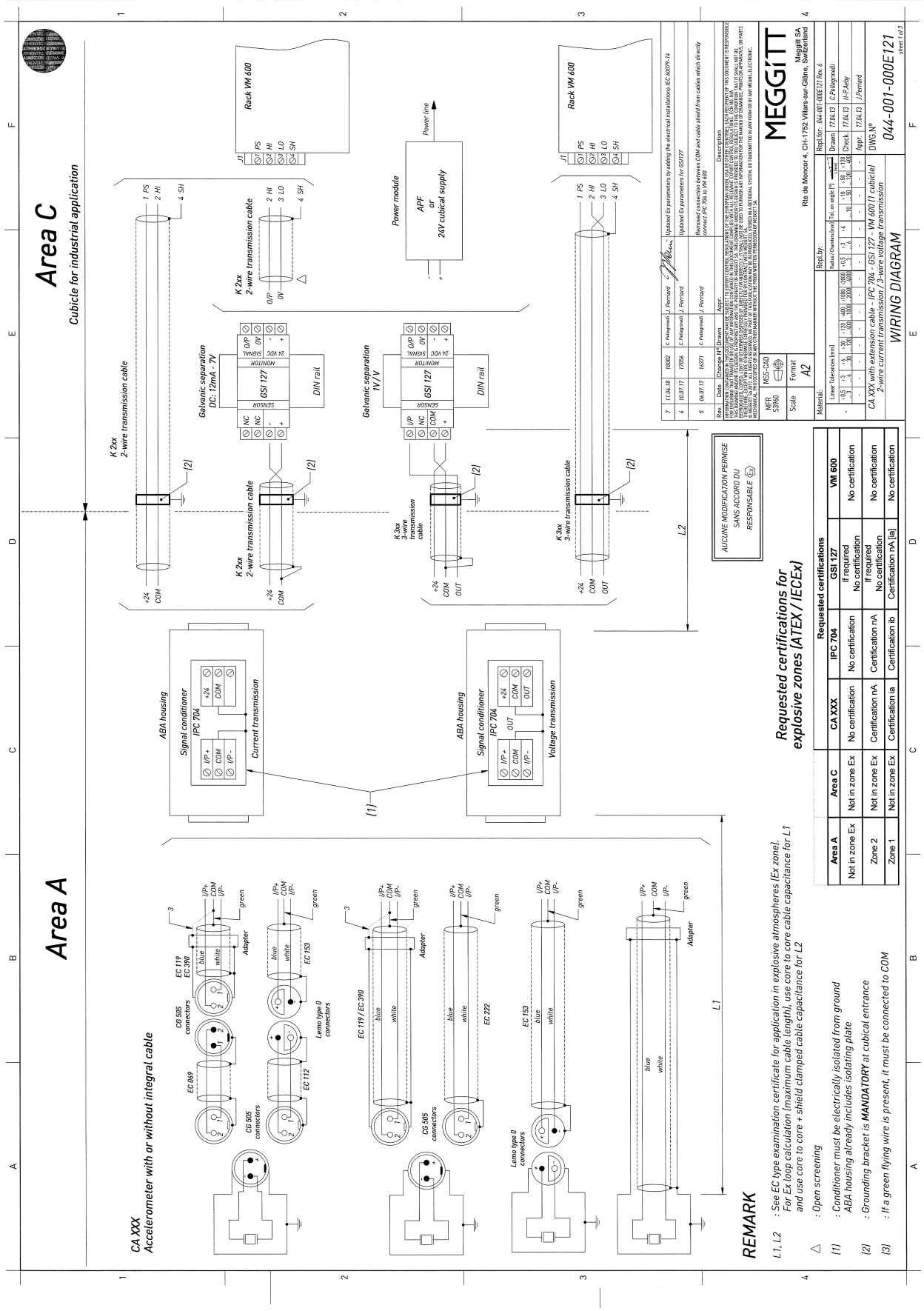
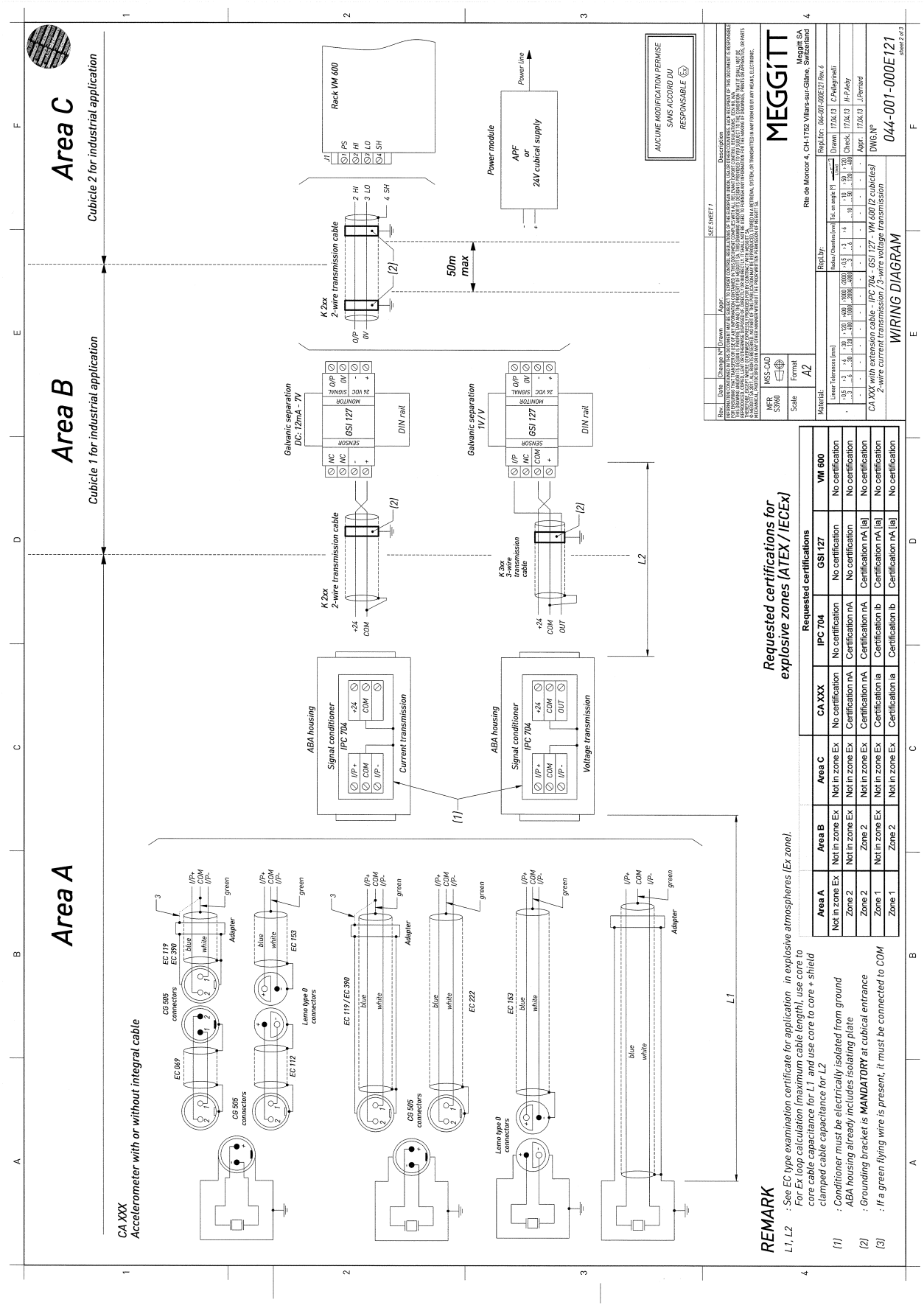



**Figure 7-4:** CAxxx-based vibration measurement chains suitable for use in non-explosive or potentially explosive atmospheres – using a single cubicle for industrial applications




| Area A | Area B | Area C | CA XXX | IPC 704 | GSI 127 | VM 600 |
|---|---|---|---|---|---|---|
| Not in zone Ex | Not in zone Ex | Not in zone Ex | No certification | No certification | No certification | No certification |
| Zone 2 | Not in zone Ex | Not in zone Ex | Certification nA | Certification nA | No certification | No certification |
| Zone 2 | Zone 2 | Not in zone Ex | Certification nA | Certification nA | Certification nA [ia] | No certification |
| Zone 1 | Not in zone Ex | Not in zone Ex | Certification ia | Certification ib | Certification nA [ia] | No certification |
| Zone 1 | Zone 2 | Not in zone Ex | Certification ia | Certification ib | Certification nA [ia] | No certification |

*REMARK*

*L1, L2 : See EC type examination certificate for application in explosive atmospheres (Ex zone). For Ex loop calculation (maximum cable length), use core to core cable capacitance for L1 and use core to core + shield clamped cable capacitance for L2*

*(1) : Conditioner must be electrically isolated from ground ABA housing already includes isolating plate*

*(2) : Grounding bracket is **MANDATORY** at cubical entrance*

*(3) : If a green flying wire is present, it must be connected to COM*

**Figure 7-5:** CAxxx-based vibration measurement chains suitable for use in non-explosive or potentially explosive atmospheres – using two cubicles for industrial applications

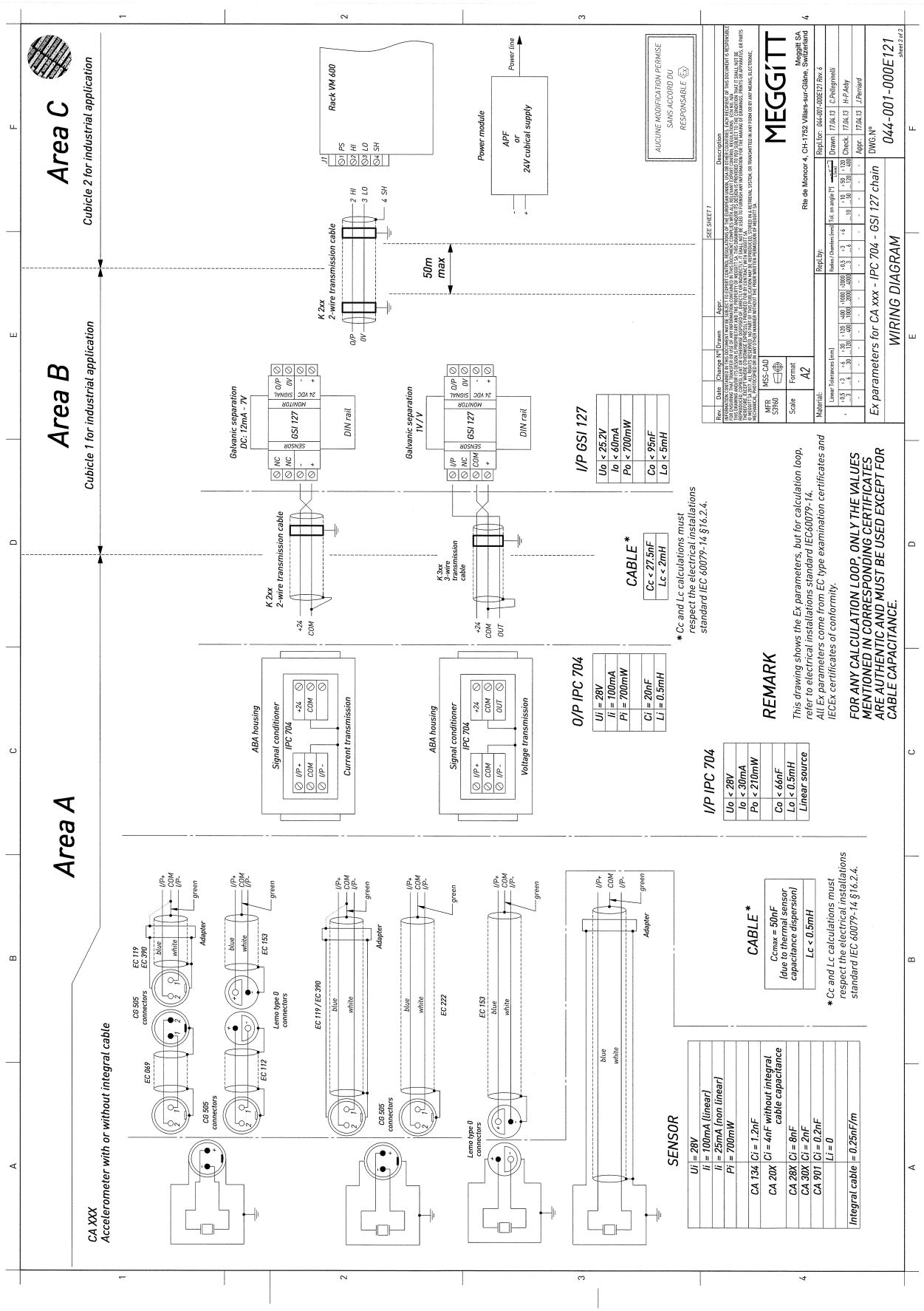



**Figure 7-6:** CAxxx-based vibration measurement chains suitable for use in non-explosive or potentially explosive atmospheres – summarising the Ex parameters for the measurement chain calculations

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# 8 MAINTENANCE

## 8.1 General

No specific maintenance is required for the CAxxx-based vibration measurement chains described in this manual, that is, for CAxxx piezoelectric accelerometers, cabling or associated equipment such as IPC70x signal conditioners and GSI12x galvanic separation units.

**NOTE:** Any attempt by unauthorised personnel to modify or repair equipment still under guarantee will invalidate the warranty.

See 10 Service and support for the contact details relevant to repairing defective hardware.

## 8.2 Requirements for equipment used in potentially explosive atmospheres

**WHERE MAINTENANCE IS REQUIRED, IT MUST BE PERFORMED ONLY BY EX QUALIFIED PERSONNEL WITH THE APPROPRIATE MATERIAL.**

**ANY MAINTENANCE WORK PERFORMED ON MEGGITT VIBRO-METER® EQUIPMENT THAT CAN BE USED IN POTENTIALLY EXPLOSIVE ATMOSPHERES MUST RESPECT THE CRITERIA DEFINED IN THE APPROPRIATE SECTIONS OF THE CORRESPONDING EX CERTIFICATES.**

**FOR FURTHER INFORMATION, SEE THE EX CERTIFICATES IN THE APPENDICES OF THIS MANUAL. (EX CERTIFICATES ARE ALSO AVAILABLE FROM OUR WEBSITE AT WWW.MEGGITTSENSING.COM/ENERGY)**

**DO NOT ATTEMPT TO MODIFY OR REPAIR EQUIPMENT FROM MEGGITT'S VIBRO-METER® PRODUCT LINE THAT IS USED IN POTENTIALLY EXPLOSIVE ATMOSPHERES.**

## 8.3 Cleaning

It is not required to clean the components of CAxxx-based vibration measurement chains.

However, if cleaning does become necessary:

- Clean with a damp cloth, then wipe with a dry cloth if required.
- Keep away from live electrical parts.
- Do not use any solvents or cleaning agents. Never pour or spray any cleaner or liquid on the components.

**IF CLEANING BECOMES NECESSARY, USE A DAMP CLOTH ONLY AND KEEP AWAY FROM POWERED ("LIVE") ELECTRICAL PARTS.**

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# 9 END-OF-LIFE PRODUCT DISPOSAL

Some of the components used in CAxxx-based vibration measurement chains such as IPC70x signal conditioners and GSI12x galvanic separation units are electrical/electronic products, therefore, they must be disposed of in a acceptable manner at the end of their useful life. This is important in order to reduce pollution and improve resource efficiency.

**NOTE:** For environmental and economic reasons, end-of-life electrical and electronic equipment must be collected and treated separately from other waste: it must not go into landfill (or tip, dump, rubbish dump, garbage dump or dumping ground).

In Europe (the European Union), end-of-life electrical/electronic products are classed as waste electrical and electronic equipment (WEEE), and are subject to the requirements of the European Union (EU) directive 2012/19/EU on waste electrical and electronic equipment (commonly referred to as the WEEE directive).

According to the WEEE regulations, all waste electrical and electronic equipment should be collected separately and then treated and disposed of in accordance with the best available and environmentally friendly techniques. This is because electronic waste (or e-waste) may contain substances harmful to the environment and/or to human health. In addition, electronic waste is also a valuable source of raw materials that can contribute to a circular economy.

The WEEE symbol (a “crossed-out wheeled bin”) is used on product labelling to indicate equipment that must be properly treated and disposed of at the end of its life (see Figure 9-1).

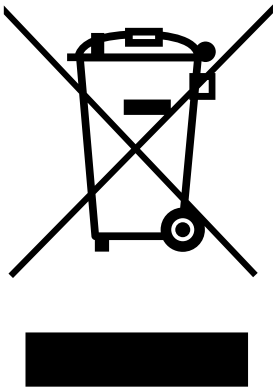

**Figure 9-1:** WEEE symbol

Although a number of non-EU countries have enacted WEEE regulations, different end-of-life product disposal laws and regulations apply in other countries and regions of the world. Accordingly, please consult your local authorities to obtain the information and guidance relevant to your country and region.

**NOTE:** At the end of their useful life, electrical/electronic products must be disposed of in an environmentally friendly manner.
In European Union Member States, the WEEE directive is applicable.
In other countries and regions of the world, different laws and regulations may be applicable, so please consult your local authorities.

For additional end-of-life product disposal information and guidance, contact your local Meggitt representative. Alternatively, contact our main office:

Environment, health and safety department
Meggitt SA
Route de Moncor 4
Case postale
1701 Fribourg
Switzerland

Telephone: +41 26 407 11 11
Email: ehs@ch.meggitt.com
Website: www.meggittsensing.com/energy

# 10 SERVICE AND SUPPORT

## 10.1 Contacting us

Meggitt's worldwide customer support network offers a range of support, including 10.2 Technical support and 10.3 Sales and repairs support. For customer support, contact your local Meggitt representative. Alternatively, contact our main office:

Customer support department
Meggitt SA
Route de Moncor 4
Case postale
1701 Fribourg
Switzerland

Telephone: +41 26 407 11 11
Email: energysupport@ch.meggitt.com
Website: www.meggittsensing.com/energy

## 10.2 Technical support

Meggitt's technical support team provide both pre-sales and post-sales technical support, including:

- General advice
- Technical advice
- Troubleshooting
- Site visits.

**NOTE:** For further information, contact your local Meggitt representative or Meggitt SA (see 10.1 Contacting us).

## 10.3 Sales and repairs support

Meggitt's sales team provide both pre-sales and post-sales support, including advice on:

- New products
- Spare parts
- Repairs.

**NOTE:** If a product has to be returned for repairs, then it should be accompanied by a completed Energy product return form, included on page 10-4.

## 10.4 Customer feedback

As part of our continuing commitment to improving customer service, we warmly welcome your opinions. To provide feedback, complete the Energy customer feedback form on page 10-8 and return it to Meggitt SA's main office (see 10.1 Contacting us).

# REPAIRS AND RETURNS

## Energy product return procedure

If a Meggitt vibro-meter® Energy product needs to be returned to Meggitt Switzerland, please use the online product return procedure on the Meggitt vibro-meter® Energy website at www.meggittsensing.com/energy/service-and-support/repair

As described on the website, the product return procedure is as follows:

**1-** Complete and submit online the **Energy product return form** that is available on the website (note: * indicates a required field).

For each Energy product to be returned, a separate Energy product return form must be completed and submitted online. It is possible to return multiple items of the same product type with the same form (same part number (PNR), multiple serial numbers (SNRs) – separated with a coma ","). When an Energy product return form is submitted online, the website displays a message confirming that the form has been successfully sent.

**2-** When the Energy product return form has been processed by Meggitt Switzerland, a return merchandise authorisation (RMA) document with a unique RMA # reference number and containing a pre-filled end-user certificate (EUC) will be emailed by return.

Received forms are typically processed and the RMA document sent within 2 working days.

**NOTE:** Please do not return any products to Meggitt Switzerland without a supporting return merchandise authorisation (RMA) document.
Please use the RMA # reference number in all future communications regarding a product return.

**3-** Review, complete and sign the RMA document and also review, complete and sign the EUC that the RMA contains (separate signatures are required for each).

For each Energy product to be returned, an associated single-use end-user certificate (EUC) is required, unless your company has an annual end-user certificate (EUC) in place. Either end-user certificate can be used to cover multiple products.
Multiple items of the same product type (same part number (PNR), multiple serial numbers (SNRs)) are allowed for a single RMA and EUC.

**4-** Optionally, to support your internal processes, you may want to issue one purchase order (PO) per product (may include multiple items / serial numbers) and send it to Meggitt Switzerland.

**5-** Send the Energy product(s) together with printed and signed copies of the return merchandise authorisation (RMA) document (or documents) and the end-user certificate (or certificates) to Meggitt Switzerland at:

**Meggitt SA, Energy repairs department, Route de Moncor 4, Case postale, 1701 Fribourg, Switzerland**.

**NOTE:** The **Energy product return form** reproduced below is included to support the gathering of information required for completion and submission online.

# Energy product return form

## Contact information

First name:*

Last name:*

Job title:

Company:*

Address:*

Country:*

Email:*

Telephone:*

Fax:

## Product information

Product type:*

Part number (PNR):*

Serial number (SER):

Note: Enter “Unknown” if the serial number (SER) is not known.

Ex product:

☐ Yes

☐ No

SIL product:*

☐ Yes

☐ No

Meggitt SA purchase order number:

Date of purchase (dd.mm.yyyy):

Product under warranty:

☐ Yes

☐ No

☐ Don’t know

Site where installed:

End user:

## Return information

Reason for return:*

☐ Repair

☐ Calibration / recertification

☐ Out-of-box problem

☐ Return

If the reason for return is “Repair”, please answer the following questions:*

Type of problem:

☐ Continuous

☐ Intermittent

☐ Temperature dependent

How long was the operating time before the problem?

Description of problem:

Please provide a detailed description in order to help with problem diagnosis.

If the reason for return is “Out-of-box problem”, please answer the following questions:*

Type of out-of-box problem:

☐ Product damaged

☐ Incorrect product configuration

☐ Incorrect product delivered

☐ Problem with documentation / labelling

☐ Product dead-on-arrival

Additional information:

Please provide as much information as possible in order to help with problem diagnosis.

## Ex product information – additional information required for Ex products only

Is the product installed in a hazardous area (potentially explosive atmosphere)?:

☐ Yes

☐ No

If the product is installed in a hazardous area, please answer the following questions:

How long was the operating time before the problem?:

Additional information:

## SIL product information – additional information required for SIL products only*

Note: For SIL products used in functional-safety contexts/systems, this **SIL product information** section must be completed.

When was it installed and first operated (dd.mm.yyyy)?:

When was a proof test last executed (dd.mm.yyyy)?:

Is the product installed in a safety-related system?:*

☐ Yes

☐ No

If the product is installed in a safety-related system, please answer the following questions:*

Did the system fail** in a safe mode?:* (That is, the safety relay operated but the trip was spurious.)

☐ Yes

☐ No

☐ Not applicable

Did the system fail** in a dangerous state?:* (That is, the failure did not result in the safe state.)

☐ Yes

☐ No

☐ Not applicable

How long was the operating time before the failure (in hours)?:*

Additional information:

** A faulty indicator LED is considered as a cosmetic failure.

# FEEDBACK

## Energy customer feedback form

### Manual information

Title of manual:

*Vibration measurement chains using CAxxx piezoelectric accelerometers installation manual*

| | | | |
|---|---|---|---|
| Reference: | MACA/E | Version: | Edition 17 |
| Date of issue: | January 2023 | | |

### Customer contact information

First name:*

Last name:*

Job title:

Company:*

Address:*

Country:*

Email:*

Telephone:*

Fax:

## Feedback – general

Please answer the following questions:

| | | |
|---|---|---|
| Is the document well organised? | ☐ Yes | ☐ No |
| Is the information technically accurate? | ☐ Yes | ☐ No |
| Is more technical detail required? | ☐ Yes | ☐ No |
| Are the instructions clear and complete? | ☐ Yes | ☐ No |
| Are the descriptions easy to understand? | ☐ Yes | ☐ No |
| Are the examples and diagrams/photos helpful? | ☐ Yes | ☐ No |
| Are there enough examples and diagrams/photos? | ☐ Yes | ☐ No |
| Is the style/wording easy to read? | ☐ Yes | ☐ No |
| Is any information not included? | ☐ Yes | ☐ No |

Please include any additional information in the “Feedback – additional” section below.

## Feedback – additional

Additional information:

Please provide as much feedback as possible in order to help us improve our product documentation.
Continue on a separate sheet if necessary …

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# APPENDIX A: TIGHTENING TORQUE VALUES FOR CABLE FITTINGS

Figure A-1 outlines the recommended tightening torque values for the proper assembly of cable fittings (stuffing glands) on ABA17x industrial housings.

In Figure A-1, the maximum tightening torque values in N·m are specified for different cable fitting components such as cable glands, reduction flanges, nuts and covers (plugs for unused cable entries) which may form part of the configuration of ABA17x industrial housings.

**NOTE:** In order to ensure correct mounting, the tightening of components should be stopped if the sealing insert forms a bead that projects above the lock nut, even if the torque specified in Figure A-1 has not yet been reached.

**Failure to respect the recommended tightening torques when mounting cable fittings (stuffing glands) can lead to permanent component damage.**

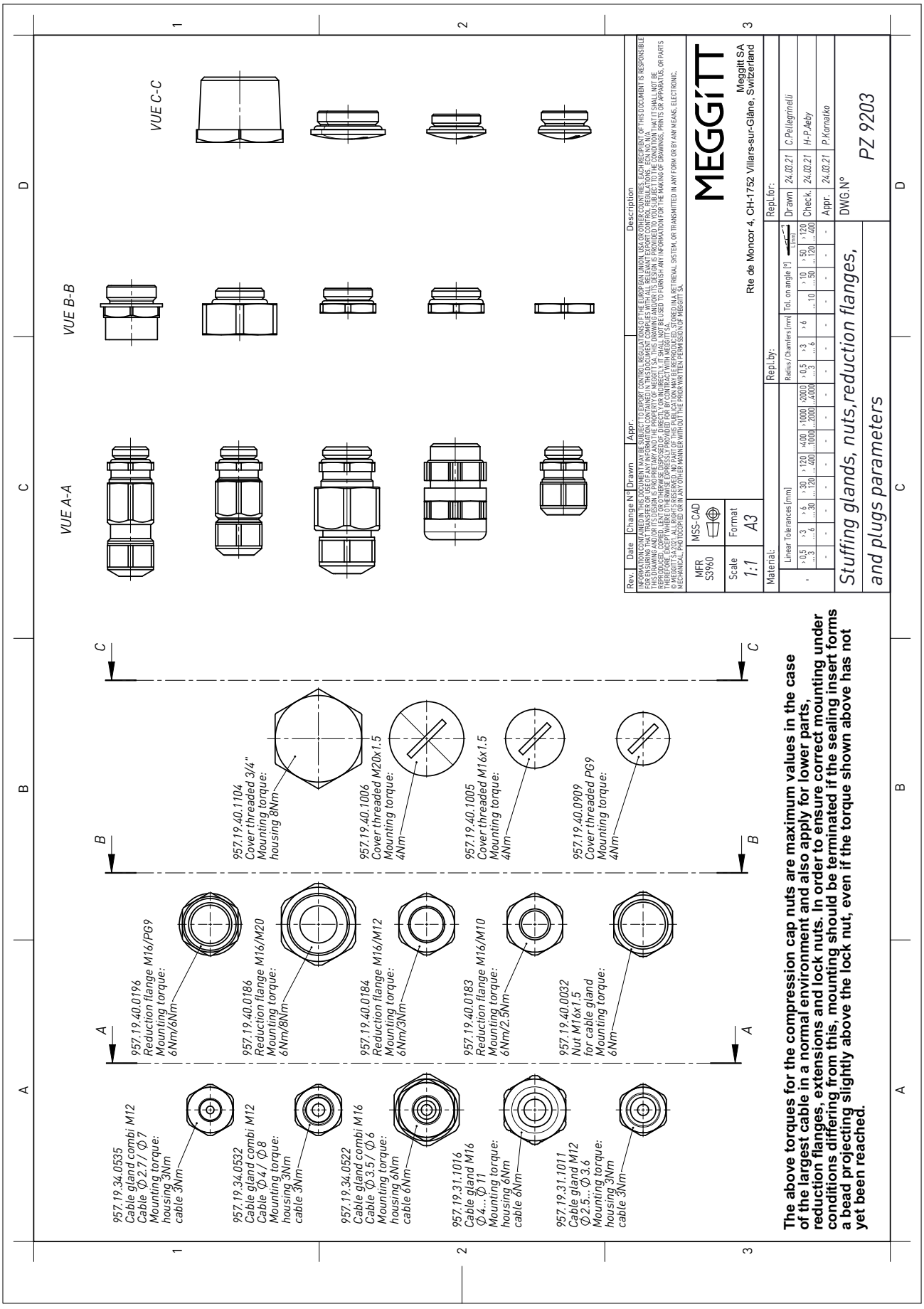


**Figure A-1:** Tightening torque values for cable fittings (ABA17x)

# APPENDIX B: ATEX CERTIFICATIONS

**Table B-1:** Related ATEX certificates

| Product(s) covered | Certificate number |
|---|---|
| ABA160, JB116 and JB118 | PTB 01 ATEX 1061 U |
| ABA161 | PTB 98 ATEX 3101 U |
| ABA17x | BVS 15 ATEX E 112 U |
| | Presafe 14 ATEX 5378 U |
| CA134 | LCIE 02 ATEX 6110 X |
| | LCIE 09 ATEX 1043 X |
| CA20x | LCIE 02 ATEX 6179 X |
| | LCIE 09 ATEX 1044 X |
| CA28x, CE28x and CE31x | KEMA 04 ATEX 1055 |
| | LCIE 09 ATEX 1047 X |
| CA30x | KEMA 04 ATEX 1294 |
| | LCIE 09 ATEX 1048 X |
| CA901 | LCIE 08 ATEX 6017 X |
| | LCIE 09 ATEX 1046 X |
| GSI127 | LCIE 13 ATEX 3037 X |
| IPC707 | LCIE 18 ATEX 1012 X |
| | LCIE 18 ATEX 3026 X |
| Cable fittings (stuffing glands) | ITS 16 ATEX 101335 X |
| | ITS 16 ATEX 101336 X |
| | LCIE 02 ATEX 0038 U |
| | LCIE 03 ATEX 0033 U |
| | PTB 11 ATEX 1007 X |
| | PTB 98 ATEX 3130 |
| | SEV 15 ATEX 0151 |
| | SEV 15 ATEX 0152 X |

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EX CERTIFICATE – ATEX

vibro-meter®

# PTB 01 ATEX 1061 U
# for
# ABA15x, ABA160, JB116, JB118 and PA151 enclosures

Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference PTB 01 ATEX 1061 U
Edition 6 – March 2022

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www.meggitt.com

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Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
Nationales Metrologieinstitut

# EU-Baumusterprüfbescheinigung

(1)

(2) Komponente zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen
**Richtlinie 2014/34/EU**

(3) EU-Baumusterprüfbescheinigungsnummer

**PTB 01 ATEX 1061 U** **Ausgabe: 1**

(4) Produkt: Leergehäuse Typ 26.******

(5) Hersteller: ROSE Systemtechnik GmbH

(6) Anschrift: Erbeweg 13 - 15, 32457 Porta Westfalica, Deutschland

(7) Die Bauart dieses Produkts sowie die verschiedenen zulässigen Ausführungen sind in der Anlage und den darin aufgeführten Unterlagen zu dieser Baumusterprüfbescheinigung festgelegt.

(8) Die Physikalisch-Technische Bundesanstalt, notifizierte Stelle Nr. 0102 gemäß Artikel 17 der Richtlinie 2014/34/EU des Europäischen Parlaments und des Rates vom 26. Februar 2014, bescheinigt, dass dieses Produkt die grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Produkten zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie erfüllt.

Die Ergebnisse der Prüfung sind in dem vertraulichen Prüfbericht PTB Ex 16-16032 festgehalten.

(9) Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit

**EN 60079-0:2012 + A11:2013, EN 60079-7:2015, EN 60079-31:2014**

(10) Das Zeichen "U" hinter der Zertifikatsnummer gibt an, dass dieses Zertifikat nicht mit einem für ein Gerät oder Schutzsystem vorgesehenen Zertifikat verwechselt werden darf. Diese Komponenten-Bescheinigung darf als Basis für die Bescheinigung eines Gerätes oder Schutzsystems verwendet werden.

(11) Diese EU-Baumusterprüfbescheinigung bezieht sich nur auf Konzeption und Prüfung des festgelegten Produkts gemäß Richtlinie 2014/34/EU. Weitere Anforderungen dieser Richtlinie gelten für die Herstellung und das Bereitstellen auf dem Markt. Diese Anforderungen werden nicht durch diese Bescheinigung abgedeckt.

(12) Die Kennzeichnung des Produkts muss die folgenden Angaben enthalten:

**II 2 G Ex eb IIC Gb**
**II 2 D Ex tb IIIC Db**

Konformitätsbewertungsstelle, Sektor Explosionsschutz Braunschweig, 7. September 2016
Im Auftrag

Dr.-Ing. D. Markus
Oberregierungsrat

ZSEx10110d c



EU-Baumusterprüfbescheinigungen ohne Unterschrift und ohne Siegel haben keine Gültigkeit.
Diese EU-Baumusterprüfbescheinigung darf nur unverändert weiterverbreitet werden.
Auszüge oder Änderungen bedürfen der Genehmigung der Physikalisch-Technischen Bundesanstalt.
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(13) # Anlage

(14) **EU-Baumusterprüfbescheinigung PTB 01 ATEX 1061 U, Ausgabe: 1**

(15) Beschreibung des Produkts

Leergehäuse Typ 26.****** aus Polyester, das mit Flanschen und einer Schauscheibe aus Glas oder Kunststoff ausgestattet sein kann. Es kann wahlweise mit einem Erdverbindungsbolzen in Verbindung mit / oder ohne einer Off-shore-Platte ausgestattet werden. Es können wahlweise geschraubte oder genietete Typenschilder aus Edelstahl angebracht werden.

Technische Daten

| Baugrößen und Produktreihen | | | |
|---|---|---|---|
| Baugrößen Typ 26.08 08 06 bis 26.41 40 20 (Ex-Standard-Gehäuse) | Breite | Höhe | Tiefe |
| kleinste | 80 mm | 75 mm | 56 mm |
| größte | 400 mm | 405 mm | 201 mm |
| | | | |
| Baugrößen Typ 26.88 01 00 bis 26.88 04 00 (Ex-Okta Box-Gehäuse) | Breite | Höhe | Tiefe |
| kleinste | 81 mm | 81 mm | 75 mm |
| größte | 200 mm | 200 mm | 125 mm |
| | | | |
| Baugrößen Typ 26.14 01 00 bis 26.14 03 00 (Ex-Polyester Flansch-Gehäuse) | Breite | Höhe | Tiefe |
| kleinste | 270 mm | 170 mm | 136 mm |
| größte | 541 mm | 270 mm | 136 mm |
| | | | |
| Baugrößen Typ 26.12 20 00 bis 26.40 60 00 (Mini-Polyglas-Ex-Gehäuse und Polyglas-Ex-Gehäuse) | Breite | Höhe | Tiefe |
| kleinste | 200 mm | 120 mm | 100 mm |
| größte | 405 mm | 605 mm | 252 mm |
| | | | |
| Baugrößen Typ 26.01 22 15 bis 26.01 44 15 (Ex-Combi Box-Gehäuse) | Breite | Höhe | Tiefe |
| kleinste | 177 mm | 177 mm | 145 mm |
| größte | 360 mm | 360 mm | 145 mm |



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**Anlage zur EU-Baumusterprüfbescheinigung PTB 01 ATEX 1061 U, Ausgabe: 1**

Umgebungstemperaturbereich
-55 °C bis +127 °C mit Silikondichtung
-40 °C bis +100 °C mit HF Dichtung
-40 °C bis +100 °C mit PU Schaum
-20 °C bis + 85 °C mit CR Dichtung
-20 °C bis +100 °C mit Glasscheibe
-50 °C bis +100 °C mit PC-Scheibe mono duro clear 8099 leitfähig
bis +105 °C Ex-PF-Gehäuse, Mini-Polyglas-Ex-Gehäuse and Polyglas-Ex-Gehäuse
(minimale Temperatur ist abhängig von der verwendeten Dichtung)

Schutzgrad: ..... IP 66 nach EN 60529

Gewindestift des Erdverbindungsbolzens: .... M6x60, M8x50, M10x60, M12x80

Typschlüssel

| | | | |
|---|---|---|---|
| 26. | ** | ** | ** |
| 1 | 2 | 3 | 4 |

1: Typ, Material Polyester
2: Höhe oder Produktreihe (siehe oben)
3: Breite oder Nummer, die von der Produktreihe abhängt
4: Tiefe oder Nummer, die von der Produktreihe abhängt

Änderungen

Neue Prüfung nach den Normen EN 60079-0:2012 + A11:2013, EN 60079-7:2015 und EN 60079-31:2014.

Dadurch ändert sich das Kennzeichen in :

**II 2 G Ex eb IIC Gb**

**II 2 D Ex tb IIIC Db**

(16) Prüfbericht PTB Ex 16-16032

(17) Einschränkungen für Herstellung, Einbau und Inbetriebnahme

Die Installation von elektrischen Bauteilen erfordert eine neue Bewertung durch eine benannte Prüfstelle.



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**Anlage zur EU-Baumusterprüfbescheinigung PTB 01 ATEX 1061 U, Ausgabe: 1**

(18) Grundlegende Sicherheits- und Gesundheitsanforderungen

Erfüllt durch Übereinstimmung mit den vorgenannten Normen.

Nach Artikel 41 der Richtlinie 2014/34/EU dürfen EG-Baumusterprüfbescheinigungen nach Richtlinie 94/9/EG, die bereits vor dem Datum der Anwendung von Richtlinie 2014/34/EU (20. April 2016) bestanden, so betrachtet werden, als wenn sie bereits in Übereinstimmung mit der Richtlinie 2014/34/EU ausgestellt wurden. Mit Genehmigung der Europäischen Kommission dürfen Ergänzungen zu solchen EG-Baumusterprüfbescheinigungen und neue Ausgaben solcher Zertifikate weiterhin die vor dem 20. April 2016 ausgestellte originale Zertifikatsnummer tragen.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
Im Auftrag

Braunschweig, 7. Septemer 2016

Dr.-Ing. D. Markus
Oberregierungsrat



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# (1) EU-TYPE-EXAMINATION CERTIFICATE
**(Translation)**

(2) Equipment or Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number:

**PTB 01 ATEX 1061 U** **Issue: 1**

(4) Product: Empty enclosure type 26.******

(5) Manufacturer: ROSE Systemtechnik GmbH

(6) Address: Erbeweg 13, 32457 Porta Westfalica, Germany

(7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential Test Report PTB Ex 16-16032.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 60079-0:2012 + A11:2013, EN 60079-7:2015, EN 60079-31:2014**

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:

**II 2 G Ex eb IIC Gb**
**II 2 D Ex tb IIIC Db**

Konformitätsbewertungsstelle, Sektor Explosionsschutz Braunschweig, September 7 , 2016
On behalf of PTB:

Dr.-Ing. D. Markus
Oberregierungsrat

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EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
In case of dispute, the German text shall prevail.

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# (13) SCHEDULE

(14) **EU-Type Examination Certificate Number PTB 01 ATEX 1061 U, Issue:1**

(15) Description of Product

Empty enclosure of type 26.******, made of polyester, which may be provided with flanges and a glass or plastic inspection window.

It can optionally be fitted with an earth bolt compl. with / or without off-shore plate and screwed or riveted type plates made of stainless steel.

Technical data

| Sizes and Product lines | | | | |
|---|---|---|---|---|
| Type 26.08 08 06 to 26.41 40 20 (Ex-standard-enclosure) | | Width | Height | Depth |
| | min. | 80 mm | 75 mm | 56 mm |
| | max. | 400 mm | 405 mm | 201 mm |
| Type 26.88 01 00 to 26.88 04 00 (Ex-Okta Box-enclosure) | | Width | Height | Depth |
| | min. | 81 mm | 81 mm | 75 mm |
| | max. | 200 mm | 200 mm | 125 mm |
| Type 26.14 01 00 to 26.14 03 00 (Ex-PF-enclosure) | | Width | Height | Depth |
| | min. | 270 mm | 170 mm | 136 mm |
| | max. | 541 mm | 270 mm | 136 mm |
| Type 26.12 20 00 to 26.40 60 00 (Mini-Polyglas-Ex-enclosure and Polyglas-Ex-enclosure) | | Width | Height | Depth |
| | min. | 200 mm | 120 mm | 100 mm |
| | max. | 405 mm | 605 mm | 252 mm |
| Type 26.01 22 15 to 26.01 44 15 (Ex-Combi Box-enclosure) | | Width | Height | Depth |
| | min. | 177 mm | 177 mm | 145 mm |
| | max. | 360 mm | 360 mm | 145 mm |



EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
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## SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 01 ATEX 1061 U Issue: 1

Ambient temperature

-55 °C to +127 °C with Silicon gasket
-40 °C to +100 °C with HF gasket
-40 °C to +100 °C with PU foam
-20 °C to + 85 °C with CR gasket
-20 °C to +100 °C with window out of glas
-50 °C to +100 °C with PC-window mono duro clear 8099,conductive
to +105 °C Ex-PF-enclosure, Mini-Polyglas-Ex-enclosure and Polyglas-Ex-enclosure
(minimum temperature depends on the gasket used)

Ingress protection IP 66 acc. to IEC 60529

Thread stud of the earth bolt compl. .. M6x60, M8x50, M10x60, M12x80

Nomenclature

| | | | |
|---|---|---|---|
| 26. | ** | ** | ** |
| 1 | 2 | 3 | 4 |

1: Type, material polyester
2: Height or product line (see above)
3: Width or number depending on product line
4: Depth or number depending on product line

Modifications

New testing according to standard EN 60079-0:2012 + A11:2013, EN 60079-7:2015 and EN 60079-31:2014.

Therefore the marking changes to:

**II 2 G Ex eb IIC Gb**

**II 2 D Ex tb IIIC Db**

(16) Test Report PTB Ex 16-16032

(17) Specific conditions of use

Installation of electrical components requires a further assessment by an ExCB.

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.



EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 01 ATEX 1061 U Issue: 1

According to Article 41 of Directive 2014/34/EU, EC-type examination certificates which have been issued according to Directive 94/9/EC prior to the date of coming into force of Directive 2014/34/EU (April 20, 2016) may be considered as if they were issued already in compliance with Directive 2014/34/EU. By permission of the European Commission supplements to such EC-type examination certificates and new issues of such certificates may continue to hold the original certificate number issued before April 20, 2016.

Konformitätsbewertungsstelle, Sektor Explosionsschutz Braunschweig, September 7, 2016
On behalf of PTB:

Dr.-Ing. D. Markus
Oberregierungsrat

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT 80



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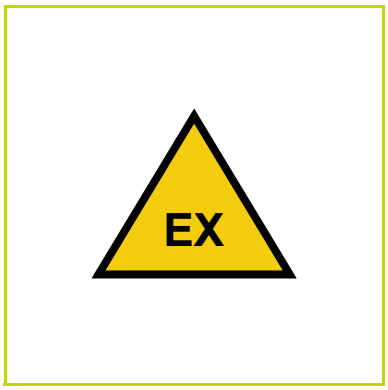
EX CERTIFICATE – ATEX

vibro-meter®

# PTB 98 ATEX 3101 U
# for
# ABA161 and PA150 enclosures




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference PTB 98 ATEX 3101 U
Edition 5 – April 2022

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# EU-Baumusterprüfbescheinigung

(1)

(2) Komponente zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen
**Richtlinie 2014/34/EU**

(3) EU-Baumusterprüfbescheinigungsnummer

**PTB 98 ATEX 3101 U** **Ausgabe: 1**

(4) Produkt: Leergehäuse Typ 25.******

(5) Hersteller: ROSE Systemtechnik GmbH

(6) Anschrift: Erbeweg 13 - 15, 32457 Porta Westfalica, Deutschland

(7) Die Bauart dieses Produkts sowie die verschiedenen zulässigen Ausführungen sind in der Anlage und den darin aufgeführten Unterlagen zu dieser Baumusterprüfbescheinigung festgelegt.

(8) Die Physikalisch-Technische Bundesanstalt, notifizierte Stelle Nr. 0102 gemäß Artikel 17 der Richtlinie 2014/34/EU des Europäischen Parlaments und des Rates vom 26. Februar 2014, bescheinigt, dass dieses Produkt die grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Produkten zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie erfüllt.

Die Ergebnisse der Prüfung sind in dem vertraulichen Prüfbericht PTB Ex 16-16037 festgehalten.

(9) Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit

**EN 60079-0:2012 + A11:2013, EN 60079-7:2015, EN 60079-31:2014**

(10) Das Zeichen "U" hinter der Zertifikatsnummer gibt an, dass dieses Zertifikat nicht mit einem für ein Gerät oder Schutzsystem vorgesehenen Zertifikat verwechselt werden darf. Diese Komponenten-Bescheinigung darf als Basis für die Bescheinigung eines Gerätes oder Schutzsystems verwendet werden.

(11) Diese EU-Baumusterprüfbescheinigung bezieht sich nur auf Konzeption und Prüfung des festgelegten Produkts gemäß Richtlinie 2014/34/EU. Weitere Anforderungen dieser Richtlinie gelten für die Herstellung und das Bereitstellen auf dem Markt. Diese Anforderungen werden nicht durch diese Bescheinigung abgedeckt.

(12) Die Kennzeichnung des Produkts muss die folgenden Angaben enthalten:

**II 2 G Ex eb IIC Gb**
**II 2 D Ex tb IIIC Db**

Konformitätsbewertungsstelle, Sektor Explosionsschutz Braunschweig, 8. September 2016
Im Auftrag

Dr.-Ing. D. Markus
Oberregierungsrat

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(13) # Anlage

(14) **EU-Baumusterprüfbescheinigung PTB 98 ATEX 3101 U, Ausgabe: 1**

(15) Beschreibung des Produkts

Leergehäuse Typ 25.****** aus Aluminium, das mit Flanschen und einer Schauscheibe aus Glas oder Kunststoff ausgestattet sein kann.

Technische Daten

| Baugrößen. | Länge | Breite | Tiefe |
|---|---|---|---|
| kleinste | 58 mm | 64 mm | 34 mm |
| größte | 600 mm | 600 mm | 227 mm |

Schutzgrad: IP66 nach EN 60529

Umgebungstemperaturbereich:
-55 °C bis +135 °C mit Silikondichtung
-40 °C bis +100 °C mit HF Dichtung
-40 °C bis +100 °C mit PU-Schaum
-20 °C bis +85 °C mit CR Dichtung
-20 °C bix +100 °C mit Glasscheibe
-50 °C bis +100 °C mit PC-Scheibe mono duro clear 8099 leitfähig.

Typschlüssel

| 25. | ** | ** | ** |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

1: Material Aluminium
2: Höhe
3: Breite
4:Tiefe

Änderungen

Neue Prüfung nach den Normen EN 60079-0:2012 + A11:2013, EN 60079-7:2015 und EN 60079-31:2014.

Dadurch ändert sich das Kennzeichen in:

**II 2 G Ex eb IIC Gb**

**II 2 D Ex tb IIIC Db**



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**Anlage zur EU-Baumusterprüfbescheinigung PTB 98 ATEX 3101 U, Ausgabe: 1**

(16) Prüfbericht PTB Ex 16-16037

(17) Einschränkungen für Herstellung, Einbau und Inbetriebnahme

Gehäuse mit einer Lackierung dürfen nicht in Bereichen eingesetzt werden, in denen stark ladungserzeugende Prozesse, maschinelle Reib- und Trennprozesse und das Sprühen von Elektronen (z.B. im Umfeld von elektrostatischen Lackiereinrichtungen) stattfinden oder pneumatisch geförderter Staub austritt.

Die Installation von elektrischen Bauteilen erfordert eine neue Bewertung durch eine benannte Prüfstelle.

(18) Grundlegende Sicherheits- und Gesundheitsanforderungen

Erfüllt durch Übereinstimmung mit den vorgenannten Normen.

Nach Artikel 41 der Richtlinie 2014/34/EU dürfen EG-Baumusterprüfbescheinigungen nach Richtlinie 94/9/EG, die bereits vor dem Datum der Anwendung von Richtlinie 2014/34/EU (20. April 2016) bestanden, so betrachtet werden, als wenn sie bereits in Übereinstimmung mit der Richtlinie 2014/34/EU ausgestellt wurden. Mit Genehmigung der Europäischen Kommission dürfen Ergänzungen zu solchen EG-Baumusterprüfbescheinigungen und neue Ausgaben solcher Zertifikate weiterhin die vor dem 20. April 2016 ausgestellte originale Zertifikatsnummer tragen.

Konformitätsbewertungsstelle, Sektor Explosionsschutz — Braunschweig, 8. September 2016
Im Auftrag

Dr.-Ing. D. Markus
Oberregierungsrat



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# EU-TYPE EXAMINATION CERTIFICATE

**(Translation)**

(1)

(2) Component Intended for Use in Potentially Explosive Atmospheres
**Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number:

**PTB 98 ATEX 3101 U** **Issue: 1**

(4) Product: Empty Enclosure type 25.******

(5) Manufacturer: ROSE Systemtechnik GmbH

(6) Address: Erbeweg 13 - 15, 32457 Porta Westfalica, Germany

(7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential test report PTB Ex 16-16037.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
**EN 60079-0:2012 + A11:2013, EN 60079-7:2015, EN 60079-31:2014**

(10) The sign "U" placed behind the certificate number indicates that this certificate should not be confounded with certificates issued for equipment or protective systems. This partial certification may be used as a basis for certification of an equipment or protective systems.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:

**II 2 G Ex eb IIC Gb**
**II 2 D Ex tb IIIC Db**

Konformitätsbewertungsstelle, Sektor Explosionsschutz — Braunschweig, September 8, 2016
On behalf of PTB:

Dr.-Ing. D. Markus
Oberregierungsrat



EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
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(13) **SCHEDULE**

(14) **EU-Type Examination Certificate Number PTB 98 ATEX 3101 U, Issue: 1**

(15) Description of Product

Empty enclosure type 25.******, made of aluminium, whlch may be provided with flanges and a glass or plastic inspection window.

Technical data

| sizes | length | width | depth |
|---|---|---|---|
| min | 58 mm | 64 mm | 34 mm |
| max | 600 mm | 600 mm | 227 mm |

Degree of protection: IP 66 acc. to IEC 60529

Ambient temperature

-55 °C to +135 °C with Silicon gasket
-40 °C to +100 °C with HF gasket
-40 °C to +100 °C with PU-foam
-20 °C to + 85 °C with CR gasket
-20 °C to +100 °C with window out of glas
-50 °C to +100 °C with PC-window mono duro clear 8099, conductive

Nomenclature

| 25. | ** | ** | ** |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

1: Material aluminium
2: Height
3: Width
4: Depth

Details of change
New test according to EN 60079-0:2012+A11:2013, EN 60079-7:2015, EN 60079-31:2014 and changing of the marking.

**II 2 G Ex eb IIC Gb**
**II 2 D Ex tb IIIC Db**



EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
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**SCHEDULE TO EU-TYPE-EXAMINATION CERTIFICATE PTB 98 ATEX 3101 U Issue:1**

(16) Test report PTB Ex 16-16037

(17) Notes for manufacture, installation and operation
The empty enclosure with a coating must not be used in areas affected by charge-producing processes, mechanical friction and separation processes, electron emission (e.g. in the vicinity of electrostatic coating equipment), and pneumatically conveyed dust.

Installation of electrical components requires a further assessment by an ExCB.

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

According to Article 41 of Directive 2014/34/EU, EC-type examination certificates which have been issued according to Directive 94/9/EC prior to the date of coming into force of Directive 2014/34/EU (April 20, 2016) may be considered as if they were issued already in compliance with Directive 2014/34/EU. By permission of the European Commission supplements to such EC-type examination certificates and new issues of such certificates may continue to hold the original certificate number issued before April 20, 2016.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Dr.-Ing. D. Markus
Oberregierungsrat

Braunschweig, September 8, 2016



EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
In case of dispute, the German text shall prevail.
Physikalisch-Technische Bundesanstalt • Bundesallee 100 • 38116 Braunschweig • GERMANY



MEGGITT
Original copy (English)

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# ATEX certificate:

# BVS 15 ATEX E 112 U

# for

# ABA17x

Although the certificate is available in two languages (English and German), the liability of the notified body applies only on the text of the original copy of the certificate that it published.

EN

Obwohl das Zertifikat in zwei Sprachen (Englisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

DE

EX

Meggitt SA
Route de Moncor 4
PO Box 1616
1701 Fribourg
Switzerland



energy@ch.meggitt.com
www.meggittsensing.com/energy

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# EU-Baumusterprüfbescheinigung

2 **Komponenten, die zum Einbau in Geräte und Schutzsysteme vorgesehen sind Richtlinie 2014/34/EU**

3 Nr. der EU-Baumusterprüfbescheinigung: **BVS 15 ATEX E 112 U**

4 Produkt: **Leergehäuse Typ eCAM ** ** **

5 Hersteller: **thuba AG**

6 Anschrift: **Blauensteinerstrasse 16, 4015 Basel, Schweiz**

7 Die Bauart dieses Produktes sowie die verschiedenen zulässigen Ausführungen sind in der Anlage zu dieser Baumusterprüfbescheinigung festgelegt.

8 Die Zertifizierungsstelle der DEKRA EXAM GmbH, benannte Stelle Nr. 0158 gemäß Artikel 17 der Richtlinie 2014/34/EU des Europäischen Parlaments und des Rates vom 26. Februar 2014, bescheinigt, dass das Produkt die wesentlichen Gesundheits- und Sicherheitsanforderungen für die Konzeption und den Bau von Produkten zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie erfüllt.
Die Ergebnisse der Prüfung sind in dem vertraulichen Prüfprotokoll BVS PP 16.2059 EU niedergelegt.

9 Die wesentlichen Gesundheits- und Sicherheitsanforderungen werden erfüllt durch Übereinstimmung mit den Normen:

| | |
|---|---|
| **EN 60079-0:2012 + A11:2013** | **Allgemeine Anforderungen** |
| **EN 60079-7:2015** | **Erhöhte Sicherheit "e"** |
| **EN 60079-31:2014** | **Schutz durch Gehäuse "t"** |

10 Das Zeichen "U" hinter der Bescheinigungsnummer gibt an, dass dieses Zertifikat nicht mit einem für ein Gerät oder Schutzsystem vorgesehenen Zertifikat verwechselt werden darf. Dieses Zertifikat darf nur als Basis für die Bescheinigung eines Gerätes oder Schutzsystems verwendet werden.

11 Diese EU-Baumusterprüfbescheinigung bezieht sich nur auf den Entwurf und Bau der beschriebenen Produkte.
Für den Herstellungsprozess und die Abgabe der Produkte sind weitere Anforderungen der Richtlinie zu erfüllen, die nicht durch diese Bescheinigung abgedeckt sind.

12 Die Kennzeichnung des Produktes muss die folgenden Angaben enthalten:

**II 2G Ex eb IIC Gb**
**II 2D Ex tb IIIC Db**

DEKRA EXAM GmbH
Bochum, den 22.04.2016

Zertifizierer

Fachzertifizierer



DEKRA EXAM GmbH, Dinnendahlstraße 9, 44809 Bochum, Deutschland
Telefon +49.234.3696-105, Telefax +49.234.3696-110, zs-exam@dekra.com

13 **Anlage zur**

14 **EU-Baumusterprüfbescheinigung**

**BVS 15 ATEX E 112 U**

15 **Beschreibung des Produktes**

15.1 **Gegenstand und Typ**

Leergehäuse Typ eCAM **[1] **[2] **[3]

| Stahl oder Edelstahl Typ | Baugrösse Breite[1] [mm] | Höhe[2] [mm] | Tiefe[3] [mm] |
|---|---|---|---|
| Gehäuse mit verschraubtem Deckel (Abmaße Bereich) | | | |
| eCAM 12 12 08 | 120 | 120 | 80 |
| bis | | | |
| eCAM 40 40 20 | 400 | 400 | 200 |
| Gehäuse mit Scharnier und Riegel (Abmaße Bereich) | | | |
| eCAM 20 20 10 | 200 | 200 | 100 |
| bis | | | |
| eCAM 100 120 50 | 1000 | 1200 | 500 |

15.2 **Beschreibung**

Das Leergehäuse Typ eCAM ** ** ** ist in der Zündschutzart Erhöhte Sicherheit „e" für den Bereich mit EPL Gb oder Schutz durch Gehäuse „t" für den Bereich mit EPL Db ausgeführt.

Das Leergehäuse ist für die Aufnahme von Energieverteilungs-, Schalt- und Steuerungskomponenten vorgesehen. Das Gehäuse besteht aus Stahl oder Edelstahl und kann mit einem verschraubten Deckel oder einem Deckel mit Verschlussscharnier ausgeführt werden.

15.3 **Kenngrößen**

Grenzen der Betriebstemperatur -55°C bis +100 °C

IP-Schutzgrad IP65

16 **Prüfprotokoll**

BVS PP 16.2059 EU, Stand 22.04.2016

17 **Verwendungshinweise**

Keine

18 **Wesentliche Gesundheits- und Sicherheitsanforderungen**

Die wesentlichen Gesundheits- und Sicherheitsanforderungen sind durch die unter Abschnitt 9 gelisteten Normen abgedeckt.

19 **Zeichnungen und Unterlagen**

Die Zeichnungen und Unterlagen sind in dem vertraulichen Prüfprotokoll gelistet.



DEKRA EXAM GmbH, Dinnendahlstraße 9, 44809 Bochum, Deutschland
Telefon +49.234.3696-105, Telefax +49.234.3696-110, zs-exam@dekra.com

Translation

# EU-Type Examination Certificate

1 **Component intended for use on/in an Equipment or Protective System intended for use in potentially explosive atmospheres Directive 2014/34/EU**

2 EU-Type Examination Certificate Number: **BVS 15 ATEX E 112 U**

3 Product: **Empty enclosure type eCAM **** ****

4 Manufacturer: **thuba Ltd.**

5 Address: **Blauensteinerstrasse 16, 4015 Basel, Switzerland**

6 This product and any acceptable variation thereto are specified in the appendix to this certificate and the documents therein referred to.

7 DEKRA EXAM GmbH, Notified Body number 0158, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the Confidential Report No. BVS PP 16.2059 EU.

8 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 60079-0:2012 + A11:2013 General requirements**
**EN 60079-7:2015 Increased Safety "e"**
**EN 60079-31:2014 Protection by Enclosure "t"**

9 The sign "U" is placed after the certificate number. It indicates that this certificate must not be mistaken for a certificate intended for an equipment or protective system. This partial certification may be used as a basis for certification of an equipment or protective system respectively product.

10 This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

11 The marking of the product shall include the following:

**II 2G Ex eb IIC Gb**
**II 2D Ex tb IIIC Db**

DEKRA EXAM GmbH
Bochum, 2016-04-22

Signed: Simanski
Certifier

Signed: Dr. Wittler
Approver

Page 1 of 3 of BVS 15 ATEX E 112 U
This certificate may only be reproduced in its entirety and without any change.

DEKRA EXAM GmbH, Dinnendahlstrasse 9, 44809 Bochum, Germany,
telephone +49 234 3696-105, Fax +49 234 3696-110, zs-exam@dekra.com

13 **Appendix**

14 **EU-Type Examination Certificate**

**BVS 15 ATEX E 112 U**

15 **Product description**

15.1 **Subject and type**

Empty enclosure type eCAM **[1] **[2] **[3]

| Steel or stainless steel | size | | |
|---|---|---|---|
| Type | width[1] [mm] | height[2] [mm] | depth[3] [mm] |
| **Enclosure with screwed fixing covers (size range)** | | | |
| eCAM 12 12 08 | 120 | 120 | 80 |
| up to | | | |
| eCAM 40 40 20 | 400 | 400 | 200 |
| **Enclosure with hinges and latches (size range)** | | | |
| eCAM 20 20 10 | 200 | 200 | 100 |
| up to | | | |
| eCAM 100 120 50 | 1000 | 1200 | 500 |

15.2 **Description**

The empty enclosure type eCam. ** ** ** is built in type of protection increased Safety "e" for use in areas with EPL Gb or I Protection by Enclosure "t" for use in areas with EPL Db.
The empty enclosure is used for the mounting of different switch and control apparatus. The enclosure consists of steel or stainless steel and can be constructed with a screwed fixing cover or a cover with hinges and latches.

15.3 **Parameters**

Limits of service temperature -55 °C up to +100 °C

IP protection degree IP66

16 **Report Number**

BVS PP 16.2059 EU, as of 2016-04-22

17 **Schedule of Limitations**

None

18 **Essential Health and Safety Requirements**

The Essential Health and Safety Requirements covered by the standards listed under item 9.

19 **Drawings and Documents**

Drawings and documents are listed in the confidential report.

Page 2 of 3 of BVS 15 ATEX E 112 U
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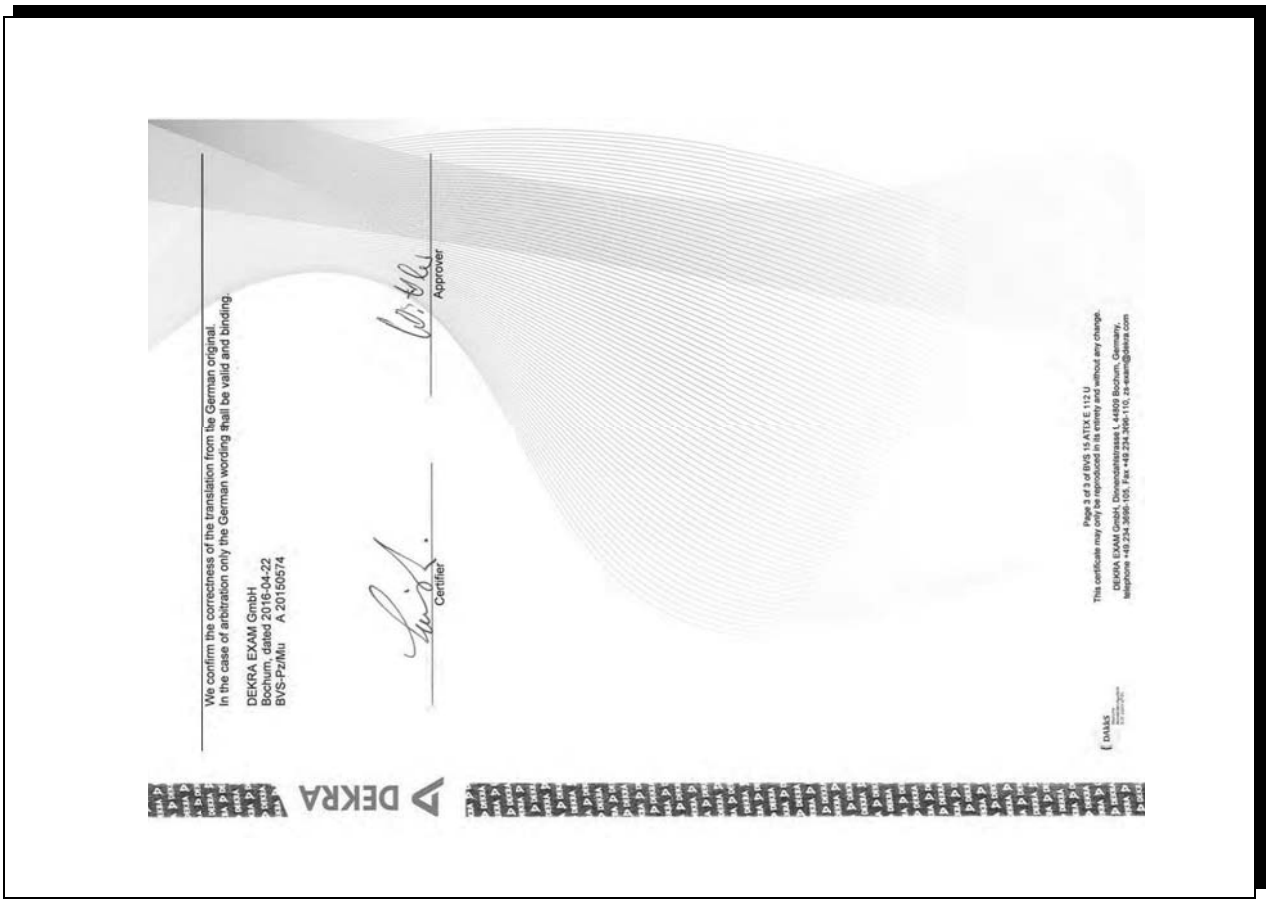
telephone +49 234 3696-105, Fax +49 234 3696-110, zs-exam@dekra.com


We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.
DEKRA EXAM GmbH
Bochum, dated 2016-04-22
BVS-Pz/Mu A 20150574
Certifier
Approver
DEKRA
Page 3 of 3 of BVS 15 ATEX E 112 U
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DEKRA EXAM GmbH, Dinnendahlstrasse 9, 44809 Bochum, Germany,
telephone +49 234 3696-105, fax +49 234 3696-110, zs-exam@dekra.com

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# ATEX certificate:

EN

## Presafe 14 ATEX 5378 U

## for

## ABA 17x

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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Presafe

# EC-Type Examination Certificate

**[2]** EQUIPMENT OR PROTECTIVE SYSTEM INTENDED FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES DIRECTIVE 94/9/EC

**[3]** **EC-Type Examination Certificate Number:** **Presafe 14 ATEX 5378U** **Issue 1**

**[4]** **Equipment or Protective System:** **Empty box**

**[5]** **Applicant – Manufacturer or Authorized representative:** **Ensto Finland Oy**

**[6]** **Address:** **Ensio Miettisen katu 2**
**P.O.Box 77, 06101 Porvoo**

**[7]** **This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.**

**[8]** **DNV Nemko Presafe AS, notified body number 2460 in accordance with Article 9 of Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.**
**The examination and test results are recorded in confidential reports listed in section 14.**

**[9]** **Compliance with the Essential Health and Safety Requirements has been assured by compliance with: EN 60079-0: 2012, EN 60079-7:2007 & EN 60079-31:2014**

**[10]** **If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.**

**[11]** **This EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protected system. If applicable, further requirements of this Directive apply to the manufacturer and supply of this equipment or protective system.**

**[12]** **The marking of the equipment or protective system shall include the following:**

**II 2 G** **Ex e IIC Gb**
**II 2 D** **Ex tb IIIC Db IP 64 / 66 / 67**

Bjørn Spongsveen
For DNV Nemko Presafe AS
Information on electronic signature www.presafe.com

PROD 021

Date of issue: 2014-12-10

This Certificate replaces previously certificate DNV 11 ATEX 98909U issued by DNV





Presafe

# EC-Type Examination Certificate

**[13]** **Schedule**

**[14]** **EC-TYPE EXAMINATION CERTIFICATE No.:** **Presafe 14 ATEX 5378U** Issue 1

**Certificate History**

| Issue | Description | Report no. | Issue date |
|---|---|---|---|
| 0 | Original issue | D0001550 | 2014-12-05 |
| 1 | Corrected Type errors in the certificate | D0001550 | 2014-12-05 |

**[15]** **Description of Equipment or Protective System**

CuboX empty boxes made of stainless steel or painted steel in various sizes. Enclosures can be fitted with optional plastic window or gland plates, mounting accessories like DIN-rails, mounting plates,brackets & Metric or NPT thread coupler. Lid can be fixed by screws or combination of screws and loose hinges or quick locks. Several internal and external earthing options are provided. Sealing is ensured by high temperature silicone gasket (EPDM gasket can be used for gland plate or Combo assemblies). For information regarding tightening torques, refer to instructions for use. See attachment for more product details and rating.

Refer Product Nomenclature for the possible variants/provisions. This replaces DNV 11 ATEX 98909U

**Type Identification**

Operating temperature limits for plain stainless steel enclosure (with or without gland plate): -55°C to +160°C

Operating temperature limits for stainless steel enclosure with Lexan plastic window, earthing option 3:

-55°C to +100°C

Operating temperature limits for painted steel enclosure (with or without plastic window and gland plate):

-55°C to +85°C

Operating temperature EPDM gasket/and or quick locks in enclosure: -55°C to +85°C

Operating temperature plastic switch handle in enclosure: -30°C to +45°C

**Degrees of protection (IP Code):**

| Enclosure material | Optional accessories | IP rating |
|---|---|---|
| Stainless steel and painted steel enclosure | Plastic window | IP66/67 |
| Stainless steel and painted steel enclosure | Standard gland plate with silicon gasket | IP66 |
| Stainless steel or painted steel enclosure | AISI quick locks | IP66/67 |
| Stainless steel or painted steel enclosure | Zink quick locks | IP66 |
| Stainless steel or painted steel enclosure | Gland plate & Combo box with EPDM gasket | IP66/67 |
| Stainless steel or painted steel enclosure | Plastic switch handle | IP64 |



**DNV Nemko Presafe AS,** Gaustadalléen 30, 0373 Oslo, Norway

Presafe

# EC-Type Examination Certificate

**Product Nomenclature:**

| [X] | [Version] | [Material] | [Surface] | [Cut type] | [width] [height] [depth] | KOT8... | |
|---|---|---|---|---|---|---|---|
| | | | | | | | Customer specific feaatures |
| | | | | | | | (Total No. Holes/Mounting Lugs) |
| | | | | | | | Max width: 1000 mm |
| | | | | | | | Max height: 2000 mm |
| | | | | | | | No restriction on depth |
| | | | | | | | [F]: Standard flange plate |
| | | | | | | | [FC]: Custom sized flange plate(s) |
| | | | | | | | [P]: Plain walls or cut-outs |
| | | | | | | | [N]: Natural surface |
| | | | | | | | [B]: Brushed surface |
| | | | | | | | [E]: Powder coated |
| | | | | | | | [S]: Stainless steel AISI304 |
| | | | | | | | [A]:Stainless steel AISI316L |
| | | | | | | | [F]: Mild steel mild steel galvanized |
| | | | | | | | [1]: Lid with screws |
| | | | | | | | [2]: Lid with screws and hinges |
| | | | | | | | [3]: Lid with quick locks |
| | | | | | | | [4]: Lid with screws and loose hinges |
| | | | | | | | [X]: Cubo X |

NB. If with two doors, then end of code there will be letter 'D', if supplied with AISI-locks,
then after the code there will be letter 'S', if Combo option with EPDM gasket end letter will be 'C'.

Examples:

X2ANP303015C –Combo

X3ANP303015C –Combo with standard lock

X3ANP303015S –Box with AISI lock

X3ANP303015 –Box with Standard lock

X3ANP10010015D – Two doors with standard locks

X3ANP10010015DS – Two doors with AISI locks



**DNV Nemko Presafe AS,** Gaustadalléen 30, 0373 Oslo, Norway

Presafe

EC-Type Examination Certificate

**[16] Project No.:** D0001550

**Descriptive Documents**

| Title: | Drawing No.: | Rev. Level: | Date: |
|---|---|---|---|
| 800001 | Types and general assembly | C | 2013-03-03 |
| 800002 | General sizing information | C | 2013-03-03 |
| 800003 | Earthing mounting and rivet ponding | D | 2014-10-10 |
| 800004 | Window and gland plates | B | 2013-03-03 |
| 800005 | General gasket information | B | 2013-03-03 |
| 800006 | Certification label and label fixing | C | 2012-01-10 |
| 800009 | Glanding areas | C | 2014-10-31 |
| 800014 | Combo enclosure and EPDM gland plate | A | 2013-03-03 |
| 800015 | Double door enclosure | A | 2013-03-03 |

**[17] Special Conditions for Safe Use**

Potential risk of electrostatic discharge from plastic window, Refer to instructions for use.

When the plastic switch handle is installed in the electrical apparatus, care must be taken that the temperatures at the mounting place are within the temperature range of use.

**[18] Essential Health and Safety Requirements**

See part 9 of this certificate

END OF CERTIFICATE



**DNV Nemko Presafe AS,** Gaustadalléen 30, 0373 Oslo, Norway



MEGGITT

# ATEX certificate:

# LCIE 02 ATEX 6110 X

# for CA 134

Although the certificate is available in the three languages (English, French and German), the liability of the notified body applies only on the text of the original copy of the certificate that it published.

EN

Bien que le certificat soit traduit dans les 3 langues (Anglais, Français et Allemand), seul le texte de la copie originale du certificat peut engager la responsabilité de l'organisme notifié qui l'a publié.

FR

Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

DE

EX

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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LCIE

Ex

1 **ATTESTATION D'EXAMEN CE DE TYPE**

2 Appareils et systèmes de protection destinés à être utilisés en atmosphères explosibles
**Directive 94/9/CE**

3 Numéro de l'attestation CE de type
**LCIE 02 ATEX 6110 X**

4 Appareil ou système de protection
Capteurs d'accélération
Type : CA134/CA136/CA160/CA201

5 Demandeur : VIBRO-METER S.A.

6 Adresse : BP 1071
1701 FRIBOURG - SUISSE

7 Cet appareil ou système de protection et ses variantes éventuelles acceptées est décrit dans l'annexe de la présente attestation et dans les documents descriptifs cités en annexe.

8 Le LCIE, organisme notifié sous la référence 0081 conformément à l'article 9 de la directive 94/9/CE du Parlement européen et du Conseil du 23 mars 1994, certifie que cet appareil ou système de protection est conforme aux exigences essentielles en ce qui concerne la sécurité et la santé pour la conception et la construction d'appareils et de systèmes de protection destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la directive. Les vérifications et épreuves figurent dans notre rapport confidentiel N° 41 031 010 K.

9 Le respect des exigences essentielles en ce qui concerne la sécurité et la santé est assuré par la conformité aux documents suivants :
- EN 50014 (1997) + amendements 1 et 2
- EN 50020 (1994)

10 Le signe X lorsqu'il est placé à la suite du numéro de l'attestation, indique que ce matériel ou système de protection est soumis aux conditions spéciales pour une utilisation sûre, mentionnées dans l'annexe de la présente attestation.

11 La présente attestation d'examen CE de type porte uniquement sur la conception, l'examen et l'essai de l'équipement ou du système de protection spécifié conformément à la directive 94/9/CE.
Toutes autres exigences de la Directive sont applicables au procédé de fabrication et de livraison de cet équipement ou système de protection. Ces derniers ne sont pas couverts par la présente attestation.

12 Le marquage de l'appareil ou du système de protection devra comporter, entre autres indications utiles, les mentions suivantes :

Ex II 1G
EEx ia IIC T6 à T1 pour le type CA134
EEx ia IIC T6 à T2 pour les types CA136/CA160 et CA201

1 **EC TYPE EXAMINATION CERTIFICATE**

2 Equipment or Protective System Intended for use in Potentially explosive atmospheres
**Directive 94/9/EC**

3 EC type Examination Certificate number
**LCIE 02 ATEX 6110 X**

4 Equipment or Protective system
Accelerometers
Type : CA134/CA136/CA160/CA201

5 Applicant : VIBRO-METER S.A.

6 Address : BP 1071
1701 FRIBOURG - SUISSE

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein refered to.

8 LCIE, notified body number 0081 in accordance with article 9 of the directive 94/9/EC of the European Parliament and Council of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective system intended for use in potentially explosive atmospheres, given in Annex II to the directive.
The examination and test results are recorded in confidential report No 41 031 010 K.

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with :

- EN 50014 (1997) + amendments 1 and 2
- EN 50020 (1994)

10 If the sign X is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC Type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC.

Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include the following :

Ex II 1G
EEx ia IIC T6 to T1 for CA134 type
EEx ia IIC T6 to T2 for CA136/CA160/CA201 type

Fontenay-aux-Roses, le 29 août 2002

Le Directeur de l'organisme certificateur
Manager of the certification body

Timbre sec/dry seal

**Par délégation**
**Michel BRÉNON**
**Directeur adjoint**
**à la Certification**

13-c



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LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES
Société anonyme à Directoire et Conseil de surveillance au capital de 15 745 984 euros - RCS Nanterre B 408 363 174
33, avenue du Général Leclerc - BP n° 8 - F 92266 FONTENAY-AUX-ROSES CEDEX - Tél. : +33 1 40 95 60 60

LCIE

(A1) **ANNEXE**

(A2) **ATTESTATION D'EXAMEN CE DE TYPE**
**LCIE 02 ATEX 6110 X**

(A3) Description de l'équipement ou du système de protection

Capteurs d'accélération
Type : CA134/CA136/CA160/CA201

Ces capteurs sont des transducteurs électromécaniques fournissant à leurs bornes une charge électrique proportionnelle à la pression mesurée.

Ce type de capteur fonctionne avec un matériau piézo-électrique monté en compression (pour le type CA134/CA136/CA160) et en cisaillement (pour le type CA201).

Le marquage sera le suivant :

VIBRO-METER S.A.
Adresse : ...
Type :CA134 ou CA136 ou CA160 ou CA201
N° de fabrication : ...
Année de fabrication : ...
Ex II 1G
EEx ia IIC T6 à T1 pour le type CA134
EEx ia IIC T6 à T2 pour les types CA136/CA160/CA201
LCIE 02 ATEX 6110 X

Le marquage CE est accompagné du numéro d'identification de l'organisme notifié responsable de la surveillance du système approuvé de qualité (0081 pour le LCIE).

Le matériel devra également comporter le marquage normalement prévu par les normes de construction du matériel électrique concerné.

Paramètres spécifiques du ou des modes protection concernés :

Valeurs pour capteurs seuls.

(A4) Documents descriptifs

Dossier technique N° DT 1001, rév. 1 du 14 mars 2002.
Le document comprend 19 rubriques (24 pages).

(A5) Conditions spéciales pour une utilisation sûre :

Le matériel ci-dessus défini est un matériel à "sécurité intrinsèque". Il peut être placé en atmosphères explosibles.

Le matériel ne doit être associé qu'à un matériel [ia] ou [ib] d'un type certifié et cette association, en tenant compte de la longueur du câble de raccordement, doit être compatible du point de vue de la sécurité intrinsèque.

Les caractéristiques du matériel associé ne devront excéder aucune des valeurs suivantes :

$U_o \leq 28$ V, $Icc_o \leq 100$ mA (source linéaire)
$U_o \leq 28$ V, $Icc_o \leq 25$ mA (source non linéaire)
Soit une puissance $P_o \leq 0,7$ W

(A1) **SCHEDULE**

(A2) **EC TYPE EXAMINATION CERTIFICATE**
**LCIE 02 ATEX 6110 X**

(A3) Description of Equipment or protective system

Accelerometers
Type : CA134/CA136/CA160/CA201

These sensors are electromechanic transducers delivering at their terminal blocks on electrical load proportional to the measures pressure.

It works with a piezoelectric material mounted in compression (for CA134/CA136/CA160 type) and in shearing (for CA201 type).

The marking will be the following :

VIBRO-METER S.A.
Address : ...
Type :CA134 or CA136 or CA160 or CA201
Serial number : ...
Year of construction : ...
Ex II 1G
EEx ia IIC T6 to T1 for CA134 type
EEx ia IIC T6 to T2 for CA136/CA160/CA201 type
LCIE 02 ATEX 6110 X

The CE marking shall be accompanied by the identification number of the notified body responsible for surveillance of the approved quality system (0081 for LCIE).

The equipment must also carry the usual marking required by the manufacturing standards applying to such equipments.

Specific parameters of the mode of protection concerned :

Values for sensors only.

| | CA134 | CA136 | CA160 | CA201 |
|---|---|---|---|---|
| Ci | 0,3 nF | 6 nF | 0,4 nF | 2,5 nF |
| Li | ~ 0 | ~ 0 | ~ 0 | ~ 0 |

(A4) Descriptive documents :

Technical file n° DT 1001, rev. 1 dated on March 14th, 2002.
This file includes 19 items (24 pages).

(A5) Special conditiosn for safe use :

The sensors are intrinsically safe equipment. They could be mounted in explosive atmospheres.

The material must only be connected to a certified [ia] or [ib] apparatus and this combination, taking account to the length of joining cable, must be compatible as regards intrinsic safety.

Specific parameters of associated apparatus must not be over than no one of following values :

$U_o \leq 28$ V, $Icc_o \leq 100$ mA (linear supply)
$U_o \leq 28$ V, $Icc_o \leq 25$ mA (not linear supply)
And power $P_o \leq 0,7$ W

05.01

LCIE

(A1) **ANNEXE**

(A2) **ATTESTATION D'EXAMEN CE DE TYPE**
**LCIE 02 ATEX 6110 X (suite)**

(A6) Exigences essentielles en ce qui concerne la sécurité et la santé

a conception du matériel satisfait aux normes européennes N 50014 (1997 + amendements 1 et 2) et EN 50020 (1994).

(A1) **SCHEDULE**

(A2) **EC TYPE EXAMINATION CERTIFICATE**
**LCIE 02 ATEX 6110 X (continued)**

(A6) Essential Health and Safety Requirements

The design of the equipment complies to european standards EN 50014 (1997 + amendments 1 and 2) and EN 50020 (1994).



05.01

(A1) **ATTESTATION D'EXAMEN CE DE TYPE**
**LCIE 02 ATEX 6110 X du 29 août 2002**

**AVENANT 02 ATEX 6110 X/01**

(A2) DESIGNATION DE L'EQUIPEMENT OU DU SYSTEME DE PROTECTION :

Capteurs d'accélération
Type : 144-YYY-000-XXX

Construit par :
VIBRO-METER S.A

(A3) OBJET DE L'AVENANT, DESCRIPTION DE L'APPAREIL OU DU SYTEME DE PROTECTION :

Modifications des désignations des appareils CA134, CA136, CA160 et CA201 qui seront désormais respectivement les suivantes :
- 144-134-000-XXX
- 144-136-000-XXX
- 144-160-000-XXX
- 144-201-000-XXX

Ajout de variantes avec différents types de connecteurs et différentes longueurs de câbles.

Le marquage est modifié comme suit :

Type : 144-YYY-000-XXX (*)

(*): à compléter (YYY) selon modèle et (XXX) selon variante

(A4) DOCUMENTS DESCRIPTIFS :

Dossier technique n° DT 1001 / 01 rév. 2 du 16 Juillet 2003.

Ce dossier comprend 5 rubriques ( 6 pages).

(A5) CONDITIONS SPECIALES POUR UNE UTILISATION SURE :

Inchangées.

(A6) EXIGENCES ESSENTIELLES EN CE QUI CONCERNE LA SECURITE ET LA SANTE :

Inchangées.

Fontenay-aux-Roses, le 4 Novembre 2003

(A1) **EC TYPE EXAMINATION CERTIFICATE**
**LCIE 02 ATEX 6110 X dated August 29, 2002**

**VARIATION 02 ATEX 6110 X/01**

(A2) NAME OF EQUIPMENT OR PROTECTIVE SYSTEM :

Accelerometers
Type : 144-YYY-000-XXX

Manufactured by :
VIBRO-METER S.A

(A3) SUBJECT OF THE VARIATION, DESCRIPTION OF EQUIPMENT OR PROTECTIVE SYSTEM :

Modifications of designations of apparatuses CA134, CA136, CA160 and CA201 which will be from now on respectively the following ones.
- 144-134-000-XXX
- 144-136-000-XXX
- 144-160-000-XXX
- 144-201-000-XXX

Addition of variations with various types of connectors and various lengths of cables.

The marking is modified as follows :

Type : 144-YYY-000-XXX

(*) : supplemented (YYY) according to model and (XXX) according to variante

(A4) DESCRIPTIVE DOCUMENTS :

Certification file No. DT 1001 / 01 rév. 2 dated July 16th, 2003.

This file includes 5 items (6 pages).

(A5) SPECIAL CONDITIONS FOR SAFE USE :

Unchanged.

(A6) ESSENTIAL HEALTH AND SAFETY REQUIREMENTS :

Unchanged.

Le Directeur de l'organisme certificateur
Manager of the certification body

Timbre sec/Dry seal



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et conseil de surveillance
au capital de 15 745 984 €
RCS Nanterre B 408 363 174

10-1



MEGGiTT

1 **AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE**

2 **Appareil ou système de protection** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 02 ATEX 6110 X / 02**

4 Appareil ou système de protection :
Capteurs d'accélération
Type : CA134/ CA136/ CA160/ CA210

5 Demandeur : VIBRO-METER S.A.

15 **DESCRIPTION DE L'AVENANT**

- Mise à jour normative selon les normes :
EN 60079-0 (2006) et EN 60079-11 (2007)
- Ajout de la plage de température ambiante dans les conditions spéciales d'utilisation sûres
- Mise à jour des classes de température

Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 60056381-557031 / 16

Paramètres spécifiques du ou des modes de protection concerné(s) :
Inchangés

Le marquage doit être :

Seuls les éléments suivants doivent être modifiés comme suit:
Ex ia IIC T6 à T510 pour le type 144-134-000-XXX
Ex ia IIC T6 à T2 pour les autres types

Ajout de :
Uo ≤ 28V, Icco ≤ 100 mA (source linéaire)
Uo ≤ 28V, Icco ≤ 25 mA (source non linéaire)
Po ≤ 0,7W
Capteurs seuls :

| | 144-134-000-XXX | 144-136-000-XXX | 144-160-000-XXX | 144-201-000-XXX |
|---|---|---|---|---|
| Ci | 0,3 nF | 6 nF | 0,4 nF | 0,5 nF |
| Li | ≈0 | ≈0 | ≈0 | ≈0 |

16 **DOCUMENTS DESCRIPTIFS**
Dossier de certification N° DT 1030 du 05/03/2007.
Ce dossier comprend 2 rubriques (7 pages).

1 **SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE**

2 **Equipment or protective system** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number :
**LCIE 02 ATEX 6110 X / 02**

4 Equipment or protective system :
Accelerometers
Type : CA134/ CA136/ CA160/ CA210

5 Applicant : VIBRO-METER S.A.

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**

- Normative update according to standards' :
EN 60079-0 (2006) and EN 60079-11 (2007)
- Adding of operational temperature range in clause special conditions for safe use
- Update of temperature classes

The examination and test results are recorded in confidential report N° 60056381-557031 / 16

Specific parameters of the mode(s) of protection concerned:

Unchanged

The marking shall be :

Only following elements shall be modified as follows :

Ex ia IIC T6 to T510 for the type 144-134-000-XXX
Ex ia IIC T6 to T2 for the other types

Adding of :
Uo ≤ 28V, Icco ≤ 100 mA (linear source)
Uo ≤ 28V, Icco ≤ 25 mA (no linear source)
Po ≤ 0,7W
Only sensors :

16 **DESCRIPTIVE DOCUMENTS**
Certification file N° DT 1030 dated 2007/03/05
This file includes 2 items (7 pages).

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13 **ANNEXE**

14 **AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE**

**LCIE 02 ATEX 6110 X / 02**

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SURE**
Ajout de :
Pour le type 144-134-000-XXX : Ta = -200°C à +450°C (exceptionnellement durant 15 min : Ta = -200°C à +500°C)
Pour le type 144-136-000-XXX : Ta = -54°C à +260°C (exceptionnellement durant 15 min : Ta = -54°C à +280°C)
Pour le type 144-160-000-XXX : Ta = -54°C à +320°C
Pour le type 144-201-000-XXX : Ta = -54°C à +260°C

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**
Couvertes par les normes :
EN 60079-0 (2006) et EN 60079-11 (2007)

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**
Inchangés

Fontenay-aux-Roses, le 17 décembre 2007

13 **SCHEDULE**

14 **SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE**

**LCIE 02 ATEX 6110 X / 02**

17 **SPECIAL CONDITIONS FOR SAFE USE**

Adding of :
For the type 144-134-000-XXX : Ta = -200°C to +450°C (in exceptional condition during 15 min : Ta = -200°C to +500°C)
For the type 144-136-000-XXX : Ta = -54°C to +260°C (in exceptional condition during 15 min : Ta = -54°C to +280°C)
For the type 144-160-000-XXX : Ta = -54°C to +320°C
For the type 144-201-000-XXX : Ta = -54°C to +260°C

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Covered by standards:
EN 60079-0 (2006) and EN 60079-11 (2007)

19 **ROUTINE VERIFICATIONS AND TESTS**
Unchanged

Le responsable de certification ATEX
ATEX certification manager
Marc GILLAUX

NOTIFIED BODY 0081 ORGANISME NOTIFIE

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L C I E

1 **AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE**

2 **Appareil ou système de protection** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 02 ATEX 6110 X / 03**

4 Appareil ou système de protection :
Capteurs d'accélération
Type : 144-YYY-000-XXX

5 Demandeur : Meggitt SA
Route de Moncor 4
1752 Villars-sur-Glâne
Suisse

15 **DESCRIPTION DE L'AVENANT**

- Changement de nom et d'adresse du fabricant
- Modifications des marques commerciales déposées

Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 102105-602924 / 15.

Paramètres spécifiques du ou des modes de protection concerné(s) :
Inchangés.

Le marquage doit être :

Inchangé, excepté la marque commerciale vibro-meter qui devient vibro-meter ou MEGGITT ou MFR S3960 et l'adresse.

16 **DOCUMENTS DESCRIPTIFS**

Courrier du demandeur du 07/09/2010.

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SURE**
Inchangées.

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**
Inchangées.

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**
Inchangés.

Fontenay-aux-Roses, le 25 octobre 2010.

Le responsable de certification ATEX
ATEX certification manager
Marc GILLAUX

1 **SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE**

2 **Equipment or protective system** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number :
**LCIE 02 ATEX 6110 X / 03**

4 Equipment or protective system :
Accelerometers
Type : 144-YYY-000-XXX

5 Applicant : Meggitt SA
Route de Moncor 4
1752 Villars-sur-Glâne
Switzerland

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**
- Change of legal entity name and address of applicant
- Modifications of registered trade mark

The examination and test results are recorded in confidential report N° 102105-602924 / 15.

Specific parameters of the mode(s) of protection concerned:

Unchanged.

The marking shall be :

Unchanged, except registered trade mark vibro-meter becomes vibro-meter or MEGGITT or MFR S3960 and the address.

16 **DESCRIPTIVE DOCUMENTS**

Letter of applicant from 2010/09/07.

17 **SPECIAL CONDITIONS FOR SAFE USE**

Unchanged.

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Unchanged.

19 **ROUTINE VERIFICATIONS AND TESTS**
Unchanged.

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L C I E

1 **AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE**

2 **Appareil ou système de protection** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 02 ATEX 6110 X / 04**

4 Appareil ou système de protection :
Capteur d'accélération
Type : PNR 144-134-000-XXX

5 Demandeur : Meggitt SA

15 **DESCRIPTION DE L'AVENANT**

Mise à jour normative selon la norme EN 60079-0 (2009)
Suppression des types CA 136, CA 160 et CA 201

Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 110055-619675 / 08

Paramètres spécifiques du ou des modes de protection concerné(s) :
Inchangés

Le marquage doit être :
Modifié comme suit :
Vibro-Meter ou MEGGITT ou MFR S3960
Adresse : ...
Type : PNR 144-134-000-XXX
N° de série :... ; Date de fabrication :...
Ⓔx II 1 G
Ex ia IIC T6 à T510°C Ga
LCIE 02 ATEX 6110 X
Ui = ... ; Pi = ... ; Ii = ... ; Ci = ... ; Li = ... (1)
(1) complété avec les paramètres électriques

16 **DOCUMENTS DESCRIPTIFS**
Lettre du demandeur du 20/10/2011 (2 pages).

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SURE**
Inchangées

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**
Couvertes par les normes EN 60079-0 (2009)
et EN 60079-11 (2007)

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**
Néant

Fontenay-aux-Roses, le 21/12/2011

Le responsable de certification ATEX
ATEX certification manager
Michel BRÉNON

1 **SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE**

2 **Equipment or protective system** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number :
**LCIE 02 ATEX 6110 X / 04**

4 Equipment or protective system :
Accelerometer
Type : PNR 144-134-000-XXX

5 Applicant : Meggitt SA

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**
Normative update according to standard EN 60079-0 (2009)
Delete types CA 136, CA 160 and CA 201

The examination and test results are recorded in confidential report N° 110055-619675 / 08

Specific parameters of the concerned protection mode:

Unchanged

The marking shall be :
Modified as follows :
Vibro-Meter or MEGGITT or MFR S3960
Address : ...
Type : PNR 144-134-000-XXX
Serial Number :... ; Date of construction :...
Ⓔx II 1 G
Ex ia IIC T6 to T510°C Ga
LCIE 02 ATEX 6110 X
Ui = ... ; Pi = ... ; Ii = ... ; Ci = ... ; Li = ... (1)
(1) completed with the electrical parameters

16 **DESCRIPTIVE DOCUMENTS**
Applicant's letter dated 2011/10/20 (2 pages).

17 **SPECIAL CONDITIONS FOR SAFE USE**

Unchanged

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Covered by standards EN 60079-0 (2009) and
EN 60079-11 (2007)

19 **ROUTINE VERIFICATIONS AND TESTS**
None

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L C I E

1 **AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE**

2 **Appareil ou système de protection** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 02 ATEX 6110 X / 05**

4 Appareil ou système de protection :
Capteur d'accélération
Type : PNR 144-134-000-XXX

5 Demandeur : MEGGITT SA

15 **DESCRIPTION DE L'AVENANT**

Mise à jour normative selon les normes EN 60079-0:2012 et EN 60079-11:2012.
Modification de l'élément sensible du capteur.

Les résultats des vérifications et essais figurent dans le rapport confidentiel N°123216-647054.

Paramètres spécifiques du ou des modes de protection concerné(s) :
Modifiés comme suit :
Capteur : Ci ≤ 1,2nF, Li ≈ 0
Câble : Ci ≤ 250pF/m, Li ≈ 0
Source linéaire: Ui ≤ 28V, Ii ≤ 100mA, Pi ≤ 0,7W
Source non linéaire: Ui ≤ 28V, Ii ≤ 25mA, Pi ≤ 0,7W,

Le marquage doit être : Inchangé
Vibro-meter, MEGGITT ou MFR S3960 Adresse :...
Type : PNR 144-134-000-XXX
Numéro de fabrication :... Année de fabrication : ...
Ⓔx II 1 G Ex ia IIC T6 à T1 ou 510°C Ga
LCIE 02 ATEX 6110 X
*Ui* ≤ ...V, *Ii* ≤ ....mA, *Pi* ≤ ....W, *Ci* = ...µF, *Li* ≤ ...µH
(complété avec les paramètres électriques)

16 **DOCUMENTS DESCRIPTIFS**

Dossier technique n°DT 1058 rév.00 du 30/08/2013.
Ce dossier comprend 4 rubriques (6 pages).

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SURE**

Inchangées. Complétées par : Classement en température T6 : Tamb < 80°C, T5 : Tamb < 95°C, T4 : Tamb < 130°C, T3 : Tamb < 195°C, T2 : Tamb < 290°C, T1 : Tamb < 440°C, 510°C : Tamb < 500°C.

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**

Couvertes par les normes EN 60079-0:2012 et EN 60079-11:2012.

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**

Néant.

Fontenay-aux-Roses, le 25 octobre 2013

1 **SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE**

2 **Equipment or protective system** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number :
**LCIE 02 ATEX 6110 X / 05**

4 Equipment or protective system :
Accelerometer
Type : PNR 144-134-000-XXX

5 Applicant : MEGGITT SA

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**

Normative update according to EN 60079-0:2012 and EN 60079-11:2012.
Modification of the sensing part material of the sensor.

The examination and test results are recorded in confidential report N°123216-647054.

Specific parameters of the concerned protection mode:

Modified as follows :
Sensor : Ci ≤ 1,2nF, Li ≈ 0
Cable : Ci ≤ 250pF/m, Li ≈ 0
Linear source : Ui ≤ 28V, Ii ≤ 100mA, Pi ≤ 0,7W
Non linear source : Ui ≤ 28V, Ii ≤ 25mA, Pi ≤ 0,7W

The marking shall be :
Vibro-meter, MEGGITT or MFR S3960 Address : .....
Type : PNR 144-134-000-XXX
Serial number : ..... Year of construction : .....
Ⓔx II 1 G Ex ia IIC T6 to T1 or 510°C Ga
LCIE 02 ATEX 6110 X
*Ui* ≤ ...V, *Ii* ≤ ....mA, *Pi* ≤ ....W, *Ci* = ...µF, *Li* ≤ ...µH
(completed with the electrical parameters)

16 **DESCRIPTIVE DOCUMENTS**

Technical file n°DT 1058 rev.00 dated 2013/08/30.
This file includes 4 items (6 pages).

17 **SPECIAL CONDITIONS FOR SAFE USE**

Unchanged. Completed with : Temperature classification : T6 : Tamb < 80°C, T5 : Tamb < 95°C, T4 : Tamb < 130°C, T3 : Tamb < 195°C, T2 : Tamb < 290°C, T1 : Tamb < 440°C, 510°C : Tamb < 500°C.

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Covered by EN 60079-0:2012 and EN 60079-11:2012 standards.

19 **ROUTINE VERIFICATIONS AND TESTS**

None.

Le Responsable de Certification ATEX
ATEX Certification Officer
Julien GAUTHIER

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**Deutsche Übersetzung der originalen französischen Kopie der Seite 1**

1 **EG-PRÜFZERTIFIKAT**

2 Geräte und Schutzsysteme zur Verwendung in explosionsgefährdeten Bereichen - **Richtlinie 94/9/EG**

3 EG-Zertifikatnummer
**LCIE 02 ATEX 6110 X**

4 Gerät oder Schutzsystem
Beschleunigungsgeber
Typ: CA 134 / CA 136 / CA 160 / CA 201

5 Hersteller: VIBRO-METER S.A.

6 Adresse: BP 1071, CH-1701 FRIBOURG, SCHWEIZ

7 Dieses Gerät oder Schutzsystem und die möglichen, zulässigen Varianten sind im Anhang dieses Zertifikats und den darin aufgeführten Unterlagen beschrieben.

8 LCIE, eingetragen unter der Nummer 0081 gemäß Artikel 9 der Richtlinie 94/9/EG des Europaparlamentes und des Rates vom 23. März 1994, bestätigt, dass dieses Gerät oder Schutzsystem die wesentlichen Gesundheits- und Sicherheitsanforderungen in Bezug auf die Auslegung und die Bauart von Geräten und Schutzsystemen zur Verwendung in explosionsgefährdeten Bereichen nach Anhang II der Richtlinie erfüllt.
Die Prüf- und Testergebnisse sind im vertraulichen Bericht Nr. 41 031 010 K aufgezeichnet.

9 Die Einhaltung der wesentlichen Gesundheits- und Sicherheitsanforderungen wird durch die Übereinstimmung mit den den folgenden Dokumenten sichergestellt:
- EN 50014 (1997) + Änderungen 1 und 2
- EN 50020 (1994)

10 Ein "X" nach der Zertifikatnummer gibt an, dass für die sichere Verwendung des Gerätes oder Schutzsystemes besondere Bedingungen gemäß dem Anhang dieses Zertifikates gelten.

11 Dieses EG-Prüfzertifikat betrifft nur die Bauart und die Prüfungen und Tests des betreffenden Gerätes odder Schutzssystems nach der Richtlinie 94/9/e.g.
Alle anderen Anforderungen der Richtlinie gelten für die Fertigung und Lieferung dieses Gerätes oder Schutzsystems. Sie werden nicht von diesem Zertifikat abgedeckt.

12 Die Kennzeichnung des Gerätes oder Schutzsystems muss unter anderem die folgenden Angaben enthalten:
Ex II 1G
EEx ia IIC T6 bis T1 für den Typ CA 134
EEx ia IIC T6 bis T2 für die Typen CA 136 / CA 160 und CA 201

Fontenay-aux-Roses, 29. August 2002 | Leiter Zertifizierung | Leiter Zertifizierung
Trockenstempel



LCIE haftet nur für den französischen Text.
Dieses Zertifikat darf nur vollständig und ohne Änderungen vervielfältigt werden.

Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 1**

(A1) **ANHANG**

(A2) **EG-PRÜFZERTIFIKAT**
**LCIE 02 ATEX 6110 X**

(A3) Beschreibung des Gerätes oder Schutzsystems
Beschleunigungsgeber
Typ: CA 134 / CA 136 / CA 160 / CA 201
Diese Geber sind elektromechanische Messwandler, die eine elektrische Ladung proportional zum gemessenen Druck an die Klemmen liefern.
Diese Art Geber arbeitet mit einem mit Druck (Typ CA134/CA136/CA160) und Schub (Typ CA 201) montierten piezoelektrischen Material.
Kennzeichnung:
VIBRO-METER S.A.
Adresse: ..
Typ: CA134 oder CA136 oder CA160 oder CA201
Herstellungsnummer: ...
Herstellungsjahr: ...

II 1G
EEx ia IIC T6 bis T1 für den Typ CA 134
EEx ia IIC T6 bis T2 für die Typen CA 136 / CA 160 und CA 201
LCIE 02 ATEX 6110 X
Die EG-Kennzeichnung wird von der Kennnummer der Stelle, die für die Überwachung des genehmigten Qualitätssystems zuständig ist (0081 für LCIE) begleitet.
Die Geräte müssen ebenfalls mit der Kennzeichnung versehen sein, die in den Herstellungsnormen der betreffenden elektrischen Geräte normalerweise vorgesehen sind.
Spezielle Parameter für die betreffende(n) Schutzart(en):
Werte nur für die Geber.

| | CA 134 | CA 136 | CA 160 | CA 201 |
|---|---|---|---|---|
| $C_i$ | 0,3 nF | 6 nF | 0,4 nF | 2,5 nF |
| $L_i$ | ~0 | ~0 | ~0 | ~0 |

(A4) Beschreibende Unterlagen
Technische Unterlagen Nr. DT 1001, Änd. 1 vom 14. März 2002.Dieses Dokument umfasst 19 Teile (24 Seiten).

(A5) Spezielle Bedingungen für eine sichere Verwendung:
Das oben definierte Gerät ist ein "eigensicheres" Gerät. Es kann in explosionsgefährdeten Bereichen verwendet werden.
Das Gerät darf nur an ein Gerät [ia] oder [ib] eines zertifizierten Typs angeschlossen werden und diese Verbindung muss unter Berücksichtigung des Anschlusskabels in Bezug auf die Eigensicherheit kompatibel sein.
Die Eigenschaften des dazugehörigen Gerätes dürfen die folgenden Werte nicht überschreiten:
$U_0 \leq 28$ V, $I_{cc0} \leq 100$ mA (lineare Quelle)
$U_0 \leq 28$ V, $I_{cc0}$ 25 mA (nicht lineare Quelle)
Leistung $P_0 \leq 0,7$ W



**Deutsche Übersetzung der originalen französischen Kopie der Seite 2**

(A1) **ANHANG**

(A2) **EG-PRÜFZERTIFIKAT**
**LCIE 02 ATEX 6110 X (Fortsetzung)**

(A6) Wesentliche Anforderungen in Bezug auf Sicherheit und Gesundheit
Die Bauart des Gerätes entspricht den europäischen Normen EN 50014 (1997 + Änderungen 1 und 2) und EN 50020 (1994).



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 2**

(A1) **EG-PRÜFZERTIFIKAT**
**LCIE 02 ATEX 6110 X vom 29. August 2002**
**NACHTRAG 02 ATEX 6110 X/01**

(A2) BESCHREIBUNG DES GERÄTES ODER SCHUTZSYSTEMS:
Beschleunigungsgeber
Typ: 144-YYY-000-XXX
Hergestellt von: VIBRO-METER S.A

(A3) ZIEL DES NACHTRAGS, BESCHREIBUNG DES GERÄTES ODER SCHUTZSYSTEMS:
Änderungen der Gerätebezeichnungen CA 134, CA 136, CA 160 und CA 201, die von nun an jeweils wie folgt lauten:
144-134-000-XXX
144-136-000-XXX
144-160-000-XXX
144-201-000-XXX
Hinzufügen von Varianten mit verschiedenen Steckertypen und Kabellängen.
Die Kennzeichnung wird wie folgt geändert:
Typ: 144-YYY-000-XXX (*)
(*): je nach Modell (YYY) und Variante (XXX) zu ergänzen

(A4) BESCHREIBENDE UNTERLAGEN:
Technische Unterlagen Nr. DT 1001 / 01, Änd. 2 vom 16. Juli 2003. Dieses Dokument beinhaltet 5 Teile (6 Seiten).

(A5) SPEZIELLE BEDINGUNGEN FÜR EINE SICHERE VERWENDUNG:
Unverändert

(A6) WESENTLICHE ANFORDERUNGEN IN BEZUG AUF SICHERHEIT UND GESUNDHEIT
Unverändert

Fontenay-aux-Roses, 4. November 2003 Leiter Zertifizierung Leiter Zertifizierung
Trockenstempel



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**Deutsche Übersetzung der original französisch/englischen Kopie der Seite 3**

1 **ERGÄNZUNG ZUR EG-BAUMUSTERPRÜFBESCHEINIGUNG**

2 **Betriebsmittel oder Schutzsystem** zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen – **Richtlinie 94/9/EG**

3 Nummer der Ergänzungsbescheinigung:
**LCIE 02 ATEX 6110 X / 02**

4 Betriebsmittel oder Schutzsystem
Accelerometer
Typ: CA134 / CA136 / CA 160 / CA210

5 Hersteller: **VIBRO-METER S.A.**

15 **BESCHREIBUNG DER ERGÄNZUNGSBESCHEINIGUNG**
– Normgerechte Überarbeitung entsprechend den Normen:
EN 60079-0 (2006) und EN 60079-11 (2007)
– Betriebstemperaturbereich im Abschnitt „Besondere Bedingungen für die sichere Anwendung“ hinzugefügt
– Temperaturklassen aktualisiert
Die Ergebnisse der Prüfung sind im vertraulichen Prüfbericht Nr. 60056381-557031 / 16 festgehalten.
Spezifische Kenndaten der betroffenen Schutzarten:
Unverändert
Kennzeichnung:
Nur die folgenden Elemente werden wie folgt geändert:
Typ 144-134-000-XXX: Ex ia IIC T6 in T510
Andere Typen: Ex ia IIC T6 in T2
Zusätze:
Uo ≤ 28 V, Icco ≤ 100 mA (lineare Quelle)
Uo ≤ 28 V, Icco ≤ 25 mA (nichtlineare Quelle)
Po ≤ 0,7 W
Nur Sensoren:

| | 144-134-000-XXX | 144-136-000-XXX | 144-160-000-XXX | 144-201-000-XXX |
|---|---|---|---|---|
| Ci | 0,3 nF | 6 nF | 0,4 nF | 0,5 nF |
| Li | ~ 0 | ~ 0 | ~ 0 | ~ 0 |

16 **BESCHREIBENDE DOKUMENTE**
Bescheinigung Nr. DT 1030 vom 05. März 2007.
Dieses Dokument besteht aus 2 Elementen (7 Seiten).

Fontenay-aux-Roses, 17. Dezember 2007

Leiter Zertifizierung
Trockenstempel



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Dieses Zertifikat darf nur vollständig und ohne Änderungen vervielfältigt werden.

**Deutsche Übersetzung der original französisch/englischen Kopie der Seite 3**

13 **ANLAGE**

14 **ERGÄNZUNG ZUR EG-BAUMUSTERPRÜFBESCHEINIGUNG**

LCIE 07 ATEX 6110 X / 02

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**
Zusätze:
Für Typ 144-134-000-XXX: Ta = –200 °C bis +450 °C (unter außergewöhnlichen Bedingungen für 15 min: Ta = –200 °C bis +500 °C)
Für Typ 144-136-000-XXX: Ta = –54 °C bis +260 °C (unter außergewöhnlichen Bedingungen für 15 min: Ta = –54 °C bis +280 °C)
Typ 144-160-000-XXX: Ta = –54 °C bis +320 °C
Typ 144-201-000-XXX: Ta = –54 °C bis +260 °C

18 **GRUNDLEGENDE GESUNDHEITS- UND SICHERHEITSANFORDERUNGEN**
Abgedeckt durch die Normen: EN 60079-0 (2006) und EN 60079-11 (2007)

19 **Routinemäßige Prüfungen und Tests**
Unverändert
ATEX-Bescheinigungsbevollmächtigter
Die Haftung von LCIE beschränkt sich allein auf den französischen Originaltext. Dieses Dokument darf nur vollständig und ohne Veränderungen vervielfältigt werden.



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**Deutsche Übersetzung der originalen französischen Kopie der Seite 4**

1 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

2 Geräte zur Verwendung in explosionsgefährdeten Bereichen (**Richtlinie 94/9/EG**)

3 Zusätzliche Zertifikatnummer:
**LCIE 02 ATEX 6110 X / 03**

4 Gerät oder Schutzsystem
Beschleunigungsgeber
Typ: 144-YYY-000-XXX

5 Hersteller: MEGGITT SA
Adresse: Route de Moncor 4, 1752 Villars-sur-Glâne, Schweiz

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS**

- Änderung der juristischen Person und Addresse des Antragstellers
- Modifikation des eingetragenen Markenzeichens

Die Prüf- und Testergebnisse sind im vertraulichen Bericht Nr. 102105-602924/15 aufgezeichnet.

Spezifische Kenndaten der betroffenen Schutzarten:
Unverändert.

Die Kennzeichnung soll lauten:
Unverändert, bis auf Markenzeichen vibro-meter wird zu vibro-meter oder MEGGITT oder MFR S3960 sowie die Adressänderung.

16 **BESCHREIBENDE UNTERLAGEN**

Brief des Antragsstellers vom 07.09.2010.

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

Unverändert.

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**

Unverändert.

19 **ROUTINEPRÜFUNGEN UND TESTS**

Unverändert.

Fontenay-aux-Roses,
am 25. Oktober 2010

Leiter Zertifizierung

Trockenstempel

Seite 1/1

Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 4**

1 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

2 Geräte zur Verwendung in explosionsgefährdeten Bereichen (**Richtlinie 94/9/EG**)

3 Zusätzliche Zertifikatnummer:
**LCIE 02 ATEX 6110 X / 04**

4 Gerät oder Schutzsystem
Beschleunigungsgeber
Typ: PNR 144-134-000-XXX

5 Hersteller: MEGGITT SA

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS**

Standardaktualisierungen gemäß folgender Richtlinien: EN 60079-0 (2009)
Typ der Gerät löschen CA 136, CA 160 und CA 201

Die Prüf- und Testergebnisse sind im vertraulichen Bericht Nr. 110055-619675 / 08 aufgezeichnet.

Spezifische Kenndaten der betroffenen Schutzarten:
Unverändert.

Die Kennzeichnung lautet wie folgt:
Wie folgt modifiziert:
Vibro-Meter oder MEGGITT oder MFR S3960
Adresse: ...
Typ: PNR 144-134-000-XXX
Herstellungsnummer: ... Herstellungsjahr: ...
Ex II 1 G
Ex ia IIC T6 bis T510°C Ga
LCIE 02 ATEX 6110 X
Ui = ... ; Pi = ... ; Ii = ... ; Ci = ... ; Li = ... (1)

(1) Abhängig von der Typ der Gerät

16 **BESCHREIBENDE UNTERLAGEN**

Brief des Antragsstellers vom 20.10.2011 (2 Seiten)

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

Unverändert.

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**

Werden von folgenden Richtlinien abgedeckt:
EN 60079-0 (2009) und EN 60079-11 (2007)

19 **ROUTINEPRÜFUNGEN UND TESTS**

Keine.

Fontenay-aux-Roses,
am 21. Dezember 2011

Leiter Zertifizierung

Trockenstempel



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 5**

1 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

2 Geräte zur Verwendung in explosionsgefährdeten Bereichen (**Richtlinie 94/9/EG**)

3 Zusätzliche Zertifikatnummer:
**LCIE 02 ATEX 6110 X / 05**

4 Gerät oder Schutzsystem
Beschleunigungsgeber
Typ: PNR 144-134-000-XXX

5 Hersteller: MEGGITT SA

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS**

Standardaktualisierungen gemäß folgender Richtlinien: EN 60079-0:2012 und EN 60079-11:2012.
Änderung des Erfassungselements des Sensors.

Die Prüf- und Testergebnisse sind im vertraulichen Bericht Nr. 123216-647054 aufgezeichnet.

Spezifische Kenndaten der betroffenen Schutzarten:
Wie folgt modifiziert:
Sensor: Ci ≤ 1,2 nF, Li ≈ 0
Kabel: Ci ≤ 250 pF/m, Li ≈ 0
Stromversorgung (linear): Ui ≤ 28 V, Ii ≤ 100 mA, Pi ≤ 0,7 W
Stromversorgung (nicht-linear): Ui ≤ 28 V, Ii ≤ 25 mA, Pi ≤ 0,7 W

Die Kennzeichnung lautet wie folgt:
Vibro-Meter, MEGGITT oder MFR S3960 Adresse: ...
Typ: PNR 144-134-000-XXX
Herstellungsnummer: ... Herstellungsjahr: ...
⟨Ex⟩ II 1 G Ex ia IIC T6 bis T1 oder 510°C Ga
LCIE 02 ATEX 6110 X
Ui ≤ ... V, Ii ≤ ... mA, Pi ≤ ... W, Ci ≤ ... µF, Li ≤ ... µH
(Abhängig von der Typ der Gerät)

16 **BESCHREIBENDE UNTERLAGEN**

Bescheinigung Nr. DT 1058 rev.00 vom 30. August 2013.
Dieses Dokument besteht aus 4 Elementen (6 Seiten).

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

Unverändert. Ergänzt mit Temperatur-Klassifizierung:
T6: Ta < 80°C, T5: Ta < 95°C, T4: Ta < 130°C,
T3: Ta < 195°C, T2: Ta < 290°C, T1: Ta < 440°C,
510°C: Ta < 500°C.

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**

Werden von folgenden Richtlinien abgedeckt: EN 60079-0:2012 und EN 60079-11:2012.

19 **ROUTINEPRÜFUNGEN UND TESTS**

Keine.

Fontenay-aux-Roses,
am 25. Oktober 2013

Leiter Zertifizierung

Trockenstempel



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

# ATEX certificate:

## LCIE 09 ATEX 1043 X

## for CA 134

Although the certificate is available in the three languages (English, French and German), the liability of the notified body applies only on the text of the original copy of the certificate that it published.

EN

Bien que le certificat soit traduit dans les 3 langues (Anglais, Français et Allemand), seul le texte de la copie originale du certificat peut engager la responsabilité de l'organisme notifié qui l'a publié.

FR

Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

DE

EX

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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CETTE PAGE EST LAISSÉE INTENTIONNELLEMENT VIDE
DIESE SEITE WURDE ABSICHTLICH LEER GELASSEN

1 **ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

2 **Appareil** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'attestation d'examen de type
**LCIE 09 ATEX 1043 X**

4 Appareil
Capteur d'accélération
Type : PNR: 144-134-000-XXX

5 Demandeur : VIBRO-METER SA
Adresse : Route de Moncor 4
1701 FRIBOURG SUISSE

7 Cet appareil ou système de protection et ses variantes éventuelles acceptées sont décrits dans l'annexe de la présente attestation et dans les documents descriptifs cités en référence.

8 Le LCIE certifie que cet appareil ou système de protection est conforme aux exigences essentielles de sécurité et de santé pour la conception d'appareils ou système de protection, électriques de catégorie 3 ou non électriques de catégorie 2 et 3, destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la directive 94/9/CE du Parlement européen et du Conseil du 23 mars 1994.

Les résultats des vérifications et essais figurent dans le rapport confidentiel N°94576 - 589014/6.

9 Le respect des exigences essentielles de sécurité et de santé est assuré par la conformité à :
- EN 60079-0 (2006) - EN 60079-15 (2005)

0 Le signe X lorsqu'il est placé à la suite du numéro de l'attestation, indique que cet appareil ou système de protection est soumis aux conditions spéciales pour une utilisation sûre, mentionnées dans l'annexe de la présente attestation.

1 Cette attestation d'examen de type concerne uniquement la conception, les vérifications et essais de l'appareil ou du système de protection spécifié, conformément à la directive 94/9/CE.
Des exigences supplémentaires de la directive sont applicables pour la fabrication et la fourniture de l'appareil ou du système de protection. Ces dernières ne sont pas couvertes par la présente attestation.

2 Le marquage de l'appareil ou du système de protection doit comporter les informations détaillées au point 15.

Fontenay-aux-Roses, le 10 octobre 2009.

1 **VOLUNTARY TYPE EXAMINATION CERTIFICATE**

2 **Equipment** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Type Examination Certificate number
**LCIE 09 ATEX 1043X**

4 Equipment
Accelerometer
Type : PNR: 144-134-000-XXX

5 applicant : VIBRO-METER SA
Address : Route de Moncor 4
1701 FRIBOURG SUISSE

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 LCIE certifies that this equipment or protective system has been found to comply with the essential Health and Safety Requirements that relate to the design of equipment or protective system, of category 3 electrical or categories 2 and 3 non electrical, which is intended for use in potentially explosive atmospheres, given in Annex II of the Directive 94/9/EC of the European Parliament and Council of 23 March 1994.

The examination and test results are recorded in confidential report N°94576 - 589014/6.

9 Compliance with the Essential Health and Safety Requirements has been assured by reference to :
- EN 60079-0 (2006) - EN 60079-15 (2005)

10 If the sign X is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11 This type examination certificate relates only to the design, examination and tests of this specified equipment or protective system in accordance III to the directive 94/9/EC.

Further requirements of the Directive may apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include information as detailed at 15.

e responsable de certification ATEX
ATEX certification manager

Marc GILLAUX

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Rev.A



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Société par Actions Simplifiée
au capital de 15 745 98 : €
RCS Nanterre B 408 363 177

13 **ANNEXE**

14 **ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

**LCIE 09 ATEX 1043 X**

15 **DESCRIPTION DE L'APPAREIL OU DU SYSTEME DE PROTECTION**

Capteur d'accélération
Type : PNR : 144-134-000-XXX

Le matériel est un transducteur électro-mécanique fournissant à ses bornes une charge électrique proportionnelle à la pression mesurée.

Paramètres spécifiques du ou des modes de protection concernés :
U ≤ 28V, I ≤ 100mA, P ≤ 0,7W

Le marquage doit être :
VIBRO-METER
Adresse : ... Type : PNR : 144-134-000-XXX
N° de fabrication : ... Année de fabrication : ...
Ex II 3G Ex nA II T6 à T510
LCIE 09 ATEX 1043 X

Le marquage peut être réduit à :
VIBRO-METER
PNR : 144-134-000-XXX
Ex II 3G LCIE 09 ATEX 1043 X

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concerne.

16 **DOCUMENTS DESCRIPTIFS**
Dossier de certification N°DT 1046 rev.00 du 20/07/09.
Ce document comprend 7 rubriques (9 pages).

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SÛRE**
Température ambiante d'utilisation : -200°C à +500°C.
Classement en température en fonction de la température ambiante :
T6 à Tamb. + 80°C
T5 à Tamb. + 95°C
T4 à Tamb. + 130°C
T3 à Tamb. + 195°C
T2 à Tamb. + 290°C
T1 à Tamb. + 440°C
T510 à Tamb. + 500°C

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**
Couvertes par les normes listées au point 9.

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**
Néant.

13 **SCHEDULE**

14 **VOLUNTARY TYPE EXAMINATION CERTIFICATE**

**LCIE 09 ATEX 1043 X**

15 **DESCRIPTION OF EQUIPMENT OR PROTECTIVE SYSTEM**

Accelerometer
Type : PNR : 144-134-000-XXX

This equipment is an electro-mechanical transducer delivering at its terminal blocks an electrical load proportional to the measured pressure.

Specific parameters of the mode(s) of protection concerned :
U ≤ 28V, I ≤ 100mA, P ≤ 0,7W

The marking shall be :
VIBRO-METER
Address : ... Type : PNR : 144-134-000-XXX
Serial number : ... Year of construction : ...
Ex II 3G Ex nA II T6 to T510
LCIE 09 ATEX 1043 X

The marking can be reduce at :
VIBRO-METER
PNR : 144-134-000-XXX
Ex II 3G LCIE 09 ATEX 1043 X

The equipment shall also bear the usual marking required by the manufacturing standards applying to such equipment.

16 **DESCRIPTIVE DOCUMENTS**
Certification file N°DT 1046 rev.00 dated 09/07/20.
This file includes 7 items (9 pages).

17 **SPECIAL CONDITIONS FOR SAFE USE**

Operating ambient temperature : -200°C to +500°C
Temperature classification in function of the operating temperature :
T6 at Tamb. + 80°C
T5 at Tamb. + 95°C
T4 at Tamb. + 130°C
T3 at Tamb. + 195°C
T2 at Tamb. + 290°C
T1 at Tamb. + 440°C
T510 at Tamb. + 500°C

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Covered by standards listed at 9.

19 **ROUTINE VERIFICATIONS AND TESTS**
None.

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Rev.A

L C I E

1 **AVENANT D'ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

2 **Appareil** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 09 ATEX 1043 X / 01**

4 Appareil
Capteur d'accélération
Type : PNR 144-134-000-XXX

5 demandeur : Meggitt SA
Route de Moncor 4
1752 Villars-sur-Glâne
Suisse

15 **DESCRIPTION DE L'AVENANT**

- Changement de nom et d'adresse du fabricant
- Modifications des marques commerciales déposées

Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 102105 – 602924 / 16.

Paramètres spécifiques du ou des modes de protection concerné(s) :
Inchangés.

Le marquage doit être :

Inchangé, excepté la marque commerciale vibro-meter qui devient vibro-meter ou MEGGITT ou MFR S3960 et l'adresse.

16 **DOCUMENTS DESCRIPTIFS**
Lettre du demandeur du 07/09/2010.

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SÛRE**
Inchangées.

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**
Inchangées.

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**
Néant.

1 **VOLUNTARY SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE**

2 **Equipment** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number :
**LCIE 09 ATEX 1043 X / 01**

4 Equipment
Accelerometer
Type : PNR 144-134-000-XXX

5 Applicant : Meggitt SA
Route de Moncor 4
1752 Villars-sur-Glâne
Switzerland

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**
- Change of legal entity name and address of applicant
- Modifications of registered trade mark

The examination and test results are recorded in confidential report N°102105 – 602924 / 16.

Specific parameters of the mode(s) of protection concerned:

Unchanged.

The marking shall be :

Unchanged, except registered trade mark vibro-meter becomes vibro-meter or MEGGITT or MFR S3960 and the address.

16 **DESCRIPTIVE DOCUMENTS**
Letter of applicant from 2010/09/07.

17 **SPECIAL CONDITIONS FOR SAFE USE**
Unchanged.

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Unchanged.

19 **ROUTINE VERIFICATIONS AND TESTS**
None.

Fontenay-aux-Roses, le 25 octobre 2010.

Le responsable de certification ATEX
ATEX certification manager
Marc GILLAUX

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des Industries Electriques — 92260 Fontenay-aux-Roses cedex — contact@lcie.fr — RCS Nanterre B 408 363 174
Une société de Bureau Veritas — France — www.lcie.fr

L C I E

1 **AVENANT D'ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

2 **Appareil** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 09 ATEX 1043 X / 02**

4 Appareil
Capteur d'accélération
Type : PNR 144-134-000-XXX

5 demandeur : Meggitt SA
Route de Moncor 4
1752 Villars-sur-Glâne
Suisse

15 **DESCRIPTION DE L'AVENANT**

Mise à jour des normes EN 60079-0 (2009) et EN 60079-15 (2010)

Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 110055-619675 / 08

Paramètres spécifiques du ou des modes de protection concerné(s) :
Inchangés

Le marquage doit être :
Modifié comme suit :
Vibro-Meter ou MEGGITT ou MFR S3960
Adresse : ...
Type : PNR 144-134-000-XXX
N° de série :..., Date de fabrication : ...
Ⓔx II 3 G
Ex nA IIC T6 à T510°C Gc
LCIE 09 ATEX 1043 X

16 **DOCUMENTS DESCRIPTIFS**
Lettre du demandeur du 20/10/2011 (2 pages).

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SÛRE**
Inchangées

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**
Couvertes par les normes EN 60079-0 (2009) et EN 60079-15 (2010)

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**
Néant

1 **VOLUNTARY SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE**

2 **Equipment** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number :
**LCIE 09 ATEX 1043 X / 02**

4 Equipment
Accelerometer
Type : PNR 144-134-000-XXX

5 Applicant : Meggitt SA
Route de Moncor 4
1752 Villars-sur-Glâne
Switzerland

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**
Normative update according to EN 60079-0 (2009) and EN 60079-15 (2010)

The examination and test results are recorded in confidential report N° 110055-619675 / 08

Specific parameters of the concerned protection mode :

Unchanged

The marking shall be :
Modified as follows :
Vibro-Meter or MEGGITT or MFR S3960
Address : ...
Type : PNR 144-134-000-XXX
Serial Number:..., Year of Construction : ...
Ⓔx II 3 G
Ex nA IIC T6 to T510°C Gc
LCIE 09 ATEX 1043 X

16 **DESCRIPTIVE DOCUMENTS**
Applicant's letter dated 2011/10/20 (2 pages)

17 **SPECIAL CONDITIONS FOR SAFE USE**
Unchanged

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Covered by standards EN 60079-0 (2009) and EN 60079-15 (2010)

19 **ROUTINE VERIFICATIONS AND TESTS**
None

Fontenay-aux-Roses, le 21/12/2011

Le responsable de certification ATEX
ATEX certification manager
Michel BRÉNON

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L C I E

1 **AVENANT D'ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

2 **Appareil** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 09 ATEX 1043 X / 03**

4 Appareil ou système de protection :
Capteur d'accélération
Type : PNR 144-134-000-XXX

5 Demandeur : Meggitt SA

15 **DESCRIPTION DE L'AVENANT**

- Mise à jour normative selon la norme EN 60079-0:2012 + Amendement A11:2013
- Ajout d'un essai individuel de rigidité diélectrique,

Définition du type/ *Type definition*:

PNR 144-134-000-XXX
X = 0...9 : dépend du type de connecteur, du type et de la longueur du câble */ depends on the type of connector, the type and the length of cable.*

Les résultats des vérifications et essais de type sont enregistrés dans le rapport confidentiel n°130454-662462-07.

Paramètres spécifiques du ou des modes de protection concerné(s) :
U ≤28 V, I ≤100 mA, P ≤0,7 W

Le marquage doit être :
Meggitt SA ou Vibro-meter ou MFR S3960
Adresse : ...
Type : PNR 144-134-000-XXX
N° de fabrication : ...
Année de fabrication : ...
⟨Ex⟩ II 3 G
Ex nA IIC T6...510°C Gc (*)
LCIE 09 ATEX 1043 X

Le marquage peut être réduit comme suit :
Meggitt SA ou Vibro-meter ou MFR S3960
PNR 144-134-000-XXX
⟨Ex⟩ II 3 G
Ex nA IIC T6...510°C Gc (*)
LCIE 09 ATEX 1043 X

Fontenay-aux-Roses, le 02 décembre 2014

1 **VOLUNTARY SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE**

2 **Equipment** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number:
**LCIE 09 ATEX 1043 X / 03**

4 Equipment or protective system:
Accelerometer
Type: PNR 144-134-000-XXX

5 Applicant: Meggitt SA

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**

- Normative update according to standard EN 60079-0:2012 + Amendment A11:2013
- Add of routine dielectric strength test,

The results of type verifications and tests are recorded in confidential report n°130454-662462-07.

Specific parameters of the concerned protection mode:

U ≤28 V, I ≤100 mA, P ≤0.7 W

The marking shall be:
Meggitt SA or Vibro-meter or MFR S3960
Address: ...
Type: PNR 144-134-000-XXX
Serial number: ...
Year of construction: ...
⟨Ex⟩ II 3 G
Ex nA IIC T6...510°C Gc (*)
LCIE 09 ATEX 1043 X

The marking can be reduced as follows:
Meggitt SA or Vibro-meter or MFR S3960
PNR 144-134-000-XXX
⟨Ex⟩ II 3 G
Ex nA IIC T6...510°C Gc (*)
LCIE 09 ATEX 1043 X

Le Responsable de Certification ATEX
ATEX Certification Officer
Michel EQUI

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13 **ANNEXE**

14 **AVENANT D'ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

**LCIE 09 ATEX 1043 X / 03**

15 **DESCRIPTION DE L'AVENANT (suite)**

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concerne.

16 **DOCUMENTS DESCRIPTIFS**
Dossier technique n° DT 1069 rév. 00 du 25/09/2014.
Ce dossier comprend 2 rubriques (6 pages).

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SURE**

1. Température ambiante d'utilisation : -200°C à +500°C

2. Classement en température en fonction de la température ambiante d'utilisation :

| | T6 | T5 | T4 | T3 | T2 | T1 | 510°C |
|---|---|---|---|---|---|---|---|
| Température ambiante d'utilisation *Ambient temperature in service* | ≤+80°C | ≤+95°C | ≤+130°C | ≤+195°C | ≤+290°C | ≤+440°C | ≤+500°C |

3. Des mesures doivent être prises afin d'éviter que la tension nominale ne soit pas dépassée par des perturbations transitoires de plus de 119 V.

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**

Conformité aux normes européennes EN 60079-0:2012 + Amendement A11:2013 et EN 60079-15:2010.

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**

Chaque appareil doit être soumis à un essai de rigidité diélectrique sous une tension d'essai de 500 V efficace, appliquée entre les conducteurs et le châssis durant 60 s, conformément au paragraphe 6.5.1 de la norme EN 60079-15:2010.
Autrement, l'essai doit être exécuté à 600 V efficace pendant au moins 100 ms.

13 **SCHEDULE**

14 **VOLUNTARY SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE**

**LCIE 09 ATEX 1043 X / 03**

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE (continued)**

The equipment shall also bear the usual marking required by the manufacturing standards applying to such equipment.

16 **DESCRIPTIVE DOCUMENTS**
Technical file n° DT 1069 rev. 00 dated 2014/09/25.
This file includes 2 items (6 pages).

17 **SPECIAL CONDITIONS FOR SAFE USE**

1. Ambient temperature in service: -200°C to +500°C

2. Temperature classification in function of the ambient temperature in service:

3. Provisions shall be made to prevent the rated voltage from being exceeded by transient disturbances of more than 119 V.

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Compliance with European standards EN 60079-0:2012 + Amendment A11:2013 and EN 60079-15:2010.

19 **ROUTINE VERIFICATIONS AND TESTS**

Each equipment shall be submitted to a dielectric strength test with test voltage of 500 V r.m.s, applied between wires and body during 60 s, carried out in accordance with clause 6.5.1 standard EN 60079-15:2010.

Alternatively, a test shall be carried out at 600 V r.m.s during at least 100 ms.

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**Deutsche Übersetzung der originalen französischen Kopie der Seite 1**

1 **FREIWILLIGES TYPENPRÜFZERTIFIKAT**

2 Geräte zur Verwendung in explosionsgefährdeten Bereichen - **Richtlinie 94/9/EG**

3 Zertifikatnummer
**LCIE 09 ATEX 1043X**

4 Gerät
Beschleunigungsgeber
Type : PNR: 144-134-000-XXX

5 Hersteller: VIBRO METER
Adresse: Route de Moncor 4, 1701 FRIBOURG, SCHWEIZ

7 Dieses Gerät oder Schutzsystem und die möglichen, zulässigen Varianten sind im Anhang dieses Zertifikats und den darin aufgeführten Unterlagen beschrieben.

8 LCIE bestätigt, dass dieses Gerät oder Schutzsystem die wesentlichen Gesundheits- und Sicherheitsanforderungen in Bezug auf die Auslegung und die Bauart von Geräten und Schutzsystemen der Kategorie 3 (elektrisch) oder Kategorien 2 und 3 (nicht elektrisch) zur Verwendung in explosionsgefährdeten Bereichen nach Anhang II der Richtlinie 94/9EG des Europaparlaments und des Rats vom 23. März 1994 erfüllt.

Die Prüf- und Testergebnisse sind im vertraulichen Bericht Nr. 94576 - 589014/6 aufgezeichnet.

9 Die Einhaltung der wesentlichen Gesundheits- und Sicherheitsanforderungen wird durch die Übereinstimmung mit den folgenden Dokumenten sichergestellt:
- EN 60079-0 (2006)
- EN 60079-15 (2005)

10 Ein "X" nach der Zertifikatnummer gibt an, dass für die sichere Verwendung des Gerätes oder Schutzsystemes besondere Bedingungen gemäß dem Anhang dieses Zertifikates gelten.

11 Dieses EG-Prüfzertifikat betrifft nur die Bauart und die Prüfungen und Tests des betreffenden Geräts oder Schutzsystems gemäss Anhang III der Richtlinie 94/9/EG.

Zusätzliche Anforderungen dieser Richtlinie gelten für die Fertigung und Lieferung des Geräts oder Schutzsystems. Diese werden durch dieses Zertifikat nicht abgedeckt.

12 Die Kennzeichnung des Gerätes oder Schutzsystems muss die unter Punkt 15 erläuterten Angaben enthalten.

Fontenay-aux-Roses,
am 10. Oktober 2009

Leiter Zertifizierung

Trockenstempel

**Rev.A**
Seite 1/2

LCIE haftet nur für den französischen Text.
Dieses Zertifikat darf nur vollständig und ohne Änderungen vervielfältigt werden.

Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 1**

13 **ANHANG**

14 **FREIWILLIGES TYPENPRÜFZERTIFIKAT**

**LCIE 09 ATEX 1043 X**

15 **BESCHREIBUNG DES GERÄTES ODER SCHUTZSYSTEMS**

Beschleunigungsgeber
Typ : PNR : 144-134-000-XXX

Das Gerät verwandelt elektrische Eingangsladung in elektrisches Ausgangssignal welches proportional zur Beschleunigung oder dem Druck ist.

Spezifische Kenndaten der betroffenen Schutzarten:

U ≤ 28 V, I ≤ 100 mA, P ≤ 0,7 W

Kennzeichnung:
VIBRO-METER Adresse: ..
Typ: PNR: 144-134-000-XXX
Herstellungsnummer: ... Herstellungsjahr: ...
II 3G Ex nA II T6 bis T510
LCIE 09 ATEX 1043 X

Die Kennzeichnung kann wiefolgt vereinfacht werden:
VIBRO-METER PNR: 144-134-000-XXX
II 3G LCIE 09 ATEX 1043 X

Die Geräte müssen ebenfalls mit der Kennzeichnung versehen sein, die in den Herstellungsnormen der betreffenden Geräte normalerweise vorgesehen sind.

16 **BESCHREIBENDE UNTERLAGEN**

Zertifizierungs-Datei-Nr. DT 1046 Ausgabe 0 vom 20. Juli 2009.
Diese Datei enthält 7 Punkte (9 Seiten).

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

Umgebungstemperatur: −200 °C bis +500 °C

Temperaturklassifizierung:
T6 bis Ta = +80 °C
T5 bis Ta = +95 °C
T4 bis Ta = +130 °C
T3 bis Ta = +195 °C
T2 bis Ta = +290 °C
T1 bis Ta = +440 °C
T510 bis Ta = +500 °C

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**
Siehe unter Punkt 9 aufgelistete Bestimmungen.

19 **ROUTINEPRÜFUNGEN UND TESTS**

Keine.

**Rev.A**
Seite 2/2

Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 2**

1 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

2 Geräte zur Verwendung in explosionsgefährdeten Bereichen (**Richtlinie 94/9/EG**)

3 Zusätzliche Zertifikatnummer:
**LCIE 09 ATEX 1043 X / 01**

4 Gerät
Beschleunigungsgeber
Type : PNR: 144-134-000-XXX

5 Hersteller: Meggitt SA
Adresse: Route de Moncor 4, 1752 Villars-sur-Glâne, Schweiz

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS**

- Änderung der juristischen Person und Addresse des Antragstellers
- Modifikation des eingetragenen Markenzeichens

Die Prüf- und Testergebnisse sind im vertraulichen Bericht Nr. 102105-602924/16 aufgezeichnet.

Spezifische Kenndaten der betroffenen Schutzarten:
Unverändert.

Die Kennzeichnung soll lauten:
Unverändert, bis auf Markenzeichen vibro-meter wird zu vibro-meter oder MEGGITT oder MFR S3960 sowie die Adressänderung.

16 **BESCHREIBENDE UNTERLAGEN**

Brief des Antragsstellers vom 07.09.2010.

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

Unverändert.

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**

Unverändert.

19 **ROUTINEPRÜFUNGEN UND TESTS**

Keine.

Fontenay-aux-Roses,
am 25. Oktober 2010

Leiter Zertifizierung

Trockenstempel



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 2**

1 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

2 Geräte zur Verwendung in explosionsgefährdeten Bereichen (**Richtlinie 94/9/EG**)

3 Zusätzliche Zertifikatnummer:
**LCIE 09 ATEX 1043 X / 02**

4 Gerät
Beschleunigungsgeber
Type : PNR: 144-134-000-XXX

5 Hersteller: Meggitt SA
Adresse: Route de Moncor 4, 1752 Villars-sur-Glâne, Schweiz

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS**

Standardaktualisierungen gemäß folgender Richtlinien: EN 60079-0 (2009) und EN 60079-15 (2010)

Die Prüf- und Testergebnisse sind im vertraulichen Bericht Nr. 110055-619675 / 08 aufgezeichnet.

Spezifische Kenndaten der betroffenen Schutzarten:
Unverändert.

Die Kennzeichnung lautet wie folgt:
Wie folgt modifiziert:
Vibro-Meter oder MEGGITT oder MFR S3960
Adresse: ...
Typ: PNR 144-134-000-XXX
Herstellungsnummer: ... Herstellungsjahr: ...
Ex II 3 G
Ex nA IIC T6 bis T510°C Gc
LCIE 09 ATEX 1043 X

16 **BESCHREIBENDE UNTERLAGEN**

Brief des Antragsstellers vom 20.10.2011 (2 Seiten)

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

Unverändert.

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**

Werden von folgenden Richtlinien abgedeckt:
EN 60079-0 (2009) und EN 60079-15 (2010)

19 **ROUTINEPRÜFUNGEN UND TESTS**

Keine.

Fontenay-aux-Roses,
am 21. Dezember 2011

Leiter Zertifizierung

Trockenstempel



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**Deutsche Übersetzung der originalen französischen Kopie der Seite 3**

1 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

2 Geräte zur Verwendung in explosionsgefährdeten Bereichen (**Richtlinie 94/9/EG**)

3 Zusätzliche Zertifikatnummer:
**LCIE 09 ATEX 1043 X / 03**

4 Gerät
Beschleunigungsgeber
Typ: PNR 144-134-000-XXX

5 Antragsteller: Meggitt SA

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS**

– Standardaktualisierungen gemäß folgender Richtlinien:
EN 60079-0:2012 + Änderung A11:2013.
– Hinzufügen einer Stückprüfung von Durchschlagfestigkeit.

Definition von Gerät:
PNR 144-134-000-XXX
X = 0 … 9: Abhängig von der Steckertyp, Kabeltyp und Kabellänge.

Die Testergebnisse sind im vertraulichen Bericht Nr. 130454-662462-07.

Spezifische Kenndaten der betroffenen Schutzarten:
U ≤ 28 V, I ≤ 100 mA, P ≤ 0,7 W

Die Kennzeichnung wird wie folgt festgesetzt:
Meggitt SA oder Vibro-Meter oder MFR S3960
Adresse: …
Typ: PNR 144-134-000-XXX
Herstellungsnummer: … Herstellungsjahr: …
Ex II 3 G
Ex nA IIC T6…510°C Gc(*)
LCIE 09 ATEX 1043 X

Die Kennzeichnung kann wie folgt reduziert werden:
Meggitt SA oder Vibro-Meter oder MFR S3960
PNR 144-134-000-XXX
Ex II 3 G
Ex nA IIC T6…510°C Gc(*)
LCIE 09 ATEX 1043 X

(*): Siehe besondere Bedingungen für die sichere Anwendung (unter Punkt 17)

Fontenay-aux-Roses,
am 02. Dezember 2014

Leiter Zertifizierung

Trockenstempel



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**Deutsche Übersetzung der originalen französischen Kopie der Seite 3**

13 **ANHANG**

14 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

**LCIE 09 ATEX 1043 X / 03**

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS (FORTSETZUNG)**

Die Geräte müssen ebenfalls mit der Kennzeichnung versehen sein, die in den Herstellungsnormen der betreffenden elektrischen Geräte normalerweise vorgesehen sind.

16 **BESCHREIBENDE UNTERLAGEN**

Zertifizierungs-Datei-Nr. DT 1069 Ausgabe 00 vom 2014/09/25.
Diese Datei enthält 2 Punkte (6 Seiten).

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

1. Umgebungstemperatur im Betrieb: −200 °C bis +500°C.

2. Temperaturklassifizierung entsprechend der Umgebungstemperatur im Betrieb:

| | T6 | T5 | T4 | T3 | T2 | T1 | 510°C |
|---|---|---|---|---|---|---|---|
| Umgebungstemperatur im Betrieb | ≤ +80 °C | ≤ +95°C | ≤ +130 °C | ≤ +195 °C | ≤ +290 °C | ≤ +440 °C | ≤ +500 °C |

3. Es müssen Vorkehrungen getroffen werden dass kurzzeitige Störungen die Nominalspannungen nicht mehr als 119 V überschreiten können.

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**

Werden von folgenden Richtlinien abgedeckt:
EN 60079-0:2012 + Änderung A11:2013 und EN 60079-15:2010.

19 **ROUTINEPRÜFUNGEN UND TESTS**

Jedes Gerät muss einem Durschlagsfestigkeitstest unterzogen werden. Spannung von 500 V (RMS) währen 60 Sekunden zwischen den Leitern und dem Gehäuse gemäss Norm EN 60079-15:2010.
Andernfalls muss ein Test mit 600 V (RMS) während mindestens 100 ms durchgeführt werden



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

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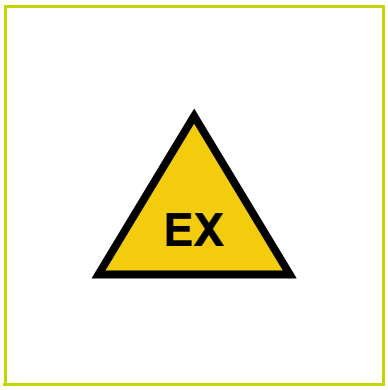
DIESE SEITE WURDE ABSICHTLICH LEER GELASSEN

EX CERTIFICATE – ATEX

vibro-meter®

# LCIE 02 ATEX 6179 X
# for
# CA20x piezoelectric accelerometers




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference LCIE 02 ATEX 6179 X
Edition 8 – January 2021

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# ATTESTATION D'EXAMEN UE DE TYPE
## *EU TYPE EXAMINATION CERTIFICATE*

1 **Version : 05** — **LCIE 02 ATEX 6179 X** — **Issue : 05**

**Directive 2014/34/UE** / **Directive 2014/34/EU**

2 Appareil ou Système de Protection destiné à être utilisé en Atmosphères Explosibles / Equipment or Protective System Intended for use in Potentially Explosive Atmospheres

3 Produit : Capteur d'accélération / Product : Acceleration transducer

**Type: 144-20x-000-yyy**

4 Fabricant : / Manufacturer :

**Meggitt SA**

5 Adresse : / Address :

Route de Moncor 4
1752 Villars-sur-Glâne
Switzerland

6 Ce produit et ses variantes éventuelles acceptées sont décrits dans l'annexe de la présente attestation et dans les documents descriptifs cités en référence. / This product and any acceptable variations thereto are specified in the schedule to this certificate and the documents therein referred to.

7 Le LCIE, Organisme Notifié sous la référence 0081 conformément à l'article 17 de la directive 2014/34/UE du Parlement européen et du Conseil du 26 février 2014, certifie que ce produit est conforme aux Exigences Essentielles de Sécurité et de Santé pour la conception et la construction de produits destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la Directive.
Accréditation Cofrac Certification de Produits et Services, n°5-0014. Portée disponible sur www.cofrac.fr. / LCIE, Notified Body number 0081 in accordance with article 17 of the Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014 certifies that product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.
Cofrac Accreditation Product and Services Certification n°5-0014. Scope available on www.cofrac.fr.

Les résultats des vérifications et essais figurent dans le(s) rapport(s) confidentiel(s) N° : / The examination and test results are recorded in confidential report(s) N°:

166439-749029-M1

8 Le respect des Exigences Essentielles de Sécurité et de Santé est assuré par la conformité à : / Compliance with the Essential Health and Safety Requirements has been assured by compliance with :

EN IEC 60079-0:2018
EN 60079-11:2012

9 Le signe « X » lorsqu'il est placé à la suite du numéro de l'attestation, indique que cet appareil est soumis aux conditions particulières d'utilisation, mentionnées dans l'annexe de cette attestation. / If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

10 Cette Attestation d'Examen UE de Type concerne uniquement la conception et la construction du produit spécifié.
Des exigences supplémentaires de la directive sont applicables pour la fabrication et la fourniture du produit. Ces dernières ne sont pas couvertes par la présente attestation. / This EU Type Examination Certificate relates only to the design and construction of the specified product.
Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

11 Le marquage du produit est mentionné dans l'annexe de cette attestation. / The marking of the product is specified in the schedule to this certificate.

Fontenay-aux-Roses, le 17 décembre 2020

Responsable de Certification
Certification Officer
Julien Gauthier

LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES
S.A.S au capital de 15.745.984 €
RCS Nanterre B 408 363 174
33 avenue du Général Leclerc
F - 92260 FONTENAY AUX ROSES

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Une société de Bureau Veritas
33 Avenue du Général Leclerc
92260 Fontenay-aux-Roses
FRANCE
WWW.LCIE.FR

# ATTESTATION D'EXAMEN UE DE TYPE - ANNEXE
## *EU TYPE EXAMINATION CERTIFICATE - SCHEDULE*

1 **Version : 05** — **LCIE 02 ATEX 6179 X** — **Issue : 05**

12 **DESCRIPTION DU PRODUIT**

Le capteur d'accélération est composé d'un boîtier en acier inoxydable, qui abrite un dispositif piézoélectrique comme élément de détection.

Ce capteur d'accélération est un transducteur électromécanique fournissant à ses bornes une charge électrique proportionnelle à la vibration à laquelle il est soumis. Cette vibration est transmise à l'élément sensible par l'intermédiaire de masse sismique. Il fonctionne avec un matériau piézo-électrique monté en cisaillement.

Il y a deux versions:
1) Capteur d'accélération avec connecteur.
2) Capteur d'accélération avec câble intégré d'une longueur 315 mètres max.

**DESCRIPTION OF PRODUCT**

Acceleration transducer is composed of a stainless steel enclosure, which house a piezoelectric device as sensing element.

This acceleration sensor is an electro-mechanical transducer that supplies to its terminal an electrical charge proportional to the vibration which is submitted.
This vibration is transmitted to the sensible element by the intermediate of seismic mass. It operates with a piezo-electrical material built in shear.

There are two versions :
1) Acceleration transducer with connector.
2) Acceleration transducer with integral cable length 315 meters max.

**DETAIL DE LA GAMME** / **RANGE DETAILS**

144-20x-000-yyy

| | |
|---|---|
| **x** | Définit la conception de la tête du capteur (x = 0 à 9)<br>*Defines the design of the sensor head (x = 0 to 9)* |
| **yyy** | Dépend du type de connecteur et de la longueur du câble (y = 0 à 9)<br>*Depends of the connector type and cable length (y = 0 to 9)* |

**CARACTERISTIQUES** / **RATINGS**

| **Version**<br>***Version*** | **Paramètres électriques de sécurité intrinsèque**<br>***Intrinsic safety electrical parameters*** |
|---|---|
| Connecteur / *Connector* | $U_i$ : 28 V; $I_i$ : 100 mA; $P_i$ : 0.7 W; $C_i$ : 20 nF; $L_i$ : 0 |
| Câble intégré / *Integral cable* | $U_i$ : 28 V; $I_i$ : 100 mA; $P_i$ : 0.7 W; $C_i$ : 20 nF + 0.2 nF/m; $L_i$ : 1 µH/m |

**MARQUAGE**

Le marquage du produit doit comprendre :

vibro-meter® ou MEGGIT SA ou MFR S3960
Adresse : …
Type : 144-20x-000-yyy (1)
N° de fabrication : …
Année de fabrication : …
Ex II 1 G
Ex ia IIC T6…T2 Ga (2)
LCIE 02 ATEX 6179 X
-55°C ≤ $T_{amb}$ ≤ +260°C
$U_i$: … V; $I_i$: … mA; $P_i$: … mW; $C_i$: … nF; $L_i$: … µH (3)
(1): complété par la désignation de type.
(2): voir le tableau des températures.
(3): complétées par les paramètres électriques de sécurité intrinsèque de la version concernée.

**MARKING**

The marking of the product shall include the following :

vibro-meter® or MEGGIT SA or MFR S3960
Address: …
Type: 144-20x-000-yyy (1)
Serial number: …
Year of construction: …
Ex II 1 G
Ex ia IIC T6…T2 Ga (2)
LCIE 02 ATEX 6179 X
-55°C ≤ $T_{amb}$ ≤ +260°C
$U_i$: … V; $I_i$: … mA; $P_i$: … mW; $C_i$: … nF; $L_i$: … µH (3)
(1): completed with type designation.
(2): see temperatures table.
(3): completed by intrinsic safety electrical parameters of the version concerned.

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# ATTESTATION D'EXAMEN UE DE TYPE - ANNEXE
## *EU TYPE EXAMINATION CERTIFICATE - SCHEDULE*

1 **Version : 05** — **LCIE 02 ATEX 6179 X** — **Issue : 05**

Le marquage peut être réduit ainsi :

vibro-meter® ou MEGGIT SA ou MFR S3960
Adresse : …
Type : 144-20x-000-yyy (1)
N° de fabrication : …
Année de fabrication : …
Ⓔx II 1 G
Ex ia IIC T6…T2 Ga
LCIE 02 ATEX 6179 X
(1): complété par la désignation de type.

The marking can be reduce as following:

vibro-meter® or MEGGIT SA or MFR S3960
Address: …
Type: 144-20x-000-yyy (1)
Serial number: …
Year of construction: …
Ⓔx II 1 G
Ex ia IIC T6…T2 Ga
LCIE 02 ATEX 6179 X
(1): completed with type designation.

Tableau des températures / *Temperatures table*

| **Température ambiante** *Ambient temperature* | **Classe de température** *Temperature class* |
|---|---|
| -55°C ≤ $T_{amb}$ ≤ +80°C | T6 |
| -55°C ≤ $T_{amb}$ ≤ +95°C | T5 |
| -55°C ≤ $T_{amb}$ ≤ +130°C | T4 |
| -55°C ≤ $T_{amb}$ ≤ +195°C | T3 |
| -55°C ≤ $T_{amb}$ ≤ +260°C | T2 |

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concernent sous la responsabilité du fabricant.

The equipment shall also bear the usual marking required by the product standards applying to such equipment under the manufacturer responsibility.

13 **CONDITIONS PARTICULIERES D'UTILISATION**

a. L'appareil ne doit être raccordé qu'à des matériels associés de sécurité intrinsèque certifiés. Cette association doit être compatible vis-à-vis de la sécurité intrinsèque conformément aux exigences de la norme EN 60079-25.

b. Température ambiante d'utilisation : -55°C à +260°C.

c. Le montage de l'appareil dans une installation doit être effectué de telle sorte que le corps métallique du capteur d'accélération et le blindage du câble soient reliés de manière fiable à la terre du système.

d. L'appareil devra être installé comme défini dans le plan n° PZ 9134 rév. 00 du 10/02/2020.

e. Le câble utilisé doit avoir une température d'utilisation compatible avec l'environnement dans lequel l'appareil est installé.

**SPECIFIC CONDITIONS OF USE**

a. The apparatus shall only be connected to associated intrinsically safe apparatus. This combination must be compatible as regard the intrinsic safety rules according to the requirements of EN 60079-25 standard.

b. Operating ambient temperature: -55°C to +260°C.

c. The mounting of the apparatus into an installation must be carried out in such a way that metallic body of acceleration transducer and cable shield are reliably connected to the system earth.

d. The apparatus must be installed per drawing n° PZ 9134 rev. 00 dated 2020/02/10.

e. The cable used must have an operating temperature compatible with the environment in which the equipment is installed.

14 **EXIGENCES ESSENTIELLES DE SANTE ET DE SECURITE**

Couvertes par les normes listées au point 8.

**ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Covered by standards listed at 8.

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# ATTESTATION D'EXAMEN UE DE TYPE - ANNEXE
## *EU TYPE EXAMINATION CERTIFICATE - SCHEDULE*

1 **Version : 05** — **LCIE 02 ATEX 6179 X** — **Issue : 05**

15 **DOCUMENTS DESCRIPTIFS** — **DESCRIPTIVE DOCUMENTS**

| N° | Description | Reference | Rev. | Date | Page(s) |
|---|---|---|---|---|---|
| 1. | Dossier technique / *Technical file* | DT-1078 | 00 | 2020/12/09 | 19 |
| 2. | Manuel d'instruction / *Instruction manual* | PZ 9135 | – | -- | -- |

16 **INFORMATIONS COMPLEMENTAIRES**

**Essais individuels**

Néant.

**Conditions de certification**

Les détenteurs d'attestations d'examen UE de type doivent également satisfaire les exigences de contrôle de production telles que définies à l'article 13 de la Directive 2014/34/UE.

**ADDITIONAL INFORMATIONS**

**Routine tests**

None.

**Conditions of certification**

Holders of EU type examination certificates are also required to comply with the production control requirements defined in article 13 of Directive 2014/34/EU.

17 **DETAILS DES MODIFICATIONS DE L'ATTESTATION** — **DETAILS OF CERTIFICATE CHANGES**

| | | |
|---|---|---|
| Version 00 : (09/01/2003) | Evaluation initiale selon les normes suivantes :<br>- EN 50014:1997+A1 et A2,<br>- EN 50020:1994. | Issue 00 : (2003/01/09) | Initial assessment according to following standards:<br>- EN 50014:1997+A1 and A2,<br>- EN 50020:1994. |
| Version 01 : (17/12/2007) | - Mise à jour normative selon les normes EN 60079-0:2006 et EN 60079-11:2007.<br>- Ajout de la plage de température ambiante dans les conditions spéciale d'utilisation sûres. | Issue 01 (2007/12/17) | - Normative update according to EN 60079-0:2006 and EN 60079-11:2007 standards.<br>- Adding of operational temperature range in clause special conditions for a safe use. |
| Version 02 : (25/10/2010) | - Changement de nom et d'adresse du fabricant.<br>- Modification des marques commerciales déposées. | Issue 02 (2010/10/25) | - Change of legal entity name and address of applicant.<br>- Modification of the registered trade mark. |
| Version 03 : (21/12/2011) | - Mise à jour normative selon la norme EN 60079-0:2009.<br>- Mise à jour du type.<br>- Correction de la classe de température. | Issue 03 (2011/12/21) | - Normative update according to EN 60079-0:2009 standard.<br>- Type update.<br>- Correction of the temperature classification. |
| Version 04 : (29/07/2014) | - Mise à jour normative selon les normes EN 60079-0:2012 et EN 60079-11:2012.<br>- Modification des paramètres électriques.<br>- Modification du classement en température.<br>- Mise à jour du dossier technique. | Issue 04 (2014/07/29) | - Normative update according to EN 60079-0:2012 and EN 60079-11:2012 standards.<br>- Modification of the electrical parameters.<br>- Modification of the temperature classification.<br>- Update of the technical file. |
| Version 05: | - Mise à jour normative selon la norme EN IEC 60079-0:2018.<br>- Modification de la valeur de la capacité du transducteur: 20 nF au lieu de 5 nF. | Issue 05 | - Normative update according to EN IEC 60079-0:2018 standard.<br>- Modification of the transducer capacitance value: 20 nF instead of 5 nF. |

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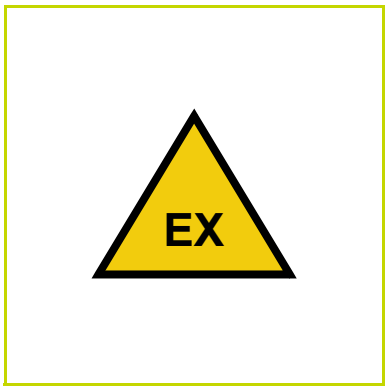
EX CERTIFICATE – ATEX

vibro-meter®

# LCIE 09 ATEX 1044 X
# for
# CA20x piezoelectric accelerometers

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Document reference LCIE 09 ATEX 1044 X
Edition 5 – January 2023

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# ATTESTATION D'EXAMEN DE TYPE
## *TYPE EXAMINATION CERTIFICATE*

1 **Version : 04** — **LCIE 09 ATEX 1044 X** — **Issue : 04**

| | **Directive 2014/34/UE** | **Directive 2014/34/EU** |
|---|---|---|
| 2 | Appareil ou Système de Protection destiné à être utilisé en Atmosphères Explosibles | Equipment or Protective System Intended for use in Potentially Explosive Atmospheres |
| 3 | Produit :<br>**Capteur d'accélération** | Product :<br>**Accelerometer** |

**Type: PNR 144-20X-000-YYY**

4 Fabricant : / Manufacturer :
**Meggitt SA**

5 Adresse : / Address :
Route de Moncor 4
1752 Villars-sur-Glâne
SWITZERLAND

6 Ce produit et ses variantes éventuelles acceptées sont décrits dans l'annexe de la présente attestation et dans les documents descriptifs cités en référence.
This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

7 Le LCIE certifie que ce produit est conforme aux Exigences Essentielles de Sécurité et de Santé pour la conception et la construction de produits destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la Directive.
Les résultats des vérifications et essais figurent dans le(s) rapport(s) confidentiel(s) N° :
LCIE certifies that product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.
The examination and test results are recorded in confidential report(s) N°:
94576-589014/7; 102105-602924/18; 110055-619675/09; 130454-662562-08; 17461656-785107-M3

8 Le respect des Exigences Essentielles de Sécurité et de Santé est assuré par la conformité à :
Compliance with the Essential Health and Safety Requirements has been assured by compliance with :
EN IEC 60079-0:2018
EN 60079-15:2010

9 Le signe « X » lorsqu'il est placé à la suite du numéro de l'attestation, indique que cet appareil est soumis aux conditions particulières d'utilisation, mentionnées dans l'annexe de cette attestation.
If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

10 Cette Attestation d'Examen de Type concerne uniquement la conception et la construction du produit spécifié.
Des exigences supplémentaires de la directive sont applicables pour la fabrication et la fourniture du produit. Ces dernières ne sont pas couvertes par la présente attestation.
This Type Examination Certificate relates only to the design and construction of the specified product.
Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

11 Le marquage du produit est mentionné dans l'annexe de cette attestation.
The marking of the product is specified in the schedule to this certificate.

Fontenay-aux-Roses, le 22 décembre 2022

Responsable de Certification
Certification Officer
Julien Gauthier

LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES
S.A.S au capital de 15.745.984 €
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33 avenue du Général Leclerc
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# ATTESTATION D'EXAMEN DE TYPE - ANNEXE
## *TYPE EXAMINATION CERTIFICATE - SCHEDULE*

1 **Version : 04** — **LCIE 09 ATEX 1044 X** — **Issue : 04**

12 **DESCRIPTION DU PRODUIT**

L'accéléromètre type PNR 144-20X-000-YYY fonctionne comme un transducteur électromécanique qui fournit à ses bornes une charge électrique proportionnelle à l'accélération subie. L'équipement est équipé d'un câble câblé permanent protégé par une gaine métallique ou par un connecteur.

**DETAIL DE LA GAMME**

PNR 144-20X-000-YYY
X = 0...9 : définit l'exécution de la tête du capteur.
Y = 0...9 : dépend du type de connecteur et de la longueur du câble.

**CARACTERISTIQUES**

U ≤ 28 V, I ≤ 100 mA, P ≤ 0.7 W

**MARQUAGE**

Le marquage du produit doit comprendre :

Le marquage doit être :
Meggitt SA ou Vibro-meter ou MFR S3960
Adresse : …
Type : 144-20X-000-YYY
N° de fabrication : …
Année de fabrication : …
II 3 G
Ex nA IIC T6…T2 Gc (*)
LCIE 09 ATEX 1044 X

Le marquage peut être réduit comme suit :
Meggitt SA ou Vibro-meter ou MFR S3960
144-20X-000-YYY
II 3 G
Ex nA IIC T6…T2 Gc (*)
LCIE 09 ATEX 1044 X
(*) : voir conditions spéciales pour une utilisation sûre.

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concernent sous la responsabilité du fabricant.

13 **CONDITIONS PARTICULIERES D'UTILISATION**

a. Température ambiante en service : -55°C à +260°C.

b. Classement en température en fonction de la température ambiante d'utilisation :

**DESCRIPTION OF PRODUCT**

The accelerometer type PNR 144-20X-000-YYY functions as an electromechanical transducer which supplies at its terminals electrical charge proportional to the submitted acceleration. The equipment is equipped with a permanently wired cable protected by metallic sheath or with a connector.

**RANGE DETAILS**

PNR 144-20X-000-YYY
X = 0…9: defines the execution of the sensor head.
Y = 0…9: depends on the type of connector and cable length.

**RATINGS**

**MARKING**

The marking of the product shall include the following :

The marking shall be:
Meggitt SA or Vibro-meter or MFR S3960
Address: …
Type: 144-20X-000-YYY
Serial number: …
Year of construction: …
II 3 G
Ex nA IIC T6…T2 Gc (*)
LCIE 09 ATEX 1044 X

The marking can be reduced as follows:
Meggitt SA or Vibro-meter or MFR S3960
144-20X-000-YYY
II 3 G
Ex nA IIC T6…T2 Gc (*)
LCIE 09 ATEX 1044 X
(*): see special conditions for safe use.

The equipment shall also bear the usual marking required by the product standards applying to such equipment under the manufacturer responsibility.

**SPECIFIC CONDITIONS OF USE**

Ambient temperature in service: -55°C to +260°C.

Temperature classification in function of the ambient temperature in service:

| | T6 | T5 | T4 | T3 | T2 |
|---|---|---|---|---|---|
| Température ambiante d'utilisation<br>*Ambient temperature in service* | ≤ +80°C | ≤ +95°C | ≤ +130°C | ≤ +195°C | ≤ +260°C |

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Laboratoire Central des Industries Electriques
Une société de Bureau Veritas
33 Avenue du Général Leclerc
92260 Fontenay-aux-Roses
FRANCE
WWW.LCIE.FR

# ATTESTATION D'EXAMEN DE TYPE - ANNEXE
## *TYPE EXAMINATION CERTIFICATE - SCHEDULE*

1 **Version : 04** **LCIE 09 ATEX 1044 X** **Issue : 04**

c. Des mesures doivent être prises afin d'éviter que la tension nominale ne soit pas dépassée par des perturbations transitoires de plus de 119 V.

Provisions shall be made to prevent the rated voltage from being exceeded by transient disturbances of more than 119 V.

14 **EXIGENCES ESSENTIELLES DE SANTE ET DE SECURITE**

Couvertes par les normes listées au point 8.

**ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Covered by standards listed at 8.

15 **DOCUMENTS DESCRIPTIFS**

**DESCRIPTIVE DOCUMENTS**

| N° | Description | Reference | Rev. | Date | Page(s) |
|---|---|---|---|---|---|
| 1. | Technical file | DT1047 | 00 | 2009/04/20 | - |
| 2. | Technical file | DT 1069 | 00 | 2014/09/25 | - |
| 3. | Technical file | DT 1084 | 00 | 2022/12/13 | - |
| 4. | User instruction | Ex MANUAL CA20x accelerometer | 05 | - | - |

16 **INFORMATIONS COMPLEMENTAIRES**

**Essais individuels**

Chaque appareil doit être soumis à un essai de rigidité diélectrique sous une tension d'essai de 500 V efficace, appliquée entre les conducteurs et le châssis durant 60 s, conformément au paragraphe 6.5.1 de la norme EN 60079-15:2010. Autrement, l'essai doit être exécuté à 600 V efficace pendant au moins 100 ms

**ADDITIONAL INFORMATIONS**

**Routine tests**

Each equipment shall be submitted to a dielectric strength test with test voltage of 500 V r.m.s, applied between wires and body during 60 s, carried out in accordance with clause 6.5.1 standard EN 60079-15:2010. Alternatively, a test shall be carried out at 600 V r.m.s during at least 100 ms.

17 **DETAILS DES MODIFICATIONS DE L'ATTESTATION**

| | |
|---|---|
| Version 00: 06/04/2009 | Évaluation initiale selon les normes EN 60079-0:2006 et EN 60079-15:2005. |
| Version 01: 06/04/2009 | - Changement de nom et d'adresse du demandeur personne morale,<br>- modifications de la marque enregistrée. |
| Version 02: 21/12/2011 | Mise à jour normative selon les normes EN 60079-0:2009 et EN 60079-15:2010. |
| Version 03: 02/12/2014 | - Mise à jour normative selon la norme EN 60079-0:2012 + amendement A11:2013.<br>- Ajout de l'essai de routine de rigidité diélectrique. |
| Version 04: | Mise à jour normative selon la norme EN IEC 60079-0:2018. |

**DETAILS OF CERTIFICATE CHANGES**

| | |
|---|---|
| Issue 00: | Initial assessment according to EN 60079-0:2006 and EN 60079-15:2005 standards. |
| Issue 01: | - Change of legal entity applicant's name and address,<br>- Modifications of registered trademark. |
| Issue 02: | Normative update according to EN 60079-0:2009 and EN 60079-15:2010 standards. |
| Issue 03: | - Normative update according to EN 60079-0:2012 standard + amendment A11:2013.<br>- Add of routine dielectric strength test. |
| Issue 04 : | Normative update according to EN IEC 60079-0:2018 standard. |

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Original copy (French, English)
MEGGITT

# ATEX certificate:

# KEMA 04 ATEX 1055

# for CA 28x, CE 28x and CE 31x

Although the certificate is available in the three languages (English, French and German), the liability of the notified body applies only on the text of the original copy of the certificate that it published.

EN

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FR

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DE

EX

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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CETTE PAGE EST LAISSÉE INTENTIONNELLEMENT VIDE
DIESE SEITE WURDE ABSICHTLICH LEER GELASSEN

DEKRA

# CERTIFICATE

## EU-Type Examination

(1)

(2) **Equipment or protective systems intended for use in potentially explosive atmospheres - Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number: **KEMA 04ATEX1055** Issue Number: **7**

(4) Product: **Piezoelectric Accelerometer Type 144-28.-000-..., Type 444-28.-000-... and Type 444-31.-000-...**

(5) Manufacturer: **Meggitt SA**

(6) Address: **Rte de Moncor 4, 1752 Villars-sur-Glâne, Switzerland**

(7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) DEKRA Certification B.V., Notified Body number 0344 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential test report number 210692400/1, issue 7.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 60079-0 : 2012 + A11** **EN 60079-11 : 2012**

except in respect of those requirements listed at item 18 of the Schedule.

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:

Ex **II 1 G Ex ia IIC T6 ... T2 Ga**

Date of certification: 24 June 2016

DEKRA Certification B.V.

R. Schuller
Certification Manager



PRODUCTS RvA C 081

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DEKRA

(13) **SCHEDULE**

(14) **to EU-Type Examination Certificate KEMA 04ATEX1055** Issue No. **7**

(15) **Description**

Piezoelectric Accelerometers sensor only Type 144-28.-000-..., sensor with remote Conditioner (Electronic box) Type 444-28.-000-… and sensor with integral Conditioner Type 444-31.-000-… are used for vibration monitoring.
The sensor converts mechanical forces (e.g. vibrations) of the equipment to which it is mounted into an electrical signal, that is processed externally. When a conversion module is integrated, the sensor signal is converted into a modulated current output signal.

Ambient temperature range, depending on type and application:

Type 444-28.-000-..1
Conditioner: -55 ºC to +100 ºC,
Sensor and Cable: -55 ºC to +260 ºC

Type 444-28.-000-..2 to 444-28.-000-..9
Conditioner: -55 ºC to +125 ºC,
Sensor and Cable: -55 ºC to +260 ºC

Type 444-31.-000-..1
Sensor and Integral
Conditioner:: -55 ºC to +100 ºC

Type 444-31.-000-..2 to to 444-31.-000-..9
Sensor and Integral
Conditioner:: -55 ºC to +125 ºC

Type 144-28.-000-…
Sensor only: -60 ºC to +260 ºC

The relation between maximum ambient temperature and temperature class is as follows for all devices, taking into account the above mentioned temperature ranges:

| Type | T6 | T5 | T4 | T3 | T2 |
|---|---|---|---|---|---|
| 444-28.-000-..1 Conditioner | +80 ºC | +95 ºC | +100 ºC | - | - |
| 444-28.-000-..2 to 444-28-000-..9 Conditioner | +65 ºC | +80 ºC | +115 ºC | +125 ºC | - |
| 444-31.-000-..1 | +80 ºC | +95 ºC | +100 ºC | - | - |
| 444-31.-000-..2 to 444-31.-000-..9 Conditioner | +65 ºC | +80 ºC | +115 ºC | +125 ºC | - |
| 144-28.-000-… | +80 ºC | +95 ºC | +130 ºC | +195 ºC | +260 ºC |



Form 227A
Version 1 (2016-04)

MEGGITT

DEKRA

(13) **SCHEDULE**

(14) **to EU-Type Examination Certificate KEMA 04ATEX1055** Issue No. **7**

**Electrical data**

Supply and output signal:
in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with following maximum values:

| Type | $U_i$ | $I_i$ | $P_i$ | $L_i$ | $C_i$ sensor | $C_i$ cable |
|---|---|---|---|---|---|---|
| 444-28.-000-..1 | 28 V | 100 mA | 0,7 W | 0mH | 10.5 nF | - |
| 444-28-000-..2 to 444-28.-000-..9 | 28 V | 100 mA | 0,7 W | 0mH | 0 nF | - |
| 444-31.-000-..1 | 28 V | 100 mA | 0,7 W | 0mH | 10.5 nF | 0,25 nF/m |
| 444-31.-000-..2 to 444-31.-000-..9 | 28 V | 100 mA | 0,7 W | 0mH | 0 nF | 0,25 nF/m |
| 144-28.-000-... | 28 V | 100 mA | 0,7 W | 0mH | 8 nF | 0,25 nF/m |

**Installation instructions**

The instructions provided with the product shall be followed in detail to assure safe operation.

(16) **Report Number**

210692400/1, issue 7.

(17) **Specific conditions of use**

None.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at item (9).

(19) **Test documentation**

As listed in Report No. 210692400/1, issue 7.

(20) **Certificate history**

Issue 1 - 203798600 initial certificate
Issue 2 - 210692400 update of standards
Issue 3 - 212412300 Ci of the sensor changed from 6 nF to 8 nF.
Issue 4 - 213900800 Change of manufacturer name and adress
Issue 5 - 214938400: Assessment according to EN 60079-0 : 2009.
Issue 6 - 217022200 Assessment according to EN 60079-0 : 2012 and EN 60079-11 : 2012
Issue 7 - 203798600 Minor technical changes

Page 3/3

Form 227A
Version 1 (2016-04)



MEGGITT

**Traduction française de la copie originale anglaise publiée à la page 1**

1 **D'EXAMEN EU de type**

2 Appareils et systèmes de protection prévus pour une utilisation dans des atmosphères potentiellement explosives **– Directive 2014/34/EU**

3 Numéro d'attestation d'examen EU de type : **KEMA 04ATEX1055 Numéro d'émission : 7**

Appareil : **Accéléromètre piézoélectrique Type 144-28.000…, Type 444-28.000… et Type 444-31.000…**

5 Fabricant : **Meggitt SA**

6 Adresse : **Rte de Moncor 4, 1752 Villars-sur-Glâne, Switzerland**

7 Cet appareil et toute variante acceptable de celuici sont spécifiés dans l'annexe de cette attestation et les documents auxquels il est fait référence.

8 Suivant l'Article 17 de la Directive du Conseil 2014/34/EU du 26 février 2014, DEKRA Certification B.V., numéro d'Organisme notifié 0344, certifie que cet appareil est conforme aux Exigences essentielles en ce qui concerne la sécurité et la santé relatives à la conception et la fabrication d'appareils et de systèmes de protection conçus pour une utilisation dans des atmosphères potentiellement explosives, suivant l'Annexe II de cette directive.
Les résultats des vérifications et des tests figurent dans le rapport confidentiel N° 210692400/1 édition 7.

9 Le respect des Exigences essentielles en ce qui concerne la sécurité et la santé est assuré par la conformité aux normes suivantes :

**EN 60079-0 : 2012 + A11** **EN 60079-11 : 2012**

sauf en ce qui concerne les conditions indiquées au point 18 de l'annexe.

10 Le signe X, lorsque placé à la suite du numéro de l'attestation, indique que l'appareil est soumis aux Conditions spéciales pour une utilisation, mentionnées dans l'annexe de la présente attestation.

11 La présente Attestation d'examen EU de type porte uniquement sur la conception, la vérification et les tests de l'appareil spécifié. D'autres exigences de la Directive sont applicables au procédé de fabrication et à la livraison de l'appareil. Ces dernières ne sont pas couvertes par la présente attestation.

12 Le marquage de l'appareil devra comporter, entre autres indications utiles, les mentions suivantes :

**Ⅱ 1 G Ex ia IIC T6 … T2 Ga**

Date de certification : le 24 juin 2016

DEKRA Certification B.V.
R. Schuller
Responsable de la certification



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**Traduction française de la copie originale anglaise publiée à la page 1**

13 **ANNEXE**

14 **Attestation d'examen EU de type KEMA 04ATEX1055 Numéro d'émission : 7**

15 **Description**

Accéléromètres piézoélectriques Type 144-28.-000-… (capteur uniquement),
capteur avec module de conversion à distance) Type 444-28.-000-… ,
et capteur avec module de conversion intégral Type 444-31.-000-… ,
utilisés pour la mesure des vibrations.
Le capteur convertit les forces mécaniques (par exemple, les vibrations) de l'appareil sur lequel il est monté en signal électrique, traité en externe. Lorsqu'un module de conversion est intégré, le signal du capteur est converti en signal de sortie sous la forme de courant modulé.

Fourchette de températures ambiantes, suivant le type et l'application :

Type 444-28.-000-..1
Module de conversion : De −55°C à +100°C
Capteur et câble : De −55°C à +260°C.

Type 444-28.-000-..2 à 444-28.-000-..9
Module de conversion : De −55°C à +125°C
Capteur et câble : De −55°C à +260°C.

Type 444-31.-000-..1
Capteur et module de conversion intégral : De −55°C à +100°C.

Type 444-31.-000-..2 à 444-31.-000-..9
Capteur et module de conversion intégral : De −55°C à +125°C.

Type 144-28.-000-…
Capteur uniquement : De −60°C à +260°C.

Pour tous les appareils et en prenant en compte les fourchettes de température mentionnées cidessus, la relation entre la température ambiante maximum et la classe de température est la suivante :

| Type | T6 | T5 | T4 | T3 | T2 |
|---|---|---|---|---|---|
| 444-28.-000-001<br>Module de conversion | +80°C | +95°C | +100°C | - | - |
| 444-28.-000-002<br>à<br>444-28.-000-009<br>Module de conversion | +65°C | +80°C | +115°C | +125°C | - |
| 444-31.-000-001 | +80°C | +95°C | +100°C | - | - |
| 444-31.-000-002<br>à<br>444-31.-000-009<br>Module de conversion | +65°C | +80°C | +115°C | +125°C | - |
| 144-28.-000-... | +80°C | +95°C | +130°C | +195°C | +260°C |



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**Traduction française de la copie originale anglaise publiée à la page 2**

13 **ANNEXE**

14 **Attestation d'examen EU de type KEMA 04ATEX1055 Numéro d'émission : 7**

**Données électriques**

Signal d'alimentation et de sortie :
Dans le type de protection par sécurité intrinsèque Ex ia IIC, uniquement pour une connexion à un circuit sécurisé intrinsèquement, avec les valeurs maximum suivantes :

| Type | Ui | Ii | Pi | Li | Ci capteur | Ci câble |
|---|---|---|---|---|---|---|
| 444-28.-000-001 | 28 V | 100 mA | 0,7 W | 0 mH | 10,5 nF | - |
| 444-28.-000-002 à 444-28.-000-009 | 28 V | 100 mA | 0,7 W | 0 mH | 0 nF | - |
| 444-31.-000-001 | 28 V | 100 mA | 0,7 W | 0 mH | 10,5 nF | 0,25 nF/m |
| 444-31.-000-002 à 444-31.-000-009 | 28 V | 100 mA | 0,7 W | 0 mH | 0 nF | 0,25 nF/m |
| 144-28.-000-... | 28 V | 100 mA | 0,7 W | 0 mH | 8 nF | 0,25 nF/m |

**Instructions d'installation**

Les instructions du manuel fourni avec l'appareil devront être suivies précisément pour une utilisation sûre.

16 **Numéro de rapport**
No. 210692400/1 édition 7.

17 **Conditions spéciales pour une utilisation**
Néant

18 **Exigences essentielles en ce qui concerne la sécurité et la santé**
Couvertes par les normes répertoriées en (9)

19 **Documentation de test**
Comme répertoriée dans le Rapport de test N° 210692400/1 édition 7.

20 **Historique de certificat**

Edition 1 – 203798600 Certificat initial
Edition 2 – 210692400 Mise à jour des normes
Edition 3 – 212412300 Ci (capacitance) du capteur passe de 6 nF à 8 nF
Edition 4 – 213900800 Changement de nom et adresse du fabricant
Edition 5 – 214938400 Évaluation selon la norme EN 60079-0 : 2009
Edition 6 – 217022200 Évaluation selon les normes EN 60079-0 : 2012 et EN 60079-11 : 2012
Edition 7 – 203798600 Modifications techniques mineures



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**Deutsche Übersetzung der original englischen Kopie der Seite 1**

1 **EGBAUMUSTERPRÜFBESCHEINIGUNG**

2 Betriebsmittel und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen – Richtlinie 2014/34/EU

3 EGBaumusterprüfbescheinigung Nummer: **KEMA 04ATEX1055** Versionsnummer: **7**

4 Betriebsmittel oder Schutzsystem: **Piezoelektrisches Accelerometer**, **Typ 144-28.000...**, **Typ 444-28.000...** und **Typ 444-31.000...**

5 Hersteller: **Meggitt SA**

6 Adresse: **Rte de Moncor 4, 1752 Villars-sur-Glâne, Schweiz**

7 Die Bauart dieses Geräts oder Schutzsystems sowie die verschiedenen zulässigen Ausführungen sind in der Anlage zu dieser EGBaumusterprüfbescheinigung und in den zugehörigen Unterlagen festgelegt.

8 DEKRA Certification B.V. bescheinigt als benannte Stelle Nr. 0344 nach Artikel 17 der Richtlinie 2014/34/EU des Rates der Europäischen Gemeinschaft vom 26. Februar 2014 die Erfüllung der grundlegenden Sicherheits und Gesundheitsanforderungen für die Konzeption und die Herstellung von Betriebsmitteln und Schutzsystemen zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie.
Die Ergebnisse der Prüfung sind im vertraulichen Prüfbericht Nr. 210692400/1 Ausgabe 7 festgehalten.

9 Die grundlegenden Sicherheits und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit:
**EN 60079-0: 2012 + A11** **EN 60079-11: 2012**

außer in Bezug auf diese Anforderungen unter Punkt 18 aufgeführten der Zeitplan.

10 Falls das Zeichen „X“ hinter der Bescheinigungsnummer steht, wird auf besondere Bedingungen für die sichere Anwendung dieses Betriebsmittels oder Schutzsystems in der Anlage zu dieser Bescheinigung hingewiesen.

11 Diese EGBaumusterprüfbescheinigung bezieht sich nur auf Konzeption, Bau und Prüfung des bezeichneten Betriebsmittels oder Schutzsystems gemäß Richtlinie 94/9/EG. Weitere Anforderungen dieser Richtlinie gelten für den Herstellungsprozess und das Inverkehrbringen dieses Betriebsmittels oder Schutzsystems. Diese Anforderungen werden von dieser Bescheinigung nicht abgedeckt.

12 Die Kennzeichnung des Betriebsmittels oder Schutzsystems muss die folgenden Angaben enthalten:
**II 1 G Ex ia IIC T6 ... T2 Ga**

Zeit der Zertifizierung: 24. Juni 2016

DEKRA Certification B.V.
R. Schuller
Certification Manager



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**Deutsche Übersetzung der original englischen Kopie der Seite 1**

13 **ANLAGE**

14 **zur EGBaumusterprüfbescheinigung KEMA 04ATEX1055** Version **7**

15 **Beschreibung**

Piezoelektrische Accelerometer der Typen 144-28.-000-... (nur Sensor) ,
Sensor mit externem Konvertierungsmodul der Typen 444-28.-000-... ,
und Sensor mit integriertem Konvertierungsmodul der Typen 444-31.-000-... ,
werden für die Schwingungsüberwachung verwendet.
Der Sensor wandelt mechanische Kräfte (z. B. Schwingungen), die auf das Betriebsmittel wirken, an dem der Sensor befestigt ist, in ein elektrisches Signal, das extern weiterverarbeitet wird. Wenn ein Konvertierungsmodul integriert ist, wird das Sensorsignal in ein strommoduliertes Ausgangssignal umgewandelt.

Umgebungstemperaturbereiche nach Typ und Anwendung:

Typ 444-28.-000-..1
Konvertierungsmodul: –55°C bis +100°C
Sensor und Kabel: –55°C bis +260°C.

Typ 444-28.-000-..2 bis Typ 444-28.-000-..9
Konvertierungsmodul: –55°C bis +125°C
Sensor und Kabel: –55°C bis +260°C.

Typ 444-31.-000-..1
Sensor und integriertes Konvertierungsmodul: –55°C bis +100°C.

Typ 444-31.-000-..2 bis Typ 444-31.-000-..9
Sensor und integriertes Konvertierungsmodul: –55°C bis +125°C.

Typ 444-28.-000-...
Nur Sensor: –60°C bis +260°C.

Der Zusammenhang zwischen maximaler Umgebungstemperatur und Temperaturklasse gilt für alle Geräte gemäß der nachstehenden Tabelle. Dabei sind die oben genannten Temperaturbereiche zu berücksichtigen:

| Typ | T6 | T5 | T4 | T3 | T2 |
|---|---|---|---|---|---|
| 444-28.-000-001 Konvertierungsmodul | +80°C | +95°C | +100°C | - | - |
| 444-28.-000-002 à 444-28.-000-009 Konvertierungsmodul | +65°C | +80°C | +115°C | +125°C | - |
| 444-31.-000-001 | +80°C | +95°C | +100°C | - | - |
| 444-31.-000-002 à 444-31.-000-009 Konvertierungsmodul | +65°C | +80°C | +115°C | +125°C | - |
| 144-28.-000-... | +80°C | +95°C | +130°C | +195°C | +260°C |



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der original englischen Kopie der Seite 2**

13 **ANLAGE**

14 **zur EGBaumusterprüfbescheinigung KEMA 04ATEX1055** Version **7**

**Elektrische Daten**

Versorgungsspannung und Ausgangssignal:
In Zündschutzart Eigensicherheit Ex ia IIC, nur zum Anschluss an einen bescheinigten eigensicheren Stromkreis mit folgenden Höchstwerten:

| Typ | Ui | Ii | Pi | Li | Ci sensor | Ci kabel |
|---|---|---|---|---|---|---|
| 444-28.-000-001 | 28 V | 100 mA | 0,7 W | 0 mH | 10,5 nF | - |
| 444-28.-000-002<br>à<br>444-28.-000-009 | 28 V | 100 mA | 0,7 W | 0 mH | 0 nF | - |
| 444-31.-000-001 | 28 V | 100 mA | 0,7 W | 0 mH | 10,5 nF | 0,25 nF/m |
| 444-31.-000-002<br>à<br>444-31.-000-009 | 28 V | 100 mA | 0,7 W | 0 mH | 0 nF | 0,25 nF/m |
| 144-28.-000-... | 28 V | 100 mA | 0,7 W | 0 mH | 8 nF | 0,25 nF/m |

**Installationsanweisungen**

Zur sicheren Bedienung sind die Anweisungen im mitgelieferten Handbuch zur beachten.

16 **Berichtsnummer**
Nr. 210692400/1 Ausgabe 7.

17 **Besondere Bedingungen für die sichere Anwendung**
Keine

18 **GRUNDLEGENDE GESUNDHEITS UND SICHERHEITSANFORDERUNGEN**
Abgedeckt durch die unter 9 aufgeführten Normen.

19 **Prüfungsunterlagen**
Gemäß Aufstellung in Prüfbericht Nr. 210692400/1 Ausgabe 7.

20 **Zertifikat Geschichte**

Ausgabe 1 – 203798600 Ursprüngliche
Ausgabe 2 – 210692400 Aktualisierung von Standards
Ausgabe 3 – 212412300 Kapazität (Ci) des Sensors 6 nF bis 8 nF geändert
Ausgabe 4 – 213900800 Änderung des Namens und Anschrift des Herstellers
Ausgabe 5 – 214938400 Beurteilung selon Standard EN 60079-0 : 2009
Ausgabe 6 – 217022200 Beurteilung selon den Standards EN 60079-0 : 2012 und EN 60079-11 : 2012
Ausgabe 7 – 203798600 Geringfügige technische Austausch



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

# ATEX certificate:

## LCIE 09 ATEX 1047 X

## for CA 28x, CE 28x and CE 31x

Although the certificate is available in the three languages (English, French and German), the liability of the notified body applies only on the text of the original copy of the certificate that it published.

EN

Bien que le certificat soit traduit dans les 3 langues (Anglais, Français et Allemand), seul le texte de la copie originale du certificat peut engager la responsabilité de l'organisme notifié qui l'a publié.

FR

Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

DE

EX

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

THIS PAGE INTENTIONALLY LEFT BLANK
CETTE PAGE EST LAISSÉE INTENTIONNELLEMENT VIDE
DIESE SEITE WURDE ABSICHTLICH LEER GELASSEN

L C I E

1 **ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

2 **Appareil** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'attestation d'examen de type
**LCIE 09 ATEX 1047 X**

4 Appareil
Capteur d'accélération
Types PNR: 444-28X-000-YYY
: 444-31X-000-YYY
144-28X-000-YYY

5 Demandeur : VIBRO-METER SA
Adresse : Route de Moncor 4
1701 FRIBOURG SUISSE

7 Cet appareil ou système de protection et ses variantes éventuelles acceptées sont décrits dans l'annexe de la présente attestation et dans les documents descriptifs cités en référence.

8 Le LCIE certifie que cet appareil ou système de protection est conforme aux exigences essentielles de sécurité et de santé pour la conception d'appareils ou système de protection, électriques de catégorie 3 ou non électriques de catégorie 2 et 3, destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la directive 94/9/CE du Parlement européen et du Conseil du 23 mars 1994.

Les résultats des vérifications et essais figurent dans le rapport confidentiel N°94576/589014/10.

9 Le respect des exigences essentielles de sécurité et de santé est assuré par la conformité à :
- EN 60079-0 (2006) - EN 60079-15 (2005)

10 Le signe X lorsqu'il est placé à la suite du numéro de l'attestation, indique que cet appareil ou système de protection est soumis aux conditions spéciales pour une utilisation sûre, mentionnées dans l'annexe de la présente attestation.

11 Cette attestation d'examen de type concerne uniquement la conception, les vérifications et essais de l'appareil ou du système de protection spécifié, conformément à la directive 94/9/CE.
Des exigences supplémentaires de la directive sont applicables pour la fabrication et la fourniture de l'appareil ou du système de protection. Ces dernières ne sont pas couvertes par la présente attestation.

12 Le marquage de l'appareil ou du système de protection doit comporter les informations détaillées au point 15.

Fontenay-aux-Roses, le 10 octobre 2009

Le responsable de certification ATEX
ATEX certification manager

Marc GILLAUX

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au capital de 15 245 951 €
RCS Nanterre B 408 363 177

L C I E

1 **VOLUNTARY TYPE EXAMINATION CERTIFICATE**

2 **Equipment** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Type Examination Certificate number
**LCIE 09 ATEX 1047X**

4 Equipment
Accelerometer
Types PNR: 444-28X-000-YYY
: 444-31X-000-YYY
144-28X-000-YYY

5 applicant : VIBRO-METER SA
Address : Route de Moncor 4
1701 FRIBOURG SUISSE

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 LCIE certifies that this equipment or protective system has been found to comply with the essential Health and Safety Requirements that relate to the design of equipment or protective system, of category 3 electrical or categories 2 and 3 non electrical, which is intended for use in potentially explosive atmospheres, given in Annex II of the Directive 94/9/EC of the European Parliament and Council of 23 March 1994.

The examination and test results are recorded in confidential report N°94576/589014/10.

9 Compliance with the Essential Health and Safety Requirements has been assured by reference to :
- EN 60079-0 (2006) - EN 60079-15 (2005)

10 If the sign X is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11 This type examination certificate relates only to the design, examination and tests of this specified equipment or protective system in accordance III to the directive 94/9/EC.

Further requirements of the Directive may apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include information as detailed at 15.

L C I E

13 **ANNEXE**

14 **ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

**LCIE 09 ATEX 1047 X**

15 **DESCRIPTION DE L'APPAREIL OU DU SYSTEME DE PROTECTION**

Capteur d'accélération
Type : PNR : 444-28X-000-YYY
444-31X-000-YYY
144-28X-000-YYY

Le matériel est un transducteur électro-mécanique fournissant à ses bornes une charge électrique proportionnelle à la pression mesurée.

Paramètres spécifiques du ou des modes de protection concernés :

U ≤ 28V, I ≤ 100mA, P ≤ 0,7W

Le marquage doit être :

VIBRO-METER
Adresse : ...
Type : PNR : 444-28X-000-YYY, 444-31X-000-YYY,
144-28X-000-YYY
N° de fabrication : ... Année de fabrication : ...
II 3G Ex nA II T6 à T4 ou T6 à T2 (1)
LCIE 09 ATEX 1047 X

Le marquage peut être réduit à :

VIBRO-METER
444-28X-000-YYY, 444-31X-000-YYY,144-28X-000-YYY
II 3G LCIE 09 ATEX 1047 X

Note (1):
PNR 444-31X-000-YYY : T6 à T4.
PNR 444-28X-000-YYY et PNR 144-28X-000-YYY : T6 à T2

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concerne.

16 **DOCUMENTS DESCRIPTIFS**

Dossier de certification N°DT 1039 rev.00 du 20/07/09.
Ce document comprend 7 rubriques (12 pages).
Dossier de certification N°DT 1040 rev.00 du 20/07/09.
Ce document comprend 7 rubriques (11 pages).
Dossier de certification N°DT 1048 rev.00 du 20/07/09.
Ce document comprend 3 rubriques (5 pages).

13 **SCHEDULE**

14 **VOLUNTARY TYPE EXAMINATION CERTIFICATE**

**LCIE 09 ATEX 1047 X**

15 **DESCRIPTION OF EQUIPMENT OR PROTECTIVE SYSTEM**

Accelerometer
Type : PNR : 444-28X-000-YYY
444-31X-000-YYY
144-28X-000-YYY

This equipment is an electro-mechanical transducer delivering at its terminal blocks an electrical load proportional to the measured pressure.

Specific parameters of the mode(s) of protection concerned :

U ≤ 28V, I ≤ 100mA, P ≤ 0,7W

The marking shall be :

VIBRO-METER
Address : ...
Type : PNR : 444-28X-000-YYY, 444-31X-000-YYY,
144-28X-000-YYY
Serial number : ... Year of construction : ...
II 3G Ex nA II T6 to T4 or T6 to T2 (1)
LCIE 09 ATEX 1047 X

The marking can be reduce at :

VIBRO-METER
444-28X-000-YYY, 444-31X-000-YYY,144-28X-000-YYY
Ex nA LCIE 09 ATEX 1047 X

Note (1):
PNR 444-31X-000-YYY : T6 to T4.
PNR 444-28X-000-YYY and PNR 144-28X-000-YYY : T6 to T2.

The equipment shall also bear the usual marking required by the manufacturing standards applying to such equipment.

16 **DESCRIPTIVE DOCUMENTS**

Certification file N°DT 1039 rev.00 dated 09/07/20.
This file includes 7 items (12 pages).
Certification file N°DT 1040 rev.00 dated 09/07/20.
This file includes 7 items (11 pages).
Certification file N°DT 1048 rev.00 dated 09/07/20.
This file includes 3 items (5 pages).

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Rev.A

L C I E

1 **AVENANT D'ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

2 **Appareil** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 09 ATEX 1047 X / 01**

4 Appareil
Capteur d'accélération
Type : PNR : 444-28X-000-YYY
444-31X-000-YYY
144-28X-000-YYY

5 demandeur : Meggitt SA
Route de Moncor 4
1752 Villars-sur-Glâne
Suisse

15 **DESCRIPTION DE L'AVENANT**

- Changement de nom et d'adresse du fabricant
- Modifications des marques commerciales déposées

Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 102105 – 602924 / 19.

Paramètres spécifiques du ou des modes de protection concerné(s) :
Inchangés.

Le marquage doit être :

Inchangé, excepté la marque commerciale vibro-meter qui devient vibro-meter ou MEGGITT ou MFR S3960 et l'adresse.

16 **DOCUMENTS DESCRIPTIFS**
Courrier du demandeur du 07/09/2010.

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SÛRE**
Inchangées.

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**
Inchangées.

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**
Néant.

1 **VOLUNTARY SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE**

2 **Equipment** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number :
**LCIE 09 ATEX 1047 X / 01**

4 Equipment
Accelerometer
Type : PNR : 444-28X-000-YYY
444-31X-000-YYY
144-28X-000-YYY

5 Applicant : Meggitt SA
Route de Moncor 4
1752 Villars-sur-Glâne
Switzerland

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**
- Change of legal entity name and address of applicant
- Modifications of registered trade mark

The examination and test results are recorded in confidential report N°102105 – 602924 / 19.

Specific parameters of the mode(s) of protection concerned:

Unchanged.

The marking shall be :

Unchanged, except registered trade mark vibro-meter becomes vibro-meter or MEGGITT or MFR S3960 and the address.

16 **DESCRIPTIVE DOCUMENTS**
Letter of applicant from 2010/09/07.

17 **SPECIAL CONDITIONS FOR SAFE USE**
Unchanged.

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Unchanged.

19 **ROUTINE VERIFICATIONS AND TESTS**
None.

Fontenay-aux-Roses, le 25 octobre 2010.

Le responsable de certification ATEX
ATEX certification manager
Marc GILLAUX

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au capital de 15 745 984 €
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13 **ANNEXE (suite)**

14 **ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

**LCIE 09 ATEX 1047 X**

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SÛRE**

Capteur 444-28X-000-YYY :

Température ambiante d'utilisation :
- Capteur et câble : -55°C à +260°C
- Conditionneur : -55°C à +100°C

Classement en température en fonction de la température ambiante :
T6 à Tamb. + 80°C
T5 à Tamb. + 95°C
T4 à Tamb. + 130°C
T3 à Tamb. + 195°C
T2 à Tamb. + 260°C

Capteur 444-31X-000-YYY :

Température ambiante d'utilisation :
- Capteur : -55°C à +125°C
- Câble : -55°C à +125°C

Classement en température en fonction de la température ambiante :
T6 à Tamb. + 80°C
T5 à Tamb. + 95°C
T4 à Tamb. + 125°C

Capteur 144-28X-000-YYY :

Température ambiante d'utilisation :
- Capteur et câble : -55°C à +260°C

Classement en température en fonction de la température ambiante :
T6 à Tamb. + 80°C
T5 à Tamb. + 95°C
T4 à Tamb. + 130°C
T3 à Tamb. + 195°C
T2 à Tamb. + 260°C

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**

Couvertes par les normes listées au point 9.

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**
Néant.

13 **SCHEDULE (continued)**

14 **VOLUNTARY TYPE EXAMINATION CERTIFICATE**

**LCIE 09 ATEX 1047 X**

17 **SPECIAL CONDITIONS FOR SAFE USE**

Sensor 444-28X-000-YYY :

Operating ambient temperature :
- Sensor and cable : -55°C to +260°C
- Conditioner : -55°C to +100°C

Temperature classification as a function of the ambient temperature :
T6 to Tamb. + 80°C
T5 to Tamb. + 95°C
T4 to Tamb. + 130°C
T3 to Tamb. + 195°C
T2 to Tamb. + 260°C

Sensor 444-31X-000-YYY :

Operating ambient temperature :
- Sensor : -55°C to +125°C
- Cable : -55°C to +125°C

Temperature classification as a function of the ambient temperature :
T6 to Tamb. + 80°C
T5 to Tamb. + 95°C
T4 to Tamb. + 125°C

Sensor 144-28X-000-YYY :

Operating ambient temperature :
- Sensor and cable : -55°C to +260°C

Temperature classification in function of the operating temperature :
T6 to Tamb. + 80°C
T5 to Tamb. + 95°C
T4 to Tamb. + 130°C
T3 to Tamb. + 195°C
T2 to Tamb. + 260°C

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Covered by standards listed at 9.

19 **ROUTINE VERIFICATIONS AND TESTS**
None.

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**Rev.A**

L C I E

1 **AVENANT D'ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

2 **Appareil** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 09 ATEX 1047 X / 02**

4 Appareil
Capteur d'accélération
Type : PNR 444-28X-000-YYY
PNR 444-31X-000-YYY
PNR 144-28X-000-YYY

5 Demandeur : Meggitt SA

15 **DESCRIPTION DE L'AVENANT**

Mise à jour des normes EN 60079-0 (2009) et EN 60079-15 (2010)

Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 110055-619675 / 10

Paramètres spécifiques du ou des modes de protection concerné(s) :
Inchangés

Le marquage doit être :
Modifié comme suit
Vibro-Meter ou MEGGITT ou MFR S3960
Adresse : ...
Type : PNR 444-28X-000-YYY
PNR 444-31X-000-YYY
PNR 144-28X-000-YYY
N° de série :..., Date de fabrication : ...
Ex II 3 G
Ex nA IIC T6 à T4 ou T2 Gc (1)
LCIE 09 ATEX 1047 X
(1) dépend du type

16 **DOCUMENTS DESCRIPTIFS**
Lettre du demandeur du 20/10/2011 (2 pages).

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SÛRE**
Inchangées

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**
Couvertes par les normes EN 60079-0 (2009) et EN 60079-15 (2010)

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**
Néant

Fontenay-aux-Roses, le 21/12/2011

1 **VOLUNTARY SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE**

2 **Equipment** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number :
**LCIE 09 ATEX 1047 X / 02**

4 Equipment
Accelerometer
Type : PNR 444-28X-000-YYY
PNR 444-31X-000-YYY
PNR 144-28X-000-YYY

5 Applicant : Meggitt SA

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**
Normative update according to EN 60079-0 (2009) and EN 60079-15 (2010)

The examination and test results are recorded in confidential report N° 110055-619675 / 10

Specific parameters of the concerned protection mode :

Unchanged

The marking shall be :
Modified as follows
Vibro-Meter or MEGGITT or MFR S3960
Address : ...
Type : PNR 444-28X-000-YYY
PNR 444-31X-000-YYY
PNR 144-28X-000-YYY
Serial Number:..., Year of Construction : ...
Ex II 3 G
Ex nA IIC T6 to T4 or T2 Gc (1)
LCIE 09 ATEX 1047 X
(1) depending on type

16 **DESCRIPTIVE DOCUMENTS**
Applicant's letter dated 2011/10/20 (2 pages).

17 **SPECIAL CONDITIONS FOR SAFE USE**
Unchanged

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Covered by standards EN 60079-0 (2009) and EN 60079-15 (2010)

19 **ROUTINE VERIFICATIONS AND TESTS**
None

Michel BRÉNON
Le responsable de certification ATEX
ATEX certification manager

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L C I E

1 **AVENANT D'ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

2 **Appareil** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 09 ATEX 1047 X / 03**

4 Appareil ou système de protection :
Capteurs d'accélération
Type : PNR 444-28X-000-YY1, PNR 444-31X-000-YY1, PNR 144-28X-000-YYY

5 Demandeur : Meggitt SA

15 **DESCRIPTION DE L'AVENANT**

- Mise à jour normative selon la norme EN 60079-0:2012 + Amendement A11:2013,
- Types PNR 444-XXX-000-YYY deviennent PNR 444-XXX-000-YY1,
- Ajout d'un essai individuel de rigidité diélectrique,

Définition du type/ *Type definition*:

PNR 444-28X-000-YY1, PNR 444-31X-000-YY1, PNR 144-28X-000-YYY
X = 0...9 : définit l'exécution de la tête du capteur / *defines the execution of the sensor head.*
Y = 0...9 : dépend du type de connecteur et de la longueur du câble / *depends on the type of connector and cable length.*

Les résultats des vérifications et essais de type sont enregistrés dans le rapport confidentiel n°130454-662462-11.

Paramètres spécifiques du ou des modes de protection concerné(s) :
U ≤28 V, I ≤100 mA, P ≤0,7 W

Le marquage doit être :
Meggitt SA ou Vibro-meter ou MFR S3960
Adresse : ...
Type : PNR 444-28X-000-YY1, PNR 444-31X-000-YY1, PNR 144-28X-000-YYY
N° de fabrication : ...
Année de fabrication : ...
Ex II 3 G
Ex nA IIC T6...T4 ou T6...T2 Gc (*)
LCIE 09 ATEX 1047 X
(*) : voir conditions spéciales pour une utilisation sûre.

Fontenay-aux-Roses, le 02 décembre 2014

1 **VOLUNTARY SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE**

2 **Equipment** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number:
**LCIE 09 ATEX 1047 X / 03**

4 Equipment or protective system:
Accelerometers
Type: PNR 444-28X-000-YY1, PNR 444-31X-000-YY1, PNR 144-28X-000-YYY

5 Applicant: Meggitt SA

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**

- Normative update according to standard EN 60079-0:2012 + Amendment A11:2013,
- Types PNR 444-XXX-000-YYY become PNR 444-XXX-000-YY1,
- Add of routine dielectric strength test,

The results of type verifications and tests are recorded in confidential report n°130454-662462-11.

Specific parameters of the concerned protection mode:

U ≤28 V, I ≤100 mA, P ≤0.7 W

The marking shall be:
Meggitt SA or Vibro-meter or MFR S3960
Address: ...
Type: PNR 444-28X-000-YY1, PNR 444-31X-000-YY1, PNR 144-28X-000-YYY
Serial number: ...
Year of construction: ...
Ex II 3 G
Ex nA IIC T6...T4 or T6...T2 Gc (*)
LCIE 09 ATEX 1047 X
(*): see special conditions for safe use.

Le Responsable de Certification ATEX
ATEX Certification Officer
Michel EQUI

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13 ANNEXE

14 AVENANT D'ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE

LCIE 09 ATEX 1047 X / 03

15 DESCRIPTION DE L'AVENANT (suite)

Le marquage peut être réduit comme suit :
Meggitt SA ou Vibro-meter ou MFR S3960
PNR 444-28X-000-YY1, PNR 444-31X-000-YY1, PNR 144-28X-000-YYY
Ⓔ II 3 G
Ex nA IIC T6...T4 ou T6...T2 Gc (*)
LCIE 09 ATEX 1047 X
(*) : voir conditions spéciales pour une utilisation sûre.

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concerne.

16 DOCUMENTS DESCRIPTIFS
Dossier technique n° DT 1069 rév. 00 du 25/09/2014.
Ce dossier comprend 2 rubriques (6 pages).

17 CONDITIONS SPECIALES POUR UNE UTILISATION SURE

1. Température ambiante d'utilisation / *Ambient temperature in service:*

| Type | Câble / *Cable* | Capteur / *Sensor* | Conditionneur / *Conditioner* |
|---|---|---|---|
| PNR 444-28X-000-YY1 | -55°C à/*to* +260°C | -55°C à/*to* +260°C | -55°C à/*to* +100°C |
| PNR 444-31X-000-YY1 | -55°C à/*to* +125°C | -55°C à/*to* +125°C | |
| PNR 144-28X-000-YYY | -55°C à/*to* +260°C | -55°C à/*to* +260°C | |

2. Classement en température / *Temperature classification:*

| Classe de température / *Temperature class* / Température ambiante d'utilisation / *Ambient temperature in service* | T6 | T5 | T4 | T3 | T2 |
|---|---|---|---|---|---|
| PNR 444-28X-000-YY1 | ≤+80°C | ≤+95°C | ≤+130°C | ≤+195°C | ≤+260°C |
| PNR 444-31X-000-YY1 | ≤+80°C | ≤+95°C | ≤+125°C | | |
| PNR 144-28X-000-YYY | ≤+80°C | ≤+95°C | ≤+130°C | ≤+195°C | ≤+260°C |

3. Des mesures doivent être prises afin d'éviter que la tension nominale ne soit pas dépassée par des perturbations transitoires de plus de 119 V.

18 EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE

Conformité aux normes européennes EN 60079-0:2012 + Amendement A11:2013 et EN 60079-15:2010.

13 ANNEXE (suite)

14 AVENANT D'ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE

LCIE 09 ATEX 1047 X / 03

19 VERIFICATIONS ET ESSAIS INDIVIDUELS

Chaque appareil doit être soumis à un essai de rigidité diélectrique sous une tension d'essai de 500 V efficace, appliquée entre les conducteurs et le châssis durant 60 s, conformément au paragraphe 6.5.1 de la norme EN 60079-15:2010.
Autrement, l'essai doit être exécuté à 600 V efficace pendant au moins 100 ms.

13 SCHEDULE (continued)

14 VOLUNTARY SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE

LCIE 09 ATEX 1047 X / 03

19 ROUTINE VERIFICATIONS AND TESTS

Each equipment shall be submitted to a dielectric strength test with test voltage of 500 V r.m.s, applied between wires and body during 60 s, carried out in accordance with clause 6.5.1 of standard EN 60079-15:2010.
Alternatively, a test shall be carried out at 600 V r.m.s during at least 100 ms.

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1 **AVENANT D'ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

2 **Appareil** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 09 ATEX 1047 X / 04**

4 Appareil : Accéléromètres CE28X et CE31X

Type : - PNR 444-28X-000-YY1 à YY9,
- PNR 444-31X-000-YY1 à YY9,
- PNR 144-28X-000-YYY.

5 Demandeur : Meggitt SA

15 **DESCRIPTION DE L'AVENANT**

Nouveau développement de l'électronique du conditionneur, les nouveaux types sont :
- PNR 444-28X-000-YY2 à YY9,
- PNR 444-31X-000-YY2 à YY9.

Les résultats des vérifications et essais figurent dans le rapport confidentiel N°129425-660044

Paramètres spécifiques du ou des modes de protection concerné(s) :
-PNR 444-28X-000-YY1 :
U ≤ 28V, I ≤ 100mA, P ≤ 0,7W
-PNR 444-28X-000-YY2 à YY9 :
U ≤ 28V, I ≤ 8mA, P ≤ 224mW
-PNR 444-31X-000-YY1 :
U ≤ 28V, I ≤ 100mA, P ≤ 0,7W
-PNR 444-31X-000-YY2 à YY9 :
U ≤ 28V, I ≤ 8mA, P ≤ 224mW
-PNR 144-28X-000-YYY :
U ≤ 28V, I ≤ 100mA, P ≤ 0,7W

Le marquage doit être : Modifié comme suit
VIBRO-METER ou MEGGITT SA ou MFR S3960
Adresse : ...
Type : PNR 444-28X-000-YY1 à YY9 ou
PNR 444-31X-000-YY1 à YY9 ou
PNR 144-28X-000-YYY
Numéro de série : ...
Année de fabrication : ...
Ⓔx II 3 G
Ex nA IIC T6... T2 Gc (voir conditions spéciales)
LCIE 09 ATEX 1047 X

16 **DOCUMENTS DESCRIPTIFS**
Dossier de certification n° DT 1039 Rev.01 du 05-05-2014.
Ce document comprend 5 rubriques (10 pages).
Dossier de certification n° DT 1040 Rev.01 du 05-05-2014.
Ce document comprend 5 rubriques (10 pages).

Fontenay-aux-Roses, le 27 janvier 2015

1 **VOLUNTARY SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE**

2 **Equipment** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number :
**LCIE 09 ATEX 1047 X / 04**

4 Equipment: CE28X and CE31X accelerometers.

Type : - PNR 444-28X-000-YY1 to YY9,
- PNR 444-31X-000-YY1 to YY9,
- PNR 144-28X -000-YYY.

5 Applicant : Meggitt SA

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**
New design of conditioner electronic , new types are :
- PNR 444-28X-000-YY2 to YY9,
- PNR 444-31X-000-YY2 to YY9.

The examination and test results are recorded in confidential report N°129425-660044.

Specific parameters of the concerned protection mode :

-PNR 444-28X-000-YY1 :
U ≤ 28V, I ≤ 100mA, P ≤ 0,7W
-PNR 444-28X-000-YY2 à YY9 :
U ≤ 28V, I ≤ 8mA, P ≤ 224mW
-PNR 444-31X-000-YY1 :
U ≤ 28V, I ≤ 100mA, P ≤ 0,7W
-PNR 444-31X-000-YY2 à YY9 :
U ≤ 28V, I ≤ 8mA, P ≤ 224mW
-PNR 144-28X-000-YYY :
U ≤ 28V, I ≤ 100mA, P ≤ 0,7W

The marking shall be : Modified as follows
VIBRO-METER or MEGGITT SA or MFR S3960
Address: ...
Type: PNR 444-28X-000-YY1 to YY9 or
PNR 444-31X-000-YY1 to YY9 or
PNR 144-28X-000-YYY
Serial number: ...
Year of construction: ...
Ⓔx II 3 G
Ex nA IIC T6... T2 Gc (see special conditons)
LCIE 09 ATEX 1047 X

16 **DESCRIPTIVE DOCUMENTS**
Certification file n° DT 1039, Rev.01 dated 2014-05-05
This file includes 5 items (10 pages).
Certification file n° DT 1040, Rev.01 dated 2014-05-05
This file includes 5 items (10 pages).

Le Responsable de Certification ATEX
ATEX Certification Officer
Julien GAUTHIER

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13 **ANNEXE**

14 **AVENANT D'ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

**LCIE 09 ATEX 1047 X / 04**

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SÛRE**

- L'installation électrique doit fournir une protection contre les transitoires de tensions supérieures à 119V.
- PNR 444-28X-000-YY1 à YY9, plages de températures de fonctionnement (Ta) :
  - Capteur et câble: -55°C ≤ Ta ≤+260°C
  - Conditionneur PNR 444-28X-000-YY1 : -55°C ≤ Ta ≤ +100°C
  - Conditionneur PNR 444-28X-000-YY2 to YY9 : -55°C ≤ Ta ≤ +125°C
- PNR 444-31X-000-YY1, -55°C ≤ Ta ≤ +125°C.
- PNR 444-31X-000-YY2 à YY9, -55°C ≤ Ta ≤ +125°C.
- PNR 144-28X-000-YYY, -55°C ≤ Ta ≤ +260°C
- Classement en température en fonction des températures de fonctionnement maximum du conditionneur, du câble et du capteur, voir tableau ci-dessous :

| | T6 | T5 | T4 | T3 | T2 |
|---|---|---|---|---|---|
| PNR 444-28X-000-YY1 ... YY9 Capteur et cable / *Sensor and cable:* | + 80°C | + 95°C | + 130°C | + 195°C | + 260°C |
| PNR 444-28X-000-YY1 Conditionneur / *Conditioner* | + 80°C | + 95°C | + 100°C | -- | -- |
| PNR 444-28X-000-YY2 ... YY9 Conditionneur / *Conditioner* | + 65°C | + 80°C | + 115°C | +125°C | -- |
| PNR 444-31X-000-YY1 | + 80°C | + 95°C | + 125°C | -- | -- |
| PNR 444-31X-000-YY2 ... YY9 | + 65°C | + 80°C | + 115°C | +125°C | -- |
| PNR 144-28X-000-YYY | + 80°C | + 95°C | + 130°C | + 195°C | + 260°C |

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**

Couvertes par les normes EN 60079-0:2012/A11:2013 et EN 60079-15:2010.

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**

- Chaque produit devra être soumis à une épreuve de rigidité diélectrique de 500VAC pendant une minute, comme définie dans le paragraphe § 6.5 de la norme EN 60079-15:2010, appliqué entre les connections d'entrée et les parties métalliques externes.
- Comme alternative l'essai peut être réalisé à 600VAC pendant au moins 100ms.

13 **SCHEDULE**

14 **VOLUNTARY SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE**

**LCIE 09 ATEX 1047 X / 04**

17 **SPECIAL CONDITIONS FOR SAFE USE**

- The electrical installation must provide a protection against voltage transients greater than 119V.
- PNR 444-28X-000-YY1 to YY9, operating temperature (Ta) ranges:
  - Sensor and cable: -55°C ≤ Ta ≤ +260°C.
  - PNR 444-28X-000-YY1 conditioner: -55°C ≤ Ta ≤ +100°C
  - PNR 444-31X-000-YY2 to YY9 conditioner: -55°C ≤ Ta ≤ +125°C.
- PNR 444-31X-000-YY1, -55°C ≤ Ta ≤ +125°C.
- PNR 444-31X-000-YY2 to YY9, -55°C ≤ Ta ≤ +125°C.
- PNR 144-28X-000-YYY, -55°C ≤ Ta ≤ +260°C
- Temperature classes depending on maximum operating temperatures of conditioner, cable and sensor, see table below:

| | T6 | T5 | T4 | T3 | T2 |
|---|---|---|---|---|---|
| PNR 444-28X-000-YY1 ... YY9 Capteur et cable / *Sensor and cable:* | + 80°C | + 95°C | + 130°C | + 195°C | + 260°C |
| PNR 444-28X-000-YY1 Conditionneur / *Conditioner* | + 80°C | + 95°C | + 100°C | -- | -- |
| PNR 444-28X-000-YY2 ... YY9 Conditionneur / *Conditioner* | + 65°C | + 80°C | + 115°C | +125°C | -- |
| PNR 444-31X-000-YY1 | + 80°C | + 95°C | + 125°C | -- | -- |
| PNR 444-31X-000-YY2 ... YY9 | + 65°C | + 80°C | + 115°C | +125°C | -- |
| PNR 144-28X-000-YYY | + 80°C | + 95°C | + 130°C | + 195°C | + 260°C |

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Covered by standards EN 60079-0:2012/A11:2013 and EN 60079-15:2010.

19 **ROUTINE VERIFICATIONS AND TESTS**

- Each product shall be submitted to the dielectric strength test at 500VAC during one minute, as defined in the clause § 6.5 of the EN 60079-15:2010 standard, applied between input connections and external metallic parts.
- As an alternative the test can be done at 600VAC during at least 100 ms.

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**Deutsche Übersetzung der originalen französischen Kopie der Seite 1**

1 **FREIWILLIGES TYPENPRÜFZERTIFIKAT**

2 Geräte zur Verwendung in explosionsgefährdeten Bereichen - **Richtlinie 94/9/EG**

3 Zertifikatnummer
**LCIE 09 ATEX 1047X**

4 Gerät
Beschleunigungsgeber
PNR: 444-28X-000-YYY
PNR: 444-31X-000-YYY
PNR: 144-28X-000-YYY

5 Hersteller: VIBRO METER
Adresse: Route de Moncor 4, 1701 FRIBOURG, SCHWEIZ

7 Dieses Gerät oder Schutzsystem und die möglichen, zulässigen Varianten sind im Anhang dieses Zertifikats und den darin aufgeführten Unterlagen beschrieben.

8 LCIE bestätigt, dass dieses Gerät oder Schutzsystem die wesentlichen Gesundheits- und Sicherheitsanforderungen in Bezug auf die Auslegung und die Bauart von Geräten und Schutzsystemen der Kategorie 3 (elektrisch) oder Kategorien 2 und 3 (nicht elektrisch) zur Verwendung in explosionsgefährdeten Bereichen nach Anhang II der Richtlinie 94/9EG des Europaparlaments und des Rats vom 23. März 1994 erfüllt.

Die Prüf- und Testergebnisse sind im vertraulichen Bericht Nr. 94576/589014/10 aufgezeichnet.

9 Die Einhaltung der wesentlichen Gesundheits- und Sicherheitsanforderungen wird durch die Übereinstimmung mit den folgenden Dokumenten sichergestellt:
- EN 60079-0 (2006)
- EN 60079-15 (2005)

10 Ein "X" nach der Zertifikatnummer gibt an, dass für die sichere Verwendung des Gerätes oder Schutzsystemes besondere Bedingungen gemäß dem Anhang dieses Zertifikates gelten.

11 Dieses Typenprüfzertifikat betrifft nur die Bauart und die Prüfungen und Tests des betreffenden Geräts oder Schutzsystems gemäß Richtlinie 94/9/EG.
Zusätzliche Anforderungen dieser Richtlinie gelten für die Fertigung und Lieferung des Geräts oder Schutzsystems. Diese werden durch dieses Zertifikat nicht abgedeckt.

12 Die Kennzeichnung des Gerätes oder Schutzsystems muss die unter Punkt 15 erläuterten Angaben enthalten.

Fontenay-aux-Roses,
am 10. Oktober 2009

Leiter Zertifizierung

Trockenstempel



LCIE haftet nur für den französischen Text.
Dieses Zertifikat darf nur vollständig und ohne Änderungen vervielfältigt werden.

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**Deutsche Übersetzung der originalen französischen Kopie der Seite 1**

13 **ANHANG**

14 **FREIWILLIGES TYPENPRÜFZERTIFIKAT**

**LCIE 09 ATEX 1047 X**

15 **BESCHREIBUNG DES GERÄTES ODER SCHUTZSYSTEMS**

Beschleunigungsgeber
Typ : PNR : 444-28X-000-YYY
PNR : 444-31X-000-YYY
PNR : 144-28X-000-YYY

Das Gerät verwandelt elektrische Eingangsladung in elektrisches Ausgangssignal welches proportional zur Beschleunigung oder dem Druck ist.

Spezifische Kenndaten der betroffenen Schutzarten:

U ≤ 28 V, I ≤ 100 mA, P ≤ 0,7 W

Kennzeichnung:
VIBRO-METER Adresse: ..
Typ: PNR: 444-28X-000-YYY, 444-31X-000-YYY,
144-28X-000-YYY
Herstellungsnummer: ... Herstellungsjahr: ...
Ex 3G Ex nA II T6 bis T4 oder T2
LCIE 09 ATEX 1047 X

Die Kennzeichnung kann wiefolgt vereinfacht werden:
VIBRO-METER
444-28X-000-YYY, 444-31X-000-YYY, 144-28X-000-YYY
Ex II 3G LCIE 09 ATEX 1047 X

Die Geräte müssen ebenfalls mit der Kennzeichnung versehen sein, die in den Herstellungsnormen der betreffenden Geräte normalerweise vorgesehen sind.

16 **BESCHREIBENDE UNTERLAGEN**

Zertifizierungs-Datei-Nr. DT 1039 Ausgabe 0 vom 20. Juli 2009.
Diese Datei enthält 7 Punkte (12 Seiten).

Zertifizierungs-Datei-Nr. DT 1040 Ausgabe 0 vom 20. Juli 2009.
Diese Datei enthält 7 Punkte (11 Seiten).

Zertifizierungs-Datei-Nr. DT 1048 Ausgabe 0 vom 20. Juli 2009.
Diese Datei enthält 3 Punkte (5 Seiten).



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**Deutsche Übersetzung der originalen französischen Kopie der Seite 2**

13 **ANHANG**

14 **FREIWILLIGES TYPENPRÜFZERTIFIKAT**

**LCIE 09 ATEX 1047 X**

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

Sensor 444-28X-000-YYY :

Umgebungstemperatur:
- Sensor: −55 °C bis +260 °C
- Kabel: −55 °C bis +260 °C
- Signalaufbereiter: −55 °C bis +100 °C

Temperaturklassifizierung:
T6 bis Ta = +80 °C
T5 bis Ta = +95 °C
T4 bis Ta = +130 °C
T3 bis Ta = +195 °C
T2 bis Ta = +260 °C

Sensor 444-31X-000-YYY :

Umgebungstemperatur:
- Sensor: −55 °C bis +125 °C
- Kabel: −55 °C bis +125 °C

Temperaturklassifizierung:
T6 bis Ta = +80 °C
T5 bis Ta = +95 °C
T4 bis Ta = +125 °C

Sensor 144-28X-000-YYY :

Umgebungstemperatur:
- Sensor und Kabel: −55 °C bis +260 °C

Temperaturklassifizierung:
T6 bis Ta = +80 °C
T5 bis Ta = +95 °C
T4 bis Ta = +130 °C
T3 bis Ta = +195 °C
T2 bis Ta = +260 °C

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**
Siehe unter Punkt 9 aufgelistete Bestimmungen.

19 **ROUTINEPRÜFUNGEN UND TESTS**

Keine.



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 2**

1 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

2 Geräte zur Verwendung in explosionsgefährdeten Bereichen (**Richtlinie 94/9/EG**)

3 Zusätzliche Zertifikatnummer:
**LCIE 09 ATEX 1047 X / 01**

4 Gerät
Beschleunigungsgeber
PNR: 444-28X-000-YYY
PNR: 444-31X-000-YYY
PNR: 144-28X-000-YYY

5 Hersteller: Meggitt SA
Adresse: Route de Moncor 4, 1752 Villars-sur-Glâne, Schweiz

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS**

- Änderung der juristischen Person und Addresse des Antragstellers
- Modifikation des eingetragenen Markenzeichens

Die Prüf- und Testergebnisse sind im vertraulichen Bericht Nr. 102105-602924/19 aufgezeichnet.

Spezifische Kenndaten der betroffenen Schutzarten:
Unverändert.

Die Kennzeichnung soll lauten:
Unverändert, bis auf Markenzeichen vibro-meter wird zu vibro-meter oder MEGGITT oder MFR S3960 sowie die Adressänderung.

16 **BESCHREIBENDE UNTERLAGEN**

Brief des Antragsstellers vom 07.09.2010.

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

Unverändert.

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**

Unverändert.

19 **ROUTINEPRÜFUNGEN UND TESTS**

Keine.

Fontenay-aux-Roses,
am 25. Oktober 2010

Leiter Zertifizierung

Trockenstempel



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 3**

1 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

2 Geräte zur Verwendung in explosionsgefährdeten Bereichen (**Richtlinie 94/9/EG**)

3 Zusätzliche Zertifikatnummer:
**LCIE 09 ATEX 1047 X / 02**

4 Gerät
Beschleunigungsgeber
PNR: 444-28X-000-YYY
PNR: 444-31X-000-YYY
PNR: 144-28X-000-YYY

5 Hersteller: Meggitt SA

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS**

Standardaktualisierungen gemäß folgender Richtlinien:
EN 60079-0 (2009) und EN 60079-15 (2010)

Die Prüf- und Testergebnisse sind im vertraulichen Bericht Nr. 110055-619675 / 10 aufgezeichnet.

Spezifische Kenndaten der betroffenen Schutzarten:
Unverändert.

Die Kennzeichnung lautet wie folgt:
Wie folgt modifiziert:
Vibro-Meter oder MEGGITT oder MFR S3960
Adresse: ...
Typ: PNR: 444-28X-000-YYY
PNR: 444-31X-000-YYY
PNR: 144-28X-000-YYY
Herstellungsnummer: ... Herstellungsjahr: ...
II 3 G
Ex nA IIC T6 bis T4 oder T2 Gc (1)
LCIE 09 ATEX 1047 X

(1) Abhängig von der Typ der Gerät

16 **BESCHREIBENDE UNTERLAGEN**

Brief des Antragsstellers vom 20.10.2011 (2 Seiten)

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

Unverändert.

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**

Werden von folgenden Richtlinien abgedeckt:
EN 60079-0 (2009) und EN 60079-15 (2010)

19 **ROUTINEPRÜFUNGEN UND TESTS**

Keine.

Fontenay-aux-Roses,
am 21. Dezember 2011

Leiter Zertifizierung

Trockenstempel



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**Deutsche Übersetzung der originalen französischen Kopie der Seite 3**

1 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

2 Geräte zur Verwendung in explosionsgefährdeten Bereichen (**Richtlinie 94/9/EG**)

3 Zusätzliche Zertifikatnummer:
**LCIE 09 ATEX 1047 X / 03**

4 Gerät
Beschleunigungsgeber
Typ: PNR 444-28X-000-YY1, PNR 444-31X-000-YY1, PNR 144-28X-000-YYY

5 Antragsteller: Meggitt SA

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS**

– Standardaktualisierungen gemäß folgender Richtlinien:
EN 60079-0:2012 + Änderung A11:2013.
– PNR 444-XXX-000-YYY wird PNR 444-XXX-000-YY1.
– Hinzufügen einer Stückprüfung von Durchschlagfestigkeit.

Definition von Gerät:
PNR 444-28X-000-YY1, PNR 444-31X-000-YY1, PNR 144-28X-000-YYY
X = 0 … 9: Definiert das Design des Sensorkopfes
Y = 0 … 9: Abhängig von der Steckertyp und Kabellänge.

Die Testergebnisse sind im vertraulichen Bericht Nr. 130454-662462-11.

Spezifische Kenndaten der betroffenen Schutzarten:
U ≤ 28 V, I ≤ 100 mA, P ≤ 0,7 W

Die Kennzeichnung wird wie folgt festgesetzt:
Meggitt SA oder Vibro-Meter oder MFR S3960
Adresse: …
Typ: PNR 444-28X-000-YY1, PNR 444-31X-000-YY1, PNR 144-28X-000-YYY
Herstellungsnummer: … Herstellungsjahr: …
Ex II 3 G
Ex nA IIC T6…T4 oder T6…T2 Gc(*)
LCIE 09 ATEX 1047 X

(*): Siehe besondere Bedingungen für die sichere Anwendung (unter Punkt 17)

Fontenay-aux-Roses,
am 02. Dezember 2014

Leiter Zertifizierung

Trockenstempel



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 4**

13 **ANHANG**

14 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

**LCIE 09 ATEX 1047 X / 03**

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS (FORTSETZUNG)**

Die Kennzeichnung kann wie folgt reduziert werden:
Meggitt SA oder Vibro-Meter oder MFR S3960
PNR 444-28X-000-YY1, PNR 444-31X-000-YY1, PNR 144-28X-000-YYY
Ex II 3 G
Ex nA IIC T6…T4 oder T6…T2 Gc(*)
LCIE 09 ATEX 1047 X
(*): Siehe besondere Bedingungen für die sichere Anwendung (unter Punkt 17)

Die Geräte müssen ebenfalls mit der Kennzeichnung versehen sein, die in den Herstellungsnormen der betreffenden elektrischen Geräte normalerweise vorgesehen sind.

16 **BESCHREIBENDE UNTERLAGEN**

Zertifizierungs-Datei-Nr. DT 1069 Ausgabe 00 vom 2014/09/25.
Diese Datei enthält 2 Punkte (6 Seiten).

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

1. Umgebungstemperatur im Betrieb:

PNR 444-28X-000-YY1:
– Sensor und Kabel: −55 °C bis +260 °C
– Signalaufbereiter: −55 °C bis +100 °C

PNR 444-31X-000-YY1:
– Sensor und Kabel: −55 °C bis +125 °C

PNR 144-28X-000-YYY:
– Sensor und Kabel: −55 °C bis +260 °C

2. Temperaturklassifizierung entsprechend der Umgebungstemperatur im Betrieb:

| | T6 | T5 | T4 | T3 | T2 |
|---|---|---|---|---|---|
| PNR 444-28X-000-YY1 | ≤ +80 °C | ≤ +95 °C | ≤ +130 °C | ≤ +195 °C | ≤ +260 °C |
| PNR 444-31X-000-YY1 | ≤ +80 °C | ≤ +95 °C | ≤ +125 °C | | |
| PNR 144-28X-000-YYY | ≤ +80 °C | ≤ +95 °C | ≤ +130 °C | ≤ +195 °C | ≤ +260 °C |

3. Es müssen Vorkehrungen getroffen werden dass kurzzeitige Störungen die Nominalspannungen nicht mehr als 119 V überschreiten können.

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**

Werden von folgenden Richtlinien abgedeckt:
EN 60079-0:2012 + Änderung A11:2013 und EN 60079-15:2010.



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 4**

13 **ANHANG**

14 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

**LCIE 09 ATEX 1047 X / 03**

19 **ROUTINEPRÜFUNGEN UND TESTS**

Jedes Gerät muss einem Durschlagsfestigkeitstest unterzogen werden. Spannung von 500 V (RMS) währen 60 Sekunden zwischen den Leitern und dem Gehäuse gemäss Norm EN 60079-15:2010.
Andernfalls muss ein Test mit 600 V (RMS) während mindestens 100 ms durchgeführt werden



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 5**

1 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

2 Geräte zur Verwendung in explosionsgefährdeten Bereichen (**Richtlinie 94/9/EG**)

3 Zusätzliche Zertifikatnummer:
**LCIE 09 ATEX 1047 X / 04**

4 Gerät: CE 28X und CE 31X Beschleunigungsgeber
Typ: – PNR 444-28X-000-YY1 bis YY9,
– PNR 444-31X-000-YY1 bis YY9,
– PNR 144-28X-000-YYY.

5 Antragsteller: Meggitt SA

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS**

Neue Beschleunigungsgeber Elektronik für neue typen, wie:
– PNR 444-28X-000-YY2 bis YY9,
– PNR 444-31X-000-YY2 bis YY9.

Die Prüf- und Testergebnisse sind im vertraulichen Bericht Nr. 129425-660044.

Spezifische Kenndaten der betroffenen Schutzarten:

– PNR 444-28X-000-YY1:
U ≤ 28 V, I ≤ 100 mA, P ≤ 0,7 W
– PNR 444-28X-000-YY2 bis YY9:
U ≤ 28 V, I ≤ 8 mA, P ≤ 224 mW
– PNR 444-31X-000-YY1:
U ≤ 28 V, I ≤ 100 mA, P ≤ 0,7 W
– PNR 444-31X-000-YY2 bis YY9:
U ≤ 28 V, I ≤ 8 mA, P ≤ 224 mW
– PNR 144-28X-000-YYY:
U ≤ 28 V, I ≤ 100 mA, P ≤ 0,7 W

Die Kennzeichnung wird wie folgt festgesetzt: Wie folgt modifiziert:
VIBRO-METER oder MEGGITT SA oder MFR S3960
Adresse: …
Typ: PNR 444-28X-000-YY1 bis YY9 oder
PNR 444-31X-000-YY1 bis YY9 oder
PNR 144-28X-000-YYY
Herstellungsnummer: …
Herstellungsjahr: …
Ex II 3 G
Ex nA IIC T6 …T2 Gc (siehe besondere Bedingungen für die sichere Anwendung (unter Punkt 17))
LCIE 09 ATEX 1047 X

16 **BESCHREIBENDE UNTERLAGEN**

Zertifizierungs-Datei-Nr. DT 1039 Ausgabe 01 vom 2014/05/05.
Diese Datei enthält 5 Punkte (10 Seiten).
Zertifizierungs-Datei-Nr. DT 1040 Ausgabe 01 vom 2014/05/05.
Diese Datei enthält 5 Punkte (10 Seiten).



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 5**

13 **ANHANG**

14 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

**LCIE 09 ATEX 1047 X / 04**

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

– Es müssen Vorkehrungen getroffen werden dass kurzzeitige Störungen die Nominalspannungen nicht mehr als 119 V überschreiten können.

– PNR 444-28X-000-YY1 bis YY9 Umgebungstemperatur (Ta) im Betrieb:
  – Sensor und Kabel:
    −55 °C ≤ Ta ≤ +260 °C
  – PNR 444-28X-000-YY1 Signalaufbereiter:
    −55 °C ≤ Ta ≤ +100 °C
  – PNR 444-28X-000-YY2 bis YY9 Signalaufbereiter:
    −55 °C ≤ Ta ≤ +125 °C

PNR 444-31X-000-YY1: −55 °C ≤ Ta ≤ +125 °C
PNR 444-31X-000-YY2 bis YY9: −55 °C ≤ Ta ≤ +125 °C
PNR 144-28X-000-YYY: −55 °C ≤ Ta ≤ +260 °C

– Temperaturklassifizierung entsprechend der Umgebungstemperatur von Signalaufbereiter, Kabel und Sensor im Betrieb:

| | T6 | T5 | T4 | T3 | T2 |
|---|---|---|---|---|---|
| PNR 444-28X-000-YY1 bis YY9 Sensor und Kabel | +80 °C | +95 °C | +130 °C | +195 °C | +260 °C |
| PNR 444-28X-000-YY1 Signalaufbereiter | +80 °C | +95 °C | +100 °C | | |
| PNR 444-28X-000-YY2 bis YY9 Signalaufbereiter | +65 °C | +80 °C | +115 °C | +125 °C | |
| PNR 444-31X-000-YY1 | +80 °C | +95 °C | +125 °C | | |
| PNR 444-31X-000-YY2 bis YY9 | +65 °C | +80 °C | +115 °C | +125 °C | |
| PNR 144-28X-000-YYY | +80 °C | +95 °C | +130 °C | +195 °C | +260 °C |

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**

Werden von folgenden Richtlinien abgedeckt:
EN 60079-0:2012 + Änderung A11:2013 und EN 60079-15:2010.

19 **ROUTINEPRÜFUNGEN UND TESTS**

– Jedes Gerät muss einem Durschlagsfestigkeitstest unterzogen werden. Spannung von 500 V (RMS) währen 60 Sekunden zwischen den Leitern und dem Gehäuse (äußeren Metallteile) gemäss Norm EN 60079-15:2010.

– Andernfalls muss ein Test mit 600 V (RMS) während mindestens 100 ms durchgeführt werden.



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

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DIESE SEITE WURDE ABSICHTLICH LEER GELASSEN

# ATEX certificate:

# KEMA 04 ATEX 1294

# for CA 30x

Although the certificate is available in the three languages (English, French and German), the liability of the notified body applies only on the text of the original copy of the certificate that it published.

EN

Bien que le certificat soit traduit dans le 3 langues (Anglais, Français et Allemand), seul le texte de la copie originale du certificat peut engager la responsabilité de l'organisme notifié qui l'a publié.

FR

Obwohl das Zertifikat in 3 Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

DE

EX

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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CETTE PAGE EST LAISSÉE INTENTIONNELLEMENT VIDE
DIESE SEITE WURDE ABSICHTLICH LEER GELASSEN

# CERTIFICATE

## (1) EC-Type Examination

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **KEMA 04ATEX1294** Issue Number: **5**

(4) Equipment: **Accelerometer Type 144-30.-000-...**

(5) Manufacturer: **Meggitt SA**

(6) Address: **Rte de Moncor 4, 1752 Villars-sur-Glâne, Switzerland**

(7) This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) DEKRA Certification B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the directive.

The examination and test results are recorded in confidential test report number 210692400/2 issue 4.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 60079-0 : 2012** **EN 60079-11 : 2012** **EN 60079-26 : 2007**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

**II 1 G Ex ia IIC T6 ... T1 or 450 °C ... 510 °C Ga**

This certificate is issued on 28 May 2014 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

DEKRA Certification B.V.

R. Schuller
Certification Manager



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T +31 88 96 83000 F +31 88 96 83100 www.dekra-certification.com Registered Arnhem 09085396

DEKRA

## (13) SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 04ATEX1294** Issue No. **5**

(15) **Description**

Accelerometer Type 144-30.-000-... is used for vibration monitoring of the equipment to which it is mounted.
A piezo electrical sensor converts mechanical forces (e.g. vibrations) into an electrical signal that is processed externally.

Ambient temperature range:
-30 °C to +80 °C, if an explosive atmosphere may be present continuously or frequently and during long periods;
-54 °C to +500 °C, for sensor and cable;
-54 °C to +500 °C, for high temperature VM connector;
-54 °C to +260 °C, for standard temperature VM connector;
-65 °C to +200 °C, for connector type M83723/98Y1020 or equivalent;
-65 °C to +150 °C, for LEMO connector type 0 or equivalent

The temperature class, depending on the ambient temperature, respectively depending on the process temperature, is listed in following table:

| Temperature class | Ambient temperature, respectively process temperature |
|---|---|
| T6 | ≤ 75 °C |
| T5 | ≤ 90 °C |
| T4 | ≤ 125 °C |
| T3 | ≤ 190 °C |
| T2 | ≤ 290 °C |
| T1 | ≤ 440 °C |

For an ambient temperature, respectively a process temperature over 440 °C, the temperature of the sensor exceeds that temperature by 10 K.

**Electrical data**

Output circuit (connector):
in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with following maximum values:
$U_i$ = 28 V; $I_i$ = 100 mA (linear characteristic), $I_i$ = 25 mA (non-linear characteristic);
$P_i$ = 0,7 W; $L_i$ = 0 mH; $C_i$ = 2 nF + $C_{cable}$;
the capacitance of the integral cable is 0,2 nF/m.

**Installation instructions**

The manual provided with the equipment shall be followed in detail to assure safe operation.



Form 100
Version 5 (2013-07)

MEGGITT

KEMA 04 ATEX 1294
*(Original copy)*
CA 30x

DEKRA

(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 04ATEX1294** Issue No. **5**

(16) **Test Report**

No. 210692400/2 Issue 4.

(17) **Special conditions for safe use**

None.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 210692400/2 Issue 4.

Page 3/3

Form 100
Version 5 (2013-07)

**Traduction française de la copie originale anglaise publiée à la page 1**

1 **ATTESTATION D'EXAMEN CE de type**

2 Appareils et systèmes de protection prévus pour une utilisation dans des atmosphères potentiellement explosives – Directive 94/9/CE

3 Numéro d'attestation d'examen CE de type : **KEMA 04ATEX1294** Numéro d'émission : **5**

4 Appareil :**Accéléromètre Type 144-30.-000-…**

5 Fabricant : **Meggitt SA**

6 Adresse : **Rte de Moncor 4, 1752 Villars-sur-Glâne, Switzerland**

7 Cet appareil et toute variante acceptable de celui-ci sont spécifiés dans l'annexe de cette attestation et les documents auxquels il est fait référence.

8 Suivant l'Article 9 de la Directive du Conseil 94/9/CE du 23 mars 1994, DEKRA Certification B.V., numéro d'Organisme notifié 0344, certifie que cet appareil est conforme aux Exigences essentielles en ce qui concerne la sécurité et la santé relatives à la conception et la fabrication d'appareils et de systèmes de protection conçus pour une utilisation dans des atmosphères potentiellement explosives, suivant l'Annexe II de cette directive.
Les résultats des vérifications et des tests figurent dans le rapport confidentiel N° 210692400/2 édition 4.

9 Le respect des Exigences essentielles en ce qui concerne la sécurité et la santé est assuré par la conformité aux normes suivantes :
**EN 60079-0 : 2012** **EN 60079-11 : 2012** **EN 60079-26 : 2007**

10 Le signe X, lorsque placé à la suite du numéro de l'attestation, indique que l'appareil est soumis aux Conditions spéciales pour une utilisation sûre, mentionnées dans l'annexe de la présente attestation.

11 La présente Attestation d'examen CE de type porte uniquement sur la conception, la vérification et les tests de l'appareil spécifié, conformément à la Directive 94/9/CE. D'autres exigences de la Directive sont applicables au procédé de fabrication et à la livraison de l'appareil. Ces dernières ne sont pas couvertes par la présente attestation.

12 Le marquage de l'appareil devra comporter, entre autres indications utiles, les mentions suivantes :
**II 1 G Ex ia IIC T6 … T1 ou 450°C … 510°C Ga**
Cette attestation a été délivrée le 28 mai 2014 et, quand applicable, sera révisée avant la date de cessation de la présomption de conformité des (de l'une des) normes mentionnées ci-dessus, comme communiqué dans le Journal officiel de l'Union européenne.

DEKRA Certification B.V.
R.Schuller
Responsable de la certification

(c) Ce certificat ne peut être reproduit que dans sa totalité et sans aucune modification.


**Traduction française de la copie originale anglaise publiée à la page 1**

13 **ANNEXE**

14 **Attestation d'examen CE de type - KEMA 04ATEX1294** Numéro d'émission : **5**

15 **Description**
Accéléromètre Type 144-30.-000-… utilisé pour la mesure des vibrations de l'appareil sur lequel il est monté.
Un capteur piézo-électrique convertit les forces mécaniques (par exemple, les vibrations) en signal électrique, traité en externe.
Fourchette de température ambiante :
-30 °C…+80 °Cdans le cas d'une atmosphère explosive présente en permanence ou pendant de longues périodes ou fréquemment
De -54 °C à +500 °C pour le capteur et le câble ;
De -54 °C à +500 °C pour le connecteur VM – température élevée ;
De -54 °C à +260 °C pour le connecteur VM – température standard ;
De -65 °C à +200 °C pour le connecteur Type M83723/98Y1020 ou équivalent ;
De -65 °C à +150 °C pour le connecteur LEMO Type 0 ou équivalent.
Les classes de température sont répertoriées dans le tableau ci-dessous, en fonction de la température ambiante/process :

| Classe de température | Température ambiante/process |
|---|---|
| T6 | ≤75 °C |
| T5 | ≤90 °C |
| T4 | ≤125 °C |
| T3 | ≤190 °C |
| T2 | ≤290 °C |
| T1 | ≤440 °C |

Pour une température ambiante/process supérieure à 440 °C, la température du capteur dépasse cette température de 10 K.
**Données électriques**
Circuit de sortie (connecteur) :
Dans le type de protection par sécurité intrinsèque Ex ia IIC, uniquement pour une connexion à un circuit sécurisé intrinsèquement, avec les valeurs maximum suivantes :
U = 28 V ; I = 100 mA (caractéristique linéaire) ; I = 25 mA (caractéristique non linéaire) ; P = 0,7 W ; L = 0 mH ; C = 2 nF + C câble ;
La capacitance du câble intégral est de 0,2 nF/m.
**Instructions d'installation**
Les instructions du manuel fourni avec l'appareil devront être suivies précisément pour une utilisation sûre.



Bien que le certificat soit traduit dans les 3 langues (Anglais, Français et Allemand), seul le texte de la copie originale du certificat peut engager la responsabilité de l'organisme notifié qui l'a publié.

**Traduction française de la copie originale anglaise publiée à la page 2**

13 **ANNEXE**

14 **Attestation d'examen CE de type - KEMA 04ATEX1294** Numéro d'émission : **5**

16 **Rapport de test**
No. 210692400/2 édition 4.

17 **Conditions spéciales pour une utilisation sûre**
Néant.

18 **Exigences essentielles en ce qui concerne la sécurité et la santé**
Couvertes par les normes répertoriées en (9).

19 **Documentation de test**
Comme répertoriée dans le Rapport de test N° 210692400/2 édition 4.



Bien que le certificat soit traduit dans les 3 langues (Anglais, Français et Allemand), seul le texte de la copie originale du certificat peut engager la responsabilité de l'organisme notifié qui l'a publié.

**Deutsche Übersetzung der original englischen Kopie der Seite 1**

1 **EG-BAUMUSTERPRÜFBESCHEINIGUNG**

2 Betriebsmittel und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen – Richtlinie 94/9/EG

3 EG-Baumusterprüfbescheinigung Nummer: **KEMA 04ATEX1294** Versionsnummer: **5**

4 Betriebsmittel oder Schutzsystem:**Accelerometer Typ 144-30.-000-...**

5 Hersteller: **Meggitt SA**

6 Adresse: **Rte de Moncor 4, 1752 Villars-sur-Glâne, Schweiz**

7 Die Bauart dieses Geräts oder Schutzsystems sowie die verschiedenen zulässigen Ausführungen sind in der Anlage zu dieser EG-Baumusterprüfbescheinigung und in den zugehörigen Unterlagen festgelegt.

8 DEKRA Certification B.V. bescheinigt als benannte Stelle Nr. 0344 nach Artikel 9 der Richtlinie 94/9/EG des Rates der Europäischen Gemeinschaft vom 23. März 1994 die Erfüllung der grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und die Herstellung von Betriebsmitteln und Schutzsystemen zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie.
Die Ergebnisse der Prüfung sind im vertraulichen Prüfbericht Nr. 210692400/2 Ausgabe 4 festgehalten.

9 Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit:
**EN 60079-0 : 2012** **EN 60079-11 : 2012** **EN 60079-26 : 2007**

10 Falls das Zeichen „X“ hinter der Bescheinigungsnummer steht, wird auf besondere Bedingungen für die sichere Anwendung dieses Betriebsmittels oder Schutzsystems in der Anlage zu dieser Bescheinigung hingewiesen.

11 Diese EG-Baumusterprüfbescheinigung bezieht sich nur auf Konzeption, Bau und Prüfung des bezeichneten Betriebsmittels oder Schutzsystems gemäß Richtlinie 94/9/EG. Weitere Anforderungen dieser Richtlinie gelten für den Herstellungsprozess und das Inverkehrbringen dieses Betriebsmittels oder Schutzsystems. Diese Anforderungen werden von dieser Bescheinigung nicht abgedeckt.

12 Die Kennzeichnung des Betriebsmittels oder Schutzsystems muss die folgenden Angaben enthalten:
**II 1 G Ex ia IIC T6 … T1 oder 450°C … 510°C Ga**
Diese Bescheinigung wurde am 28. Mai 2014 ausgestellt und muss gegebenenfalls revidiert werden, wenn in den offiziellen Mitteilungen der Europäischen Union angekündigt wird, dass eine der oben genannten Normen, auf der die Konformität basiert, ihre Gültigkeit verliert.

DEKRA Certification B.V.
R.Schuller
Certification Manager

(c) Die vollständige Veröffentlichung dieser Bescheinigung und der begleitenden Berichte ist zulässig. Diese Bescheinigung darf nur ungekürzt und unverändert weitergegeben werden.



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der original englischen Kopie der Seite 1**

13 **ANLAGE**

14 **zur EG-Baumusterprüfbescheinigung KEMA 04ATEX1294** Versionsnummer: **5**

15 **Beschreibung**

Das Accelerometer Typ 144-30.-000- wird zur Überwachung der Schwingungen des Betriebsmittels verwendet, an dem der Sensor befestigt ist.

Ein piezoelektrischer Sensor wandelt mechanische Kräfte (z. B. Schwingungen) in ein elektrisches Signal, das extern weiterverarbeitet wird.

Umgebungstemperaturbereich:

–30 °C bis +80 °CIn ständiger oder häufiger und andauernder Anwesenheit einer explosionsgefährdeten Umgebung
–54 °C bis +500 °C für Sensor und Kabel
–54 °C bis +500 °C für VM-Hochtemperaturanschluss
–54 °C bis +260 °C für VM-Standardtemperaturanschluss
–65 °C bis +200 °C für Anschlusstyp M83723/98Y1020 oder gleichwertig
–65 °C bis +150 °C für LEMO-Anschlusstyp 0 oder gleichwertig

In der folgenden Tabelle sind die Temperaturklassen in Abhängigkeit von der Umgebungstemperatur sowie von der Prozesstemperatur zusammengestellt:

| Temperaturklasse | Umgebungstemperatur bzw. Prozesstemperatur |
|---|---|
| T6 | ≤75 °C |
| T5 | ≤90 °C |
| T4 | ≤125 °C |
| T3 | ≤190 °C |
| T2 | ≤290 °C |
| T1 | ≤440 °C |

Bei Umgebungstemperaturen bzw. Prozesstemperaturen über 440 °C liegt die Sensortemperatur 10 K über dieser Temperatur.

**Elektrische Daten**

Ausgangskreis (Anschluss):

In Zündschutzart Eigensicherheit Ex ia IIC, nur zum Anschluss an einen bescheinigten eigensicheren Stromkreis mit folgenden Höchstwerten:

Ui = 28 V, Ii = 100 mA (lineare Charakteristik), Ii = 25 mA (nichtlineare Charakteristik),
Pi = 0,7 W, Li = 0 mH, Ci ~ 2 nF + CKabel
Kapazität des integriertes Kabels: 0,2 nF/m

**Installationsanweisungen**

Zur sicheren Bedienung sind die Anweisungen im mitgelieferten Handbuch zur beachten.



**Deutsche Übersetzung der original englischen Kopie der Seite 2**

13 **ANLAGE**

14 **zur EG-Baumusterprüfbescheinigung KEMA 04ATEX1294** Versionsnummer: **5**

**Prüfbericht**

Nr. 210692400/2 Ausgabe 4.

17 **Besondere Bedingungen für die sichere Anwendung**

Keine.

18 **GRUNDLEGENDE GESUNDHEITS- UND SICHERHEITSANFORDERUNGEN**

Abgedeckt durch die unter 9 aufgeführten Normen.

19 **Prüfungsunterlagen**

Gemäß Aufstellung in Prüfbericht Nr. 210692400/2 Ausgabe 4.



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

# ATEX certificate:

## LCIE 09 ATEX 1048 X

## for CA 30x

Although the certificate is available in the three languages (English, French and German), the liability of the notified body applies only on the text of the original copy of the certificate that it published.

EN

Bien que le certificat soit traduit dans les 3 langues (Anglais, Français et Allemand), seul le texte de la copie originale du certificat peut engager la responsabilité de l'organisme notifié qui l'a publié.

FR

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DE

EX

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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CETTE PAGE EST LAISSÉE INTENTIONNELLEMENT VIDE
DIESE SEITE WURDE ABSICHTLICH LEER GELASSEN

1 **ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

2 **Appareil** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'attestation d'examen de type
**LCIE 09 ATEX 1048 X**

4 Appareil
Capteur d'accélération
Type : PNR: 144-30X-000-YYY

5 Demandeur : VIBRO-METER SA
Adresse : Route de Moncor 4
1701 FRIBOURG SUISSE

7 Cet appareil ou système de protection et ses variantes éventuelles acceptées sont décrits dans l'annexe de la présente attestation et dans les documents descriptifs cités en référence.

8 Le LCIE certifie que cet appareil ou système de protection est conforme aux exigences essentielles de sécurité et de santé pour la conception d'appareils ou système de protection, électriques de catégorie 3 ou non électriques de catégorie 2 et 3, destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la directive 94/9/CE du Parlement européen et du Conseil du 23 mars 1994.

Les résultats des vérifications et essais figurent dans le rapport confidentiel N°94576 - 589014/11.

9 Le respect des exigences essentielles de sécurité et de santé est assuré par la conformité à :
- EN 60079-0 (2006) - EN 60079-15 (2005)

10 Le signe X lorsqu'il est placé à la suite du numéro de l'attestation, indique que cet appareil ou système de protection est soumis aux conditions spéciales pour une utilisation sûre, mentionnées dans l'annexe de la présente attestation.

11 Cette attestation d'examen de type concerne uniquement la conception, les vérifications et essais de l'appareil ou du système de protection spécifié, conformément à la directive 94/9/CE.
Des exigences supplémentaires de la directive sont applicables pour la fabrication et la fourniture de l'appareil ou du système de protection. Ces dernières ne sont pas couvertes par la présente attestation.

12 Le marquage de l'appareil ou du système de protection doit comporter les informations détaillées au point 15.

Fontenay-aux-Roses, le 10 octobre 2009

Le responsable de certification ATEX
ATEX certification manager

Marc GILLAUX

1 **VOLUNTARY TYPE EXAMINATION CERTIFICATE**

2 **Equipment** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Type Examination Certificate number
**LCIE 09 ATEX 1048X**

4 Equipment
Accelerometer
Type : PNR: 144-30X-000-YYY

5 applicant : VIBRO-METER SA
Address : Route de Moncor 4
1701 FRIBOURG SUISSE

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 LCIE certifies that this equipment or protective system has been found to comply with the essential Health and Safety Requirements that relate to the design of equipment or protective system, of category 3 electrical or categories 2 and 3 non electrical, which is intended for use in potentially explosive atmospheres, given in Annex II of the Directive 94/9/EC of the European Parliament and Council of 23 March 1994.

The examination and test results are recorded in confidential report N°94576 - 589014/11.

9 Compliance with the Essential Health and Safety Requirements has been assured by reference to :
- EN 60079-0 (2006) - EN 60079-15 (2005)

10 If the sign X is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11 This type examination certificate relates only to the design, examination and tests of this specified equipment or protective system in accordance III to the directive 94/9/EC.

Further requirements of the Directive may apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include informations as detailed at 15.

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Rev.A



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au capital de 15 ***15 084 €
RCS Nanterre B 408 363 177

13 **ANNEXE**

14 **ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

**LCIE 09 ATEX 1048 X**

15 **DESCRIPTION DE L'APPAREIL OU DU SYSTEME DE PROTECTION**

Capteur d'accélération
Type : PNR : 144-30X-000-YYY

Le matériel est un transducteur électro-mécanique fournissant à ses bornes une charge électrique proportionnelle à la pression mesurée.

Paramètres spécifiques du ou des modes de protection concernés :
U ≤ 30V, I ≤ 130mA, P ≤ 0,8W

Le marquage doit être :
VIBRO-METER
Adresse : ... Type : PNR : 144-30X-000-YYY
N° de fabrication : ... Année de fabrication : ...
II 3G Ex nA II T6 à T1 ou T510
LCIE 09 ATEX 1048 X

Le marquage peut être réduit à :
VIBRO-METER
PNR : 144-30X-000-YYY
II 3G LCIE 09 ATEX 1048 X

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concerne.

6 **DOCUMENTS DESCRIPTIFS**
Dossier de certification N°DT 1049 rev.00 du 20/07/09.
Ce document comprend 3 rubriques (5 pages).

7 **CONDITIONS SPECIALES POUR UNE UTILISATION SÛRE**
Température ambiante d'utilisation :
- Capteur et câble : -54°C à +500°C
- Connecteurs :
connecteur Lemo type 0 ou équivalent: -65°C à +150°C
connecteur M83723/89Y1020 ou équivalent: -65°C à +200°C
connecteur VM température standard : -54°C à +260°C
connecteur VM haute température: -54°C à +500°C

Classement en température en fonction de la température ambiante :
T6 à Tamb. + 75°C
T5 à Tamb. + 90°C
T4 à Tamb. + 125°C
T3 à Tamb. + 190°C
T2 à Tamb. + 290°C
T1 à Tamb. + 440°C
T510°C à Tamb. +500°C

8 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**
Couvertes par les normes listées au point 9.

9 **VERIFICATIONS ET ESSAIS INDIVIDUELS**
Néant.

13 **SCHEDULE**

14 **VOLUNTARY TYPE EXAMINATION CERTIFICATE**

**LCIE 09 ATEX 1048 X**

15 **DESCRIPTION OF EQUIPMENT OR PROTECTIVE SYSTEM**

Accelerometer
Type : PNR : 144-30X-000-YYY
This equipment is an electro-mechanical transducer delivering at its terminal blocks an electrical load proportional to the measured pressure.

Specific parameters of the mode(s) of protection concerned :
U ≤ 30V, I ≤ 130mA, P ≤ 0,8W

The marking shall be :
VIBRO-METER
Address : ... Type : PNR : 144-30X-000-YYY
Serial number : ... Year of construction : ...
II 3G Ex nA II T6 to T1 or T510
LCIE 09 ATEX 1048 X

The marking can be reduce at :
VIBRO-METER
PNR : 144-30X-000-YYY
II 3G LCIE 09 ATEX 1048 X

The equipment shall also bear the usual marking required by the manufacturing standards applying to such equipment.

16 **DESCRIPTIVE DOCUMENTS**
Certification file N°DT 1049 rev.00 dated 09/07/20.
This file includes 3 items (5 pages).

17 **SPECIAL CONDITIONS FOR SAFE USE**
Operating ambient temperature :
- Sensor and cable : -54°C to +500°C
- Connectors :
connector Lemo type 0 or equivalent: -65°C to +150°C
connector M83723/89Y1020 or equivalent: -65°C to +200°C
connector VM standard temperature: -54°C to +260°C
connector VM high temperature: -54°C to +500°C

Temperature classification as a function of the operating temperature :
T6 at Tamb. + 75°C
T5 at Tamb. + 90°C
T4 at Tamb. + 125°C
T3 at Tamb. + 190°C
T2 at Tamb. + 290°C
T1 at Tamb. + 440°C
T510°C at Tamb. +500°C

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**
Covered by standards listed at 9.

19 **ROUTINE VERIFICATIONS AND TESTS**
None.

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Rev.A

L C I E

1 **AVENANT D'ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

2 **Appareil** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 09 ATEX 1048 X / 01**

4 Appareil
Capteur d'accélération
Type : PNR : 144-30X-000-YYY

5 demandeur : Meggitt SA
Route de Moncor 4
1752 Villars-sur-Glâne
Suisse

15 **DESCRIPTION DE L'AVENANT**

- Changement de nom et d'adresse du fabricant
- Modifications des marques commerciales déposées

Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 102105 – 602924 / 20.

Paramètres spécifiques du ou des modes de protection concerné(s) :
Inchangés.

Le marquage doit être :

Inchangé, excepté la marque commerciale vibro-meter qui devient vibro-meter ou MEGGITT ou MFR S3960 et l'adresse.

16 **DOCUMENTS DESCRIPTIFS**
Courrier du demandeur du 07/09/2010.

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SÛRE**
Inchangées.

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**
Inchangées.

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**
Néant.

Fontenay-aux-Roses, le 25 octobre 2010.

Le responsable de certification ATEX
ATEX certification manager
Marc GILLAUX

1 **VOLUNTARY SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE**

2 **Equipment** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number :
**LCIE 09 ATEX 1048 X / 01**

4 Equipment
Accelerometer
Type : PNR : 144-30X-000-YYY

5 Applicant : Meggitt SA
Route de Moncor 4
1752 Villars-sur-Glâne
Switzerland

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**
- Change of legal entity name and address of applicant
- Modifications of registered trade mark

The examination and test results are recorded in confidential report N°102105 – 602924 / 20.

Specific parameters of the mode(s) of protection concerned:

Unchanged.

The marking shall be :

Unchanged, except registered trade mark vibro-meter becomes vibro-meter or MEGGITT or MFR S3960 and the address.

16 **DESCRIPTIVE DOCUMENTS**
Letter of applicant from 2010/09/07.

17 **SPECIAL CONDITIONS FOR SAFE USE**
Unchanged.

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Unchanged.

19 **ROUTINE VERIFICATIONS AND TESTS**
None.

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L C I E

1 **AVENANT D'ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

2 **Appareil** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 09 ATEX 1048 X / 02**

4 Appareil
Capteur d'accélération
Type : PNR 144-30X-000-YYY

5 Demandeur : Meggitt SA

15 **DESCRIPTION DE L'AVENANT**

Mise à jour des normes EN 60079-0 (2009) et EN 60079-15 (2010)

Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 110055-619675 / 11

Paramètres spécifiques du ou des modes de protection concerné(s) :
Inchangés

Le marquage doit être :
Modifié comme suit
Vibro-Meter ou MEGGITT ou MFR S3960
Adresse : ...
Type : PNR 144-30X-000-YYY
N° de série :..., Date de fabrication : ...
II 3 G
Ex nA IIC T6 à T510°C Gc
LCIE 09 ATEX 1048 X

16 **DOCUMENTS DESCRIPTIFS**
Lettre du demandeur du 20/10/2011 (2 pages).

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SÛRE**
Inchangées

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**
Couvertes par les normes EN 60079-0 (2009) et EN 60079-15 (2010)

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**
Néant

Fontenay-aux-Roses, le 21/12/2011

Le responsable de certification ATEX
ATEX certification manager
Michel BRÉNON

1 **VOLUNTARY SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE**

2 **Equipment** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number :
**LCIE 09 ATEX 1048 X / 02**

4 Equipment
Accelerometer
Type : PNR 144-30X-000-YYY

5 Applicant : Meggitt SA

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**
Normative update according to EN 60079-0 (2009) and EN 60079-15 (2010)

The examination and test results are recorded in confidential report N° 110055-619675 / 11

Specific parameters of the concerned protection mode :

Unchanged

The marking shall be :
Modified as follows
Vibro-Meter or MEGGITT or MFR S3960
Address : ...
Type : PNR 144-30X-000-YYY
Serial Number:..., Year of Construction : ...
II 3 G
Ex nA IIC T6 to T510°C Gc
LCIE 09 ATEX 1048 X

16 **DESCRIPTIVE DOCUMENTS**
Applicant's letter dated 2011/10/20 (2 pages).

17 **SPECIAL CONDITIONS FOR SAFE USE**
Unchanged

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Covered by standards EN 60079-0 (2009) and EN 60079-15 (2010)

19 **ROUTINE VERIFICATIONS AND TESTS**
None

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des Industries Electriques — 92260 Fontenay-aux-Roses cedex — contact@lcie.fr — RCS Nanterre B 408 363 174
Une société de Bureau Veritas — France — www.lcie.fr



MEGGITT

1 **AVENANT D'ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

2 **Appareil** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 09 ATEX 1048 X / 03**

4 Appareil ou système de protection :
Capteur d'accélération
Type : PNR 144-30X-000-YYY

5 Demandeur : Meggitt SA

15 **DESCRIPTION DE L'AVENANT**

- Mise à jour normative selon la norme EN 60079-0:2012 + Amendement A11:2013
- Ajout d'un essai individuel de rigidité diélectrique,

Définition du type/ *Type definition*:

PNR 144-30X-000-YYY
X = 0...9 : définit l'exécution de la tête du capteur / *defines the execution of the sensor head.*
Y = 0...9 : dépend du type de connecteur et de la longueur du câble / *depends on the type of connector and cable length.*

Les résultats des vérifications et essais de type sont enregistrés dans le rapport confidentiel n°130454-662462-12.

Paramètres spécifiques du ou des modes de protection concerné(s) :
U ≤30 V, I ≤130 mA, P ≤0,8 W

Le marquage doit être :
Meggitt SA ou Vibro-meter ou MFR S3960
Adresse : ...
Type : PNR 144-30X-000-YYY
N° de fabrication : ... Année de fabrication : ...
Ⓔ II 3 G
Ex nA IIC T6...510°C Gc (*)
LCIE 09 ATEX 1048X

Le marquage peut être réduit comme suit :
Meggitt SA ou Vibro-meter ou MFR S3960
PNR 144-30X-000-YYY
Ⓔ II 3 G Ex nA IIC T6...510°C Gc (*)
LCIE 09 ATEX 1048 X
(*) voir conditions spéciales pour une utilisation sûre.

Fontenay-aux-Roses, le 02 décembre 2014

1 **VOLUNTARY SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE**

2 **Equipment** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number:
**LCIE 09 ATEX 1048 X / 03**

4 Equipment or protective system:
Accelerometer
Type: PNR 144-30X-000-YYY

5 Applicant: Meggitt SA

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**

- Normative update according to standard EN 60079-0:2012 + Amendment A11:2013
- Add of routine dielectric strength test,

The results of type verifications and tests are recorded in confidential report n°130454-662462-12.

Specific parameters of the concerned protection mode:
U ≤30 V, I ≤130 mA, P ≤0.8 W

The marking shall be:
Meggitt SA or Vibro-meter or MFR S3960
Address: ...
Type: PNR 144-30X-000-YYY
Serial number: ... Year of construction: ...
Ⓔ II 3 G
Ex nA IIC T6...510°C Gc (*)
LCIE 09 ATEX 1048 X

The marking can be reduced as follows:
Meggitt SA or Vibro-meter or MFR S3960
PNR 144-30X-000-YYY
Ⓔ II 3 G Ex nA IIC T6...510°C Gc (*)
LCIE 09 ATEX 1048 X
(*) see special conditions for safe use.

Le Responsable de Certification ATEX
ATEX Certification Officer
Michel EQUI

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13 **ANNEXE**

14 **AVENANT D'ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

**LCIE 09 ATEX 1048 X / 03**

15 **DESCRIPTION DE L'AVENANT (suite)**

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concerne.

16 **DOCUMENTS DESCRIPTIFS**
Dossier technique n° DT 1069 rév. 00 du 25/09/2014.
Ce dossier comprend 2 rubriques (6 pages).

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SURE**

1. Température ambiante d'utilisation :
- Capteur : -54°C à +500°C
- Câble : -54°C à +500°C
- Connecteur Lemo type 0 ou équivalent : -65°C à +150°C
- Connecteur M83723/89Y1020 ou équivalent : -65°C à +200°C
- Connecteur VM température standard : -54°C à +260°C
- Connecteur VM haute température : -54°C à +500°C

2. Classement en température en fonction de la température ambiante d'utilisation :

| Classe de température / Température ambiante d'utilisation / *Temperature class / Ambient temperature in service* | T6 | T5 | T4 | T3 | T2 | T1 | 510°C |
|---|---|---|---|---|---|---|---|
| Capteur/ *Sensor* | ≤+80°C | ≤+95°C | ≤+130°C | ≤+195°C | ≤+290°C | ≤+440°C | ≤+500°C |
| Câble/ *Cable* | ≤+80°C | ≤+95°C | ≤+130°C | ≤+195°C | ≤+290°C | ≤+440°C | ≤+500°C |
| Connecteur Lemo type 0 ou équivalent *Connector Lemo type 0 or equivalent* | ≤+80°C | ≤+95°C | ≤+130°C | ≤+150°C | - | - | - |
| Connecteur M83723/89Y1020 ou équivalent *Connector M83723/89Y1020 or equivalent* | ≤+80°C | ≤+95°C | ≤+130°C | ≤+195°C | ≤+200°C | - | - |
| Connecteur VM température standard *Connector VM standard temperature* | ≤+80°C | ≤+95°C | ≤+130°C | ≤+195°C | ≤+260°C | - | - |
| Connecteur VM haute température *Connector VM high temperature* | ≤+80°C | ≤+95°C | ≤+130°C | ≤+195°C | ≤+290°C | ≤+440°C | ≤+500°C |

3. Des mesures doivent être prises afin d'éviter que la tension nominale ne soit pas dépassée par des perturbations transitoires de plus de 119 V.

13 **SCHEDULE**

14 **VOLUNTARY SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE**

**LCIE 09 ATEX 1048 X / 03**

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE (continued)**

The equipment shall also bear the usual marking required by the manufacturing standards applying to such equipment.

16 **DESCRIPTIVE DOCUMENTS**
Technical file n° DT 1069 rev. 00 dated 2014/09/25.
This file includes 2 items (6 pages).

17 **SPECIAL CONDITIONS FOR SAFE USE**

1. Ambient temperature in service:
- Sensor: -54°C to +500°C
- Cable: -54°C to +500°C
- Connector Lemo type 0 or equivalent: -65°C to +150°C
- Connector M83723/89Y1020 or equivalent: -65°C to +200°C
- Connector VM standard temperature: -54°C to +260°C
- Connector VM high temperature: -54°C to +500°C

2. Temperature classification in function of the ambient temperature in service:

3. Provisions shall be made to prevent the rated voltage from being exceeded by transient disturbances of more than 119 V.

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13 ANNEXE (suite)

13 SCHEDULE (continued)

14 AVENANT D'ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE

LCIE 09 ATEX 1048 X / 03

14 VOLUNTARY SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE

LCIE 09 ATEX 1048 X / 03

18 EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE

Conformité aux normes européennes EN 60079-0:2012 + Amendement A11:2013 et EN 60079-15:2010.

18 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS

Compliance with European standards EN 60079-0:2012 + Amendment A11:2013 and EN 60079-15:2010.

19 VERIFICATIONS ET ESSAIS INDIVIDUELS

Chaque appareil doit être soumis à un essai de rigidité diélectrique sous une tension d'essai de 500 V efficace, appliquée entre les conducteurs et le châssis durant 60 s, conformément au paragraphe 6.5.1 de la norme EN 60079-15:2010.
Autrement, l'essai doit être exécuté à 600 V efficace pendant au moins 100 ms.

19 ROUTINE VERIFICATIONS AND TESTS

Each equipment shall be submitted to a dielectric strength test with test voltage of 500 V r.m.s, applied between wires and body during 60 s, carried out in accordance with clause 6.5.1 of standard EN 60079-15:2010.
Alternatively, a test shall be carried out at 600 V r.m.s during at least 100 ms.

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**Deutsche Übersetzung der originalen französischen Kopie der Seite 1**

1 **FREIWILLIGES TYPENPRÜFZERTIFIKAT**

2 Geräte zur Verwendung in explosionsgefährdeten Bereichen - **Richtlinie 94/9/EG**

3 Zertifikatnummer
**LCIE 09 ATEX 1048X**

4 Gerät
Beschleunigungsgeber
PNR: 144-30X-000-YYY

5 Hersteller: VIBRO METER
Adresse: Route de Moncor 4, 1701 FRIBOURG, SCHWEIZ

7 Dieses Gerät oder Schutzsystem und die möglichen, zulässigen Varianten sind im Anhang dieses Zertifikats und den darin aufgeführten Unterlagen beschrieben.

8 LCIE bestätigt, dass dieses Gerät oder Schutzsystem die wesentlichen Gesundheits- und Sicherheitsanforderungen in Bezug auf die Auslegung und die Bauart von Geräten und Schutzsystemen der Kategorie 3 (elektrisch) oder Kategorien 2 und 3 (nicht elektrisch) zur Verwendung in explosionsgefährdeten Bereichen nach Anhang II der Richtlinie 94/9EG des Europaparlaments und des Rats vom 23. März 1994 erfüllt.

Die Prüf- und Testergebnisse sind im vertraulichen Bericht Nr. 94576 - 589014/11 aufgezeichnet.

9 Die Einhaltung der wesentlichen Gesundheits- und Sicherheitsanforderungen wird durch die Übereinstimmung mit den folgenden Dokumenten sichergestellt:
- EN 60079-0 (2006)
- EN 60079-15 (2005)

10 Ein "X" nach der Zertifikatnummer gibt an, dass für die sichere Verwendung des Gerätes oder Schutzsystemes besondere Bedingungen gemäß dem Anhang dieses Zertifikates gelten.

11 Dieses Typenprüfzertifikat betrifft nur die Bauart und die Prüfungen und Tests des betreffenden Geräts oder Schutzsystems gemäß Richtlinie 94/9/EG.
Zusätzliche Anforderungen dieser Richtlinie gelten für die Fertigung und Lieferung des Geräts oder Schutzsystems. Diese werden durch dieses Zertifikat nicht abgedeckt.

12 Die Kennzeichnung des Gerätes oder Schutzsystems muss die unter Punkt 15 erläuterten Angaben enthalten.

Fontenay-aux-Roses,
am 10. Oktober 2009

Leiter Zertifizierung

Trockenstempel

**Rev.A**
Seite 1/2

LCIE haftet nur für den französischen Text.
Dieses Zertifikat darf nur vollständig und ohne Änderungen vervielfältigt werden.

Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 1**

13 **ANHANG**

14 **FREIWILLIGES TYPENPRÜFZERTIFIKAT**
**LCIE 09 ATEX 1048 X**

15 **BESCHREIBUNG DES GERÄTES ODER SCHUTZSYSTEMS**

Beschleunigungsgeber
PNR : 144-30X-000-YYY

Das Gerät verwandelt elektrische Eingangsladung in elektrisches Ausgangssignal welches proportional zur Beschleunigung oder dem Druck ist.

Spezifische Kenndaten der betroffenen Schutzarten:

U ≤ 30 V, I ≤ 130 mA, P ≤ 0,8 W

Kennzeichnung:
VIBRO-METER Adresse: ..
Typ: PNR: 144-30X-000-YYY
Herstellungsnummer: ... Herstellungsjahr: ...
Ex II 3G Ex nA II T6 bis T1 oder T510
LCIE 09 ATEX 1048 X

Die Kennzeichnung kann wiefolgt vereinfacht werden:
VIBRO-METER PNR: 144-30X-000-YYY
Ex II 3G LCIE 09 ATEX 1048 X

Die Geräte müssen ebenfalls mit der Kennzeichnung versehen sein, die in den Herstellungsnormen der betreffenden Geräte normalerweise vorgesehen sind.

16 **BESCHREIBENDE UNTERLAGEN**

Zertifizierungs-Datei-Nr. DT 1049 Ausgabe 0 vom 20. Juli 2009.
Diese Datei enthält 3 Punkte (5 Seiten).

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

Umgebungstemperatur:
- Sensor und Kabel: −54 °C bis +500 °C
Stecker:
- Stecker LEMO Typ O oder Äquivalent: −65 °C bis +150 °C
- Stecker M83723/89Y1020 oder Äquivalent: −65 °C bis +200 °C
- Standardtemperatur VM-Stecker: −54 °C bis +260 °C
- Hochtemperatur VM-Stecker: −54 °C bis +500 °C

Temperaturklassifizierung:
T6 bis Ta = +75 °C
T5 bis Ta = +90 °C
T4 bis Ta = +125 °C
T3 bis Ta = +190 °C
T2 bis Ta = +290 °C
T1 bis Ta = +440 °C
T510 bis Ta = +500 °C

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**
Siehe unter Punkt 9 aufgelistete Bestimmungen.

19 **ROUTINEPRÜFUNGEN UND TESTS**
Keine.

**Rev.A**
Seite 2/2

Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 2**

1 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

2 Geräte zur Verwendung in explosionsgefährdeten Bereichen (**Richtlinie 94/9/EG**)

3 Zusätzliche Zertifikatnummer:
**LCIE 09 ATEX 1048 X / 01**

4 Gerät
Beschleunigungsgeber
Type : PNR: 144-30X-000-YYY

5 Hersteller: Meggitt SA
Adresse: Route de Moncor 4, 1752 Villars-sur-Glâne, Schweiz

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS**

- Änderung der juristischen Person und Addresse des Antragstellers
- Modifikation des eingetragenen Markenzeichens

Die Prüf- und Testergebnisse sind im vertraulichen Bericht Nr. 102105-602924/20 aufgezeichnet.

Spezifische Kenndaten der betroffenen Schutzarten:
Unverändert.

Die Kennzeichnung soll lauten:
Unverändert, bis auf Markenzeichen vibro-meter wird zu vibro-meter oder MEGGITT oder MFR S3960 sowie die Adressänderung.

16 **BESCHREIBENDE UNTERLAGEN**

Brief des Antragsstellers vom 07.09.2010.

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

Unverändert.

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**

Unverändert.

19 **ROUTINEPRÜFUNGEN UND TESTS**

Keine.

Fontenay-aux-Roses,
am 25. Oktober 2010

Leiter Zertifizierung

Trockenstempel



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 2**

1 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

2 Geräte zur Verwendung in explosionsgefährdeten Bereichen (**Richtlinie 94/9/EG**)

3 Zusätzliche Zertifikatnummer:
**LCIE 09 ATEX 1048 X / 02**

4 Gerät
Beschleunigungsgeber
Type : PNR 144-30X-000-YYY

5 Hersteller: Meggitt SA

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS**

Standardaktualisierungen gemäß folgender Richtlinien: EN 60079-0 (2009) und EN 60079-15 (2010)

Die Prüf- und Testergebnisse sind im vertraulichen Bericht Nr. 110055-619675 / 11 aufgezeichnet.

Spezifische Kenndaten der betroffenen Schutzarten:
Unverändert.

Die Kennzeichnung lautet wie folgt:
Wie folgt modifiziert:
Vibro-Meter oder MEGGITT oder MFR S3960
Adresse: ...
Typ: PNR 144-30X-000-YYY
Herstellungsnummer: ... Herstellungsjahr: ...
Ex II 3 G
Ex nA IIC T6 bis T510°C Gc
LCIE 09 ATEX 1048 X

16 **BESCHREIBENDE UNTERLAGEN**

Brief des Antragsstellers vom 20.10.2011 (2 Seiten)

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

Unverändert.

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**

Werden von folgenden Richtlinien abgedeckt:
EN 60079-0 (2009) und EN 60079-15 (2010)

19 **ROUTINEPRÜFUNGEN UND TESTS**

Keine.

Fontenay-aux-Roses,
am 21. Dezember 2011

Leiter Zertifizierung

Trockenstempel



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 3**

1 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

2 Geräte zur Verwendung in explosionsgefährdeten Bereichen (**Richtlinie 94/9/EG**)

3 Zusätzliche Zertifikatnummer:
**LCIE 09 ATEX 1048 X / 03**

4 Gerät
Beschleunigungsgeber
Typ: PNR 144-30X-000-YYY

5 Antragsteller: Meggitt SA

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS**

– Standardaktualisierungen gemäß folgender Richtlinien:
EN 60079-0:2012 + Änderung A11:2013.
– Hinzufügen einer Stückprüfung von Durchschlagfestigkeit.

Definition von Gerät:
PNR 144-30X-000-YYY
X = 0 … 9: Definiert das Design des Sensorkopfes
Y = 0 … 9: Abhängig von der Steckertyp und Kabellänge.

Die Testergebnisse sind im vertraulichen Bericht Nr. 130454-662462-12.

Spezifische Kenndaten der betroffenen Schutzarten:
U ≤ 30 V, I ≤ 130 mA, P ≤ 0,8 W

Die Kennzeichnung wird wie folgt festgesetzt:
Meggitt SA oder Vibro-Meter oder MFR S3960
Adresse: …
Typ: PNR 144-30X-000-YYY
Herstellungsnummer: … Herstellungsjahr: …
II 3 G
Ex nA IIC T6…510°C Gc(*)
LCIE 09 ATEX 1048 X

Die Kennzeichnung kann wie folgt reduziert werden:
Meggitt SA oder Vibro-Meter oder MFR S3960
PNR 144-30X-000-YYY
II 3 G Ex nA IIC T6…510°C Gc(*)
LCIE 09 ATEX 1048 X

(*): Siehe besondere Bedingungen für die sichere Anwendung (unter Punkt 17)

Fontenay-aux-Roses,
am 02. Dezember 2014

Leiter Zertifizierung

Trockenstempel



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 3**

13 **ANHANG**

14 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

**LCIE 09 ATEX 1048 X / 03**

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS (FORTSETZUNG)**

Die Geräte müssen ebenfalls mit der Kennzeichnung versehen sein, die in den Herstellungsnormen der betreffenden elektrischen Geräte normalerweise vorgesehen sind.

16 **BESCHREIBENDE UNTERLAGEN**

Zertifizierungs-Datei-Nr. DT 1069 Ausgabe 00 vom 2014/09/25.
Diese Datei enthält 2 Punkte (6 Seiten).

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

1. Umgebungstemperatur im Betrieb:
– Sensor: −54 °C bis +500 °C
– Kabel: −54 °C bis +500 °C
– Stecker LEMO Typ O oder Äquivalent: −65 °C bis +150 °C
– Stecker M83723/89Y1020 oder Äquivalent: −65 °C bis +200 °C
– Standardtemperatur VM-Stecker: −54 °C bis +260 °C
– Hochtemperatur VM-Stecker: −54 °C bis +500 °C

2. Temperaturklassifizierung entsprechend der Umgebungstemperatur im Betrieb:

| | T6 | T5 | T4 | T3 | T2 | T1 | 510°C |
|---|---|---|---|---|---|---|---|
| Sensor | ≤ +80 °C | ≤ +95 °C | ≤ +130 °C | ≤ +195 °C | ≤ +290 °C | ≤ +440 °C | ≤ +500 °C |
| Kabel | ≤ +80 °C | ≤ +95 °C | ≤ +130 °C | ≤ +195 °C | ≤ +290 °C | ≤ +440 °C | ≤ +500 °C |
| Stecker LEMO Typ O oder Äquivalent | ≤ +80 °C | ≤ +95 °C | ≤ +130 °C | ≤ +150 °C | | | |
| Stecker M83723/89Y1020 oder Äquivalent | ≤ +80 °C | ≤ +95 °C | ≤ +130 °C | ≤ +195 °C | ≤ +200 °C | | |
| Standardtemperatur VM-Stecker | ≤ +80 °C | ≤ +95 °C | ≤ +130 °C | ≤ +195 °C | ≤ +260 °C | | |
| Hochtemperatur VM-Stecker | ≤ +80 °C | ≤ +95 °C | ≤ +130 °C | ≤ +195 °C | ≤ +290 °C | ≤ +440 °C | ≤ +500 °C |

3. Es müssen Vorkehrungen getroffen werden dass kurzzeitige Störungen die Nominalspannungen nicht mehr als 119 V überschreiten können.



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 4**

13 **ANHANG**

14 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

**LCIE 09 ATEX 1048 X / 03**

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**

Werden von folgenden Richtlinien abgedeckt:
EN 60079-0:2012 + Änderung A11:2013 und EN 60079-15:2010.

19 **ROUTINEPRÜFUNGEN UND TESTS**

Jedes Gerät muss einem Durschlagsfestigkeitstest unterzogen werden. Spannung von 500 V (RMS) währen 60 Sekunden zwischen den Leitern und dem Gehäuse gemäss Norm EN 60079-15:2010.
Andernfalls muss ein Test mit 600 V (RMS) während mindestens 100 ms durchgeführt werden



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

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# ATEX certificate:

# LCIE 08 ATEX 6017 X

# for CA 901

Although the certificate is available in the three languages (English, French and German), the liability of the notified body applies only on the text of the original copy of the certificate that it published.

EN

Bien que le certificat soit traduit dans les 3 langues (Anglais, Français et Allemand), seul le texte de la copie originale du certificat peut engager la responsabilité de l'organisme notifié qui l'a publié.

FR

Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

DE

EX

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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DIESE SEITE WURDE ABSICHTLICH LEER GELASSEN

## ATTESTATION D'EXAMEN CE DE TYPE

1 **EC TYPE EXAMINATION CERTIFICATE**

**Appareil ou système de protection** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

2 **Equipment or protective system** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

Numéro de l'attestation d'examen CE de type
**LCIE 08 ATEX 6017 X**

3 EC type examination certificate number
**LCIE 08 ATEX 6017 X**

Appareil ou système de protection :
Accéléromètre
Type : CA 901 modèle : 144-901-000-XXX

4 Equipment or protective system :
Acceleration transducer
Type : CA 901 model : 144-901-000-XXX

Demandeur : VIBRO METER
Adresse : BP 1071 1701 FRIBOURG
SUISSE

5 Applicant : VIBRO METER
Address : BP 1071 1701 FRIBOURG
SUISSE

Fabricant : VIBRO METER
Adresse : BP 1071 1701 FRIBOURG
SUISSE

6 Manufacturer : VIBRO METER
Address : BP 1071 1701 FRIBOURG
SUISSE

Cet appareil ou système de protection et ses variantes éventuelles acceptées sont décrits dans l'annexe de la présente attestation et dans les documents descriptifs cités en référence.

7 This equipment or protective system and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

Le LCIE, organisme notifié sous la référence 0081 conformément à l'article 9 de la directive 94/9/CE du Parlement européen et du Conseil du 23 mars 1994, certifie que cet appareil ou système de protection est conforme aux exigences essentielles de sécurité et de santé pour la conception et la construction d'appareils et de systèmes de protection destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la directive.
Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 77907/566467.

8 LCIE, notified body number 0081 in accordance with article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994. certifies that this equipment or protective system has been found to comply with the essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.
The examination and test results are recorded in confidential report N° 77907/566467.

Le respect des exigences essentielles de sécurité et de santé est assuré par la conformité à :
- EN 60079-0 (2004)
- EN 60079-11 (2007)

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with :
- EN 60079-0 (2004)
- EN 60079-11 (2007)

Le signe X lorsqu'il est placé à la suite du numéro de l'attestation, indique que cet appareil ou système de protection est soumis aux conditions spéciales pour une utilisation sûre, mentionnées dans l'annexe de la présente attestation.

10 If the sign X is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

Cette attestation d'examen CE de type concerne uniquement la conception et la construction de l'appareil ou du système de protection spécifié, conformément à l'annexe III de la directive 94/9/CE.
Des exigences supplémentaires de la directive sont applicables pour la fabrication et la fourniture de l'appareil ou du système de protection. Ces dernières ne sont pas couvertes par la présente attestation.

11 This EC type examination certificate relates only to the design and construction of this specified equipment or protective system in accordance with annex III to the directive 94/9/EC.
Further requirements of the directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

Le marquage de l'appareil ou du système de protection doit comporter les informations détaillées au point 15.

12 The marking of the equipment or protective system shall include informations as detailed at 15.

Fontenay-aux-Roses, le 23 février 2008

Le responsable de certification ATEX
ATEX certification manager

Henri CERVELLO

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Laboratoire Central — BP 8 — Fax : +33 1 40 95 86 56 — au capital de 35 715 084 €
des Industries Electriques — 92260 Fontenay-aux-Roses cedex — contact@lcie.fr — RCS Nanterre B 408 363 177
Une société de Bureau Veritas — France — www.lcie.fr

13 **ANNEXE**

14 **ATTESTATION D'EXAMEN CE DE TYPE**

**LCIE 08 ATEX 6017 X**

15 **DESCRIPTION DE L'APPAREIL OU DU SYSTEME DE PROTECTION**

Accéléromètre
Type : CA 901 modèle : 144-901-000-XXX
Le capteur est un transducteur électro-mécanique fournissant à ses bornes une charge électrique proportionnelle à l'accélération à laquelle il est soumis.
Le câble à isolant minéral et le connecteur font partie intégrante du capteur.

Paramètres spécifiques du ou des modes de protection concernés :
Capteur : Ci = 80pF, Li ≈ 0
Câble : Ci = 200pF/m, Li ≈ 0
Source linéaire : Ui ≤ 28V, Ii ≤ 100mA, Pi ≤ 0,7W
Source non linéaire : Ui ≤ 28V, Ii ≤ 25mA, Pi ≤ 0,7W

Le marquage doit être :
VIBRO METER Adresse : ...
Type : 144-901-000-XXX
N° de fabrication : ... Année de fabrication : ...
Ex II 1G Ex ia IIC T6 à T710°C
LCIE 08 ATEX 6017 X

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concerne.

16 **DOCUMENTS DESCRIPTIFS**
Dossier de certification N° DT 1032 rev1 du 19/11/07.
Ce document comprend 6 rubriques (8 pages).

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SÛRE**
Le capteur ne peut être raccordé qu'à un équipement certifié de sécurité intrinsèque. Cette association doit être compatible vis-à-vis de la sécurité intrinsèque (voir les paramètres électriques au paragraphe 15).
Température ambiante d'utilisation :
- capteur et câble : - 196°C à + 700°C
- connecteur :
  - 65°C à + 150°C : connecteur LEMO type O ou équivalent
  - 65°C à + 200°C : connecteur M83723/89Y1020 ou équivalent
  - 54°C à + 260°C : connecteur VM standard
  - 196°C à + 700°C : connecteur VM haute température

Classement en température :
T6 jusqu'à Ta = + 80°C, T5 jusqu'à Ta = + 95°C,
T4 jusqu'à Ta = + 130°C, T3 jusqu'à Ta = + 195°C,
T2 jusqu'à Ta = + 290°C, T1 jusqu'à Ta = + 440°C
Au-delà de Ta = + 440°C et jusqu'à +700°C : T...°C = Ta +10°C.

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**
Couvertes par les normes listées au point 9.

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**
Néant.

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13 **SCHEDULE**

14 **EC TYPE EXAMINATION CERTIFICATE**

**LCIE 08 ATEX 6017 X**

15 **DESCRIPTION OF EQUIPMENT OR PROTECTIVE SYSTEM**

Acceleration transducer
Type : CA 901 model : 144-901-000-XXX
The sensor is an electro-mechanical transducer delivering at its terminal blocks an electrical load proportional to the acceleration which it is submitted.
The mineral insulating cable and the connector are fully in a part of the sensor.

Specific parameters of the mode(s) of protection concerned :
Sensor : Ci = 80pF, Li ≈ 0
Cable Ci = 200pF/m, Li ≈ 0
Linear power supply : Ui ≤ 28V, Ii ≤ 100mA, Pi ≤ 0,7W
Non linear power supply : Ui ≤ 28V, Ii ≤ 25mA, Pi ≤ 0,7W

The marking shall be :
VIBRO METER Address : ...
Type : 144-901-000-XXX
Serial number : ... Year of construction : ...
Ex II 1G Ex ia IIC T6 to T710°C
LCIE 08 ATEX 6017 X

The equipment shall also bear the usual marking required by the manufacturing standards applying to such equipment.

16 **DESCRIPTIVE DOCUMENTS**
Certification file N° DT 1032 rev1 dated 19/11/07.
This file includes 6 items (8 pages).

17 **SPECIAL CONDITIONS FOR SAFE USE**

The sensor shall be only connected to an intrinsically safe certified equipment. This combination shall be compatible as regard the intrinsic safety rules (see electrical parameters clause 15).
Operating ambient temperature :
- sensor and cable : - 196°C to + 700°C
- connector :
  - 65°C to + 150°C : connector LEMO type O or equivalent
  - 65°C to + 200°C : connector M83723/89Y1020 or equivalent
  - 54°C to + 260°C : standard temperature VM connector
  - 196°C to + 700°C : high temperature VM connector

Temperature classification:
T6 up to Ta = + 80°C, T5 up to Ta = + 95°C,
T4 up to Ta = + 130°C, T3 up to Ta = + 195°C,
T2 up to Ta = + 290°C, T1 up to Ta = + 440°C
Above Ta = + 440°C and up to +700°C : T...°C = Ta + 10°C.

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Covered by standards listed at 9.

19 **ROUTINE VERIFICATIONS AND TESTS**
None.

L C I E

1 **AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE**

2 **Appareil ou système de protection** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 08 ATEX 6017 X / 01**

4 Appareil ou système de protection :
Accéléromètre
Type : CA901 model 144-901-000-XXX

5 Demandeur : Meggitt SA
Route de Moncor 4
1752 Villars-sur-Glâne
Suisse

15 **DESCRIPTION DE L'AVENANT**

- Mise à jour normative selon la norme EN 60079-0 (2006)
- Mise à jour des documents fabricant
- Changement de nom et d'adresse du fabricant
- Modifications des marques commerciales déposées

Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 102105-602924 / 21.

Paramètres spécifiques du ou des modes de protection concerné(s) :
Inchangés, excepté
Capteur qui devient Tête de capteur : Ci = 80pF
Câble qui devient Câble intégral : Ci = 200pF/m

Le marquage doit être :

Inchangé, excepté la marque commerciale vibro-meter qui devient vibro-meter ou MEGGITT ou MFR S3960 et l'adresse.

16 **DOCUMENTS DESCRIPTIFS**

Dossier de certification N° DT 1032 - 01 Rev. 02 du 01/12/2010.
Ce dossier comprend 04 rubriques (14 pages).

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SURE**
Inchangées.

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**
Couvertes par les normes EN 60079-0 (2006) et EN 60079-11 (2007).

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**
Néant.

Fontenay-aux-Roses, le 03 décembre 2010.

1 **SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE**

2 **Equipment or protective system** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number :
**LCIE 08 ATEX 6017 X / 01**

4 Equipment or protective system :
Acceleration transducer
Type : CA901 model 144-901-000-XXX

5 Applicant : Meggitt SA
Route de Moncor 4
1752 Villars-sur-Glâne
Switzerland

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**
- Normative update according to standard EN 60079-0 (2006)
- Update of the manufacturer documents
- Change of legal entity name and address of applicant
- Modifications of registered trade mark

The examination and test results are recorded in confidential report N° 102105-602924 / 21.

Specific parameters of the mode(s) of protection concerned:

Unchanged, except
Sensor becomes sensor heat : Ci = 80pF
Cable becomes integral cable : Ci = 200pF/m

The marking shall be :

Unchanged, except registered trade mark vibro-meter becomes vibro-meter or MEGGITT or MFR S3960 and the address.

16 **DESCRIPTIVE DOCUMENTS**

Certification file N° DT 1032 - 01 Rev.02 dated 2010/12/01.

This file includes 04 items (14 pages).

17 **SPECIAL CONDITIONS FOR SAFE USE**

Unchanged.

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Covered by standards EN 60079-0 (2006) and EN 60079-11 (2007).

19 **ROUTINE VERIFICATIONS AND TESTS**
None.

Le responsable de certification ATEX
ATEX certification manager
Marc GILLAUX

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Une société de Bureau Veritas — France — www.lcie.fr

L C I E

1 **AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE**

2 **Appareil ou système de protection** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 08 ATEX 6017 X / 02**

4 Appareil ou système de protection :
Capteur d'accélération
Type : PNR 144-901-000-XXX

5 Demandeur : Meggitt SA

15 **DESCRIPTION DE L'AVENANT**

Mise à jour normative selon la norme EN 60079-0 (2009)
Mise à jour du type

Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 110055-619675 / 12

Paramètres spécifiques du ou des modes de protection concerné(s) :
Inchangés

Le marquage doit être :
Modifié comme suit :
Vibro-Meter ou MEGGITT ou MFR S3960
Adresse : ...
Type : PNR 144-901-000-XXX
N° de série :... ; Date de fabrication :...
Ex II 1 G
Ex ia IIC T6 à T710°C Ga
LCIE 08 ATEX 6017 X
Ui = ... ; Pi = ... ; Ii = ... ; Ci = ... ; Li = ... (1)
(1) complété avec les paramètres électriques

16 **DOCUMENTS DESCRIPTIFS**
Lettre du demandeur du 20/10/2011 (2 pages).

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SURE**
Inchangées

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**
Couvertes par les normes EN 60079-0 (2009) et EN 60079-11 (2007)

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**
Néant

Fontenay-aux-Roses, le 21/12/2011

1 **SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE**

2 **Equipment or protective system** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number :
**LCIE 08 ATEX 6017 X / 02**

4 Equipment or protective system :
Acceleration transducer
Type : PNR 144-901-000-XXX

5 Applicant : Meggitt SA

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**
Normative update according to standard EN 60079-0 (2009)
Type update

The examination and test results are recorded in confidential report N° 110055-619675 / 12

Specific parameters of the concerned protection mode:

Unchanged

The marking shall be :
Modified as follows :
Vibro-Meter or MEGGITT or MFR S3960
Address : ...
Type : PNR 144-901-000-XXX
Serial Number :... ; Date of construction :...
Ex II 1 G
Ex ia IIC T6 to T710°C Ga
LCIE 08 ATEX 6017 X
Ui = ... ; Pi = ... ; Ii = ... ; Ci = ... ; Li = ... (1)
(1) completed with the electrical parameters

16 **DESCRIPTIVE DOCUMENTS**
Applicant's letter dated 2011/10/20 (2 pages).

17 **SPECIAL CONDITIONS FOR SAFE USE**

Unchanged

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Covered by standards EN 60079-0 (2009) and EN 60079-11 (2007)

19 **ROUTINE VERIFICATIONS AND TESTS**
None

Michel BRÉNON
Le responsable de certification ATEX
ATEX certification manager

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1 **AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE**

2 **Appareil ou système de protection** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 08 ATEX 6017 X / 03**

4 Appareil ou système de protection :
Capteur d'accélération
Type : PNR 144-901-000-XXX

5 Demandeur : Meggitt SA

15 **DESCRIPTION DE L'AVENANT**

Mise à jour normative selon les normes EN 60079-0:2012 et EN 60079-11:2012.
Modification du capteur (la valeur capacitive maximale du capteur est de 200pF au lieu de 80pF).
Modification du paramètre électrique suivant :
Tête de capteur : Ci = 200pF.
Mise à jour du dossier technique.

Les résultats des vérifications et essais figurent dans le rapport confidentiel N°128022-656776.

Paramètres spécifiques du ou des modes de protection concerné(s) :
Modifié comme suit :
Tête de capteur : Ci = 200pF, Li ≈ 0
Câble intégral : Ci = 200pF/m, Li ≈ 0
Source linéaire : Ui ≤ 28V, Ii ≤ 100mA, Pi ≤ 0,7W
Source non linéaire : Ui ≤ 28V, Ii ≤ 25mA, Pi ≤ 0,7W

Le marquage doit être :
Vibro-Meter ou MEGGITT ou MFR S3960
Adresse : ...
Type : PNR 144-901-000-XXX
N° de fabrication : ...
Année de fabrication : ...
Ex II 1 G
Ex ia IIC T6 à 710°C Ga
LCIE 08 ATEX 6017 X
Ui = ..., Ii = ..., PI = ..., Ci = ..., Li = ... (1)
(1)complété avec les paramètres électriques

16 **DOCUMENTS DESCRIPTIFS**

Dossier de certification N° DT 1032 Rév.03 du 02/07/2014.
Ce dossier comprend 5 rubriques (7 pages).

Fontenay-aux-Roses, le 18 juillet 2014

1 **SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE**

2 **Equipment or protective system** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number :
**LCIE 08 ATEX 6017 X / 03**

4 Equipment or protective system :
Acceleration transducer
Type : PNR 144-901-000-XXX

5 Applicant : Meggitt SA

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**

Normative update according to EN 60079-0:2012 and EN 60079-11:2012 standards.
Modification of the sensor (the maximum sensor capacitance is 200pF instead of 80pF).
Modification of the following electrical parameter :
Sensor head: Ci = 200pF.
Update of the technical file.

The examination and test results are recorded in confidential report N°128022-656776.

Specific parameters of the concerned protection mode:

Modified as follows :
Sensor head : Ci = 200pF, Li ≈ 0
Integral cable : Ci = 200pF/m, Li ≈ 0
Linear power supply : Ui ≤ 28V, Ii ≤ 100mA, Pi ≤ 0,7W
Non linear power supply : Ui ≤ 28V, Ii ≤ 25mA, Pi ≤ 0,7W

The marking shall be :
Vibro-Meter or MEGGITT or MFR S3960
Address : ...
Type : PNR 144-901-000-XXX
Serial number : ...
Year of construction : ...
Ex II 1 G
Ex ia IIC T6 to 710°C Ga
LCIE 08 ATEX 6017 X
Ui = ..., Ii = ..., Pi = ..., Ci = ..., Li = ... (1)
(1)completed with the electrical parameters

16 **DESCRIPTIVE DOCUMENTS**

Certification file N° DT 1032 Rev.03 dated 2014/07/02.

This file includes 5 items (7 pages).

Le Responsable de Certification ATEX
ATEX Certification Officer
Julien GAUTHIER

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13 **ANNEXE**

14 **AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE**

**LCIE 08 ATEX 6017 X / 03**

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SURE**
Inchangées.

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**
Couvertes par les normes EN 60079-0:2012 et EN 60079-11:2012.

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**
Néant.

**Désignation du type :**

PNR 144-901-000-XXX :
XXX : dépend du type de connecteur et de la longueur du câble : X = 0 à 9.

13 **SCHEDULE**

14 **SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE**

**LCIE 08 ATEX 6017 X / 03**

17 **SPECIAL CONDITIONS FOR SAFE USE**

Unchanged

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Covered by EN 60079-0:2012 and EN 60079-11:2012 standards.

19 **ROUTINE VERIFICATIONS AND TESTS**
None.

**Type designation :**

PNR 144-901-000-XXX :
XXX : depend of the connector type and cable length : X = 0 to 9.

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**Deutsche Übersetzung der original französisch/englischen Kopie der Seite 1**

1 **EG-PRÜFZERTIFIKAT**

2 **Geräte oder Schutzsysteme** zur bestimmungsgemässen Verwendung in explosionsgefährdeten Bereichen - **(Richtlinie 94/9/EG)**

3 Nummer der EG-Baumusterprüfbescheinigung
**LCIE 08 ATEX 6017 X**

4 Geräte oder Schutzsystem
Beschleunigungswandler
Typ: CA 901 Modell: 144-901-000-XXX

5 Antragsteller: VIBRO-METER
Adresse: BP 10171701 FRIBOURG
SCHWEIZ

6 Hersteller: VIBRO-METER
Adresse: BP 10171701 FRIBOURG
SCHWEIZ

7 Dieses Gerät oder Schutzsystem und die verschiedenen zulässigen Varianten sind im Anhang dieses Zertifikats und den darin aufgeführten Unterlagen beschrieben.

8 LCIE, eingetragen unter der Nummer 0081 gemäss Artikel 9 der Richtlinie 94/9/EG des Europaparlaments und des Rates vom 23. März 1994, bestätigt, dass dieses Gerät oder Schutzsystem die wesentlichen Gesundheits- und Sicherheitsanforderungen in Bezug auf die Auslegung und Bauart von Geräten und Schutzsystemen zur Verwendung in explosionsgefährdeten Bereichen nach Anhang II der Richtlinie erfüllt.
Die Prüf- und Testergebnisse sind im vertraulichen Bericht Nr. 77907/566467 aufgezeichnet.

9 Die Einhaltung der wesentlichen Gesundheits- und Sicherheitsanforderungen wird durch die Übereinstimmung mit den folgenden Dokumenten sichergestellt:
- EN 60079-0 (2004)
- EN 60079-11 (2007)

10 Ein "X" nach der Zertifikatnummer gibt an, dass die für die sichere Verwendung des Geräts oder Schutzsystems besondere Bedingungen gemäss dem Anhang dieses Zertifikats gelten.

11 Dieses EG-Prüfzertifikat betrifft nur die Bauart und die Prüfungen und Tests des betreffenden Geräts oder Schutzsystems gemäss Anhang III der Richtlinie 94/9/EG.
Zusätzliche Anforderungen dieser Richtlinie gelten für die Fertigung und Lieferung des Geräts oder Schutzsystems. Diese werden durch dieses Zertifikat nicht abgedeckt.

12 Die Kennzeichnung des Geräts oder Schutzsystems muss die unter Punkt 15 festgelegten Angaben enthalten.

Leiter Zertifizierung

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Dieses Zertifikat darf nur vollständig und ohne Änderungen vervielfältigt werden.

Seite 1/2

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**Deutsche Übersetzung der originalen französischen Kopie der Seite 1**

13 **ANHANG**

14 **EG-PRÜFZERTIFIKAT**

**LCIE 08 ATEX 6017 X**

15 **BESCHREIBUNG DES GERÄTS ODER SCHUTZSYSTEMS**

Beschleunigungswandler
Typ: CA 901 Modell: 144-901-000 XXX
Der Sensor ist ein elektromechanischer Wandler, der seinen Klemmenblöcken eine elektrische Last liefert, die der aufgetretenen Beschleunigung proportional ist.
Das mineralisch isolierte Kabel und der Stecker sind Teil des Sensors.
Spezielle Parameter für die betreffende(n) Schutzart(en):

Sensor: Ci = 80 pF, Li ≈ 0
Kabel: Ci = 200 pF/m, Li ≈ 0
Lineare Stromversorgung: Ui ≤ 28 V, Ii ≤ 100 mA, Pi ≤ 0,7 W
Nicht lineare Stromversorgung: Ui ≤ 28 V, Ii ≤ 25 mA, Pi ≤ 0,7 W
Kennzeichnung:
VIBRO-METERAdresse:...
Typ: 144-901-000-XXX
Seriennummer:... Baujahr:...
(Ex) II 1G Ex ia IIC T6 bis T710 °C
LCIE 08 ATEX 6017 X

Die Geräte müssen ebenfalls mit der Kennzeichnung versehen sein, die in den Herstellungsnormen der betreffenden Geräte normalerweise vorgesehen ist.

16 **BESCHREIBENDE UNTERLAGEN**

Zertifizierungsdatei-Nr. DT 1032 rev1 vom 19.11.07
Diese Datei enthält 6 Teile (8 Seiten).

17 **SPEZIELLE BEDINGUNGEN FÜR EINEN SICHEREN BETRIEB**

Der Sensor darf nur an eigensichere Geräte angeschlossen werden. Diese Verbindung muss mit den Sicherheitsbestimmungen für Eigensicherheit kompatibel sein (siehe Absatz 15 bezüglich elektrischer Parameter).
Betriebstemperatur:
- Sensor und Kabel: -196 °C bis +700 °C
- Stecker:
  - 65 °C bis + 150 °C: Stecker LEMO Typ O oder Äquivalent
  - 65 °C bis + 200 °C: Stecker M83723/89Y1020 oder Äquivalent
  - 54 °C bis + 260 °C: Standardtemperatur VM-Stecker
  - 196 °C bis + 700 °C: Hochtemperatur VM-Stecker

Temperatureinteilung:
T6 bis Ta = +80 °C, T5 bis Ta = +95 °C,
T4 bis Ta = +130 °C, T3 bis Ta = +195 °C,
T2 bis Ta = +290 °C, T1 bis Ta = + 440 °C
Über Ta = +440 °C und bis +700 °C : T...°C = Ta +10 °C.

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**

Siehe unter Punkt 9 aufgelistete Bestimmungen.

19 **ROUTINEPRÜFUNGEN UND TESTS**

Keine.

Fontenay-aux-Roses, 23. Februar 2008

Leiter Zertifizierung
Trockenstempel



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**Deutsche Übersetzung der originalen französischen Kopie der Seite 2**

1 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

2 Geräte zur Verwendung in explosionsgefährdeten Bereichen (**Richtlinie 94/9/EG**)

3 Zusätzliche Zertifikatnummer:
**LCIE 08 ATEX 6017 X / 01**

4 Gerät
Beschleunigungswandler
Type : PNR: 144-901-000-XXX

5 Hersteller: MEGGITT SA
Adresse: Route de Moncor 4, 1752 Villars-sur-Glâne, Schweiz

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS**

- Normierte Aktualisierung gemäss der Norm EN 60079-0 (2006)
- Aktualisierung der Dokumentation des Herstellers
- Änderung der juristischen Person und Addresse des Antragstellers
- Modifikation des eingetragenen Markenzeichens

Die Prüf- und Testergebnisse sind im vertraulichen Bericht Nr. 102105-602924/21 aufgezeichnet.

Spezifische Kenndaten der betroffenen Schutzarten:
Unverändert, bis auf
Messgeber wird zu Messgeberkopf : Ci = 80 pF
Kabel wird zu Integralkabel : Ci = 200pF/m

Die Kennzeichnung soll lauten:
Unverändert, bis auf Markenzeichen vibro-meter wird zu vibro-meter oder MEGGITT oder MFR S3960 sowie die Adressänderung.

16 **BESCHREIBENDE UNTERLAGEN**

Zertifizierungsdatei-Nr. DT 1032 - 01 rev2 vom 01.12.2010.
Diese Datei enthält 4 Teile (14 Seiten).

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

Unverändert.

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**

Behandelt in den Normen EN 60079-0 (2006) und EN 60079-11 (2007).

19 **ROUTINEPRÜFUNGEN UND TESTS**

Keine.

Fontenay-aux-Roses,
am 03. Dezember 2010

Leiter Zertifizierung

Trockenstempel



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**Deutsche Übersetzung der originalen französischen Kopie der Seite 2**

1 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

2 Geräte zur Verwendung in explosionsgefährdeten Bereichen (**Richtlinie 94/9/EG**)

3 Zusätzliche Zertifikatnummer:
**LCIE 08 ATEX 6017 X / 02**

4 Gerät
Beschleunigungswandler
Type : PNR 144-901-000-XXX

5 Hersteller: MEGGITT SA

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS**

Standardaktualisierungen gemäß folgender Richtlinien: EN 60079-0 (2009)
Typ der Gerät update

Die Prüf- und Testergebnisse sind im vertraulichen Bericht Nr. 110055-619675 / 12 aufgezeichnet.

Spezifische Kenndaten der betroffenen Schutzarten:
Unverändert.

Die Kennzeichnung lautet wie folgt:
Wie folgt modifiziert:
Vibro-Meter oder MEGGITT oder MFR S3960
Adresse: ...
Typ: PNR 144-901-000-XXX
Herstellungsnummer: ... Herstellungsjahr: ...
Ex II 1 G
Ex ia IIC T6 bis T710°C Ga
LCIE 08 ATEX 6017 X
Ui = ... ; Pi = ... ; Ii = ... ; Ci = ... ; Li = ... (1)

(1) Abhängig von der Typ der Gerät

16 **BESCHREIBENDE UNTERLAGEN**

Brief des Antragsstellers vom 20.10.2011 (2 Seiten)

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

Unverändert.

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**

Werden von folgenden Richtlinien abgedeckt:
EN 60079-0 (2009) und EN 60079-11 (2007)

19 **ROUTINEPRÜFUNGEN UND TESTS**

Keine.

Fontenay-aux-Roses,
am 21. Dezember 2011

Leiter Zertifizierung

Trockenstempel



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 4**

1 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

2 Betriebsmittel oder Schutzsystem zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen - **Richtlinie 94/9/EG**

3 Zusätzliche Zertifikatnummer:

**LCIE 08 ATEX 6017 X / 03**

4 Gerät

Beschleunigungswandler
Type : PNR 144-901-000-XXX

5 Hersteller: Meggitt SA

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS**

Standardaktualisierungen gemäß folgender Richtlinien: EN 60079-0:2012 und EN 60079-11:2012.

Modifikationen des Sensors (der maximale Sensorkapazität 200 pF statt 80 pF).
Änderungen der folgenden elektrischen Werten:
Sensorkopf: Ci = 200 pF.
Update der technischen Unterlagen.

Die Prüf- und Testergebnisse sind im vertraulichen Bericht Nr. 128022-656776 aufgezeichnet.

Spezifische Kenndaten der betroffenen Schutzarten:

Wie folgt modifiziert:
Sensorkopf: Ci = 200 pF, Li ≈ 0
Integralkabel: Ci = 200 pF/m, Li ≈ 0
Lineare Stromversorgung: Ui ≤ 28 V, Ii ≤ 100 mA, Pi ≤ 0,7 W
Nicht lineare Stromversorgung: Ui ≤ 28 V, Ii ≤ 25 mA, Pi ≤ 0,7 W

Die Kennzeichnung lautet wie folgt:
Vibro-Meter oder MEGGITT oder MFR S3960
Adresse: ...
Typ: PNR 144-901-000-XXX
Herstellungsnummer: ... Herstellungsjahr: ...
II 1 G
Ex ia IIC T6 bis T710°C Ga
LCIE 08 ATEX 6017 X
Ui = ... ; Ii = ... ; Pi = ... ; Ci = ... ; Li = ... (1)

(1) Abhängig von der Typ der Gerät

16 **BESCHREIBENDE UNTERLAGEN**

Zertifizierungs-Datei-Nr. DT 1032 Ausgabe 03 vom 02. Juli 2014.
Diese Datei enthält 5 Punkte (7 Seiten).



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 4**

13 **ANHANG**

14 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

**LCIE 08 ATEX 6017 X / 03**

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

Unverändert.

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**

Werden von folgenden Richtlinien abgedeckt: EN 60079-0:2012 und EN 60079-11:2012.

19 **ROUTINEPRÜFUNGEN UND TESTS**

Keine.

Typenbezeichnung:

**PNR 144-901-000-XXX:**
XXX: abhängig von der Steckertyp und Kabellänge (X = 0 bis 9)



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

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DIESE SEITE WURDE ABSICHTLICH LEER GELASSEN

# ATEX certificate:

# LCIE 09 ATEX 1046 X

# for CA 901

Although the certificate is available in the three languages (English, French and German), the liability of the notified body applies only on the text of the original copy of the certificate that it published.

EN

Bien que le certificat soit traduit dans les 3 langues (Anglais, Français et Allemand), seul le texte de la copie originale du certificat peut engager la responsabilité de l'organisme notifié qui l'a publié.

FR

Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

DE

EX

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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L C I E

1 **ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

2 **Appareil** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'attestation d'examen de type
**LCIE 09 ATEX 1046 X**

4 Appareil
Capteur d'accélération
Type : PNR: 144-901-000-XXX

5 Demandeur : VIBRO-METER SA
Adresse : Route de Moncor 4
1701 FRIBOURG SUISSE

7 Cet appareil ou système de protection et ses variantes éventuelles acceptées sont décrits dans l'annexe de la présente attestation et dans les documents descriptifs cités en référence.

8 Le LCIE certifie que cet appareil ou système de protection est conforme aux exigences essentielles de sécurité et de santé pour la conception d'appareils ou système de protection, électriques de catégorie 3 ou non électriques de catégorie 2 et 3, destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la directive 94/9/CE du Parlement européen et du Conseil du 23 mars 1994.

Les résultats des vérifications et essais figurent dans le rapport confidentiel N°94576 - 589014/9

9 Le respect des exigences essentielles de sécurité et de santé est assuré par la conformité à :
- EN 60079-0 (2006) - EN 60079-15 (2005)

10 Le signe X lorsqu'il est placé à la suite du numéro de l'attestation, indique que cet appareil ou système de protection est soumis aux conditions spéciales pour une utilisation sûre, mentionnées dans l'annexe de la présente attestation.

11 Cette attestation d'examen de type concerne uniquement la conception, les vérifications et essais de l'appareil ou du système de protection spécifié, conformément à la directive 94/9/CE.
Des exigences supplémentaires de la directive sont applicables pour la fabrication et la fourniture de l'appareil ou du système de protection. Ces dernières ne sont pas couvertes par la présente attestation.

12 Le marquage de l'appareil ou du système de protection doit comporter les informations détaillées au point 15.

Fontenay-aux-Roses, le 10 octobre 2009

Le responsable de certification ATEX
ATEX certification manager

Marc GILLAUX

1 **VOLUNTARY TYPE EXAMINATION CERTIFICATE**

2 **Equipment** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Type Examination Certificate number
**LCIE 09 ATEX 1046 X**

4 Equipment
Accelerometer
Type : PNR: 144-901-000-XXX

5 applicant : VIBRO-METER SA
Address : Route de Moncor 4
1701 FRIBOURG SUISSE

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 LCIE certifies that this equipment or protective system has been found to comply with the essential Health and Safety Requirements that relate to the design of equipment or protective system, of category 3 electrical or categories 2 and 3 non electrical, which is intended for use in potentially explosive atmospheres, given in Annex II of the Directive 94/9/EC of the European Parliament and Council of 23 March 1994.

The examination and test results are recorded in confidential report N°94576 - 589014/9

9 Compliance with the Essential Health and Safety Requirements has been assured by reference to :
- EN 60079-0 (2006) - EN 60079-15 (2005)

10 If the sign X is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11 This type examination certificate relates only to the design, examination and tests of this specified equipment or protective system in accordance III to the directive 94/9/EC.

Further requirements of the Directive may apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include informations as detailed at 15.

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L C I E

13 **ANNEXE**

14 **ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

**LCIE 09 ATEX 1046 X**

15 **DESCRIPTION DE L'APPAREIL OU DU SYSTEME DE PROTECTION**

Capteur d'accélération
Type : PNR : 144-901-000-XXX
Le matériel est un transducteur électro-mécanique fournissant à ses bornes une charge électrique proportionnelle à la pression mesurée.

Paramètres spécifiques du ou des modes de protection concernés :
U ≤ 30V, I ≤ 130mA, P ≤ 0,8W

Le marquage doit être :
VIBRO-METER
Adresse : ... Type : PNR : 144-901-000-XXX
N° de fabrication : ... Année de fabrication : ...
Ex II 3G Ex nA II T6 à T710
LCIE 09 ATEX 1046 X

Le marquage peut être réduit à :
VIBRO-METER PNR : 144-901-000-XXX
Ex II 3G LCIE 09 ATEX 1046 X

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concerne.

16 **DOCUMENTS DESCRIPTIFS**
Dossier de certification N°DT 1050 rev.00 du 20/07/09.
Ce document comprend 3 rubriques (5 pages).

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SÛRE**
Température ambiante d'utilisation :
- Capteur : -196°C à +700°C
- Câble : -196°C à +700°C
- Connecteur :
connecteur Lemo type 0 ou équivalent: -65°C à +150°C
connecteur M83723/89Y1020 ou équivalent: -65°C à +200°C
connecteur VM température standard : -54°C à +260°C
connecteur VM haute température : -196°C à +700°C

Classement en température en fonction de la température ambiante :
T6 à Tamb. + 80°C
T5 à Tamb. + 95°C
T4 à Tamb. + 130°C
T3 à Tamb. + 195°C
T2 à Tamb. + 290°C
T1 à Tamb. + 440°C
T710°C à Tamb. +700°C

8 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**
Couvertes par les normes listées au point 9.

9 **VERIFICATIONS ET ESSAIS INDIVIDUELS**
Néant.

13 **SCHEDULE**

14 **VOLUNTARY TYPE EXAMINATION CERTIFICATE**

**LCIE 09 ATEX 1046 X**

15 **DESCRIPTION OF EQUIPMENT OR PROTECTIVE SYSTEM**

Accelerometer
Type : PNR : 144-901-000-XXX
This equipment is an electro-mechanical transducer delivering at its terminal blocks an electrical load proportional to the measured pressure.

Specific parameters of the mode(s) of protection concerned :

U ≤ 30V, I ≤ 130mA, P ≤ 0,8W

The marking shall be :
VIBRO-METER
Address : ... Type : PNR : 144-901-000-XXX
Serial number : ... Year of construction: ...
Ex II 3G Ex nA II T6 to T710
LCIE 09 ATEX 1046 X

The marking can be reduce at :
VIBRO-METER PNR : 144-901-000-XXX
Ex II 3G LCIE 09 ATEX 1046 X

The equipment shall also bear the usual marking required by the manufacturing standards applying to such equipment.

16 **DESCRIPTIVE DOCUMENTS**
Certification file N°DT 1050 rev.00 dated 09/07/20.
This file includes 3 items (5 pages).

17 **SPECIAL CONDITIONS FOR SAFE USE**

Operating ambient temperature :
- Sensor : -196°C to +700°C
- Cable : -196°C to +700°C
- Connector :
connector Lemo type 0 or equivalent: -65°C to +150°C
connector M83723/89Y1020 or equivalent: -65°C to +200°C
connector VM standard temperature: -54°C to +260°C
connector VM high température : -196°C to +700°C

Temperature classification in function of the operating temperature :
T6 at Tamb. + 80°C
T5 at Tamb. + 95°C
T4 at Tamb. + 130°C
T3 at Tamb. + 195°C
T2 at Tamb. + 290°C
T1 at Tamb. + 440°C
T710°C at Tamb. +700°C

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Covered by standards listed at 9.

19 **ROUTINE VERIFICATIONS AND TESTS**
None.

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L C I E

1 **AVENANT D'ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

2 **Appareil** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 09 ATEX 1046 X / 01**

4 Appareil
Capteur d'accélération
Type : PNR : 144-901-000-XXX

5 demandeur : Meggitt SA
Route de Moncor 4
1752 Villars-sur-Glâne
Suisse

15 **DESCRIPTION DE L'AVENANT**

- Changement de nom et d'adresse du fabricant
- Modifications des marques commerciales déposées

Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 102105 – 602924 / 22.

Paramètres spécifiques du ou des modes de protection concerné(s) :
Inchangés.

Le marquage doit être :

Inchangé, excepté la marque commerciale vibro-meter qui devient vibro-meter ou MEGGITT ou MFR S3960 et l'adresse.

16 **DOCUMENTS DESCRIPTIFS**
Courrier du demandeur du 07/09/2010.

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SÛRE**
Inchangées.

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**
Inchangées.

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**
Néant.

Fontenay-aux-Roses, le 25 octobre 2010.

Le responsable de certification ATEX
ATEX certification manager
Marc GILLAUX

1 **VOLUNTARY SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE**

2 **Equipment** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number :
**LCIE 09 ATEX 1046 X / 01**

4 Equipment
Accelerometer
Type : PNR : 144-901-000-XXX

5 Applicant : Meggitt SA
Route de Moncor 4
1752 Villars-sur-Glâne
Switzerland

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**
- Change of legal entity name and address of applicant
- Modifications of registered trade mark

The examination and test results are recorded in confidential report N°102105 – 602924 / 22.

Specific parameters of the mode(s) of protection concerned:

Unchanged.

The marking shall be :

Unchanged, except registered trade mark vibro-meter becomes vibro-meter or MEGGITT or MFR S3960 and the address.

16 **DESCRIPTIVE DOCUMENTS**
Letter of applicant from 2010/09/07.

17 **SPECIAL CONDITIONS FOR SAFE USE**
Unchanged.

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Unchanged.

19 **ROUTINE VERIFICATIONS AND TESTS**
None.

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L C I E

1 **AVENANT D'ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

2 **Appareil** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 09 ATEX 1046 X / 02**

4 Appareil
Capteur d'accélération
Type : PNR 144-901-000-XXX

5 demandeur : Meggitt SA
Route de Moncor 4
1752 Villars-sur-Glâne
Suisse

15 **DESCRIPTION DE L'AVENANT**

Mise à jour des normes EN 60079-0 (2009) et EN 60079-15 (2010)

Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 110055-619675 / 12

Paramètres spécifiques du ou des modes de protection concerné(s) :
Inchangés

Le marquage doit être :
Modifié comme suit :
MEGGITT SA, Adresse : ...
Type : PNR 144-901-000-XXX
N° de série :..., Date de fabrication : ...
Ex II 3 G
Ex nA IIC T6 à T710°C Gc
LCIE 09 ATEX 1046 X

16 **DOCUMENTS DESCRIPTIFS**
Lettre du demandeur du 20/10/2011 (2 pages).

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SÛRE**
Inchangées

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**
Couvertes par les normes EN 60079-0 (2009) et EN 60079-15 (2010)

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**
Néant

Fontenay-aux-Roses, le 21/12/2011

Le responsable de certification ATEX
ATEX certification manager
Michel BRENON

1 **VOLUNTARY SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE**

2 **Equipment** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number :
**LCIE 09 ATEX 1046 X / 02**

4 Equipment
Accelerometer transducer
Type : PNR 144-901-000-XXX

5 Applicant : Meggitt SA
Route de Moncor 4
1752 Villars-sur-Glâne
Switzerland

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**
Normative update according to EN 60079-0 (2009) and EN 60079-15 (2010)

The examination and test results are recorded in confidential report N° 110055-619675 / 12

Specific parameters of the concerned protection mode :

Unchanged

The marking shall be :
Modified as follows :
Vibro-Meter or MEGGITT or MFR S3960
Address : ...
Type : PNR 144-901-000-XXX
Serial Number:..., Year of Construction : ...
Ex II 3 G
Ex nA IIC T6 to T710°C Gc
LCIE 09 ATEX 1046 X

16 **DESCRIPTIVE DOCUMENTS**
Applicant's letter dated 2011/10/20 (2 pages)

17 **SPECIAL CONDITIONS FOR SAFE USE**
Unchanged

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Covered by standards EN 60079-0 (2009) and EN 60079-15 (2010)

19 **ROUTINE VERIFICATIONS AND TESTS**
None

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LCIE

1 **AVENANT D'ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

2 **Appareil** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 09 ATEX 1046 X / 03**

4 Appareil ou système de protection :
Capteur d'accélération
Type : PNR 144-901-000-XXX

5 Demandeur : Meggitt SA

15 **DESCRIPTION DE L'AVENANT**

- Mise à jour normative selon la norme EN 60079-0:2012 + Amendement A11:2013
- Ajout d'un essai individuel de rigidité diélectrique,

Définition du type/ *Type definition*:

PNR 144-901-000-XXX
X = 0...9 : dépend du type de connecteur et de la longueur du câble / *depends on the type of connector and cable length.*

Les résultats des vérifications et essais de type sont enregistrés dans le rapport confidentiel n°130454-662462-10.

Paramètres spécifiques du ou des modes de protection concerné(s) :
U ≤30 V, I ≤130 mA, P ≤0,8 W

Le marquage doit être :
Meggitt SA ou Vibro-meter ou MFR S3960
Adresse : ...
Type : PNR 144-901-000-XXX
N° de fabrication : ... Année de fabrication : ...
Ⓔx II 3 G
Ex nA IIC T6...710°C Gc (*)
LCIE 09 ATEX 1046X

Le marquage peut être réduit comme suit :
Meggitt SA ou Vibro-meter ou MFR S3960
PNR 144-901-000-XXX
Ⓔx II 3 G
Ex nA IIC T6...710°C Gc (*)
LCIE 09 ATEX 1046 X
(*) voir conditions spéciales pour une utilisation sûre.

Fontenay-aux-Roses, le 02 décembre 2014

1 **VOLUNTARY SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE**

2 **Equipment** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number:
**LCIE 09 ATEX 1046 X / 03**

4 Equipment or protective system:
Accelerometer
Type: PNR 144-901-000-XXX

5 Applicant: Meggitt SA

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**

- Normative update according to standard EN 60079-0:2012 + Amendment A11:2013
- Add of routine dielectric strength test,

The results of type verifications and tests are recorded in confidential report n°130454-662462-10.

Specific parameters of the concerned protection mode:

U ≤30 V, I ≤130 mA, P ≤0.8 W

The marking shall be:
Meggitt SA or Vibro-meter or MFR S3960
Address: ...
Type: PNR 144-901-000-XXX
Serial number: ... Year of construction: ...
Ⓔx II 3 G
Ex nA IIC T6...710°C Gc (*)
LCIE 09 ATEX 1046 X

The marking can be reduced as follows:
Meggitt SA or Vibro-meter or MFR S3960
PNR 144-901-000-XXX
Ⓔx II 3 G
Ex nA IIC T6...710°C Gc (*)
LCIE 09 ATEX 1046 X
(*) see special conditions for safe use.

Le Responsable de Certification ATEX
ATEX Certification Officer
Michel EQUI

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LCIE

13 **ANNEXE**

14 **AVENANT D'ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE**

**LCIE 09 ATEX 1046 X / 03**

15 **DESCRIPTION DE L'AVENANT (suite)**

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concerne.

16 **DOCUMENTS DESCRIPTIFS**
Dossier technique n° DT 1069 rév. 00 du 25/09/2014.
Ce dossier comprend 2 rubriques (6 pages).

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SURE**

1. Température ambiante d'utilisation :
- Capteur : -196°C à +700°C
- Câble : -196°C à +700°C
- Connecteur Lemo type 0 ou équivalent : -65°C à +150°C
- Connecteur M83723/89Y1020 ou équivalent : -65°C à +200°C
- Connecteur VM temperature standard : -54°C à +260°C
- Connecteur VM haute température : -196°C à +700°C

2. Classement en température en fonction de la température ambiante d'utilisation :

13 **SCHEDULE**

14 **VOLUNTARY SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE**

**LCIE 09 ATEX 1046 X / 03**

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE (continued)**

The equipment shall also bear the usual marking required by the manufacturing standards applying to such equipment.

16 **DESCRIPTIVE DOCUMENTS**
Technical file n° DT 1069 rev. 00 dated 2014/09/25.
This file includes 2 items (6 pages).

17 **SPECIAL CONDITIONS FOR SAFE USE**

1. Ambient temperature in service:
- Sensor: -196°C to +700°C
- Cable: -196°C to +700°C
- Connector Lemo type 0 or equivalent: -65°C to +150°C
- Connector M83723/89Y1020 or equivalent: -65°C to +200°C
- Connector VM standard temperature: -54°C to +260°C
- Connector VM high temperature: -196°C to +700°C

2. Temperature classification in function of the ambient temperature in service:

| Température ambiante d'utilisation / *Ambient temperature in service* — Classe de température / *Temperature class* | T6 | T5 | T4 | T3 | T2 | T1 | 710°C |
|---|---|---|---|---|---|---|---|
| Capteur/ *Sensor* | ≤+80°C | ≤+95°C | ≤+130°C | ≤+195°C | ≤+290°C | ≤+440°C | ≤+700°C |
| Câble/ *Cable* | ≤+80°C | ≤+95°C | ≤+130°C | ≤+195°C | ≤+290°C | ≤+440°C | ≤+700°C |
| Connecteur Lemo type 0 ou équivalent *Connector Lemo type 0 or equivalent* | ≤+80°C | ≤+95°C | ≤+130°C | ≤+150°C | - | - | - |
| Connecteur M83723/89Y1020 ou équivalent *Connector M83723/89Y1020 or equivalent* | ≤+80°C | ≤+95°C | ≤+130°C | ≤+195°C | ≤+200°C | - | - |
| Connecteur VM température standard *Connector VM standard temperature* | ≤+80°C | ≤+95°C | ≤+130°C | ≤+195°C | ≤+260°C | - | - |
| Connecteur VM haute température *Connector VM high temperature* | ≤+80°C | ≤+95°C | ≤+130°C | ≤+195°C | ≤+290°C | ≤+440°C | ≤+700°C |

3. Des mesures doivent être prises afin d'éviter que la tension nominale ne soit pas dépassée par des perturbations transitoires de plus de 119 V.

3. Provisions shall be made to prevent the rated voltage from being exceeded by transient disturbances of more than 119 V.

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MEGGITT

**LCIE 09 ATEX 1046 X (FR, EN)**
*[Original copy]*
CA 901

13 ANNEXE (suite)

13 SCHEDULE (continued)

14 AVENANT D'ATTESTATION D'EXAMEN DE TYPE VOLONTAIRE

LCIE 09 ATEX 1046 X / 03

14 VOLUNTARY SUPPLEMENTARY TYPE EXAMINATION CERTIFICATE

LCIE 09 ATEX 1046 X / 03

18 EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE

Conformité aux normes européennes EN 60079-0:2012 + Amendement A11:2013 et EN 60079-15:2010.

18 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS

Compliance with European standards EN 60079-0:2012 + Amendment A11:2013 and EN 60079-15:2010.

19 VERIFICATIONS ET ESSAIS INDIVIDUELS

Chaque appareil doit être soumis à un essai de rigidité diélectrique sous une tension d'essai de 500 V efficace, appliquée entre les conducteurs et le châssis durant 60 s, conformément au paragraphe 6.5.1 de la norme EN 60079-15:2010.
Autrement, l'essai doit être exécuté à 600 V efficace pendant au moins 100 ms.

19 ROUTINE VERIFICATIONS AND TESTS

Each equipment shall be submitted to a dielectric strength test with test voltage of 500 V r.m.s. applied between wires and body during 60 s, carried out in accordance with clause 6.5.1 standard EN 60079-15:2010.
Alternatively, a test shall be carried out at 600 V r.m.s during at least 100 ms.

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**Deutsche Übersetzung der originalen französischen Kopie der Seite 1**

1 **FREIWILLIGES TYPENPRÜFZERTIFIKAT**

2 Geräte zur Verwendung in explosionsgefährdeten Bereichen - **Richtlinie 94/9/EG**

3 Zertifikatnummer
**LCIE 09 ATEX 1046 X**

4 Gerät
Beschleunigungsgeber
Type : PNR: 144-901-000-XXX

5 Hersteller: VIBRO METER
Adresse: Route de Moncor 4, 1701 FRIBOURG, SCHWEIZ

7 Dieses Gerät oder Schutzsystem und die möglichen, zulässigen Varianten sind im Anhang dieses Zertifikats und den darin aufgeführten Unterlagen beschrieben.

8 LCIE bestätigt, dass dieses Gerät oder Schutzsystem die wesentlichen Gesundheits- und Sicherheitsanforderungen in Bezug auf die Auslegung und die Bauart von Geräten und Schutzsystemen der Kategorie 3 (elektrisch) oder Kategorien 2 und 3 (nicht elektrisch) zur Verwendung in explosionsgefährdeten Bereichen nach Anhang II der Richtlinie 94/9EG des Europaparlaments und des Rats vom 23. März 1994 erfüllt.

Die Prüf- und Testergebnisse sind im vertraulichen Bericht Nr. 94576 - 589014/9 aufgezeichnet.

9 Die Einhaltung der wesentlichen Gesundheits- und Sicherheitsanforderungen wird durch die Übereinstimmung mit den folgenden Dokumenten sichergestellt:
- EN 60079-0 (2006)
- EN 60079-15 (2005)

10 Ein "X" nach der Zertifikatnummer gibt an, dass für die sichere Verwendung des Gerätes oder Schutzsystemes besondere Bedingungen gemäß dem Anhang dieses Zertifikates gelten.

11 Dieses Typenprüfzertifikat betrifft nur die Bauart und die Prüfungen und Tests des betreffenden Geräts oder Schutzsystems gemäß Richtlinie 94/9/EG.
Zusätzliche Anforderungen dieser Richtlinie gelten für die Fertigung und Lieferung des Geräts oder Schutzsystems. Diese werden durch dieses Zertifikat nicht abgedeckt.

12 Die Kennzeichnung des Gerätes oder Schutzsystems muss die unter Punkt 15 erläuterten Angaben enthalten.

Fontenay-aux-Roses,
am 10. Oktober 2009

Leiter Zertifizierung

Trockenstempel

**Rev.A**
Seite 1/2

LCIE haftet nur für den französischen Text.
Dieses Zertifikat darf nur vollständig und ohne Änderungen vervielfältigt werden.

Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 1**

13 **ANHANG**

14 **FREIWILLIGES TYPENPRÜFZERTIFIKAT**
**LCIE 09 ATEX 1046 X**

15 **BESCHREIBUNG DES GERÄTES ODER SCHUTZSYSTEMS**

Beschleunigungsgeber
Typ : PNR : 144-901-000-XXX

Das Gerät verwandelt elektrische Eingangsladung in elektrisches Ausgangssignal welches proportional zur Beschleunigung oder dem Druck ist.

Spezifische Kenndaten der betroffenen Schutzarten:
U ≤ 30 V, I ≤ 130 mA, P ≤ 0,8 W

Kennzeichnung:
VIBRO-METER Adresse: ..
Typ: PNR: 144-901-000-XXX
Herstellungsnummer: ... Herstellungsjahr: ...
II 3G Ex nA II T6 bis T710
LCIE 09 ATEX 1046 X

Die Kennzeichnung kann wiefolgt vereinfacht werden:
VIBRO-METER PNR: 144-901-000-XXX
II 3G LCIE 09 ATEX 1046 X

Die Geräte müssen ebenfalls mit der Kennzeichnung versehen sein, die in den Herstellungsnormen der betreffenden Geräte normalerweise vorgesehen sind.

16 **BESCHREIBENDE UNTERLAGEN**

Zertifizierungs-Datei-Nr. DT 1050 Ausgabe 0 vom 20. Juli 2009.
Diese Datei enthält 3 Punkte (5 Seiten).

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

Umgebungstemperatur:
- Sensor: −196 °C bis +700 °C
- Kabel: −196 °C bis +700 °C
- Stecker:
  Stecker LEMO Typ O oder Äquivalent: −65 °C bis +150 °C
  Stecker M83723/89Y1020 oder Äquivalent: −65 °C bis +200 °C
  Standardtemperatur VM-Stecker: −54 °C bis +260 °C
  Hochtemperatur VM-Stecker: −196 °C bis +700 °C

Temperaturklassifizierung:
T6 bis Ta = +80 °C
T5 bis Ta = +95 °C
T4 bis Ta = +130 °C
T3 bis Ta = +195 °C
T2 bis Ta = +290 °C
T1 bis Ta = +440 °C
T710 bis Ta = +700 °C

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**
Siehe unter Punkt 9 aufgelistete Bestimmungen.

19 **ROUTINEPRÜFUNGEN UND TESTS**
Keine.

**Rev.A**
Seite 2/2

Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 2**

1 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

2 Geräte zur Verwendung in explosionsgefährdeten Bereichen (**Richtlinie 94/9/EG**)

3 Zusätzliche Zertifikatnummer:
**LCIE 09 ATEX 1046 X / 01**

4 Gerät
Beschleunigungsgeber
Type : PNR: 144-901-000-XXX

5 Hersteller: Meggitt SA
Adresse: Route de Moncor 4, 1752 Villars-sur-Glâne, Schweiz

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS**

- Änderung der juristischen Person und Addresse des Antragstellers
- Modifikation des eingetragenen Markenzeichens

Die Prüf- und Testergebnisse sind im vertraulichen Bericht Nr. 102105-602924/22 aufgezeichnet.

Spezifische Kenndaten der betroffenen Schutzarten:
Unverändert.

Die Kennzeichnung soll lauten:
Unverändert, bis auf Markenzeichen vibro-meter wird zu vibro-meter oder MEGGITT oder MFR S3960 sowie die Adressänderung.

16 **BESCHREIBENDE UNTERLAGEN**

Brief des Antragsstellers vom 07.09.2010.

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

Unverändert.

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**

Unverändert.

19 **ROUTINEPRÜFUNGEN UND TESTS**

Keine.

Fontenay-aux-Roses,
am 25. Oktober 2010

Leiter Zertifizierung

Trockenstempel



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 2**

1 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

2 Geräte zur Verwendung in explosionsgefährdeten Bereichen (**Richtlinie 94/9/EG**)

3 Zusätzliche Zertifikatnummer:
**LCIE 09 ATEX 1046 X / 02**

4 Gerät
Beschleunigungsgeber
Type : PNR 144-901-000-XXX

5 Hersteller: Meggitt SA
Adresse: Route de Moncor 4, 1752 Villars-sur-Glâne, Schweiz

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS**

Standardaktualisierungen gemäß folgender Richtlinien: EN 60079-0 (2009) und EN 60079-15 (2010)

Die Prüf- und Testergebnisse sind im vertraulichen Bericht Nr. 110055-619675 / 12 aufgezeichnet.

Spezifische Kenndaten der betroffenen Schutzarten:
Unverändert.

Die Kennzeichnung lautet wie folgt:
Wie folgt modifiziert:
Vibro-Meter oder MEGGITT oder MFR S3960
Adresse: ...
Typ: PNR 144-901-000-XXX
Herstellungsnummer: ... Herstellungsjahr: ...
Ex II 3 G
Ex nA IIC T6 bis T710°C Gc
LCIE 09 ATEX 1046 X

16 **BESCHREIBENDE UNTERLAGEN**

Brief des Antragsstellers vom 20.10.2011 (2 Seiten)

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

Unverändert.

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**

Werden von folgenden Richtlinien abgedeckt:
EN 60079-0 (2009) und EN 60079-15 (2010)

19 **ROUTINEPRÜFUNGEN UND TESTS**

Keine.

Fontenay-aux-Roses,
am 21. Dezember 2011

Leiter Zertifizierung

Trockenstempel



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**Deutsche Übersetzung der originalen französischen Kopie der Seite 3**

1 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

2 Geräte zur Verwendung in explosionsgefährdeten Bereichen (**Richtlinie 94/9/EG**)

3 Zusätzliche Zertifikatnummer:
**LCIE 09 ATEX 1046 X / 03**

4 Gerät
Beschleunigungsgeber
Typ: PNR 144-901-000-XXX

5 Antragsteller: Meggitt SA

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS**

– Standardaktualisierungen gemäß folgender Richtlinien:
EN 60079-0:2012 + Änderung A11:2013.
– Hinzufügen einer Stückprüfung von Durchschlagfestigkeit.

Definition von Gerät:
PNR 144-901-000-XXX
X = 0 … 9: Abhängig von der Steckertyp und Kabellänge.

Die Testergebnisse sind im vertraulichen Bericht Nr. 130454-662462-10.

Spezifische Kenndaten der betroffenen Schutzarten:
U ≤ 30 V, I ≤ 130 mA, P ≤ 0,8 W

Die Kennzeichnung wird wie folgt festgesetzt:
Meggitt SA oder Vibro-Meter oder MFR S3960
Adresse: …
Typ: PNR 144-901-000-XXX
Herstellungsnummer: … Herstellungsjahr: …
Ex II 3 G
Ex nA IIC T6…710°C Gc(*)
LCIE 09 ATEX 1046 X

Die Kennzeichnung kann wie folgt reduziert werden:
Meggitt SA oder Vibro-Meter oder MFR S3960
PNR 144-901-000-XXX
Ex II 3 G
Ex nA IIC T6…710°C Gc(*)
LCIE 09 ATEX 1046 X

(*): Siehe besondere Bedingungen für die sichere Anwendung (unter Punkt 17)

Fontenay-aux-Roses,
am 02. Dezember 2014

Leiter Zertifizierung

Trockenstempel



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 3**

13 **ANHANG**

14 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

**LCIE 09 ATEX 1046 X / 03**

15 **BESCHREIBUNG DES ZUSÄTZLICHEN ZERTIFIKATS (FORTSETZUNG)**

Die Geräte müssen ebenfalls mit der Kennzeichnung versehen sein, die in den Herstellungsnormen der betreffenden elektrischen Geräte normalerweise vorgesehen sind.

16 **BESCHREIBENDE UNTERLAGEN**

Zertifizierungs-Datei-Nr. DT 1069 Ausgabe 00 vom 2014/09/25.
Diese Datei enthält 2 Punkte (6 Seiten).

17 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

1. Umgebungstemperatur im Betrieb:
– Sensor: −196 °C bis +700 °C
– Kabel: −196 °C bis +700 °C
– Stecker LEMO Typ O oder Äquivalent: −65 °C bis +150 °C
– Stecker M83723/89Y1020 oder Äquivalent: −65 °C bis +200 °C
– Standardtemperatur VM-Stecker: −54 °C bis +260 °C
– Hochtemperatur VM-Stecker: −196 °C bis +700 °C

2. Temperaturklassifizierung entsprechend der Umgebungstemperatur im Betrieb:

| | T6 | T5 | T4 | T3 | T2 | T1 | 710 °C |
|---|---|---|---|---|---|---|---|
| Sensor | ≤ +80 °C | ≤ +95 °C | ≤ +130 °C | ≤ +195 °C | ≤ +290 °C | ≤ +440 °C | ≤ +700 °C |
| Kabel | ≤ +80 °C | ≤ +95 °C | ≤ +130 °C | ≤ +195 °C | ≤ +290 °C | ≤ +440 °C | ≤ +700 °C |
| Stecker LEMO Typ O oder Äquivalent | ≤ +80 °C | ≤ +95 °C | ≤ +130 °C | ≤ +150 °C | | | |
| Stecker M83723/89Y1020 oder Äquivalent | ≤ +80 °C | ≤ +95 °C | ≤ +130 °C | ≤ +195 °C | ≤ +200 °C | | |
| Standardtemperatur VM-Stecker | ≤ +80 °C | ≤ +95 °C | ≤ +130 °C | ≤ +195 °C | ≤ +260 °C | | |
| Hochtemperatur VM-Stecker | ≤ +80 °C | ≤ +95 °C | ≤ +130 °C | ≤ +195 °C | ≤ +290 °C | ≤ +440 °C | ≤ +700 °C |

3. Es müssen Vorkehrungen getroffen werden dass kurzzeitige Störungen die Nominalspannungen nicht mehr als 119 V überschreiten können.



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**Deutsche Übersetzung der originalen französischen Kopie der Seite 4**

13 **ANHANG**

14 **ZUSÄTZLICHES FREIWILLIGES TYPENPRÜFUNGSZERTIFIKAT**

**LCIE 09 ATEX 1046 X / 03**

18 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**

Werden von folgenden Richtlinien abgedeckt:
EN 60079-0:2012 + Änderung A11:2013 und EN 60079-15:2010.

19 **ROUTINEPRÜFUNGEN UND TESTS**

Jedes Gerät muss einem Durschlagsfestigkeitstest unterzogen werden. Spannung von 500 V (RMS) währen 60 Sekunden zwischen den Leitern und dem Gehäuse gemäss Norm EN 60079-15:2010.
Andernfalls muss ein Test mit 600 V (RMS) während mindestens 100 ms durchgeführt werden



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# ATEX certificate:

# LCIE 13 ATEX 3037 X

# for

# GSI 127

Although the certificate is available in the three languages (English, French and German), the liability of the notified body applies only on the text of the original copy of the certificate that it published.

EN

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FR

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DE

EX

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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# ATTESTATION D'EXAMEN UE DE TYPE
## *EU TYPE EXAMINATION CERTIFICATE*

1 **Version : 01** — **LCIE 13 ATEX 3037 X** — **Issue : 01**

| | **Directive 2014/34/UE** | **Directive 2014/34/EU** |
|---|---|---|
| 2 | Appareil ou Système de Protection destiné à être utilisé en Atmosphères Explosibles | Equipment or Protective System Intended for use in Potentially Explosive Atmospheres |
| 3 | Produit :<br>**Interface GSI 127** | Product :<br>**GSI 127 interface** |
| | **Type: 244-127-000-XXX-A2-BYY** | |
| 4 | Fabricant : | Manufacturer : |
| | **MEGGITT SA** | |
| 5 | Adresse : | Address : |
| | Route de Moncor 4<br>1752 Villars-sur-Glâne<br>SUISSE | |
| 6 | Ce produit et ses variantes éventuelles acceptées sont décrits dans l'annexe de la présente attestation et dans les documents descriptifs cités en référence. | This product any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to. |
| 7 | Le LCIE, Organisme Notifié sous la référence 0081 conformément à l'article 17 de la directive 2014/34/UE du Parlement européen et du Conseil du 26 février 2014, certifie que ce produit est conforme aux Exigences Essentielles de Sécurité et de Santé pour la conception et la construction de produits destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la Directive.<br>Les résultats des vérifications et essais figurent dans le(s) rapport(s) confidentiel(s) N° : | LCIE, Notified Body number 0081 in accordance with article 17 of the Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014 certifies that product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.<br>The examination and test results are recorded in confidential report(s) N°: |
| | 108046-614947; 141529-685013 | |
| 8 | Le respect des Exigences Essentielles de Sécurité et de Santé est assuré par la conformité à : | Compliance with the Essential Health and Safety Requirements has been assured by compliance with : |
| | EN 60079-0:2012 + A11:2013<br>EN 60079-11:2012<br>EN 60079-15:2010 | |
| 9 | Le signe « X » lorsqu'il est placé à la suite du numéro de l'attestation, indique que cet appareil est soumis aux conditions particulières d'utilisation, mentionnées dans l'annexe de cette attestation. | If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate. |
| 10 | Cette Attestation d'Examen UE de Type concerne uniquement la conception et la construction du produit spécifié.<br>Des exigences supplémentaires de la directive sont applicables pour la fabrication et la fourniture du produit. Ces dernières ne sont pas couvertes par la présente attestation. | This EU Type Examination Certificate relates only to the design and construction of the specified product.<br>Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate. |
| 11 | Le marquage du produit est mentionné dans l'annexe de cette attestation. | The marking of the product is specified in the schedule to this certificate. |

Fontenay-aux-Roses, le 30 novembre 2016

Responsable de Certification
Certification Officer
Julien Gauthier

LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES
S.A.S au capital de 15 745 900 €
RCS Nanterre B 408 363 174
33 avenue du Général Leclerc
F - 92260 FONTENAY AUX ROSES

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CERT-ATEX-FORM 04 Rev. 02



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92260 Fontenay-aux-Roses
FRANCE
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# ATTESTATION D'EXAMEN UE DE TYPE - ANNEXE
## *EU TYPE EXAMINATION CERTIFICATE - SCHEDULE*

1 **Version : 01** — **LCIE 13 ATEX 3037 X** — **Issue : 01**

| | **DESCRIPTION DU PRODUIT** | **DESCRIPTION OF PRODUCT** |
|---|---|---|
| 12 | L'interface GSI 127 fournit une isolation galvanique entre le circuit d'alimentation ou le circuit de traitement de signal (Ex nA) et un capteur ou un conditionneur (Ex ia).<br>L'appareil se compose d'une carte électronique et des bornes à vis montées dans un boîtier plastique. Un revêtement conforme est appliqué sur deux faces de la carte. | The GSI 127 interface provides galvanic insolation between power supply circuit or signal treatment circuit (Ex nA) and a sensor or a conditioner (Ex ia).<br>The equipment consists of electronic board and screwed terminals blocks mounted inside a plastic enclosure. Conformal coating is applied on both sides of the electronic board. |
| | **DETAIL DE LA GAMME** | **RANGE DETAILS** |
| | **244-127-000-XXX-A2-BYY**<br><br>XXX définit la version du produit (X = 0 à 9).<br>YY définit le mode de transfert (YY = 01 à 19 pour la spécification actuelle; YY = 20 à 39 pour la spécification alternative). | **244-127-000-XXX-A2-BYY**<br><br>XXX defines the version of the product (X = 0 to 9).<br>YY defines the transfer mode (YY = 01 to 19 for actual specification; YY = 20 to 39 for alternate specification). |
| | **MARQUAGE** | **MARKING** |
| | Le marquage du produit doit comprendre :<br><br>MEGGITT SA ou VIBRO-METER ou MFR S3960<br>Adresse : .....<br>Type : 244-127-000-XXX-A2-BYY<br>N° de fabrication : ...<br>Année de fabrication : ...<br>Ⓔx II 3 (1) G<br>Ex nA [ia Ga] IIC T4 Gc<br>LCIE 13 ATEX 3037 X<br>Alimentation : U ≤ 30 V, I ≤ 150 mA<br>Capteur ou conditionneur :<br>Pour 244-127-000-XXX-A2-B01 à B19:<br>$U_o$: 25,2 V; $I_o$: 60 mA; $P_o$: 0,7 W; $C_o$: 95 nF; $L_o$: 5 mH<br>Pour 244-127-000-XXX-A2-B20 à B39:<br>$U_o$: 25,2 V; $I_o$: 45 mA; $P_o$: 0,5 W; $C_o$: 95 nF; $L_o$: 10 mH<br><br>L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concernent sous la responsabilité du fabricant. | The marking of the product shall include the following :<br><br>MEGGITT SA or VIBRO-METER or MFR S3960<br>Address: ...<br>Type: 244-127-000-XXX-A2-BYY<br>Serial number: ...<br>Year of construction: ...<br>Ⓔx II 3 (1) G<br>Ex nA [ia Ga] IIC T4 Gc<br>LCIE 13 ATEX 3037 X<br>Power supply : U ≤ 30 V, I ≤ 150 mA<br>Sensor or conditioner :<br>For 244-127-000-XXX-A2-B01 to B19:<br>$U_o$: 25.2 V; $I_o$: 60 mA; $P_o$: 0.7 W; $C_o$: 95 nF; $L_o$: 5 mH<br>For 244-127-000-XXX-A2-B20 to B39:<br>$U_o$: 25.2 V; $I_o$: 45 mA; $P_o$: 0.5 W; $C_o$: 95 nF; $L_o$: 10 mH<br><br>The equipment shall also bear the usual marking required by the product standards applying to such equipment under the manufacturer responsibility. |
| 13 | **CONDITIONS PARTICULIERES D'UTILISATION** | **SPECIFIC CONDITIONS OF USE** |
| a. | L'appareil ne doit être raccordé qu'à des matériels de sécurité intrinsèque certifiés ou à un appareil simple. Cette association doit être compatible vis-à-vis de la sécurité intrinsèque. | The equipment shall only be connected to associated intrinsically safe certified equipment or simple apparatus. This combination must be compatible as regard the intrinsic safety rules. |
| b. | L'appareil doit être installé dans une enveloppe conforme aux exigences de la norme EN 60079-0 et ayant un degré de protection minimal IP54. | The apparatus shall be installed in an enclosure conform to the requirements of standard EN 60079-0 and with ingress protection at least IP54. |
| c | Température ambiante d'utilisation : -40°C à +70°C. | Operating ambient temperature: -40°C to +70°C. |
| 14 | **EXIGENCES ESSENTIELLES DE SANTE ET DE SECURITE** | **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS** |
| | Couvertes par les normes listées au point 8. | Covered by standards listed at 8. |

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CERT-ATEX-FORM 04 Rev. 02



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# ATTESTATION D'EXAMEN UE DE TYPE - ANNEXE
## *EU TYPE EXAMINATION CERTIFICATE - SCHEDULE*

1 **Version : 01** — **LCIE 13 ATEX 3037 X** — **Issue : 01**

15 **DOCUMENTS DESCRIPTIFS** / **DESCRIPTIVE DOCUMENTS**

| N° | Description | Reference | Rev. | Date | Page(s) |
|---|---|---|---|---|---|
| 1. | Technical file | DT 1052 | 01 | 2016-10-24 | 36 |
| 2. | User manual (extract) | PZ 8763 | 00 | 2016-09-06 | 1 |

16 **INFORMATIONS COMPLEMENTAIRES** / **ADDITIONAL INFORMATIONS**

**Essais individuels**

Chaque transformateur T1 devra être soumis à un essai diélectrique sous tension d'essai de 1500 V ; 50/60 Hz appliquée entre l'enroulement primaire et les enroulements secondaires pendant au moins 60 s conformément au paragraphe 11.2 de la norme EN 60079-11:2012.

**Conditions de certification**

Les détenteurs d'attestations d'examen UE de type doivent également satisfaire les exigences de contrôle de production telles que définies à l'article 13 de la Directive 2014/34/UE.

En accord avec l'Article 41 de la Directive 2014/34/UE, les attestations d'examen CE de type mentionnant la Directive 94/9/CE émises avant la date d'application de la Directive 2014/34/UE (20 avril 2016) peuvent être considérées comme émises en accord avec la Directive 2014/34/UE. Les nouvelles versions de ces attestations peuvent conserver le numéro de l'attestation d'origine émise avant le 20 avril 2016.

**Routine tests**

Each transformer T1 shall be submitted to dielectric strength test under test voltage of 1500 V; 50/60 Hz applied between the primary winding and the secondary windings during at least 60 s in accordance with clause 11.2 of EN 60079-11:2012 standard.

**Conditions of certification**

Holders of EU type examination certificates are also required to comply with the production control requirements defined in article 13 of Directive 2014/34/EU.

In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to Directive 94/9/EC that were in existence prior to the date of application of Directive 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. New issues of such certificates may continue to bear the original certificate number issued prior to 20 April 2016.

17 **DETAILS DES MODIFICATIONS** / **DETAILS OF CHANGES**

Version 00 : (31/05/2013) Evaluation de la conformité selon les normes EN 60079-0:2012, EN 60079-11:2012 et EN 60079-15:2010.

Version 01 :
- Mise à jour normative selon la norme EN 60079-0:2012 + A11:2013.
- Nouvelle plage de température ambiante d'utilisation : -40°C à +70°C
- Mise à jour de la désignation du type pour différencier deux spécifications.

Issue 00 : (2013/05/31) Conformity assessment according to EN 60079-0:2012, EN 60079-11:2012 and EN 60079-15:2010 standards.

Issue 01 :
- Normative update according to EN 60079-0:2012 + A11:2013 standard.
- New operating ambient temperature range: -40°C to +70°C.
- Update of type designation to differentiate two specifications.

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MEGGITT

**Deutsche Übersetzung der originalen französischen Kopie der Seite 1**

## EG-PRÜFZERTIFIKAT

1 **Version: 01** **LCIE 13 ATEX 3037 X** **Ausgabe: 01**

2 **Richtlinie 2014/34/EU**
Geräte und Schutzsysteme zur Verwendung in explosionsgefährdeten Bereichen

3 Produkt:
GSI 127 Galvanisches Trennmodul
Typ: 244-127-000-XXX-A2-BYY

4 Hersteller: Meggitt SA

5 Adresse: Route de Moncor 4, BP 1752 Villars-sur-Glâne, Schweiz

6 Dieses Gerät und die möglichen, zulässigen Varianten sind im Anhang dieses Zertifikats und den darin aufgeführten Unterlagen beschrieben.

7 LCIE, eingetragen unter der Nummer 0081 gemäß Artikel 17 der Richtlinie 2014/34/EU des Europaparlamentes und des Rates vom 26. Februar 2014, bestätigt, dass dieses Gerät oder Schutzsystem die wesentlichen Gesundheits- und Sicherheitsanforderungen in Bezug auf die Auslegung und die Bauart von Geräten und Schutzsystemen zur Verwendung in explosionsgefährdeten Bereichen nach Anhang II der Richtlinie erfüllt.
Die Prüf- und Testergebnisse sind im vertraulichen Bericht Nr. 108046/614947 ; 141529-685013 aufgezeichnet.

8 Die Einhaltung der wesentlichen Gesundheits- und Sicherheitsanforderungen wird durch die Übereinstimmung mit den folgenden Dokumenten sichergestellt:
EN 60079-0:2012 + A11:2013
EN 60079-11:2012
EN 60079-15:2010

9 Ein "X" nach der Zertifikatnummer gibt an, dass für die sichere Verwendung des Gerätes besondere Bedingungen gemäß dem Anhang dieses Zertifikates gelten.

10 Dieses Typenprüfzertifikat betrifft nur die Bauart und die Prüfungen und Tests des betreffenden Geräts gemäß Richtlinie 2014/34/EU.
Zusätzliche Anforderungen dieser Richtlinie gelten für die Fertigung und Lieferung des Geräts oder Schutzsystems. Diese werden durch dieses Zertifikat nicht abgedeckt.

11 Die Kennzeichnung des Gerätes muss die in der Anlage zu dieser Bescheinigung enthaltenen Angaben enthalten.

Fontenay-aux-Roses,
am 30. November 2016

Leiter Zertifizierung

Trockenstempel



LCIE haftet nur für den französischen Text.
Dieses Zertifikat darf nur vollständig und ohne Änderungen vervielfältigt werden.

Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 1**

**EG-PRÜFZERTIFIKAT**

1 **Version: 01** **LCIE 13 ATEX 3037 X** **Ausgabe: 01**

12 **BESCHREIBUNG DES PRODUKTS**

Die GSI 127 Galvanisches Trennmodul bietet eine galvanische Trennung (isolation) zwischen dem Stromversorgungskreis oder dem Signalbehandlungskreis (Ex nA) und einem Sensor- oder Signalaufbereiter (Ex iA).
Das Gerät besteht aus einer elektronischen Platine und Schraubklemmen, die in einem Kunststoffgehäuse montiert sind.
Eine konforme Beschichtung erfolgt auf beiden Seiten der elektronischen Leiterplatte.

**PRODUKTÜBERSICHT**

**244-127-000-XXX-A2-BYY**

XXX definiert die Version des Produkts (X = 0 bis 9).
YY definiert die Übertragungsfunktion (Konfiguration) des Produkts (YY = 01 bis 19 für die Ist-Spezifikation, YY = 20 bis 39 für eine alternative Spezifikation).

**KENNZEICHNIUNG**

Die Kennzeichnung des Erzeugnisses muss die folgenden Angaben enthalten:

MEGGITT SA oder VIBRO-METER oder MFR S3960
Adresse: ...
Typ: 244-127-000-XXX-A2-BYY
Herstellungsnummer: ... Herstellungsjahr: ...
II 3 (1) G
Ex nA [ia Ga] IIC T4 Gc
LCIE 13 ATEX 3037 X
Stromversorgung: U ≤ 30 V, I ≤ 150 mA
Sensor oder Signalconditioner Ausgang:
Für 244-127-000-XXX-A2-B01 to B19:
Uo: 25,2 V, Io: 60 mA, Po: 0,7 W, Co: 95 nF, Lo: 5mH
Für 244-127-000-XXX-A2-B20 to B39:
Uo: 25,2 V, Io: 45 mA, Po: 0,5 W, Co: 95 nF, Lo: 10mH

Die Geräte müssen ebenfalls mit der Kennzeichnung versehen sein, die in den Herstellungsnormen der betreffenden Geräte normalerweise vorgesehen sind.

13 **BESONDERE BEDINGUNGEN FÜR DIE SICHERE ANWENDUNG**

a. Das Gerät darf nur mit zugehörigen eigensicheren zertifizierten Geräten oder einem einfachen Gerät verbunden sein. Diese Kombination muss mit den Regeln der Eigensicherheit vereinbar sein.
b. Der Benutzer muss sicherstellen, die Lage des Modul entspricht den Anforderungen der Norm EN 60079-0 und der Schutzklasse IP54 oder gleichwertig.
c. Umgebungstemperatur betreiben: −40 bis +70 °C

14 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**

Abgedeckt nach den Normen aufgeführt unter Punkt 8.



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

**Deutsche Übersetzung der originalen französischen Kopie der Seite 2**

**EG-PRÜFZERTIFIKAT**

1 **Version: 01** **LCIE 13 ATEX 3037 X** **Ausgabe: 01**

15 **BESCHREIBENDE UNTERLAGEN**

| Nummer (Nr.) | Beschreibung | Referenz | Revision | Datum | Seiten |
|---|---|---|---|---|---|
| 1. | Technische Datei | DT 1052 | 01 | 2016-10-24 | 36 |
| 2. | Benutzerhandbuch (Auszug) | PZ 8763 | 00 | 2016-09-06 | 1 |

16 **ZUSÄTZLICHE INFORMATION**

**RoutinePrüfungen und Tests**
Jeder Transformator T1 muss einer Spannungsfestigkeit Test dauert 60 Sekunden eingereicht werden, mit einer 50/60 Hz Sinus von 1500 VRMS zwischen der Primärwicklung und der secondard Wicklungen, gemäß Abschnitt 11.2 der Norm EN 60079-11:2012.

**Zertifizierungsbedingungen**
Inhaber von Typenprüfzertifikaten (EG-Prèufzertifikaten) müssen die Anforderungen an die Produktionssteuerung nach Artikel 13 der Richtlinie 2014/34/EU erfüllen.
Gemäß Artikel 41 der Richtlinie 2014/34/EU können Typenprüfzertifikaten, die sich auf 94/9/EU beziehen, die vor dem Tag der Anwendung der Richtlinie 2014/34/EU (20. April 2016) vorliegen, referenziert werden Als ob sie gemäß der Richtlinie 2014/34/EU ausgestellt würden. Neue Emissionen dieser Zertifikate können weiterhin die ursprüngliche Zertifikatsnummer tragen, die vor dem 20. April 2016 ausgestellt wurde.

**Details der Änderungen**
Ausgabe 00:
Konformitätsbewertung nach den Normen EN 60079-0:2012, EN 60079-11:2012 und EN 60079-15:2010.

Ausgabe 01:
Normative Aktualisierung nach der Norm EN 60079-0:2012 + A11:2013.
Neuer Umgebungstemperatur betreiben: −40 bis +70 °C.
Aktualisierung der Typbezeichnung zur Unterscheidung von zwei Spezifikationen.



Obwohl das Zertifikat in drei Sprachen (Englisch, Französisch und Deutsch) übersetzt ist, können nur die bescheinigten Behörden, die den Text auf der Originalausgabe des Zertifikates herausgegeben haben, zur rechtlichen Verantwortung gezogen werden.

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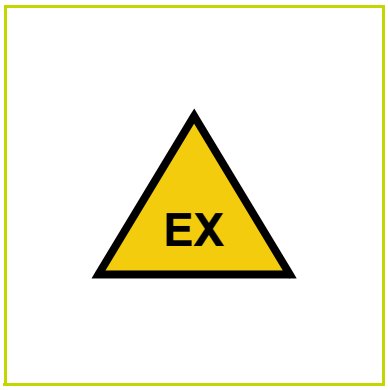
EX CERTIFICATE – ATEX

vibro-meter®

# LCIE 18 ATEX 1012 X
# for
# IPC707 signal conditioner




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference LCIE 18 ATEX 1012 X
Edition 2 – April 2022

Meggitt SA, Route de Moncor 4, Case postale, 1701 Fribourg, Switzerland

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www.meggittsensing.com/energy
www.meggitt.com

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# ATTESTATION D'EXAMEN DE TYPE
## *TYPE EXAMINATION CERTIFICATE*

1 **Version : 01** — **LCIE 18 ATEX 1012 X** — **Issue : 01**

| | **Directive 2014/34/UE** | **Directive 2014/34/EU** |
|---|---|---|
| 2 | Appareil ou Système de Protection destiné à être utilisé en Atmosphères Explosibles | Equipment or Protective System Intended for use in Potentially Explosive Atmospheres |
| 3 | Produit :<br>**Conditionneur de signal, IPC 707** | Product :<br>**Signal conditioner, IPC 707** |
| | **Type: 244-707-000-xxx-A3** | |
| 4 | Fabricant : | Manufacturer :<br>**MEGGITT SA** |
| 5 | Adresse : | Address :<br>Route de Moncor 4<br>1752 Villars-sur-Glâne<br>SUISSE |
| 6 | Ce produit et ses variantes éventuelles acceptées sont décrits dans l'annexe de la présente attestation et dans les documents descriptifs cités en référence. | This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to. |
| 7 | Le LCIE certifie que ce produit est conforme aux Exigences Essentielles de Sécurité et de Santé pour la conception et la construction de produits destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la Directive.<br>Les résultats des vérifications et essais figurent dans le(s) rapport(s) confidentiel(s) N° : | LCIE certifies that product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.<br>The examination and test results are recorded in confidential report(s) N°:<br>140555-682752 ; 173139-767045-M1 |
| 8 | Le respect des Exigences Essentielles de Sécurité et de Santé est assuré par la conformité à : | Compliance with the Essential Health and Safety Requirements has been assured by compliance with :<br>EN IEC 60079-0:2018<br>EN 60079-7:2015+A11:2018 |
| 9 | Le signe « X » lorsqu'il est placé à la suite du numéro de l'attestation, indique que cet appareil est soumis aux conditions particulières d'utilisation, mentionnées dans l'annexe de cette attestation. | If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate. |
| 10 | Cette Attestation d'Examen de Type concerne uniquement la conception et la construction du produit spécifié.<br>Des exigences supplémentaires de la directive sont applicables pour la fabrication et la fourniture du produit. Ces dernières ne sont pas couvertes par la présente attestation. | This Type Examination Certificate relates only to the design and construction of the specified product.<br>Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate. |
| 11 | Le marquage du produit est mentionné dans l'annexe de cette attestation. | The marking of the product is specified in the schedule to this certificate. |

Fontenay-aux-Roses, le 1er avril 2022

Responsable de Certification
Certification Officer
Julien Gauthier

LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES
S.A.S au capital de 15.745.984 €
RCS Nanterre B 408 363 174
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F - 92260 FONTENAY AUX ROSES

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# ATTESTATION D'EXAMEN DE TYPE - ANNEXE
## *TYPE EXAMINATION CERTIFICATE - SCHEDULE*

1 **Version : 01** — **LCIE 18 ATEX 1012 X** — **Issue : 01**

12 **DESCRIPTION DU PRODUIT**

Le conditionneur de signal IPC 707 est un conditionneur électronique analogique qui convertit les charges électriques provenant d'un capteur piézoélectrique (côté capteur) en un signal de tension ou de courant analogique (côté signal).

Le circuit électronique du conditionneur de signal IPC 707 est incorporé dans une enveloppe en aluminium.

Le conditionneur de signal IPC 707 est équipé de bornes (côté capteur et côté signal) et d'un clip optionnel pour rail DIN.

Les configurations de sortie, côté signal, sont les suivantes :
- sortie de tension : mode de transmission à 3 fils,
- sortie de courant : mode de transmission à 2 fils.

**DESCRIPTION OF PRODUCT**

IPC 707 signal conditioner is an analogue electronic conditioner which converts the electrical charges coming from a piezoelectric sensor (sensor side) into an analogue voltage or current signal (signal side).

The electronic circuitry of the IPC 707 signal conditioner is incorporated into an aluminium enclosure.

IPC 707 signal conditioner is equipped with terminals (sensor side and signal side) and with an optional clip for DIN rail.

Signal side output configurations could be as following:
- voltage output: 3-wires transmission mode,
- current output: 2-wires transmission mode.

**DETAIL DE LA GAMME** / **RANGE DETAILS**

244 – 707 - 000 ** * A3

- Numéro de modification mineure/ Minor modification number = 0 à/*to* 9 (le numéro est incrémenté à chaque modification / *Each modification increase the number by 1*)
- Version personnalisée (transfert, filtre, installation) / *Customized version (transfer, filter, installation)* = 00 à/*to* 99
- Type du produit / *Product Type*

**CARACTERISTIQUES**

Bornier signal (SUP, COM, OUT) : $U_{max}$ : 30 V, $I_{max}$ : 20 mA.

**RATINGS**

Signal terminal (SUP, COM, OUT): $U_{max}$ : 30 V, $I_{max}$ : 20 mA.

**MARQUAGE**

Le marquage du produit doit comprendre :

Marquage complet :

Vibro-Meter ou MEGGITT SA ou MFR S3960
Adresse : …
Type : 244-707-000-xxx-A3
N° de fabrication : …
Année de fabrication : …
Ex II 3 G
Ex ec IIC T6…T4 Gc (*)
LCIE 18 ATEX 1012 X
-40°C ≤ Tamb ≤ +85°C
$U_{max}$ : 30 V, $I_{max}$ : 20 mA.
AVERTISSEMENT - NE PAS SEPARER SOUS TENSION.
AVERTISSEMENT – SEPARER UNIQUEMENT DANS UN EMPLACEMENT NON DANGEREUX.

**MARKING**

The marking of the product shall include the following:

Complete marking:

Vibro-Meter or MEGGITT SA or MFR S3960
Address: …
Type: 244-707-000-xxx-A3
Serial number: …
Year of construction: …
Ex II 3 G
Ex ec IIC T6…T4 Gc (*)
LCIE 18 ATEX 1012 X
-40°C ≤ Tamb ≤ +85°C
$U_{max}$ : 30 V, $I_{max}$ : 20 mA.
WARNING – DO NOT SEPARATE WHEN ENERGIZED.
WARNING – SEPARATE ONLY IN A NON-HAZARDOUS AREA.

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# ATTESTATION D'EXAMEN DE TYPE - ANNEXE
## *TYPE EXAMINATION CERTIFICATE - SCHEDULE*

1 **Version : 01** — **LCIE 18 ATEX 1012 X** — **Issue : 01**

Marquage réduit :

Vibro-Meter ou MEGGITT SA ou MFR S3960
Adresse : …
Type : 244-707-000-xxx-A3
N° de fabrication : …
Année de fabrication : …
Ex II 3 G
Ex ec IIC T6…T4 Gc (*)
LCIE 18 ATEX 1012 X

(*) La classification en température est réalisée comme suit :

Reduced marking:

Vibro-Meter or MEGGITT SA or MFR S3960
Address: …
Type: 244-707-000-xxx-A3
Serial number: …
Year of construction: …
Ex II 3 G
Ex ec IIC T6…T4 Gc (*)
LCIE 18 ATEX 1012 X

(*) Temperature classification shall be as following:

| Classification en température<br>*Temperature classification* | Température ambiante d'utilisation<br>*Ambient operating temperature range* |
|---|---|
| T6 | -40°C ≤ Tamb ≤ +65°C |
| T5 | -40°C ≤ Tamb ≤ +80°C |
| T4 | -40°C ≤ Tamb ≤ +85°C |

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concernent sous la responsabilité du fabricant.

The equipment shall also bear the usual marking required by the product standards applying to such equipment under the manufacturer responsibility.

13 **CONDITIONS PARTICULIERES D'UTILISATION**

a. Température ambiante d'utilisation : -40°C à +85°C

b. L'utilisateur final devra prendre toutes les précautions nécessaires pour installer l'appareil dans une enveloppe IP54 et maintenir le degré de protection minimum IP54 de la connexion du capteur lors de son raccordement selon les préconisations de la norme EN 60079-14.

c. L'appareil devra être raccordé conformément au manuel d'instruction.

d. Le matériel doit être utilisé dans une zone assurant au moins un degré de pollution 2, tel que défini dans la norme EN 60664-1.

e. La protection contre les transitoires doit être fournie à un niveau défini ne dépassant pas 140% de la valeur de crête de la tension assignée aux bornes d'alimentation vers le matériel.

**SPECIFIC CONDITIONS OF USE**

a. Ambient temperature range: -40°C to +85°C.

b. For final installation, final end user shall take any precautions to install the apparatus into an IP54 enclosure and keep it connected in compliance with EN 60079-14 requirements, providing and maintaining degree of protection at least IP54.

c. The apparatus must be connected according to instruction manual.

d. The equipment shall only be used in an area of at least pollution degree 2, as defined in EN 60664-1 standard.

e. Transient protection shall be provided that is set at a level not exceeding 140% of the peak rated voltage value at the supply terminals to the equipment.

14 **EXIGENCES ESSENTIELLES DE SANTE ET DE SECURITE**

Couvertes par les normes listées au point 8.

**ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Covered by standards listed at 8.

15 **DOCUMENTS DESCRIPTIFS**

**DESCRIPTIVE DOCUMENTS**

| N° | Description | Reference | Rev. | Date | Page(s) |
|---|---|---|---|---|---|
| 1. | Dossier technique/*Technical file* | DT-1071 | 01 | 2022/03/09 | - |
| 2. | Extrait de la notice utilisateur/*Extract of user manual* | PZ 8782 | - | - | - |

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# ATTESTATION D'EXAMEN DE TYPE - ANNEXE
## *TYPE EXAMINATION CERTIFICATE - SCHEDULE*

1 **Version : 01** — **LCIE 18 ATEX 1012 X** — **Issue : 01**

16 **INFORMATIONS COMPLEMENTAIRES**

**Essais individuels**

Néant.

**ADDITIONAL INFORMATIONS**

**Routine tests**

None.

17 **DETAILS DES MODIFICATIONS DE L'ATTESTATION**

| | |
|---|---|
| Version 00 : 30/08/2018 | Evaluation initiale selon les normes EN 60079-0 :2012 + A11 : 2013 et EN 60079-7 : 2015 |
| Version 01 | Mise à jour normative selon les normes EN IEC 60079-0 :2018 et EN 60079-7 :2015 + A1 : 2018.<br>Extension de la gamme, la référence 244-707-000-012-A3 devient 244-707-000-xxx-A3. |

**DETAILS OF CERTIFICATE CHANGES**

| | |
|---|---|
| Issue 00: 2018/08/30 | Initial assessment according to EN 60079-0:2012 + A11:2013 and EN 60079-7:2015 standards. |
| Issue 01 | Normative update according to EN IEC 60079-0:2018 and EN 60079-7:2015+A1:2018 standards.<br>Extension of the range, Reference 244-707-000-012-A3 becomes 244-707-000-xxx-A3. |

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CERT-ATEX-FORM 05 Rev. 05


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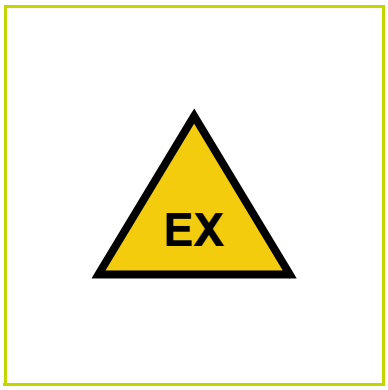
EX CERTIFICATE – ATEX

vibro-meter®

# LCIE 18 ATEX 3026 X
# for
# IPC707 signal conditioner




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference LCIE 18 ATEX 3026 X
Edition 2 – April 2022

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www.meggitt.com

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# ATTESTATION D'EXAMEN UE DE TYPE
## *EU TYPE EXAMINATION CERTIFICATE*

1 **Version : 02** — **LCIE 18 ATEX 3026 X** — **Issue : 02**

2

| | **Directive 2014/34/UE** | **Directive 2014/34/EU** |
|---|---|---|
| 2 | Appareil ou Système de Protection destiné à être utilisé en Atmosphères Explosibles | Equipment or Protective System Intended for use in Potentially Explosive Atmospheres |
| 3 | Produit :<br>Conditionneur de signal, IPC 707 | Product :<br>Signal Conditioner, IPC 707 |

**Type: 244-707-000-xxx-A2**

| | | |
|---|---|---|
| 4 | Fabricant : | Manufacturer : |
| | **MEGGITT SA** | |
| 5 | Adresse : | Address : |
| | Route de Moncor 4<br>1752 Villars-sur-Glâne<br>SUISSE | |

6 Ce produit et ses variantes éventuelles acceptées sont décrits dans l'annexe de la présente attestation et dans les documents descriptifs cités en référence.

This product and any acceptable variations thereto are specified in the schedule to this certificate and the documents therein referred to.

7 Le LCIE, Organisme Notifié sous la référence 0081 conformément à l'article 17 de la directive 2014/34/UE du Parlement européen et du Conseil du 26 février 2014, certifie que ce produit est conforme aux Exigences Essentielles de Sécurité et de Santé pour la conception et la construction de produits destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la Directive.
Accréditation Cofrac Certification de Produits et Services, n°5-0014. Portée disponible sur www.cofrac.fr.

LCIE, Notified Body number 0081 in accordance with article 17 of the Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014 certifies that product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.
Cofrac Accreditation Product and Services Certification n°5-0014. Scope available on www.cofrac.fr.

Les résultats des vérifications et essais figurent dans le(s) rapport(s) confidentiel(s) N° :

The examination and test results are recorded in confidential report(s) N°:

140555-682748 ; 173139-767047-M1

8 Le respect des Exigences Essentielles de Sécurité et de Santé est assuré par la conformité à :

Compliance with the Essential Health and Safety Requirements has been assured by compliance with :

EN IEC 60079-0:2018
EN 60079-11:2012

9 Le signe « X » lorsqu'il est placé à la suite du numéro de l'attestation, indique que cet appareil est soumis aux conditions particulières d'utilisation, mentionnées dans l'annexe de cette attestation.

If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

10 Cette Attestation d'Examen UE de Type concerne uniquement la conception et la construction du produit spécifié.
Des exigences supplémentaires de la directive sont applicables pour la fabrication et la fourniture du produit. Ces dernières ne sont pas couvertes par la présente attestation.

This EU Type Examination Certificate relates only to the design and construction of the specified product.
Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

11 Le marquage du produit est mentionné dans l'annexe de cette attestation.

The marking of the product is specified in the schedule to this certificate.

Fontenay-aux-Roses, le 1er avril 2022

Responsable de Certification
Certification Officer
Julien Gauthier

LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES
S.A.S au capital de 15.745.984 €
RCS Nanterre B 408 363 174
33 avenue du Général Leclerc
F - 92260 FONTENAY AUX ROSES

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92260 Fontenay-aux-Roses
FRANCE
WWW.LCIE.FR

# ATTESTATION D'EXAMEN UE DE TYPE - ANNEXE
## *EU TYPE EXAMINATION CERTIFICATE - SCHEDULE*

1 **Version : 02** — **LCIE 18 ATEX 3026 X** — **Issue : 02**

12 **DESCRIPTION DU PRODUIT**

Le Conditionneur de Signal IPC 707 est un conditionneur électronique analogique qui convertit les charges électriques provenant d'un capteur piézoélectrique (côté capteur) en un signal de tension ou de courant analogique (côté signal).

Le circuit électronique du conditionneur de signal IPC 707 est entièrement enrobé et incorporé dans une enveloppe en aluminium.

Le conditionneur de signal IPC 707 est équipé de bornes (côté capteur et côté signal) et d'un clip optionnel pour rail DIN.

Les configurations de sortie, côté signal, sont les suivantes:
- sortie de tension: mode de transmission à 3 fils,
- sortie de courant: mode de transmission à 2 fils.

**DESCRIPTION OF PRODUCT**

IPC 707 Signal Conditioner is an analogue electronic conditioner which converts the electrical charges coming from a piezoelectric sensor (sensor side) into an analogue voltage or current signal (signal side).

The electronic circuitry of the IPC 707 signal conditioner is totally potted and incorporated into an aluminium enclosure.

IPC 707 Signal Conditioner is equipped with terminals (sensor side and signal side) and with an optional clip for DIN rail.

Signal side output configurations could be as following :
- voltage output : 3-wires transmission mode,
- current output : 2-wires transmission mode.

**DETAIL DE LA GAMME**

**RANGE DETAILS**

244 – 707 - 000 ** * A2

- A2 : Type du produit / *Product Type*
- * : Version personnalisée (transfert, filtre, installation) / *Customized version (transfer, filter, installation)* = 00 à/*to* 99
- ** : Numéro de modification mineure/ Minor modification number = 0 à/*to* 9 (le numéro est incrémenté à chaque modification / *Each modification increase the number by 1*)

**CARACTERISTIQUES**

Paramètres électriques :

Borne Signal (SUP, COM) :
$U_i$ : 28V, $I_i$ : 100 mA, $P_i$ : 700 mW, $C_i$ : 2,2 nF, $L_i$ : 1 µH

**RATINGS**

Electrical parameters :

Signal side terminals (SUP, COM) :
$U_i$ : 28V, $I_i$ : 100 mA, $P_i$ : 700 mW, $C_i$ : 2,2 nF, $L_i$ : 1 µH.

**MARQUAGE**

Le marquage du produit doit comprendre :

Marquage complet :

Vibro-Meter ou MEGGITT SA ou MFR S3960
Adresse : …
Type : 244-707-000-xxx-A2
N° de fabrication : …
Année de fabrication : …
Ⓔ II 1 G
Ex ia IIC T6 … T4 Ga (*)
LCIE 18 ATEX 3026 X
-40°C ≤ Tamb ≤ +85°C
$U_i$ : …, $I_i$ : … , $P_i$ : …, $C_i$ : …, $L_i$ : … (**)
$U_o$ : …, $I_o$ : …, $P_o$ : …, $C_o$ : …, $L_o$ : …

**MARKING**

The marking of the product shall include the following :

Complete marking:

Vibro-Meter or MEGGITT SA or MFR S3960
Address: …
Type: 244-707-000-xxx-A2
Serial number: …
Year of construction: …
Ⓔ II 1 G
Ex ia IIC T6 … T4 Ga (*)
LCIE 18 ATEX 3026 X
-40°C ≤ Tamb ≤ +85°C
$U_i$ : …, $I_i$ : … , $P_i$ : …, $C_i$ : …, $L_i$ : … (**)
$U_o$ : …, $I_o$ : …, $P_o$ : …, $C_o$ : …, $L_o$ : …

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## ATTESTATION D'EXAMEN UE DE TYPE - ANNEXE
*EU TYPE EXAMINATION CERTIFICATE - SCHEDULE*

1 **Version : 02** — **LCIE 18 ATEX 3026 X** — **Issue : 02**

Marquage réduit :

Vibro-Meter ou MEGGITT SA ou MFR S3960
Adresse : …
Type : 244-707-000-xxx-A2
N° de fabrication : …
Année de fabrication : …
Ⓔ II 1 G
Ex ia IIC T6 … T4 Ga (*)
LCIE 18 ATEX 3026 X

(**) Les paramètres de sécurité intrinsèque sont identifiés comme suit :

| Borne / *Terminal* | Paramètres électriques de sécurité intrinsèque / *Intrinsic safety electrical parameters* | |
|---|---|---|
| J0 (SUP, COM) | $U_i$ : 28V, $I_i$ : 100 mA, $P_i$ : 700 mW | $C_i$ : 2,2 nF, $L_i$ : 1 µH. |
| J0 (OUT, COM) | | $C_i$ : 9,6 nF, $L_i$ : 565 µH. |
| J1 (IN+, COM) (IN-, COM) | $U_o$ : 6,6V, $I_o$ : 66 mA, $P_o$ : 107 mW, $C_o$ : 5,69 µF, $L_o$ : 3,435 mH. | |

(*) La classification en température est réalisée comme suit :

| Classification en température / *Temperature classification* | Température ambiante d'utilisation / *Ambient operating temperature range* |
|---|---|
| T6 | -40°C ≤ Tamb ≤ +70°C |
| T5 | -40°C ≤ Tamb ≤ +80°C |
| T4 | -40°C ≤ Tamb ≤ +85°C |

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concernent sous la responsabilité du fabricant.

### 13 CONDITIONS PARTICULIERES D'UTILISATION

a. Température ambiante d'utilisation : de -40°C à +85°C

b. L'appareil ne peut être raccordé qu'à des équipements certifiés de sécurité intrinsèque. Ces associations doivent répondre aux exigences de la norme EN 60079-25.

c. L'appareil devra être raccordé conformément au manuel d'instruction.

d. L'équipement contient plus de 15% d'aluminium. Il doit être monté de manière à éviter le risque d'étincelle par frottement ou impact.

e. La mise à la terre des circuits de sécurité intrinsèque (borne SHD) doit être conforme aux exigences du chapitre 16.2.3 de la norme EN 60079-14.

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## ATTESTATION D'EXAMEN UE DE TYPE - ANNEXE
*EU TYPE EXAMINATION CERTIFICATE - SCHEDULE*

1 **Version : 02** — **LCIE 18 ATEX 3026 X** — **Issue : 02**

Reduced markin :

Vibro-Meter or MEGGITT SA or MFR S3960
Address: …
Type: 244-707-000-xxx-A2
Serial number: …
Year of construction: …
Ⓔ II 1 G
Ex ia IIC T6 … T4 Ga (*)
LCIE 18 ATEX 3026 X

(**) Intrinsic safety electrical parameters are identified as following:

(*) Temperature classification shall be as following:

The equipment shall also bear the usual marking required by the product standards applying to such equipment under the manufacturer responsibility.

### SPECIFIC CONDITIONS OF USE

Ambient temperature range: -40°C to +85°C.

The intrinsic safety terminal blocks (IS boards) must be connected only to an intrinsically safe certified apparatus. These combinations shall comply with the requirements of the standard EN 60079-25.

The apparatus must be connected according to instruction manual.

The equipment contains more than 15% of aluminium. It must be mounted in such a manner as to eliminate the risk of sparks caused by friction or impact.

The grounding of the intrinsically safe circuits must be in accordance with requirements of clause 16.2.3 of EN 60079-14 standard.

### 14 EXIGENCES ESSENTIELLES DE SANTE ET DE SECURITE

Couvertes par les normes listées au point 8.

### ESSENTIAL HEALTH AND SAFETY REQUIREMENTS

Covered by standards listed at 8.

### 15 DOCUMENTS DESCRIPTIFS

| N° | Description | Reference | Rev. | Date | Page(s) |
|---|---|---|---|---|---|
| 1. | Dossier technique/Technical file | DT-107*0* | 01 | 2022/03/09 | - |
| 2. | Extrait de la notice utilisateur/Extract of user manual | PZ 8*954* | - | - | - |

### DESCRIPTIVE DOCUMENTS

| N° | Description | Reference | Rev. | Date | Page(s) |
|---|---|---|---|---|---|
| 1. | Dossier technique/Technical file | DT-107*0* | 01 | 2022/03/09 | - |
| 2. | Extrait de la notice utilisateur/Extract of user manual | PZ 8*954* | - | - | - |

### 16 INFORMATIONS COMPLEMENTAIRES

**Essais individuels**

Néant.

### ADDITIONAL INFORMATIONS

**Routine tests**

None.

### 17 DETAILS DES MODIFICATIONS DE L'ATTESTATION

| | |
|---|---|
| Version 00 : 27/07/2018 | Evaluation initiale selon les normes EN 60079-0:2012+A11:2013 et EN 60079-11:2012. |
| Version 01 : 30/08/2018 | Clarification du modèle de l'appareil. La référence 244-707-000-xxx devient 244-707-000-012-A2. |
| Version 02 | Mise à jour normative selon la norme EN IEC 60079-0 :2018. Extension de la gamme, la référence 244-707-000-012-A2 devient 244-707-000-xxx-A2. |

### DETAILS OF CERTIFICATE CHANGES

| | |
|---|---|
| Issue 00 : 2018/07/27 | Initial assessment according to standards EN 60079-0:2012+A11:2013 and EN 60079-11:2012 requirements. |
| Issue 01 : 2018/08/30 | Clarification of apparatus type. Reference 244-707-000-xxx becomes 244-707-000-012-A2. |
| Issue 02 | Normative update according to EN IEC 60079-0:2018 standard. Extension of the range, Reference 244-707-000-012-A2 becomes 244-707-000-xxx-A2. |

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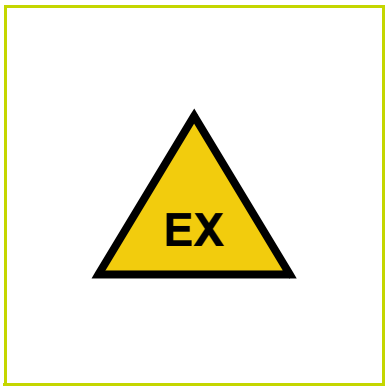
EX CERTIFICATE – ATEX

vibro-meter®

# ITS 16 ATEX 101335 X
# for
# cable fittings (stuffing glands)

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Document reference ITS 16 ATEX 101335 X
Edition 2 – January 2022

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www.meggitt.com

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intertek
Total Quality. Assured.

# EU TYPE-EXAMINATION CERTIFICATE

1. **EU type-examination Certificate (Module B)**
2. **Equipment or Protective System intended for use in potentially explosive atmospheres (Directive 2014/34/EU)**
3. **EU type examination certificate Nr** **ITS 16 ATEX 101335 X**
4. **Product:** Types CB, CF, CK, CQ, CY, PD-E-4, PD-U, PH-E, PA-D and PB-D Stopping plugs.
5. **Manufacturer:** EATON ELECTRICAL SYSTEMS Ltd Trading as Redapt or Raxton
   **Applicant:** EATON ELECTRICAL SYSTEMS Ltd Trading as Redapt or Raxton
6. **Address:** Kingsway South, Westgate, Aldridge, West Midlands, WS9 8FS
   **Address:** Kingsway South, Westgate, Aldridge, West Midlands, WS9 8FS
7. This product and any acceptable variation thereto are specified in the schedule to this certificate and therein referred to.
8. INTERTEK ITALIA S.p.A., Notified Body n° 2575 in accordance with article 17 of the Directive 2014/34/EU of the European Parliament and Council of the 26 February 2014, certifies that the equipment or protective system has been found to comply with the essential Health and Safety Requirements relating to the design and construction of equipment and protective system intended for use in potentially explosive atmosphere, given in Annex II of the Directive.

   The examination and tests results are recorded in confidential technical evaluation Intertek Report Nr. G102174344A Issue 1 dated December 2016 and G103326724 Issue 1 dated April 2018
9. Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0:2012, EN 60079-1:2014, EN 60079-7:2015 and EN 60079-31:2014 except in respect of those requirements referred to at item 16 of the Schedule.
10. If the sign X is placed after the certificate number, it indicates that the product is subject to Special Conditions for Safe Use specified in the schedule to this certificate.
11. This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.
12. The marking of the product shall include the following:

I M2 Ex d I Mb
I M2 Ex e I Mb

II 2G Ex d IIC Gb
II 2G Ex e IIC Gb
II 2D Ex tb IIIC Db IP66

**(Group I marking does not apply to CY or PD-E-4 Stopping Plugs) (Ex d marking does not apply to PD-E-4)**
Ta = (Dependant on construction material and O-ring fitted – See equipment sections)
Ta =-20°C, or +5°C to +65°C (from Nylon PD-E-4 versions, refer to Conditions of Certification 6) See equipment section

04-10-2019
**Certificate issue date**

**Alessandro Savio**
Certification Officer
Intertek Italia S.p.A. (NB 2575)

ACCREDIA
L'ENTE ITALIANO DI ACCREDITAMENTO
PDR N° 277B
Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual Recognition Agreements

This certificate has been issued by Intertek Italia S.p.A. NB 2575 on transfer from Intertek Testing & Certification Ltd. (NB 0359) using the same issued original certificate number.

This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek n\ame or one of its marks for the sale or advertisement of the tested material, product or service must first\ be approved in writing by Intertek.



## SCHEDULE

**EU TYPE EXAMINATION CERTIFICATE NUMBER: ITS 16 ATEX 101335 X**

13. **DESCRIPTION OF THE EQUIPMENT OR PROTECTIVE SYSTEM**

The stopping plugs are threaded and are used to fill unused entries in associated apparatus. They have thread forms between M12 and M 110 and are briefly described as follows:
Type CF: Round/hexagon socket/internal mounting
Type CB: Round/hexagon socket/external mounting
Type CK: Hexagon head
Type CQ: 'Mushroom' head
Type CY: Similar to Type CK with a hollow threaded section
The PD-U series stopping plugs comprise of metallic round bodies with a dome head having a hexagonal key-way recess for tightening. They may optionally be machined with a groove to fit an 'o' ring seal. Coded: Exd I/IIC Mb/Gb, Ex e I/IIC Mb/Gb, Ex tb IIIC Db IP6X
The PA-D and PB-D Series stopping plugs comprise of metallic round bodies with a thread run out to shoulder having a hexagonal key-way recess for internal or external tightening. Coded: Ex d I/IIC Mb/Gb, Ex e I/IIC Mb/Gb Ex tb IIIC Db IP6X

The PH-E Series are ranges of 'Ex e' threaded stopping plugs each comprising a threaded body with either a hexagonal head or socket for tightening.
Design Options:
Threadforms Options: ISO Metric (to BS3463)
PG to DIN40430
NPT (ANSI/ASME B1.20.1)
NPS (ANSI/ASME B1.20.1)
ISO Pipe Thread (BS21) BSPP/BSPT
Imperial conduit ET BS31
BSP to BS21
Any threadform conforming to Table 3 of EN 60079-1
Material Options: Brass BS 2874 (CZ121)
Mild Steel to BS970 (EN1A)
Stainless Steel to BS970 (316)
Aluminium HE30 (BS754 Parts 1,2,3 & 6/BS755 1,2,3 & 6)
Plating Options: Metallic variants may be suitably plated to the appropriate British, European or ISO recognized standards
Types PD-E-4 Stopping Plugs: these are a range of threaded stopping plugs that are used to fill unused entries in the associated apparatus. The PD-E-4 has a 'mushroom' head, there is also a version made from Durethan BKV 30 N1 30% Glass Filled Nylon 6 which are intended for Ex e only.
Material options
- Brass BS 2872 (CZI 21)
- Mild Steel to BS970 (EN1A)
- Stainless Steel to BS970 (316)
- Aluminium BS1474, 6082T6
- Type Durethan BKV 30 N1 Glass Filled Nylon 6
- Type Durethan BKV 140 Glass Filled Nylon 6

Surface Coating: Nickel, Zinc, Electroless Nickel

Entry threads options:

**SCHEDULE**

**EU TYPE EXAMINATION CERTIFICATE NUMBER: ITS 16 ATEX 101335 X**

- Metric to BS 3643:
- ET Conduit to BS 31:
- PG to DIN 40430:
- BSP to BS 2779
- BSPT to BS 21
- NPT to ANSI/ASME B1.20.1

Design options
* The materials of construction may be brass, stainless steel or mild steel.
* Entry threads may be Metric to ISO 965, Pg to DIN 40430, BSPP to BS 31, ET (British Conduit) to ET 31, NPS to ANSI/ASME B1.20.1 or thread forms complying with Table 3 of IEC 60079-1.
Material options O-ring and options Entry thread options
Brass CZ121/CZ122 EPDM (standard) Metric to ISO PT 173
Stainless steel 316 Nitrile PG to DIN 40430:1971
Aluminium BS 1474, 6082T6 Neoprene BSPP to BS 2779
Aluminium bronze BS 1400B2 (JM-03 or LM7-16) Viton BSPT to BS21
Silicone ET Conduit to BS 31

**Conditions of manufacture**
The Manufacturer shall comply with the following for the stopping plugs:
1. The DP-E stopping plugs manufactured from Nylon shall not be marked with any information that indicates that they are suitable for Group I use.
2. The manufacturer shall take all reasonable steps to ensure that the user can comply with the special conditions for safe use and shall advise the user in respect of the materials that are used in the construction of the devices.
3. These products shall be marked in accordance with the information as specified in this certificate and related reports.
4. When these entry devices are manufactured in Type BKV 30 or 140 material, they shall be to be marked with BKV 30 or140 as applicable.
5. These products shall be marked in accordance with the information as specified in this certificate and related reports.
6. Aluminium variants, where applicable, are not permitted for Group I applications. The manufacturer shall ensure that the equipment is marked appropriately
7. In accordance with IEC 60079-1, the coating on joint surfaces of metallic devices that are electroplated shall be no more than 0.008mm thick.

CE Marking shall be accompanied by the identification number of the Notified Body responsible for surveillance of production.

14. **DRAWINGS AND DOCUMENTS**

| TITLE | DOCUMENT Nr | LEVEL | DATE |
|---|---|---|---|
| Stopping Plugs (CB& CF Tapered | CB-CF | 1 | 05/04/16 |
| Stopping Plugs (CQ, CK & CY) | CQ-CK-CY | 1 | 18/04/11 |



**SCHEDULE**

**EU TYPE EXAMINATION CERTIFICATE NUMBER: ITS 16 ATEX 101335 X**

| TITLE | DOCUMENT Nr | LEVEL | DATE |
|---|---|---|---|
| Exe Glass Filled Nylon Stopping Plugs | CQ-M | 1 | 05/04/16 |
| EExe II Dome Head Stopping Plugs | PD-E | 1 | 28/03/16 |
| Exd I&IIC & Exe IIC Domehead Stopping Plugs | PD-U | 1 | 28/03/16 |
| Exe II Hex Head Stopping Plugs | PH-E | 1 | 04/04/16 |
| Marking Drawing | IECExITS16.0012X, ITS16ATEX101335X | 1 | 15/11/16 |
| *Exd I & IIC Certified Parallel Stopping Plugs | 80-B-6 | 1 | 08/03/16 |
| *Exd I&IIc Certified NPT Stopping Plugs | PA-D PB-D | 1 | 08/03/16 |

Copies of the above listed documents are kept at Intertek Italia S.p.A. archive.

15. **SPECIAL CONDITIONS FOR SAFE USE**

1. If a stopping plug is machined with an undercut and is used for an Ex d application, then the wall of the enclosure into which it is fitted shall be such as to maintain five full threads engagement.
2. When used for increased safety or Ex e or protection by enclosure Ex tb applications, a suitable method of sealing to the associated enclosure shall be fitted
3. The stopping plugs shall not be used with any form of adaptors or reducers.
4. The interfaces between these devices and the associated enclosure cannot be defined; therefore, it is the user's responsibility to ensure that the appropriate ingress protection level is maintained at these interfaces.
5. The stopping plugs, when manufactured from non-metallic material, are only suitable for installation in areas considered to be a low risk from mechanical impact
6. The stopping plugs, when manufactured from non-metallic material, shall be adequately protected from direct exposure to sunlight
7. The stopping plugs, when construction from non-metallic material, shall only be cleaned with a damp cloth.
8. The stopping plugs are suitable for use at -50°C to +200°C at their point of mounting (Note: this is reduced when the stopping plugs are fitted with 'O' rings, see below).

| 'O'-ring Material | Limiting temperature |
|---|---|
| None | -50°C to +200°C |
| Nitrile | -20°C to +80°C |
| EPDM | -30°C to +125°C |
| Neoprene | -20°C to +100°C |
| Viton | -5°C to +180°C |
| Silicone | -30°C to +180°C |
| Fluorosilicone | -50°C to +150°C |

Note: The maximum temperature is limited to 150°C in Group I application (Coal dust, Mining)

**SCHEDULE**

**EU TYPE EXAMINATION CERTIFICATE NUMBER: ITS 16 ATEX 101335 X**

**PD-E-4 Nylon Stopping Plugs**

9. When manufactured in BKV 30 NI type material, the entry devices are suitable for a service temperature range of -20°C to +65°C. items made from this material are marked with 'BKV 30'.
10. When manufactured in BKV 140 type material, the entry devices are suitable for a service temperature range of -20°C to +45°C; items made from this material are marked with 'BKV 140'.
11. At their point of mounting, these devices are suitable for use at either -20°C to +65°C or 5°C to +65°C when using Viton seals. The clearance holes for metric male threaded products, suitable for clearance hole applications of increased safety enclosures are to have a dimeter of 0.3 to 0.5mm larger than the major diameter of the male thread. PD-E-4 stopping plugs employing parallel threads without seals shall have at least eight full threads of engagement, with a minimum tolerance according to ISO 965-1 and ISO 965-3.

**PD-U Stopping Plugs**

12. When installed in Group I applications, adaptors manufactured in brass shall be installed where the risk of impact is low

**PA-D and PB-D Stopping Plugs**

13. At their point of mounting, these devices are suitable for use at -50°C to +180°C for Group II applications and -50°C to +150°C for Group I applications

16. **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

The relevant essential Health and Safety Requirements have been identified and assessed in Intertek Report Nr. G102174344A Issue: 1 Dated: December 2016 and G103326724 Issue 1 dated April 2018

17. **ROUTINE (FACTORY) TESTS**

None

18. **DETAIL OF CERTIFICATE CHANGES**

None

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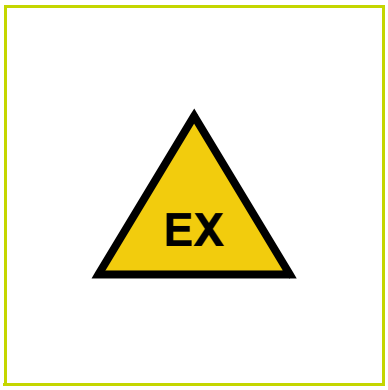
EX CERTIFICATE – ATEX

vibro-meter®

# ITS 16 ATEX 101336 X
# for
# cable fittings (stuffing glands)




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference ITS 16 ATEX 101336 X
Edition 2 – January 2022

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# EU TYPE-EXAMINATION CERTIFICATE

1. **EU type-examination Certificate (Module B)**
2. **Equipment or Protective System intended for use in potentially explosive atmospheres (Directive 2014/34/EU)**
3. **EU type examination certificate Nr** **ITS16ATEX101336X**
4. **Product:** Type AR Male/Male and types AU / AX Female/ Female Union Adaptors. Types AB and AJ Gland Adaptors, Types BB and BJ Gland Reducers and DG / DN Earthlead Adaptors and Reducers
5. **Manufacturer:** EATON ELECTRICAL SYSTEMS Ltd Trading as Redapt or Raxton
6. **Address:** Kingsway South
   Westgate, Aldridge
   West Midlands
   WS9 8FS
7. This product and any acceptable variation thereto are specified in the schedule to this certificate and therein referred to.
8. INTERTEK ITALIA S.p.A., Notified Body n° 2575 in accordance with article 17 of the Directive 2014/34/EU of the European Parliament and Council of the 26 February 2014, certifies that the equipment or protective system has been found to comply with the essential Health and Safety Requirements relating to the design and construction of equipment and protective system intended for use in potentially explosive atmosphere, given in Annex II of the Directive.

   The examination and tests results are recorded in confidential technical evaluation Intertek Report Nr. G102174344B Issue 1 dated September 2016 and Report 10439337LHD-001b dated August 2019.
9. Compliance with the Essential Health and Safety Requirements has been assured by compliance with standards EN 60079-0:2012+A11:2013, EN 60079-1:2014, EN 60079-7:2015+A1:2018 and EN 60079-31:2014 except in respect of those requirements referred to at item 16 of the Schedule.
10. If the sign X is placed after the certificate number, it indicates that the product is subject to Special Conditions for Safe Use specified in the schedule to this certificate.
11. This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.
12. The marking of the product shall include the following:

**Types AR and BJ Male/Male and type AU and AX Female/Female Union Adaptors, Types AB and AJ Gland Adaptors, Types BB and BJ Gland Reducers and DG and DN Earthlead Adaptors and Reducers**
I M2 Ex db I Mb
II 2 G Ex db IIC Gb
I M2 Ex eb I Mb
II 2 G Ex eb IIC Gb
II 2D Ex tb IIIC Db IP6X Ta = see schedule
**Type AB & AJ Adapters, Type BB & BJ Reducers**
II 2G Ex eb IIC Gb
II 2D Ex t IIIC Db IP 66 Ta = see schedule

September 1, 2020
**Certificate issue date**

**Alessandro Savio**
Certification Officer
Intertek Italia S.p.A. (NB 2575)

PDR N° 277B
Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual Recognition Agreements

This certificate has been issued by Intertek Italia S.p.A. NB 2575 on transfer from Intertek Testing & Certification Ltd. (NB 0359) using the same issued original certificate number.

This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.



## SCHEDULE

**EU TYPE EXAMINATION CERTIFICATE NUMBER: ITS16ATEX101336X**

13. **DESCRIPTION OF THE EQUIPMENT OR PROTECTIVE SYSTEM**

The Types AR, BJ, AB, AU, AX, AJ Adaptors, Types BB & BJ Reducers and Types DG and DN Earthlead Adaptors are designed to convert an existing cable entry aperture, in the associated apparatus, to a different thread form and/or size. Each device comprises a hollow body with a male thread at one end and a female thread at the other. Entry threads are between M12 and M120 (M16 to M75 for Glass Filled Nylon and M20 to M32 for DG/DN).
The Type AR and BJ Male/Male Adaptor and Types AU and AX Female/Female Adaptors have thread forms of between M12 and M120. Thread combinations are such that a maximum of two 'standard' size differences is maintained for Increase in thread and no restriction on reduction. Type designations determine thread combinations and body profiles.

Material Options
Brass to BS 2874
Brass BS 2872
Stainless Steel
Mild Steel
Aluminium
Bronze
30 % Glass Filled Nylon
40% Glass Filled Nylon
Surface Coating: Nickel, Zinc, Electroless Nickel

Thread Options
Metric to BS 3643
ET Conduit to BS 31
PG to DIN 40430
BSPP to BS 2779
BSPT to BS 21
NPT to ANSI/ASME B1.20.1
In addition any other thread form that also complies with the requirements of IEC 60079-1 tables 3 or 4 and clause C2.2 (as applicable) are also permitted.

CE Marking shall be accompanied by the identification number of the Notified Body responsible for surveillance of production.

14. **DRAWINGS AND DOCUMENTS**

| TITLE | DOCUMENT Nr | LEVEL | DATE |
|---|---|---|---|
| AB & AJ SERIES ADAPTORS | AB-AJ | 1 | 05-04-2016 |
| AB-AJ & BB-BJ SERIES ADAPTORS & REDUCERS | AB-AJ- BB-BJ | 2 | 08-07-2018 |
| AR-AU-AX SERIES ADAPTORS | AR-AU-AX | 1 | 05-04-2016 |
| BB-BJ SERIES REDUCERS | BB-BJ | 1 | 05-04-2016 |
| DG SERIES | DG | 2 | 01-02-2012 |
| MARKING DRAWING | IECExITS16.0011X<br>ITS16ATEX101336X | 1 | 15-11-2016 |

Copies of the above listed documents are kept at Intertek Italia S.p.A. archive.

**SCHEDULE**

**EU TYPE EXAMINATION CERTIFICATE NUMBER: ITS16ATEX101336X**

15. **SPECIAL CONDITIONS FOR SAFE USE**

1. When used for Increased Safety ('Ex e') or Protection by enclosure (Ex tb) applications, a suitable method of sealing to the associated enclosure shall be provided.

2. Products constructed from Aluminium are to be positioned where they are subject to low risk of mechanical impact only and shall not be marked as suitable for Group I.

**Type AB & AJ Adapters, Type BB & BJ Reducers**

1 All entry devices shall only be installed where there is a low risk from mechanical impact.

2 Only one adaptor or reducer is to be used with any single cable entry on the associated equipment.

3 The interfaces between these devices and the associated enclosure cannot be defined; therefore, it is the user's responsibility to ensure that the appropriate ingress protection level is maintained at these interfaces.

4 When manufactured in 30% Glass Filled Nylon material, the entry devices are suitable for a service temperature range of -30°C to +90°C.

5 When manufactured in 40% Glass Filed Nylon material, the entry devices are suitable for a service temperature range of -20°C to +45°C.

6 When the entry devices are manufactured in 40% Glass Filled Nylon material, they shall be protected from exposure to light; items made from this material are marked with '40% Glass Filled Nylon'.

7 Service temperature ranges have been applied as follows:

O-ring Service temperature

| Material | Service Temperature |
|---|---|
| None fitted | -60°C to 200°C* |
| EPDM | -50°C to +100°C |
| Nitrile | -20°C to +80°C |
| Neoprene | -40°C to +80°C |
| Viton | -20°C to +180°C* |
| Silicone | -60°C to +180°C * |
| Fluorosilicone | -60°C to +130°C |

Note:. The limiting temperatures specified above are de-rated by 20K according to Clause 7.2.2 'Material Selection' of EN 60079-0.
Note: The maximum temperature is limited to 150°C in Group I application (Coal dust, Mining) O-ring materials affect marked with '*' above.
Note: Unless fitted with an interface sealing O-ring with lower properties, temperatures shall then be limited as per the manufacturer's instructions.

16. **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

The relevant essential Health and Safety Requirements have been identified and assessed in Intertek Report Nr. G102174344B Issue 1 dated September 2016 and Report 10439337LHD-001b dated August 2019.



**SCHEDULE**

**EU TYPE EXAMINATION CERTIFICATE NUMBER: ITS16ATEX101336X**

17. **ROUTINE (FACTORY) TESTS**

None.

18. **DETAIL OF CERTIFICATE CHANGES**

None.

# ATEX certificate:

## LCIE 02 ATEX 0038 U

## for

## Cable stuffing glands

Although the certificate is available in two languages (English and French), the liability of the notified body applies only on the text of the original copy of the certificate that it published.

EN

Bien que le certificat soit traduit dans les 2 langues (Anglais et Français), seul le texte de la copie originale du certificat peut engager la responsabilité de l'organisme notifié qui l'a publié.

FR

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L C I E

1 **ATTESTATION D'EXAMEN CE DE TYPE**

2 Composants destinés à être utilisés en atmosphères explosibles
**Directive 94/9/CE**

3 Numéro de l'attestation CE de type
**LCIE 02 ATEX 0038U**

4 Accessoires
Type : EExe

5 Demandeur : SIB-ADR

6 Adresse : 50, rue du Capitaine Maillard
57220 BOULAY - FRANCE

7 Ce composant ou système de protection et ses variantes éventuelles acceptées est décrit dans l'annexe de la présente attestation et dans les documents descriptifs cités en annexe.

8 Le LCIE, organisme notifié sous la référence 0081 conformément à l'article 9 de la directive 94/9/CE du Parlement européen et du Conseil du 23 mars 1994, certifie que ce composant est conforme aux exigences essentielles en ce qui concerne la sécurité et la santé pour la conception et la construction de composants destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la directive. Les vérifications et épreuves figurent dans notre rapport confidentiel N° 60000011/2.

9 Le respect des exigences essentielles en ce qui concerne la sécurité et la santé est assuré par la conformité aux documents suivants :
- EN 50014 (1997) + Amendements 1 et 2 (1999)
- EN 50019 (2000)
- EN 50281-1-1 (1998)

10 Le signe U lorsqu'il est placé à la suite du numéro de l'attestation, indique que cette attestation ne doit pas être confondue avec celle destinée à un appareil ou un système de protection. Cette attestation partielle peut être utilisée comme base pour l'attestation d'un appareil ou d'un système de protection.

11 La présente attestation d'examen CE de type porte uniquement sur la conception, l'examen et l'essai de l'équipement ou du système de protection spécifié conformément à la directive 94/9/CE.
Toutes autres exigences de la Directive sont applicables au procédé de fabrication et de livraison de cet équipement ou système de protection. Ces derniers ne sont pas couverts par la présente attestation.

12 Le marquage du composant devra comporter, entre autres indications utiles, les mentions suivantes :

II 2 G/D
EEx e II
IP6X

1 **EC TYPE EXAMINATION CERTIFICATE**

2 Components Intended for use in Potentially explosive atmospheres
**Directive 94/9/EC**

3 EC type Examination Certificate number
**LCIE 02 ATEX 0038U**

4 Accessories
Type : EExe

5 Applicant : SIB-ADR

6 Address : 50, rue du Capitaine Maillard
57220 BOULAY - FRANCE

7 This component and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein refered to.

8 LCIE, notified body number 0081 in accordance with article 9 of the directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this component has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of component intended for use in potentially explosive atmospheres, given in Annex II to the directive. The examination and test results are recorded in confidential report No 60000011/2.

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with :
- EN 50014 (1997) + Amendments 1 and 2 (1999)
- EN 50019 (2000)
- EN 50281-1-1 (1998)

10 The sign U placed after the certificate number indicates that this certificate must not be mistaken with a certificate intended for an Equipment or Protective system. This partial certification may be used as a basis for certification of an Equipment or Protective system.

11 This EC Type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include the following :

II 2 G/D
EEx e II
IP6X

Fontenay-aux-Roses, le 23 janvier 2003

Le Directeur de l'organisme certificateur
Manager of the certification body

Isabelle HELLER

Timbre sec/dry seal

Page 1/2

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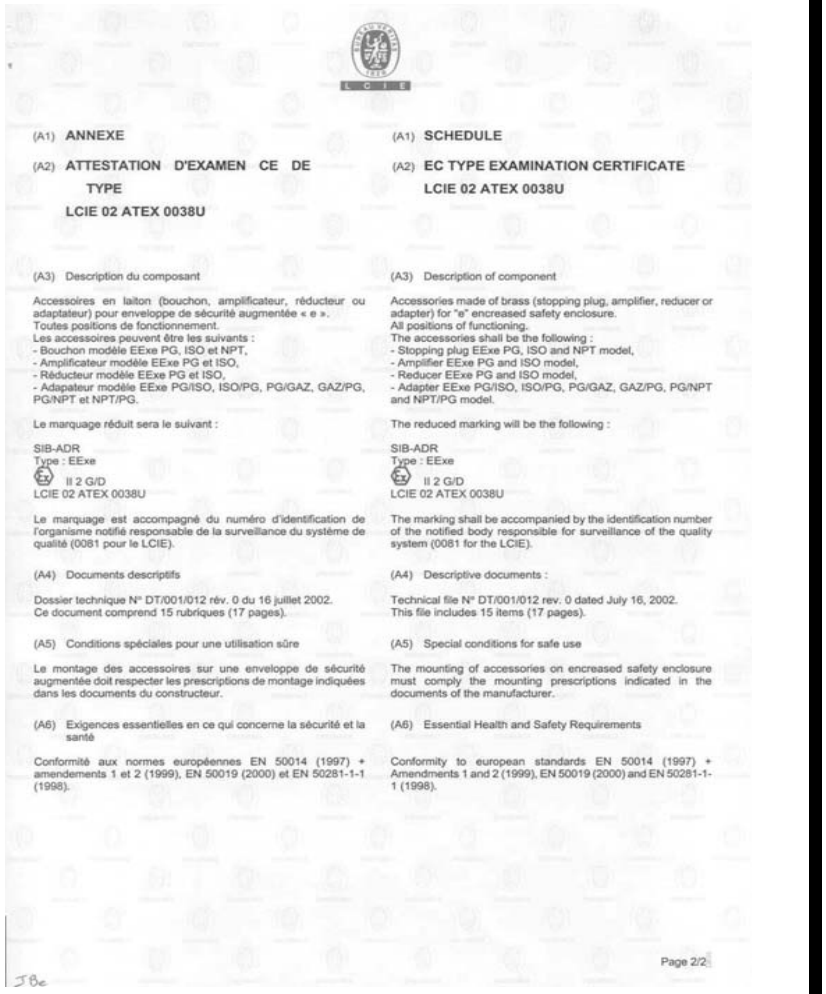
Laboratoire Central des Industries Electriques — BP 8 — 92260 Fontenay-aux-Roses cedex — Fax : +33 1 40 95 86 56 — contact@lcie.fr — et conseil de surveillance au capital de 15 745 984 €
Une société de Bureau Veritas — France — www.lcie.fr — RCS Nanterre B 408 363 174

JBe



(A1) **ANNEXE**

(A2) **ATTESTATION D'EXAMEN CE DE TYPE**
**LCIE 02 ATEX 0038U**

(A3) Description du composant

Accessoires en laiton (bouchon, amplificateur, réducteur ou adaptateur) pour enveloppe de sécurité augmentée « e ».
Toutes positions de fonctionnement.
Les accessoires peuvent être les suivants :
- Bouchon modèle EExe PG, ISO et NPT,
- Amplificateur modèle EExe PG et ISO,
- Réducteur modèle EExe PG et ISO,
- Adapateur modèle EExe PG/ISO, ISO/PG, PG/GAZ, GAZ/PG, PG/NPT et NPT/PG.

Le marquage réduit sera le suivant :

SIB-ADR
Type : EExe
II 2 G/D
LCIE 02 ATEX 0038U

Le marquage est accompagné du numéro d'identification de l'organisme notifié responsable de la surveillance du système de qualité (0081 pour le LCIE).

(A4) Documents descriptifs

Dossier technique N° DT/001/012 rév. 0 du 16 juillet 2002.
Ce document comprend 15 rubriques (17 pages).

(A5) Conditions spéciales pour une utilisation sûre

Le montage des accessoires sur une enveloppe de sécurité augmentée doit respecter les prescriptions de montage indiquées dans les documents du constructeur.

(A6) Exigences essentielles en ce qui concerne la sécurité et la santé

Conformité aux normes européennes EN 50014 (1997) + amendements 1 et 2 (1999), EN 50019 (2000) et EN 50281-1-1 (1998).

(A1) **SCHEDULE**

(A2) **EC TYPE EXAMINATION CERTIFICATE**
**LCIE 02 ATEX 0038U**

(A3) Description of component

Accessories made of brass (stopping plug, amplifier, reducer or adapter) for "e" encreased safety enclosure.
All positions of functioning.
The accessories shall be the following :
- Stopping plug EExe PG, ISO and NPT model,
- Amplifier EExe PG and ISO model,
- Reducer EExe PG and ISO model,
- Adapter EExe PG/ISO, ISO/PG, PG/GAZ, GAZ/PG, PG/NPT and NPT/PG model.

The reduced marking will be the following :

SIB-ADR
Type : EExe
II 2 G/D
LCIE 02 ATEX 0038U

The marking shall be accompanied by the identification number of the notified body responsible for surveillance of the quality system (0081 for the LCIE).

(A4) Descriptive documents :

Technical file N° DT/001/012 rev. 0 dated July 16, 2002.
This file includes 15 items (17 pages).

(A5) Special conditions for safe use

The mounting of accessories on encreased safety enclosure must comply the mounting prescriptions indicated in the documents of the manufacturer.

(A6) Essential Health and Safety Requirements

Conformity to european standards EN 50014 (1997) + Amendments 1 and 2 (1999), EN 50019 (2000) and EN 50281-1-1 (1998).

Page 2/2

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MEGGITT

**LCIE 02 ATEX 0038 U (FR, EN)**
*[Original copy]*
**Cable stuffing glands**

L C I E

1 AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE

2 Appareil ou système de protection destiné à être utilisé en atmosphères explosibles (Directive 94/9/CE)

3 Numéro de l'avenant :
LCIE 02 ATEX 0038 U / 01

4 Appareil ou système de protection :
Composants
Type : EEXe ; modèles Bouchon, Réducteur, Amplificateur

5 Demandeur : SIB ADR

15 DESCRIPTION DE L'AVENANT
Mise à jour des normes

Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 600551O6-555530 / 04

Le marquage doit être :

SIB ADR (ou logo SIB)
⟨Ex⟩ II 2 G/ D
Ex e II
Ex tD A21
LCIE 02 ATEX 0038 U
Type et pas du filetage

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concerne.

16 DOCUMENTS DESCRIPTIFS
Dossier de certification N° DA/007/04 rev 0 du 12 février 2007. Ce dossier comprend 15 rubriques (17 pages).

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04A-Annexe III_CE_ep_av - rev0.DOC



L C I E

13 ANNEXE

14 AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE

LCIE 02 ATEX 0038 U / 01

17 CONDITIONS SPECIALES POUR UNE UTILISATION SURE

Lors du montage des bouchons, des réducteurs ou des amplificateurs sur des enveloppes de sécurité augmentée « e » (pour les atmosphères Gaz) ou sur des enveloppes protégées « IP6X » (pour les atmosphères Poussières), l'implantation et les assemblages réalisés devront être conformes aux documents descriptifs du constructeur.

Gamme de température d'utilisation comprise entre :
– 20 °C et + 80 °C.

18 EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE

Le respect des exigences essentielles de sécurité et de santé est assuré par la conformité à :
- EN 60079-0 (2004)
- EN 60079-7 (2003)
- EN 61241-0 (2004)
- EN 61241-1 (2004)

19 VERIFICATIONS ET ESSAIS INDIVIDUELS
Néant

13 SCHEDULE

14 SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE

LCIE 02 ATEX 0038 U / 01

17 SPECIAL CONDITIONS FOR SAFE USE

For the assembling of the caps, reducers or amplifiers on "e" increased safety enclosures (for Gas atmospheres) or on IP6X protected enclosures (for Dust atmospheres), the fitting up and the assembling realized shall must be in accordance with the descriptive documents on the manufacturer.

Using ambient temperature range between :
– 20 °C and + 80 °C.

18 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS

Compliance with the Essential Health and Safety Requirements has been assured by compliance with :
- EN 60079-0 (2004)
- EN 60079-7 (2003)
- EN 61241-0 (2004)
- EN 61241-1 (2004)

19 ROUTINE VERIFICATIONS AND TESTS
None

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Page 2 sur 2
04A-Annexe III_CE_ep_av - rev0.DOC

L C I E

1 **AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE**

2 **Composant** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 02 ATEX 0038 U / 02**

4 Composant :

Type : EEX e
Modèles: Bouchon, réducteur, amplificateur et adaptateur en métal

5 Demandeur : S.I.B. ( Schlemmer Industry & Building Parts )
25 Rue Théophile Somborn
57 220 BOULAY – MOSELLE France

15 **DESCRIPTION DE L'AVENANT**
Mise à jour normative suivant les normes :
EN 60079-0:2012 + A11:2013, EN 60079-7:2007, EN 60079-31:2009
Mise à jour du marquage
Mise à jour de la raison sociale

Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 133536-668141-05

Paramètres spécifiques du ou des modes de protection concerné(s) :
Néant

Le marquage doit être :
SIB
Adresse : ...
Type : EEx e
N° de fabrication : ...
Année de fabrication : ...
Ex II 2 GD
Ex eb IIC
Ex tb IIIC
IP6X
LCIE 02 ATEX 0038 U

Fontenay-aux-Roses, le 6 mai 2015

1 **SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE**

2 **Component** Intended for use in Potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number :
**LCIE 02 ATEX 0038 U / 02**

4 Component :

Type : EEX e
Models: Metallic cap , reducer, amplifier and adaptor

5 Applicant : S.I.B. ( Schlemmer Industry & Building Parts )
25 Rue Théophile Somborn
57 220 BOULAY – MOSELLE France

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**
Update according to the standards :
EN 60079-0:2012 + A11:2013, EN 60079-7:2007, EN 60079-31:2009
Update of marking
Update of company name

The examination and test results are recorded in confidential report N° 133536-668141-05

Specific parameters of the concerned protection mode :

None

The marking shall be:
SIB
Address...
Type : EEx e
N° de fabrication : ...
Année de fabrication : ...
Ex II 2 GD
Ex eb IIC
Ex tb IIIC
IP6X
LCIE 02 ATEX 0038 U

Le Responsable de Certification ATEX
ATEX Certification Officer
Julien Gauthier

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des Industries Electriques 92266 Fontenay-aux-Roses cedex contact@lcie.fr RCS Nanterre B 408 363 174
Une société de Bureau Veritas France www.lcie.fr

L C I E

13 **ANNEXE**

14 **AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE**

**LCIE 02 ATEX 0038 U / 02**

16 **DOCUMENTS DESCRIPTIFS**
Dossier de certification N° DA/002/02 rév.2 du 13/02/2015
Ce document comprend 2 rubriques (4 pages).

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SURE**
Lors du montage des bouchons, des réducteurs ou des amplificateurs sur les enveloppes de sécurité augmentée ou sur les enveloppes protégées contre les inflammations de poussières par enveloppe Ex t, l'implantation et les assemblages réalisés devront être conformes aux documents descriptifs du constructeur.

Gamme de température de service :
- 20°C ≤ $T_{service}$ ≤ +80°C

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**
Couverte par les normes listées au point 15

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**
Néant

13 **SCHEDULE**

14 **SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE**

**LCIE 02 ATEX 0038 U / 02**

16 **DESCRIPTIVE DOCUMENTS**
Certification file N° DA/002/02 rev.2 dated 2015/02/13
This file includes 2 items (4 pages).

17 **SPECIAL CONDITIONS FOR SAFE USE**

For the assembling of the caps, reducers or amplifiers on increased safety enclosures (for Gas atmospheres) or on Ex t enclosures (for Dust atmospheres), the fitting up and the assembling realized shall must be in accordance with the descriptive documents on the manufacturer.

Using service temperature range between :
- 20°C ≤ $T_{service}$ ≤ +80°C

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Covered by standards listed at 15

19 **ROUTINE VERIFICATIONS AND TESTS**
None

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# ATEX certificate:

# LCIE 03 ATEX 0033 U

# for

# Stuffing gland

Although the certificate is available in two languages (English and French), the liability of the notified body applies only on the text of the original copy of the certificate that it published.

EN

Bien que le certificat soit traduit dans les 2 langues (Anglais et Français), seul le texte de la copie originale du certificat peut engager la responsabilité de l'organisme notifié qui l'a publié.

FR

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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L C I E

1 **ATTESTATION D'EXAMEN CE DE TYPE**

2 Composants destinés à être utilisés en atmosphères explosibles
**Directive 94/9/CE**

3 Numéro de l'attestation CE de type
**LCIE 03 ATEX 0033 U**

4 Composant
Composants
Type : EEXe ; modèles Bouchon, Réducteur ou Amplificateur

5 Demandeur : S.I.B.-A.D.R.

6 Adresse : 50, Rue du Capitaine Maillard
57220 BOULAY
FRANCE

7 Ce composant ou système de protection et ses variantes éventuelles acceptées est décrit dans l'annexe de la présente attestation et dans les documents descriptifs cités en annexe.

8 Le LCIE, organisme notifié sous la référence 0081 conformément à l'article 9 de la directive 94/9/CE du Parlement européen et du Conseil du 23 mars 1994, certifie que ce composant est conforme aux exigences essentielles en ce qui concerne la sécurité et la santé pour la conception et la construction de composants destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la directive. Les vérifications et épreuves figurent dans notre rapport confidentiel N° 60004606/1.

9 Le respect des exigences essentielles en ce qui concerne la sécurité et la santé est assuré par la conformité aux documents suivants :
- EN 50014 (1997) + amendements 1 et 2 (1999)
- EN 50019 (2000)
- EN 50281-1-1 (1998) + amendement 1 (2002)

10 Le signe U lorsqu'il est placé à la suite du numéro de l'attestation, indique que cette attestation ne doit pas être confondue avec celle destinée à un appareil ou un système de protection. Cette attestation partielle peut être utilisée comme base pour l'attestation d'un appareil ou d'un système de protection.

11 La présente attestation d'examen CE de type porte uniquement sur la conception, l'examen et l'essai du composant spécifié conformément à la directive 94/9/CE.
D'autres exigences de la Directive sont applicables au procédé de fabrication et de livraison du composant.
Ces dernières ne sont pas couvertes par la présente attestation.

12 Le marquage du composant devra comporter, entre autres indications utiles, les mentions suivantes :

Ex II 2 G/D
EEx e II – IP6X

Fontenay-aux-Roses, le 09 janvier 2004

Le Directeur de l'organisme certificateur
Manager of the certification body

Timbre sec/dry seal

Page 1/3

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au capital de 15 745 984 €
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1 **EC TYPE EXAMINATION CERTIFICATE**

2 Components Intended for use in Potentially explosive atmospheres
**Directive 94/9/EC**

3 EC type Examination Certificate number
**LCIE 03 ATEX 0033 U**

4 Component
Components
Type : EEXe ; Cap, Reducer or Amplifier models

5 Applicant : S.I.B.-A.D.R.

6 Address : 50, Rue du Capitaine Maillard
57220 BOULAY
FRANCE

7 This component and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein refered to.

8 LCIE, notified body number 0081 in accordance with article 9 of the directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this component has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of component intended for use in potentially explosive atmospheres, given in Annex II to the directive.
The examination and test results are recorded in confidential report N° 60004606/1.

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with :

10
- EN 50014 (1997) + Amendments 1 and 2 (1999)
- EN 50019 (2000)
- EN 50281-1-1 (1998) + Amendment 1 (2002)

10 If the sign U is placed after the certificate number it indicates that this certificate must not be mistaken with a certificate intended for an Equipment or Protective system. This partial certification may be used as a basis for certification of an Equipment or Protective system.

11 This EC Type examination certificate relates only to the design, examination and tests of the specified component in accordance to the directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this component.. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include the following :

Ex II 2 G/D
EEx e II – IP6X

L C I E

(A1) **ANNEXE**

(A2) **ATTESTATION D'EXAMEN CE DE TYPE**
**LCIE 03 ATEX 0033 U**

(A3) DESCRIPTION DU COMPOSANT

Les bouchons permettent d'obturer une enveloppe non équipée d'entrée de câble.
Les réducteurs et amplificateurs permettent le montage d'entrée de câble d'un diamètre inférieur ou supérieur au diamètre du trou de passage de l'enveloppe.

Toutes positions de fonctionnement

Les composants comprennent les éléments suivants :
- le bouchon à fente, le réducteur ou l'amplificateur, fileté PG ou ISO en matière plastique PC ou PA6,
- un joint plat en néoprène,
- un contre écrou hexagonal fileté PG ou ISO en laiton.

Le marquage réduit est le suivant :

S.I.B.-A.D.R.
Type : EEXe
Ex II 2 G/D
EEx e II
IP6X
LCIE 03 ATEX 0033U

Le marquage devra être accompagné du numéro d'identification de l'organisme notifié responsable de la surveillance du système approuvé de qualité (0081 pour le LCIE).
Le matériel devra également comporter le marquage normalement prévu par les normes de construction du matériel électrique concerné.

(A4) DOCUMENTS DESCRIPTIFS

Dossier technique N° DT/001/03 rév. 0 du 25 novembre 2003.
Ce document comprend 8 rubriques (13 pages).

(A5) CONDITIONS SPECIALES POUR UTILISATION SURE

Lors du montage des bouchons, des réducteurs ou des amplificateurs sur des enveloppes de sécurité augmentée « e » (pour les atmosphères Gaz) ou sur des enveloppes protégées « IP6X » (pour les atmosphères Poussières), l'implantation et les assemblages réalisés devront être conformes aux documents descriptifs du constructeur.

Gamme de température ambiante d'utilisation comprise entre :
– 20 °C et + 55 °C.

(A1) **SCHEDULE**

(A2) **EC TYPE EXAMINATION CERTIFICATE**
**LCIE 03 ATEX 0033 U**

(A3) DESCRIPTION OF COMPONENT

The caps allow to seal an enclosure no equipped of cable gland.

The reducers and the amplifiers allow the assembling of cable gland of less or higher diameter of the enclosure crossing hole diameter.

All positions of functioning

The components including the following elements :
- the groove cap, the reducer or the amplifier, threaded PG or ISO made of PC or PA6 plastic,
- a flat gasket made of neoprene,
- an hexagon PG or ISO threaded counternut made of brass.

The reduced marking is the following:

S.I.B.-A.D.R.
Type : EEXe
Ex II 2 G/D
EEx e II
IP6X
LCIE 03 ATEX 0033U

The marking shall be accompanied by the identification number of the notified body responsible for surveillance of the approved quality system (0081 for the LCIE).
The equipment must also carry the usual marking required by the manufacturing standards applying to such equipments concerned.

(A4) DESCRIPTIVE DOCUMENTS

Technical file N° DT/001/03 rev 0 dated November 25, 2003.
This file includes 8 items (13 pages).

(A5) SPECIAL CONDITIONS FOR SAFE USE

For the assembling of the caps, reducers or amplifiers on "e" increased safety enclosures (for Gas atmospheres) or on IP6X protected enclosures (for Dust atmospheres), the fitting up and the assembling realized shall must be in accordance with the descriptive documents on the manufacturer.

Using ambient temperature range between :
– 20 °C and + 55 °C.

Page 2/3

(A1) **ANNEXE (suite)**

(A2) **ATTESTATION D'EXAMEN CE DE TYPE**

**LCIE 03 ATEX 0033 U**

(A6) EXIGENCES ESSENTIELLES EN CE QUI CONCERNE LA SECURITE ET LA SANTE

Conformité aux normes européennes EN 50014 (1997) + amendements 1 et 2 (1999), EN 50019 (2000) et EN 50281-1-1 (1998) + amendement 1 (2002).

Le matériel est dispensé d'épreuve individuelle.

(A1) **SCHEDULE (continued)**

(A2) **EC TYPE EXAMINATION CERTIFICATE**

**LCIE 03 ATEX 0033 U**

(A6) ESSENTIAL HEALTH AND SAFETY REQUIREMENTS

Conformity to the European standards EN 50014 (1997) + Amendments 1 and 2 (1999), EN 50019 (2000) and EN 50281-1-1 (1998) + Amendment 1 (2002).

The equipment is exempted of individual test.

Page 3/3

1 **AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE**

2 **Appareil ou système de protection** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 03 ATEX 0033 U / 01**

4 Appareil ou système de protection :
Composants
Type : EEXe ; modèles Bouchon, Réducteur, Amplificateur

5 Demandeur : SIB ADR

15 **DESCRIPTION DE L'AVENANT**

Mise à jour des normes

Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 60055106-555530 / 03

Le marquage doit être :

SIB ADR (ou logo SIB)
Ex II 2 G/ D
Ex e II
Ex tD A21
LCIE 03 ATEX 0033 U
Type et pas du filetage

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concerne.

16 **DOCUMENTS DESCRIPTIFS**

Dossier de certification N° DA/007/05 rev 0 du 12 février 2007. Ce dossier comprend 9 rubriques (13 pages).

1 **SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE**

2 **Equipment or protective system** intended for use in potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number :
**LCIE 03 ATEX 0033 U / 01**

4 Equipment or protective system :
Components
Type : EEXe ; Cap, Reducer or Amplifier models

5 Applicant : SIB ADR

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**
Update standards

The examination and test results are recorded in confidential report N° 60055106-555530 / 03

The marking shall be :

SIB ADR (or SIB logo)
Ex II 2 G/ D
Ex e II
Ex tD A21
LCIE 03 ATEX 0033 U
Type and size of thread

The equipment shall also bear the usual marking required by the manufacturing standards applying to such equipment.

16 **DESCRIPTIVE DOCUMENTS**

Certification file N° DA/007/05 rev 0 dated February 12th, 2007. This file includes 9 items (13 pages).

Fontenay-aux-Roses, le 26 juin 2007

Le responsable de certification ATEX
ATEX certification manager

Henri CERVELLO

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des Industries Electriques — 92260 Fontenay-aux-Roses cedex — contact@lcie.fr — RCS Nanterre B 408 363 174
Une société de Bureau Veritas — France — www.lcie.fr

13 **ANNEXE**

14 **AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE**

**LCIE 03 ATEX 0033 U / 01**

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SURE**

Lors du montage des bouchons, des réducteurs ou des amplificateurs sur des enveloppes de sécurité augmentée « e » (pour les atmosphères Gaz) ou sur des enveloppes protégées « IP6X » (pour les atmosphères Poussières), l'implantation et les assemblages réalisés devront être conformes aux documents descriptifs du constructeur.

Gamme de température d'utilisation comprise entre :
– 20 °C et + 55 °C.

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**

Le respect des exigences essentielles de sécurité et de santé est assuré par la conformité à :
- EN 60079-0 (2004)
- EN 60079-7 (2003)
- EN 61241-0 (2004)
- EN 61241-1 (2004)

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**

Néant

13 **SCHEDULE**

14 **SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE**

**LCIE 03 ATEX 0033 U / 01**

17 **SPECIAL CONDITIONS FOR SAFE USE**

For the assembling of the caps, reducers or amplifiers on "e" increased safety enclosures (for Gas atmospheres) or on IP6X protected enclosures (for Dust atmospheres), the fitting up and the assembling realized shall must be in accordance with the descriptive documents on the manufacturer.

Using ambient temperature range between :
– 20 °C and + 55 °C.

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Compliance with the Essential Health and Safety Requirements has been assured by compliance with :
- EN 60079-0 (2004)
- EN 60079-7 (2003)
- EN 61241-0 (2004)
- EN 61241-1 (2004)

19 **ROUTINE VERIFICATIONS AND TESTS**

None

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1 **AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE**

2 **Composant** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 03 ATEX 0033 U / 02**

4 Composant :
Type : EEXe
Modèles : Bouchon, réducteur et amplificateur

5 Demandeur : S.I.B.-A.D.R.

15 **DESCRIPTION DE L'AVENANT**

Mise à jour selon les normes EN 60079-0 (2006), EN 60079-7 (2007), EN 61241-0 (2004), EN 61241-1 (2004)

Extension de la température ambiante d'utilisation. Voir détails au point 17.

Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 91814-583624.

Paramètres spécifiques du ou des modes de protection concerné(s) :

Inchangés.

Le marquage doit être :

Inchangé.

16 **DOCUMENTS DESCRIPTIFS**
Dossier de certification N° DA/009/06 Rév. 1 du 23/06/2009.
Ce document comprend 9 rubriques (13 pages).

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SÛRE**

Modifié comme suit :
Les accessoires ne doivent pas être soumis à un choc supérieur à 4 joules.

| Référence de la matière plastique / *Reference of plastic material* | A9541016 | A9380300 | A9380301 |
|---|---|---|---|
| Température ambiante d'utilisation / *Using ambient temperature* | -35°C à / *to* +95°C | -35°C à / *to* +90°C | -35°C à / *to* +90°C |

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**

Couvertes par les normes listées au point 15.

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**

Néant.

Fontenay-aux-Roses, le 24 juillet 2009

1 **SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE**

2 **Component** Intended for use in Potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number :
**LCIE 03 ATEX 0033 U / 02**

4 Component :
Type : EEXe
Models : Cap, reducer and amplifier

5 Applicant : S.I.B.-A.D.R.

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**

Updating according to the standards EN 60079-0 (2006), EN 60079-7 (2007), EN 61241-0 (2004), EN 61241-1 (2004)

Extension of the using ambient temperature. See details at 17.

The examination and test results are recorded in confidential report N° 91814-583624.

Specific parameters of the mode of protection concerned:

Unchanged.

The marking shall be :

Unchanged.

16 **DESCRIPTIVE DOCUMENTS**
Certification file N° DA/009/06 Rev. 1 dated 23/06/2009.
This file includes 9 items (13 pages).

17 **SPECIAL CONDITIONS FOR SAFE USE**

Modified as follows :
The accessories must not be submitted to a mechanical choc higher than 4 joules.

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Covered by standards listed at 15.

19 **ROUTINE VERIFICATIONS AND TESTS**

None.

Le responsable de certification ATEX
ATEX certification manager

Michel EQUI

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1 **AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE**

2 **Composant** destiné à être utilisé en atmosphères explosibles **(Directive 94/9/CE)**

3 Numéro de l'avenant :
**LCIE 03 ATEX 0033 U / 03**

4 Composant :

Type : EEx e
Modèles: Bouchon, réducteur et amplificateur

5 Demandeur : S.I.B (Schlemmer Industry & Building Parts )
25 Rue Théophile Somborn
57 220 BOULAY – MOSELLE France

15 **DESCRIPTION DE L'AVENANT**
Mise à jour normative suivant les normes :
EN 60079-0:2012 + A11:2013, EN 60079-7:2007,
EN 60079-31:2009
Mise à jour du marquage
Mise à jour de la raison sociale

Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 133536-668141-03

Paramètres spécifiques du ou des modes de protection concerné(s) :
Néant
Le marquage doit être :
S.I.B
Adresse : ...
Type : EEx e
N° de fabrication : ...
Année de fabrication : ...
Ex II 2 GD
Ex eb IIC
Ex tb IIIC
IP6X
LCIE 03 ATEX 0033 U

Fontenay-aux-Roses, le 7 mai 2015

1 **SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE**

2 **Component** Intended for use in Potentially explosive atmospheres **(Directive 94/9/EC)**

3 Supplementary certificate number :
**LCIE 03 ATEX 0033 U / 03**

4 Component :

Type : EEx e
Models: Plastic cap , reducer and amplifier

5 Applicant : S.I.B (Schlemmer Industry & Building Parts )
25 Rue Théophile Somborn
57 220 BOULAY – MOSELLE France

15 **DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**
Normative update according to the standards :
EN 60079-0:2012 + A11:2013, EN 60079-7:2007,
EN 60079-31:2009
Update of marking
Update of company name

The examination and test results are recorded in confidential report N° 133536-668141-03

Specific parameters of the concerned protection mode :

None
The marking shall be :
S.I.B
Address
Type : EEx e
N° de fabrication : ...
Année de fabrication : ...
Ex II 2 GD
Ex eb IIC
Ex tb IIIC
IP6X
LCIE 03 ATEX 0033 U

Le Responsable de Certification ATEX
ATEX Certification Officer
Julien Gauthier

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au capital de 15 745 984 €
RCS Nanterre B 408 363 171

13 **ANNEXE**

14 **AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE**

**LCIE 03 ATEX 0033 U / 03**

16 **DOCUMENTS DESCRIPTIFS**
Dossier de certification N° DA/003/03 rév.3 du 04/02/2015.
Ce document comprend 2 rubriques (4 pages).

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SURE**
Pour l'assemblage de bouchons, réducteurs ou amplificateur sur des enveloppes protégées par sécurité augmentée (pour les atmosphères Gaz) ou sur des enveloppes « Ex t » (pour les atmosphères poussière), l'aménagement et l'assemblage devra être en accord avec les documents descriptifs du fabriquant.

Température de service :
$-20°C \leq T_{service} \leq + 55°C$ pour toute la gamme
$-35°C \leq T_{service} \leq +95°C$ :
Polycarbonate référencé A9541016
$-35°C \leq T_{service} \leq +90°C$ :
Polyamide 6 référencé A9380300 et A9380301

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**
Couverte par les normes listées au point 15

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**
Néant.

13 **SCHEDULE**

14 **SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE**

**LCIE 03 ATEX 0033 U / 03**

16 **DESCRIPTIVE DOCUMENTS**
Certification file N° DA/003/03 rev.3 dated on 2015/02/04
This file includes 2 items (4 pages).

17 **SPECIAL CONDITIONS FOR SAFE USE**

For the assembling of the caps, reducers or amplifiers protected by increased safety enclosures (for Gas atmospheres) or on "Ex t" protected enclosures (for Dust atmospheres), the fitting up and the assembling realized shall be in accordance with the descriptive documents of the manufacturer.

Service temperature :
$-20°C \leq T_{service} \leq + 55°C$ for all the range
$-35°C \leq T_{service} \leq +95°C$ :
Polycarbonate referenced A9541016
$-35°C \leq T_{service} \leq +90°C$ :
Polyamide 6 referenced A9380300 and A9380301

18 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Covered by standards listed at 15

19 **ROUTINE VERIFICATIONS AND TESTS**
None.

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MEGGITT

# ATEX certificate:

## PTB 11 ATEX 1007 X

## for

## Stuffing gland

DE

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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CETTE PAGE EST LAISSÉE INTENTIONNELLEMENT VIDE
DIESE SEITE WURDE ABSICHTLICH LEER GELASSEN

## Physikalisch-Technische Bundesanstalt

**Braunschweig und Berlin**

PTB

# EG-Baumusterprüfbescheinigung

(1)

(2) Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen - **Richtlinie 94/9/EG**

(3) EG-Baumusterprüfbescheinigungsnummer

**PTB 11 ATEX 1007 X**

(4) Gerät: Kabel- und Leitungseinführung Typ blueglobe HT
Kabelverschraubung aus Messing vernickelt und Edelstahl

(5) Hersteller: Pflitsch GmbH & Co. KG

(6) Anschrift: Ernst-Pflitsch-Str. 1, 42499 Hückeswagen, Deutschland

(7) Die Bauart dieses Gerätes sowie die verschiedenen zulässigen Ausführungen sind in der Anlage und den darin aufgeführten Unterlagen zu dieser Baumusterprüfbescheinigung festgelegt.

(8) Die Physikalisch-Technische Bundesanstalt bescheinigt als benannte Stelle Nr. 0102 nach Artikel 9 der Richtlinie des Rates der Europäischen Gemeinschaften vom 23. März 1994 (94/9/EG) die Erfüllung der grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Geräten und Schutzsystemen zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen gemäß Anhang II der Richtlinie.

Die Ergebnisse der Prüfung sind in dem vertraulichen Bewertungs- und Prüfbericht PTB Ex 11-11042 festgehalten.

(9) Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit
**EN 60079-0:2009, EN 60079-7:2007, EN 60079-31:2009**

(10) Falls das Zeichen „X" hinter der Bescheinigungsnummer steht, wird auf besondere Bedingungen für die sichere Anwendung des Gerätes in der Anlage zu dieser Bescheinigung hingewiesen.

(11) Diese EG-Baumusterprüfbescheinigung bezieht sich nur auf Konzeption und Prüfung des festgelegten Gerätes gemäß Richtlinie 94/9/EG. Weitere Anforderungen dieser Richtlinie gelten für die Herstellung und das Inverkehrbringen dieses Gerätes. Diese Anforderungen werden nicht durch diese Bescheinigung abgedeckt.

(12) Die Kennzeichnung des Gerätes muss die folgenden Angaben enthalten:

**II 2 G Ex e IIC Gb**
**II 2 D Ex tb IIIC Db IP66, IP68**

ZSEx10100d.dot

Zertifizierungssektor Explosionsschutz
Im Auftrag

Braunschweig, 8. Juni 2011

Dr.-Ing. U. Klausmeyer
Direktor und Professor

Seite 1/3

EG-Baumusterprüfbescheinigungen ohne Unterschrift und ohne Siegel haben keine Gültigkeit.
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## Physikalisch-Technische Bundesanstalt

**Braunschweig und Berlin**

PTB

(13) # Anlage

(14) **EG-Baumusterprüfbescheinigung PTB 11 ATEX 1007 X**

(15) Beschreibung des Gerätes

Die Kabel- und Leitungseinführung Typ blueglobe HT, blueglobe HT AC und blueglobe HT TRI Kabelverschraubung aus Messing vernickelt, blank und Edelstahl dient zur Einführung von fest verlegten Kabeln und Leitungen in elektrische Betriebsmittel der Zündschutzart Erhöhte Sicherheit "e".

Die Kabel- und Leitungseinführung besteht aus Druckschraube, Doppelnippel mit metrischem Anschlussgewinde in unterschiedlichen Längen und einem Dichteinsatz aus Silikon.

Der Einbau erfolgt in Gehäuse mit Durchgangs- oder Gewindebohrungen. Bei Durchgangsbohrungen werden Gegenmuttern verwendet.

Zubehör ist die Baugruppe AC für stahlarmierte Kabel und Leitungen, die TRI-Feder für geschirmte Kabel und Leitungen sowie ein Kunststoffbolzen zum Verschließen von nicht benutzten Kabelverschraubungen.

Technische Daten

Nenngröße Anschlussgewinde ..... M 12 bis M 40

verwendbar für Kabel- und Leitungsdurchmesser ..... je nach Nenngröße von 4 mm bis 32 mm

geeignet für Geräte der Gerätegruppe II
mit dem Grad der mechanischen Gefahr ..... hoch

Mindestwandstärken
Einbau in Geräte mit Gewindebohrungen ..... 5,0 mm (Kunststoff)
..... 3,0 mm (Metall)
Einbau in Geräte mit Durchgangsbohrungen ..... 2,0 mm (Kunststoff)
..... 1,0 mm (Metall)

| | Einsatztemperaturbereich |
|---|---|
| Dichteinsatz und Dichtring Silikon | -55 °C bis +160 °C |
| Bolzen | -55 °C bis +90 °C |

Berührungs-, Fremdkörper- und Wasserschutz ..... IP 68 und IP66 nach EN 60529

| Gewindegröße | maximale Anzugsdrehmomente | |
|---|---|---|
| Metrisch | Doppelnippel | Druckschraube |
| M 12 | 5 Nm | 5 Nm |
| M 16 | 8 Nm | 8 Nm |
| M 20 | 10 Nm | 10 Nm |
| M 25 | 15 Nm | 15 Nm |
| M 32 | 15 Nm | 15 Nm |
| M 40 | 20 Nm | 20 Nm |

Seite 2/3

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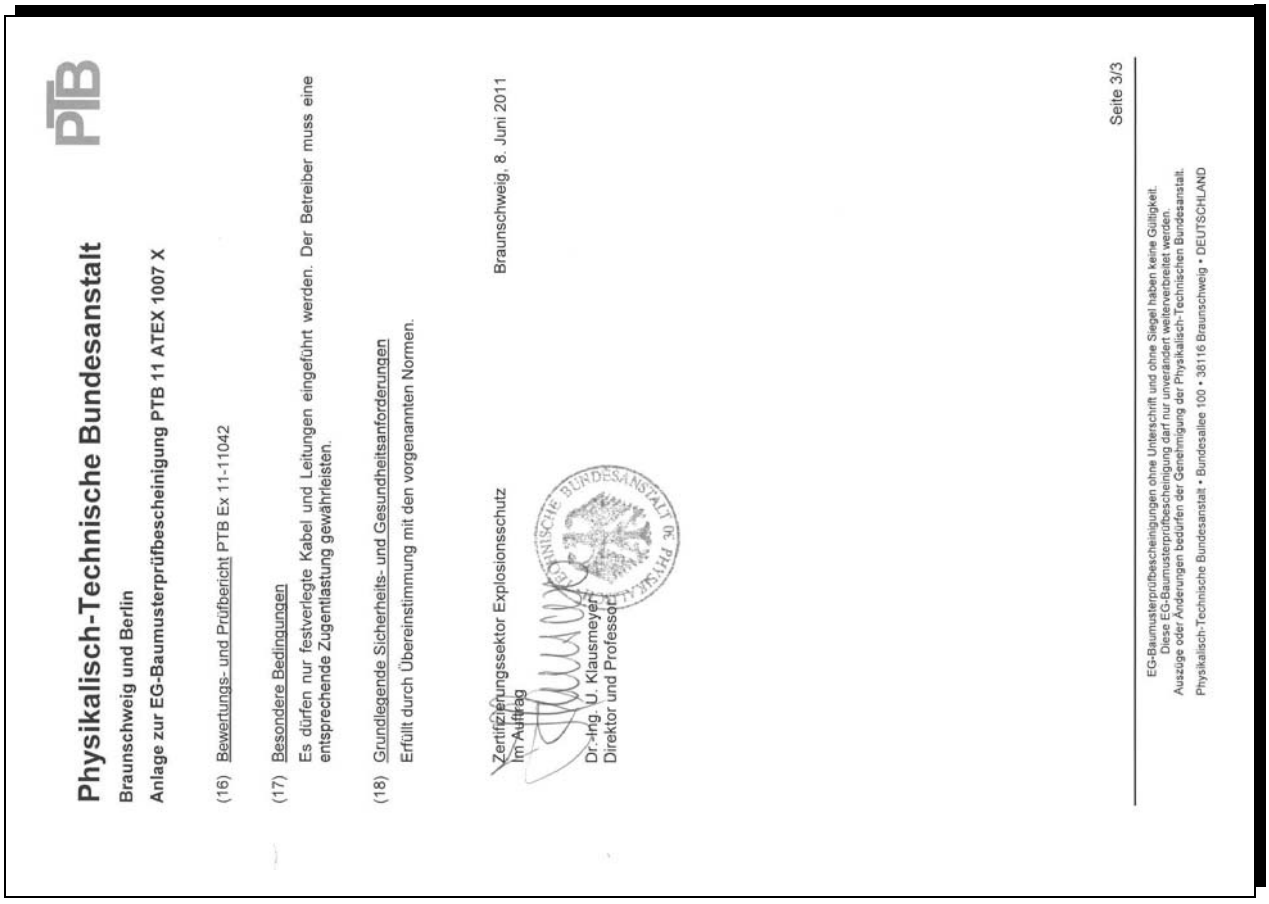

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

Anlage zur EG-Baumusterprüfbescheinigung PTB 11 ATEX 1007 X

(16) Bewertungs- und Prüfbericht PTB Ex 11-11042

(17) Besondere Bedingungen

Es dürfen nur festverlegte Kabel und Leitungen eingeführt werden. Der Betreiber muss eine entsprechende Zugentlastung gewährleisten.

(18) Grundlegende Sicherheits- und Gesundheitsanforderungen

Erfüllt durch Übereinstimmung mit den vorgenannten Normen.

Zertifizierungssektor Explosionsschutz
Im Auftrag

Braunschweig, 8. Juni 2011

Dr.-Ing. U. Klausmeyer
Direktor und Professor

Seite 3/3

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Physikalisch-Technische Bundesanstalt • Bundesallee 100 • 38116 Braunschweig • DEUTSCHLAND

# ATEX certificate:

EN

## PTB 98 ATEX 3130

## for

## Cable stuffing glands

Meggitt SA
Route de Moncor 4
PO Box 1616
1701 Fribourg
Switzerland



energy@ch.meggitt.com
www.meggittsensing.com/energy

**Physikalisch-Technische Bundesanstalt**

**Braunschweig und Berlin**

PTB

(1) **EC-TYPE-EXAMINATION CERTIFICATE**

**(Translation)**

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

**PTB 98 ATEX 3130**

(4) Equipment: Dummy plugs type GHG 960 663.P....

(5) Manufacturer: CEAG Sicherheitstechnik GmbH

(6) Address: Neuer Weg Nord 49, D-69412 Eberbach

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report PTB Ex 98-30021.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50014:1992 EN 50019:1994

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design and construction of the specified equipment in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.

(12) The marking of the equipment shall include the following:

Ex **II 2 G EEx e II**

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, November 12, 1998

Dr.-Ing. U. Engel
Regierungsdirektor

sheet 1/2

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
In case of dispute, the German text shall prevail.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • D-38116 Braunschweig

**Physikalisch-Technische Bundesanstalt**

**Braunschweig und Berlin**

PTB

(13) **SCHEDULE**

(14) **EC-TYPE-EXAMINATION CERTIFICATE PTB 98 ATEX 3130**

(15) Description of equipment

The type GHG 960 663.P... dummy plugs made of polyamide serve to close threaded holes for cable entries in enclosures of the type of protection increased safety "e". Installation in clearance holes is with lock nuts made of brass or polyamide.

Technical data

| Nominal size | Installation in encloses of wall thickness |
|---|---|
| M 16 x 1,5 | ≥ 3,5 mm |
| M 20 x 1,5 | ≥ 3,5 mm |
| M 25 x 1,5 | ≥ 3,5 mm |
| M 32 x 1,5 | ≥ 3,5 mm |
| M 40 x 1,5 | ≥ 3,5 mm |
| M 50 x 1,5 | ≥ 3,5 mm |
| range of temperature of use: | -55 °C to +95 °C |
| range of temperature of ambient: | -55 °C to +55 °C |
| Suitability for equipment of group II with a degree of mechanical hazard: | high |
| Protection against contact, foreign matter and water: | at least IP 54 acc. to EN 60 529:1991 |

(16) Test report PTB Ex 98-30021 (comprising 3 pages, description and drawing)

(17) Special conditions for safe use

not applicable

(18) Essential health and safety requirements

The degree of protection - at least IP 54 according to EN 60529:1991 - is guaranteed only by appropriate selection of the dummy plugs and proper installation in the equipment.

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, Novermber 12,1998

Dr.-Ing. U. Engel
Regierungsdirektor

sheet 2/2

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
In case of dispute, the German text shall prevail.

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## Physikalisch-Technische Bundesanstalt

**Braunschweig und Berlin**

# 1. SUPPLEMENT

**according to Directive 94/9/EC Annex III.6**

**to EC-TYPE-EXAMINATION CERTIFICATE PTB 98 ATEX 3130**

**(Translation)**

Equipment: Dummy plugs, type GHG 960 663. P.

Marking: Ⓔx **II 2 G EEx e II**

Manufacturer: CEAG Sicherheitstechnik GmbH

Address: Neuer Weg Nord 49
69412 Eberbach, Germany

Description of supplements and modifications

According to EN 50281-1-1:1998 the type GHG 960 663.P... dummy plugs may also be used in areas in which explosive atmospheres with dust/air mixtures have to be expected to occur occasionally.

The marking is therefore changed to read:

Ⓔx **II 2 G/D EEx e II IP66**

Test report: PTB Ex 03-13301

Zertifizierungsstelle Explosionsschutz
By order:
Dipl.-Phys. U. Völker

Braunschweig, September 18, 2003

Sheet 1/1

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
In case of dispute, the German text shall prevail.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • 38116 Braunschweig, Germany

## Physikalisch-Technische Bundesanstalt

**Braunschweig und Berlin**

Physikalisch-Technische Bundesanstalt • Postfach 33 45 • 38023 Braunschweig

Cooper-Crouse Hinds GmbH
z. Hd. Frau Frankhauser

Neuer Weg Nord 49
69412 Eberbach

Ihr Zeichen:
Ihre Nachricht vom: 29.11.2007
Unser Zeichen:
Unsere Nachricht vom:

Bearbeitet von: Dr. Monika Schumann
Telefondurchwahl: +49 (0) 531-592-3515
Telefaxdurchwahl: +49 (0) 531-592-3505
E-Mail: Monika.Schumann@ptb.de

Datum: 14. Januar 2008

**Normengenerationsänderung nach EN 60079-0 ff, EN 6124-0 ff**
**Blindstopfen Typ / dummy plug type GHG 960 663. P....,**
**PTB 98 ATEX 3130**

Sehr geehrte Frau Frankhauser,

es bestehen keine sicherheitstechnischen Bedenken,

den Blindstopfen Typ GHG 960 663. P.... mit folgenden Kennzeichnungen zu versehen:

Ⓔx II 2 G Ex e II

Ⓔx II 2 D Ex tD A21 IP66

Wir bitten Sie, diese Änderungen bei zukünftigen Ergänzungen mit aufzunehmen.

Translation

there are no safety-related objections from PTB to mark

the dummy plug type GHG 960 663.P... as follows

Ⓔx II 2 G Ex e II

Ⓔx II 2 D Ex tD A21 IP66

We would like to ask you to include this change into the next supplement.

Mit freundlichen Grüßen
Im Auftrag
Schumann
Dr. Schumann
Regierungsrätin

600 00 009

Hausadresse, Lieferanschrift:
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38116 Braunschweig
Deutschland

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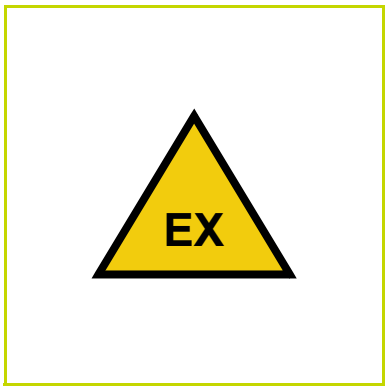
PTB Berlin-Charlottenburg
Abbestraße 2-12
10587 Berlin
Deutschland

EX CERTIFICATE – ATEX

vibro-meter®

# SEV 15 ATEX 0151
# for
# cable fittings (stuffing glands)

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Document reference SEV 15 ATEX 0151
Edition 2 – October 2020

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www.meggitt.com

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eurofins | Electrosuisse Product Testing

# Attestation d'Examen UE de Type

(1)

(2) Matériel et systèmes de protection destinés à être utilisés en atmosphères explosibles - **Directive 2014/34/UE**

(3) Numéro de l'attestation d'examen: **SEV 15 ATEX 0151**

(4) Produit: Presse-étoupe et accessoires
Type Progress *** ***** KB EX

(5) Fabricant: Agro AG

(6) Adresse: Korbackerweg 7, 150, 5502 Hunzenschwil, SWITZERLAND

(7) Le type de ce produit ainsi que toute autre variante acceptable de celui-ci sont spécifiés dans l'annexe de cette attestation d'examen.

(8) Eurofins, comme organisme notifié n° 1258, conformément à l'article 17 de la Directive 2014/34/UE du Parlement des Communautés européennes et du Conseil du 26 février 2014, certifie que les Exigences Essentielles de Santé et de Sécurité relatives à la conception et à la construction de produits destinés à être utilisés en atmosphères explosibles, telles qu'énoncées à l'Annexe II de la directive, sont remplies.

Les résultats de l'examen sont consignés dans le rapport d'essai confidentiel. 18-Ex-0130.01

(9) Les Exigences Essentielles de Santé et de Sécurité sont remplies par la conformité à:

**EN 60079-0:12 + A11:13** **EN 60079-31:14** **EN 60079-7:15**

Les conditions spécifiées au point 18 constituent une exception.

(10) Lorsque le numéro de l'attestation est suivi du signe « X », celui-ci renvoie aux conditions spéciales de sécurité d'utilisation du produit, telles que spécifiées dans l'annexe de cette attestation.

(11) La présente attestation d'examen UE de type porte exclusivement sur la conception et la construction du produit spécifié. D'autres exigences de cette directive s'appliquent à la fabrication et à la mise sur le marché du produit, celles-ci ne font cependant pas l'objet de cette attestation.

(12) Le produit portera un marquage incluant les éléments suivants:

**II 2 G Ex eb IIC Gb**
**II 2 D Ex tb IIIC Db**

**Eurofins Electrosuisse Product Testing AG**
**Notified Body ATEX**

Martin Plüss
Product Certification



eurofins | Electrosuisse Product Testing

(13) # Annexe

(14) **Attestation d'Examen UE de Type no. SEV 15 ATEX 0151**

(15) **Description du produit**
Les presse-étoupe Progress *** KB Ex laiton ou acier servent à monter des câbles et conduites dans du matériel électrique présentant une enveloppe à sécurité augmentée «eb» et protection par enveloppe «tb». Le montage se fait dans le boîtier par des trous filetés ou des trous de passage.
Les presse-étoupe se composent essentiellement de l'écrou de pression, du manchon et du joint d'étanchéité. La décharge de traction se fait par le joint d'étanchéité ou par un système supplémentaire de décharge.
Les accessoires comprennent des réductions, des extensions, des pièces de verrouillage et des contre-écrous.

Désignations des types
Progress MS **** KB EX (M16…M63; Pg9…Pg48; NPT3/8"…NPT2")
Progress S2 **** KB EX (M12…M63; Pg7…Pg48; NPT1/4"…NPT2")
Progress S4 **** KB EX (M12…M63; Pg7…Pg48; NPT1/4"…NPT2")
Adaptateurs filetés (réductions, extensions) MS EX (M16…M63; Pg9…Pg48)
Adaptateurs filetés (réductions, extensions) S2 EX (M12…M63; Pg7…Pg48)
Adaptateurs filetés (réductions, extensions) S4 EX (M12…M63; Pg7…Pg48)
Lamelles de blocage MS EX; S2 EX; S4 EX (M8…M63; Pg7…Pg48)
Contre-écrous MS EX; S2 EX; S4 EX (M8…M63; Pg7…Pg48)

Progress MS EMV easyCONNECT KB EX
(Laiton nickeleé avec mâchoires de serrage, M16…M63; Pg9…Pg48; NPT3/8"…NPT2")
Progress S2 EMV easyCONNECT KB Ex
(Laiton nickeleé avec mâchoires de serrage, M12…M63; Pg7…Pg48; NPT1/4"…NPT2")
Progress S4 EMV easyCONNECT KB Ex
(Laiton nickeleé avec mâchoires de serrage, M12…M63; Pg7…Pg48; NPT1/4"…NPT2")

Classification de l'installation et utilisation: fixe
Indice de protection: IP 66 / IP68
Plage de température ambiante nominale: -60 °C … +100 °C pour types de métal

(16) **Rapport d'essai** 18-Ex-0130.01

(17) **Conditions spéciales**
Aucune

(18) **Exigences Essentielles de Santé et de Sécurité**
Outre les Exigences Essentielles de Santé et de Sécurité remplies par les normes spécifiées au point 9, les conditions suivantes, prises en compte dans le rapport d'essai, sont également importantes:
**Paragraphe** **Thème**
Aucune

(19) **Dessins et documents**
Voir rapport d'essai « Documents du fabricant »

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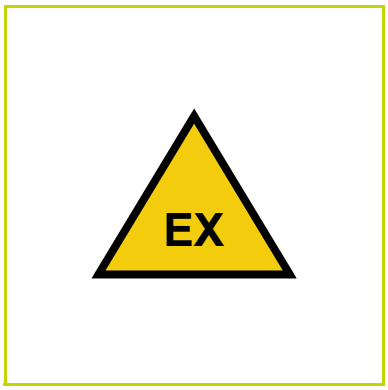
EX CERTIFICATE – ATEX

vibro-meter®

# SEV 15 ATEX 0152 X
# for
# cable fittings (stuffing glands)

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Document reference SEV 15 ATEX 0152 X
Edition 3 – October 2020

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eurofins

# Attestation d'Examen UE de Type

(1)

(2) Matériel et systèmes de protection destinés à être utilisés en atmosphères explosibles - **Directive 2014/34/UE**

(3) Numéro de l'attestation d'examen: **SEV 15 ATEX 0152 X**

(4) Produit: Presse-étoupe et accessoires Type Progress *** ***** EX

(5) Fabricant: Agro AG

(6) Adresse: Korbackerweg 7, 5502 Hunzenschwil, SWITZERLAND

(7) Le type de ce produit ainsi que toute autre variante acceptable de celui-ci sont spécifiés dans l'annexe de cette attestation d'examen.

(8) Eurofins, comme organisme notifié n° 1258, conformément à l'article 17 de la Directive 2014/34/UE du Parlement des Communautés européennes et du Conseil du 26 février 2014, certifie que les Exigences Essentielles de Santé et de Sécurité relatives à la conception et à la construction de produits destinés à être utilisés en atmosphères explosibles, telles qu'énoncées à l'Annexe II de la directive, sont remplies.

Les résultats de l'examen sont consignés dans le rapport d'essai confidentiel.
18-Ex-0130.02 + .02 E1 + .02 E2

(9) Les Exigences Essentielles de Santé et de Sécurité sont remplies par la conformité à:

**EN 60079-0:2012+A11:13** **EN 60079-31:14** **EN 60079-7:15**

Les conditions spécifiées au point 18 constituent une exception.

(10) Lorsque le numéro de l'attestation est suivi du signe « X », celui-ci renvoie aux conditions spéciales de sécurité d'utilisation du produit, telles que spécifiées dans l'annexe de cette attestation.

(11) La présente attestation d'examen UE de type porte exclusivement sur la conception et la construction du produit spécifié. D'autres exigences de cette directive s'appliquent à la fabrication et à la mise sur le marché du produit, celles-ci ne font cependant pas l'objet de cette attestation.

(12) Le produit portera un marquage incluant les éléments suivants:

**II 2 G Ex eb IIC Gb**
**II 2 D Ex tb IIIC Db**

**Eurofins Electrosuisse Product Testing AG**
**Notified Body ATEX**

Martin Plüss
Product Certification



eurofins

(13) # Annexe

(14) **Attestation d'Examen UE de Type no. SEV 15 ATEX 0152 X**

(15) **Description du produit**

Les presse-étoupe Progress *** KB Ex en plastique, laiton ou acier servent à monter des câbles et conduites dans du matériel électrique présentant une enveloppe à sécurité augmentée «eb» et protection par enveloppe «tb». Le montage se fait dans le boîtier par des trous filetés ou des trous de passage.
Les presse-étoupe se composent essentiellement de l'écrou de pression, du manchon et du joint d'étanchéité. La décharge de traction se fait par le joint d'étanchéité ou par un système supplémentaire de décharge. Les accessoires comprennent des réductions, des extensions, des pièces de verrouillage et des contre-écrous.

Désignations des types

| | |
|---|---|
| Progress MS **** KB EX (M12; Pg7; NPT1/4") | [résistance aux chocs réduite] |
| Progress MS **** EX (M8…M12; Pg7; NPT1/8"…NPT1/4") | [résistance aux chocs réduite] |
| Progress S2 **** EX (M8…M10; NPT1/8") | [résistance aux chocs réduite] |
| Progress S4 **** EX (M8…M10; NPT1/8") | [résistance aux chocs réduite] |
| Progress MS **** EX (M16…M63; Pg9…Pg48; NPT3/8"…NPT2") | |
| Progress S2 **** EX (M12…M63; Pg7…Pg48; NPT1/4"…NPT2") | |
| Progress S4 **** EX (M12…M63; Pg7…Pg48; NPT1/4"…NPT2") | |
| Progress GFK*** EX (M16…M63; Pg9…Pg48) | [résistance aux chocs réduite] |
| Adaptateurs filetés (réductions, extensions) MS EX (M8…M12; Pg7) | [résistance aux chocs réduite] |
| Adaptateurs filetés (réductions, extensions) S2 EX (M8…M10) | [résistance aux chocs réduite] |
| Adaptateurs filetés (réductions, extensions) S4 EX (M8…M10) | [résistance aux chocs réduite] |

En supplément, les variantes client suivantes sont incluses:
EX1000.12.91.900; EX1100.12.91.900; EX1700.12.86.901.91; EX1700.12.86.903.91;
EX1700.17.86.900.91; EX1710.12.86.901.91; EX1710.12.86.903.91; EX1710.17.86.900.91;
Progress MS FK EX, A2 FK EX, A4 FK EX, no d'article EX130*.75.*620.140
Progress MS EMV easyCONNECT KB EX
(Laiton nickelеé avec mâchoires de serrage, M12; Pg7; NPT1/4") [résistance aux chocs réduite]

| | |
|---|---|
| Classification de l'installation et utilisation: | mobile / fixe / portatif |
| Indice de protection: | IP 66 / IP68 |
| Plage de température ambiante nominale: | -60 °C … +100 °C pour types de métal |
| | -20 °C … +85 °C pour types GFK |
| | -50 °C … +60 °C pour MS FK EX, A2 FK EX, A4 FK EX |



MEGGITT

Original copy (English)

eurofins

(16) **Rapport d'essai** 18-Ex-0130.02 + .02 E1 + .02 E2

(17) **Conditions spéciales**

- Les types à faible force de traction sont destinés uniquement aux conduites et câbles fixes. L'utilisateur doit garantir une décharge de traction appropriée. (Non valable pour Progress MS ***** KB EX (M12; PG7; NPT1/4"))
- Les types à faible énergie de choc sont à monter dans le boîtier de sorte à assurer leur protection mécanique contre l'énergie de choc conformément au paragraphe 26.4.2 de la norme européenne EN 60079-0.

(18) **Exigences Essentielles de Santé et de Sécurité**

Outre les Exigences Essentielles de Santé et de Sécurité remplies par les normes spécifiées au point 9, les conditions suivantes, prises en compte dans le rapport d'essai, sont également importantes:

| **Paragraphe** | **Thème** |
|---|---|
| Aucune | |

(19) **Dessins et documents**

Voir rapport d'essai « Documents du fabricant »

# APPENDIX C: cCSAus CERTIFICATIONS

**Table C-1:** Related cCSAus certificates

| Product(s) covered | Certificate number |
|---|---|
| CA134 | cCSAus 1636188 |
| CA20x | cCSAus 70004630 |
| CA28x, CE28x and CE31x | cCSAus 1514310 |
| CA30x | cCSAus 1550831 |
| GSI127 | cCSAus 70001999 |
| IPC707 | cCSAus 70198728 |

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MEGGITT

EN

# cCSAus certificate:

# 1636188

# for

# CA 134

EX

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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CSA Group

# Certificate of Compliance

**Certificate:** 1636188 (LR 62075) **Master Contract:** 175074

**Project:** 70002267 **Date Issued:** February 28, 2014

**Issued to:** **Meggitt SA**

**Rte de Moncor 4**
**Villars-sur-Glane, 1752**
**Switzerland**
**Attention: Mr. Carlo Pellegrinelli**

***The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.***

C US

T. Munteanu

**Issued by:** T. Munteanu, P.Eng.

**PRODUCTS**

**CLASS 2258 84** - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - - For Hazardous Locations - Certified to US Standards

**CLASS 2258 04** - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - For Hazardous Locations

CLASS I, Division 1, Groups A, B, C and D

**Acceleration transducer Type 144-134-000-YYY**

Intrinsically safe with entity parameters when connected per drawing PZ6920

**Ratings:**

Vmax≤ 28 Vdc, Imax≤100 mA. (for linear source) 25 mA (for non linear source), Pi≤0.7W

Ci=1.2 nF, capacitance of the integral cable is 0,250 nF/m.

Li=0 mH

**Temperature code:**

Ambient temperatures are as follows:



CSA Group



* -200°C/ + 500°C for sensor and cable

*-200°C/ +500°C for sensor with high temperature VM connector

* -65°C/ + 200°C for connector Type M83723/89Y1020 or equivalent

* -65°C/ + 150°C for LEMO connector Type 0 or equivalent

The relation between maximum ambient temperature and temperature class is as follows for all devices, taking into account the above mentioned temperature ranges.

Maximum ambient temperature:

Ta<+430 °C for T1

Ta<+280 °C for T2

Ta<+180 °C for T3

Ta<+115 °C for T4

Ta<+80 °C for T5

Ta<+75 °C for T6

The maximum temperature, for ambient higher than 430 °C is the process temperature minus 10K.

**APPLICABLE REQUIREMENTS**

CAN/CSA-C22.2 No. 61010-1-04 - Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements

CSA Std. C22.2 No 157-92 (R 2012) - Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations

UL 61010C-1 - Standard for Process Control Equipment

UL 913, Ed 6th - Standard for Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, III, Division 1, Hazardous (Classified) Locations

**MARKINGS**

1. Submittor's identification (company name);

2. Factory identifier; Made in Switzerland

3. Model designation; 144-134-000-YYY

4. Electrical rating;

CSA Group

*Supplement to Certificate of Compliance*

**Certificate:** 1636188 **Master Contract:** 175074

*The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.*

**Product Certification History**

| Project | Date | Description |
|---|---|---|
| 70002267 | Feb 28, 2014 | cCSAus report update for modification of Accelerometer 144-134-000-XXX. |
| 2421976 | May 5, 2011 | Update Report 1636188 to include the change of legal entity name |
| **History** | | |
| 1636188 | March 22, 2005 | Original Certification. |

DQD 507 Rev. 2012-05-22 Page: 1



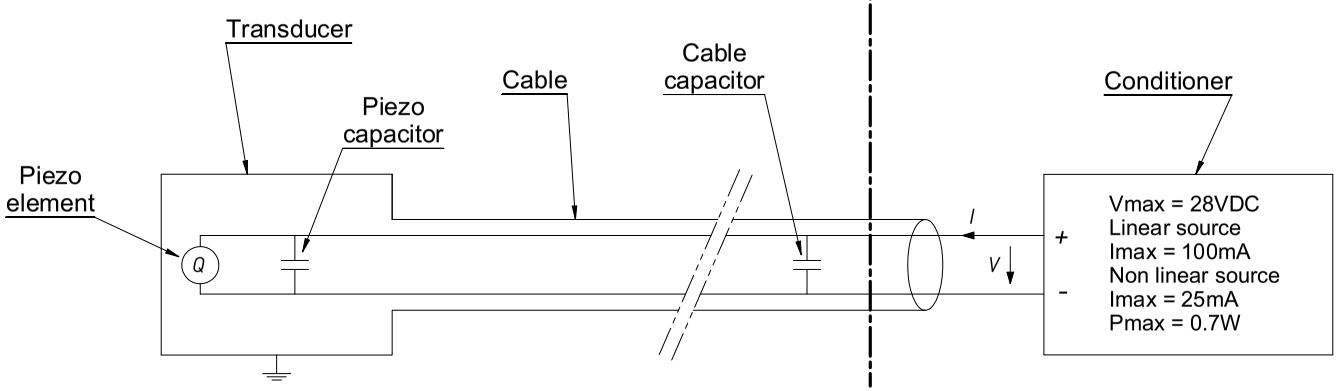
CSA Group

**Certificate:** 1636188 (LR 62075) **Master Contract:** 175074

**Project:** 70002267 **Date Issued:** February 28, 2014

5. Serial Number or Date of manufacture;
6. The cCSAus Monogram;
7. Hazardous area : Class I, Div 1, Groups A,B,C,D
8. Ex ia Tx/ AEx ia Tx
9. Entity Parameters: Vmax, Imax, Ci, Li, Pi
10. Intrinsically safe when connected per Control Drawing PZ6920

DQD 507 Rev. 2012-05-22 Page: 3




**Transducer CA 134**

Transducer Ci < 1nF
Transducer Li = 0
Transducer Ri = 0

Cable Ci = 250pF/m x cable length (pole to pole)
Cable Li = 0
Cable Ri = 0

WARNING:
- THIS PRODUCT MAY NEITHER BE MODIFIED OR REPAIRED

ATTENTION
- CE PRODUIT NE PEUT PAS ETRE MODIFIE OU REPARE

Environmental conditions

- Pollution degree : 2
- Installation category : CAT I
- Altitude : 2000 m Max
- Humidity : 80% Max relative humidity
- Electrical supply voltage fluctuation : No supply voltage (charge generator)
- Outdoor use statement : Outdoor use
- Temperature operational
  - sensor : -200°C to +500°C
  - cable : -200°C to +500°C
  - connectors : -200°C to +500°C
  - : -65°C to +200°C
  - : -65°C to +150°C

- Warning: This product may neither be modified or repaired.
- Coordinates to obtain Technical assistance provided.
  Meggitt SA, P.O. Box 1616, Route de Moncor 4, 1701 Fribourg, Switzerland, phone +41 26 407 11 11
- The product is intended to be used with certified signal conditioner and safety barrier.
- To ensure an installation conform with an explosive environment, it is crucial to respect the criteria mentioned into the corresponding Ex certificates.

Notes

1. Ex ia is defined as intrinsically safe.
2. Install associated apparatus in accordance with manufacturers instructions.

NO MODIFICATION ALLOWED
WITHOUT PRIOR AUTORISATION
OF NOTIFIED BODY

| Rev. | Date | Change N° | Drawn | Appr. | Description |
|---|---|---|---|---|---|

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| | | |
|---|---|---|
| MFR S3960 | MSS-CAD | MEGGiTT |
| Scale 1:1 | Format A3 | Meggitt SA, Rte de Moncor 4, CH-1752 Villars-sur-Glâne, Switzerland |

Material: | Repl.by: | Repl.for:

Linear Tolerances [mm]: › 0,5 … 3 | › 3 … 6 | › 6 … 30 | › 30 … 120 | › 120 … 400 | › 400 … 1000 | › 1000 … 2000 | › 2000 … 4000 — all -

Radius / Chamfers [mm]: › 0,5 … 3 | › 3 … 6 | › 6 — all -

Tol. on angle [°] (L [mm]): … 10 | › 10 … 50 | › 50 … 120 | › 120 … 400 — all -

| | | |
|---|---|---|
| Drawn | 27.08.13 | C.Pellegrinelli |
| Check. | 27.08.13 | H-P.Aeby |
| Appr. | 27.08.13 | J.Perriard |

Accelerometer 144-134-000-XXX

Wiring diagram Ex

DWG.N° PZ 6920

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# cCSAus certificate:

EN

## 70004630

## for

## CA 20x

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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CSA Group

# Certificate of Compliance

**Certificate:** 70004630 **Master Contract:** 175074

**Project:** 70004630 **Date Issued:** August 26, 2014

**Issued to:** **MEGGITT SA**
**Route de Moncor 4**
**1752 Villars sur Glâne**
**SWITZERLAND**

**Attention: Mr Carlo Pellegrinelli**

***The products listed below are eligible to bear the CSA Mark shown with adjacent indicators "C" and "US".***

C US

**Issued by: E Giusti**
E Giusti

**PRODUCTS**

**CLASS 2258 02 -** PROCESS CONTROL EQUIPMENT - For Hazardous Locations
**CLASS 2258 82 -** PROCESS CONTROL EQUIPMENT - For Hazardous Locations - Certified to US Standards

Class I Division 2 Group A, B, C, D
Ex nA IIC T6 to T2 Gc
Class I Zone 2 AEx nA IIC T6 to T2 Gc

Accelerometer Type 144-20X-000-YYY
X defines the design of the sensor head (0 to 9)
YYY depend of the connector type and cable length

Ratings: U≤28V, I≤100mA, P ≤0.7W
Operating ambient Temperature: -55°C to +260°C

Temperature codes are as follows:
* T6 at Tamb. +80°C
* T5 at Tamb. +95°C
* T4 at Tamb. +130°C



CSA Group

**Certificate:** 1636189 **Master Contract:** 175074

**Project:** 70004631 **Date Issued:** August 26, 2014, 2014

* T3 at Tamb. +195°C
* T2 at Tamb. +290°C

For details related to rating, size, configuration, etc. reference should be made to the CSA Certification Record or the descriptive report.

Note: The supply side of the cable is either provided with flying leads or connector, it is the end user responsibility to install this supply side as per National Codes (Canadian Electircal code or NFPA 70).

**APPLICABLE REQUIREMENTS**

| | |
|---|---|
| CAN/CSA C22.2 No. 0-2010: | General Requirements - Canadian Electrical Code, Part II |
| CAN/CSA C22.2 No. 142- 2009: | Process control equipment |
| CAN/CSA C22.2 No. 213-2008: | Non-incendive electrical equipment for use in class I, Division 2 hazardous locations |
| CAN/CSA C22.2 No. 60079-0:11: | Electrical apparatus for explosive gas atmospheres – Part 0: General requirements |
| CAN/CSA C22.2 No. 60079-15:12: | Electrical apparatus for explosive gas atmospheres – Part 15: type of protection "n" electrical apparatus |
| ANSI/UL 916: 2013: | Energy management equipment |
| ANSI/ISA 60079-0 (12.00.01): 2009: | Electrical Apparatus for Use in Class I, Zone 0, 1 & 2 Hazardous (Classified) Locations: General requirements |
| ANSI/ISA 60079-15 (12.00.02): 2009 | Electrical Apparatus for Use in Class I, Zone 2 Hazardous (Classified) Locations - Part 15: Equipment protection by type of protection "n" |
| AINSI/ISA-12.12.01: 2013: | Nonincendive Electrical Equipment for use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (classified) locations |

**MARKINGS**

The following markings appear, engraved on the body of the product:

CSA Monogram with NRTL/C or C/US indicator
Submittor's identification and/or CSA master contract number "175074" adjacent to the CSA Monogram
Model designation
Serial number
A code traceable to the month and year of manufacture
Electrical rating
Hazardous Location designation: Class I, Division 2, Groups A, B, C and D
Ex nA IIC T6 to T2 Gc
Class I Zone 2 AEx nA IIC T6 to T2 Gc
Ambient temperature
Reference to installation drawing PZ6948

CSA Group

*Supplement to Certificate of Compliance*

**Certificate:** 70004630 **Master Contract:** 175074

*The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.*

**Product Certification History**

| Project | Date | Description |
|---|---|---|
| 70004630 | August 26, 2014 | Original certification for Accelerometer type 144-20X-000-YYY |

DQD 507 Rev. 2012-05-22 Page 1

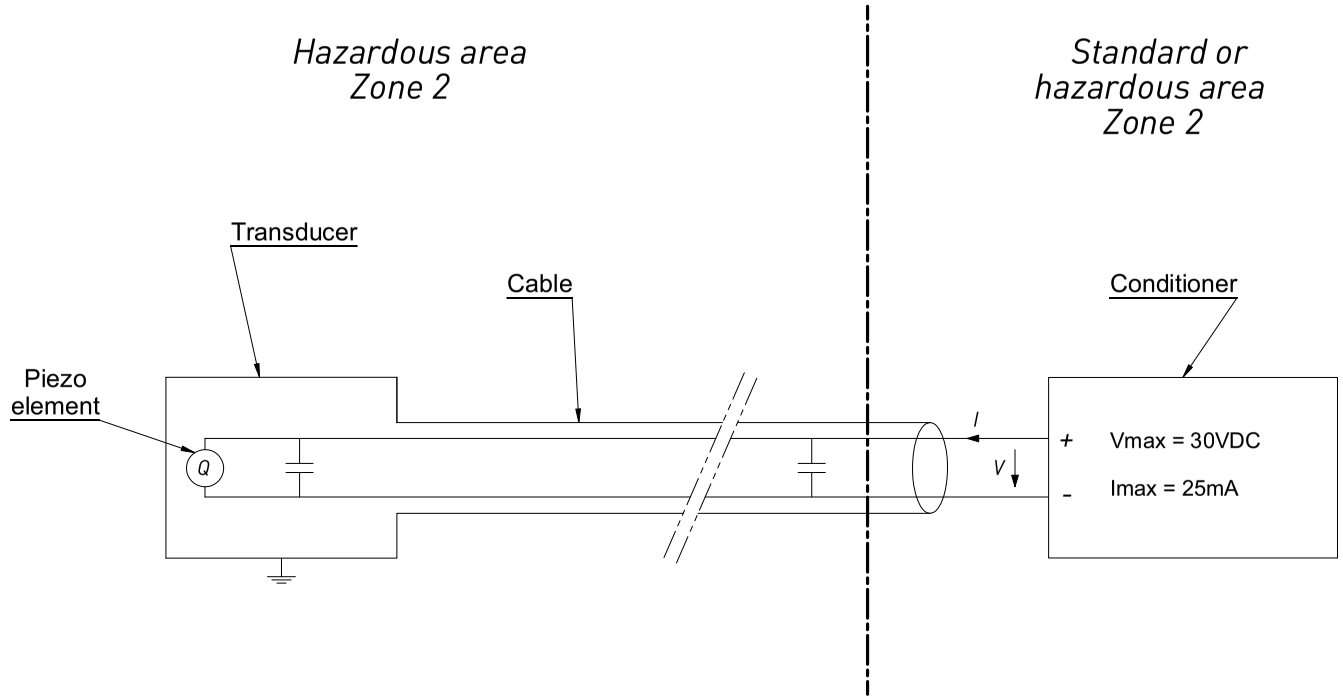
CSA Group

**Certificate:** 1636189 **Master Contract:** 175074

**Project:** 70004631 **Date Issued:** August 26, 2014

Jurisdictions in Canada may require these markings to be also in French. It is the responsibility of the Customer to provide bilingual marking, where applicable, in accordance with the requirements of the Provincial Regulatory Authorities. It is the responsibility of the Customer to determine this requirement and have bilingual wording added to the "Markings".

DQD 507 Rev. 2012-05-22 Page 3




WARNING:
- THIS PRODUCT MAY NEITHER BE MODIFIED OR REPAIRED

ATTENTION
- CE PRODUIT NE PEUT PAS ETRE MODIFIE OU REPARE

NO MODIFICATION ALLOWED
WITHOUT PRIOR AUTORISATION
OF NOTIFIED BODY

Environmental conditions

| | |
|---|---|
| - Pollution degree | : 2 |
| - Installation category | : CAT I |
| - Altitude | : 2000 m Max |
| - Humidity | : 80% Max relative humidity |
| - Electrical supply voltage fluctuation | : No supply voltage (charge generator) |
| - Outdoor use statement | : Outdoor use |
| - Temperature operational | : -55°C to +260°C |

- Warning: This product may neither be modified or repaired.
- Coordinates to obtain Technical assistance provided.
  Meggitt SA, P.O. Box 1616, Route de Moncor 4, 1701 Fribourg, Switzerland, phone +41 26 407 11 11
- To ensure an installation conform with an explosive environment, it is crucial to respect
  the criteria mentioned into the corresponding Ex certificates.

| Rev. | Date | Change N° | Drawn | Appr. | Description |
|---|---|---|---|---|---|

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| MFR | MSS-CAD |
|---|---|
| S3960 | |
| Scale | Format |
| 1:1 | A3 |

MEGGiTT
Meggitt SA
Rte de Moncor 4, CH-1752 Villars-sur-Glâne, Switzerland

| Material: | Repl.by: | Repl.for: |
|---|---|---|

| Linear Tolerances [mm] | | | | | | | | | Radius / Chamfers [mm] | | | Tol. on angle [°] | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| › 0,5 ... 3 | › 3 ... 6 | › 6 ... 30 | › 30 ... 120 | › 120 ... 400 | ›400 ...1000 | ›1000 ...2000 | ›2000 ...4000 | | › 0,5 ... 3 | › 3 ... 6 | › 6 | ... 10 | › 10 ... 50 | › 50 ... 120 | › 120 ... 400 | L [mm] |
| - | - | - | - | - | - | - | - | | - | - | - | - | - | - | - | |

| | | |
|---|---|---|
| Drawn | 31.01.14 | C.Pellegrinelli |
| Check. | 31.01.14 | H-P.Aeby |
| Appr. | 31.01.14 | J.Perriard |

Accelerometer 144-20X-000-YYY
Wiring diagram

DWG.N°
PZ 6948

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# cCSAus certificate:

EN

## 1514310

## for CA 28x, CE 28x and CE 31x

EX

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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# Certificate of Compliance

**Certificate:** 1514310 **Master Contract:** 175074

**Project:** 70097496 **Date Issued:** 2016-12-12

**Issued to:** **Meggitt SA**
**Rte de Moncor 4**
**Villars-sur-Glane, Fribourg 1752**
**SWITZERLAND**
**Attention: Carlo Pellegrinelli**

***The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.***

**Issued by:** Hossein Saleh
Hossein Saleh

**PRODUCTS**

CLASS – 2258 04 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - For Hazardous Locations
CLASS – 2258 84 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - For Hazardous Locations - Certified to US Standards

**Class I, Division 1, Groups A, B, C and D**

Accelerometers Type CE 28X (sensor with remote electronic) P/N 444-28X-000-YY1, and Type CE 31X (sensor with integrated electronic) P/N 444-28X-000-YY1

The sensor converts mechanical forces (e.g. vibrations) of the equipment to which it is mounted into an electrical signal sent to a conditioner (remote, or integrated, respectively) that sends out a modulated current output signal. Intrinsically safe with entity parameters when connected per drawing PZ6684, and PZ6692, respectively.

Ratings:

In type of protection intrinsic safety Ex ia, only for connection to a certified intrinsically safe circuit, with the following entity parameters:





| Part Number | Power Source Type | Vmax | Imax | Li | Ci |
|---|---|---|---|---|---|
| 444-28X-000-YY1 | Linear | 28 V | 100 mA | 0 mH | 10.45 nF |
| 444-31X-000-YY1 | Linear | 28 V | 100 mA | 0 mH | 10.45 nF |

Ambient Temperature Range:

| Type Description | Part Number | Ambient Temperature | |
|---|---|---|---|
| | | Conditioner | Sensor and cable |
| Sensor and remote electronic | 444-28X-000-YY1 | -55 °C to +100 °C | -55 °C to +260 °C |
| Sensor and integrated electronic | 444-31X-000-YY1 | -55 °C to +125 °C | |

Temperature Code:

| Part Number | T6 | T5 | T4 |
|---|---|---|---|
| 444-28X-000-YY1 | +80°C | +95°C | +100°C |
| 444-31X-000-YY1 | +80°C | +95°C | +125°C |

**Class I, Division 1, Groups A, B, C and D**
**Ex ia IIC T6…T2 Ga**
**Class I, Zone 0, AEx ia IIC T6…T2 Ga**

Accelerometer Type CA 28X (sensor only) P/N 144-28X-000-YYY

The sensor converts mechanical forces (e.g. vibrations) of the equipment to which it is mounted into an electrical signal that is processed externally. Intrinsically safe with entity parameters when connected per drawing PZ 8721.

Nomenclature:

X defines the design of the sensor head (X = 0…9)
YYY depends on the connector type and the cable length (Y = 0…9)

Ratings:

In type of protection intrinsic safety A/Ex ia IIC, only for connection to a certified intrinsically safe circuit, with following entity parameters:

| Part Number | Vmax, Ui | Imax, Ii | Pi | Li | Ci sensor | Ci cable |
|---|---|---|---|---|---|---|
| 144-28X-000-YYY | 28 V | 100 mA | 0.7 W | 0 mH | 8 nF | 250 pF/m |

Ambient Temperature Range:

| Type Description | Part Number | Ambient Temperature |
|---|---|---|
| Sensor only | 144-28X-000-YYY | -55 °C to +260 °C |

**Certificate:** 1514310 **Master Contract:** 175074
**Project:** 70097496 **Date Issued:** 2016-12-12

Temperature Code:

| Part Number | T6 | T5 | T4 | T3 | T2 |
|---|---|---|---|---|---|
| 144-28X-000-YYY | +80°C | +95°C | +130°C | +195°C | +260°C |

Accelerometers Type CE 28X (sensor with remote electronic) P/N 444-28X-000-YY2 to 444-28X-000-YY9

The sensor converts mechanical forces (e.g. vibrations) of the equipment to which it is mounted into an electrical signal through a permanently attached cable to a conditioner (electronic box) that sends out a modulated current output signal. Intrinsically safe with entity parameters when connected per drawing PZ 8726.

Nomenclature:

X defines the design of the sensor head (X = 0…9)
YY depends on the connector type and the cable length (Y = 0…9)

Ratings:

In type of protection intrinsic safety A/Ex ia IIC, only for connection to a certified intrinsically safe circuit, with following entity parameters:

| Part Number | Vmax, Ui | Imax, Ii | Pi | Li | Ci sensor |
|---|---|---|---|---|---|
| 444-28X-000-YY2 to 444-28X-000-YY9 | 28 V | 100 mA | 0.7 W | 0 mH | 0 nF |

Ambient Temperature Range:

| Type Description | Part Number | Ambient Temperature | |
|---|---|---|---|
| | | Conditioner | Sensor and cable |
| Sensor and remote electronic | 444-28X-000-YY2 to 444-28X-000-YY9 | -55 °C to +125 °C | -55 °C to +260 °C |

Temperature Code:

| Type Part Number | | T6 | T5 | T4 | T3 | T2 |
|---|---|---|---|---|---|---|
| 444-28X-000-YY2 to | Sensor and cable | +80°C | +95°C | +130°C | +195°C | +260°C |
| 444-28X-000-YY9 | Conditioner | +65°C | +80°C | +115°C | +125°C | +125°C |

**Class I, Division 1, Groups A, B, C and D**
**Ex ia IIC T6…T3 Ga**
**Class I, Zone 0, AEx ia IIC T6…T3 Ga**

Accelerometers Type CE 31X (sensor with integrated electronic) P/N 444-31X-000-YY2 to 444-31X-000-YY9

The sensor is used for vibration monitoring and converts mechanical forces (e.g. vibrations) of the equipment to which it is mounted into an electrical signal that is processed within the integrated signal conditioner and sends



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**Project:** 70097496 **Date Issued:** 2016-12-12

out a modulated current output signal. Intrinsically safe with entity parameters when connected per drawing PZ 8735.

Nomenclature:

X defines the design of the sensor head (X = 0…9)
YY depends on the connector type and the cable length (Y = 0…9)

Ratings:

In type of protection intrinsic safety A/Ex ia IIC, only for connection to a certified intrinsically safe circuit, with following entity parameters.

| Part Number | Vmax, Ui | Imax, Ii | Pi | Li | Ci sensor | Ci cable |
|---|---|---|---|---|---|---|
| 444-31X-000-YY2 to 444-31X-000-YY9 | 28 V | 100 mA | 0.7 W | 0 mH | 0 nF | 250 pF/m |

Ambient Temperature Range:

| Type Description | Part Number | Ambient Temperature |
|---|---|---|
| Sensor with integrated conditioner | 444-31X-000-YY2 to 444-31X-000-YY9 | -55 °C to +125 °C |

Temperature Code:

| Part Number | T6 | T5 | T4 | T3 |
|---|---|---|---|---|
| 444-31X-000-YY2 to 444-31X-000-YY9 | +65°C | +80°C | +115°C | +125°C |

CLASS - C225802 - PROCESS CONTROL EQUIPMENT- For Hazardous Locations -
CLASS - C225882 - PROCESS CONTROL EQUIPMENT- For Hazardous Locations - Certified to US Standards

**Class I, Division 2, Groups A, B, C and D**
**Ex nA IIC T6…T2 Gc**
**Class I, Zone 2, AEx nA IIC T6…T2 Gc**

Accelerometers Type CA 28X (sensor only) P/N 144-28X-000-YYY

The sensor converts mechanical forces (e.g. vibrations) of the equipment to which it is mounted into an electrical signal that is processed externally. Installation shall be in accordance with drawing PZ 8723.

Nomenclature:

X defines the design of the sensor head (X = 0…9)
YYY depends on the connector type and the cable length (Y = 0…9)

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**Project:** 70097496 **Date Issued:** 2016-12-12

Ambient Temperature Range:

| Type Description | Part Number | Ambient Temperature |
|---|---|---|
| Sensor and cable only | 144-28X-000-YYY | -55 °C to +260 °C |

Temperature Code:

| Part Number | T6 | T5 | T4 | T3 | T2 |
|---|---|---|---|---|---|
| 144-28X-000-YYY | +80°C | +95°C | +130°C | +195°C | +260°C |

Conditions of Acceptability

1. To be supplied by a Class 2 or Limited Energy Source in accordance with CSA/UL 61010-1.
2. Transient protection shall be provided that is set at a level not exceeding 140 % of the peak rated voltage value at the supply terminals to the equipment.
3. The final installation shall ensure that there is no risk of mechanical impact to the cable of the device.
4. The final installation of the device shall meet the requirements of CEC (for Canada) and NEC (for USA) for wiring method in Zone 2 and Division 2 and is subjected to acceptance of local authority having jurisdiction.

Accelerometers Type CE 28X (sensor with remote electronic) P/N 444-28X-000-YY2 to 444-28X-000-YY9

The sensor converts mechanical forces (e.g. vibrations) of the equipment to which it is mounted into an electrical signal sent through an integrated cable to a conditioner (electronic box) that sends out a modulated current output signal. Installation shall be in accordance with drawing PZ 8732.

Nomenclature:

X defines the design of the sensor head (X = 0…9)
YY depends on the connector type and the cable length (Y = 0…9)

Ratings:

In type of protection non-sparking Ex nA IIC with the following maximum values:

| Part Number | Maximum Voltage | Maximum Current | Maximum Power |
|---|---|---|---|
| 444-28X-000-YY2 to 444-28X-000-YY9 | 28 V | 25 mA | 224 mW |

Ambient Temperature Range:

| Type Description | Part Number | Ambient Temperature | |
|---|---|---|---|
| | | Electronic | Sensor and cable |
| Sensor with remote electronic | 444-28X-000-YY2 to 444-28X-000-YY9 | -55 °C to +125 °C | -55 °C to +260 °C |



**Certificate:** 1514310 **Master Contract:** 175074
**Project:** 70097496 **Date Issued:** 2016-12-12

Temperature Code:

| Type Part Number | | T6 | T5 | T4 | T3 | T2 |
|---|---|---|---|---|---|---|
| 444-28X-000-YY2 to 444-28X-000-YY9 | Sensor and cable | +80°C | +95°C | +130°C | +195°C | +260°C |
| | Conditioner | +65°C | +80°C | +115°C | +125°C | +125°C |

Conditions of Acceptability

1. To be supplied by a Class 2 or Limited Energy Source in accordance with CSA/UL 61010-1.
2. Transient protection shall be provided that is set at a level not exceeding 140 % of the peak rated voltage value at the supply terminals to the equipment.
3. The final installation shall ensure that there is no risk of mechanical impact to the cable of the device.
4. The final installation of the device shall meet the requirements of CEC (for Canada) and NEC (for USA) for wiring method in Zone 2 and Division 2 and is subjected to acceptance of local authority having jurisdiction.

**Class I, Division 2, Groups A, B, C and D**
**Ex nA IIC T6…T3 Gc**
**Class I, Zone 2, AEx nA IIC T6…T3 Gc**

Accelerometers Type CE 31X (sensor with integrated electronic) P/N 444-31X-000-YY2 to 444-31X-000-YY9

The sensor is used for vibration monitoring and converts mechanical forces (e.g. vibrations) of the equipment to which it is mounted into an electrical signal that is processed within the integrated signal conditioner and sends out a modulated current output signal. Installation shall be in accordance with drawing PZ 8739.

Nomenclature:

X defines the design of the sensor head (X = 0…9)
YY depends on the connector type and the cable length (Y = 0…9)

Ratings:

In type of protection non-sparking A/Ex nA IIC with the following maximum values:

| Part Number | Maximum Voltage | Maximum Current | Maximum Power |
|---|---|---|---|
| 444-31X-000-YY2 to 444-31X-000-YY9 | 28 V | 25 mA | 224 mW |

Ambient Temperature Range:

| Type Description | Part Number | Ambient Temperature |
|---|---|---|
| Sensor with integral conditioner | 444-31X-000-YY2 to 444-31X-000-YY9 | -55 °C to +125 °C |

**Certificate:** 1514310 **Master Contract:** 175074
**Project:** 70097496 **Date Issued:** 2016-12-12

Temperature Code:

| Part Number | T6 | T5 | T4 | T3 |
|---|---|---|---|---|
| 444-31X-000-YY2 to 444-31X-000-YY9 | +65°C | +80°C | +115°C | +125°C |

Conditions of Acceptability

1. To be supplied by a Class 2 or Limited Energy Source in accordance with CSA/UL 61010-1.
2. Transient protection shall be provided that is set at a level not exceeding 140 % of the peak rated voltage value at the supply terminals to the equipment.
3. The final installation shall ensure that there is no risk of mechanical impact to the cable of the device.
4. The final installation of the device shall meet the requirements of CEC (for Canada) and NEC (for USA) for wiring method in Zone 2 and Division 2 and is subjected to acceptance of local authority having jurisdiction.

**APPLICABLE REQUIREMENTS**

| | |
|---|---|
| CAN/CSA-C22.2 No. 0-10 (R2011) | General Requirements – Canadian Electrical Code, Part II |
| CSA Standard 1010.1 | Safety Requirements for Electrical Equipment for Measurement, Control & Laboratory Use - Part 1: General Requirements |
| CSA Std. C22.2 No. 213-16 | Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations |
| CAN/CSA-C22.2 No. 60079-0:15 | Explosive Atmospheres - Part 0: Equipment - General requirements |
| CAN/CSA-C22.2 No. 60079-11:14 | Explosive Atmospheres – Part 11: Equipment protection by intrinsic safety "i" |
| CAN/CSA-C22.2 No. 60079-15:16 | Explosive Atmospheres – Part 15: Construction, test and marking of type of protection "n" electrical apparatus |
| UL 61010C-1, 1st Ed | Standard for Process Control Equipment |
| ANSI/ISA-12.12.01-2015 | Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations |
| ANSI/UL 60079-0:13 | Electrical Apparatus for Explosive Gas Atmospheres - Part 0: General Requirements |
| ANSI/UL 60079-11:13 | Electrical apparatus for Explosive Gas Atmospheres - Part 11: Intrinsic Safety "i" |
| ANSI/UL 60079-15:13 | Electrical apparatus for Explosive Gas Atmospheres - Part 15: Type of Protection "n" |



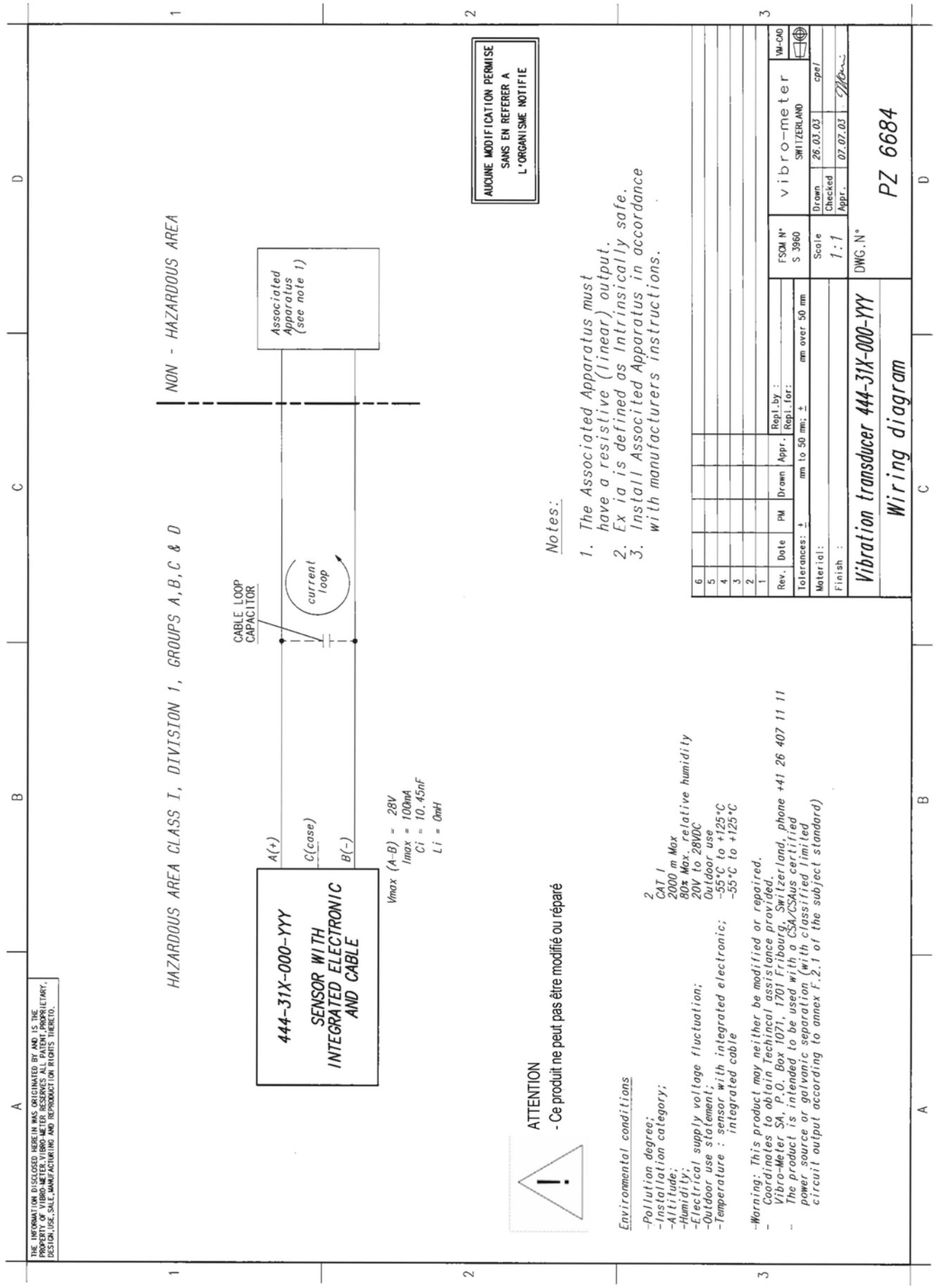
## *Supplement to Certificate of Compliance*

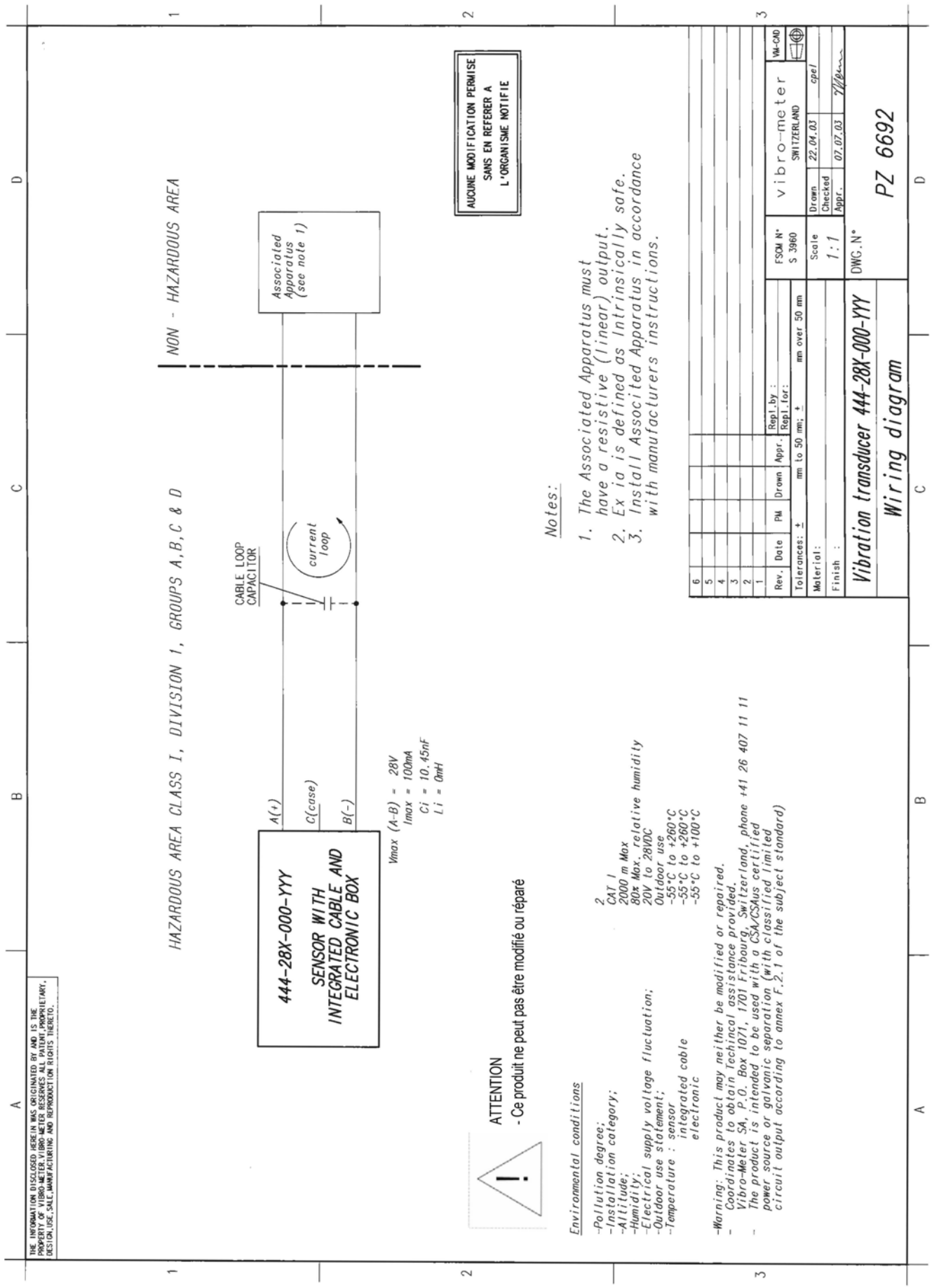
**Certificate:** 1514310 **Master Contract:** 175074

***The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.***

### Product Certification History

| Project | Date | Description |
|---|---|---|
| 70097496 | 2016-12-12 | Update to report 1514310 to include the following changes: New design of electronic conditioner; Introduction of new nomenclature for old and new models; Addition of alternative RT 426 casting compound; Evaluation of intrinsic safe version of product for Division 1 and Zone 0; Evaluation of non-sparking version of product for Division 2 and Zone 2; Update of several control drawings; Update to applicable standards. |
| 2421979 | 2011-05-05 | Update Report 1514310 to include the change of legal entity name |
| 2188588 | 2009-07-22 | Update to report 1514310 to change Ci value from 6nF to 8nF. Evaluation done against following standards: CSA Standard 1010.1, CSA C22.2No. 157-92, UL 61010C-1, and Ul 913. |
| 1648970 | 2005-04-12 | Update to report 1514310 to add a new compound reference Q-Sil 550. |
| 1514310 | 2004-01-09 | Original cCSAus certification for Accelerometer Type 444-31X-000-YYY, 444-28X-000-YYY, and 144-28X-000-YYY. |


HAZARDOUS AREA CLASS I, DIVISION 1, GROUPS A,B,C & D
NON - HAZARDOUS AREA
444-31X-000-YYY
SENSOR WITH
INTEGRATED ELECTRONIC
AND CABLE
A(+)
C(case)
B(-)
CABLE LOOP
CAPACITOR
current loop
Associated Apparatus (see note 1)
Vmax (A-B) = 28V
Imax = 100mA
Ci = 10.45nF
Li = 0mH
AUCUNE MODIFICATION PERMISE
SANS EN REFERER A
L'ORGANISME NOTIFIE
ATTENTION
- Ce produit ne peut pas être modifié ou réparé
Notes:
1. The Associated Apparatus must have a resistive (linear) output.
2. Ex ia is defined as Intrinsically safe.
3. Install Associated Apparatus in accordance with manufacturers instructions.
Environmental conditions
-Pollution degree; 2
-Installation category; CAT I
-Altitude; 2000 m Max
-Humidity; 80% Max. relative humidity
-Electrical supply voltage fluctuation; 20V to 28VDC
-Outdoor use statement; Outdoor use
-Temperature : sensor with integrated electronic; -55°C to +125°C
integrated cable -55°C to +125°C
-Warning: This product may neither be modified or repaired.
- Coordinates to obtain Technical assistance provided.
Vibro-Meter SA, P.O. Box 1071, 1701 Fribourg, Switzerland, phone +41 26 407 11 11
- The product is intended to be used with a CSA/CSAus certified power source or galvanic separation (with classified limited circuit output according to annex F.2.1 of the subject standard)
THE INFORMATION DISCLOSED HEREIN WAS ORIGINATED BY AND IS THE PROPERTY OF VIBRO-METER. VIBRO-METER RESERVES ALL PATENT, PROPRIETARY, DESIGN, USE, SALE, MANUFACTURING AND REPRODUCTION RIGHTS THERETO.
Rev. Date PM Drawn Appr. Repl.by : Repl.for:
Tolerances: ± mm to 50 mm; ± mm over 50 mm
Material:
Finish :
FSCM N° S 3960
Scale 1:1
DWG.N° PZ 6684
vibro-meter SWITZERLAND
Drawn 26.03.03 cpel
Checked
Appr. 07.07.03
Vibration transducer 444-31X-000-YYY
Wiring diagram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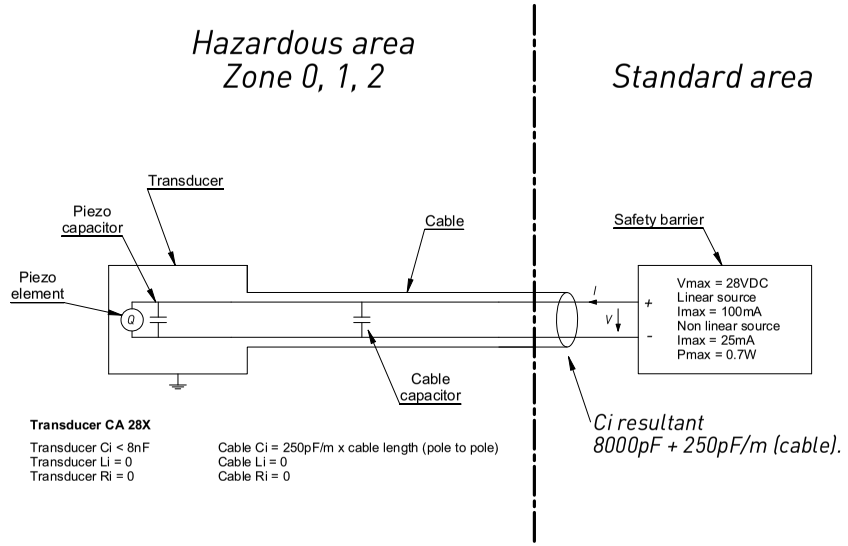
HAZARDOUS AREA CLASS I, DIVISION 1, GROUPS A,B,C & D
NON - HAZARDOUS AREA
444-28X-000-YYY
SENSOR WITH INTEGRATED CABLE AND ELECTRONIC BOX
A(+)
C(case)
B(-)
CABLE LOOP CAPACITOR
current loop
Associated Apparatus (see note 1)
Vmax (A-B) = 28V
Imax = 100mA
Ci = 10.45nF
Li = 0mH
AUCUNE MODIFICATION PERMISE SANS EN REFERER A L'ORGANISME NOTIFIE
ATTENTION
- Ce produit ne peut pas être modifié ou réparé
Notes:
1. The Associated Apparatus must have a resistive (linear) output.
2. Ex ia is defined as Intrinsically safe.
3. Install Associated Apparatus in accordance with manufacturers instructions.
Environmental conditions
-Pollution degree; 2
-Installation category; CAT I
-Altitude; 2000 m Max
-Humidity; 80% Max. relative humidity
-Electrical supply voltage fluctuation; 20V to 28VDC
-Outdoor use statement; Outdoor use
-Temperature : sensor -55°C to +260°C
integrated cable -55°C to +260°C
electronic -55°C to +100°C
-Warning: This product may neither be modified or repaired.
- Coordinates to obtain Techincal assistance provided.
Vibro-Meter SA, P.O. Box 1071, 1701 Fribourg, Switzerland, phone +41 26 407 11 11
- The product is intended to be used with a CSA/CSAus certified power source or galvanic separation (with classified limited circuit output according to annex F.2.1 of the subject standard)
Rev. Date PM Drown Appr. Repl.by : Repl.for:
Tolerances: ± mm to 50 mm; ± mm over 50 mm
Material:
Finish :
FSCM N° S 3960
Scale 1:1
DWG. N°
Vibration transducer 444-28X-000-YYY
Wiring diagram
PZ 6692
vibro-meter SWITZERLAND
Drown 22.04.03 cpel
Checked
Appr. 07.07.03
VM-CAD




WARNING:
- THIS PRODUCT MAY NEITHER BE MODIFIED OR REPAIRED

ATTENTION
- CE PRODUIT NE PEUT PAS ETRE MODIFIE OU REPARE

Notes

1. Ex ia is defined as intrinsically safe.
2. Install associated apparatus in accordance with manufacturers instructions.

Environmental conditions

- Pollution degree : 2
- Installation category : CAT I
- Altitude : 2000 m Max
- Humidity : 80% Max relative humidity
- Electrical supply voltage fluctuation : No supply voltage (charge generator)
- Outdoor use statement : Outdoor use
- Temperature operational
  - sensor : -55°C to +260°C
  - cable : -55°C to +260°C

- Warning: This product may neither be modified or repaired.
- Coordinates to obtain Technical assistance provided.
  Meggitt SA, P.O. Box 1616, Route de Moncor 4, 1701 Fribourg, Switzerland, phone +41 26 407 11 11
- The product is intended to be used with certified signal conditioner and safety barrier.
- To ensure an installation conform with an explosive environment, it is crucial to respect the criteria mentioned into the corresponding Ex certificates.

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OF NOTIFIED BODY

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|---|---|---|---|---|---|

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| MFR S3960 | MSS-CAD | MEGGITT |
|---|---|---|
| Scale 1:1 | Format A3 | Meggitt SA, Rte de Moncor 4, CH-1752 Villars-sur-Glâne, Switzerland |

| Material: | Repl.by: | Repl.for: |
|---|---|---|

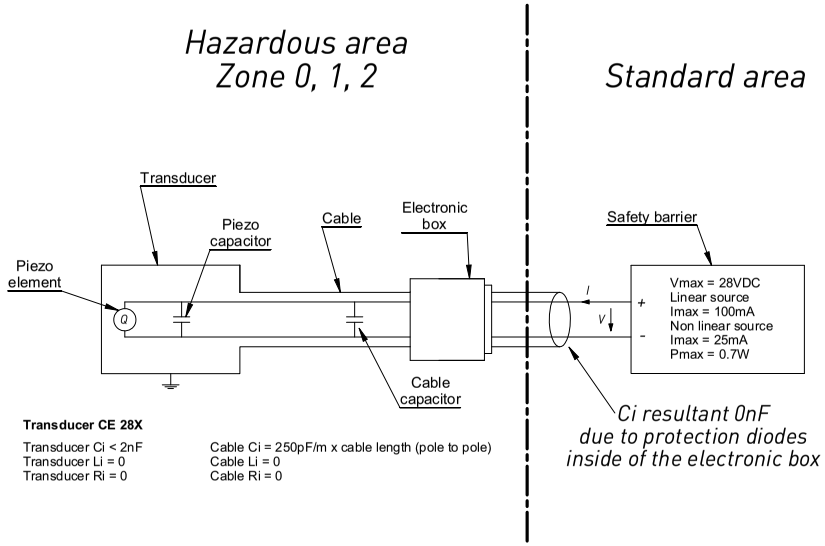
Linear Tolerances [mm]: › 0,5 … 3 | › 3 … 6 | › 6 … 30 | › 30 … 120 | › 120 … 400 | ›400 …1000 | ›1000 …2000 | ›2000 …4000 — all -

Radius / Chamfers [mm]: › 0,5 … 3 | › 3 … 6 | › 6 — all -

Tol. on angle [°] (L [mm]): … 10 | › 10 … 50 | › 50 … 120 | › 120 … 400 — all -

| | | |
|---|---|---|
| Drawn | 30.06.16 | C.Pellegrinelli |
| Check. | 30.06.16 | H-P.Aeby |
| Appr. | 30.06.16 | J.Perriard |

| Wiring diagram CA 28X (ia) | DWG.N° |
|---|---|
| 144-28X-000-YYY | PZ 8721 |




WARNING:
- THIS PRODUCT MAY NEITHER BE MODIFIED OR REPAIRED

ATTENTION
- CE PRODUIT NE PEUT PAS ETRE MODIFIE OU REPARE

Notes

1. Ex ia is defined as intrinsically safe.
2. Install associated apparatus in accordance with manufacturers instructions.

Environmental conditions

- Pollution degree : 2
- Installation category : CAT I
- Altitude : 2000 m Max
- Humidity : 80% Max relative humidity
- Electrical supply voltage fluctuation : 15VDC to 28VDC
- Outdoor use statement : Outdoor use
- Temperature operational
  - sensor : -55°C to +260°C
  - cable : -55°C to +260°C
  - conditioner : -55°C to +125°C

- Warning: This product may neither be modified or repaired.
- Coordinates to obtain Technical assistance provided.
  Meggitt SA, P.O. Box 1616, Route de Moncor 4, 1701 Fribourg, Switzerland, phone +41 26 407 11 11
- The product is intended to be used with certified signal conditioner and safety barrier.
- To ensure an installation conform with an explosive environment, it is crucial to respect the criteria mentioned into the corresponding Ex certificates.

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| Rev. | Date | Change N° | Drawn | Appr. | Description |
|---|---|---|---|---|---|

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| MFR S3960 | MSS-CAD | MEGGiTT |
|---|---|---|
| Scale 1:1 | Format A3 | Meggitt SA, Rte de Moncor 4, CH-1752 Villars-sur-Glâne, Switzerland |

Material: | Repl.by: | Repl.for:

| Linear Tolerances [mm] | | | | | | | | | Radius / Chamfers [mm] | | | Tol. on angle [°] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| › 0,5 ... 3 | › 3 ... 6 | › 6 ... 30 | › 30 ... 120 | › 120 ... 400 | ›400 ...1000 | ›1000 ...2000 | ›2000 ...4000 | | › 0,5 ... 3 | › 3 ... 6 | › 6 | ... 10 | › 10 ... 50 | › 50 ... 120 | › 120 ... 400 | | |
| - | - | - | - | - | - | - | - | | - | - | - | - | - | - | - | | |

| | | |
|---|---|---|
| Drawn | 30.06.16 | C.Pellegrinelli |
| Check. | 30.06.16 | H-P.Aeby |
| Appr. | 30.06.16 | J.Perriard |

Wiring diagram CE 28X (ia)
444-28X-000-YY2 to -YY9

DWG.N° PZ 8726



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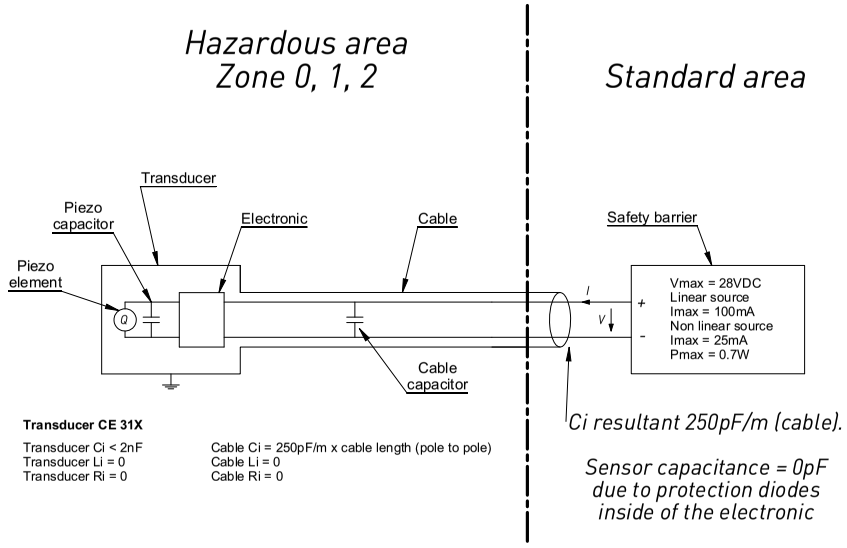


**Transducer CE 31X**

Transducer Ci < 2nF
Transducer Li = 0
Transducer Ri = 0

Cable Ci = 250pF/m x cable length (pole to pole)
Cable Li = 0
Cable Ri = 0

WARNING:
- THIS PRODUCT MAY NEITHER BE MODIFIED OR REPAIRED

ATTENTION
- CE PRODUIT NE PEUT PAS ETRE MODIFIE OU REPARE

Notes

1. Ex ia is defined as intrinsically safe.
2. Install associated apparatus in accordance with manufacturers instructions.

Environmental conditions

- Pollution degree : 2
- Installation category : CAT I
- Altitude : 2000 m Max
- Humidity : 80% Max relative humidity
- Electrical supply voltage fluctuation : 15VDC to 28VDC
- Outdoor use statement : Outdoor use
- Temperature operational
  - sensor : -55°C to +125°C
  - cable : -55°C to +125°C

- Warning: This product may neither be modified or repaired.
- Coordinates to obtain Technical assistance provided.
  Meggitt SA, P.O. Box 1616, Route de Moncor 4, 1701 Fribourg, Switzerland, phone +41 26 407 11 11
- The product is intended to be used with certified signal conditioner and safety barrier.
- To ensure an installation conform with an explosive environment, it is crucial to respect the criteria mentioned into the corresponding Ex certificates.

NO MODIFICATION ALLOWED
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| MFR | MSS-CAD |
|---|---|
| S3960 | |
| Scale | Format |
| 1:1 | A3 |

MEGGITT
Meggitt SA
Rte de Moncor 4, CH-1752 Villars-sur-Glâne, Switzerland

| Material: | Repl.by: | Repl.for: |
|---|---|---|

Linear Tolerances [mm]

| › 0,5 … 3 | › 3 … 6 | › 6 … 30 | › 30 … 120 | › 120 … 400 | ›400 …1000 | ›1000 …2000 | ›2000 …4000 |
|---|---|---|---|---|---|---|---|
| - | - | - | - | - | - | - | - |

Radius / Chamfers [mm]

| › 0,5 … 3 | › 3 … 6 | › 6 |
|---|---|---|
| - | - | - |

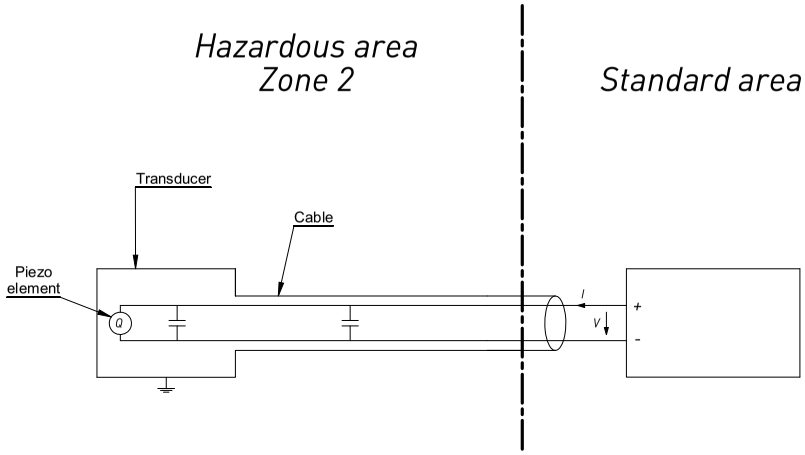
Tol. on angle [°]

| … 10 | › 10 … 50 | › 50 … 120 | › 120 … 400 |
|---|---|---|---|
| - | - | - | - |

| | | |
|---|---|---|
| Drawn | 30.06.16 | C.Pellegrinelli |
| Check. | 30.06.16 | H-P.Aeby |
| Appr. | 30.06.16 | J.Perriard |

Wiring diagram CE 31X (ia)
444-31X-000-YY2 to YY9

DWG.N°
PZ 8735




WARNING:
- THIS PRODUCT MAY NEITHER BE MODIFIED OR REPAIRED

ATTENTION
- CE PRODUIT NE PEUT PAS ETRE MODIFIE OU REPARE

Notes

Install associated apparatus in accordance with manufacturers instructions.

Environmental conditions

- Pollution degree : 2
- Installation category : CAT I
- Altitude : 2000 m Max
- Humidity : 80% Max relative humidity
- Electrical supply voltage fluctuation : No supply voltage (charge generator)
- Outdoor use statement : Outdoor use
- Temperature operational
  - sensor : -55°C to +260°C
  - cable : -55°C to +260°C

- To be supplied by a Class 2 or Limited Energy Source in accordance with CSA/UL 61010-1.
- Transient protection shall be provided that is set at a level not exceeding 140 % of the peak rated voltage value at the supply terminals to the equipment.
- The final installation shall ensure that there is no risk of mechanical impact to the cable of the device.
- The final installation of the device shall meet the requirements of CEC (for Canada) and NEC (for USA) for wiring method in Zone 2 and Division 2 and is subjected to acceptance of local authority having jurisdiction.

- Warning: This product may neither be modified or repaired.
- Coordinates to obtain Technical assistance provided.
  Meggitt SA, P.O. Box 1616, Route de Moncor 4, 1701 Fribourg, Switzerland, phone +41 26 407 11 11
- The product is intended to be used with certified signal conditioner and safety barrier.
- To ensure an installation conform with an explosive environment, it is crucial to respect the criteria mentioned into the corresponding Ex certificates.

NO MODIFICATION ALLOWED
WITHOUT PRIOR AUTORISATION
OF NOTIFIED BODY

| Rev. | Date | Change N° | Drawn | Appr. | Description |
|---|---|---|---|---|---|

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| MFR | MSS-CAD |
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| S3960 | |
| Scale | Format |
| 1:1 | A3 |

MEGGiTT
Meggitt SA
Rte de Moncor 4, CH-1752 Villars-sur-Glâne, Switzerland

| Material: | Repl.by: | Repl.for: |
|---|---|---|

Linear Tolerances [mm]: › 0,5 … 3 | › 3 … 6 | › 6 … 30 | › 30 … 120 | › 120 … 400 | ›400 …1000 | ›1000 …2000 | ›2000 …4000 : - | - | - | - | - | - | - | -
Radius / Chamfers [mm]: › 0,5 … 3 | › 3 … 6 | › 6 : - | - | -
Tol. on angle [°] (L [mm]): … 10 | › 10 … 50 | › 50 … 120 | › 120 … 400 : - | - | - | -

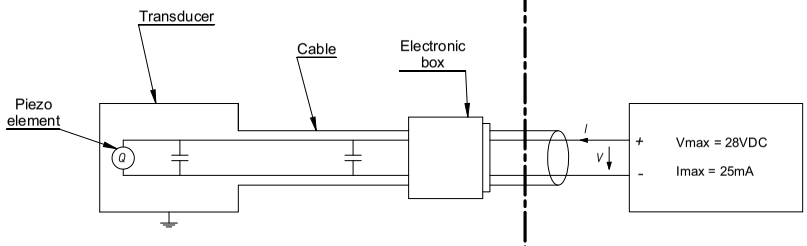
| | | |
|---|---|---|
| Drawn | 30.06.16 | C.Pellegrinelli |
| Check. | 30.06.16 | H-P.Aeby |
| Appr. | 30.06.16 | J.Perriard |

*Wiring diagram CA 28X (nA)*
*144-28X-000-YYY*

DWG.N°
*PZ 8723*



MEGGiTT




WARNING:
- THIS PRODUCT MAY NEITHER BE MODIFIED OR REPAIRED

ATTENTION
- CE PRODUIT NE PEUT PAS ETRE MODIFIE OU REPARE

Notes

Install associated apparatus in accordance with manufacturers instructions.

Environmental conditions

- Pollution degree : 2
- Installation category : CAT I
- Altitude : 2000 m Max
- Humidity : 80% Max relative humidity
- Electrical supply voltage fluctuation : 15VDC to 28VDC
- Outdoor use statement : Outdoor use
- Temperature operational
  - sensor : -55°C to +260°C
  - cable : -55°C to +260°C
  - conditioner : -55°C to +125°C

- To be supplied by a Class 2 or Limited Energy Source in accordance with CSA/UL 61010-1.
- Transient protection shall be provided that is set at a level not exceeding 140 % of the peak rated voltage value at the supply terminals to the equipment.
- The final installation shall ensure that there is no risk of mechanical impact to the cable of the device.
- The final installation of the device shall meet the requirements of CEC (for Canada) and NEC (for USA) for wiring method in Zone 2 and Division 2 and is subjected to acceptance of local authority having jurisdiction.

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- Coordinates to obtain Technical assistance provided.
  Meggitt SA, P.O. Box 1616, Route de Moncor 4, 1701 Fribourg, Switzerland, phone +41 26 407 11 11
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| MFR | MSS-CAD |
|---|---|
| S3960 | |
| Scale | Format |
| 1:1 | A3 |

MEGGITT
Meggitt SA
Rte de Moncor 4, CH-1752 Villars-sur-Glâne, Switzerland

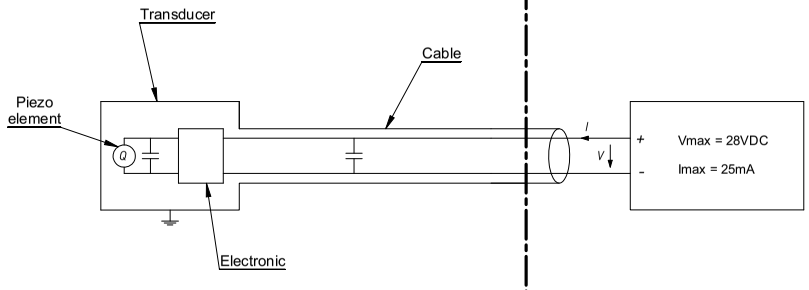
| Material: | Repl.by: | Repl.for: |
|---|---|---|

| Linear Tolerances [mm] | | | | | | | | | Radius / Chamfers [mm] | | | Tol. on angle [°] | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| › 0,5 ... 3 | › 3 ... 6 | › 6 ... 30 | › 30 ... 120 | › 120 ... 400 | ›400 ...1000 | ›1000 ...2000 | ›2000 ...4000 | | › 0,5 ... 3 | › 3 ... 6 | › 6 | ... 10 | › 10 ... 50 | › 50 ... 120 | › 120 ... 400 | L [mm] |
| - | - | - | - | - | - | - | - | | - | - | - | - | - | - | - | |

| | | |
|---|---|---|
| Drawn | 30.06.16 | C.Pellegrinelli |
| Check. | 30.06.16 | H-P.Aeby |
| Appr. | 30.06.16 | J.Perriard |

*Wiring diagram CE 28X (nA)*
*444-28X-000-YY2 to -YY9*

DWG.N°
*PZ 8732*




WARNING:
- THIS PRODUCT MAY NEITHER BE MODIFIED OR REPAIRED

ATTENTION
- CE PRODUIT NE PEUT PAS ETRE MODIFIE OU REPARE

Notes

Install associated apparatus in accordance with manufacturers instructions.

Environmental conditions

- Pollution degree : 2
- Installation category : CAT I
- Altitude : 2000 m Max
- Humidity : 80% Max relative humidity
- Electrical supply voltage fluctuation : 15VDC to 28VDC
- Outdoor use statement : Outdoor use
- Temperature operational
  - sensor : -55°C to +125°C
  - cable : -55°C to +125°C

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| MFR S3960 | MSS-CAD | MEGGiTT |
|---|---|---|
| Scale 1:1 | Format A3 | Meggitt SA, Rte de Moncor 4, CH-1752 Villars-sur-Glâne, Switzerland |

| Material: | Repl.by: | Repl.for: |
|---|---|---|

Linear Tolerances [mm]: › 0,5 … 3 | › 3 … 6 | › 6 … 30 | › 30 … 120 | › 120 … 400 | ›400 …1000 | ›1000 …2000 | ›2000 …4000 — all "-"

Radius / Chamfers [mm]: › 0,5 … 3 | › 3 … 6 | › 6 — all "-"

Tol. on angle [°] (L [mm]): … 10 | › 10 … 50 | › 50 … 120 | › 120 … 400 — all "-"

| | | | |
|---|---|---|---|
| Drawn | 30.06.16 | C.Pellegrinelli |
| Check. | 30.06.16 | H-P.Aeby |
| Appr. | 30.06.16 | J.Perriard |

*Wiring diagram CE 31X (nA)*
*444-31X-000-YY2 to -YY9*

DWG.N°
*PZ 8739*

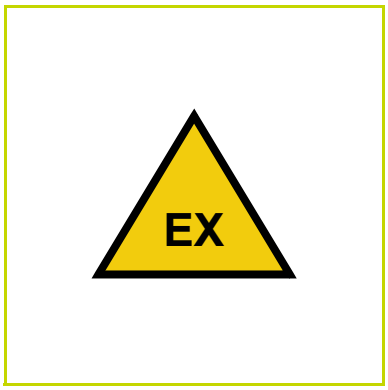


MEGGiTT

EX CERTIFICATE – cCSAus

vibro-meter®

# cCSAus 1550831
# for
# CA30x piezoelectric accelerometers




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference cCSAus 1550831
Edition 5 – May 2021

Meggitt SA, Route de Moncor 4, Case postale, 1701 Fribourg, Switzerland

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Fax: +41 26 407 1660
energy@ch.meggitt.com
www.meggittsensing.com/energy
www.meggitt.com

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# Certificate of Compliance

**Certificate:** 1550831 **Master Contract:** 175074

**Project:** 80070101 **Date Issued:** 2021-04-06

**Issued To:** **Meggitt SA**
**Rte de Moncor 4**
**Villars-sur-Glane, Fribourg, 1752**
**Switzerland**

**Attention: Pascal Kornatko**

***The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.***

**Issued by:** Sorin Tat
Sorin Tat

C US

**PRODUCTS**
CLASS - C225804 - PROCESS CONTROL EQUIPMENT Intrinsically Safe, Entity - For Hazardous Locations
CLASS - C225884 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe Entity - For Hazardous Locations - Certified to US Standards

CLASS I, Division 1, Groups A, B, C and D

**Accelerometer Type 144-30X-000-YYY**

Intrinsically safe with entity parameters when connected per drawing PZ 6720


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**Entity Parameters for the sensor:**
Vmax(Ui)=28 V, Imax(Ii)=100 mA, when used with linear source Voc ≤ 28 V, Isc ≤ 100 mA, Po ≤ 0,7W
Pmax(Pi)=0,7W, Imax(Ii)=25mA, when used with non linear source Voc ≤ 28V, Isc ≤ 25mA, Po ≤ 0,7W
Ci=2nF, Li=0 mH

**Temperature code** :

Ambient temperatures are as follows:

* -54°C/ / + 500°C for sensor and cable

*-54°C/…/+500°C for sensor with high temperature VM connector
connectors:
* -65°C/ / + 150°C for LEMO connector Type 0 or equivalent
* -65°C/ / + 200°C for connector Type M83723/89Y1020 or equivalent
* -54°C/ / + 260°C for standard temperature VM connector

The relation between maximum ambient temperature and temperature class is as follows for all devices, taking into account the above mentioned temperature ranges:

Maximum ambient temperature: Ta<+430 °C for T1
Ta<+280 °C for T2
Ta<+180 °C for T3
Ta<+115 °C for T4
Ta<+80 °C for T5
Ta<+75 °C for T6

The maximum temperature, for ambient higher than 430 °C is the process temperature minus 10K.

**APPLICABLE REQUIREMENTS**

| | |
|---|---|
| CSA Standard 1010.1 | Safety Requirements for Electrical Equipment for Measurement, Control & Laboratory Use - Part 1: General Requirements |
| CSA C22.2 No 157-92 | Intrinsically Safe and Non-Incendive Equipment for use in Hazardous Locations |
| UL 61010C-1, 1st Ed | Standard for Process Control Equipment |
| UL 913, 6th Ed | Standard for Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, III, Division 1, Hazardous (Classified) Locations |

**MARKINGS**


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**Certificate:** 1550831
**Project:** 80070101

**Master Contract:** 175074
**Date Issued:** 2021-04-06

The manufacturer is required to apply the following markings:

- Products shall be marked with the markings specified by the particular product standard.
- Products certified for Canada shall have all Caution and Warning markings in both English and French.

Additional bilingual markings not covered by the product standard(s) may be required by the Authorities Having Jurisdiction. It is the responsibility of the manufacturer to provide and apply these additional markings, where applicable, in accordance with the requirements of those authorities.

The products listed are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US (indicating that products have been manufactured to the requirements of both Canadian and U.S. Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only.

Markings shall be as follows:

VIBRO METER

CSA Monogram

Type: 144-30X-000-YYY

Serial Number

Class I, Div 1, Groups A, B, C, D

Ex ia Tx

Reference Drawing: drawing PZ6720.

Method of marking: engraved on the enclosure of the sensor

*Note - Jurisdictions in Canada may require these markings to also be provided in French language. It is the responsibility of the manufacturer to provide bilingual marking, where applicable, in accordance with the requirements of the Provincial Regulatory Authorities. It is the responsibility of the manufacturer to determine this requirement and have bilingual wording added to the "Markings".*


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## *Supplement to Certificate of Compliance*

**Certificate:** 1550831

**Master Contract:** 175074

***The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.***

### Product Certification History

| Project | Date | Description |
|---|---|---|
| 80070101 | 2021-04-06 | Update to cCSAus report 1550831 for intrinsically safe Accelerometer Type 144-30X-000-YYY for removal of entity parameters from marking label drawing. This update is based on FIR on September 15, 2020 at Factory ID 4551751 in Fribourg, Switzerland. |
| 0002421981 | 2011-05-05 | Update Report 1550831 to include the change of legal entity name |
| 1550831 | 2004-09-23 | Original certification of Accelerometer Type 144-30X-000-YYY for Class I Division 1 Gr.A,B,C,D. |


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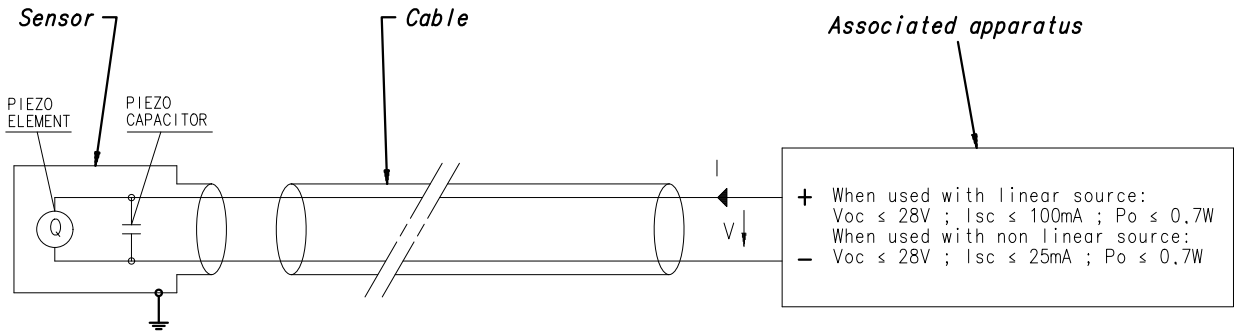


Sensor Ci = 2nF
Sensor Li = 0
Sensor Ri = 0

Cable Ci = 200pF/m x Cable lenght
Cable Li = 0
Cable Ri = 0

Ca ≥ Ci + Ccable
La ≥ Li + Lcable

AUCUNE MODIFICATION PERMISE
SANS EN REFERER A
L'ORGANISME NOTIFIE

WARNING
This product may neither be modified or repaired

ATTENTION
Ce produit ne peut pas être modifié ou réparé

*Environmental conditions*

| | |
|---|---|
| - Pollution degree; | 2 |
| - Installation category; | CAT I |
| - Altitude; | 2000 m Max |
| - Humidity; | 80% Max. relative humidity |
| - Electrical supply voltage fluctuation; | No supply voltage (charge generator) |
| - Outdoor use statement; | Outdoor use |
| - Temperature: sensor and connector; | -54°C to +500°C |
| sensor and cable; | -54°C to +500°C |
| connectors; | -65°C to +150°C |
| | -65°C to +200°C |
| | -54°C to +260°C |

- *Coordinates to obtain Techincal assistance provided.*
  *Meggitt SA, Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland, phone +41 26 407 11 11*
- *The product is intended to be used with certified safety barrier.*
- *To ensure an installation conform with an explosive environment, it is crucial to respect the criteria mentioned into the corresponding Ex certificates.*

*Notes:*

1. *Ex ia is defined as Intrinsically safe.*
2. *Install Associted Apparatus in accordance with manufacturers instructions.*

| Rev. | Date | PM | Drawn | Appr. | Repl.by : / Repl.for: |
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| 6 | | | | | |
| 5 | | | | | |
| 4 | | | | | |
| 3 | | | | | |
| 2 | | | | | |
| 1 | 30.03.21 | ----- | cpel | P.Kornatko | Updated conditioner box |

Tolerances: ± mm to 50 mm; ± mm over 50 mm

Material:

Finish :

FSCM N° S 3960

vibro-meter SWITZERLAND

VM-CAD

| | | | |
|---|---|---|---|
| Scale | 1:1 | | |
| Drawn | 06.01.04 | cpel | |
| Checked | | | |
| Appr. | 06.01.04 | jper | |

**Vibration transducer 144-30X-000-YYY**

**Wiring diagram (cCSAus)**

DWG.N° PZ 6720



MEGGITT
Original copy (English)

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# cCSAus certificate:

EN

## 70001999

## for

## GSI 127

EX

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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# Certificate of Compliance

**Certificate:** 70001999 **Master Contract:** 175074

**Project:** 70112845 **Date Issued:** 2017-01-19

**Issued to:** **Meggitt SA**
**Rte de Moncor 4**
**Villars-sur-Glane, Fribourg 1752**
**SWITZERLAND**
**Attention: Carlo Pellegrinelli**

***The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.***

**Issued by:** Hossein Saleh
Hossein Saleh

**PRODUCTS**

CLASS - 2258 03 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non-Incendive Systems - For Hazardous Locations
CLASS - 2258 83 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non-Incendive-Systems - For Hazardous Locations - Certified to U.S. Standards

**Class I, Division 2, Groups A, B, C and D**
**Ex nA [ia Ga] IIC T4 Gc**
**Class I, Zone 2, AEx nA [ia Ga] IIC T4 Gc**

Monitoring system consisting of galvanic separation unit Model 244-127-000-XXX (GSI 127) providing I.S. outputs for Division 1/Zone 0 when connected per Installation Drawing PZ 6924. Operating temperature: -40° to +70°C

Nomenclature:

244-127-000-XXX-A2-BYY

XXX defines the version of the product (X = 0 to 9)
YY defines the transfer mode (YY = 01 to 19 for actual specification; YY = 20 to 39 for alternate specification)





Rating:

Power supply: 30 V, 150 mA

Sensor or conditioner:

- For 244-127-000-XXX-A2-B01 to B19:
  Uo, Voc = 25.2 V; Io, Isc = 60 mA; Po = 0.7 W; Co, Ca = 95 nF; Lo, La = 5 mH
- For 244-127-000-XXX-A2-B20 to B39:
  Uo, Voc = 25.2 V; Io, Isc = 45 mA; Po = 0.5 W; Co, Ca = 95 nF; Lo, La = 10 mH

Conditions of Acceptability:

1. The power to the Monitoring Side of the equipment shall be supplied by an SELV or PELV system with a maximum voltage of 30 Vdc.
2. The Transducer Side of the equipment shall only be connected to intrinsically safe certified associated apparatus or simple apparatus.
3. This device is an OPEN type equipment that shall be installed within a fixed end-use enclosure that is rated for IP54 (according to CSA/UL 60079-0) or Type 4. The suitability of the enclosure is subject to investigation by the local authorities having jurisdiction at the time of installation.

**APPLICABLE REQUIREMENTS**

| | |
|---|---|
| CAN/CSA C22.2 No. 0-10 (R2011) | General Requirements - Canadian Electrical Code, Part II |
| CAN/CSA C22.2 No. 142- 2009 | Process control equipment |
| CSA Std. C22.2 No. 213-16 | Non-incendive electrical equipment for use in class I, Division 2 hazardous locations |
| CAN/CSA-C22.2 No. 60079-0:15 | Explosive Atmospheres - Part 0: Equipment - General requirements |
| CAN/CSA-C22.2 No. 60079-11:14 | Explosive Atmospheres – Part 11: Equipment protection by intrinsic safety "i" |
| CAN/CSA-C22.2 No. 60079-15:16 | Explosive Atmospheres – Part 15: Construction, test and marking of type of protection “n” electrical apparatus |
| ANSI/UL 916: October 2015 (Fifth Edition) | Energy management equipment |
| ANSI/UL 60079-0:13 | Electrical Apparatus for Explosive Gas Atmospheres - Part 0: General Requirements |
| ANSI/UL 60079-11:13 | Electrical apparatus for Explosive Gas Atmospheres - Part 11: Intrinsic Safety “i” |
| ANSI/UL 60079-15:13 | Electrical apparatus for Explosive Gas Atmospheres - Part 15: Type of Protection “n” |
| ANSI/ISA-12.12.01-2015 | Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations |

CSA Group

*Supplement to Certificate of Compliance*

**Certificate:** 70001999 **Master Contract:** 175074

***The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.***

**Product Certification History**

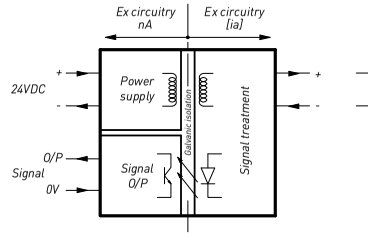
| Project | Date | Description |
|---|---|---|
| 70112845 | 2017-01-19 | Update to CSA C-US Certificate and Report 70001999 for GSI 127 Interface with IS Output, to add new models with Alternate specification, and an update to the Type designation of 2444-127-000-XXX-A2-BYY to differentiate between the two specifications. A new operating temperature of -40°C to + 70°C for all models is introduced. |
| 70001999 | 2014-03-24 | cCSAus certification for GSI127 for Class I, Division 2, with intrinsically safe outputs |

DQD 507 Rev. 2016-02-18 Page 1

Standard area (Cubicle for industrial application) or hazardous area Zone 2

Hazardous area Zones 0, 1, 2
Class I, division 1, groups A,B,C,D

## 2-wire transmission




## GSI 127

| 244-127-000-XXX-A2-B01 to B19 | 244-127-000-XXX-A2-B20 to B39 | CSA | IEC |
|---|---|---|---|
| 95nF | 95nF | Ca | Co |
| 5mH | 10mH | La | Lo |
| 25.2V | 25.2V | Voc | Uo |
| 60mA | 45mA | Isc | Io |
| 0.7W | 0.5W | Po | Po |

Grounding bracket is recommended at cubical entrance

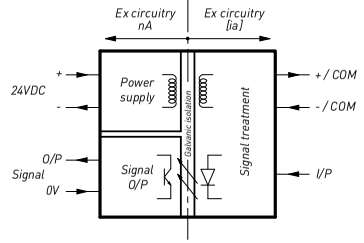
CABLE Ccable Lcable

DEVICE

| CSA | IEC |
|---|---|
| Ci | Ci |
| Li | Li |
| Vmax | Vi |
| Imax | Ii |
| Pi | Pi |

Intrinsically safe device

## 3-wire transmission




Intrinsically safe device

"Conditions of Acceptability:

1. The power to the Monitoring Side of the device shall be supplied by an SELV or PELV system with a maximum voltage of 30 Vdc.
2. The Transducer Side of the device shall only be connected to intrinsically safe certified associated apparatus or simple apparatus.
3. This device is an OPEN type equipment that shall be installed within a fixed end-use enclosure that is rated for IP54 (according to CSA/UL 60079-0) or Type 4. The suitability of the enclosure is subject to investigation by the local authorities having jurisdiction at the time of installation."

| CSA | IEC |
|---|---|
| Ca ≥ Ci + Ccable | Co ≥ Ci + Ccable |
| La ≥ Li + Lcable | Lo ≥ Li + Lcable |
| Va ≤ Vmax | Vo ≤ Vi |
| Isc ≤ Imax | Io ≤ Ii |
| Po ≤ Pi | Po ≤ Pi |

Notes

1. Choose associated apparatus and intrinsically safe devices such that the above conditions are met.
2. Ex i is defined as intrinsically safe.
3. Install associated apparatus in accordance with manufacturers instructions.
4. Installation shall be carried out in compliance with NEC and CEC.

THESE NOTES ARE NOT APPLICABLE FOR n PROTECTION MODE

WARNING
- This product may neither be modified or repaired
- Separate only in non-hazardous area
- Do not connect or disconnect when energized

ATTENTION
- Ce produit ne peut pas être modifié ou réparé
- Séparer uniquement dans une zone non dangereuse
- Ne pas connecter ou déconnecter lorsqu'il est sous tension

Environmental conditions

- Pollution degree : 2
- Installation category : Cat I
- Altitude : 2000m max
- Humidity : 80% max relative humidity
- Power supply : 30V, 150mA
- Outdoor use statement : Indoor use only
- Temperature range
  - ambient temperature : -40°C to +70°C
  - storage temperature : -40°C to +85°C

- Coordinates to obtain technial assistance provided:
  Meggitt SA / rte de Moncor 4 / PO box / 1701 Fribourg / Switzerland

NO MODIFICATION ALLOWED
WITHOUT PRIOR AUTORISATION
OF NOTIFIED BODY

| Rev. | Date | PM | Drawn | Appr. | Description |
|---|---|---|---|---|---|
| 1 | 01.12.16 | ----- | cpel | jper | Lower operational temperature of -40°C was 0°C<br>Lower storage temperature of -40°C was -20°C |

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| MFR | MSS-CAD |
|---|---|
| S3960 | |
| Scale | Format |
| | A3 |

MEGGITT
Meggitt SA
Rte de Moncor 4, CH-1752 Villars-sur-Glâne, Switzerland

Material:

Repl.by

Repl.for

| Linear Tolerances [mm] | | | | | | | | | Radius / Chamfers [mm] | | | Tol. on angle [°] | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ' | ›0,5 …3 | ›3 …6 | ›6 …30 | ›30 …120 | ›120 …400 | ›400 …1000 | ›1000 …2000 | ›2000 …4000 | ›0,5 …3 | ›3 …6 | ›6 | … 10 | ›10 …50 | ›50 …120 | ›120 …400 |
| | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

| | | |
|---|---|---|
| Drawn | 11.11.2013 | C.Pellegrinelli |
| Checked | 11.11.2013 | H-P.Aeby |
| Appr. | 11.11.2013 | J.Perriard |

Wiring diagram cCSAus
GSI 127

DWG.N°
PZ 6924

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# cCSAus certificate:

EN

## 70198728

## for

## IPC707

EX

Meggitt SA
Route de Moncor 4
PO Box 1616
1701 Fribourg
Switzerland



energy@ch.meggitt.com
www.meggittsensing.com/energy

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# Certificate of Compliance

**Certificate:** 70198728 **Master Contract:** 175074

**Project:** 70198728 **Date Issued:** 2018-12-07

**Issued to:** **Meggitt SA**
**Rte de Moncor 4**
**Villars-sur-Glane, Fribourg 1752**
**SWITZERLAND**

**Attention:** **Carlo Pellegrinelli**

***The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.***

**Issued by:** Hossein Saleh
Hossein Saleh

**PRODUCTS**

**CLASS 2258 04** - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - For Hazardous Locations
**CLASS 2258 84** - PROCESS CONTROL EQUIPMENT - Intrinsically Safe, Entity - For Hazardous Locations - Certified to US Standards

**Class I, Division 1, Groups A, B, C, and D T6…T4**
**Ex ia IIC T6…T4 Ga**
**Class I, Zone 0, AEx ia IIC T6…T4 Ga**

IPC 707 Signal Conditioner is an analog electronic conditioner which converts the electrical charges coming from a piezoelectric sensor (sensor side) into an analog voltage or current signal (signal side). The electronic circuitry of the IPC 707 signal conditioner is fully potted and incorporated into an aluminum enclosure.

IPC 707signal Conditioner is equipped with terminals (sensor side and signal side) and with an optional clip for DIN rail mounting. Signal side output configurations could be one of the following:

- Voltage output: 3-wires transmission mode,
- Current output: 2-wires transmission mode.

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Entity Parameter Values:

| Terminal | Intrinsic Safety Electrical Parameters | |
|---|---|---|
| J0 (SUP, COM) | $U_i/V_{max}$: 28 V, $I_i/I_{max}$: 100 mA, $P_i/P_{max}$: 700 mW | $C_i$: 2.2 nF, $L_i$: 1 uH |
| J0 (OUT, COM) | | $C_i$: 9.6 nF, $L_i$: 565 uH |
| J1 (IN+, COM) (IN-, COM) | Uo/Vos: 6.6 V, Io/Isc: 66 mA, Po/Pmax: 107 mW, Co/Ca: 5.69 uF, $L_o/L_a$: 3.435 mH | |

Temperature Table:

| Temperature Class / Code | Ambient Temperature Range |
|---|---|
| T6 | -40 °C ≤ $T_{AMB}$ ≤ +70 °C |
| T5 | -40 °C ≤ $T_{AMB}$ ≤ +80 °C |
| T4 | -40 °C ≤ $T_{AMB}$ ≤ +85 °C |

Notes:

1. The above model is fixed connection, Pollution Degree 2 (Micro Environment), Overvoltage Category I.
2. Mode of operation: Continuous.
3. Environmental Conditions: Extended, Indoor use, -40°C to +85°C, altitude up to 4000m, RH% of 0-95% (non-condensing).
4. The sensor that can be attached to the IPC707 Signal Conditioner has not been assessed under this certification. The suitability of the combination as a system is to be determined.

**Conditions of Acceptability:**

1. The intrinsic safety terminal blocks (IS boards) must be connected only to an Intrinsically Safe certified apparatus.
2. The equipment housing contains more than 10% of aluminum. It must be mounted in such a manner as to eliminate the risk of sparks caused by friction or impact.
3. The grounding of the Intrinsically Safe circuits must be in accordance with the requirements of CEC and NEC.
4. End-use shall ensure the device is properly connected to Earth upon installation.

**CLASS 2258 02** - PROCESS CONTROL EQUIPMENT – For Hazardous Locations
**CLASS 2258 82** - PROCESS CONTROL EQUIPMENT – For Hazardous Locations - Certified to US Standards

**Class I, Division 2, Groups A, B, C, and D T6…T4**
**Ex ec IIC T6…T4 Gc**
**Class I, Zone 2, AEx ec IIC T6…T4 Gc**

IPC 707 Signal Conditioner is an analog electronic conditioner which converts the electrical charges coming from a piezoelectric sensor (sensor side) into an analog voltage or current signal (signal side). The electronic circuitry of the IPC 707 signal conditioner is fully potted and incorporated into an aluminum enclosure.

IPC 707signal Conditioner is equipped with terminals (sensor side and signal side) and with an optional clip for DIN rail mounting. Signal side output configurations could be one of the following:

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**Certificate:** 70198728 **Master Contract:** 175074
**Project:** 70198728 **Date Issued:** 2018-12-07

- Voltage output: 3-wires transmission mode,
- Current output: 2-wires transmission mode.

Electrical Rating: $U_{MAX}$: 30 V, $I_{MAX}$: 20 mA

Temperature Table:

| Temperature Class / Code | T6 | T5 | T4 |
|---|---|---|---|
| Ambient Temperature Range | -40 °C ≤ $T_{AMB}$ ≤ +70 °C | -40 °C ≤ $T_{AMB}$ ≤ +80 °C | -40 °C ≤ $T_{AMB}$ ≤ +85 °C |

Notes:

1. The above model is fixed connection, Pollution Degree 2 (Macro Environment), Installation Category I.
2. Mode of operation: Continuous.
3. Environmental Conditions: Extended, Indoor use, -40°C to +85°C, altitude up to 4000m, RH% of 0-95% (non-condensing).
4. The sensor that can be attached to the IPC707 Signal Conditioner has not been assessed under this certification. The suitability of the combination as a system is to be determined.

**Conditions of Acceptability:**

1. To be supplied by a Class 2 or limited-energy source on the signal side according to CSA 61010-1-12/UL 61010-1 3rd Edition.
2. Transient protection shall be provided that is set at a level not exceeding 140 % of the peak rated voltage value at the supply terminals to the equipment.
3. The equipment shall be used in an area of not more than pollution degree 2 as defined in IEC 60664-1.
4. For Zone 2 application, this device shall be installed within a fixed end-use enclosure that provides a degree of protection not less than IP54 according to CSA/UL 60079-0 and CSA/UL 60079-7. The suitability of the enclosure is subject to acceptance by the local authorities having jurisdiction at the time of installation.
5. For Division 2 application, this device shall be installed within a fixed end-use enclosure that provides a degree of protection Type 4. The suitability of the enclosure is subject to acceptance by the local authorities having jurisdiction at the time of installation.
6. The final enclosure must bear the following warning marking both in French and English: “Do not connect or disconnect when an explosive atmosphere is present”.
7. The final installation of the device shall meet the requirements of CEC (for Canada) and NEC (for USA) for wiring method in Division 2 and Zone 2 and is subject to acceptance of local authority having jurisdiction.
8. End-use shall ensure the device is properly connected to Earth upon installation.

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**Certificate:** 70198728 **Master Contract:** 175074
**Project:** 70198728 **Date Issued:** 2018-12-07

**APPLICABLE REQUIREMENTS**

| | |
|---|---|
| CAN/CSA C22.2 No. 61010-1-12 | Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use - Part 1: General Requirements - Third Edition |
| CSA Std. C22.2 No. 213-17 | Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations |
| CAN/CSA-C22.2 No. 60079-0:15 | Explosive Atmospheres - Part 0: Equipment - General requirements |
| CAN/CSA-C22.2 No. 60079-7:16 | Explosive atmospheres - Part 7: Equipment protection by increased safety “e” |
| CAN/CSA-C22.2 No. 60079-11:14 | Explosive Atmospheres - Part 11: Equipment protection by intrinsic safety "i" |
| ANSI/UL 61010-1 3rd Edition | Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use - Part 1: General Requirements - Third Edition |
| ANSI/UL 121201 Edition 9 | Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations |
| ANSI/UL 60079-0:13 | Electrical Apparatus for Explosive Gas Atmospheres - Part 0: General Requirements |
| ANSI/UL 60079-7:17 | Explosive Atmospheres - Part 7: Equipment Protection by Increased Safety “e” |
| ANSI/UL 60079-11:13 | Electrical apparatus for Explosive Gas Atmospheres - Part 11: Intrinsic Safety “i” |

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*Supplement to Certificate of Compliance*

**Certificate:** 70198728 **Master Contract:** 175074

***The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.***

## Product Certification History

| Project | Date | Description |
|---|---|---|
| 70198728 | 2018-12-07 | Original North American certification of IPC707 Signal Conditioner with Model Number 244-707-000-XXX based on acceptance of existing IEC and IECEx reports for the following markings: Class I, Division 1, Groups A, B, C, D T6…T4; Ex ia IIC T6...T4 Ga; Class I, Zone 0, AEx ia IIC T6...T4 Ga; and Class I, Division 2, Groups A, B, C, and D T6…T4; Ex ec IIC T6...T4 Gc; Class I, Zone 2, AEx ec IIC T 6...T4 Gc. |

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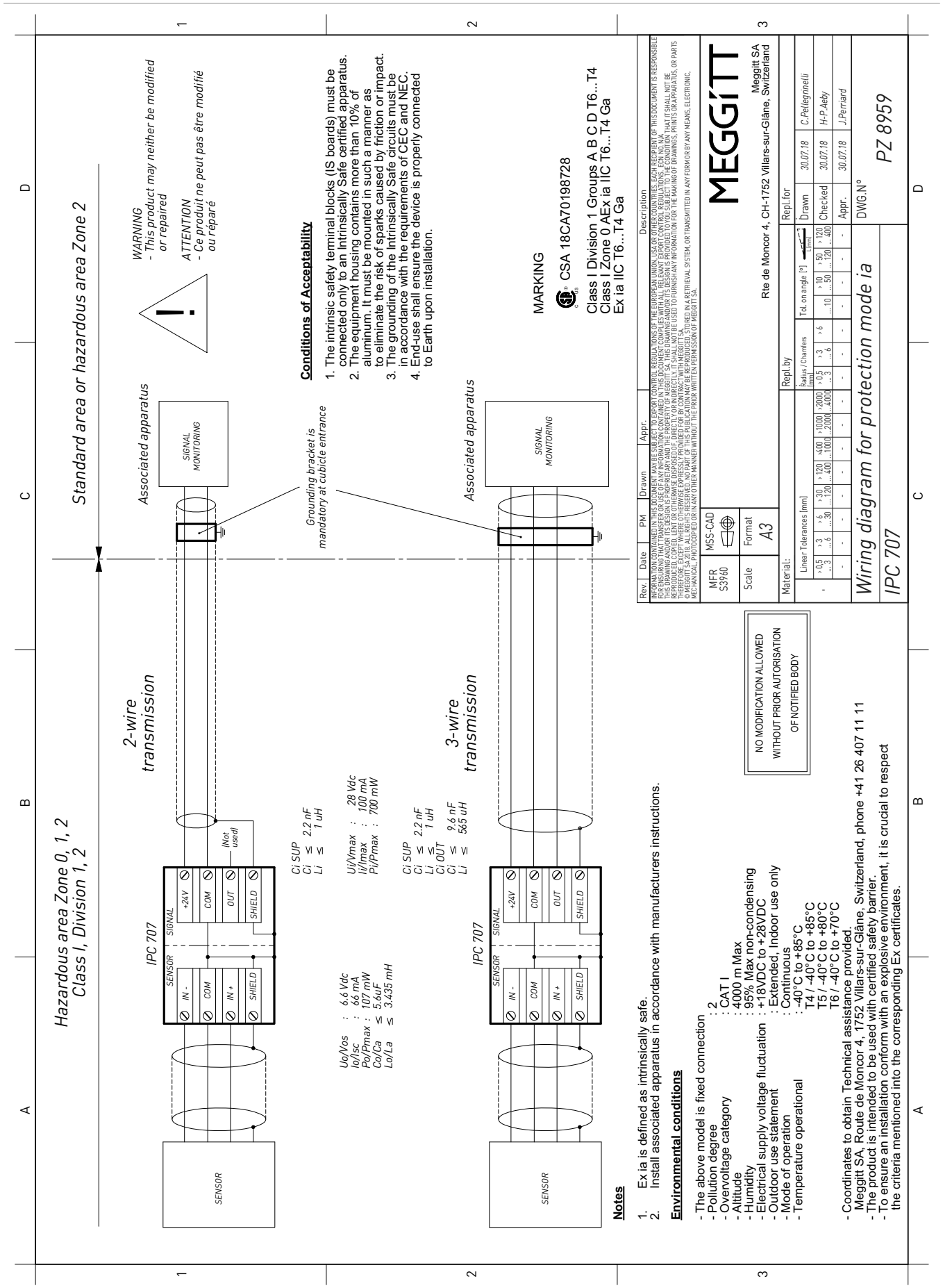
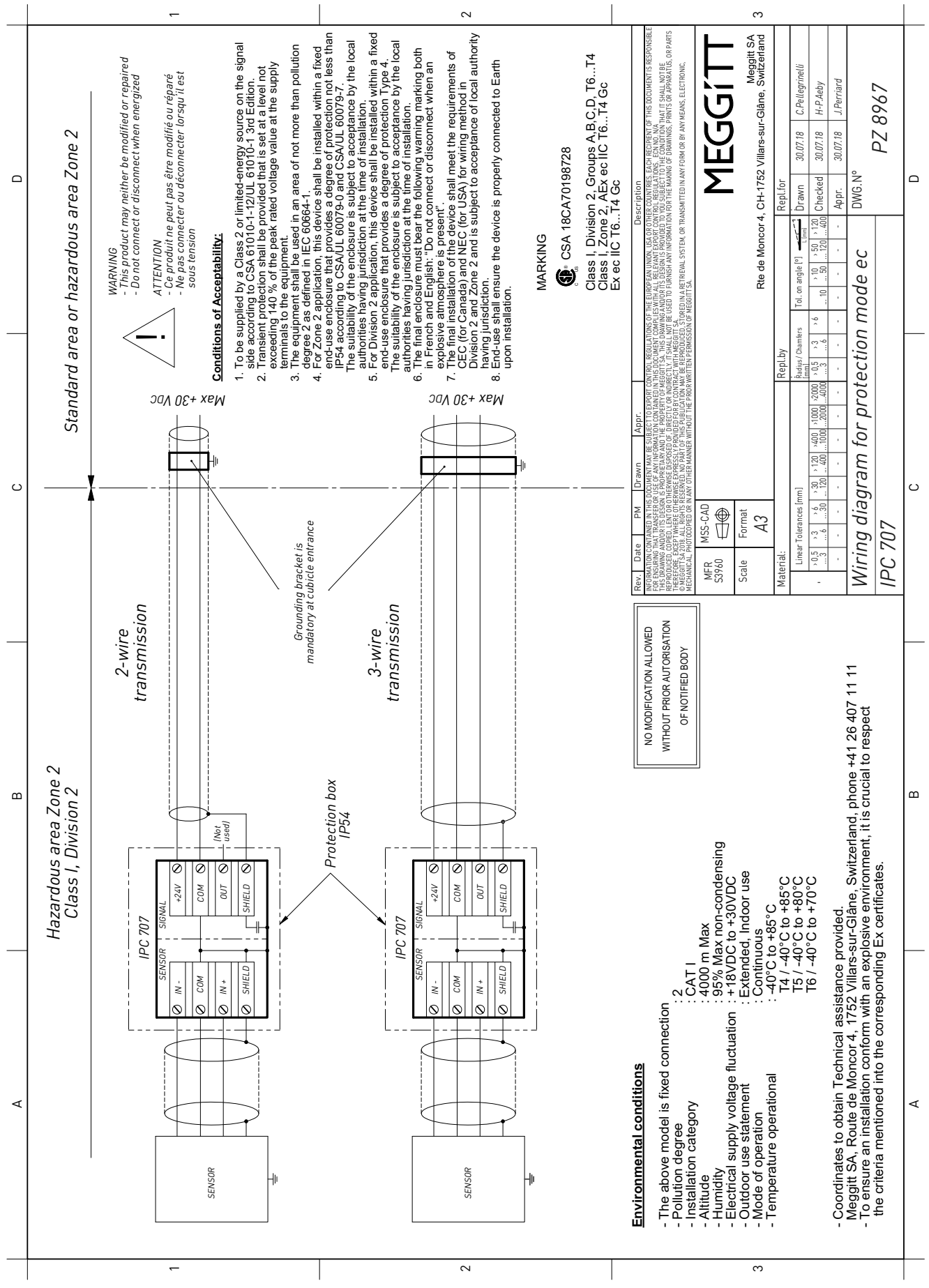

Hazardous area Zone 0, 1, 2
Class I, Division 1, 2
Standard area or hazardous area Zone 2
2-wire transmission
3-wire transmission
Associated apparatus
SIGNAL MONITORING
Grounding bracket is mandatory at cubicle entrance
IPC 707
SENSOR
IN -
COM
IN +
SHIELD
+24V
OUT
(Not used)
Ui/Vmax : 28 Vdc
Ii/Imax : 100 mA
Pi/Pmax : 700 mW
Ci SUP 2.2 nF
Ci ≤ 1 uH
Li ≤
Uo/Vos : 6.6 Vdc
Io/Isc : 66 mA
Po/Pmax : 107 mW
Co/Ca ≤ 5.6uF
Lo/La ≤ 3.435 mH
Ci OUT 9.6 nF
Li ≤ 565 uH
WARNING
- This product may neither be modified or repaired
ATTENTION
- Ce produit ne peut pas être modifié ou réparé
Conditions of Acceptability
1. The intrinsic safety terminal blocks (IS boards) must be connected only to an Intrinsically Safe certified apparatus.
2. The equipment housing contains more than 10% of aluminum. It must be mounted in such a manner as to eliminate the risk of sparks caused by friction or impact.
3. The grounding of the Intrinsically Safe circuits must be in accordance with the requirements of CEC and NEC.
4. End-use shall ensure the device is properly connected to Earth upon installation.
MARKING
CSA 18CA70198728
Class I Division 1 Groups A B C D T6...T4
Class I Zone 0 AEx ia IIC T6...T4 Ga
Ex ia IIC T6...T4 Ga
Notes
1. Ex ia is defined as intrinsically safe.
2. Install associated apparatus in accordance with manufacturers instructions.
Environmental conditions
- The above model is fixed connection : 2
- Pollution degree : 2
- Overvoltage category : CAT I
- Altitude : 4000 m Max
- Humidity : 95% Max non-condensing
- Electrical supply voltage fluctuation : +18VDC to +28VDC
- Outdoor use statement : Extended. Indoor use only
- Mode of operation : Continuous
- Temperature operational : -40°C to +85°C
T4 / -40°C to +85°C
T5 / -40°C to +80°C
T6 / -40°C to +70°C
- Coordinates to obtain Technical assistance provided.
Meggitt SA, Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland, phone +41 26 407 11 11
- The product is intended to be used with certified safety barrier.
- To ensure an installation conform with an explosive environment, it is crucial to respect the criteria mentioned into the corresponding Ex certificates.
NO MODIFICATION ALLOWED WITHOUT PRIOR AUTORISATION OF NOTIFIED BODY
Rev. Date PM Drawn Appr. Description
MFR S3960
MS5-CAD
Scale
Format A3
Material:
Repl.by
Repl.for
Linear Tolerances [mm]
Radius / Chamfers [mm]
Tol. on angle [°]
Drawn 30.07.18 C.Pellegrinelli
Checked 30.07.18 H-P.Aeby
Appr. 30.07.18 J.Perriard
MEGGITT
Meggitt SA
Rte de Moncor 4, CH-1752 Villars-sur-Glâne, Switzerland
Wiring diagram for protection mode ia
IPC 707
DWG.N°
PZ 8959


Standard area or hazardous area Zone 2
Hazardous area Zone 2
Class I, Division 2
WARNING
- This product may neither be modified or repaired
- Do not connect or disconnect when energized
ATTENTION
- Ce produit ne peut pas être modifié ou réparé
- Ne pas connecter ou déconnecter lorsqu'il est sous tension
Conditions of Acceptability:
1. To be supplied by a Class 2 or limited-energy source on the signal side according to CSA 61010-1-12/UL 61010-1 3rd Edition.
2. Transient protection shall be provided that is set at a level not exceeding 140 % of the peak rated voltage value at the supply terminals to the equipment.
3. The equipment shall be used in an area of not more than pollution degree 2 as defined in IEC 60664-1.
4. For Zone 2 application, this device shall be installed within a fixed end-use enclosure that provides a degree of protection not less than IP54 according to CSA/UL 60079-0 and CSA/UL 60079-7. The suitability of the enclosure is subject to acceptance by the local authorities having jurisdiction at the time of installation.
5. For Division 2 application, this device shall be installed within a fixed end-use enclosure that provides a degree of protection Type 4. The suitability of the enclosure is subject to acceptance by the local authorities having jurisdiction at the time of installation.
6. The final enclosure must bear the following warning marking both in French and English: "Do not connect or disconnect when an explosive atmosphere is present".
7. The final installation of the device shall meet the requirements of CEC (for Canada) and NEC (for USA) for wiring method in Division 2 and Zone 2 and is subject to acceptance of local authority having jurisdiction.
8. End-use shall ensure the device is properly connected to Earth upon installation.
MARKING
CSA 18CA70198728
Class I, Division 2, Groups A,B,C,D, T6...T4
Class I, Zone 2, AEx ec IIC T6...T4 Gc
Ex ec IIC T6...T4 Gc
2-wire transmission
3-wire transmission
Grounding bracket is mandatory at cubicle entrance
Protection box IP54
Max +30 VDC
Max +30 VDC
IPC 707
SENSOR
SIGNAL
IN -
COM
IN +
SHIELD
+24V
OUT
(Not used)
SENSOR
Environmental conditions
- The above model is fixed connection
- Pollution degree : 2
- Installation category : CAT I
- Altitude : 4000 m Max
- Humidity : 95% Max non-condensing
- Electrical supply voltage fluctuation : +18VDC to +30VDC
- Outdoor use statement : Extended, Indoor use
- Mode of operation : Continuous
- Temperature operational : -40°C to +85°C
T4 / -40°C to +85°C
T5 / -40°C to +80°C
T6 / -40°C to +70°C
- Coordinates to obtain Technical assistance provided.
Meggitt SA, Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland, phone +41 26 407 11 11
- To ensure an installation conform with an explosive environment, it is crucial to respect the criteria mentioned into the corresponding Ex certificates.
NO MODIFICATION ALLOWED
WITHOUT PRIOR AUTORISATION
OF NOTIFIED BODY
Rev. | Date | PM | Drawn | Appr. | Description
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MFR S3960
MSS-CAD
Scale
Format
A3
MEGGiTT
Meggitt SA
Rte de Moncor 4, CH-1752 Villars-sur-Glâne, Switzerland
Material:
Repl.by
Repl.for
Linear Tolerances [mm]
Radius / Chamfers [mm]
Tol. on angle [°]
Drawn 30.07.18 C.Pellegrinelli
Checked 30.07.18 H-P.Aeby
Appr. 30.07.18 J.Perriard
Wiring diagram for protection mode ec
IPC 707
DWG.N° PZ 8967

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# APPENDIX D: IECEx CERTIFICATIONS

**Table D-1:** Related IECEx certificates

| Product(s) covered | Certificate number |
|---|---|
| ABA160, JB116 and JB118 | IECEx PTB 08.0003U |
| ABA161 | IECEx PTB 08.0005U |
| ABA17x | IECEx BVS 16.0026U |
| | IECEx PRE 14.0042U |
| CA134 | IECEx LCI 06.0008X |
| | IECEx LCI 10.0017X |
| CA20x | IECEx LCI 10.0018X |
| CA28x, CE28x and CE31x | IECEx LCI 10.0021X |
| | IECEx DEK 15.0029 |
| CA30x | IECEx LCI 10.0027X |
| CA901 | IECEx LCI 08.0041X |
| | IECEx LCI 10.0020X |
| GSI127 | IECEx LCIE 13.0026X |
| IPC707 | IECEx LCIE 18.0023X |
| Cable fittings (stuffing glands) | IECEx ITS 16.0011X |
| | IECEx ITS 16.0012X |
| | IECEx LCI 10.0009U |
| | IECEx PTB 03.0000 |
| | IECEx PTB 11.0019X |
| | IECEx SEV 15.0018 |
| | IECEx SEV 15.0019X |

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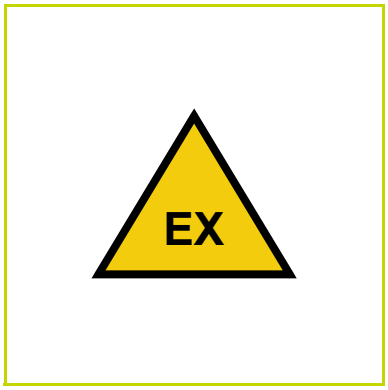
EX CERTIFICATE – IECEx

vibro-meter®

# IECEx PTB 08.0003U
# for
# ABA15x, ABA160, JB116, JB118 and PA151 enclosures




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference IECEx PTB 08.0003U
Edition 2 – March 2022

Meggitt SA, Route de Moncor 4, Case postale, 1701 Fribourg, Switzerland

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Fax: +41 26 407 1660
energy@ch.meggitt.com
www.meggittsensing.com/energy
www.meggitt.com

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# IECEx Certificate of Conformity

**INTERNATIONAL ELECTROTECHNICAL COMMISSION**
**IEC Certification System for Explosive Atmospheres**
for rules and details of the IECEx Scheme visit www.iecex.com

| | | | |
|---|---|---|---|
| Certificate No.: | **IECEx PTB 08.0003U** | Page 1 of 4 | Certificate history: |
| Status: | **Current** | Issue No: 4 | Issue 3 (2012-03-12)<br>Issue 2 (2009-08-17)<br>Issue 1 (2008-11-24)<br>Issue 0 (2008-03-12) |
| Date of Issue: | 2016-09-12 | | |
| Applicant: | **ROSE Systemtechnik GmbH**<br>Erbeweg 13<br>32457 Porta Westfalica<br>**Germany** | | |
| Equipment: | **Empty Enclosure Type 26.******** | | |
| Optional accessory: | | | |
| Type of Protection: | **Increased Safety "eb", Protection by enclosures "tb"** | | |
| Marking: | Ex eb IIC Gb<br>Ex tb III C Db | | |

Approved for issue on behalf of the IECEx Certification Body: **Dr.-Ing. Detlev Markus**

Position: **Head of Working Group "Flame Transmission Processes"**

Signature: (for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

**Physikalisch-Technische Bundesanstalt (PTB)**
**Bundesallee 100**
**38116 Braunschweig**
**Germany**

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin

# IECEx Certificate of Conformity

| | | |
|---|---|---|
| Certificate No.: | **IECEx PTB 08.0003U** | Page 2 of 4 |
| Date of issue: | 2016-09-12 | Issue No: 4 |

Manufacturer: **ROSE Systemtechnik GmbH**
Erbeweg 13
32457 Porta Westfalica
**Germany**

Additional manufacturing locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

**STANDARDS** :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

| | |
|---|---|
| **IEC 60079-0:2011**<br>Edition:6.0 | Explosive atmospheres - Part 0: General requirements |
| **IEC 60079-31:2013**<br>Edition:2 | Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t" |
| **IEC 60079-7:2015**<br>Edition:5.0 | Explosive atmospheres – Part 7: Equipment protection by increased safety "e" |

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

**TEST & ASSESSMENT REPORTS:**
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

DE/PTB/ExTR08.0007/04

Quality Assessment Report:

DE/TUR/QAR09.0009/06



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Original copy (English)

# IECEx Certificate of Conformity

Certificate No.: **IECEx PTB 08.0003U** Page 3 of 4

Date of issue: 2016-09-12 Issue No: 4

**EQUIPMENT:**
Equipment and systems covered by this Certificate are as follows:

**Description of equipment**

Empty enclosure of type 26.******, made of polyester, which may be provided with flanges and a glass or plastic inspection window.
It can optionally be fitted with an earth bolt compl. with / or without off-shore plate and screwed or riveted typeplates made of stainless steel.

Technical Data, Nomenclature and Schedule of Limitations see Annex.

**SPECIFIC CONDITIONS OF USE: NO**

# IECEx Certificate of Conformity

Certificate No.: **IECEx PTB 08.0003U** Page 4 of 4

Date of issue: 2016-09-12 Issue No: 4

**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**
1) New test according to the standards IEC 60079-7:2015 and IEC 60079-31:2013.
2) New marking.
3)The maximum ambient temperature is decreased to +127 °C.

**Annex:**

COCA-08.0003U-Issue 4.pdf



Original copy (English)
MEGGITT

Applicant: ROSE Systemtechnik GmbH
Erbeweg 13
32457 Porta Westfalica
Germany

Electrical Apparatus: Empty Enclosure Type 26.******

**Description of equipment**

Empty enclosure of type 26.******, made of polyester, which may be provided with flanges and a glass or plastic inspection window.
It can optionally be fitted with an earth bolt compl. with / or without off-shore plate and screwed or riveted type plates made of stainless steel.

**Technical data**

| **Sizes and Product lines** | | | | |
|---|---|---|---|---|
| Type 26.08 08 06 to 26.41 40 20 (Ex-standard-enclosure) | | Width | Height | Depth |
| | min. | 80 mm | 75 mm | 56 mm |
| | max. | 400 mm | 405 mm | 201 mm |
| | | | | |
| Type 26.88 01 00 to 26.88 04 00 (Ex-Okta Box-enclosure) | | Width | Height | Depth |
| | min. | 81 mm | 81 mm | 75 mm |
| | max. | 200 mm | 200 mm | 125 mm |
| | | | | |
| Type 26.14 01 00 to 26.14 03 00 (Ex-PF-enclosure) | | Width | Height | Depth |
| | min. | 270 mm | 170 mm | 136 mm |
| | max. | 541 mm | 270 mm | 136 mm |
| | | | | |
| Type 26.12 20 00 to 26.40 60 00 (Mini-Polyglas-Ex-enclosure and Polyglas-Ex-enclosure) | | Width | Height | Depth |
| | min. | 200 mm | 120 mm | 100 mm |
| | max. | 405 mm | 605 mm | 252 mm |
| | | | | |
| Type 26.01 22 15 to 26.01 44 15 (Ex-Combi Box-enclosure) | | Width | Height | Depth |
| | min. | 177 mm | 177 mm | 145 mm |
| | max. | 360 mm | 360 mm | 145 mm |



Attachment to Certificate
IECEx PTB 08.0003U, Issue No. 4

**Ambient temperature**
-55 °C to +127 °C with Silicon gasket
-40 °C to +100 °C with HF gasket
-40 °C to +100 °C with PU foam
-20 °C to + 85 °C with CR gasket
-20 °C to +100 °C with window out of glas
-50 °C to +100 °C with PC-window mono duro clear 8099,conductive
to +105 °C Ex-PF-enclosure, Mini-Polyglas-Ex-enclosure and Polyglas-Ex-enclosure
(minimum temperature depends on the gasket used)

**Ingress protection** ..... IP 66 acc. to IEC 60529

**Thread stud of the earth bolt compl.**..... M6x60, M8x50, M10x60, M12x80

**Nomenclature**

| 26. | ** | ** | ** |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

1: Type, material polyester
2: Height or product line (see above)
3: Width or number depending on product line
4: Depth or number depending on product line

**Schedule of limitations**

Installation of electrical components requires a further assessment by an ExCB.

**Physikalisch-Technische Bundesanstalt (PTB)**
Bundesallee 100, 38116 Braunschweig, Germany
Postfach 33 45, 38023 Braunschweig, Germany
Telephone +49 531 592-0, Telefax +49 531 592-3605

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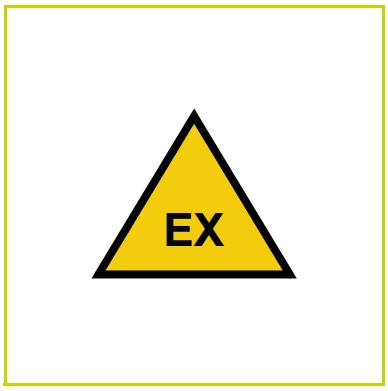
## EX CERTIFICATE – IECEx

vibro-meter®

# IECEx PTB 08.0005U
# for
# ABA161 and PA150 enclosures




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference IECEx PTB 08.0005U
Edition 2 – April 2022

Meggitt SA, Route de Moncor 4, Case postale, 1701 Fribourg, Switzerland

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energy@ch.meggitt.com
www.meggittsensing.com/energy
www.meggitt.com

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# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION
## IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

| | | | |
|---|---|---|---|
| Certificate No.: | IECEx PTB 08.0005U | Issue No: 2 | Certificate history: |
| Status: | **Current** | Page 1 of 4 | Issue No. 2 (2016-09-08)<br>Issue No. 1 (2012-02-29)<br>Issue No. 0 (2008-03-07) |
| Date of Issue: | **2016-09-08** | | |
| Applicant: | **ROSE Systemtechnik GmbH**<br>Erbeweg 13<br>32457 Porta Westfalica<br>**Germany** | | |
| Equipment:<br>*Optional accessory:* | **Empty Enclosure Type 25.******** | | |
| Type of Protection: | **Increased Safety "eb", Protection by enclosures "tb"** | | |
| Marking: | Ex eb IIC Gb<br>Ex tb IIIC Db | | |

*Approved for issue on behalf of the IECEx Certification Body:* Dr.-Ing. Detlev Markus

*Position:* Head of Working Group "Flame Transmission Processes"

*Signature:*
*(for printed version)*

*Date:* 07.09.16

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

**Physikalisch-Technische Bundesanstalt (PTB)**
**Bundesallee 100**
**38116 Braunschweig**
**Germany**

Physikalisch-Technische Bundesanstalt Braunschweig und Berlin

# IECEx Certificate of Conformity

| | | |
|---|---|---|
| Certificate No: | IECEx PTB 08.0005U | Issue No: 2 |
| Date of Issue: | **2016-09-08** | Page 2 of 4 |
| Manufacturer: | **ROSE Systemtechnik GmbH**<br>Erbeweg 13<br>32457 Porta Westfalica<br>**Germany** | |

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

| | |
|---|---|
| **IEC 60079-0 : 2011**<br>Edition:6.0 | Explosive atmospheres - Part 0: General requirements |
| **IEC 60079-31 : 2013**<br>Edition:2 | Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t" |
| **IEC 60079-7 : 2015**<br>Edition:5.0 | Explosive atmospheres – Part 7: Equipment protection by increased safety "e" |

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**

*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

DE/PTB/ExTR08.0004/02

Quality Assessment Report:

DE/TUR/QAR09.0009/06

# IECEx Certificate of Conformity

| | | |
|---|---|---|
| Certificate No: | IECEx PTB 08.0005U | Issue No: 2 |
| Date of Issue: | **2016-09-08** | Page 3 of 4 |

**Schedule**

**EQUIPMENT:**

*Equipment and systems covered by this certificate are as follows:*

**Description**

Empty enclosure type 25.******, made of aluminium, which may be provided with flanges and a glass or plastic inspection window.

Technical Data, Nomenclature and Schedule of Limitations see attachment.

**CONDITIONS OF CERTIFICATION: NO**

# IECEx Certificate of Conformity

| | | |
|---|---|---|
| Certificate No: | IECEx PTB 08.0005U | Issue No: 2 |
| Date of Issue: | **2016-09-08** | Page 4 of 4 |

**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

1) New test according to IEC 60079-0:2011, IEC 60079-7:2015, IEC 60079-31:2013
2) New marking.

**Annex:**

COCA08.0005U-02.pdf



Original copy (English)
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Attachment to Certificate
IECEx PTB 08.0005U, Issue No. 2

Applicant: ROSE Systemtechnik GmbH
Erbeweg 13
32457 Porta Westfalica
Germany

Electrical Apparatus: Empty Enclosure Type 25.******

**Description of equipment**

Empty enclosure type 25.******, made of aluminium, which may be provided with flanges and a glass or plastic inspection window.

**Technical data**

| sizes | length | width | depth |
|---|---|---|---|
| min | 58 mm | 64 mm | 34 mm |
| max | 600 mm | 600 mm | 227 mm |

**Ambient temperature**

-55 °C to +135 °C with Silicon gasket
-40 °C to +100 °C with HF gasket
-40 °C to +100 °C with PU-foam
-20 °C to + 85 °C with CR gasket
-20 °C to +100 °C with window out of glas
-50 °C to +100 °C with PC-window mono duro clear 8099, conductive

**Protection against contact, foreign bodies and water**

IP 66 acc. to IEC 60529

**Nomenclature**

| 25. | ** | ** | ** |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

1: Material aluminium
2: Height
3: Width
4: Depth

**Schedule of limitations**

The empty enclosure with a coating must not be used in areas affected by charge-producing processes, mechanical friction and separation processes, electron emission (e.g. in the vicinity of electrostatic coating equipment), and pneumatically conveyed dust.

Installation of electrical components requires a further assessment by an ExCB.

**Physikalisch-Technische Bundesanstalt (PTB)**
Bundesallee 100, 38116 Braunschweig, Germany
Postfach 33 45, 38023 Braunschweig, Germany
Telephone +49 531 592-0, Telefax +49 531 592-3605







**IECEx Technical Report: DE/PTB/ExTR08.0004/02 details**

| ExTR : | |
|---|---|
| ExTR Reference Number *: (automatic numbering) | DE/PTB/ExTR08.0004/02 |
| Status*: | Issued |
| ExTR Free Reference Number*: | DE/PTB/ExTR08.0004/00 |
| Date of Issue*: (yyyy-mm-dd) | 2016-09-08 |
| Details of change*: | New test according to IEC 60079-0:2011, IEC 60079-7:2015, IEC 60079-31:2013 and changing of the marking. |
| List of Standards Covered*: | IEC 60079-0 (Ed.6.0); IEC 60079-31 (Ed.2); IEC 60079-7 (Ed.5.0) |
| Issuing ExTL*: | PTB - Physikalisch-Technische Bundesanstalt (PTB) |
| Endorsing ExCB*: | PTB - Physikalisch-Technische Bundesanstalt (PTB) |
| Manufacturer*: | ROSE Systemtechnik GmbH + Co. KG<br>Erbeweg 13 - 15<br>32457 Porta Westfalica |
| Country of Manufacture*: | Germany |
| Ex Protection*: | Increased Safety "eb"<br>Protection by Enclosures "tb" |
| Ratings: | see certificate |
| Equipment*: | Empty Enclosure |
| Model Reference*: | Type 25.****** |
| Related IECEx Certificates: | IECEx PTB 08.0005U issue: 2 [Current] |
| Comment: | |
| Attachment: | |

Last modified: 06.09.2016 13:28:19

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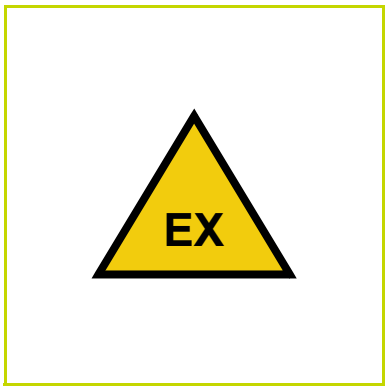
EX CERTIFICATE – IECEx

vibro-meter®

# IECEx BVS 16.0026U
# for
# ABA17x industrial housings




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference IECEx BVS 16.0026U
Edition 2 – January 2022

Meggitt SA, Route de Moncor 4, Case postale, 1701 Fribourg, Switzerland

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energy@ch.meggitt.com
www.meggittsensing.com/energy
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# IECEx Certificate of Conformity

**INTERNATIONAL ELECTROTECHNICAL COMMISSION**
**IEC Certification System for Explosive Atmospheres**
for rules and details of the IECEx Scheme visit www.iecex.com
**Ex COMPONENT CERTIFICATE**

Certificate No.: **IECEx BVS 16.0026U** Page 1 of 5 Certificate history:
Status: **Current** Issue No: 1 Issue 0 (2016-05-10)
Date of Issue: 2019-02-20

Applicant: **thuba Ltd.**
Blauensteinerstrasse 16
4002 Basel
**Switzerland**

Ex Component: Empty enclosure type eCAM ** ** **

*This component is NOT intended to be used alone and requires additional consideration when incorporated into other equipment or systems for use in explosive atmospheres (refer to IEC 60079-0).*

Type of Protection: **Equipment dust ignition protection by enclosure "t", Equipment protection by increased safety "e"**

Marking: Ex eb IIC Gb
Ex tb IIIC Db

Approved for issue on behalf of the IECEx Certification Body: **Jörg Koch**

Position: **Head of Certification Body**

Signature: (for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

**DEKRA Testing and Certification GmbH**
**Certification Body**
**Dinnendahlstrasse 9**
**44809 Bochum**
**Germany**

DEKRA
On the safe side.

# IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 16.0026U** Page 2 of 5
Date of issue: 2019-02-20 Issue No: 1

Manufacturer: **thuba Ltd.**
Blauensteinerstrasse 16
4002 Basel
**Switzerland**

Additional manufacturing locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

**STANDARDS** :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2011 Edition:6.0 — Explosive atmospheres - Part 0: General requirements

IEC 60079-31:2013 Edition:2 — Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

IEC 60079-7:2015 Edition:5.0 — Explosive atmospheres – Part 7: Equipment protection by increased safety "e"

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

**TEST & ASSESSMENT REPORTS:**
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

DE/BVS/ExTR16.0029/01

Quality Assessment Report:

DE/BVS/QAR13.0010/05

# IECEx Certificate of Conformity



**Ex Component(s) covered by this certificate is described below:**

**Subject and Type**

Empty enclosure type eCAM **1) **2) **3)

| Steel or stainless steel | size | | |
|---|---|---|---|
| Type | width[1) ] [mm] | height[2)] [mm] | depth[3)] [mm] |

Enclosure with screwed fixing covers (size range)

| | | | |
|---|---|---|---|
| eCAM 12 12 08 | 120 | 120 | 80 |
| up to | | | |
| eCAM 40 40 20 | 400 | 400 | 200 |

Enclosure with hinges and latches (size range)

| | | | |
|---|---|---|---|
| eCAM 20 20 10 | 200 | 200 | 100 |
| up to | | | |
| eCAM 100 120 50 | 1000 | 1200 | 500 |

**Description**

The empty enclosure type eCam ** ** ** is built in type of protection Increased Safety "e" for use in areas with EPL Gb or Protection by Enclosure "t" for use in areas with EPL Db.
The empty enclosure is used for the mounting of different switch and control apparatus. The enclosure consists of steel or stainless steel and can be constructed with a screwed fixing cover or a cover with hinges and latches.

**SCHEDULE OF LIMITATIONS:**

N/A

# IECEx Certificate of Conformity



**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**
Update for the new Ex component certificate layout.



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# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 16.0026U

Date of issue: 2019-02-20

Page 5 of 5

Issue No: 1

**Additional information:**
**Parameters**

| | |
|---|---|
| Limits of service temperature | -55 °C up to +100 °C |
| IP protection degree | IP66 |

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# IECEx certificate:

## IECEx PRE 14.0042U

## for

## ABA 17x

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION
## IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

| | | | |
|---|---|---|---|
| Certificate No.: | IECEx PRE 14.0042U | Issue No: 0 | Certificate history: Issue No. 0 (2014-10-31) |
| Status: | **Current** | Page 1 of 3 | |
| Date of Issue: | **2014-10-31** | | |
| Applicant: | **Ensto Finland Oy**<br>Ensio Miettisen katu 2<br>P.O.Box 77, 06101 Porvoo<br>**Finland** | | |
| Electrical Apparatus: | **Empty junction box, Cubo X** | | |
| *Optional accessory:* | | | |
| Type of Protection: | **Ex e/ Ex t** | | |
| Marking: | Ex e IIC Gb<br>Ex t IIIC Db IP 64 or IP66 or IP66/67<br>Tamb: -55°C/-30°C to +45°C/+85°C/+100°C/+160°C | | |

*Approved for issue on behalf of the IECEx Certification Body:* Bjørn Spongsveen

*Position:* Certification Manager

*Signature:*
*(for printed version)*

*Date:*

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

**DNV Nemko Presafe AS**
**Gaustadalleen 30**
**P.O.Box 73 Blindern**
**0314 Oslo**
**Norway**

Presafe
A DNV & NEMKO COMPANY

# IECEx Certificate of Conformity

| | | |
|---|---|---|
| Certificate No: | IECEx PRE 14.0042U | Issue No: 0 |
| Date of Issue: | **2014-10-31** | Page 2 of 3 |
| Manufacturer: | **Ensto Finland Oy**<br>Ensio Miettisen katu 2<br>06101 Porvoo<br>**Finland** | |

Additional Manufacturing location(s):

**Ensto Finland Oy**
Insinöörinkatu 1
FI-50100 Mikkeli
Finland

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

| | |
|---|---|
| **IEC 60079-0 : 2011**<br>Edition:6.0 | Explosive atmospheres - Part 0: General requirements |
| **IEC 60079-31 : 2013**<br>Edition:2 | Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t" |
| **IEC 60079-7 : 2006-07**<br>Edition:4 | Explosive atmospheres - Part 7: Equipment protection by increased safety "e" |

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**

*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

NO/PRE/ExTR14.0046/00

Quality Assessment Report:

FI/VTT/QAR11.0003/02

Gaustadalleen 30
P.O.Box 73 Blindern
0314 Oslo

**Annex to IECEx PRE 14.0042U Issue No.00**

Product Nomenclature:

| [X] | [Version] | [Material] | [Surface] | [Cut type] | [width] [height] [depth] | KOT8... | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | Customer specific feaatures<br>(Total No. Holes/Mounting Lugs) |
| | | | | | | | Max width: 1000 mm<br>Max height: 2000 mm<br>No restriction on depth |
| | | | | | | | [F]: Standard flange plate<br>[FC]: Custom sized flange plate(s)<br>[P]: Plain walls or cut-outs |
| | | | | | | | [N]: Natural surface<br>[B]: Brushed surface<br>[E]: Powder coated |
| | | | | | | | [S]: Stainless steel AISI304<br>[A]:Stainless steel AISI316L<br>[F]: Mild steel mild steel galvanized |
| | | | | | | | [1]: Lid with screws<br>[2]: Lid with screws and hinges<br>[3]: Lid with quick locks<br>[4]: Lid with screws and loose hinges |
| | | | | | | | [X]: Cubo X |

Examples:

X2ANP303015C –Combo

X3ANP303015C –Combo with standard lock

X3ANP303015S –Box with AISI lock

X3ANP303015 –Box with Standard lock

X3ANP10010015D – Two doors with standard locks

X3ANP10010015DS – Two doors with AISI locks

NB. If with two doors, then end of code there will be letter 'D', if supplied with AISI-locks, then after the code there will be letter 'S', if Combo option with EPDM gasket end letter will be 'C'.

## IECEx Certificate of Conformity

Certificate No: IECEx PRE 14.0042U Issue No: 0

Date of Issue: 2014-10-31 Page 3 of 3

**Schedule**

**EQUIPMENT:**

*Equipment and systems covered by this certificate are as follows:*

CuboX empty boxes are made of stainless steel or painted steel in various sizes. Enclosures can be fitted with optional plastic window or gland plates, mounting accessories like DIN-rails, mounting plates, brackets Metric & NPT thread coupler. Lid can be fixed by screws or combination of screws and loose hinges or quick locks. Several internal and external earthing options are provided. Sealing is ensured by high temperature silicone gasket (EPDM gasket can be used for gland plate or Combo assemblies). For information regarding tightening torques, refer to instructions for use. See attachment for more product details and rating.

This replaces **IECEx DNV 11.0005U**

**Schedule of Limitations**

- Potential risk of electrostatic discharge from plastic window, Refer to instructions for use.
- When the plastic switch handle is installed in the electrical apparatus, care must be taken that the temperatures at the mounting place are within the temperature range of use.

**CONDITIONS OF CERTIFICATION: NO**

**Annex:**

Annex to the certificate IECEx PRE 14.0042U.pdf

Gaustadalleen 30
P.O.Box 73 Blindern
0314 Oslo

Presafe
A DNV & NEMKO COMPANY

**Service temperature:**

Operating temperature limits for plain stainless steel enclosure (with or without gland plate): -55°C to +160°C

Operating temperature limits for stainless steel enclosure with Lexan plastic window, earthing option 3: -55°C to +100°C

Operating temperature limits for painted steel enclosure (with or without plastic window and gland plate): -55°C to +85°C

Operating temperature EPDM gasket/and or quick locks in enclosure: -55°C to +85°C

Operating temperature plastic switch handle in enclosure: -30°C to +45°C

**Degrees of Protection (IP Code)**

| Enclosure material | Optional accessories | IP rating |
|---|---|---|
| Stainless steel and painted steel | Plastic window | IP66/67 |
| Stainless steel and painted steel | Standard gland plate with silicon gasket | IP66 |
| Stainless steel or painted steel enclosure | AISI quick locks | IP66/67 |
| Stainless steel or painted steel enclosure | ZINK quick locks | IP66 |
| Stainless steel or painted steel enclosure | Gland plate & Combo box with EPDM gasket | IP66/67 |
| Stainless steel or painted steel enclosure | Plastic switch handle | IP64 |

**Example KOT8...**

**Enclosure standard type:** X3ABP304016S
**Example description:** Standard enclosure generated according to code key shown in certificate. Version 3 with stainless steel quick locks size 300x400x160mm, material AISI 316L brushed.

**Enclosure custom type:** X3ABP304016SKOT80001

**Example description:** Enclosure as X3ABP304016S with customer design features eg. d=16mm hole in bottom side. KOT8... Code by end of type refers to customer specific engineering drawing. Numbers (and letters) after KOT8 will specify general assembly drawing code. Number is sequential and cannot be used to specify other design. KOT8-design is always unique.

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MEGGITT

EN

# IECEx certificate:

## IECEx LCI 06.0008X

## for CA 134

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION
## IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx LCI 06.0008X Issue No.:3

Status: **Current**

Date of Issue: **2013-10-25** Page 1 of 4

Certificate history:
Issue No. 3 (2013-10-25)
Issue No. 2 (2011-12-23)
Issue No. 1 (2010-10-25)
Issue No. 0 (2006-7-3)

Applicant: **Meggitt SA**
Route de Moncor 4
1752 Villars-sur-Glâne
**Switzerland**

Electrical Apparatus: **Accelerometer**
*Optional accessory:*

Type of Protection: **ia**

Marking: Vibro-meter or MEGGITT or MFR S3960
Address : ...
PNR 144-134-000-XXX
Serial Number : ...
Year of construction : ...
Ex ia IIC T6 to T1 or 510°C Ga
IECEx LCI 06.0008X

*Approved for issue on behalf of the IECEx Certification Body:* Julien GAUTHIER

*Position:* Certification Officer

*Signature: (for printed version)*

*Date:* 2013-10-25

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:
**Laboratoire Central des Industries Electriques (LCIE)**
**33 Avenue du General Leclerc**
**FR-92260 Fontenay-aux-Roses**
**France**
**Documents relative to LCIE certification activites (Certificates, QARs, ExTRs) can be registered under the references "LCI" or "LCIE".**



# IECEx Certificate of Conformity

Certificate No.: IECEx LCI 06.0008X

Date of Issue: **2013-10-25** Issue No.: **3**



Manufacturer: **Meggitt SA**
Route de Moncor 4
1752 Villars-sur-Glâne
**Switzerland**

Additional Manufacturing location (s):
**Meggitt SA**
Route de Moncor 4
1752 Villars-sur-Glâne
Switzerland

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

**IEC 60079-0 : 2011** Explosive atmospheres - Part 0: General requirements
Edition: 6.0
**IEC 60079-11 : 2011** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition: 6.0

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**
*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:
FR/LCI/ExTR06.0012/00 FR/LCI/ExTR06.0012/01 FR/LCI/ExTR06.0012/02
FR/LCI/ExTR06.0012/03

Quality Assessment Report:

FR/LCI/QAR06.0006/00 FR/LCI/QAR06.0006/01 FR/LCI/QAR06.0006/02
FR/LCI/QAR06.0006/03 FR/LCI/QAR06.0006/04 FR/LCI/QAR06.0006/05
FR/LCI/QAR06.0006/06

# IECEx Certificate of Conformity

Certificate No.: IECEx LCI 06.0008X

Date of Issue: **2013-10-25** Issue No.: **3**



**Schedule**

**EQUIPMENT:**
*Equipment and systems covered by this certificate are as follows:*

DESCRIPTION
Accelerometer:
This sensor is electro mechanic transducer delivering at its terminal blocks an electrical load proportional to the measured pressure.
It works with piezoelectric equipment mounted in compression.

SPECIFIC PARAMETERS OF THE MODE OF PROTECTION "ia" :
Sensor : Ci ≤ 1,2nF, Li ≈ 0
Cable : Ci ≤ 250pF/m, Li ≈ 0

**CONDITIONS OF CERTIFICATION: YES as shown below:**

Electrical parameters of any IS certified equipment connected to the sensor shall not exceed the following values:
Linear source : Ui ≤ 28V,Ii ≤ 100mA,Pi ≤ 0,7W
Non linear source : Ui ≤ 28V,Ii ≤ 25mA,Pi ≤ 0,7W
-200℃ < Ta < +500℃
Temperature classification : T6 : Tamb < 80℃, T5 : Tamb < 95℃, T4 : Tamb < 130℃, T3 : Tamb < 195℃, T2 : Tamb < 290℃, T1 : Tamb < 440℃, 510℃ : Tamb < 500℃.
The materiel shall only be connected to a certified [ia] or [ib] apparatus and this combination, taking account to the length of joining cable, shall be compatible as regards intrinsic safety.



# IECEx Certificate of Conformity

Certificate No.: IECEx LCI 06.0008X

Date of Issue: **2013-10-25** Issue No.: **3**



**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

Issue 1 :
Normative update according to IEC 60079-11 Ed 5 standard
Change of legal entity name and adress of applicant (VIBRO-METER SA becomes Meggitt SA)
Modifications of registered trade mark
Issue 2 :
Normative update according to IEC 60079-0 Ed 5 standard
Issue 3 :
Normative update according to IEC 60079-0 Ed 6.0 and IEC 60079-11 Ed 6.0 standards
Modification of the sensing part material of the sensor



MEGGITT

MEGGITT

EN

# IECEx certificate:

## IECEx LCI 10.0017X

## for CA 134

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION
## IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

| | | | |
|---|---|---|---|
| Certificate No.: | IECEx LCI 10.0017X | issue No.:2 | Certificate history: Issue No. 2 (2011-12-23) Issue No. 1 (2010-10-25) Issue No. 0 (2010-7-20) |
| Status: | **Current** | | |
| Date of Issue: | **2011-12-23** | Page 1 of 4 | |

Applicant: **Meggitt SA**
Route de Moncor 4
1752 Villars-sur-Glâne
**Switzerland**

Electrical Apparatus: **Accelerometer**
*Optional accessory:*

Type of Protection: **nA**

Marking: **Vibro-meter or MEGGITT or MFR S3960**
**Address : ...**
**Type : PNR : 144-134-000-XXX**
**Serial number : ...**
**Year of construction : ...**
**Ex nA IIC T6 to T510°C Gc**
**IECEx LCI 10.0017X**

*Approved for issue on behalf of the IECEx Certification Body:* Julien GAUTHIER

*Position:* Certification Officer

*Signature: (for printed version)*

*Date:* December 28, 2011

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

**Laboratoire Central des Industries Electriques (LCIE)**
**33 Avenue du General Leclerc**
**FR-92260 Fontenay-aux-Roses**
**France**

L C I E



# IECEx Certificate of Conformity

Certificate No.: IECEx LCI 10.0017X

Date of Issue: **2011-12-23** Issue No.: **2**



Manufacturer: **Meggitt SA**
Route de Moncor 4
1752 Villars-sur-Glâne
**Switzerland**

Manufacturing location(s):
**Meggitt SA**
Route de Moncor 4
1752 Villars-sur-Glâne
Switzerland

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

| | |
|---|---|
| **IEC 60079-0 : 2007-10** Edition: 5 | Explosive atmospheres - Part 0:Equipment - General requirements |
| **IEC 60079-15 : 2010** Edition: 4 | Explosive atmospheres - Part 15: Equipment protection by type of protection "n" |

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**
*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

| | | |
|---|---|---|
| FR/LCI/ExTR10.0019/00 | FR/LCI/ExTR10.0019/01 | FR/LCI/ExTR10.0019/02 |

Quality Assessment Report:

| | | |
|---|---|---|
| FR/LCI/QAR06.0006/00 | FR/LCI/QAR06.0006/01 | FR/LCI/QAR06.0006/02 |
| FR/LCI/QAR06.0006/03 | FR/LCI/QAR06.0006/04 | |

MEGGiTT

# IECEx Certificate of Conformity

Certificate No.: IECEx LCI 10.0017X
Date of Issue: **2011-12-23** Issue No.: **2**
Page 3 of 4

**Schedule**

**EQUIPMENT:**
*Equipment and systems covered by this certificate are as follows:*

This equipment is composed of an electromechanical transducer which delivers to an electrical load, connected to its terminal, a signal related to the measurement performed.
Specific parameters:
U ≤ 28V, I ≤ 100mA, P ≤ 0,7W

**CONDITIONS OF CERTIFICATION: YES as shown below:**

Operating ambient temperature : -200°C to +500°C
Temperature classification in function of the operating temperature :
T6 at Tamb. + 80°C; T5 at Tamb. + 95°C
T4 at Tamb. + 130°C; T3 at Tamb. + 195°C
T2 at Tamb. + 290°C; T1 at Tamb. + 440°C
T510°C at Tamb. + 500°C

# IECEx Certificate of Conformity

Certificate No.: IECEx LCI 10.0017X
Date of Issue: **2011-12-23** Issue No.: **2**
Page 4 of 4

**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

Normative update according to standards IEC 60079-0, Ed 5 and IEC 60079-15, Ed 4

MEGGITT

EN

# IECEx certificate:

## IECEx LCI 10.0018X

## for CA 20x

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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# IECEx Certificate of Conformity

**INTERNATIONAL ELECTROTECHNICAL COMMISSION**
**IEC Certification Scheme for Explosive Atmospheres**
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx LCI 10.0018X issue No.:2

Status: **Current**

Date of Issue: **2011-12-23** Page 1 of 4

Certificate history:
Issue No. 2 (2011-12-23)
Issue No. 1 (2010-10-25)
Issue No. 0 (2010-7-20)

Applicant: **Meggitt SA**
Route de Moncor 4
1752 Villars-sur-Glâne
**Switzerland**

Electrical Apparatus: **Accelerometer**
*Optional accessory:*

Type of Protection: **nA**

Marking: **Vibro-meter or MEGGITT or MFR S3960**
**Address : ...**
**Type : PNR 144-20X-000-YYY**
**Serial number : ...**
**Year of construction : ...**
**Ex nA IIC T6 to T2 Gc**
**IECEx LCI 10.0018X**

*Approved for issue on behalf of the IECEx Certification Body:* Julien GAUTHIER

*Position:* Certification Director – Michel BRÉNON

*Signature: (for printed version)*

*Date:* December 28, 2011

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

**Laboratoire Central des Industries Electriques (LCIE)**
**33 Avenue du General Leclerc**
**FR-92260 Fontenay-aux-Roses**
**France**

L C I E

# IECEx Certificate of Conformity

Certificate No.: IECEx LCI 10.0018X

Date of Issue: **2011-12-23** Issue No.: **2**



Manufacturer: **Meggitt SA**
Route de Moncor 4
1752 Villars-sur-Glâne
**Switzerland**

Manufacturing location(s):
**Meggitt SA**
Route de Moncor 4
1752 Villars-sur-Glâne
Switzerland

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

**IEC 60079-0 : 2007-10** Explosive atmospheres - Part 0:Equipment - General requirements
Edition: 5
**IEC 60079-15 : 2010** Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition: 4

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**
*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:
FR/LCI/ExTR10.0020/00 FR/LCI/ExTR10.0020/01 FR/LCI/ExTR10.0020/02

Quality Assessment Report:

FR/LCI/QAR06.0006/00 FR/LCI/QAR06.0006/01 FR/LCI/QAR06.0006/02
FR/LCI/QAR06.0006/03 FR/LCI/QAR06.0006/04

# IECEx Certificate of Conformity

Certificate No.: IECEx LCI 10.0018X
Date of Issue: **2011-12-23** Issue No.: **2**
Page 3 of 4

**Schedule**

**EQUIPMENT:**
*Equipment and systems covered by this certificate are as follows:*

This equipment is composed of an electromechanical transducer which delivers to an electrical load, connected to its terminal, a signal related to the measurement performed.
Specific parameters:
U ≤ 28V, I ≤ 100mA, P ≤ 0,7W

**CONDITIONS OF CERTIFICATION: YES as shown below:**

Operating ambient temperature : -55°C to +260°C
Temperature classification in function of the operating temperature :
T6 at Tamb. + 80°C; T5 at Tamb. + 95°C
T4 at Tamb. + 130°C; T3 at Tamb. + 195°C
T2 at Tamb. + 260°C

# IECEx Certificate of Conformity

Certificate No.: IECEx LCI 10.0018X
Date of Issue: **2011-12-23** Issue No.: **2**
Page 4 of 4

**DETAILS OF CERTIFICATE CHANGES (for Issues 1 and above):**

Normative update according to standards IEC 60079-0, Ed 5 and IEC 60079-15, Ed 4

EN

# IECEx certificate:

## IECEx LCI 10.0021X

## for CA 28x, CE 28x and CE 31x

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION
## IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx LCI 10.0021X issue No.:3

Status: **Current**

Date of Issue: **2015-01-27** Page 1 of 4

Certificate history:
Issue No. 3 (2015-1-27)
Issue No. 2 (2011-12-23)
Issue No. 1 (2010-10-25)
Issue No. 0 (2010-7-20)

Applicant: **Meggitt SA**
Route de Moncor 4
1752 Villars-sur-Glâne
**Switzerland**

Electrical Apparatus: **Accelerometers - CE28X and CE31X**
*Optional accessory:*

Type of Protection: **nA**

Marking: Vibro-meter or MEGGITT or MFR S3960
Address : ...
Types : PNR : 444-28X-000-YYZ or PNR 444-31X-000-YYZ or PNR 144-28X-000-YYY
Serial number : …
Year of construction : …
Ex nA IIC T6...T2 Gc (see special conditions)
IECEx LCI 10.0021X

*Approved for issue on behalf of the IECEx Certification Body:* Julien GAUTHIER

*Position:* Certification Officer

*Signature: (for printed version)*

*Date:* 2015-01-27

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:
**Laboratoire Central des Industries Electriques (LCIE)**
**33 Avenue du General Leclerc**
**FR-92260 Fontenay-aux-Roses**
**France**
Documents relative to LCIE certification activites (Certificates, QARs, ExTRs) can be registered under the references "LCI" or "LCIE".

# IECEx Certificate of Conformity



Manufacturer: **Meggitt SA**
Route de Moncor 4
1752 Villars-sur-Glâne
**Switzerland**

Additional Manufacturing location (s):
**Meggitt SA**
Route de Moncor 4
1752 Villars-sur-Glâne
Switzerland

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

**IEC 60079-0 : 2011** Explosive atmospheres - Part 0: General requirements
Edition: 6.0
**IEC 60079-15 : 2010** Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition: 4

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**
*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:
FR/LCI/ExTR10.0023/00 FR/LCI/ExTR10.0023/01 FR/LCI/ExTR10.0023/02
FR/LCI/ExTR10.0023/03

Quality Assessment Report:

FR/LCI/QAR06.0006/08

# IECEx Certificate of Conformity

Certificate No.: IECEx LCI 10.0021X

Date of Issue: **2015-01-27** Issue No.: **3**



**Schedule**

**EQUIPMENT:**
*Equipment and systems covered by this certificate are as follows:*

CE28X and CE31X accelerometers are piezo-electrical transducers that supplies to its terminal an electrical charge proportional to the acceleration which is submitted. The charge generated by the piezo element is provided to the conditioner which delivers a modulated current.

***CE28X accelerometer*** is constituted of sensor head, a cable or a connector and a conditioner for PNR 444….. types. Types are:
PNR 144-28X-000-YYY; X: depends on sensor head (X = 0 to 9); YYY depends on connector type and cable length, YYY = 000 to 999
PNR 444-28X-000-YYZ; X: depends on sensor head (X = 0 to 9); YY depends on connector type and cable length, YY = 00 to 99 and Z depends on conditioner electronic design:
PNR 444-28X-000-YY1 for initial electronic design, maximum power 700mW.
PNR 444-28X-000-YY2 to YY9 for new electronic design, maximum power 224mW.

***CE31X accelerometer*** is constituted of sensor head, a cable or a connector and a conditioner.Type is PNR 444-31X-000-YYZ; X: depends on sensor head (X = 0 to 9); YY depends on connector type or cable length, YY = 00 to 99 and Z depends on conditioner electronic design:
PNR 444-31X-000-YY1 for initial electronic design, maximum power 700mW.
PNR 444-31X-000-YY2 to YY9 for new electronic design, maximum power 224mW.

**CONDITIONS OF CERTIFICATION: YES as shown below:**

- Temperature ranges:
  PNR 444-28X-000-YY0 to YY9, operating temperature ranges (Ta):
  Sensor and cable: -55℃ ≤ Ta ≤ +260℃
  Conditioner, PNR 444-28X-000-YY1: -55℃ ≤ Ta ≤ +100℃
  Conditioner, PNR 444-28X-000-YY2 to YY9: -55℃ ≤ Ta ≤ +125℃
  PNR 444-31X-000-YY1, operating temperature range: -55℃ ≤ Ta ≤ +100℃.
  PNR 444-31X-000-YY2 to YY9, operating temperature range: -55℃ ≤ Ta ≤ +125℃.

- Temperature classes depending on operating temperatures :

| | T6 | T5 | T4 | T3 | T2 |
|---|---|---|---|---|---|
| PNR 444-28X-000-YY1 to YY9Sensor and cable: | + 80℃ | + 95℃ | + 130℃ | + 195℃ | + 260℃ |
| PNR 444-28X-000-YY1Conditioner | + 80℃ | + 95℃ | + 100℃ | -- | – |
| PNR 444-28X-000-YY2 to YY9Conditioner | + 65℃ | + 80℃ | + 115℃ | +125℃ | – |
| PNR 444-31X-000-YY1 | + 80℃ | + 95℃ | + 125℃ | -- | – |
| PNR 444-31X-000-YY2 to YY9 | + 65℃ | + 80℃ | + 115℃ | +125℃ | – |
| PNR 144-28X-000-YYY | + 80℃ | + 95℃ | + 130℃ | + 195℃ | + 260℃ |

- The electrical installation must provide a protection against voltage transients greater than 119V.



# IECEx Certificate of Conformity

Certificate No.: IECEx LCI 10.0021X

Date of Issue: **2015-01-27** Issue No.: **3**



**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

**Issue 1:**
Legal entity of the applicant changes from Vibrometer to Meggitt SA, modification of trademarks.

**Issue 2:**
Normative update according to IEC 60079-0:2007-10 Ed.5 and IEC 6079-15:2010 Ed.4 standards.

**Issue 3:**
Normative update according to IEC 60079-0:2012 Ed.6.0 - Modification of types for initial electronic design, types become: PNR 444-28X-000-YY1 and PNR 444-31X-000-YY1 - New design of conditioner electronic, new types are: PNR 444-28X-000-YY2 to YY9 and PNR 444-31X-000-YY2 to YY9

MEGGITT

EN

# IECEx certificate:

## IECEx DEK 15.0029

## for CA 28x, CE 28x and CE 31x

EX

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION
## IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

| | | | |
|---|---|---|---|
| Certificate No.: | IECEx DEK 15.0029 | Issue No: 0 | Certificate history: Issue No. 0 (2016-06-24) |
| Status: | **Current** | Page 1 of 3 | |
| Date of Issue: | **2016-06-24** | | |
| Applicant: | **Meggitt SA**<br>Rte de Moncor 4, 1752 Villars-sur-Glâne<br>**Switzerland** | | |
| Equipment: | **Piezoelectric Accelerometer Type 144-28.-000-..., Type 444-28.-000-... and Type 444-31.-000-...** | | |
| *Optional accessory:* | | | |
| Type of Protection: | **Ex ia** | | |
| Marking: | Ex ia IIC T6 ... T2 Ga | | |

*Approved for issue on behalf of the IECEx Certification Body:* R. Schuller

*Position:* Certification manager

*Signature: (for printed version)*

*Date:* 2016-06-24

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

DEKRA Certification B.V.
Meander 1051,
6825 MJ Arnhem
The Netherlands

DEKRA

# IECEx Certificate of Conformity

| | | |
|---|---|---|
| Certificate No: | IECEx DEK 15.0029 | Issue No: 0 |
| Date of Issue: | **2016-06-24** | Page 2 of 3 |
| Manufacturer: | **Meggitt SA**<br>Rte de Moncor 4, 1752 Villars-sur-Glâne<br>**Switzerland** | |
| Additional Manufacturing location(s): | | |

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

| | |
|---|---|
| **IEC 60079-0 : 2011**<br>Edition:6.0 | Explosive atmospheres - Part 0: General requirements |
| **IEC 60079-11 : 2011**<br>Edition:6.0 | Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i" |

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**

*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

NL/DEK/ExTR15.0037/00

Quality Assessment Report:

FR/LCI/QAR06.0006/09

# IECEx Certificate of Conformity

| | | |
|---|---|---|
| Certificate No: | IECEx DEK 15.0029 | Issue No: 0 |
| Date of Issue: | 2016-06-24 | Page 3 of 3 |

**Schedule**

**EQUIPMENT:**

*Equipment and systems covered by this certificate are as follows:*

Piezoelectric Accelerometers Type 144-28.-000-... (sensor only), Type 444-28.-000-... (sensor with remote conversion module) and Type 444-31.-000-... (sensor with integral conversion module) are used for vibration monitoring.

The sensor converts mechanical forces (e.g. vibrations) of the equipment to which it is mounted into an electrical signal, that is processed externally. When a conversion module is integrated, the sensor signal is converted into a modulated current output signal.

Refer to Annex 1 for details

**CONDITIONS OF CERTIFICATION: NO**

**Annex:**

Annex1 to IECEx DEK15.0029 Iss0 & IECExTR15.0037_00.pdf





DEKRA

Annex 1 to Certificate of Conformity IECEx DEK 15.0029, issue 0
Annex 1 to NL/DEK/ExTR15.0037/00

Description

Piezoelectric Accelerometers sensor only Type 144-28.-000-..., sensor with remote Conditioner (Electronic box) Type 444-28.-000-... and sensor with integral Conditioner Type 444-31.-000-... are used for vibration monitoring.
The sensor converts mechanical forces (e.g. vibrations) of the equipment to which it is mounted into an electrical signal, that is processed externally. When a conversion module is integrated, the sensor signal is converted into a modulated current output signal.

Ambient temperature range, depending on type and application:

Type 144-28.-000-...
Sensor only: -60 °C to +260 °C

Type 444-28.-000-.2 to 444-28.-000-..9
Conditioner: -55 °C to +125 °C
Sensor and Cable: -55 °C to +260 °C

Type 444-31.-000-.2 to 444-31.-000-..9
Sensor and Integral
Conditioner: -55 °C to +125 °C

The relation between maximum ambient temperature and temperature class is as follows for all devices, taking into account the above mentioned temperature ranges:

| Type | T6 | T5 | T4 | T3 | T2 |
|---|---|---|---|---|---|
| 444-28.-000-.2 to 444-28.-000-..9 Conditioner | +65 °C | +80 °C | +115 °C | +125 °C | - |
| 444-31.-000-.2 to 444-31.-000-..9 | +65 °C | +80 °C | +115 °C | +125 °C | - |
| 144-28.-000-... | +80 °C | +95 °C | +130 °C | +195 °C | +260 °C |



Form 124
Version 2 (2013-07)

DEKRA Certification B.V. Meander 1051, 6825 MJ Arnhem P.O. Box 5185, 6802 ED Arnhem The Netherlands
T +31 88 9683000 F +31 88 9683100 www.dekra-certification.com Registered Arnhem 09085396

MEGGITT

Annex 1 to Certificate of Conformity IECEx DEK 15.0029, issue 0
Annex 1 to NL/DEK/ExTR15.0037/00

Electrical data

Supply and output signal:
in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with following maximum values:

| Type | $U_i$ | $I_i$ | $P_i$ | $L_i$ | $C_i$ sensor | $C_i$ cable |
|---|---|---|---|---|---|---|
| 444-28.-000-.2 to 444-28.-000-.9 | 28 V | 100 mA | 0.7 W | 0 mH | 0 nF | - |
| 444-31.-000-.2 to 444-31.-000-.9 | 28 V | 100 mA | 0.7 W | 0 mH | 0 nF | 0.25 nF/m |
| 144-28.-000-... | 28 V | 100 mA | 0.7 W | 0 mH | 8 nF | 0.25 nF/m |

Installation instructions

The instructions provided with the product shall be followed in detail to assure safe operation.

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MEGGITT

EN

# IECEx certificate:

## IECEx LCI 10.0027X

## for CA 30x

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION
## IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

| | | | |
|---|---|---|---|
| Certificate No.: | IECEx LCI 10.0027X | issue No.:2 | Certificate history: Issue No. 2 (2011-12-23) Issue No. 1 (2010-10-25) Issue No. 0 (2010-7-20) |
| Status: | Current | | |
| Date of Issue: | 2011-12-23 | Page 1 of 4 | |

Applicant: **Meggitt SA**
Route de Moncor 4
1752 Villars-sur-Glâne
**Switzerland**

Electrical Apparatus: **Accelerometer**
*Optional accessory:*

Type of Protection: **nA**

Marking: **Vibro-meter or MEGGITT or MFR S3960**
**Address : ...**
**Type : PNR 144-30X-000-YYY**
**Serial number : ...**
**Year of construction : ...**
**Ex nA IIC T6 to T510°C Gc**
**IECEx LCI 10.0027X**

*Approved for issue on behalf of the IECEx Certification Body:* Julien GAUTHIER

*Position:* Certification Officer

*Signature: (for printed version)* Michel BRÉNON

*Date:* December 28, 2011

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

**Laboratoire Central des Industries Electriques (LCIE)**
**33 Avenue du General Leclerc**
**FR-92260 Fontenay-aux-Roses**
**France**

L C I E



# IECEx Certificate of Conformity

Certificate No.: IECEx LCI 10.0027X

Date of Issue: **2011-12-23** Issue No.: **2**



Manufacturer: **Meggitt SA**
Route de Moncor 4
1752 Villars-sur-Glâne
**Switzerland**

Manufacturing location(s):
**Meggitt SA**
Route de Moncor 4
1752 Villars-sur-Glâne
Switzerland

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

**IEC 60079-0 : 2007-10** Explosive atmospheres - Part 0:Equipment - General requirements
Edition: 5
**IEC 60079-15 : 2010** Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition: 4

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**
*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:
FR/LCI/ExTR10.0024/00 FR/LCI/ExTR10.0024/01 FR/LCI/ExTR10.0024/02

Quality Assessment Report:
FR/LCI/QAR06.0006/00 FR/LCI/QAR06.0006/01 FR/LCI/QAR06.0006/02
FR/LCI/QAR06.0006/03 FR/LCI/QAR06.0006/04

## IECEx Certificate of Conformity

Certificate No.: IECEx LCI 10.0027X
Date of Issue: **2011-12-23** Issue No.: **2**
Page 3 of 4

**Schedule**

**EQUIPMENT:**
*Equipment and systems covered by this certificate are as follows:*

This equipment is composed of an electromechanical transducer which delivers to an electrical load, connected to its terminal, a signal related to the measurement performed.
Specific parameters: U ≤ 30V, I ≤ 130mA, P ≤ 0,8W

**CONDITIONS OF CERTIFICATION: YES as shown below:**

Operating ambient temperature:
Sensor and cable : -54°C to +500°C;
Connector Lemo type 0 or equivalent: -65°C to +150°C;
Connector M83723/89Y1020 or equivalent: -65°C to +200°C;
Connector VM standard temperature: -54°C to +260°C.
Connector VM high temperature: -54°C to +500°C.
Temperature classification as a function of ambient temperature range:
T6 at Tamb. + 75°C; T5 at Tamb. + 90°C; T4 at Tamb. + 125°C; T3 at Tamb. + 190°C; T2 at Tamb. + 290°C;
T1 at Tamb. + 440°C;
T510°C at Tamb. +500°C.

## IECEx Certificate of Conformity

Certificate No.: IECEx LCI 10.0027X
Date of Issue: **2011-12-23** Issue No.: **2**
Page 4 of 4

**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

Normative update according to standards IEC 60079-0, Ed 5 and IEC 60079-15, Ed 4

MEGGITT

EN

# IECEx certificate:

## IECEx LCI 08.0041X

## for CA 901

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION
## IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx LCI 08.0041X issue No.:3

Status: Current

Date of Issue: 2014-07-18 Page 1 of 4

Certificate history:
Issue No. 3 (2014-7-18)
Issue No. 2 (2011-12-23)
Issue No. 1 (2010-12-3)
Issue No. 0 (2008-10-2)

Applicant:
**Meggitt SA**
Route de Moncor 4
1752 Villars-sur-Glâne
**Switzerland**

Electrical Apparatus: **Acceleration transducer type PNR 144-901-000-XXX**
*Optional accessory:*

Type of Protection: **Ia**

Marking:
Vibro-meter or MEGGITT or MFR S3960
PNR 144-901-000-XXX
DMF mmyyyy
Ex ia IIC T6 to 710°C Ga
IECEx LCI 08.0041 X
Ui = ..., Ii = ..., Pi = ..., Ci = ..., Li = ... (completed with the electrical parameters)

*Approved for issue on behalf of the IECEx Certification Body:* Julien GAUTHIER

*Position:* Certification Officer

*Signature: (for printed version)*

*Date:* 2014-07-18

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:
**Laboratoire Central des Industries Electriques (LCIE)**
**33 Avenue du General Leclerc**
**FR-92260 Fontenay-aux-Roses**
**France**
Documents relative to LCIE certification activites (Certificates, QARs, ExTRs) can be registered under the references "LCI" or "LCIE".

L C I E

# IECEx Certificate of Conformity

Certificate No.: IECEx LCI 08.0041X

Date of Issue: **2014-07-18** Issue No.: **3**



Manufacturer:
**Meggitt SA**
Route de Moncor 4
1752 Villars-sur-Glâne
**Switzerland**

Additional Manufacturing location (s):
**Meggitt SA**
Route de Moncor 4
1752 Villars-sur-Glâne
Switzerland

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

**IEC 60079-0 : 2011** Explosive atmospheres - Part 0: General requirements
Edition: 6.0
**IEC 60079-11 : 2011** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition: 6.0

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**
*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:
FR/LCI/ExTR08.0048/03

Quality Assessment Report:

FR/LCI/QAR06.0006/07

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# IECEx Certificate of Conformity

Certificate No.: IECEx LCI 08.0041X
Date of Issue: 2014-07-18
Issue No.: 3
Page 3 of 4

**Schedule**

**EQUIPMENT:**
*Equipment and systems covered by this certificate are as follows:*

**DESCRIPTION OF THE EQUIPEMENT:**
The sensor is an electro-mechanical transducer that supplies to its terminal an electrical charge proportional to the acceleration which is submitted. This acceleration is transmitted to the sensible element by the intermediate of a seismic mass. It operates with a piezo-electrical built in compression.
**Type designation :** 144-901-000-XXX : XXX depend of the connector type and cable length (X = 0 to 9).
**TEMPERATURE CLASSIFICATION:**
T6 up to Ta =+80°C
T5 up to Ta =+95°C
T4 up to Ta =+130°C
T3 up to Ta =+195°C
T2 up to Ta =+290°C
T1 up to Ta =+440°C
Above Ta = +440°C and up to +700°C: T°C (°=Ta+10°C)

**CONDITIONS OF CERTIFICATION: YES as shown below:**

**Specific parameters of the mode of protection 'ia':**
Sensor head : Ci = 200pF, Li = 0
Integral cable : Ci = 200pF/m, Li = 0
Linear power supply : Ui ≤ 28V, Ii ≤ 100mA, Pi ≤ 0,7W
Non linear power supply : Ui ≤ 28V, Ii ≤ 25mA, Pi ≤ 0,7W

**Special condition for safe use:**
- The sensor shall be only connected to an intrinsically safe certified equipment. This combination shall be compatible as regard the intrinsic safety rules (Specific parameters of the mode of protection 'ia').
- Operating ambient temperature:
sensor and cable: -196°C to +700°C
connector: -65°C to +150°C: connector LEMO type O or equivalent
-65°C to +200°C: connector M832 3/89Y1020 or equivalent
-54°C to +260°C: standard tempe rature VM connector
-196°C to +700°C: high temperat ure VM connector

# IECEx Certificate of Conformity

Certificate No.: IECEx LCI 08.0041X
Date of Issue: 2014-07-18
Issue No.: 3
Page 4 of 4

**DETAILS OF CERTIFICATE CHANGES (for Issues 1 and above):**

Issue 1 :
Update of the manufacturer documents, change legal entity name and adress of applicant, modifications of registered trade mark
Issue 2 :
Normative update according to standard IEC 60079-0 Ed 5
Issue 3 :
Normative update according to standards IEC 60079-0:2011 Ed 6.0 and IEC 60079-11:2011 Ed 6.0
Modification of the sensor (the maximum sensor capacitance is 200pF instead of 80pF)
Modification of the following electrical parameter : Sensor head : Ci = 200pF
Update of the technical file

# IECEx certificate:

EN

## IECEx LCI 10.0020X

## for CA 901

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION
## IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

| | | | |
|---|---|---|---|
| Certificate No.: | IECEx LCI 10.0020X | issue No.:2 | Certificate history: Issue No. 2 (2011-12-23) Issue No. 1 (2010-10-25) Issue No. 0 (2010-7-20) |
| Status: | Current | | |
| Date of Issue: | 2011-12-23 | Page 1 of 4 | |

Applicant: **Meggitt SA**
Route de Moncor 4
1752 Villars-sur-Glâne
**Switzerland**

Electrical Apparatus: **Accelerometer**
*Optional accessory:*

Type of Protection: **nA**

Marking: **Vibro-meter or MEGGITT or MFR S3960**
**Address : ...**
**Type : PNR 144-901-000-XXX**
**Serial number : ...**
**Year of construction : ...**
**Ex nA IIC T6 to T710°C Gc**
**IECEx LCI 10.0020X**

*Approved for issue on behalf of the IECEx Certification Body:* Julien GAUTHIER

*Position:* Certification Officer

*Signature: (for printed version)* Michel BRÉNON

*Date:* December 28, 2011

1. This certificate and schedule may only be reproduced in full.
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Certificate issued by:

**Laboratoire Central des Industries Electriques (LCIE)**
**33 Avenue du General Leclerc**
**FR-92260 Fontenay-aux-Roses**
**France**



# IECEx Certificate of Conformity

Certificate No.: IECEx LCI 10.0020X

Date of Issue: **2011-12-23** Issue No.: **2**



Manufacturer: **Meggitt SA**
Route de Moncor 4
1752 Villars-sur-Glâne
**Switzerland**

Manufacturing location(s):
**Meggitt SA**
Route de Moncor 4
1752 Villars-sur-Glâne
Switzerland

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

**IEC 60079-0 : 2007-10** Explosive atmospheres - Part 0:Equipment - General requirements
Edition: 5
**IEC 60079-15 : 2010** Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition: 4

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**
*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:
FR/LCI/ExTR10.0022/00 FR/LCI/ExTR10.0022/01 FR/LCI/ExTR10.0022/02

Quality Assessment Report:
FR/LCI/QAR06.0006/00 FR/LCI/QAR06.0006/01 FR/LCI/QAR06.0006/02
FR/LCI/QAR06.0006/03 FR/LCI/QAR06.0006/04

## IECEx Certificate of Conformity

Certificate No.: IECEx LCI 10.0020X
Date of Issue: **2011-12-23** Issue No.: **2**
Page 3 of 4

**Schedule**

**EQUIPMENT:**
*Equipment and systems covered by this certificate are as follows:*

This equipment is composed of an electromechanical transducer which delivers to an electrical load, connected to its terminal, a signal related to the measurement performed.Specific parameters:
U ≤ 30V, I ≤ 130mA, P ≤ 0,8W

**CONDITIONS OF CERTIFICATION: YES as shown below:**

Operating ambient temperature :
- Sensor and cable: -196°C to +700°C
- Connector Lemo type 0 or equivalent: -65°C to +150°C; Connector M83723/89Y1020 or equivalent: -65°C to +200°C; Connector VM standard t: -54°C to +260°C; Connector VM high température : -196°C to +700°

Temperature classification in function of the operating temperature :
T6 at Tamb. + 80°C; T5 at Tamb. + 95°C; T4 at Tamb. + 130°C;
T3 at Tamb. + 195°C; T2 at Tamb. + 290°C; T1 at Tamb. + 440°C;
T710°C at Tamb. +700°C

## IECEx Certificate of Conformity

Certificate No.: IECEx LCI 10.0020X
Date of Issue: **2011-12-23** Issue No.: **2**
Page 4 of 4

**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

Normative update according to standards IEC 60079-0, Ed 5 and IEC 60079-15, Ed 4

MEGGITT

EN

# IECEx certificate:

## IECEx LCIE 13.0026X

## for

## GSI 127

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION
## IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

| | | | |
|---|---|---|---|
| Certificate No.: | IECEx LCIE 13.0026X | Issue No: 1 | Certificate history: Issue No. 1 (2016-11-30) |
| Status: | **Current** | Page 1 of 4 | Issue No. 0 (2013-05-31) |
| Date of Issue: | **2016-11-30** | | |
| Applicant: | **MEGGITT SA**<br>Route de Moncor 4<br>1752 VILLARS SUR GLANE<br>**Switzerland** | | |
| Equipment: | **GSI 127 Interface - Type: 244-127-000-XXX-A2-BYY** | | |
| *Optional accessory:* | | | |
| Type of Protection: | **Ex nA [ia]** | | |
| Marking: | Ex nA [ia Ga] IIC T4 Gc<br>(refer to attachment for full marking) | | |

*Approved for issue on behalf of the IECEx Certification Body:* Julien Gauthier

*Position:* Certification Officer

*Signature: (for printed version)*

*Date:* 2016-11-30

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

**Laboratoire Central des Industries Electriques (LCIE)**
**33 Avenue du General Leclerc**
**FR-92260 Fontenay-aux-Roses**
**France**

L C I E

# IECEx Certificate of Conformity

| | | |
|---|---|---|
| Certificate No: | IECEx LCIE 13.0026X | Issue No: 1 |
| Date of Issue: | **2016-11-30** | Page 2 of 4 |
| Manufacturer: | **MEGGITT SA**<br>Route de Moncor 4<br>1752 VILLARS SUR GLANE<br>**Switzerland** | |

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

| | |
|---|---|
| **IEC 60079-0 : 2011**<br>Edition:6.0 | Explosive atmospheres - Part 0: General requirements |
| **IEC 60079-11 : 2011**<br>Edition:6.0 | Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i" |
| **IEC 60079-15 : 2010**<br>Edition:4 | Explosive atmospheres - Part 15: Equipment protection by type of protection "n" |

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**

*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

FR/LCIE/ExTR13.0024/00 FR/LCIE/ExTR16.0048/00

Quality Assessment Report:

FR/LCI/QAR06.0006/09

# IECEx Certificate of Conformity

Certificate No: IECEx LCIE 13.0026X Issue No: 1

Date of Issue: **2016-11-30** Page 3 of 4

**Schedule**

**EQUIPMENT:**

*Equipment and systems covered by this certificate are as follows:*

The GSI 127 interface provides galvanic insolation between power supply circuit or signal treatment circuit (Ex nA) and a sensor or a conditioner (Ex ia).

The equipment consists of electronic board and screwed terminals blocks mounted inside a plastic enclosure. Conformal coating is applied on both sides of the electronic board.

**CONDITIONS OF CERTIFICATION: YES as shown below:**

a) The equipment shall only be connected to associated intrinsically safe certified equipment or simple apparatus. This combination must be compatible as regard the intrinsic safety rules.

b) The apparatus shall be installed in an enclosure conform to the requirements of standard IEC 60079-0 and with ingress protection of at least IP54.

c) Operating ambient temperature: -40°C to +70°C.

# IECEx Certificate of Conformity

Certificate No: IECEx LCIE 13.0026X Issue No: 1

Date of Issue: **2016-11-30** Page 4 of 4

**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

**Issue No. 0**:
Conformity assessment according to IEC 60079-0:2011 Ed. 6, IEC 60079-11:2011 Ed. 6 and IEC 60079-15:2010 Ed. 4 standards.

**Issue No. 1**:

- New operating ambient temperature range: -40°C to +70°C.
- Update of type designation to differentiate two specifications.

**Annex:**

IECEx LCIE 13.0026X Issue 01 - Annex 01 - GSI127.pdf



MEGGITT

# Annex 01 to Certificate
# IECEx LCIE 13.0026X issue 01

## ADDITIONAL EQUIPMENT DESCRIPTION

Type designation:

**244-127-000-XXX-A2-BYY**

XXX defines the version of the product (X = 0 to 9).
YY defines the transfer mode (YY = 01 to 19 for actual specification; YY = 20 to 39 for alternate specification).

In order to differentiate the two specifications, the type of product is modified as follows:

- Actual specification: 244-127-000-XXX-A2-B01 to B19
- Alternate specification: 244-127-000-XXX-A2-B20 to B39

The difference between these specifications is only on electronic component values without modification of critical components part list and printed circuit board.

User manual (extract), ref. PZ 8763 rev. 00 dated 2016-09-06.

## MARKING

MEGGITT SA or VIBRO-METER or MFR S3960
Address: ...
Type: 244-127-000-XXX-A2-BYY
Serial number: ...
Year of construction: …
Ex nA [ia Ga] IIC T4 Gc
IECEx LCIE 13.0026X
Power supply : U ≤ 30 V, I ≤ 150 mA
Sensor or conditioner :
For 244-127-000-XXX-A2-B01 to B19: $U_o$: 25.2 V; $I_o$: 60 mA; $P_o$: 0.7 W; $C_o$: 95 nF; $L_o$: 5 mH
For 244-127-000-XXX-A2-B20 to B39: $U_o$: 25.2 V; $I_o$: 45 mA; $P_o$: 0.5 W; $C_o$: 95 nF; $L_o$: 10 mH

## RATINGS

Power supply: U ≤ 30 V, I ≤ 150 mA
Sensor or conditioner:
- For 244-127-000-XXX-A2-B01 to B19: $U_o$: 25.2 V; $I_o$: 60 mA; $P_o$: 0.7 W; $C_o$: 95 nF; $L_o$: 5 mH
- For 244-127-000-XXX-A2-B20 to B39: $U_o$: 25.2 V; $I_o$: 45 mA; $P_o$: 0.5 W; $C_o$: 95 nF; $L_o$: 10 mH

## ROUTINE TEST

Each transformer T1 shall be submitted to dielectric strength test under test voltage of 1500 V; 50/60 Hz applied between the primary winding and the secondary windings during at least 60 s in accordance with clause 11.2 of IEC 60079-11:2011 Ed. 6 standard.


This Annex is valid only in combination with certificate mentioned above and may only be reproduced in its entirety and without any change.
CERT-ATEX-FORM 14 Rev. 01

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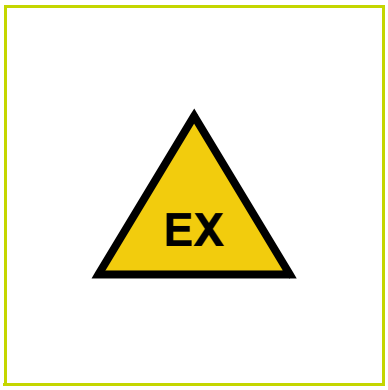
EX CERTIFICATE – IECEx

vibro-meter®

# IECEx LCIE 18.0023X
# for
# IPC707 signal conditioner




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference IECEx LCIE 18.0023X
Edition 2 – April 2022

Meggitt SA, Route de Moncor 4, Case postale, 1701 Fribourg, Switzerland

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Fax: +41 26 407 1660
energy@ch.meggitt.com
www.meggittsensing.com/energy
www.meggitt.com

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# IECEx Certificate of Conformity

**INTERNATIONAL ELECTROTECHNICAL COMMISSION**
**IEC Certification System for Explosive Atmospheres**
for rules and details of the IECEx Scheme visit www.iecex.com

| | | | |
|---|---|---|---|
| Certificate No.: | **IECEx LCIE 18.0023X** | Page 1 of 4 | Certificate history: |
| Status: | **Current** | Issue No: 1 | Issue 0 (2018-08-30) |
| Date of Issue: | 2022-04-01 | | |
| Applicant: | **MEGGITT SA**<br>Route de Moncor 4<br>1752 Villars-sur-Glâne<br>**Switzerland** | | |
| Equipment: | **Signal Conditioner IPC 707 - Type : 244-707-000-xxx-A_** | | |
| Optional accessory: | | | |
| Type of Protection: | **Ex ia, Ex ec** | | |
| Marking: | Ex ia IIC T6...T4 Ga<br>Ex ec IIC T6...T4 Gc<br>Refer to the attachment for full marking | | |

Approved for issue on behalf of the IECEx Certification Body: **Julien GAUTHIER**

Position: **Certification Officer**

Signature: (for printed version)

LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES
S.A.S au capital de 15.745.984 €
RCS Nanterre B 408 363 174
33 avenue du Général Leclerc
F - 92266 FONTENAY AUX ROSES

Date: (for printed version) 2022-04-01

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

**Laboratoire Central des Industries Electriques (LCIE)**
**33 Avenue du General Leclerc**
**FR-92260 Fontenay-aux-Roses**
**France**

L C I E

# IECEx Certificate of Conformity

| | | |
|---|---|---|
| Certificate No.: | **IECEx LCIE 18.0023X** | Page 2 of 4 |
| Date of issue: | 2022-04-01 | Issue No: 1 |

Manufacturer: **MEGGITT SA**
Route de Moncor 4
1752 Villars-sur-Glâne
**Switzerland**

Manufacturing locations: **MEGGITT SA**
Route de Moncor 4
1752 Villars-sur-Glâne
**Switzerland**

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

**STANDARDS** :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

| | |
|---|---|
| IEC 60079-0:2017<br>Edition:7.0 | Explosive atmospheres - Part 0: Equipment - General requirements |
| IEC 60079-11:2011<br>Edition:6.0 | Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i" |
| IEC 60079-7:2017<br>Edition:5.1 | Explosive atmospheres - Part 7: Equipment protection by increased safety "e" |

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

**TEST & ASSESSMENT REPORTS:**
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

FR/LCIE/ExTR22.0026/00 FR/LCIE/ExTR22.0027/00

Quality Assessment Report:

FR/LCI/QAR06.0006/16

# IECEx Certificate of Conformity



**EQUIPMENT:**
Equipment and systems covered by this Certificate are as follows:

IPC 707 Signal conditioner is an analogue electronic conditioner which converts the electrical charges coming from a piezoelectric sensor (sensor side) into an analogue voltage or current signal (signal side).

The electronic circuitry of the IPC 707 signal conditioner is totally potted and incorporated into an aluminium enclosure. IPC 707 Signal Conditioner is equipped with terminals (sensor side and signal side) and with an optional clip for DIN rail.

Signal side ouput configurations could be as following:

- Voltage output: 3-wires transmission mode,
- Current output: 2-wires transmission mode.

Refer to the attachment for full description.

**SPECIFIC CONDITIONS OF USE: YES as shown below:**

- Ambient temperature range: -40°C to +85°C.
- The apparatus must be connected according to instruction manual.

a. Ex ia protection mode:

- The intrinsic safety terminal blocks (IS boards) must be connected only to an intrinsically safe certified apparatus. These combinations shall comply with the requirements of the standard IEC 60079-25.
- The equipment contains more than 15% of of aluminum. It must be mounted in such a manner as to eliminate the risk of sparks caused by friction or impact.
- The grounding of the intrinsically safe circuits must be in accordance with requirements of clause 16.2.3 of IEC 60079-14 standard.

b. Ex ec protection mode:

- For final installation, final end user shall take any precautions to install the apparatus into an IP54 enclosure and keep it connected in compliance with IEC 60079-14 requirements, providing and maintaining degree of protection at last IP54.
- The equipment shall only be used in an area of at least pollution degree 2, as defined in IEC 60664-1 standard.
- Transient protection shall be provided that is set at a level not exceeding 140% of the peak rated voltage value at the supply terminals to equipment.

# IECEx Certificate of Conformity



**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**

Ex ia protection mode :

- Normative update according to IEC 60079-0:Ed:7 standard.
- Extension of the range, Reference 244-707-000-012-A2 becomes 244-707-000-xxx-A2.

Ex ec protection mode :

- Normative update according to IEC 60079-0:Ed:7 and IEC 60079-7:Ed:5.1standards.
- Extension of the range, Reference 244-707-000-012-A3 becomes 244-707-000-xxx-A3.

**Annex:**

Annex 01 to Certificate IECEx LCIE 18.0023X issue 01_1.pdf



Original copy (English)
MEGGITT

# Annex 01 to Certificate IECEx LCIE 18.0023 X issue 01

## FULL EQUIPMENT DESCRIPTION

**Functional description:**

IPC 707 Signal Conditioner is an analogue electronic conditioner which converts the electrical charges coming from a piezoelectric sensor (sensor side) into an analogue voltage or current signal (signal side).

Signal side output configurations could be as following:

- voltage output: 3-wires transmission mode,
- current output: 2-wires transmission mode.

**Mechanical description:**

Electronic circuitry of the IPC 707 signal conditioner is totally potted and incorporated into an aluminium enclosure. IPC 707 Signal Conditioner is equipped with terminals (sensor side and signal side) and with an optional clip for DIN rail.

## MARKING

**Ex ia type of protection**

*Complete marking:*
Vibro-Meter or MEGGITT SA or MFR S3960
Address: …
Type: 244-707-000-xxx-A2
Serial number: …
Year of construction : …
Ex ia IIC T6 …T4 Ga (*)
IECEx LCIE 18.0023X
-40°C ≤ $T_{amb}$ ≤ +85°C
$U_i$ : …V, $I_i$ : …mA, $P_i$ : … mW, $C_i$ : …nF, $L_i$ : … µH. (**)
$U_o$ : …V, $I_o$ : ….mA, $P_o$ : …mW, $C_o$ : … µF, $L_o$ : … mH.

(**) : Intrinsic safety electrical parameters are identified as following :

*Reduced marking:*
Vibro-Meter or MEGGITT SA or MFR S3960
Address: …
Type: 244-707-000-xxx-A2
Serial number: …
Year of construction: …
Ex ia IIC T6…T4 Ga (*)
IECEx LCIE 18.0023X
(*) Temperature classification shall be as following:

**Ex ec type of protection**

*Complete marking:*
Vibro-Meter or MEGGITT SA or MFR S3960
Address: …
Type: 244-707-000-xxx-A3(*)
Serial number: …
Year of construction: …
Ex ec IIC T6 … T4 Gc (**)
IECEx LCIE 18.0023X
-40°C ≤ $T_{amb}$ ≤ +85°C
$U_{max}$ : 30 V, $I_{max}$ : 20 mA.
WARNING – DO NOT SEPARATE WHEN ENERGIZED.
WARNING – SEPARATE ONLY IN A NON-HAZARDOUS AREA.
(*): completed with type designation.
(**): see temperatures table.

*Reduced marking:*
Vibro-Meter or MEGGITT SA or MFR S3960
Address: …
Type: 244-707-000-xxx-A3 (*)
Serial number: …
Year of construction: …
Ex ec IIC T6 … T4 Gc (**)
IECEx LCIE 18.0023X
(*): completed with type designation.
(**) Temperature classification shall be as following:

| *Temperature classification* | *Ambient operating temperature range* |
|---|---|
| T6 | -40°C ≤ $T_{amb}$ ≤ +70°C |
| T5 | -40°C ≤ $T_{amb}$ ≤ +80°C |
| T4 | -40°C ≤ $T_{amb}$ ≤ +85°C |


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CERT-ATEX-FORM 14 Rev. 03

# Annex 01 to Certificate IECEx LCIE 18.0023 X issue 01

## RANGE DETAILS

**Ex i model:**

244 – 707 - 000 ** * A2
- Minor modification number = 0 *to* 9 *Each modification increase the number by 1*
- *Customized version (transfer, filter, installation)* = 00 *to* 99
- *Product Type*

**Ex e model:**

244 – 707 - 000 ** * A3
- Minor modification number = 0 *to* 9 *Each modification increase the number by 1*
- *Customized version (transfer, filter, installation)* = 00 *to* 99
- *Product Type*

## RATINGS

**Ex ia type of protection:**

| Terminal | Intrinsic safety electrical parameters | |
|---|---|---|
| J0 (SUP, COM) | $U_i$ : 28V, $I_i$ : 100 mA, $P_i$ : 700 mW | $C_i$ : 2,2 nF, $L_i$ : 1 µH. |
| J0 (OUT, COM) | | $C_i$ : 9,6 nF, $L_i$ : 565 µH. |
| J1 (IN+, COM) (IN-, COM) | $U_o$ : 6,6V, $I_o$ : 66 mA, $P_o$ : 107 mW, $C_o$ : 5,69 µF, $L_o$ : 3,435 mH. | |

**Ex ec type of protection:**

$U_{max}$ : 30 V, $I_{max}$ : 20 mA.

## FULL CONDITIONS OF CERTIFICATION

**Ex ia type of protection:**

a) Ambient temperature range: -40°C to +85°C.
b) The intrinsic safety terminal blocks (IS boards) must be connected only to an intrinsically safe certified apparatus. These combinations shall comply with the requirements of the standard IEC 60079-25.
c) The apparatus must be connected according to instruction manual.
d) The equipment contains more than 15% of aluminium. It must be mounted in such a manner as to eliminate the risk of sparks caused by friction or impact.


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CERT-ATEX-FORM 14 Rev. 03



MEGGITT
Original copy (English)

e) The grounding of the intrinsically safe circuits must be in accordance with requirements of clause 16.2.3 of IEC 60079-14 standard.

**Ex ec type of protection:**

a) Ambient temperature range: -40°C to +85°C.
b) For final installation, final end user shall take any precautions to install the apparatus into an IP54 enclosure and keep it connected in compliance with IEC 60079-14 requirements, providing and maintaining degree of protection at last IP54.

c) The apparatus must be connected according to instruction manual.
d) The equipment shall only be used in an area of at least pollution degree 2, as defined in IEC 60664-1 standard.
e) Transient protection shall be provided that is set at a level not exceeding 140% of the peak rated voltage value at the supply terminals to the equipment.


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CERT-ATEX-FORM 14 Rev. 03

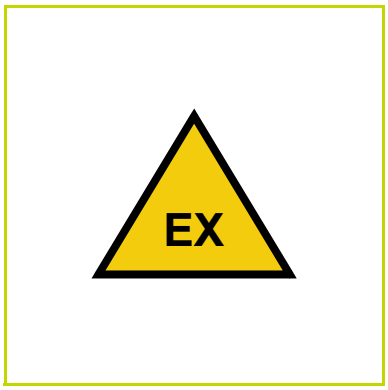


Original copy (English)
MEGGITT

EX CERTIFICATE – IECEx

vibro-meter®

# IECEx ITS 16.0011X
# for
# cable fittings (stuffing glands)




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference IECEx ITS 16.0011X
Edition 2 – January 2022

Meggitt SA, Route de Moncor 4, Case postale, 1701 Fribourg, Switzerland

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# IECEx Certificate of Conformity

**INTERNATIONAL ELECTROTECHNICAL COMMISSION**
**IEC Certification System for Explosive Atmospheres**
for rules and details of the IECEx Scheme visit www.iecex.com

| | | | |
|---|---|---|---|
| Certificate No.: | **IECEx ITS 16.0011X** | Page 1 of 6 | Certificate history: |
| Status: | **Current** | Issue No: 2 | Issue 1 (2019-02-25)<br>Issue 0 (2017-03-17) |
| Date of Issue: | 2019-08-06 | | |

Applicant: **Eaton Electrical Systems Ltd Trading as Raxton or Redapt**
Kingsway South
Westgate
Aldridge
West Midlands
WS9 8FS
**United Kingdom**

Equipment: **Gland Adaptors, Reducers and Earthlead Adaptors**

Optional accessory:

Type of Protection: **Ex db Ex eb and Ex tb**

Marking: IECEx ITS 16.0011X

**Types AR and BJ Male/Male and type AU and AX Female/Female Union Adaptors, Types AB and AJ Gland Adaptors, Types BB and BJ Gland Reducers and DG and DN Earthlead Adaptors and Reducers**

Ex db I/IIC Mb/Gb
Ex eb I/IIC Mb/Gb

Ex tb III C Db IP 6X

Ta = see schedule

**Type AB & AJ Adapters, Type BB & BJ Reducers**
Ex eb IIC Gb, Ex tb IIIC Db IP 66

Ta = see schedule

Approved for issue on behalf of the IECEx Certification Body: **V K Varma**

Position: **Certification Officer**

Signature: (for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

**Intertek Testing & Certification Limited**
**ITS House, Cleeve Road**
**Leatherhead**
**Surrey, KT22 7SA**
**United Kingdom**

# IECEx Certificate of Conformity

Certificate No.: **IECEx ITS 16.0011X** Page 2 of 6

Date of issue: 2019-08-06 Issue No: 2



MEGGITT
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# IECEx Certificate of Conformity

Certificate No.: **IECEx ITS 16.0011X** Page 3 of 6

Date of issue: 2019-08-06 Issue No: 2

Manufacturer: **Eaton Electrical Systems Ltd Trading as Raxton or Redapt**
Kingsway South
Westgate
Aldridge
West Midlands
WS9 8FS
**United Kingdom**

Additional manufacturing locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

**STANDARDS** :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2011 Edition:6.0 — Explosive atmospheres - Part 0: General requirements

IEC 60079-1:2014-06 Edition:7.0 — Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"

IEC 60079-31:2013 Edition:2 — Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

IEC 60079-7:2015 Edition:5.0 — Explosive atmospheres – Part 7: Equipment protection by increased safety "e"

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

**TEST & ASSESSMENT REPORTS:**
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

GB/ITS/ExTR16.0013/00 GB/ITS/ExTR16.0013/01 GB/ITS/ExTR16.0013/02

Quality Assessment Reports:

GB/SIR/QAR06.0014/08 GB/SIR/QAR07.0016/06

# IECEx Certificate of Conformity

Certificate No.: **IECEx ITS 16.0011X** Page 4 of 6

Date of issue: 2019-08-06 Issue No: 2

**EQUIPMENT:**
Equipment and systems covered by this Certificate are as follows:

The Types AR, BR, AB, AU, AX, AJ Adaptors, Types BB & BJ Reducers and Types DG and DN Earthlead Adaptors are designed to convert an existing cable entry aperture, in the associated apparatus, to a different thread form and/or size. Each device comprises a hollow body with a male thread at one end and a female thread at the other. Entry threads are between M12 and M120. (M16 to M75 for Glass Filled Nylon and M20 to M32 for DG/DN)

The Type AR and BJ Male/Male Adaptor and Types AU and AX Female/Female Adaptors have thread forms of between M12 and M120. Thread combinations are such that a maximum of two 'standard' size differences is maintained for Increase in thread and no restriction on reduction. Type designations determine thread combinations and body profiles.

Material Options

Brass to BS 2874

Brass BS 2872

Stainless Steel

Mild Steel

Aluminium

Bronze

30 % Glass Filled Nylon

40% Glass Filled Nylon

Surface Coating: Nickel, Zinc, Electroless Nickel

Thread Options

Metric to BS 3643

ET Conduit to BS 31

PG to DIN 40430

BSPP to BS 2779

BSPT to BS 21

NPT to ANSI/ASME B1.20.1

In addition, any other thread form that also complies with the requirements of IEC 60079-1 tables 3 or 4 and clause C2.2 (as applicable) are also permitted

Conditions of manufacture

The Manufacturer shall comply with the following:

1. The female threads of adaptors shall be restricted to one size larger than the male thread size.

2. When these entry devices are manufactured in 40% Glass Filled Nylon material, they shall be to be marked with '40% Glass Filled Nylon'.

3. These products shall be marked in accordance with the information as specified in this certificate and related reports.

4. An increase of up to two step thread sizes is permitted on the AB & AJ Series, in addition, equal sizes are also allowed.

5. These products shall be marked in accordance with the information as specified in this certificate and related reports.

6. Products constructed from Aluminum shall not to be marked for Group I applications.

**SPECIFIC CONDITIONS OF USE: YES as shown below:**
1. When used for Increased Safety ('Ex e') or Protection by enclosure (Ex tb) applications, a suitable method of sealing to the associated enclosure shall be provided.

# IECEx Certificate of Conformity



2. Products constructed from Aluminium are to be positioned where they are subject to low risk of mechanical impact only and shall not be marked as suitable for Group I

.

**Type AB & AJ Adapters, Type BB & BJ Reducers**

1 All entry devices shall only be installed where there is a low risk from mechanical impact.

2 Only one adaptor or reducer is to be used with any single cable entry on the associated equipment.

3 The interfaces between these devices and the associated enclosure cannot be defined; therefore, it is the user's responsibility to ensure that the appropriate ingress protection level is maintained at these interfaces.

4 When manufactured in 30% Glass Filled Nylon material, the entry devices are suitable for a service temperature range of -30°C to +90°C.

5 When manufactured in 40% Glass Filled Nylon material, the entry devices are suitable for a service temperature range of -20°C to +45°C

6 When the entry devices are manufactured in 40% Glass Filled Nylon material, they shall be protected from exposure to light; items made from this material are marked with '40% Glass Filled Nylon'.

7 Service temperature ranges have been applied as follows:

O-ring Service temperature

None fitted -60°C to 200°C *

EPDM -50°C to +100°C

Nitrile -20°C to +80°C

Neoprene -40°C to +80°C

Viton -20°C to +180°C *

Silicone -60°C to +180°C *

Fluorosilicone -60°C to +130°C

**Note:.** The limiting temperatures specified above are de-rated by 20K according to Clause 7.2.2 'Material Selection' of IEC 60079-0

**Note:** The maximum temperature is limited to 150°C in Group I application (Coal dust, Mining) O-ring materials affect marked with '*' above

**Note:** Unless fitted with an interface sealing O-ring with lower properties, temperatures shall then be limited as per the manufacturer's instructions

# IECEx Certificate of Conformity



**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**
Issue 1: Update of QAR to reflect the certificate holder's new entity and address. Model Designation AR-U re-introduced which is recognised as a universal type certified to Ex db, Ex eb and Ex tb

Issue 2: Nylon material references revised Drawing AB-AJ-BB-BJ revised to Issue 2.

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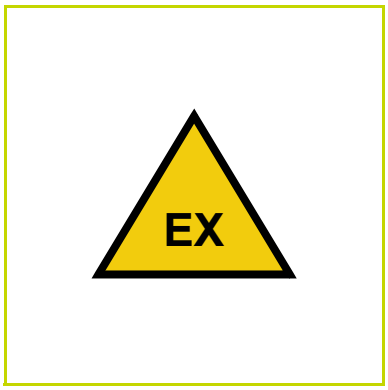
EX CERTIFICATE – IECEx

vibro-meter®

# IECEx ITS 16.0012X
# for
# cable fittings (stuffing glands)




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference IECEx ITS 16.0012X
Edition 2 – January 2022

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# IECEx Certificate of Conformity

**INTERNATIONAL ELECTROTECHNICAL COMMISSION**
**IEC Certification System for Explosive Atmospheres**
for rules and details of the IECEx Scheme visit www.iecex.com

| | | | |
|---|---|---|---|
| Certificate No.: | **IECEx ITS 16.0012X** | Page 1 of 5 | Certificate history: |
| Status: | **Current** | Issue No: 3 | Issue 2 (2019-02-22)<br>Issue 1 (2018-04-27)<br>Issue 0 (2016-12-20) |
| Date of Issue: | 2019-10-23 | | |

Applicant: **Eaton Electrical Systems trading as Raxton, Redapt or Capri**
Kingsway South
Westgate
Aldridge
West Midlands
WS9 8FS
**United Kingdom**

Equipment: **Types CB, CF, CK, CQ, CY, PD-U, PH-E, PA-D, PA-U, PB-U/PB-D and PD-E4 Stopping plugs**

Optional accessory:

Type of Protection: **Ex db , eb, tb**

Marking: IECEx ITS 16.0012X

Ex db I/IIC Mb/Gb

Ex eb I/IIC Mb/Gb

Ex tb IIIC Db

(Group I marking does not apply to CY or PD-E4 Stopping Plugs) (Ex d marking does not apply to PD-E4 or PH-E) Ta from -60°C to 200°C (Dependant on construction material and O-ring fitted). See specific conditons of use for particluar model.

Approved for issue on behalf of the IECEx Certification Body: **V K Varma**

Position: **Certificatin Officer**

Signature: (for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

**Intertek Testing & Certification Limited**
**ITS House, Cleeve Road**
**Leatherhead**
**Surrey, KT22 7SA**
**United Kingdom**

# IECEx Certificate of Conformity



Manufacturer: **Eaton Electrical Systems trading as Raxton, Redapt or Capri**
Kingsway South
Westgate
Aldridge
West Midlands
WS9 8FS
**United Kingdom**

Additional manufacturing locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

**STANDARDS** :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

| | |
|---|---|
| IEC 60079-0:2011<br>Edition:6.0 | Explosive atmospheres - Part 0: General requirements |
| IEC 60079-1:2014-06<br>Edition:7.0 | Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d" |
| IEC 60079-31:2013<br>Edition:2 | Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t" |
| IEC 60079-7:2015<br>Edition:5.0 | Explosive atmospheres – Part 7: Equipment protection by increased safety "e" |

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

**TEST & ASSESSMENT REPORTS:**
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

GB/ITS/ExTR16.0014/00 GB/ITS/ExTR16.0014/01 GB/ITS/ExTR16.0014/02
GB/ITS/ExTR16.0014/03

Quality Assessment Report:

GB/SIR/QAR06.0014/08



MEGGITT
Original copy (English)

# IECEx Certificate of Conformity

Certificate No.: **IECEx ITS 16.0012X** Page 3 of 5

Date of issue: 2019-10-23 Issue No: 3

**EQUIPMENT:**
Equipment and systems covered by this Certificate are as follows:

The stopping plugs are threaded and are used to fill unused entries in associated apparatus. They have thread forms between M12 and M120 and are briefly described as follows:
Type CF: Round/hexagon socket/internal mounting, Type CB: Round/hexagon socket/external mounting, Type CK: Hexagon head, Type CQ: 'Mushroom' head, Type CY: Similar to Type CK with a hollow threaded section
The PD-U series stopping plugs comprise of metallic round bodies with a dome head having a hexagonal key-way recess for tightening. They may optionally be machined with a groove to fit an 'o' ring seal. Coded: Exdb I/IIC Mb/Gb, Ex eb I/IIC Mb/Gb, Ex tb IIIC Db IP6X
The PA-D / PA-U, PB-D / PB-U Series stopping plugs comprise of metallic round bodies with a thread run out to shoulder having a hexagonal key-way recess for internal or external tightening. Coded: Ex db I/IIC Mb/Gb, Ex eb I/IIC Mb/ Gb Ex tb IIIC Db IP6X
The PH-E Series are ranges of 'Ex e' threaded stopping plugs each comprising a threaded body with either a hexagonal head or socket for tightening.
PD-E4 Stopping Plugs: these are a range of threaded stopping plugs that are used to fill unused entries in the associated apparatus. The PD-E4 has a 'mushroom' head, there is also a version made from 30% Glass Filled Nylon which are intended for Ex eb and tb only.
Material options:
• Brass BS 2872 (CZI 21) • Mild Steel to BS970 (EN1A) • Stainless Steel to BS970 (316) • Aluminium BS1474, 6082T6 • 30% Glass Filled Nylon • 40% Glass Filled Nylon

Surface Coating: Nickel, Zinc, Electroless Nickel

Entry threads options:
• Metric to BS 3643: • ET Conduit to BS 31: • PG to DIN 40430: • BSP to BS 2779 • BSPT to BS 21 • NPT to ANSI/ASME B1.20.1
Or any thread complying with IEC 60079-1. At their point of mounting, these devices are suitable for use at the following temperatures dependent on the type of 'o'-ring: O-ring Service temperature:

None fitted -60°C to 200°C * EPDM -50°C to +100°C Nitrile -30°C to +80°C Neoprene -40°C to +80°C Viton -20°C to +180°C * Silicone -60°C to +180°C * Fluorosilicone -60°C to +130°C
**Note:.** The limiting temperatures specified above are de-rated by 20K according to Clause 7.2.2 'Material Selection' of IEC 60079-0
**Note:** The maximum temperature is limited to 150°C in Group I application (Coal dust, Mining) O-ring materials affect marked with '*' above

**SPECIFIC CONDITIONS OF USE: YES as shown below:**

1. If a stopping plug is machined with an undercut and is used for an Ex db application, then the wall of the enclosure into which it is fitted shall be such as to maintain five full threads of engagement.
2. When used for increased safety or Ex eb or protection by enclosure Ex tb applications, a suitable method of sealing to the associated enclosure shall be fitted
3. The stopping plugs shall not be used with any form of adaptors or reducers.
4. The interfaces between these devices and the associated enclosure cannot be defined; therefore, it is the user's responsibility to ensure that the appropriate ingress protection level is maintained at these interfaces
5. The stopping plugs, when manufactured from non-metallic material, are only suitable for installation in areas considered to be a low risk from mechanical impact
6. The stopping plugs, when manufactured from non-metallic material 40% Glass Filled Nylon, shall be adequately protected from direct exposure to sunlight
7. The stopping plugs, when construction from non-metallic material, shall only be cleaned with a damp cloth.

**PD-E-4 Nylon Stopping Plugs**

8. When manufactured in 30% Glass Filled Nylon material, the entry devices are suitable for a service temperature range of -30°C to +90°C.
9. When manufactured in 40% Glass Filled Nylon material, the entry devices are suitable for a service temperature range of -20°C to +45°C; items made from this material are marked with '40% Glass Filled Nylon'.
10. At their point of mounting, these devices are suitable for use at either -30°C to +90°C or -5°C to +45°C when using Viton seals. The clearance holes for metric male threaded products, suitable for clearance hole applications of increased safety enclosures are to have a dimeter of 0.3 to 0.5mm larger than the major diameter of the make thread.
11. When installed in Group I applications, adaptors manufactured in brass shall be installed where the risk of impact is low
12. At their point of mounting, metallic stopping plugs are suitable for use at -60°C to +200°C for Group II applications and -50°C to +150°C for Group I applications
13. 'Ex db' Stopping plugs are not to be used with any form of adaptors or reducers

# IECEx Certificate of Conformity

Certificate No.: **IECEx ITS 16.0012X** Page 4 of 5

Date of issue: 2019-10-23 Issue No: 3

**Equipment (continued):**

At their point of mounting, these devices are suitable for use at the following temperatures dependent on the type of 'o'-ring:

O-ring Service temperature

None fitted -60°C to 200°C *

EPDM -50°C to +100°C

Nitrile -30°C to +80°C

Neoprene -40°C to +80°C

Viton -20°C to +180°C *

Silicone -60°C to +180°C *

Fluorosilicone -60°C to +130°C

**Note:.** The limiting temperatures specified above are de-rated by 20K according to Clause 7.2.2 'Material Selection' of IEC 60079-0

**Note:** The maximum temperature is limited to 150°C in Group I application (Coal dust, Mining) O-ring materials affect marked with '*' above

**Conditions of manufacture**

The Manufacturer shall comply with the following for the stopping plugs:

1. The PD-E4 stopping plugs manufactured from Nylon shall not be marked with any information that indicates that they are suitable for Group I use.

2. The manufacturer shall take all reasonable steps to ensure that the user can comply with the special conditions for safe use and shall advise the user in respect of the materials that are used in the construction of the devices.

3. These products shall be marked in accordance with the information as specified in this certificate and related reports.

4. When these entry devices are manufactured in 40% Glass Filled Nylon material, they shall be marked with 40% Glass Filled Nylon.

5. These products shall be marked in accordance with the information as specified in this certificate and related reports.

6. Aluminium variants, where applicable, are not permitted for Group I applications. The manufacturer shall ensure that the equipment is marked appropriately

7. In accordance with IEC 60079-1, the coating on joint surfaces of metallic devices that are electroplated shall be no more than 0.008mm thick.

# IECEx Certificate of Conformity

Certificate No.: **IECEx ITS 16.0012X** Page 5 of 5

Date of issue: 2019-10-23 Issue No: 3

**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**

Issue 1: PA-U, PB-U as stated to be changed to PA-D, PB-D stopping plugs and addition of M12 & equivalent threadforms Intertek Project G103326724

Issue 2: Update of QAR to reflect Certificate holder's new entity and address. PA-U and PB-U re introduced as a universal option that is both Ex d and Ex e certified

Issue 3: (This certificate) Nylon material reference revised. Drawings CQ-M and PD-E revised to Issue 2. Intertek Project No G104039337

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# IECEx certificate:

EN

## LCI 10.0009U

## for

## Cable stuffing glands

Meggitt SA
Route de Moncor 4
PO Box 1616
1701 Fribourg
Switzerland



energy@ch.meggitt.com
www.meggittsensing.com/energy

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# IECEx Certificate of Conformity

**INTERNATIONAL ELECTROTECHNICAL COMMISSION**
**IEC Certification Scheme for Explosive Atmospheres**
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx LCI 10.0009U issue No.:1

Certificate history:
Issue No. 1 (2015-5-7)
Issue No. 0 (2010-5-11)

Status: **Current**

Date of Issue: **2015-05-07** Page 1 of 4

Applicant: **S.I.B ( Schlemmer Industry & Building Parts )**
25 Rue Théophile Somborn
57220 BOULAY - MOSELLE
**France**

Electrical Apparatus: **Cap, reducer and amplifier. Type EEx e**
*Optional accessory:*

Type of Protection: **Ex e, Ex tb**

Marking: Ex eb IIC
Ex tb IIIC
IP6X
IECEx LCI 10.0009U
( Full marking is available in annex)

*Approved for issue on behalf of the IECEx Certification Body:* Julien Gauthier

*Position:* Certification Officer

*Signature: (for printed version)*

*Date:* 2015-05-07

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:
**Laboratoire Central des Industries Electriques (LCIE)**
**33 Avenue du General Leclerc**
**FR-92260 Fontenay-aux-Roses**
**France**
Documents relative to LCIE certification activites (Certificates, QARs, ExTRs) can be registered under the references "LCI" or "LCIE".

# IECEx Certificate of Conformity

Certificate No.: IECEx LCI 10.0009U

Date of Issue: **2015-05-07** Issue No.: 1



Manufacturer: **S.I.B ( Schlemmer Industry & Building Parts )**
25 Rue Théophile Somborn
57220 BOULAY - MOSELLE
**France**

Additional Manufacturing location (s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

| | |
|---|---|
| **IEC 60079-0 : 2011** Edition: 6.0 | Explosive atmospheres - Part 0: General requirements |
| **IEC 60079-31 : 2008** Edition: 1 | Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't' |
| **IEC 60079-7 : 2006-07** Edition: 4 | Explosive atmospheres - Part 7: Equipment protection by increased safety "e" |

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**
*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:
FR/LCI/ExTR10.0012/00 FR/LCI/ExTR10.0012/01

Quality Assessment Report:

FR/LCI/QAR10.0003/06

# IECEx Certificate of Conformity

Certificate No.: IECEx LCI 10.0009U

Date of Issue: **2015-05-07** Issue No.: **1**

Page 3 of 4

**Schedule**

**EQUIPMENT:**
*Equipment and systems covered by this certificate are as follows:*

**Description of the components :**

Three different components :
- Caps type Ex "e" in plastic used to be fitted on entry (clearance hole or threaded hole) on wall of enclosure.
- Reducers and amplifiers type Ex "e" in plastic used in order to adapt a cable entry with a lower or higher diameter (clearance hole or threaded hole) than the cable entry hole.

All these components are in plastic material. The plastics materials used in the construction are : Polycarbonate (Ref A9541016) or Polyamide 6 (Ref A9380300 and A99380301) and neoprene. For each size and component, there is the possibility of an ISO metric thread pitch 1,5 mm (ISO 965 (1998)) or PG thread (UTE 68 311 (2000) ; UTE 68312 (2000)).

**Schedule of limitation :**

For the assembling of the caps, reducers or amplifiers on increased safety enclosures (for Gas atmospheres) or on "Ex t" protected enclosures (for Dust atmospheres), the fitting up and the assembling realized shall be in accordance with the descriptive documents of the manufacturer.

Operating service temperature :

-20℃ ≤ Tservice ≤ + 55℃ (For all the range)
-35℃ ≤ Tservice ≤ +95℃ (Polycarbonate referenced A9541016)
-35℃ ≤ Tservice ≤ +90℃ (Polyamide 6 referenced A9380300 and A9380301)

**CONDITIONS OF CERTIFICATION: NO**

# IECEx Certificate of Conformity

Certificate No.: IECEx LCI 10.0009U

Date of Issue: **2015-05-07** Issue No.: 1

Page 4 of 4

**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

Issue 00 ( 2010-05-11 )
Initial assessment according to IEC 60079-0: Ed4 ; IEC 60079-7 Ed4 ; IEC 61241-0 Ed1 ; IEC 61241-1 Ed 1 standards

Issue 01
Normative updating according to the standards IEC 60079-0 Ed 6 ; IEC 60079-31 Ed 1 ; IEC 60079-7 Ed 4
Update of marking
Update of company name

**Annex:** LCI 10.0009 U - Issue 01-Annex 01 - SIB.pdf

IECEx LCI 10.0009U issue 01
Annex n°01

Marking :

SIB
Address
Type : EEx e
Serial number
Year of construction

Ex eb IIC
Ex tb IIIC
IP6X
IECEx LCI 10.0009U

This Annex is valid only in combination with certificate IECEx LCI 10.0009UX issue 01 and may only be reproduced in its entirety and without any change.

Page 1 sur 1
75 - IECEx CoC Attachment – rev0.DOC

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EN

# IECEx certificate:

## PTB 03.0000

## for

## Cable stuffing glands

Meggitt SA
Route de Moncor 4
PO Box 1616
1701 Fribourg
Switzerland



energy@ch.meggitt.com
www.meggittsensing.com/energy

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# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION
## IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

| | | | |
|---|---|---|---|
| Certificate No.: | IECEx PTB 03.0000 | Issue No: 2 | Certificate history: |
| Status: | Current | | Issue No. 2 (2011-09-12) |
| Date of Issue: | 2011-09-12 | Page 1 of 4 | Issue No. 1 (2011-02-04) |
| | | | Issue No. 0 (2003-09-15) |

Applicant: **Cooper Crouse Hinds GmbH**
Neuer Weg Nord 49
D-69412 Eberbach
**Germany**

Equipment: **Blanking Element Type GHG 960 **** * ****
*Optional accessory:*

Type of Protection: **Increased Safety**

Marking: Ex e IIC Gb
Ex tb III C Db IP66/IP65
alternativ
Ex eb IIC
Ex tb III C IP66/IP65

*Approved for issue on behalf of the IECEx Certification Body:* Dr.-Ing. Ulrich Johannsmeyer

*Position:* Head of Department "Intrinsic Safety and Safety of Systems"

*Signature:*
*(for printed version)*

*Date:*

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2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

**Physikalisch-Technische Bundesanstalt (PTB)**
**Bundesallee 100**
**38116 Braunschweig**
**Germany**

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin

# IECEx Certificate of Conformity

| | | |
|---|---|---|
| Certificate No: | IECEx PTB 03.0000 | Issue No: 2 |
| Date of Issue: | 2011-09-12 | Page 2 of 4 |

Manufacturer: **Cooper Crouse-Hinds GmbH**
Neuer Weg Nord 47
D-69412 Eberbach
**Germany**

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

| | |
|---|---|
| **IEC 60079-0 : 2007-10** Edition:5 | Explosive atmospheres - Part 0:Equipment - General requirements |
| **IEC 60079-31 : 2008** Edition:1 | Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't' |
| **IEC 60079-7 : 2006-07** Edition:4 | Explosive atmospheres - Part 7: Equipment protection by increased safety "e" |

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

DE/PTB/ExTR11.0013/00

Quality Assessment Report:

DE/BVS/QAR11.0009/00

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IECEx Certificate of Conformity

Certificate No: IECEx PTB 03.0000 Issue No: 2

Date of Issue: 2011-09-12 Page 3 of 4

Schedule

EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

Description
The blanking element type GHG 960 **** * **** made of polyamide serves to close threaded holes for cable entries in enclosures.
Dependend on the size they can be used for enclosures in the type of protection Increased safety "e" and Protection by enclosure "tb".
Installation in clearance holes is with lock nuts made of brass or polyamide.

Size M16 x 1,5 to M50 x 1,5: type of protection Increased safety "e" and
Protection by enclosure "tb"

Size M63 x 1,5: type of protection Increased safety "e"

Technical data and Nomenclature: see attachment.

SPECIFIC CONDITIONS OF USE: NO

IECEx Certificate of Conformity

Certificate No: IECEx PTB 03.0000 Issue No: 2

Date of Issue: 2011-09-12 Page 4 of 4

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

New QAR

Annex:
Attachment-IECEx PTB 03_0000_Rev1.pdf

Applicant: Cooper Crouse-Hinds GmbH
Neuer Weg Nord 49
69412 Eberbach
Germany

Electrical Apparatus: Blanking element type GHG 960 **** * ****

**Description**

The type GHG 960 **** * **** blanking element made of polyamide serves to close threaded holes for cable entries in enclosures. Dependend on the size they can be used for enclosures in the type of protection Increased safety "e" and Protection by enclosure "tb". Installation in clearance holes is with lock nuts made of brass or polyamide.

Size M16 x 1,5 to M50 x 1,5: type of protection Increased safety "e" and Protection by enclosure "tb"

Size M63 x 1,5: type of protection Increased safety "e"

**Technical data**

| Designation M16x1,5 – M50x1,5 | Unique specimen | Package | |
|---|---|---|---|
| | | without O-Ring | witht O-Ring |
| Blanking element M16 x 1,5 | GHG 960 6633 P .... | GHG 960 1952 R .... | GHG 960 1953 R .... |
| Blanking element M20 x 1,5 | GHG 960 6634 P .... | GHG 960 1952 R .... | GHG 960 1953 R .... |
| Blanking element M25 x 1,5 | GHG 960 6635 P .... | GHG 960 1952 R .... | GHG 960 1953 R.... |
| Blanking element M32 x 1,5 | GHG 960 6636 P .... | GHG 960 1952 R .... | GHG 960 1953 R.... |
| Blanking element M40 x 1,5 | GHG 960 6637 P .... | GHG 960 1952 R .... | GHG 960 1953 R .... |
| Blanking element M50 x 1,5 | GHG 960 6638 P .... | GHG 960 1952 R .... | GHG 960 1953 R .... |

| Designation M63 x 1,5 | Unique specimen | Package |
|---|---|---|
| Blanking element M63 x 1,5 | GHG 960 1924 R0068 | GHG 960 1952R .... |

| | |
|---|---|
| Service temperature range<br>M16 x 1,5 to M50 x 1,5<br>M63 x 1,5 | <br>-55 °C to +95 °C<br>-20 °C to +80 °C |
| Degree of mechanical hazard | high |
| Wallthickness | ≥ 3,5 mm |
| | |
| Ingress protection | |
| M16x1,5 –M50x1,5 | IP66 |
| M63 x 1,5 | IP65 |

**Physikalisch-Technische Bundesanstalt (PTB)**
Bundesallee 100, 38116 Braunschweig, Germany
Postfach 33 45, 38023 Braunschweig, Germany
Telephone +49 531 592-0, Telefax +49 531 592-3605



Attachment to Certificate
IECEx PTB 03.0000, Revision 1

**Nomenclature**

| GHG 960 | **** | * | **** |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

1: Type designation of the blanking element
2: Designation of size and equipment (see list above)
3: P = Unique specimen
R = Package
4: Without influence on the type of protection

**Physikalisch-Technische Bundesanstalt (PTB)**
Bundesallee 100, 38116 Braunschweig, Germany
Postfach 33 45, 38023 Braunschweig, Germany
Telephone +49 531 592-0, Telefax +49 531 592-3605

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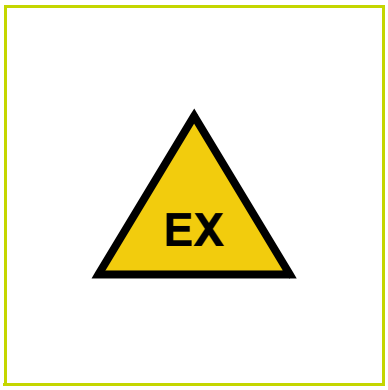
EX CERTIFICATE – IECEx

vibro-meter®

# IECEx PTB 11.0019X
# for
# cable fittings (stuffing glands)




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference IECEx PTB 11.0019X
Edition 3 – October 2020

Meggitt SA, Route de Moncor 4, Case postale, 1701 Fribourg, Switzerland

Tel: +41 26 407 1111
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energy@ch.meggitt.com
www.meggittsensing.com/energy
www.meggitt.com

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# IECEx Certificate of Conformity

**INTERNATIONAL ELECTROTECHNICAL COMMISSION**
**IEC Certification System for Explosive Atmospheres**

for rules and details of the IECEx Scheme visit www.iecex.com

| | | | |
|---|---|---|---|
| Certificate No.: | **IECEx PTB 11.0019X** | Page 1 of 4 | Certificate history: |
| Status: | **Current** | Issue No: 2 | Issue 1 (2015-09-24)<br>Issue 0 (2011-05-23) |
| Date of Issue: | 2020-04-22 | | |
| Applicant: | **Pflitsch GmbH & Co. KG**<br>Ernst-Pflitsch-Straße 1<br>42499 Hückeswagen<br>**Germany** | | |
| Equipment: | **Cable gland type blueglobe HT xx x xx xxxx xx, blueglobe HT AC xxx xx x xx xxxx xxxx xx and blueglobe HT TRI xx x xx xxxx xx** | | |
| Optional accessory: | | | |
| Type of Protection: | **Increased Safety "eb", Protection by Enclosure "tb"** | | |
| Marking: | Ex eb IIC Gb<br>Ex tb IIIC Db | | |

Approved for issue on behalf of the IECEx Certification Body: **Dr. Ing. Detlev Markus**

Position: **Head of Department "Explosion Protection in Energy Technology"**

Signature: (for printed version) _____

Date: _____

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

**Physikalisch-Technische Bundesanstalt (PTB)**
**Bundesallee 100**
**38116 Braunschweig**
**Germany**

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin

# IECEx Certificate of Conformity

| | | |
|---|---|---|
| Certificate No.: | **IECEx PTB 11.0019X** | Page 2 of 4 |
| Date of issue: | 2020-04-22 | Issue No: 2 |
| Manufacturer: | **Pflitsch GmbH & Co. KG**<br>Ernst-Pflitsch-Straße 1<br>42499 Hückeswagen<br>**Germany** | |
| Additional manufacturing locations: | | |

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

**STANDARDS** :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

| | |
|---|---|
| **IEC 60079-0:2017**<br>Edition:7.0 | Explosive atmospheres - Part 0: Equipment - General requirements |
| **IEC 60079-31:2013**<br>Edition:2 | Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t" |
| **IEC 60079-7:2017**<br>Edition:5.1 | Explosive atmospheres - Part 7: Equipment protection by increased safety "e" |

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

**TEST & ASSESSMENT REPORTS:**
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

DE/PTB/ExTR11.0032/02

Quality Assessment Report:

DE/PTB/QAR10.0003/04



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Original copy (English)

# IECEx Certificate of Conformity

Certificate No.: **IECEx PTB 11.0019X** Page 3 of 4

Date of issue: 2020-04-22 Issue No: 2

**EQUIPMENT:**
Equipment and systems covered by this Certificate are as follows:

The cable gland type blueglobe HT xx x xx xxxx xx, blueglobe HT AC xxx xx x xx xxxx xx and blueglobe HT TRI xx x xx xxxx xx made of brass blank or nickel-plated and stainless steel, serves to introduce fixed cables into electrical apparatus of the type of protection increased safety "eb" and protection by enclosure "tb". The cable gland consists of:
- pressure screw without clamping device
- sealing component with moulded inlet or two-part sealing component
- double nipple with metric connection thread in different length and an O-ring.

For mounting enclosures with through bore-holes or threaded holes are used. Lock nuts are used with through bore-holes.
Accessory is an AC group for steel armoured cables, a TRI-spring for shielded cables as well as a plastic bolt for sealing of cable glands which are not used.

Technical data and Nomenclature see Annex.

**SPECIFIC CONDITIONS OF USE: YES as shown below:**
Only permanently wired cables may be entered. The user shall provide the required strain relief.

When the tested sealing components are selected, the maximum thermal load of the cables introduced must be taken into account.

# IECEx Certificate of Conformity

Certificate No.: **IECEx PTB 11.0019X** Page 4 of 4

Date of issue: 2020-04-22 Issue No: 2

**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**
1) The pressure screw can be optionally equipped with a silicone coating.
2) Two different sealing components can be used: sealing component with moulded inlet and two-part sealing component.
3) New test according to IEC 60079-0:2017 (Ed. 7), IEC 60079-7:2015+A1:2017 (Ed. 5.1) and IEC 60079-31:2013 (Ed. 2).

**Annex:**

COCA-11.0019X Issue 2.pdf

Applicant: Pflitsch GmbH & Co. KG
Ernst-Pflitsch-Straße 1
42499 Hückeswagen
Germany

Electrical Apparatus: Cable gland type blueglobe HT xx x xx xxxx xx,
blueglobe HT AC xxx xx x xx xxxx xx and
blueglobe HT TRI xx x xx xxxx xx

**Description**

The cable gland type blueglobe HT xx x xx xxxx xx, blueglobe HT AC xxx xx x xx xxxx xx and blueglobe HT TRI xx x xx xxxx xx made of brass blank or nickel-plated and stainless steel, serves to introduce fixed cables into electrical apparatus of the type of protection increased safety "eb" and protection by enclosure "tb". The cable gland consists of:
- pressure screw without clamping device
- sealing component with moulded inlet or two-part sealing component
- double nipple with metric connection thread in different length and an O-ring

For mounting enclosures with through bore-holes or threaded holes are used. Lock nuts are used with through bore-holes.
Accessory is an AC group for steel armoured cables, a TRI-spring for shielded cables as well as a plastic bolt for sealing of cable glands which are not used.

**Technical data**

| | |
|---|---|
| Size of thread | M12 to M40 |
| Suited for devices of equipment group II with mechanical risk level | High |
| Mounted in enclosures with clearance holes<br>Plastic, wall thickness<br>Metal, wall thickness | <br>≥ 2 mm<br>≥ 1 mm |
| Mounted in enclosures with threaded holes<br>Plastic, wall thickness<br>Metal, wall thickness | <br>≥ 5 mm<br>≥ 3 mm |
| Torque | Depending on the nominal size, see list below<br>metric: 5 Nm to 20 Nm |
| Ambient temperatures<br>Insert and connecting O-ring Silicon<br>Bolt | <br>-55 °C to +160 °C<br>-55 °C to +90 °C |
| Protection against solid foreign objects, water and contact | IP66 and IP 68 in accordance with IEC 60529 |



Attachment to Certificate
IECEx PTB 11.0019X, Issue No. 2

**max. Torque blueglobe and blueglobe TRI**

| **blueglobe HTand blueglobe TRI HT** | | | | | |
|---|---|---|---|---|---|
| Thread | Molded inlet | Torque Pressure screw / double nipple | Cable diameter with inlet | Cable diameter without inlet | Mechanical strength |
| M12 | X | 5 Nm | --- | 8,0 – 5,0 | 7 J |
| M16 | X | 8 Nm | 7,0 – 4,0 | 11,0 – 7,0 | 7 J |
| M20 | X | 10 Nm | 9,0 – 5,0 | 14,0 – 9,0 | 7 J |
| M25 | X | 15 Nm | 16,0 – 11,0 | 20,0 – 16,0 | 7 J |
| M32 | | 15 Nm | 20,0 – 15,0 | 25,0 – 20,0 | 7 J |
| M40 | | 20 Nm | 26,0 – 20,0 | 32,0 – 26,0 | 7 J |
| Connection thread: metric, acc. to IEC 60 423 | | | | | |
| Note: The torque depends on the cable used and the insert seal but should not exceed the value given in the table. | | | | | |

**max. Torque blueglobe AC**

| **blueglobe HT AC for armoured cable** | | | | | | |
|---|---|---|---|---|---|---|
| Thread | Molded inlet | Torque Pressure screw / double nipple | Cable diameter with inlet | Cable diameter without inlet | Clamping range of AC group | Mecha-nical strength |
| M20 | X | 15 Nm | 14,0 – 9,0 | --- | 13,0 – 9,0 | 7 J |
| M20 | X | 15 Nm | 20,0 – 16,0 | 16,0 - 11,0 | 15,0 – 10,0 | 7 J |
| M25 | X | 15 Nm | 20,0 – 16,0 | --- | 17,0 – 14,0 | 7 J |
| M32 | | 15 Nm | 25,0 – 20,0 | --- | 23,0 – 19,0 | 7 J |
| M32 | | 15 Nm | 32,0 – 26,0 | 26,0 - 20,0 | 27,0 – 23,0 | 7 J |
| M40 | | 20 Nm | 32,0 – 26,0 | ---- | 31,0 – 28,0 | 7 J |
| Connection thread: metric, acc. to IEC 60 423 | | | | | | |
| Note: The torque depends on the cable used and the insert seal but should not exceed the value given in the table. | | | | | | |

**Nomenclature**

| blueglobe HT | xx | x | xx | xxxx | xx |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |

1: Type
2: bg
3: Type of thread, 2 = series metric, 8 = series metric long
4: Connecting thread
5: Material
6: Ex







MEGGITT
Original copy (English)

| blueglobe HT AC | xxx | xx | x | xx | xxxx | xxxx | xx |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

1: Type
2: Metric adapter
3: bg
4: Type of thread, 2 = serie metric
5: Connecting thread
6: Material
7: AC for amoured cable, clamping range
8: Ex

| blueglobe HT TRI | xx | x | xx | xxxx | xx |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |

1: Type
2: bg
3: Type of thread, 2 = serie metric
4: Connecting thread
5: Material
6: Ex

**Conditions of Certification**

Only permanently wired cables may be entered. The user shall provide the required strain relief.

The maximum thermal load of the cables and conduits entered is to be taken into account.

**Physikalisch-Technische Bundesanstalt (PTB)**
Bundesallee 100, 38116 Braunschweig, Germany
Postfach 33 45, 38023 Braunschweig, Germany
Telephone +49 531 592-0, Telefax +49 531 592-3605



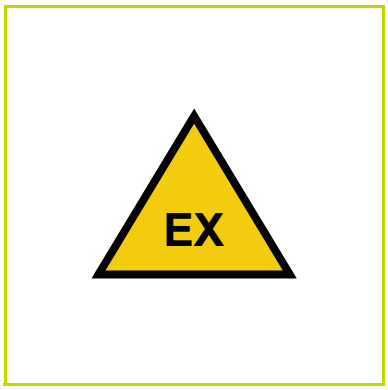


Original copy (English)
MEGGITT

EX CERTIFICATE – IECEx

vibro-meter®

# IECEx SEV 15.0018
# for
# cable fittings (stuffing glands)




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference IECEx SEV 15.0018
Edition 2 – October 2020

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# IECEx Certificate of Conformity

**INTERNATIONAL ELECTROTECHNICAL COMMISSION**
**IEC Certification Scheme for Explosive Atmospheres**

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx SEV 15.0018 Issue No: 1

Certificate history:
Issue No. 1 (2018-11-15)
Issue No. 0 (2016-01-13)

Status: Current

Page 1 of 4

Date of Issue: 2018-11-15

Applicant: AGRO AG
Korbackerweg 7
5502 Hunzenschwil
Switzerland

Equipment: Cable glands and accessories Type Progress *** ***** KB EX

*Optional accessory:* *Thread adapters; Blanking elements; Counter nuts*

Type of Protection: Encreased safety "eb" and protection by enclosure "tb"

Marking:
Ex eb IIC Gb
Ex tb III C Db

*Approved for issue on behalf of the IECEx Certification Body:* Martin Plüss

*Position:* Manager Product Certification

*Signature:*
*(for printed version)*

*Date:*

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

Eurofins Electrosuisse Product Testing AG
Luppmenstrasse 3
CH-8320 FEHRALTORF
Switzerland

eurofins | Electrosuisse Product Testing

# IECEx Certificate of Conformity

Certificate No: IECEx SEV 15.0018 Issue No: 1

Date of Issue: 2018-11-15



Manufacturer: AGRO AG
Korbackerweg 7
5502 Hunzenschwil
Switzerland

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

| | |
|---|---|
| IEC 60079-0 : 2011<br>Edition:6.0 | Explosive atmospheres - Part 0: General requirements |
| IEC 60079-31 : 2013<br>Edition:2 | Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t" |
| IEC 60079-7 : 2015<br>Edition:5.0 | Explosive atmospheres – Part 7: Equipment protection by increased safety "e" |

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

CH/SEV/ExTR15.0020/01

Quality Assessment Report:

CH/SEV/QAR12.0001/05

# IECEx Certificate of Conformity

Certificate No: IECEx SEV 15.0018 Issue No: 1

Date of Issue: 2018-11-15 Page 3 of 4

Schedule

**EQUIPMENT:**

*Equipment and systems covered by this certificate are as follows:*

The cable gland type Progress ***KB EX made of brass or steel for installation of cables in equipment with type of protection increased safety "eb" and protection by enclosure "tb". Installation takes place into the enclosure with threaded holes and through holes. The cable gland consists essentially of the compression nut, intermediate support and seal insert. The strain relief takes place by the use of seal insert or by an additional strain relief device.
Accessories are reductions, extensions, blanking elements and counter nuts.

Type References:
Progress MS **** KB EX (M16...M63; Pg9...Pg48; NPT3/8"...NPT2")
Progress S2 **** KB EX (M12...M63; Pg7...Pg48; NPT1/4"...NPT2")
Progress S4 **** KB EX (M12...M63; Pg7...Pg48; NPT1/4"...NPT2")
Thread adapters (Reductions, Extensions) MS EX (M16...M63; Pg9...Pg48)
Thread adapters (Reductions, Extensions) S2 EX (M12...M63; Pg7...Pg48)
Thread adapters (Reductions, Extensions) S4 EX (M12...M63; Pg7...Pg48)
Blanking elements MS EX; S2 EX; S4 EX (M8...M63; Pg7...Pg48)
Counter nuts MS EX; S2 EX; S4 EX (M8...M63; Pg7...Pg48)

Progress MS EMV easyCONNECT KB EX
(brass Ni with clamping jaws, M16...M63; Pg9....Pg48; NPT3/8"...NPT2")
Progress S2 EMV easyCONNECT KB Ex
(stainless steel A2 with clamping jaws, M12...M63; Pg7....Pg48; NPT1/4"...NPT2")
Progress S4 EMV easyCONNECT KB Ex
(stainless steel A4 with clamping jaws, M12...M63; Pg7....Pg48; NPT1/4"...NPT2")

**SPECIFIC CONDITIONS OF USE: NO**

# IECEx Certificate of Conformity

Certificate No: IECEx SEV 15.0018 Issue No: 1

Date of Issue: 2018-11-15 Page 4 of 4

**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

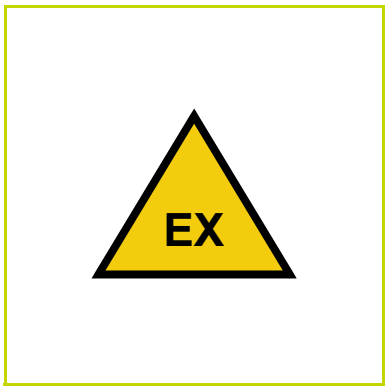
The product group was supplemented. The supplemented products are cable glands.

This certificate replaces the former certificate IECEx SEV 15.0018 Issue 0

EX CERTIFICATE – IECEx

vibro-meter®

# IECEx SEV 15.0019X
# for
# cable fittings (stuffing glands)




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference IECEx SEV 15.0019X
Edition 4 – January 2022

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# IECEx Certificate of Conformity

**INTERNATIONAL ELECTROTECHNICAL COMMISSION**
**IEC Certification System for Explosive Atmospheres**
for rules and details of the IECEx Scheme visit www.iecex.com

| | | | |
|---|---|---|---|
| Certificate No.: | **IECEx SEV 15.0019X** | Page 1 of 4 | Certificate history: |
| Status: | **Current** | Issue No: 4 | Issue 3 (2018-12-18)<br>Issue 2 (2018-10-01)<br>Issue 1 (2018-07-16)<br>Issue 0 (2016-01-13) |
| Date of Issue: | 2020-12-03 | | |
| Applicant: | **AGRO AG**<br>Korbackerweg 7<br>5502 Hunzenschwil<br>**Switzerland** | | |
| Equipment: | **Cable glands and accessories, Type: Progress *** ***** EX** | | |
| Optional accessory: | Thread adapters; Counter nuts; Blanking bolts | | |
| Type of Protection: | **eb, tb** | | |
| Marking: | Ex eb IIC Gb<br>Ex tb III C Db | | |

Approved for issue on behalf of the IECEx Certification Body: **Martin Plüss**

Position: **Manager Product Certification**

Signature: (for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

**Eurofins Electric & Electronic Product Testing AG**
**Luppmenstrasse 3**
**CH-8320 FEHRALTORF**
**Switzerland**

eurofins | E&E

# IECEx Certificate of Conformity

| | | |
|---|---|---|
| Certificate No.: | **IECEx SEV 15.0019X** | Page 2 of 4 |
| Date of issue: | 2020-12-03 | Issue No: 4 |

Manufacturer: **AGRO AG**
Korbackerweg 7
5502 Hunzenschwil
**Switzerland**

Additional manufacturing locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

**STANDARDS** :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

| | |
|---|---|
| IEC 60079-0:2011<br>Edition:6.0 | Explosive atmospheres - Part 0: General requirements |
| IEC 60079-31:2013<br>Edition:2 | Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t" |
| IEC 60079-7:2015<br>Edition:5.0 | Explosive atmospheres – Part 7: Equipment protection by increased safety "e" |

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

**TEST & ASSESSMENT REPORTS:**
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

CH/SEV/ExTR15.0021/04

Quality Assessment Report:

CH/SEV/QAR12.0001/06



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# IECEx Certificate of Conformity

Certificate No.: **IECEx SEV 15.0019X** Page 3 of 4

Date of issue: 2020-12-03 Issue No: 4

**EQUIPMENT:**
Equipment and systems covered by this Certificate are as follows:

The cable gland type Progress *** EX made of brass steel or reinforced plastics for installation of cables in equipment with type of protection increased safety "eb" and protection by enclosure "tb". Installation takes place into the enclosure with threaded holes and through holes. The cable gland consists essentially of the compression nut, intermediate support and seal insert. The strain relief takes place by the use of seal insert or by an additional strain relief device.
Accessories are reductions, extensions, blanking elements and counter nut and blanking bolts.

**Type**

Progress MS **** KB EX (M12; Pg7; NPT1/4")

Progress MS **** EX (M8…M12; Pg7; NPT1/8"…NPT1/4")

Progress S2 **** EX (M8…M10; NPT1/8")

Progress S4 **** EX (M8…M10; NPT1/8")

Progress MS **** EX (M16…M63; Pg9…Pg48; NPT3/8"…NPT2")

Progress S2 **** EX (M12…M63; Pg7…Pg48; NPT1/4"…NPT2")

Progress S4 **** EX (M12…M63; Pg7…Pg48; NPT1/4"…NPT2")

Progress GFK*** EX (M16…M63; Pg9…Pg48)

Thread adapters (Reductions, Extensions) MS EX (M8…M12; Pg7)

Thread adapters (Reductions, Extensions) S2 EX (M8…M10)

Thread adapters (Reductions, Extensions) S4 EX (M8…M10)

Additional the following customer variants are included:
EX1000.12.91.900; EX1100.12.91.900;
EX1700.12.86.901.91; EX1700.12.86.903.91;
EX1700.17.86.900.91; EX1710.12.86.901.91;
EX1710.12.86.903.91; EX1710.17.86.900.91

Progress MS FK EX, A2 FK EX, A4 FK EX, article number. EX130*.75.*620.140

Progress MS EMV easyCONNECT KB EX
(brass Ni with clamping jaws, M12; Pg7; NPT1/4")

**SPECIFIC CONDITIONS OF USE: YES as shown below:**

- Only permanently installed cable may be inserted into an enclosure. The user must provide a suitable strain relief. (not valid for Progress MS ***** KB EX (M12; PG7; NPT1/4"))
- The types with a low impact energy must be installed on the enclosure in such way, that they are protected mechanically from impact energy according to EN 60079-0 clause 26.4.2.

# IECEx Certificate of Conformity

Certificate No.: **IECEx SEV 15.0019X** Page 4 of 4

Date of issue: 2020-12-03 Issue No: 4

**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**
New types of cable glands Progress made in stainless steel were added



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MEGGITT

# APPENDIX E: KGS CERTIFICATIONS

**Table E-1:** Related KGS certificates

| Product(s) covered | Certificate number |
|---|---|
| CA134 | KGS 14-GA4BO-0130X |
| CA20x | KGS 17-GA4BO-0551X |
| | KGS 21-GA4BO-0276X |
| CA28x | KGS 17-GA4BO-0323X |
| CA901 | KGS 17-GA4BO-0550X |
| GSI127 | KGS 17-GA4BO-0325X |
| IPC707 | KGS 18-GA4BO-0548X |
| | KGS 18-GA4BO-0549X |

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MEGGITT

# KGS certificate:

## 14-GA4BO-0130X

## for CA 134

KO

EX

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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제14-0130호

# 안 전 인 증 서

## MEGGITT SA

**Route de Moncor 4 1752 Villars-Sur-Glane Switzerland**

위 사업장에서 제조하는 아래의 품목이 「산업안전보건법」 제34조 및 같은 법 시행규칙 제58조의4제4항에 따른 안전인증 심사 결과 안전·보건기준에 적합하므로 안전인증표시의 사용을 인증합니다.

**품 목**

Accelerometer

**형식 · 모델 / 용량 · 등급 / 인증번호**

| 형식·모델 | 용량 · 등급 | 인증번호 |
|---|---|---|
| PNR144-134-000-XXX | 뒷면 참조<br>Ex ia IIC T6 to T1 or T510℃ | 14-GA4BO-0130X |

**인 증 기 준**

방호장치 의무안전인증 고시(고용노동부고시 제2013-54호)

**인 증 조 건**

Tamb : -200℃ ~ 500℃ (4.안전한 사용을 위한 조건 참조)

2014 년 03 월 31 일

한국가스안전공사 사장

# 인 증 조 건

1. 제조공장:
Route de Moncor 4 1752 Villars-Sur-Glane Switzerland에 위치한 MEGGITT SA 공장에서 생산한 제품 중 아래 인증범위의 제품에 한함.

2. 제품개요
Accelerometer: This sensor is an electro-mechanical transducer delivering at its terminal blocks an electrical load proportional to the measured pressure. It works with piezoelectric equipment mounted in compression.

정격: Linear Source
Ui≦28V; Ii≦100mA; Pi≦0.7W
Non-linear Source
Ui≦28V; Ii≦25mA; Pi≦0.7W
Sensor: Ci≦1.2nF, Li≈0
Cable: Ci≦250pF/m, Li≈0

3. 인증범위: 본 인증서는 아래의 형식번호에 한하여 유효함
품목 명 Accelerometer, 모델 명 PNR144-134-000-XXX에 한하여 인증함.

4. 안전한 사용을 위한 조건
1)센서에 연결되는 어떤 인증받은 본질안전기기의 전기적 파라미터는 정격(Linear Source, Non-linear Source) 값을 초과하지 말 것.
2)Tamb에 적합한 온도등급은 다음을 따를 것.

| 온도등급 | Tamb(℃) |
|---|---|
| T6 | 80 |
| T5 | 95 |
| T4 | 130 |
| T3 | 195 |
| T2 | 290 |
| T1 | 440 |
| T510℃ | 500 |

3)인증받은 본질안전 관련기기([ia] 또는 [ib])와 연결하여 사용하며 설치시 본질안전을 유지할 수 있도록 케이블 길이를 고려할 것.

5. 인증(변경)사항

6. 그 밖의 사항
안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수

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EX CERTIFICATE – KGS

vibro-meter®

# KGS 17-GA4BO-0551X
# for
# CA20x piezoelectric accelerometers
# (PNR 144-202-000-xx5 only)

Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference KGS 17-GA4BO-0551X
Edition 2 – June 2021

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energy@ch.meggitt.com
www.meggittsensing.com/energy
www.meggitt.com

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복사본 COPY

제17-0551호

# 안 전 인 증 서

**Meggitt SA**

Route de Moncor 4, 1752 Villars-sur-Giâne, Switzerland

위 사업장에서 제조하는 아래의 품목이 「산업안전보건법」 제34조 및 같은 법 시행규칙 제58조의4제4항에 따른 안전인증 심사 결과 안전보건 기준에 적합하므로 안전인증표시의 사용을 인증합니다.

## 품 목

Piezoelectric Accelerometer

## 형식 · 모델 / 용량 · 등급 / 인증번호

| 형식·모델 | 용량·등급 | 인증번호 |
|---|---|---|
| CA20X(144-20X-000-YYY) | - | 17-GA4BO-0551X |
| | Ex ia IIC T6 to T2 | |

## 인 증 기 준

방호장치 의무안전인증 고시(고용노동부고시 제2016-54호)

## 인 증 조 건

Tamb = -55℃ ~ +260℃
기타 사항은 뒷면 참조할 것.

2017 년 8 월 23 일

한국가스안전공사 사장

# 인 증 조 건

1. 제조공장 :
 - "Route de Moncor 4, 1752 Villars-sur-Giâne, Switzerland"에 위치한 Meggitt SA에서 생산하는 제품에 한함.

2. 제품개요 :
 - The sensor is an electromechanic transducer delivering at its terminal blocks an electrical load proportional to the acceleration that it is subjected. It works with a piezoelectric material mounted in shearing.

3. 인증범위 :
 - Type designation : 동일 형식 일람표 참조
 - Temperature classification :
  T6 up to at Ta = +80℃
  T5 up to at Ta = +95℃
  T4 up to at Ta = +130℃
  T3 up to at Ta = +195℃
  T2 up to at Ta = +260℃
 - Specific Parameters of the mode of protection 'ia' :
  Ci ≤ 5 nF(with 5m of cable), Ri =0, Li = 0
  Ui ≤ 28V, Ii ≤ 130 mA, Pi ≤ 0.8W

4. 안전한 사용을 위한 조건 :
 - The sensor shall be only connected to an intrinsically safe certified equipment. This combination shall be compatible as regard the intrinsic safety rules(Specific parameters of the mode of protection 'Ia').

5. 인증(변경)사항 :
 - LCIE 02 ATEX 6179 X를 바탕으로 작성되었음.

6. 그 밖의 사항 :
 - 안전인증품의 품질관리. 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수

동 일 형 식 일 람 표

| 사업장명 | Meggitt SA | 개정일자 및 번호 | | | 인증번호 | 17-GA4BO-0551X |
|---|---|---|---|---|---|---|
| 형식 및 모델 | | 동일형식 인정범위 및 내역 | | | | 비 고 |
| 형식번호 | 모델번호 | 동일형식 항목1 | 동일형식 항목2 | 동일형식 항목3 | 동일형식 항목4 | |
| CA20X | 144-202-000-105 | 케이블길이 3m | | | | |
| | 144-202-000-115 | 케이블길이 6m | | | | |
| | 144-202-000-125 | 케이블길이 11m | | | | |
| | 144-202-000-135 | 케이블길이 20m | | | | |
| | 144-202-000-305 | 케이블길이 8m | | | | |
| | 144-202-000-315 | 케이블길이 3m | | | | |
| | 144-202-000-325 | 케이블길이 11m | | | | |
| | 144-202-000-505 | 케이블길이 6m | | | | |
| | 144-202-000-515 | 케이블길이 10m | | | | |

EX CERTIFICATE – KGS

vibro-meter®

# KGS 21-GA4BO-0276X
# for
# CA20x piezoelectric accelerometers
# (PNR 144-202-000-xx6 only)

Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference KGS 21-GA4BO-0276X
Edition 1 – June 2021

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제21-0276호

# 안 전 인 증 서

MEGGITT SA

Route de Moncor 4 1752 Villars-sur-Glane SWITZERLAND

위 사업장에서 제조하는 아래의 품목이 「산업안전보건법」 제84조 및 같은 법 시행규칙 제110조제1항에 따른 안전인증 심사 결과 안전·보건기준에 적합하므로 안전인증표시의 사용을 인증합니다.

## 품 목

Acceleration transducer

## 형식 · 모델 / 용량 · 등급 / 인증번호

| 형식 · 모델 | 용량 · 등급 | 인증번호 |
|---|---|---|
| CA20X(144-20x-000-yyy,동일형식 일람표 참고) | [뒷면 제품개요 참조]<br>Ex ia IIC T6...T2 Ga | 21-GA4BO-0276X |

## 인 증 기 준

방호장치 안전인증 고시(고용노동부고시 제2021-22호)

## 인 증 조 건

Tamb : -55 ℃ ~ +260 ℃, 뒷면참조

2021 년 06 월 07 일

한국가스안전공사 사장

한국가스안전공사

# 인 증 조 건

1. 제조공장:

Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland에 위치한 Meggitt S.A에서 생산한 제품 중 아래 인증범위의 제품에 한함.

2. 제품개요

Acceleration transducer is composed of a stainless steel enclosure, which house a piezoelectric device as sensing element.
This acceleration sensor is an electro-mechanical transducer that supplies to its terminal an electrical charge proportional to the vibration which is submitted.
This vibration is transmitted to the sensible element by the intermediate of seismic mass. It operates with a piezo-electrical material built in shear.

* Parameters

| Parameter | Connector | integral cable |
|---|---|---|
| Ui | ≤ 28 V | ≤ 28 V |
| Ii | ≤ 100 mA | ≤ 100 mA |
| Pi | ≤ 0.7W | ≤ 0.7 W |
| Ci | ≤ 20nF | ≤ 20nF +0.2nF/m |
| Li | ≤ 0 | ≤ 1uH/m |

3. 인증범위: 본 인증서는 아래의 형식에 한하여 유효함.

품목 명 : Acceleration transducer, 모델 명 : 144-20x-000-yyy(동일형식 일람표 참고)
Temperature Classification :
T6 up to at Ta = +80℃, T5 up to at Ta = +95℃, T4 up to at Ta = +130℃, T3 up to at Ta = +195℃
T2 up to at Ta = +260℃

4. 안전한 사용을 위한 조건

가. 이 기기는 관련된 본질 안전 기기에만 연결되어야 함.
이 결합은 EN 60079-25 표준의 요구사항에 따라 본질안전관련 규칙과 관련하여 호환되어야 함.
나. Operating ambient temperature : -55 ℃ to 260 ℃
다. 기기를 설비에 설치하는 작업은 가속변환기의 금속몸체와 케이블 차폐가 시스템 접지에 안정적으로 연결되도록 해야 함
라. 이 기기는 도면 n° PZ 9134 rev. 00 dated 2020/02/10에 따라 설치되어야 함.
마. 사용되는 케이블은 이 기기가 설치되는 환경과 호환되는 사용 온도를 가지고 있어야 한다.

5. 인증(변경)사항

LCIE 02 ATEX 6179 X Issue No. 5에 의해 작성되었음

6. 그 밖의 사항

가. 안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수
나. 본 안전인증서는 반드시 관련 ATEX 인증서(LCIE 02 ATEX 6179 X Issue No. 5)와 함께 사용할 것

## 동 일 형 식 일 람 표

| 사업장명 | Meggitt SA | 개정일자 및 번호 | 0 | 인증번호 | 21-GA4BO-0276X |
|---|---|---|---|---|---|

| 형식 및 모델번호 | | 동일형식 항목 및 내역 | | | | 비고 |
|---|---|---|---|---|---|---|
| 형식번호 | 모델번호 | Cable Length | 동일형식 항목2 | 동일형식 항목3 | 동일형식 항목4 | |
| CA20X | 144-202-000-106 | 3m | | | | |
| | 144-202-000-116 | 6m | | | | |
| | 144-202-000-126 | 11m | | | | |
| | 144-202-000-136 | 20m | | | | |
| | 144-202-000-306 | 8m | | | | |
| | 144-202-000-316 | 3m | | | | |
| | 144-202-000-326 | 11m | | | | |
| | 144-202-000-506 | 6m | | | | |
| | 144-202-000-516 | 10m | | | | |

MEGGITT

KO

# KGS certificate:

# 17-GA4BO-0323X

# for

# CA28x

EX

**Meggitt SA**
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CH - 1701 Fribourg
Switzerland

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제17-0323호

# 안 전 인 증 서

## MEGGITT SA

Route de Moncor 4, 1752 Villars-sur-Glane, Switzerland

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품 목

Piezoelectric Accelerometer

형식 · 모델 / 용량 · 등급 / 인증번호

| 형식·모델 | 용량 · 등급 | 인증번호 |
|---|---|---|
| 144-28*-000-*** | Ui=28V, Ii=100mA, Pi=0.7W, Li=0mH, Ci=0nF<br>Ex ia IIC T6...T2 | 17-GA4BO-0323X |

인 증 기 준

방호장치 안전인증 고시(고용노동부고시 제2016-54호)

인 증 조 건

뒷면 참조

2017 년 04 월 28 일

한국가스안전공사 사장

# 인 증 조 건

1. 제조공장

Route de Moncor 4, 1752 Villars-sur-Glane, Switzerland에서 제조하는 제품에 한함

2. 제품개요

Piezoelectric Accelerometers are used for vibration monitoring.
The sensor converts mechanical forces (e.g. vibrations) of the equipment to which it is mounted into an electrical signal, that is processed externally. When a conversion module is integrated, the sensor signal is converted into a modulated current output signal.

3. 인증범위

-첨부 인증조건 참조

4. 안전한 사용을 위한 조건

- The instructions provided with the product shall be followed in detail to assure safe operation.

5. 인증(변경)사항

IECEx DEK 15.0029 Issue No.0 에 의해 작성되었음

6. 그 밖의 사항

안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수

KGS

# 인 증 조 건(17-0323)

## 1. Ambient temperature

**Ambient temperature range, depending on type and application:**

Type 144-28-000-...
Sensor only: -60 °C to +260 °C

Type 444-28-000-..2 to 444-28-000-..9
Conditioner: -55 °C to +125 °C
Sensor and Cable: -55 °C to +260 °C

Type 444-31-000-..2 to 444-31-000-..9
Sensor and Integral
Conditioner: -55 °C to +125 °C

**The relation between maximum ambient temperature and temperature class is as follows for all devices, taking into account the above mentioned temperature ranges:**

| Type | T6 | T5 | T4 | T3 | T2 |
|---|---|---|---|---|---|
| 444-28-000-..2 to 444-28-000-..9 Conditioner | +65 °C | +80 °C | +115 °C | +125 °C | - |
| 444-31-000-..2 to 444-31-000-..9 | +65 °C | +80 °C | +115 °C | +125 °C | - |
| 144-28-000-... | +80 °C | +95 °C | +130 °C | +195 °C | +260 °C |

## 2. Electrical data

**Supply and output signal:**
**In type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with following maximum values:**

| Type | $U_i$ | $I_i$ | $P_i$ | $L_i$ | $C_i$ sensor | $C_i$ cable |
|---|---|---|---|---|---|---|
| 444-28-000-..2 to 444-28-000-..9 | 28 V | 100 mA | 0.7 W | 0 mH | 0 nF | - |
| 444-31-000-..2 to 444-31-000-..9 | 28 V | 100 mA | 0.7 W | 0 mH | 0 nF | 0.25 nF/m |
| 144-28-000-... | 28 V | 100 mA | 0.7 W | 0 mH | 8 nF | 0.25 nF/m |

(1/1)

MEGGITT

KO

# KGS certificate:

# 17-GA4BO-0550X

# for

# CA901

EX

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제17-0550호

# 안 전 인 증 서

## Meggitt SA

Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland

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품 목

Piezoelectric Accelerometer

형식 · 모델 / 용량 · 등급 / 인증번호

| 형식·모델 | 용량·등급 | 인증번호 |
|---|---|---|
| CA901(144-901-000-YYY) | - | 17-GA4BO-0550X |
| | Ex ia IIC T6 to T710℃ | |

인 증 기 준

방호장치 의무안전인증 고시(고용노동부고시 제2016-54호)

인 증 조 건

Tamb = -196℃ ~ +700℃
기타 사항은 뒷면 참조할 것.

2017 년 8 월 23 일

한국가스안전공사 사장

복사본 COPY

# 인 증 조 건

1. 제조공장 :
   - "Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland"에 위치한 Meggitt SA에서 생산하는 제품에 한함.

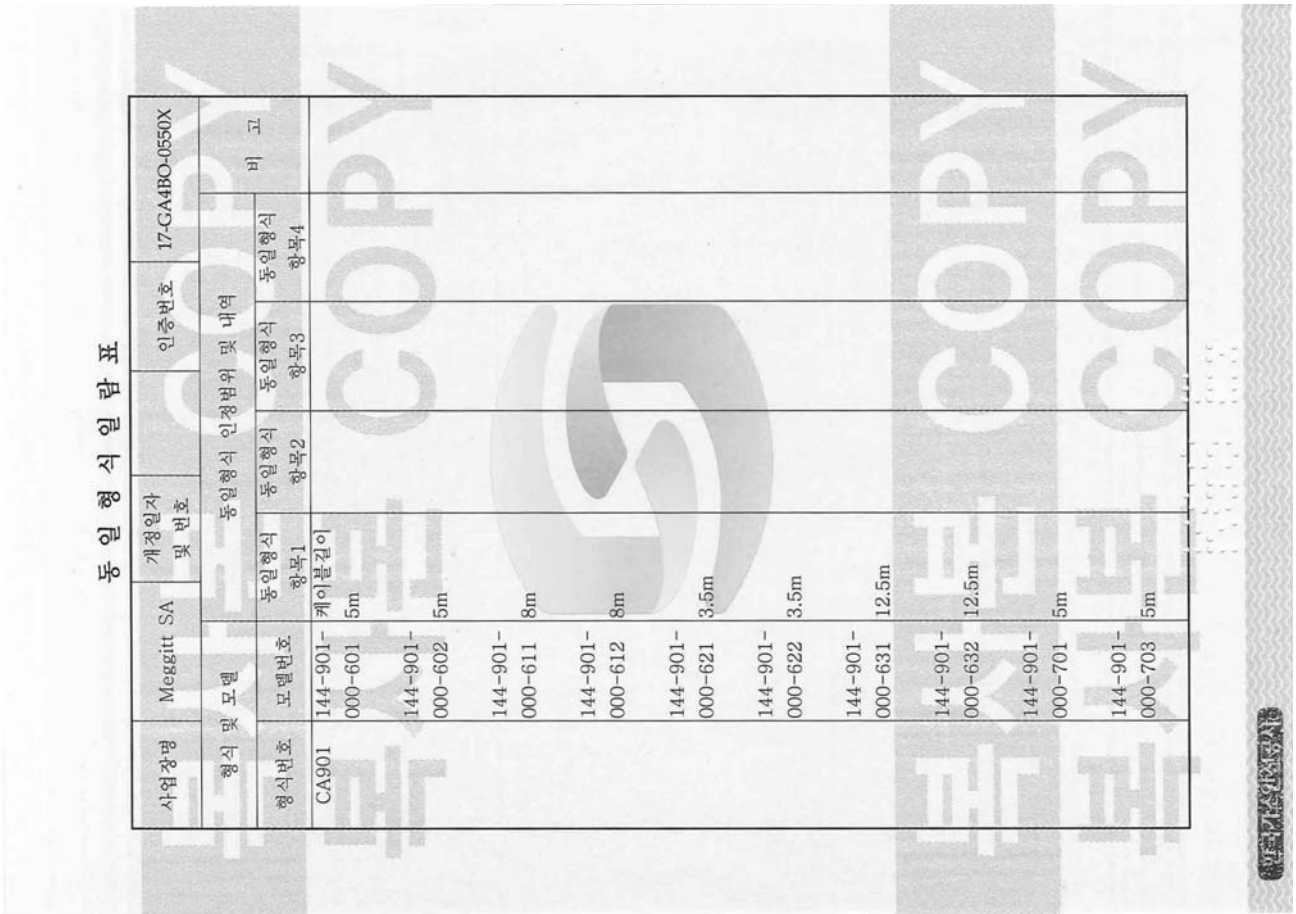
2. 제품개요 :
   - The sensor is an electro-mechanical transducer that supplies to its terminal an electrical charge proportional to the acceleration which is submitted. This acceleration is transmitted to the sensible element by the intermediate of a seismic mass. It operates with a piezo-electrical built in compression.

3. 인증범위 :
   - Type designation : 동일형식 일람표 참조
   - Temperature classification :
     T6 at Ta = +80℃
     T5 at Ta = +95℃
     T4 at Ta = +130℃
     T3 at Ta = +195℃
     T2 at Ta = +290℃
     T1 at Ta = +440℃
     Above Ta = +440℃ and up to +700℃:T*℃(*=Ta+10℃)
   - Specific Parameters of the mode of protection 'ia' :
     Sensor head : Ci = 200 pF, Li ≈ 0
     Integral cable : Ci = 200 pF/m, Li ≈ 0
     Linear power supply : Ui ≤ 28V, Ii ≤ 100mA, Pi ≤ 0.7W
     Non linear power supply : Ui ≤ 28V, Ii ≤ 25mA, Pi ≤ 0.7W

4. 안전한 사용을 위한 조건 :
   - The sensor shall be only connected to an intrinsically safe certified equipment. This combination shall be compatible as regard the intrinsic safety rules(Specific parameters of the mode of protection 'Ia').
   - Operating ambient temperature
     sensor and cable : -196℃ to +700℃
     connector : - 65℃ to +150℃ : connector LEMO type O or equivalent
     - 65℃ to +200℃ : connector M832 3/89Y1020 or equivalent
     - 54℃ to +260℃ : standard temperature VM connector
     - 196℃ to +700℃ : high temperature VM connector

5. 인증(변경)사항 :
   - IECEx LCI 08.0041X를 바탕으로 작성되었음.

6. 그 밖의 사항 :
   - 안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수



동 일 형 식 일 람 표

| 사업장명 | Meggitt SA | 계정일자 및 번호 | | 인증번호 | 17-GA4BO-0550X |
|---|---|---|---|---|---|
| 형식 및 모델 | 동일형식 인정범위 및 내역 | | | | |
| 형식번호 | 모델번호 | 동일형식 항목1 | 동일형식 항목2 | 동일형식 항목3 | 동일형식 항목4 | 비 고 |
| CA901 | 144-901-000-601 | 케이블길이 5m | | | | |
| | 144-901-000-602 | 5m | | | | |
| | 144-901-000-611 | 8m | | | | |
| | 144-901-000-612 | 8m | | | | |
| | 144-901-000-621 | 3.5m | | | | |
| | 144-901-000-622 | 3.5m | | | | |
| | 144-901-000-631 | 12.5m | | | | |
| | 144-901-000-632 | 12.5m | | | | |
| | 144-901-000-701 | 5m | | | | |
| | 144-901-000-703 | 5m | | | | |

MEGGITT

KO

# KGS certificate:

# 17-GA4BO-0325X

# for

# GSI127

EX

**Meggitt SA**
Route de Moncor 4
PO Box 1616
CH - 1701 Fribourg
Switzerland

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제17-0325호

# 안 전 인 증 서

## MEGGITT SA

Route de Moncor 4, 1752 Villars-sur-Glane, Switzerland

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품 목

GSI 127 Interface

형식 · 모델 / 용량 · 등급 / 인증번호

| 형식·모델 | 용량 · 등급 | 인증번호 |
|---|---|---|
| 244-127-000-***-A2-B* * | Uo=25.2V, Io=60mA, Po=0.7W, Co=95nF, Lo=5mH | 17-GA4BO-0325X |
| | Ex nA[ia] IIC T4 | |

인 증 기 준

방호장치 안전인증 고시(고용노동부고시 제2016-54호)

인 증 조 건

뒷면 참조

2017 년 04 월 28 일

한국가스안전공사 사장

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# 인 증 조 건

1. 제조공장

Route de Moncor 4, 1752 Villars-sur-Glane, Switzerland에서 제조하는 제품에 한함

2. 제품개요

The GSI 127 interface provides galvanic insolation between power supply circuit or signal treatment circuit (Ex nA) and a sensor or a conditioner (Ex ia).
The equipment consists of electronic board and screwed terminals blocks mounted inside a plastic enclosure. Conformal coating is applied on both sides of the electronic board.

3. 인증범위

-첨부 인증조건 참조

4. 안전한 사용을 위한 조건

- The equipment shall only be connected to associated intrinsically safe certified equipment or simple apparatus. This combination must be compatible as regard the intrinsic safety rules.
- The apparatus shall be installed in an enclosure conform to the requirements of standard IEC 60079-0 and with ingress protection of at least IP54.
- Operation ambient temperature: -40℃ to +70℃.

5. 인증(변경)사항

IECEx LCIE 13.0026X Issue No.1 에 의해 작성되었음

6. 그 밖의 사항

- 안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수
- 첨부 인증조건에 따라 확인시험을 실시할 것

KGS

# 인 증 조 건(17-0325)

Type designation:
**244-127-000-XXX-A2-BYY**
XXX defines the version of the product (X = 0 to 9).
YY defines the transfer mode (YY = 01 to 19 for actual specification; YY = 20 to 39 for alternate specification).

In order to differentiate the two specifications, the type of product is modified as follows:

- Actual specification: 244-127-000-XXX-A2-B01 to B19
- Alternate specification: 244-127-000-XXX-A2-B20 to B39

The difference between these specifications is only on electronic component values without modification of critical components part list and printed circuit board.

User manual (extract), ref. PZ 8763 rev. 00 dated 2016-09-06.

**MARKING**

MEGGITT SA or VIBRO-METER or MFR S3960
Address: ...
Type: 244-127-000-XXX-A2-BYY
Serial number: ...
Year of construction: ...
Ex nA [ia Ga] IIC T4 Gc
IECEx LCIE 13.0026X
Power supply : U ≤ 30 V, I ≤ 150 mA
Sensor or conditioner :
For 244-127-000-XXX-A2-B01 to B19: $U_o$: 25.2 V; $I_o$: 60 mA; $P_o$: 0.7 W; $C_o$: 95 nF; $L_o$: 5 mH
For 244-127-000-XXX-A2-B20 to B39: $U_o$: 25.2 V; $I_o$: 45 mA; $P_o$: 0.5 W; $C_o$: 95 nF; $L_o$: 10 mH

**RATINGS**

Power supply: U ≤ 30 V, I ≤ 150 mA
Sensor or conditioner:
- For 244-127-000-XXX-A2-B01 to B19: $U_o$: 25.2 V; $I_o$: 60 mA; $P_o$: 0.7 W; $C_o$: 95 nF; $L_o$: 5 mH
- For 244-127-000-XXX-A2-B20 to B39: $U_o$: 25.2 V; $I_o$: 45 mA; $P_o$: 0.5 W; $C_o$: 85 nF; $L_o$: 10 mH

**ROUTINE TEST**

Each transformer T1 shall be submitted to dielectric strength test under test voltage of 1500 V; 50/60 Hz applied between the primary winding and the secondary windings during at least 60 s in accordance with clause 11.2 of IEC 60079-11:2011 Ed. 6 standard.

(1/1)

MEGGITT

KO

# KGS certificate:

## 18-GA4BO-0548X

## for

## IPC707

EX

Meggitt SA
Route de Moncor 4
PO Box 1616
1701 Fribourg
Switzerland



energy@ch.meggitt.com
www.meggittsensing.com/energy

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제18-0548호

# 안 전 인 증 서

**Meggitt SA**

Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland

위 사업장에서 제조하는 아래의 품목이「산업안전보건법」 제34조 및 같은 법 시행규칙 제58조의4제4항에 따른 안전인증 심사 결과 안전보건 기준에 적합하므로 안전인증표시의 사용을 인증합니다.

## 품 목

Signal Conditioner

## 형식 · 모델 / 용량 · 등급 / 인증번호

| 형식.모델 | 용량.등급 | 인증번호 |
|---|---|---|
| IPC707 (244-707-000-012-A3) | Umax : 30 V, Imax : 20 ㎃ | 18-GA4BO-0548X |
| | Ex nA IIC T6 to T4 | |

## 인 증 기 준

방호장치 의무안전인증 고시(고용노동부고시 제2016-54호)

## 인 증 조 건

-40℃ ≤ Ta ≤ +85℃

2018 년 10 월 25 일

한국가스안전공사 사장

복사본 COPY

# 인 증 조 건

1. 제조공장 :
   - "Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland"에 위치한 Meggitt SA에서 생산하는 제품에 한함.

2. 제품개요 :
   - IPC 707 Signal conditioner is an analogue electronic conditioner which converts the electrical charges coming from a piezoelectric sensor(sensor side) into an analogue voltage or current signal(signal side)

3. 인증범위 :
   - Temperature classification :
     T6 at -40℃ ≤ Ta ≤ +70℃
     T5 at -40℃ ≤ Ta ≤ +80℃
     T4 at -40℃ ≤ Ta ≤ +85℃

4. 안전한 사용을 위한 조건 :
   - Transient protection shall be provided that is set at a level not exceeding 140% of the peak voltage value at the supply terminals to equipment.
   - 설치시 IP54 이상의 보호등급을 유지할 것.
   - 기타 사항은 사용설명서를 필히 참조할 것.

5. 인증(변경)사항 :
   - IECEx LCIE 18.0023X를 참조하여 작성(Ex nA IIC instead of Ex ec IIC)

6. 그 밖의 사항 :
   - 안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수

MEGGITT

**18-GA4BO-0548X**
*(Original copy)*
**IPC707**

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MEGGITT

KO

# KGS certificate:

## 18-GA4BO-0549X

## for

## IPC707

EX

Meggitt SA
Route de Moncor 4
PO Box 1616
1701 Fribourg
Switzerland



energy@ch.meggitt.com
www.meggittsensing.com/energy

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제18-0549호

# 안 전 인 증 서

**Meggitt SA**

Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland

위 사업장에서 제조하는 아래의 품목이「산업안전보건법」 제34조 및 같은 법 시행규칙 제58조의4제4항에 따른 안전인증 심사 결과 안전보건 기준에 적합하므로 안전인증표시의 사용을 인증합니다.

## 품 목

Signal Conditioner

## 형식 · 모델 / 용량 · 등급 / 인증번호

| 형식·모델 | 용량·등급 | 인증번호 |
|---|---|---|
| IPC707 (244-707-000-012-A2) | 뒷면 참조 | 18-GA4BO-0549X |
| | Ex ia IIC T6 to T4 | |

## 인 증 기 준

방호장치 의무안전인증 고시(고용노동부고시 제2016-54호)

## 인 증 조 건

-40℃ ≤ Ta ≤ +85℃

2018년 10월 25일

한국가스안전공사 사장

복사본 COPY

# 인 증 조 건

1. 제조공장 :
   - "Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland"에 위치한 Meggitt SA에서 생산하는 제품에 한함.

2. 제품개요 :
   - IPC 707 Signal conditioner is an analogue electronic conditioner which converts the electrical charges coming from a piezoelectric sensor(sensor side) into an analogue voltage or current signal(signal side)

3. 인증범위 :
   - Temperature classification :
     T6 at -40℃ ≤ Ta ≤ +70℃
     T5 at -40℃ ≤ Ta ≤ +80℃
     T4 at -40℃ ≤ Ta ≤ +85℃

   - Ratings:

| Terminals | Intrinsic safety electrical parameters | |
|---|---|---|
| J0(SUP, COM) | $U_i$: 28 V, $I_i$: 100 mA, $P_i$: 700 mW | $C_i$ : 2.2 nF, $L_i$: 1 μH |
| J0(OUT, COM) | | $C_i$ : 9.6 nF, $L_i$: 565 μH |
| J1(IN+, COM)(IN-, COM) | $U_o$: 6.6 V, $I_o$: 66 mA, $P_o$: 107 mW, $C_o$ : 5.69 μF, $L_o$: 3,435 mH | |

4. 안전한 사용을 위한 조건 :
   - The intrinsic safety terminal blocks (IS boards) must be connected to an intrinsically safe certified apparatus. These combinations shall comply with the requirements of the standard IEC 60079-25.
   - The equipment contains more than 15% of aluminium. It must be mounted in such a manner as to eliminate the risk of sparks caused by friction or impact
   - The grounding of the intrinsically safe circuits must be in accordance with requirements of clause 16.2.3 of IEC 60079-14 standard.
   - 기타 사항은 사용설명서를 필히 참조할 것.

5. 인증(변경)사항 :
   - IECEx LCIE 18.0023X를 참조하여 작성

6. 그 밖의 사항 :
   - 안전인증품의 품질관리. 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수

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# APPENDIX F: TIIS CERTIFICATIONS

**Table F-1:** Related TIIS certificates

| Product(s) covered | Certificate number |
|---|---|
| CA134<br>(PNR 144-134-000-611 only) | TIIS TC 20432 |
| CA134<br>(PNR 144-134-000-612 only) | TIIS TC 20544 |

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EX CERTIFICATE – TIIS

vibro-meter®

# TIIS TC 20432
# for
# CA134 piezoelectric accelerometer
# (PNR 144-134-000-611)

Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference TIIS TC 20432
Edition 4 – August 2022

Meggitt SA, Route de Moncor 4, Case postale, 1701 Fribourg, Switzerland

Tel: +41 26 407 1111
Fax: +41 26 407 1660
energy@ch.meggitt.com
www.meggittsensing.com/energy
www.meggitt.com

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# 防爆構造電気機械器具型式検定合格証

公益社団法人 産業安全技術協会
TIIS Technology Institution of Industrial Safety

| | |
|---|---|
| 申請者 | 東京都中央区日本橋横山町９番１４号<br>三協インタナショナル株式会社 |
| 製造者 | Route de Moncor 4,1752 Villars-sur-Glane Switzerland<br>Meggitt SA |
| 品名 | 加速度計 |
| 型式の名称 | ＣＡ１３４－１４４－１３４－０００－６１１ |
| 防爆構造の種類 | 本質安全防爆構造（ｉｂ） |
| 対象ガス又は蒸気の爆発等級及び発火度 | ⅡＣＴ１ |
| 防爆記号 | Ｅｘ　ｉｂⅡＣＴ１ |
| 適用基準 | 工場電気設備防爆指針（国際規格に整合した技術指針 2008）<br>JNIOSH-TR-NO.43 |
| 定格 | 本安回路許容電圧　２８Ｖ<br>本安回路許容電流　１００ｍＡ<br>本安回路許容電力　０．７Ｗ<br>内部インダクタンス　５μＨ<br>内部キャパシタンス　０．７１ｎＦ<br>周囲温度　＋５℃～＋６０℃<br>被測定物温度　＋５℃～＋４３５℃ |
| 使用条件 | |
| 型式検定合格番号 | 第　ＴＣ２０４３２　号 |

| 有効期間 | 型式検定者の所属及び氏名 |
|---|---|
| ２０１９年　７月１７日から　２０２２年　７月１６日まで | 試験認証部　後藤　隆 |
| ２０２２年　７月１７日から　２０２５年　７月１６日まで | 試験認証部　後藤　隆 |
| 年　月　日から　年　月　日まで | |
| 年　月　日から　年　月　日まで | |

機械等検定規則による型式検定に合格したことを証明する。

２０１３年　７月１７日

型式検定実施者　公益社団法人　産業安全技術協会長

TC20432_0_1/1

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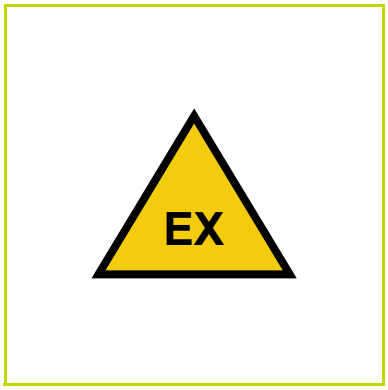
EX CERTIFICATE – TIIS

vibro-meter®

# TIIS TC 20544
# for
# CA134 piezoelectric accelerometer
# (PNR 144-134-000-612)




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference TIIS TC 20544
Edition 4 – October 2022

Meggitt SA, Route de Moncor 4, Case postale, 1701 Fribourg, Switzerland

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www.meggitt.com

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# 防爆構造電気機械器具型式検定合格証

公益社団法人 産業安全技術協会 TIIS Technology Institution of Industrial Safety

| | |
|---|---|
| 申請者 | 東京都中央区日本橋横山町９番１４号<br>三協インタナショナル株式会社 |
| 製造者 | Route de Moncor 4, 1752 Villars-sur-Glane Switzerland<br>Meggitt SA |
| 品名 | 加速度センサー |
| 型式の名称 | ＣＡ１３４－１４４－１３４－０００－６１２ |
| 防爆構造の種類 | 本質安全防爆構造（ｉｂ） |
| 対象ガス又は蒸気の爆発等級及び発火度 | ⅡＣＴ１ |
| 防爆記号 | Ｅｘ　ｉｂⅡＣＴ１ |
| 適用基準 | 工場電気設備防爆指針（国際規格に整合した技術指針 2008）<br>JNIOSH-TR-NO. 43 |
| 定格 | 本安回路許容電圧　２８Ｖ<br>本安回路許容電流　１００ｍＡ<br>本安回路許容電力　０．７Ｗ<br>内部インダクタンス　５μＨ<br>内部キャパシタンス　１．７１３ｎＦ<br>周囲温度　＋５℃～＋６０℃<br>被測定物温度　＋５℃～＋４３５℃ |
| 使用条件 | |
| 型式検定合格番号 | 第　ＴＣ２０５４４　号 |

| 有効期間 | 型式検定者の所属及び氏名 |
|---|---|
| ２０２０年　１月　８日から ２０２３年　１月　７日まで | 試験認証部　後藤　隆 |
| ２０２３年　１月　８日から ２０２６年　１月　７日まで | 試験認証部　後藤　隆 |
| 年　月　日から　年　月　日まで | |
| 年　月　日から　年　月　日まで | |

機械等検定規則による型式検定に合格したことを証明する。

２０１４年　１月　８日

型式検定実施者　公益社団法人　産業安全技術協会長

TC20544_0_1/1

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# APPENDIX G: UK CERTIFICATIONS

**Table G-1:** Related UK certificates

| Product(s) covered | Certificate number |
|---|---|
| GSI127 | CML 21 UKEX 4542 X |
| IPC707 | CML 21 UKEX 2543 X |
| | CML 21 UKEX 4544 X |

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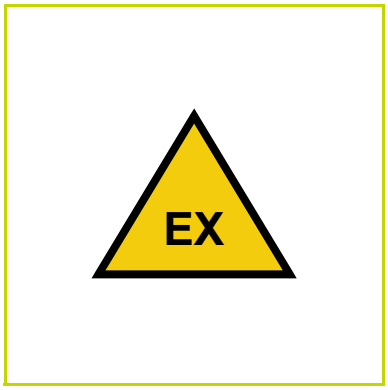
EX CERTIFICATE – UK

vibro-meter®

# CML 21 UKEX 4542 X
# for
# GSI127 galvanic separation unit




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference CML 21 UKEX 4542 X
Edition 1 – September 2021

Meggitt SA, Route de Moncor 4, Case postale, 1701 Fribourg, Switzerland

Tel: +41 26 407 1111
Fax: +41 26 407 1660
energy@ch.meggitt.com
www.meggittsensing.com/energy
www.meggitt.com

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## Type Examination Certificate CML 21UKEX4542X Issue 0

**United Kingdom Conformity Assessment**

1 Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended)

2 Equipment **GSI 127 interface**

3 Manufacturer **Meggitt SA**

4 Address **Route de Moncor 4,**
**1752 Villars-sur-Glane,**
**Switzerland**

5 The equipment is specified in the description of this certificate and the documents to which it refers.

6 Eurofins E&E CML Limited, Newport Business Park, New Port Road, Ellesmere Port, CH65 4LZ, United Kingdom, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

The examination and test results are recorded in the confidential reports listed in Section 12.

7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to specific conditions of use (affecting correct installation or safe use). These are specified in Section 14.

8 This Type Examination certificate relates only to the design and construction of the specified equipment. Further requirements of the Regulations apply to the manufacturing process and supply of the product. These are not covered by this certificate.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN IEC 60079-0:2018 EN 60079-11:2012 EN 60079-15:2010

10 The equipment shall be marked with the following:

Refer to attached certificate LCIE 13 ATEX 3037 X, Issue 01 for specific marking of explosion protection symbols.

Refer to attached certificate LCIE 13 ATEX 3037 X, Issue 01 for marked code and ambient temperature range.



L. A. Brisk
Certification Officer



### 11 Description

For product description refer to attached certificate LCIE 13 ATEX 3037 X, Issue 01.

### 12 Certificate history and evaluation reports

| Issue | Date | Associated report | Notes |
|---|---|---|---|
| 0 | 06 Aug 2021 | R14182C/00 | Issue of the prime certificate.<br>LCIE 13 ATEX 3037 X, Issue 01 is attached and shall be referred to in conjunction with this certificate. |

Note: Drawings that describe the equipment are listed in the Annex.

### 13 Conditions of Manufacture

For conditions of manufacture, refer to attached certificate LCIE 13 ATEX 3037 X, Issue 01.

Any routine tests/verifications required by the ATEX certification shall be conducted

### 14 Specific Conditions of Use

For specific conditions of use, refer to attached certificate LCIE 13 ATEX 3037 X, Issue 01.

# ATTESTATION D'EXAMEN UE DE TYPE
## *EU TYPE EXAMINATION CERTIFICATE*

1 **Version : 01** — **LCIE 13 ATEX 3037 X** — **Issue : 01**

| | **Directive 2014/34/UE** | **Directive 2014/34/EU** |
|---|---|---|
| 2 | Appareil ou Système de Protection destiné à être utilisé en Atmosphères Explosibles | Equipment or Protective System Intended for use in Potentially Explosive Atmospheres |
| 3 | Produit : **Interface GSI 127** | Product : **GSI 127 interface** |

**Type: 244-127-000-XXX-A2-BYY**

| | | |
|---|---|---|
| 4 | Fabricant : | Manufacturer : |
| | **MEGGITT SA** | |
| 5 | Adresse : | Address : |
| | Route de Moncor 4<br>1752 Villars-sur-Glâne<br>SUISSE | |

6 Ce produit et ses variantes éventuelles acceptées sont décrits dans l'annexe de la présente attestation et dans les documents descriptifs cités en référence.

This product any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

7 Le LCIE, Organisme Notifié sous la référence 0081 conformément à l'article 17 de la directive 2014/34/UE du Parlement européen et du Conseil du 26 février 2014, certifie que ce produit est conforme aux Exigences Essentielles de Sécurité et de Santé pour la conception et la construction de produits destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la Directive.
Les résultats des vérifications et essais figurent dans le(s) rapport(s) confidentiel(s) N° :

LCIE, Notified Body number 0081 in accordance with article 17 of the Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014 certifies that product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.
The examination and test results are recorded in confidential report(s) N°:

108046-614947; 141529-685013

8 Le respect des Exigences Essentielles de Sécurité et de Santé est assuré par la conformité à :

Compliance with the Essential Health and Safety Requirements has been assured by compliance with :

EN 60079-0:2012 + A11:2013
EN 60079-11:2012
EN 60079-15:2010

9 Le signe « X » lorsqu'il est placé à la suite du numéro de l'attestation, indique que cet appareil est soumis aux conditions particulières d'utilisation, mentionnées dans l'annexe de cette attestation.

If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

10 Cette Attestation d'Examen UE de Type concerne uniquement la conception et la construction du produit spécifié.
Des exigences supplémentaires de la directive sont applicables pour la fabrication et la fourniture du produit. Ces dernières ne sont pas couvertes par la présente attestation.

This EU Type Examination Certificate relates only to the design and construction of the specified product.
Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

11 Le marquage du produit est mentionné dans l'annexe de cette attestation.

The marking of the product is specified in the schedule to this certificate.

Fontenay-aux-Roses, le 30 novembre 2016

Responsable de Certification
Certification Officer
Julien Gauthier

LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES
S.A.S au capital de 15.745.980 €
RCS Nanterre B 408 363 174
33 avenue du Général Leclerc
F - 92260 FONTENAY AUX ROSES

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# ATTESTATION D'EXAMEN UE DE TYPE - ANNEXE
## *EU TYPE EXAMINATION CERTIFICATE - SCHEDULE*

1 **Version : 01** — **LCIE 13 ATEX 3037 X** — **Issue : 01**

12 **DESCRIPTION DU PRODUIT**

L'interface GSI 127 fournit une isolation galvanique entre le circuit d'alimentation ou le circuit de traitement de signal (Ex nA) et un capteur ou un conditionneur (Ex ia).
L'appareil se compose d'une carte électronique et des bornes à vis montées dans un boîtier plastique. Un revêtement conforme est appliqué sur deux faces de la carte.

**DETAIL DE LA GAMME**

**244-127-000-XXX-A2-BYY**

XXX définit la version du produit (X = 0 à 9).
YY définit le mode de transfert (YY = 01 à 19 pour la spécification actuelle; YY = 20 à 39 pour la spécification alternative).

**MARQUAGE**

Le marquage du produit doit comprendre :

MEGGITT SA ou VIBRO-METER ou MFR S3960
Adresse : .....
Type : 244-127-000-XXX-A2-BYY
N° de fabrication : …
Année de fabrication : …
Ⓔ II 3 (1) G
Ex nA [ia Ga] IIC T4 Gc
LCIE 13 ATEX 3037 X
Alimentation : U ≤ 30 V, I ≤ 150 mA
Capteur ou conditionneur :
Pour 244-127-000-XXX-A2-B01 à B19:
$U_o$: 25,2 V; $I_o$: 60 mA; $P_o$: 0,7 W; $C_o$: 95 nF; $L_o$: 5 mH
Pour 244-127-000-XXX-A2-B20 à B39:
$U_o$: 25,2 V; $I_o$: 45 mA; $P_o$: 0,5 W; $C_o$: 95 nF; $L_o$: 10 mH

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concernent sous la responsabilité du fabricant.

13 **CONDITIONS PARTICULIERES D'UTILISATION**

a. L'appareil ne doit être raccordé qu'à des matériels de sécurité intrinsèque certifiés ou à un appareil simple. Cette association doit être compatible vis-à-vis de la sécurité intrinsèque.

b. L'appareil doit être installé dans une enveloppe conforme aux exigences de la norme EN 60079-0 et ayant un degré de protection minimal IP54.

c Température ambiante d'utilisation : -40°C à +70°C.

14 **EXIGENCES ESSENTIELLES DE SANTE ET DE SECURITE**

Couvertes par les normes listées au point 8.

**DESCRIPTION OF PRODUCT**

The GSI 127 interface provides galvanic insolation between power supply circuit or signal treatment circuit (Ex nA) and a sensor or a conditioner (Ex ia).
The equipment consists of electronic board and screwed terminals blocks mounted inside a plastic enclosure. Conformal coating is applied on both sides of the electronic board.

**RANGE DETAILS**

**244-127-000-XXX-A2-BYY**

XXX defines the version of the product (X = 0 to 9).
YY defines the transfer mode (YY = 01 to 19 for actual specification; YY = 20 to 39 for alternate specification).

**MARKING**

The marking of the product shall include the following :

MEGGITT SA or VIBRO-METER or MFR S3960
Address: ...
Type: 244-127-000-XXX-A2-BYY
Serial number: ...
Year of construction: …
Ⓔ II 3 (1) G
Ex nA [ia Ga] IIC T4 Gc
LCIE 13 ATEX 3037 X
Power supply : U ≤ 30 V, I ≤ 150 mA
Sensor or conditioner :
For 244-127-000-XXX-A2-B01 to B19:
$U_o$: 25.2 V; $I_o$: 60 mA; $P_o$: 0.7 W; $C_o$: 95 nF; $L_o$: 5 mH
For 244-127-000-XXX-A2-B20 to B39:
$U_o$: 25.2 V; $I_o$: 45 mA; $P_o$: 0.5 W; $C_o$: 95 nF; $L_o$: 10 mH

The equipment shall also bear the usual marking required by the product standards applying to such equipment under the manufacturer responsibility.

**SPECIFIC CONDITIONS OF USE**

The equipment shall only be connected to associated intrinsically safe certified equipment or simple apparatus. This combination must be compatible as regard the intrinsic safety rules.
The apparatus shall be installed in an enclosure conform to the requirements of standard EN 60079-0 and with ingress protection at least IP54.
Operating ambient temperature: -40°C to +70°C.

**ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Covered by standards listed at 8.

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# ATTESTATION D'EXAMEN UE DE TYPE - ANNEXE
## *EU TYPE EXAMINATION CERTIFICATE - SCHEDULE*

1 **Version : 01** **LCIE 13 ATEX 3037 X** **Issue : 01**

15 **DOCUMENTS DESCRIPTIFS** / **DESCRIPTIVE DOCUMENTS**

| N° | Description | Reference | Rev. | Date | Page(s) |
|---|---|---|---|---|---|
| 1. | Technical file | DT 1052 | 01 | 2016-10-24 | 36 |
| 2. | User manual (extract) | PZ 8763 | 00 | 2016-09-06 | 1 |

16 **INFORMATIONS COMPLEMENTAIRES** / **ADDITIONAL INFORMATIONS**

**Essais individuels**

Chaque transformateur T1 devra être soumis à un essai diélectrique sous tension d'essai de 1500 V ; 50/60 Hz appliquée entre l'enroulement primaire et les enroulements secondaires pendant au moins 60 s conformément au paragraphe 11.2 de la norme EN 60079-11:2012.

**Conditions de certification**

Les détenteurs d'attestations d'examen UE de type doivent également satisfaire les exigences de contrôle de production telles que définies à l'article 13 de la Directive 2014/34/UE.

En accord avec l'Article 41 de la Directive 2014/34/UE, les attestations d'examen CE de type mentionnant la Directive 94/9/CE émises avant la date d'application de la Directive 2014/34/UE (20 avril 2016) peuvent être considérées comme émises en accord avec la Directive 2014/34/UE. Les nouvelles versions de ces attestations peuvent conserver le numéro de l'attestation d'origine émise avant le 20 avril 2016.

**Routine tests**

Each transformer T1 shall be submitted to dielectric strength test under test voltage of 1500 V; 50/60 Hz applied between the primary winding and the secondary windings during at least 60 s in accordance with clause 11.2 of EN 60079-11:2012 standard.

**Conditions of certification**

Holders of EU type examination certificates are also required to comply with the production control requirements defined in article 13 of Directive 2014/34/EU.

In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to Directive 94/9/EC that were in existence prior to the date of application of Directive 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. New issues of such certificates may continue to bear the original certificate number issued prior to 20 April 2016.

17 **DETAILS DES MODIFICATIONS** / **DETAILS OF CHANGES**

Version 00 : (31/05/2013) Evaluation de la conformité selon les normes EN 60079-0:2012, EN 60079-11:2012 et EN 60079-15:2010.

Version 01 :
- Mise à jour normative selon la norme EN 60079-0:2012 + A11:2013.
- Nouvelle plage de température ambiante d'utilisation : -40°C à +70°C
- Mise à jour de la désignation du type pour différencier deux spécifications.

Issue 00 : (2013/05/31) Conformity assessment according to EN 60079-0:2012, EN 60079-11:2012 and EN 60079-15:2010 standards.

Issue 01 :
- Normative update according to EN 60079-0:2012 + A11:2013 standard.
- New operating ambient temperature range: -40°C to +70°C.
- Update of type designation to differentiate two specifications.

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MEGGITT
Original copy (English)

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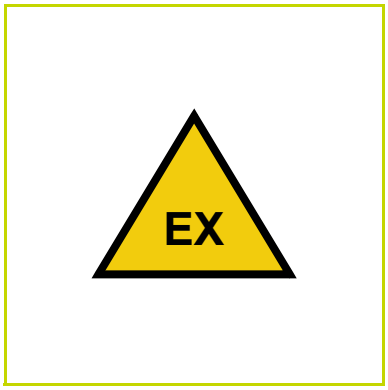
EX CERTIFICATE – UK

vibro-meter®

# CML 21 UKEX 2543 X
# for
# IPC707 signal conditioner




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference CML 21 UKEX 2543 X
Edition 1 – September 2021

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# UK Type Examination Certificate CML 21UKEX2543X Issue 0

**United Kingdom Conformity Assessment**

1 Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended) – Schedule 3A, Part 1

2 Equipment **Signal Conditioner, IPC 707**

3 Manufacturer **Meggitt SA**

4 Address **Route de Moncor 4,**
**1752 Villars-sur-Glâne,**
**Switzerland**

5 The equipment is specified in the description of this certificate and the documents to which it refers.

6 Eurofins E&E CML Limited, Newport Business Park, New Port Road, Ellesmere Port, CH65 4LZ, United Kingdom, Approved Body Number 2503, in accordance with Regulation 43 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

The examination and test results are recorded in the confidential reports listed in Section 12.

7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to specific conditions of use (affecting correct installation or safe use). These are specified in Section 14.

8 This UK Type Examination certificate relates only to the design and construction of the specified equipment. Further requirements of the Regulations apply to the manufacturing process and supply of the product. These are not covered by this certificate.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN IEC 60079-0:2018 EN 60079-11:2012

10 The equipment shall be marked with the following:

Refer to attached certificate LCIE 18 ATEX 3026 X, Issue 01 for specific marking of explosion protection symbols.

Refer to attached certificate LCIE 18 ATEX 3026 X, Issue 01 for marked code and ambient temperature range.

L. A. Brisk
Certification Officer





## 11 Description

For product description refer to attached certificate LCIE 18 ATEX 3026 X, Issue 01.

## 12 Certificate history and evaluation reports

| Issue | Date | Associated report | Notes |
|---|---|---|---|
| 0 | 05 Aug 2021 | R14182D/00 | Issue of the prime certificate.<br>LCIE 18 ATEX 3026 X, Issue 01 is attached and shall be referred to in conjunction with this certificate. |

Note: Drawings that describe the equipment are listed in the Annex.

## 13 Conditions of Manufacture

For conditions of manufacture, refer to attached certificate LCIE 18 ATEX 3026 X, Issue 01.

Any routine tests/verifications required by the ATEX certification shall be conducted.

## 14 Specific Conditions of Use

For specific conditions of use, refer to attached certificate LCIE 18 ATEX 3026 X, Issue 01.

# ATTESTATION D'EXAMEN UE DE TYPE
## *EU TYPE EXAMINATION CERTIFICATE*

1 **Version : 01** — **LCIE 18 ATEX 3026 X** — **Issue : 01**

| | **Directive 2014/34/UE** | **Directive 2014/34/EU** |
|---|---|---|
| 2 | Appareil ou Système de Protection destiné à être utilisé en Atmosphères Explosibles | Equipment or Protective System Intended for use in Potentially Explosive Atmospheres |
| 3 | Produit :<br>Conditionneur de signal, IPC 707 | Product :<br>Signal Conditioner, IPC 707 |

**Type: 244-707-000-xxx-A_**

| | | |
|---|---|---|
| 4 | Fabricant : | Manufacturer : |
| | **MEGGITT SA** | |
| 5 | Adresse : | Address : |
| | Route de Moncor 4<br>1752 Villars-sur-Glâne<br>SUISSE | |
| 6 | Ce produit et ses variantes éventuelles acceptées sont décrits dans l'annexe de la présente attestation et dans les documents descriptifs cités en référence. | This product and any acceptable variations thereto are specified in the schedule to this certificate and the documents therein referred to. |
| 7 | Le LCIE, Organisme Notifié sous la référence 0081 conformément à l'article 17 de la directive 2014/34/UE du Parlement européen et du Conseil du 26 février 2014, certifie que ce produit est conforme aux Exigences Essentielles de Sécurité et de Santé pour la conception et la construction de produits destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la Directive. | LCIE, Notified Body number 0081 in accordance with article 17 of the Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014 certifies that product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive. |
| | Accréditation Cofrac Certification de Produits et Services, n°5-0014. Portée disponible sur www.cofrac.fr. | Cofrac Accreditation Product and Services Certification n°5-0014. Scope available on www.cofrac.fr. |
| | Les résultats des vérifications et essais figurent dans le(s) rapport(s) confidentiel(s) N° : | The examination and test results are recorded in confidential report(s) N°: |
| | 140555-682748 | |
| 8 | Le respect des Exigences Essentielles de Sécurité et de Santé est assuré par la conformité à : | Compliance with the Essential Health and Safety Requirements has been assured by compliance with : |
| | EN 60079-0:2012+A11:2013, EN 60079-11:2012. | |
| 9 | Le signe « X » lorsqu'il est placé à la suite du numéro de l'attestation, indique que cet appareil est soumis aux conditions particulières d'utilisation, mentionnées dans l'annexe de cette attestation. | If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate. |
| 10 | Cette Attestation d'Examen UE de Type concerne uniquement la conception et la construction du produit spécifié.<br>Des exigences supplémentaires de la directive sont applicables pour la fabrication et la fourniture du produit. Ces dernières ne sont pas couvertes par la présente attestation. | This EU Type Examination Certificate relates only to the design and construction of the specified product.<br>Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate. |
| 11 | Le marquage du produit est mentionné dans l'annexe de cette attestation. | The marking of the product is specified in the schedule to this certificate. |

Fontenay-aux-Roses, le 30 août 2018

Responsable de Certification
Certification Officer
Jérôme Reysson

LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES
S.A.S au capital de 15.45.904 €
RCS Nanterre B 408 305 174
33 avenue du Général Leclerc
F - 92260 FONTENAY AUX ROSES

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# ATTESTATION D'EXAMEN UE DE TYPE - ANNEXE
## *EU TYPE EXAMINATION CERTIFICATE - SCHEDULE*

1 **Version : 01** — **LCIE 18 ATEX 3026 X** — **Issue : 01**

12 **DESCRIPTION DU PRODUIT**

Le Conditionneur de Signal IPC 707 est un conditionneur électronique analogique qui convertit les charges électriques provenant d'un capteur piézoélectrique (côté capteur) en un signal de tension ou de courant analogique (côté signal).

Le circuit électronique du conditionneur de signal IPC 707 est entièrement enrobé et incorporé dans une enveloppe en aluminium.

Le conditionneur de signal IPC 707 est équipé de bornes (côté capteur et côté signal) et d'un clip optionnel pour rail DIN.

Les configurations de sortie, côté signal, sont les suivantes:
- sortie de tension: mode de transmission à 3 fils,
- sortie de courant: mode de transmission à 2 fils.

**DETAIL DE LA GAMME**

Seul ce modèle est inclus : 244-707-000-012-A2

**CARACTERISTIQUES**

Borne Signal (SUP, COM) :
$U_i$ : 28V, $I_i$ : 100 mA, $P_i$ : 700 mW, $C_i$ : 2,2 nF, $L_i$ : 1 µH.

**MARQUAGE**

Le marquage du produit doit comprendre :

Marquage complet :

Vibro-Meter ou MEGGITT SA ou MFR S3960
Adresse : …
Type : 244-707-000-012-A2
N° de fabrication : …
Année de fabrication : …
Ex II 1 G
Ex ia IIC T6 … T4 Ga (*)
LCIE 18 ATEX 3026 X
-40°C ≤ Tamb ≤ +85°C
$U_i$ : …, $I_i$ : … , $P_i$ : …, $C_i$ : …, $L_i$ : … (**)
$U_o$ : …, $I_o$ : …, $P_o$ : …, $C_o$ : …, $L_o$ : …

Marquage réduit :

Vibro-Meter ou MEGGITT SA ou MFR S3960
Adresse : …
Type : 244-707-000-012-A2
N° de fabrication : …
Année de fabrication : …
Ex II 1 G
Ex ia IIC T6 … T4 Ga (*)
LCIE 18 ATEX 3026 X

**DESCRIPTION OF PRODUCT**

IPC 707 Signal Conditioner is an analogue electronic conditioner which converts the electrical charges coming from a piezoelectric sensor (sensor side) into an analogue voltage or current signal (signal side).

The electronic circuitry of the IPC 707 signal conditioner is totally potted and incorporated into an aluminium enclosure.

IPC 707 Signal Conditioner is equipped with terminals (sensor side and signal side) and with an optional clip for DIN rail.

Signal side output configurations could be as following :
- voltage output : 3-wires transmission mode,
- current output : 2-wires transmission mode.

**RANGE DETAILS**

Only this model is included: 244-707-000-012-A2

**RATINGS**

Signal side terminals (SUP, COM) :
$U_i$ : 28V, $I_i$ : 100 mA, $P_i$ : 700 mW, $C_i$ : 2,2 nF, $L_i$ : 1 µH.

**MARKING**

The marking of the product shall include the following :

Complete marking :

Vibro-Meter or MEGGITT SA or MFR S3960
Address: …
Type: 244-707-000-012-A2
Serial number: …
Year of construction: …
Ex II 1 G
Ex ia IIC T6 … T4 Ga (*)
LCIE 18 ATEX 3026 X
-40°C ≤ Tamb ≤ +85°C
$U_i$ : …, $I_i$ : … , $P_i$ : …, $C_i$ : …, $L_i$ : … (**)
$U_o$ : …, $I_o$ : …, $P_o$ : …, $C_o$ : …, $L_o$ : …

Reduced marking :

Vibro-Meter or MEGGITT SA or MFR S3960
Address: …
Type: 244-707-000-012-A2
Serial number: …
Year of construction: …
Ex II 1 G
Ex ia IIC T6 … T4 Ga (*)
LCIE 18 ATEX 3026 X

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# ATTESTATION D'EXAMEN UE DE TYPE - ANNEXE
*EU TYPE EXAMINATION CERTIFICATE - SCHEDULE*

1 **Version : 01** — **LCIE 18 ATEX 3026 X** — **Issue : 01**

## MARQUAGE (suite)

(**) Les paramètres de sécurité intrinsèque sont identifiés comme suit :

| Borne / *Terminal* | Paramètres électriques de sécurité intrinsèque / *Intrinsic safety electrical parameters* | |
|---|---|---|
| J0 (SUP, COM) | $U_i$ : 28V, $I_i$ : 100 mA, $P_i$ : 700 mW | $C_i$ : 2,2 nF, $L_i$ : 1 µH. |
| J0 (OUT, COM) | | $C_i$ : 9,6 nF, $L_i$ : 565 µH. |
| J1 (IN+, COM) (IN-, COM) | $U_o$ : 6,6V, $I_o$ : 66 mA, $P_o$ : 107 mW, $C_o$ : 5,69 µF, $L_o$ : 3,435 mH. | |

(*) La classification en température est réalisée comme suit :

| Classification en température / *Temperature classification* | Température ambiante d'utilisation / *Ambient operating temperature range* |
|---|---|
| T6 | -40°C ≤ Tamb ≤ +70°C |
| T5 | -40°C ≤ Tamb ≤ +80°C |
| T4 | -40°C ≤ Tamb ≤ +85°C |

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concernent sous la responsabilité du fabricant.

## MARKING (continued)

(**) Intrinsic safety electrical parameters are identified as following:

(*) Temperature classification shall be as following:

The equipment shall also bear the usual marking required by the product standards applying to such equipment under the manufacturer responsibility.

## 13 CONDITIONS PARTICULIERES D'UTILISATION

a) Température ambiante d'utilisation : de -40°C à +85°C

b) L'appareil ne peut être raccordé qu'à des équipements certifiés de sécurité intrinsèque.
Ces associations doivent répondre aux exigences de la norme EN 60079-25.

c) L'appareil devra être raccordé conformément au manuel d'instruction.

d) L'équipement contient plus de 15% d'aluminium. Il doit être monté de manière à éviter le risque d'étincelle par frottement ou impact.

e) La mise à la terre des circuits de sécurité intrinsèque (borne SHD) doit être conforme aux exigences du chapitre 16.2.3 de la norme EN 60079-14.

## SPECIFIC CONDITIONS OF USE

Ambient temperature range: -40°C to +85°C.

The intrinsic safety terminal blocks (IS boards) must be connected only to an intrinsically safe certified apparatus. These combinations shall comply with the requirements of the standard EN 60079-25.

The apparatus must be connected according to instruction manual.

The equipment contains more than 15% of aluminum. It must be mounted in such a manner as to eliminate the risk of sparks caused by friction or impact.

The grounding of the intrinsically safe circuits must be in accordance with requirements of clause 16.2.3 of EN 60079-14 standard.

## 14 EXIGENCES ESSENTIELLES DE SANTE ET DE SECURITE

Couvertes par les normes listées au point 8.

## ESSENTIAL HEALTH AND SAFETY REQUIREMENTS

Covered by standards listed at 8.

## 15 DOCUMENTS DESCRIPTIFS

## DESCRIPTIVE DOCUMENTS

| N° | Description | Reference | Rev. | Date | Page(s) |
|---|---|---|---|---|---|
| 1. | Extrait notice d'utilisation / *Instruction notice extract* | PZ 8954 | - | - | 1 |
| 2. | Dossier technique / *Technical file* | DT-1070 | 00 | 2018/01/10 | 125 |

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# ATTESTATION D'EXAMEN UE DE TYPE - ANNEXE
*EU TYPE EXAMINATION CERTIFICATE - SCHEDULE*

1 **Version : 01** — **LCIE 18 ATEX 3026 X** — **Issue : 01**

## 16 INFORMATIONS COMPLEMENTAIRES

**Essais individuels**

Néant.

**Conditions de certification**

Les détenteurs d'attestations d'examen UE de type doivent également satisfaire les exigences de contrôle de production telles que définies à l'article 13 de la Directive 2014/34/UE.

## ADDITIONAL INFORMATIONS

**Routine tests**

None.

**Conditions of certification**

Holders of EU type examination certificates are also required to comply with the production control requirements defined in article 13 of Directive 2014/34/EU.

## 17 DETAILS DES MODIFICATIONS DE L'ATTESTATION

Version 00 : 27/07/2018 — Evaluation initiale selon les exigences des normes EN 60079-0:2012+A11:2013 et EN 60079-11:2012.

Version 01 : Actuelle — Clarification du modèle de l'appareil.
La référence 244-707-000-xxx devient 244-707-000-012-A2.

## DETAILS OF CERTIFICATE CHANGES

Issue 00 : 2018/07/27 — Initial assessment according to standards EN 60079-0:2012+A11:2013 and EN 60079-11:2012 requirements.

Issue 01 : Current — Clarification of apparatus type.
Reference 244-707-000-xxx becomes 244-707-000-012-A2.

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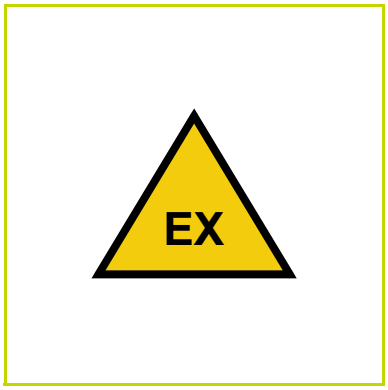
EX CERTIFICATE – UK

vibro-meter®

# CML 21 UKEX 4544 X
# for
# IPC707 signal conditioner




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference CML 21 UKEX 4544 X
Edition 1 – September 2021

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## Type Examination Certificate CML 21UKEX4544X Issue 0

**United Kingdom Conformity Assessment**

1 Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended)

2 Equipment **Signal Conditioner, IPC 707**

3 Manufacturer **Meggitt SA**

4 Address **Route de Moncor 4,**
**1752 Villars-sur-Glane,**
**Switzerland**

5 The equipment is specified in the description of this certificate and the documents to which it refers.

6 Eurofins E&E CML Limited, Newport Business Park, New Port Road, Ellesmere Port, CH65 4LZ, United Kingdom, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

The examination and test results are recorded in the confidential reports listed in Section 12.

7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to specific conditions of use (affecting correct installation or safe use). These are specified in Section 14.

8 This Type Examination certificate relates only to the design and construction of the specified equipment. Further requirements of the Regulations apply to the manufacturing process and supply of the product. These are not covered by this certificate.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN IEC 60079-0:2018 EN 60079-7:2015

10 The equipment shall be marked with the following:

Refer to attached certificate LCIE 18 ATEX 1012 X, Issue 00 for specific marking of explosion protection symbols.

Refer to attached certificate LCIE 18 ATEX 1012 X, Issue 00 for marked code and ambient temperature range.

L. A. Brisk
Certification Officer





### 11 Description

For product description refer to attached certificate LCIE 18 ATEX 1012 X, Issue 00.

### 12 Certificate history and evaluation reports

| Issue | Date | Associated report | Notes |
|---|---|---|---|
| 0 | 05 Aug 2021 | R14182E/00 | Issue of the prime certificate.<br>LCIE 18 ATEX 1012 X, Issue 00, is attached and shall be referred to in conjunction with this certificate. |

Note: Drawings that describe the equipment are listed in the Annex.

### 13 Conditions of Manufacture

For conditions of manufacture, refer to attached certificate LCIE 18 ATEX 1012 X, Issue 00.

Any routine tests/verifications required by the ATEX certification shall be conducted.

### 14 Specific Conditions of Use

For specific conditions of use, refer to attached certificate LCIE 18 ATEX 1012 X, Issue 00.

# ATTESTATION D'EXAMEN DE TYPE
## *TYPE EXAMINATION CERTIFICATE*

1 **Version : 00** — **LCIE 18 ATEX 1012 X** — **Issue : 00**

| | **Directive 2014/34/UE** | **Directive 2014/34/EU** |
|---|---|---|
| 2 | Appareil ou Système de Protection destiné à être utilisé en Atmosphères Explosibles | Equipment or Protective System Intended for use in Potentially Explosive Atmospheres |
| 3 | Produit :<br>Conditionneur de signal, IPC 707 | Product :<br>Signal conditioner, IPC 707 |
| | **Type: 244-707-000-xxx-A_** | |
| 4 | Fabricant : | Manufacturer : |
| | **MEGGITT SA** | |
| 5 | Adresse : | Address : |
| | Route de Moncor 4<br>1752 Villars-sur-Glâne<br>SUISSE | |
| 6 | Ce produit et ses variantes éventuelles acceptées sont décrits dans l'annexe de la présente attestation et dans les documents descriptifs cités en référence. | This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to. |
| 7 | Le LCIE certifie que ce produit est conforme aux Exigences Essentielles de Sécurité et de Santé pour la conception et la construction de produits destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la Directive.<br>Les résultats des vérifications et essais figurent dans le(s) rapport(s) confidentiel(s) N° : | LCIE certifies that product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.<br>The examination and test results are recorded in confidential report(s) N°: |
| | 140555-682752 | |
| 8 | Le respect des Exigences Essentielles de Sécurité et de Santé est assuré par la conformité à : | Compliance with the Essential Health and Safety Requirements has been assured by compliance with : |
| | EN 60079-0:2012 + A11:2013, EN 60079-7:2015 | |
| 9 | Le signe « X » lorsqu'il est placé à la suite du numéro de l'attestation, indique que cet appareil est soumis aux conditions particulières d'utilisation, mentionnées dans l'annexe de cette attestation. | If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate. |
| 10 | Cette Attestation d'Examen de Type concerne uniquement la conception et la construction du produit spécifié.<br>Des exigences supplémentaires de la directive sont applicables pour la fabrication et la fourniture du produit. Ces dernières ne sont pas couvertes par la présente attestation. | This Type Examination Certificate relates only to the design and construction of the specified product.<br>Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate. |
| 11 | Le marquage du produit est mentionné dans l'annexe de cette attestation. | The marking of the product is specified in the schedule to this certificate. |

Fontenay-aux-Roses, le 30 août 2018

Responsable de Certification
Certification Officer
Jérôme Reysson

LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES
33 Avenue du Général Leclerc
F - 92260 FONTENAY AUX ROSES

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Laboratoire Central des Industries Electriques
Une société de Bureau Veritas
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92260 Fontenay-aux-Roses
FRANCE
WWW.LCIE.FR

# ATTESTATION D'EXAMEN DE TYPE - ANNEXE
## *TYPE EXAMINATION CERTIFICATE - SCHEDULE*

1 **Version : 00** — **LCIE 18 ATEX 1012 X** — **Issue : 00**

12

### DESCRIPTION DU PRODUIT

Le conditionneur de signal IPC 707 est un conditionneur électronique analogique qui convertit les charges électriques provenant d'un capteur piézoélectrique (côté capteur) en un signal de tension ou de courant analogique (côté signal).

Le circuit électronique du conditionneur de signal IPC 707 est incorporé dans une enveloppe en aluminium.

Le conditionneur de signal IPC 707 est équipé de bornes (côté capteur et côté signal) et d'un clip optionnel pour rail DIN.

Les configurations de sortie, côté signal, sont les suivantes:
- sortie de tension: mode de transmission à 3 fils,
- sortie de courant: mode de transmission à 2 fils.

### DESCRIPTION OF PRODUCT

IPC 707 signal conditioner is an analogue electronic conditioner which converts the electrical charges coming from a piezoelectric sensor (sensor side) into an analogue voltage or current signal (signal side).

The electronic circuitry of the IPC 707 signal conditioner is incorporated into an aluminium enclosure.

IPC 707 signal conditioner is equipped with terminals (sensor side and signal side) and with an optional clip for DIN rail.

Signal side output configurations could be as following :
- voltage output : 3-wires transmission mode,
- current output : 2-wires transmission mode.

### DETAIL DE LA GAMME

Seul ce modèle est inclus : 244-707-000-012-A3

### RANGE DETAILS

Only this model is included: 244-707-000-012-A3

### CARACTERISTIQUES

Bornier signal (SUP, COM, OUT) : $U_{max}$ : 30 V, $I_{max}$ : 20 mA.

### RATINGS

Signal terminal (SUP, COM, OUT): $U_{max}$ : 30 V, $I_{max}$ : 20 mA.

### MARQUAGE

Le marquage du produit doit comprendre :

Marquage complet :

Vibro-Meter ou MEGGITT SA ou MFR S3960
Adresse : …
Type : 244-707-000-012-A3
N° de fabrication : …
Année de fabrication : …
Ⓔx II 3 G
Ex ec IIC T6…T4 Gc (*)
LCIE 18 ATEX 1012 X
-40°C ≤ Tamb ≤ +85°C
$U_{max}$ : 30 V, $I_{max}$ : 20 mA.
AVERTISSEMENT - NE PAS SEPARER SOUS TENSION.
AVERTISSEMENT – SEPARER UNIQUEMENT DANS UN EMPLACEMENT NON DANGEREUX.

Marquage réduit :

Vibro-Meter ou MEGGITT SA ou MFR S3960
Adresse : …
Type : 244-707-000-012-A3
N° de fabrication : …
Année de fabrication : …
Ⓔx II 3 G
Ex ec IIC T6…T4 Gc (*)
LCIE 18 ATEX 1012 X

### MARKING

The marking of the product shall include the following :

Complete marking :

Vibro-Meter or MEGGITT SA or MFR S3960
Address: …
Type: 244-707-000-012-A3
Serial number: …
Year of construction: …
Ⓔx II 3 G
Ex ec IIC T6…T4 Gc (*)
LCIE 18 ATEX 1012 X
-40°C ≤ Tamb ≤ +85°C
$U_{max}$ : 30 V, $I_{max}$ : 20 mA.
WARNING – DO NOT SEPARATE WHEN ENERGIZED.
WARNING – SEPARATE ONLY IN A NON-HAZARDOUS AREA.

Reduced marking :

Vibro-Meter or MEGGITT SA or MFR S3960
Address: …
Type: 244-707-000-012-A3
Serial number: …
Year of construction: …
Ⓔx II 3 G
Ex ec IIC T6…T4 Gc (*)
LCIE 18 ATEX 1012 X

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# ATTESTATION D'EXAMEN DE TYPE - ANNEXE
## *TYPE EXAMINATION CERTIFICATE - SCHEDULE*

1 **Version : 00** **LCIE 18 ATEX 1012 X** **Issue : 00**

**MARQUAGE (suite)**

(*) La classification en température est réalisée comme suit :

| Classification en température *Temperature classification* | Température ambiante d'utilisation *Ambient operating temperature range* |
|---|---|
| T6 | -40°C ≤ Tamb ≤ +65°C |
| T5 | -40°C ≤ Tamb ≤ +80°C |
| T4 | -40°C ≤ Tamb ≤ +85°C |

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concernent sous la responsabilité du fabricant.

**MARKING (continued)**

(*) Temperature classification shall be as following:

The equipment shall also bear the usual marking required by the product standards applying to such equipment under the manufacturer responsibility.

13 **CONDITIONS PARTICULIERES D'UTILISATION** / **SPECIFIC CONDITIONS OF USE**

a. Température ambiante d'utilisation : -40°C à +85°C / Ambient temperature range: -40°C to +85°C.

b. L'utilisateur final devra prendre toutes les précautions nécessaires pour installer l'appareil dans une enveloppe IP54 et maintenir le degré de protection minimum IP54 de la connexion du capteur lors de son raccordement selon les préconisations de la norme EN 60079-14. / For final installation, final end user shall take any precautions to install the apparatus into an IP54 enclosure and keep it connected in compliance with EN 60079-14 requirements, providing and maintaining degree of protection at least IP54.

c. L'appareil devra être raccordé conformément au manuel d'instruction. / The apparatus must be connected according to instruction manual.

d. Le matériel doit être utilisé dans une zone assurant au moins un degré de pollution 2, tel que défini dans la norme EN 60664-1. / The equipment shall only be used in an area of at least pollution degree 2, as defined in EN 60664-1 standard.

e. La protection contre les transitoires doit être fournie à un niveau défini ne dépassant pas 140% de la valeur de crête de la tension assignée aux bornes d'alimentation vers le matériel. / Transient protection shall be provided that is set at a level not exceeding 140% of the peak rated voltage value at the supply terminals to the equipment.

14 **EXIGENCES ESSENTIELLES DE SANTE ET DE SECURITE** / **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Couvertes par les normes listées au point 8. / Covered by standards listed at 8.

15 **DOCUMENTS DESCRIPTIFS** / **DESCRIPTIVE DOCUMENTS**

| N° | Description | Reference | Rev. | Date | Page(s) |
|---|---|---|---|---|---|
| 1. | Extrait de la notice d'utilisation / *Instruction notice extract* | PZ 8782 | - | - | 1 |
| 2. | Dossier technique / *Technical file* | DT-1071 | 00 | 2018/01/10 | 46 |

16 **INFORMATIONS COMPLEMENTAIRES** / **ADDITIONAL INFORMATIONS**

**Essais individuels**

Néant.

**Routine tests**

None.

17 **DETAILS DES MODIFICATIONS DE L'ATTESTATION** / **DETAILS OF CERTIFICATE CHANGES**

Version 00 : Evaluation initiale.

Issue 00: Initial assessment.

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MEGGITT
Original copy (English)

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# APPENDIX H: EAЭC RU CERTIFICATIONS

**Table H-1:** Related EAЭC RU certificates

| Product(s) covered | Certificate number |
|---|---|
| ABA17x | EAЭC RU C-CH.АД07.В.02998/21 |
| CA134, CA20x, CA28x, CA30x and CA901 | EAЭC RU C-CH.АД07.В.03042/21 |
| GSI127 | EAЭC RU C-CH.АД07.В.03008/21 |
| IPC707 | EAЭC RU C-CH.АД07.В.04681/22 |

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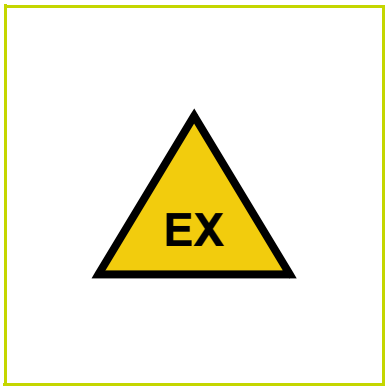
EX CERTIFICATE – RU

# ЕАЭС RU C-CH.АД07.В.02998/21
# for
# ABA17x industrial housings




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference ЕАЭС RU C-CH.АД07.В.02998/21
Edition 1 – March 2021

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# ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

## СЕРТИФИКАТ СООТВЕТСТВИЯ

EAC

№ ЕАЭС RU C-CH.АД07.В.02998/21

Серия RU № 0225696

**ОРГАН ПО СЕРТИФИКАЦИИ** Орган по сертификации Общество с ограниченной ответственностью «Центр Сертификации «ВЕЛЕС». Место нахождения (адрес юридического лица): 195009, РОССИЯ, город Санкт-Петербург, улица Академика Лебедева, дом 12, корпус 2, литера А, этаж 2, комната 26, Адрес места осуществления деятельности: 190068, РОССИЯ, город Санкт-Петербург, переулок Никольский, дом 4 литер А, помещение 8Н. Уникальный номер записи об аккредитации в реестре аккредитованных лиц № RA.RU.10АД07 Дата решения об аккредитации: 24.03.2016. Телефон: +74952211810 Адрес электронной почты: info@velessert.ru

**ЗАЯВИТЕЛЬ** ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ "СОРТУМ"
Место нахождения (адрес юридического лица) и адрес места осуществления деятельности: 101000, Россия, город Москва, переулок Милютинский, дом 10, строение 1, этаж 3, помещение VIII, комната 4, офис 4
Основной государственный регистрационный номер 1187746680538.
Телефон: 74991101637 Адрес электронной почты: info@sortum.ru

**ИЗГОТОВИТЕЛЬ** "MEGGITT S.A."
Место нахождения (адрес юридического лица) и адрес места осуществления деятельности по изготовлению продукции: Швейцария, Route de Moncor 4, 1752 Villars-sur-Glane

**ПРОДУКЦИЯ** Аппаратура распределительная: соединительные коробки, типа: ABA17x
Маркировка взрывозащиты согласно приложению (бланки №№ 0765056, 0765057).
Продукция изготовлена в соответствии с Директивой 2014/34/EU и технической документацией изготовителя для работы во взрывоопасных средах.
Серийный выпуск

**КОД ТН ВЭД ЕАЭС** 8538100000

**СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ**
Технического регламента Таможенного союза "О безопасности оборудования для работы во взрывоопасных средах" (ТР ТС 012/2011)

**СЕРТИФИКАТ СООТВЕТСТВИЯ ВЫДАН НА ОСНОВАНИИ** Протокола испытаний № 2688ИЛПМВ от 11.02.2021 года, выданного Испытательным центром Общества с ограниченной ответственностью "ПРОММАШ ТЕСТ" (уникальный номер записи об аккредитации в реестре аккредитованных лиц RA.RU.21ВС05)
акта анализа состояния производства от 01.12.2020 года, выданного Органом по сертификации Общество с ограниченной ответственностью «Центр Сертификации «ВЕЛЕС»
Руководства по эксплуатации, конструкторской документации.
Схема сертификации: 1с

**ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ** Срок службы 30 лет. Срок хранения 10 лет. Стандарты, обеспечивающие соблюдение требований Технического регламента Таможенного союза ТР ТС 012/2011 "О безопасности оборудования для работы во взрывоопасных средах" согласно приложениям - бланки №№ 0765056, 0765057.

**СРОК ДЕЙСТВИЯ С** 16.02.2021 **ПО** 15.02.2026 **ВКЛЮЧИТЕЛЬНО**

**Руководитель (уполномоченное лицо) органа по сертификации** (подпись) Ролзивон Галина Александровна (Ф.И.О.)

М.П.

**Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы))** (подпись) Шатило Андрей Алексеевич (Ф.И.О.)

АО «Опцион», Москва, 2019 г., «Б». Лицензия № 05-05-09/003 ФНС РФ. ТЗ № 369. Тел.: (495) 726-47-42, www.opcion.ru

# ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

## ПРИЛОЖЕНИЕ

### К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-CH.АД07.В.02998/21

Серия RU № 0765056

**1. Назначение и область применения**

Сертификат соответствия распространяется на соединительные коробки, типа ABA17x модели eCAM (далее по тексту – соединительные коробки), предназначенные для обеспечения защиты закрытого оборудования от проникновения твердых предметов и жидкостей, а также от повреждений в результате ударов.

Область применения – соединительные коробки являются Ex-компонентами и предназначены для применения в сборе с электрооборудованием предназначенным для установки во взрывоопасных зонах классов 1 и 2 по ГОСТ IEC 60079-10-1-2011 категорий взрывоопасных смесей IIA, IIB, IIC по ГОСТ Р МЭК 60079-20-1-2011, взрывоопасных зонах классов 21 и 22 по ГОСТ IEC 60079-10-2-2011, содержащих взрывоопасную пыль подгрупп IIIA, IIIB и IIIC, согласно маркировкам взрывозащиты электрооборудования, ГОСТ IEC 60079-14-2011 и другим нормативным документам, регламентирующим применение электрооборудования в потенциально взрывоопасных средах.

**2. Описание оборудования и средств обеспечения взрывозащиты**

Конструктивно корпус соединительной коробки выполнен в виде короба из прочной листовой стали с защитным покрытием. Корпус имеет защитную канавку вокруг дверного проема, навесную дверцу с замком и уплотнительную прокладку, которая помогает обеспечить необходимую степень защиты от внешних климатических воздействий. Крепление соединительной коробки производится с помощью четырех монтажных кронштейнов. В задней части каждого корпуса соединительной коробки имеется монтажная пластина из оцинкованной стали с горизонтальными DIN-рейками для установки преобразователей сигналов или других устройств. При необходимости монтажная пластина снимается с корпуса для облегчения установки и монтажа проводки оборудования. Дверца соединительной коробки имеет соединение с корпусом кабелем заземления. В нижней части каждого корпуса соединительной коробки имеются отверстия кабельного ввода для прокладки кабелей к оборудованию, установленного в корпусе.

Подробное описание конструкции соединительной коробки приведено в руководстве по эксплуатации.

**Основные технические данные:**

| | |
|---|---|
| Маркировка взрывозащиты | Ex e IIC Gb U<br>Ex tb IIIC Db U |
| Диапазон температур окружающей среды, °С | от минус 55 до +100 |
| Степень защиты от внешних воздействий по ГОСТ 14254-2015 | IP66 |

Взрывозащищенность соединительных коробок обеспечивается выполнением их конструкции в соответствии с общими требованиями по ГОСТ 31610.0-2014 (IEC 60079-0:2011), видом взрывозащиты «повышенная защита вида «e» по ГОСТ Р МЭК 60079-7-2012 и видом взрывозащиты от воспламенения пыли «t» по ГОСТ Р МЭК 60079-31-2010.

Внесение изготовителем в конструкцию и техническую документацию изменений, влияющих на взрывобезопасность и соответствие соединительных коробок требованиям ТР ТС 012/2011, возможно только по согласованию с органом по сертификации ООО «Центр Сертификации «ВЕЛЕС».

Данный сертификат соответствия подтверждает соответствие требованиям взрывобезопасности ТР ТС 012/2011 и не рассматривает любые другие виды безопасности соединительных коробок.

**3. Оборудование соответствует требованиям:**

| | |
|---|---|
| ТР ТС 012/2011 | Технический регламент Таможенного союза «О безопасности оборудования для работы во взрывоопасных средах»; |
| ГОСТ 31610.0-2014 (IEC 60079-0:2011) | Взрывоопасные среды. Часть 0. Оборудование. Общие требования; |
| ГОСТ Р МЭК 60079-7-2012 | Взрывоопасные среды. Часть 7. Оборудование. Повышенная защита вида "e"; |
| ГОСТ Р МЭК 60079-31-2010 | Взрывоопасные среды. Часть 31. Оборудование с видом взрывозащиты от воспламенения пыли "t". |

«Центр Сертификации «ВЕЛЕС» М.П.

**Руководитель (уполномоченное лицо) органа по сертификации** (подпись) Ролзивон Галина Александровна (Ф.И.О.)

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# ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

## ПРИЛОЖЕНИЕ

### К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-CH.АД07.В.02998/21

Серия RU № 0765057

**4. Маркировка**

Маркировка, наносимая на электрооборудование, должна включать следующие данные:

4.1 наименование предприятия-изготовителя или его зарегистрированный товарный знак;
4.2 обозначение типа оборудования;
4.3 порядковый номер по системе нумерации предприятия-изготовителя;
4.4 маркировку взрывозащиты см. п. 2 «Основные технические данные»;
4.5 наименование или знак органа по сертификации и номер сертификата соответствия;
4.6 предупредительные надписи;
4.7 единый знак ЕАС обращения продукции на рынке государств - членов Таможенного союза;
4.8 специальный знак взрывобезопасности Ex в соответствии с ТР ТС 012/2011;
4.9 другие данные, которые должен отразить изготовитель, если это требуется технической документацией (диапазон температур окружающей среды, степень защиты оболочки и т.д.).

**5. Шкала ограничений**

Нет.

Руководитель (уполномоченное лицо) органа по сертификации — (подпись) — Родзивон Галина Александровна (Ф.И.О.)

М.П.

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы)) — (подпись) — Шатило Андрей Алексеевич (Ф.И.О.)

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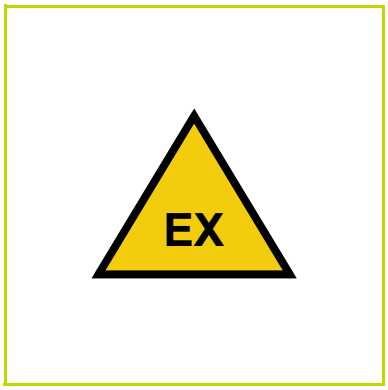
MEGGiTT

## EX CERTIFICATE – RU

# ЕАЭС RU C-CH.АД07.В.03042/21
# for
# CA134, CA20x, CA28x, CA30x, CA901, CE134, CE281 and CE620 vibration sensors




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

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# ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

## СЕРТИФИКАТ СООТВЕТСТВИЯ

EAC

№ ЕАЭС RU C-CH.АД07.В.03042/21

Серия RU № 0225745

**ОРГАН ПО СЕРТИФИКАЦИИ** Орган по сертификации Общество с ограниченной ответственностью «Центр Сертификации «ВЕЛЕС». Место нахождения (адрес юридического лица): 195009, РОССИЯ, город Санкт-Петербург, улица Академика Лебедева, дом 12, корпус 2, литера А, этаж 2, комната 26. Адрес места осуществления деятельности: 190068, РОССИЯ, город Санкт-Петербург, переулок Никольский, дом 4 литер А, помещение 8Н.
Уникальный номер записи об аккредитации в реестре аккредитованных лиц № RA.RU.10АД07.
Дата решения об аккредитации: 24.03.2016.
Телефон: +74952211810 Адрес электронной почты: info@velessert.ru

**ЗАЯВИТЕЛЬ** ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ "СОРТУМ"
Место нахождения (адрес юридического лица) и адрес места осуществления деятельности: 101000, Россия, город Москва, переулок Милютинский, дом 10, строение 1, этаж 3, помещение VIII, комната 4, офис 4
Основной государственный регистрационный номер 1187746680538.
Телефон: 74991101637 Адрес электронной почты: info@sortum.ru

**ИЗГОТОВИТЕЛЬ** "MEGGITT S.A."
Место нахождения (адрес юридического лица): Швейцария, Route de Moncor 4, 1752 Villars-sur-Glane
Филиал изготовителя: VIBRASENS, Место нахождения (адрес юридического лица) и адрес места осуществления деятельности по изготовлению продукции: Франция, Avenue des Montboucons 2E, 25000 BESANCON

**ПРОДУКЦИЯ** Оборудование измерительное: акселерометры, типов: CA134, CA20X, CA28X, CA30X, CA901, CE134, CE620, CE281.
Маркировка взрывозащиты согласно приложениям (бланки №№ 0765150, 0765151, 0765152).
Продукция изготовлена в соответствии с Директивой 2014/34/EU и технической документацией изготовителя для работы во взрывоопасных средах.
Серийный выпуск

**КОД ТН ВЭД ЕАЭС** 9031803800

**СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ**
Технического регламента Таможенного союза "О безопасности оборудования для работы во взрывоопасных средах" (ТР ТС 012/2011)

**СЕРТИФИКАТ СООТВЕТСТВИЯ ВЫДАН НА ОСНОВАНИИ** Протокола испытаний № 2690ИЛПМВ от 11.02.2021 года, выданного Испытательным центром Общества с ограниченной ответственностью «ПРОММАШ ТЕСТ» (уникальный номер записи об аккредитации в реестре аккредитованных лиц RA.RU.21ВС05)
акта анализа состояния производства от 01.12.2020 года, выданного Органом по сертификации Общество с ограниченной ответственностью «Центр Сертификации «ВЕЛЕС»
Руководства по эксплуатации, конструкторской документации.
Схема сертификации: 1с

**ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ** Срок службы 30 лет. Срок хранения 10 лет. Стандарты, обеспечивающие соблюдение требований Технического регламента Таможенного союза ТР ТС 012/2011 "О безопасности оборудования для работы во взрывоопасных средах" согласно приложениям - бланки №№ 0765150, 0765151, 0765152.

**СРОК ДЕЙСТВИЯ С** 21.02.2021 **ПО** 20.02.2026 **ВКЛЮЧИТЕЛЬНО**

**Руководитель (уполномоченное лицо) органа по сертификации** (подпись) Родионов Галина Александровна (Ф.И.О.)

М.П.

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# ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

## ПРИЛОЖЕНИЕ

**К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС** RU C-CH.АД07.В.03042/21

Серия RU № 0765150

**1. Назначение и область применения**

Сертификат соответствия распространяется на оборудование измерительное: акселерометры, типов: CA134, CA20X, CA28X, CA30X, CA901, CE134, CE620, CE281 (далее по тексту - акселерометры) которые предназначены для мониторинга и измерения вибрации в случаях, когда необходима высокая чувствительность прибора.

Область применения – взрывоопасные зоны классов 0, 1 и 2 по ГОСТ IEC 60079-10-1-2011 категорий взрывоопасных смесей IIA, IIB, IIC по ГОСТ Р МЭК 60079-20-1-2011, взрывоопасные зоны классов 20, 21 и 22 по ГОСТ IEC 60079-10-2-2011, содержащие взрывоопасную пыль подгрупп IIIA, IIIB и IIIC, а также подземные выработки угольных шахт и рудников, в том числе опасные по газу (метану) и (или) угольной пыли, и их наземные сооружения, согласно маркировкам взрывозащиты электрооборудования, ГОСТ IEC 60079-14-2011 и другим нормативным документам, регламентирующим применение электрооборудования в потенциально взрывоопасных средах.

**2. Описание оборудования и средств обеспечения взрывозащиты**

Конструктивно акселерометры, типов: CA134, CA20X, CA28X, CA30X, CA901, CE134, CE620, CE281 имеют сварной, стальной герметичный корпус. Внутри корпуса расположен датчик акселерометра, выполненный из искусственного пьезоэлектрического материала, что обеспечивает исключительную стабильность и надежность показаний прибора.

Отверстия в подложке корпуса акселерометров обеспечивает их надежное крепление. Для подключения акселерометров используется соответствующий штатный кабель, обеспечивающий минимальные затухания сигнала с выхода датчика. Сигнал с датчика акселерометра по кабелю поступает на усилитель сигнала и далее на исполнительное устройство.

Подробное описание конструкции акселерометров приведено в руководстве по эксплуатации на изделие.

**Основные технические данные:**

Маркировка взрывозащиты:

| | |
|---|---|
| - акселерометр CA134 (тип 144-134-000-XXX) | 0Ex ia IIC T6...510°C Ga X |
| - акселерометр CA134 (тип PNR: 144-134-000-XXX) | 2Ex nA II T6…510°C Gc |
| - акселерометр CA20X (тип PNR:144-20X-000-YYY) | 0Ex ia IIC T6...T2 Ga X |
| - акселерометр CA20X (тип PNR: 144-20X-000-YYY) | 2Ex nA IIC T6…T2 Gc |
| - акселерометр CA28X (тип 144-28.-000-...) | 0Ex ia IIC T6...T2 Ga X |
| - акселерометр CA28X (тип PNR: 144-28X-000-YYY) | 2Ex nA IIC T6…T2 Gc |
| - акселерометр CA30X (тип 144-30.-000-...) | 0Ex ia IIC T6...510°C Ga X |
| - акселерометр CA30X (тип PNR: 144-30X-000-YYY) | 2Ex nA IIC T6…510°C Gc |
| - акселерометр CA901 (тип PNR: 144-901-000-XXX) | 0Ex ia IIC T6...710°C Ga X |
| - акселерометр CA901 (тип PNR: 144-901-000-XXX) | 2Ex nA IIC T6…710°C Gc |
| - акселерометр CE134 (тип PNR: 444-134-000-XX1…XX4) | 1Ex ib IIC T6...T1 Gb X |
| - акселерометр CE134 (тип PNR: 444-134-000-XX5…XX9) | 0Ex ia IIC T6...T1 Ga X |
| - акселерометр CE134 (тип PNR: 444-134-000- XX1…XX9) | 2Ex nA IIC T6… T1 Gc |
| - акселерометр CE620 (тип 444-620-000- XXX) | PO Ex ia I Ma X |
| | 0Ex ia IIC T4 Ga X |
| | Ex ia IIIC T135°C Da X |
| - акселерометр CE28X (тип 444-28.-000-...) | 0Ex ia IIC T6...T2 Ga X |
| - акселерометр CE28X (тип PNR: 444-28X-000-YYY) | 2Ex nA IIC T6…T2 Gc |

**Руководитель (уполномоченное лицо) органа по сертификации** (подпись) Шаповалова Галина Александровна (Ф.И.О.)

М.П. «Центр Сертификации «ВЕЛЕС» Общество с ограниченной ответственностью

**Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы))** (подпись) Катило Андрей Алексеевич (Ф.И.О.)

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# ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

## ПРИЛОЖЕНИЕ

**К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС** RU C-CH.АД07.В.03042/21

Серия RU № 0765151

Диапазон температур окружающей среды, °С:
- акселерометр CA134 (тип 144-134-000-XXX) ..... от минус 200 до +500
- акселерометр CA134 (тип PNR: 144-134-000-XXX) ..... от минус 200 до +500
- акселерометр CA20X (тип PNR: 144-20X-000-YYY) ..... от минус 55 до +260
- датчик акселерометра CA28X (тип 144-28.-000-...) ..... от минус 60 до +260
- датчик и кабель акселерометра CA28X (тип 144-28.-000-...) ..... от минус 55 до +260
- акселерометр CA30X (тип 144-30.-000-...) ..... от минус 30 до +80
- акселерометр CA30X (тип PNR: 144-30X-000-YYY) ..... от минус 54 до +500
- акселерометр CA901 (тип PNR: 144-901-000-XXX) ..... от минус 196 до +700
- датчик акселерометра CE134 (тип PNR: 444-134-000-...) ..... от минус 70 до +350
- кабель акселерометра CE134 (тип PNR: 444-134-000-...) ..... от минус 70 до +350
- акселерометр CE620 (тип 444-620-000- XXX) ..... от минус 54 до +121
- датчик акселерометра CE28X (тип 444-28.-000-...) ..... от минус 60 до +260
- датчик и кабель акселерометра CE28X (тип 444-28.-000-...) ..... от минус 55 до +260

Степень защиты от внешних воздействий по ГОСТ 14254-2015 ..... IP67

Параметры искробезопасных цепей приведены в таблице 2.1

Таблица 2.1

| Наименование акселерометров | Значение параметров искробезопасных цепей акселерометров | | | | |
|---|---|---|---|---|---|
| | $U_i$, В | $I_i$, мА (линейное/ нелинейное питание) | $P_i$, Вт | $C_i$, нФ | $L_i$, мкГн |
| Акселерометр CA134 | 28 | 100/25 | 0,7 | 1,2+0,25 нФ/м (кабель) | 0 |
| Акселерометр CA20X | 28 | 100 | 0,7 | 20+0,2 нФ/м (кабель) | 1 мкГн (кабель) |
| Акселерометр CA28X (тип 144-28.-000-...) | 28 | 100 | 0,7 | 8+0,25 нФ/м (кабель) | 0 |
| Акселерометр CA30X (тип 144-30.-000-...) | 28 | 100/25 | 0,7 | 2+0,2 нФ/м (кабель) | 0 |
| Акселерометр CA901 (тип PNR: 144-901-000-XXX) | 28 | 100 | 0,7 | 0,2+0,2 нФ/м (кабель) | 0 |
| акселерометр CE134 (тип PNR: 444-134-000-YY1…YY4) | 28 | 100 | 2 | 15 | 500 |
| акселерометр CE134 (тип PNR: 444-134-000-YY5…YY9) | 28 | - | 0,7 | 0 | 0 |
| акселерометр CE620 (тип 444-620-000- XXX) | 28 | 93 | 0,65 | 41 (исполнение с разъемом) 56 (исполнение с кабелем. Кабель до 99 метров) | 0 (исполнение с разъемом) 51 (исполнение с кабелем. Кабель до 99 метров) |
| Акселерометр CE28X (тип 444-28.- 000-..1) | 28 | 100 | 0,7 | 10,5 | 0 |
| Акселерометр CE28X (тип 444-28.-000-..2…9)) | 28 | 100 | 0,7 | 0 | 0 |

Взрывозащищенность акселерометров обеспечивается выполнением их конструкций в соответствии с общими требованиями по ГОСТ 31610.0-2014 (IEC 60079-0:2011), видом взрывозащиты «искробезопасная электрическая цепь «i» по ГОСТ 31610.11-2014 (IEC 60079-11:2011) и видом взрывозащиты «n» по ГОСТ 31610.15-2014/IEC 60079-15:2010.

Внесение изготовителем в конструкцию и техническую документацию изменений, влияющих на взрывобезопасность и соответствие акселерометров требованиям ТР ТС 012/2011, возможно только по согласованию с органом по сертификации ООО «Центр Сертификации «ВЕЛЕС».

**Руководитель (уполномоченное лицо) органа по сертификации** (подпись) Ренжин Галина Александровна (Ф.И.О.)

«Центр Сертификации «ВЕЛЕС» М.П.

**Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы))** (подпись) Шатило Андрей Алексеевич (Ф.И.О.)

АО «Опцион», Москва, 2019 г., «Б», Лицензия № 05-05-09/003 ФНС РФ, ТЗ № 938. Тел.: (495) 726-47-42, www.opcion.ru

# ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

## ПРИЛОЖЕНИЕ

### К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-CH.АД07.В.03042/21

Серия RU № 0765152

Данный сертификат соответствия подтверждает соответствие требованиям взрывобезопасности ТР ТС 012/2011 и не рассматривает любые другие виды безопасности акселерометров.

**3. Оборудование соответствует требованиям:**

| | |
|---|---|
| ТР ТС 012/2011 | Технический регламент Таможенного союза «О безопасности оборудования для работы во взрывоопасных средах»; |
| ГОСТ 31610.0-2014 (IEC 60079-0:2011) | Взрывоопасные среды. Часть 0. Оборудование. Общие требования; |
| ГОСТ 31610.11-2014 (IEC 60079-11:2011) | Взрывоопасные среды. Часть 11. Оборудование с видом взрывозащиты "искробезопасная электрическая цепь "i". |
| ГОСТ 31610.15-2014/IEC 60079-15:2010 | Взрывоопасные среды. Часть 15. Оборудование с видом взрывозащиты "n". |

**4. Маркировка**

Маркировка, наносимая на электрооборудование, должна включать следующие данные:

4.1 наименование предприятия-изготовителя или его зарегистрированный товарный знак;
4.2 обозначение типа оборудования;
4.3 порядковый номер по системе нумерации предприятия-изготовителя;
4.4 маркировку взрывозащиты см. п. 2 «Основные технические данные»;
4.5 наименование или знак органа по сертификации и номер сертификата соответствия;
4.6 предупредительные надписи;
4.7 единый знак ЕАС обращения продукции на рынке государств - членов Таможенного союза;
4.8 специальный знак взрывобезопасности Ex в соответствии с ТР ТС 012/2011;
4.9 другие данные, которые должен отразить изготовитель, если это требуется технической документацией (диапазон температур окружающей среды, степень защиты оболочки и т.д.).

**5. Специальные условия применения**

Знак X, стоящий после Ex-маркировки, означает, что при эксплуатации необходимо соблюдать следующие специальные условия:
- к акселерометрам с видом взрывозащиты искробезопасная электрическая цепь должны подключаться устройства, имеющие соответствующую маркировку взрывозащиты и сертификат соответствия требованиям ТР ТС 012/2011. Выходные напряжение, ток и мощность таких устройств не должны превышать соответствующих максимальных входных значений акселерометров. Внешние допустимые индуктивность и электрическая емкость искробезопасных цепей таких устройств должны быть не менее максимальных значений внутренних индуктивности и электрической емкости искробезопасных цепей акселерометров с учетом параметров линии связи;
- акселерометры необходимо подключать в соответствии с инструкцией по эксплуатации;
- для акселерометров в версии с разъемом используемый кабель должен иметь рабочую температуру, совместимую с окружающей средой, в которой используется устройство.

«Центр Сертификации «ВЕЛЕС» Общество с ограниченной ответственностью

Руководитель (уполномоченное лицо) органа по сертификации _____ (подпись) Родионов Галина Александровна (Ф.И.О.)

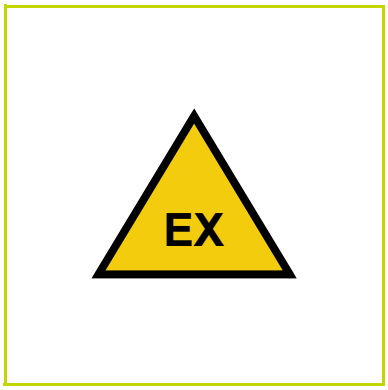
М.П.

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы)) _____ (подпись) Шилло Андрей Алексеевич (Ф.И.О.)

АО «Опцион», Москва, 2015 г., «Б». Лицензия № 05-05-09/003 ФНС РФ. ТЗ № 938. Тел.: (495) 726-47-42, www.opcion.ru

EX CERTIFICATE – RU

# ЕАЭС RU C-CH.АД07.В.03008/21
# for
# GSI127 galvanic separation unit

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Document reference ЕАЭС RU C-CH.АД07.В.03008/21
Edition 1 – March 2021

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# ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

## СЕРТИФИКАТ СООТВЕТСТВИЯ

EAC

№ ЕАЭС RU C-CH.АД07.В.03008/21

Серия RU № 0225707

**ОРГАН ПО СЕРТИФИКАЦИИ** Орган по сертификации Общество с ограниченной ответственностью «Центр Сертификации «ВЕЛЕС». Место нахождения (адрес юридического лица): 195009, РОССИЯ, город Санкт-Петербург, улица Академика Лебедева, дом 12, корпус 2, литера А, этаж 2, комната 26, Адрес места осуществления деятельности: 190068, РОССИЯ, город Санкт-Петербург, переулок Никольский, дом 4 литер А, помещение 8Н. Уникальный номер записи об аккредитации в реестре аккредитованных лиц № RA.RU.10АД07 Дата решения об аккредитации: 24.03.2016. Телефон: +74952211810 Адрес электронной почты: info@velessert.ru

**ЗАЯВИТЕЛЬ** ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ "СОРТУМ"
Место нахождения (адрес юридического лица) и адрес места осуществления деятельности: 101000, Россия, город Москва, переулок Милютинский, дом 10, строение 1, этаж 3, помещение VIII, комната 4, офис 4
Основной государственный регистрационный номер 1187746680538.
Телефон: 74991101637 Адрес электронной почты: info@sortum.ru

**ИЗГОТОВИТЕЛЬ** "MEGGITT S.A."
Место нахождения (адрес юридического лица): Швейцария, Route de Moncor 4, 1752 Villars-sur-Glane
Филиал изготовителя: TT ELECTRONICS IMS; Место нахождения (адрес юридического лица) и адрес места осуществления деятельности по изготовлению продукции: Китай, Feng Qiao Industrial Park 158 – 29 Hua Shan Road 215129 SUZHOU CITY

**ПРОДУКЦИЯ** Блоки гальванической развязки, типа: GSI127
Маркировка взрывозащиты согласно приложению (бланки №№ 0765078, 0765079).
Продукция изготовлена в соответствии с Директивой 2014/34/EU и технической документацией изготовителя для работы во взрывоопасных средах.
Серийный выпуск

**КОД ТН ВЭД ЕАЭС** 9031803800

**СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ**
Технического регламента Таможенного союза "О безопасности оборудования для работы во взрывоопасных средах" (ТР ТС 012/2011)

**СЕРТИФИКАТ СООТВЕТСТВИЯ ВЫДАН НА ОСНОВАНИИ** Протокола испытаний № 2691ИЛПМВ от 11.02.2021 года, выданного Испытательным центром Общества с ограниченной ответственностью «ПРОММАШ ТЕСТ» (уникальный номер записи об аккредитации в реестре аккредитованных лиц RA.RU.21ВС05)
акта анализа состояния производства от 01.12.2020 года, выданного Органом по сертификации Общество с ограниченной ответственностью «Центр Сертификации «ВЕЛЕС»
Руководства по эксплуатации, конструкторской документации.
Схема сертификации: 1с

**ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ** Срок службы 30 лет. Срок хранения 10 лет. Выдан взамен № ЕАЭС RU C-CH.АД07.В.02996/21 дата выдачи 16.02.2021 год. Стандарты, обеспечивающие соблюдение требований Технического регламента Таможенного союза ТР ТС 012/2011 "О безопасности оборудования для работы во взрывоопасных средах" согласно приложениям - бланки №№ 0765078, 0765079.

**СРОК ДЕЙСТВИЯ С** 18.02.2021 **ПО** 15.02.2026 **ВКЛЮЧИТЕЛЬНО**

**Руководитель (уполномоченное лицо) органа по сертификации** (подпись) Ротзивон Галина Александровна (Ф.И.О.)

М.П.

**Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы))** (подпись) Шатило Андрей Алексеевич (Ф.И.О.)

# ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

## ПРИЛОЖЕНИЕ

### К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-CH.АД07.В.03008/21

Серия RU № 0765078

**1. Назначение и область применения**

Сертификат соответствия распространяется на блоки гальванической развязки, типа: GSI127 (далее по тексту – блоки гальванической развязки), предназначенные для эксплуатации совместно с электрометрическими усилителями, преобразователями сигнала и электроникой (подключаемой или встроенной), используемой различными измерительными цепями виброметров.

Область применения – взрывоопасные зоны класса 2 по ГОСТ IEC 60079-10-1-2011 категорий взрывоопасных смесей IIA, IIB и IIC по ГОСТ Р МЭК 60079-20-1-2011, согласно маркировке взрывозащиты электрооборудования, ГОСТ IEC 60079-14-2011 и другим нормативным документам, регламентирующим применение электрооборудования в потенциально взрывоопасных средах.

**2. Описание оборудования и средств обеспечения взрывозащиты**

Блоки гальванической развязки, типа GSI127 выполнены в пластиковом корпусе, со степенью защиты от внешних воздействий IP20. Конструкция корпуса обеспечивает выполнение его монтажа на DIN-рейку. Внутри корпуса блоков гальванической развязки расположена электронная плата. Корпус блока оснащен съемными винтовыми клеммными разъемами, которые могут быть отключены от основного корпуса для упрощения установки и монтажа. Блок гальванической развязки является универсальным устройством, которое может использоваться для передачи высокочастотных сигналов переменного тока на большие расстояния в измерительных цепях, использующих передачу токового сигнала, или в качестве безопасного барьера в измерительных цепях, использующих передачу сигнала напряжения. В более общем случае он может использоваться для питания любой электронной системы (сторона датчика), имеющей потребление тока до 22 мА. Блоки гальванической развязки не имеют какой-либо индикации по работе блока и не требуют дополнительных настроек.

Подробное описание конструкции блоков гальванической развязки приведено в руководстве по эксплуатации на изделие.

**Основные технические данные:**

Маркировка взрывозащиты ..... Ex 2Ex nA [ia Ga] IIC T4 Gc X
Диапазон температур окружающей среды, °С ..... от минус 40 до +70
Степень защиты от внешних воздействий по ГОСТ 14254-2015 ..... IP20
Напряжение питания, В (постоянного тока) ..... 18 – 30
Максимальное напряжение $U_m$, В ..... 30
Параметры искробезопасных цепей блоков гальванической развязки приведены в таблице 2.1.

Таблица 2.1

| Наименование параметра | Значение | |
|---|---|---|
| | Блок GSI127 исполнения B01 – B19 | Блок GSI127 исполнения B20 – B39 |
| Максимальное выходное напряжение $U_o$, В | 25,2 | 25,2 |
| Максимальный выходной ток $I_o$, мА | 60 | 45 |
| Максимальная выходная мощность $P_o$, Вт | 0,7 | 0,5 |
| Максимальная внешняя емкость $C_o$, нФ | 95 | 95 |
| Максимальная внешняя индуктивность $L_o$, мГн | 5 | 10 |

Взрывозащищенность блоков гальванической развязки обеспечивается выполнением их конструкции в соответствии с общими требованиями по ГОСТ 31610.0-2014 (IEC 60079-0:2011), видом взрывозащиты «искробезопасная электрическая цепь «i» по ГОСТ 31610.11-2014 (IEC 60079-11:2011) и видом взрывозащиты «n» по ГОСТ 31610.15-2014/IEC 60079-15:2010.

«Центр Сертификации «ВЕЛС» М.П.

Руководитель (уполномоченное лицо) органа по сертификации (подпись) Родзивон Галина Александровна (Ф.И.О.)

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы)) (подпись) Шатило Андрей Алексеевич (Ф.И.О.)

АО «Опцион», Москва, 2019 г., «Б». Лицензия № 05-05-09/003 ФНС РФ. ТЗ № 938. Тел.: (495) 726-47-42, www.opcion.ru

# ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

## ПРИЛОЖЕНИЕ

### К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-CH.АД07.В.03008/21

Серия RU № 0765079

Внесение изготовителем в конструкцию и техническую документацию изменений, влияющих на взрывобезопасность и соответствие блоков гальванической развязки требованиям ТР ТС 012/2011, возможно только по согласованию с органом по сертификации ООО «Центр Сертификации «ВЕЛЕС».

Данный сертификат соответствия подтверждает соответствие требованиям взрывобезопасности ТР ТС 012/2011 и не рассматривает любые другие виды безопасности блоков гальванической развязки.

**3. Оборудование соответствует требованиям:**

| | |
|---|---|
| ТР ТС 012/2011 | Технический регламент Таможенного союза «О безопасности оборудования для работы во взрывоопасных средах»; |
| ГОСТ 31610.0-2014 (IEC 60079-0:2011) | Взрывоопасные среды. Часть 0. Оборудование. Общие требования; |
| ГОСТ 31610.11-2014 (IEC 60079-11:2011) | Взрывоопасные среды. Часть 11. Оборудование с видом взрывозащиты "искробезопасная электрическая цепь "i". |
| ГОСТ 31610.15-2014/IEC 60079-15:2010 | Взрывоопасные среды. Часть 15. Оборудование с видом взрывозащиты "n". |

**4. Маркировка**

Маркировка, наносимая на электрооборудование, должна включать следующие данные:

4.1 наименование предприятия-изготовителя или его зарегистрированный товарный знак;
4.2 обозначение типа оборудования;
4.3 порядковый номер по системе нумерации предприятия-изготовителя;
4.4 маркировку взрывозащиты см. п. 2 «Основные технические данные»;
4.5 наименование или знак органа по сертификации и номер сертификата соответствия;
4.6 предупредительные надписи;
4.7 единый знак ЕАС обращения продукции на рынке государств - членов Таможенного союза;
4.8 специальный знак взрывобезопасности Ex в соответствии с ТР ТС 012/2011;
4.9 другие данные, которые должен отразить изготовитель, если это требуется технической документацией (диапазон температур окружающей среды, степень защиты оболочки и т.д.).

**5. Специальные условия применения**

Знак X, стоящий после Ex-маркировки, означает, что при эксплуатации необходимо соблюдать следующие специальные условия:
- температура окружающей среды при эксплуатации от минус 40 °C до плюс 70 °C;
- блоки гальванической развязки должны устанавливаться в корпусе со степенью защиты от внешних воздействий не ниже IP54.

«Центр Сертификации «ВЕЛЕС»

М.П.

Руководитель (уполномоченное лицо) органа по сертификации _____ (подпись) Родзивон Галина Александровна (Ф.И.О.)

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы)) _____ (подпись) Шатило Андрей Алексеевич (Ф.И.О.)

АО «Опцион», Москва, 2019 г., «Б». Лицензия № 05-05-09/003 ФНС РФ. ТЗ № 926. Тел.: (495) 726-47-42, www.opcion.ru

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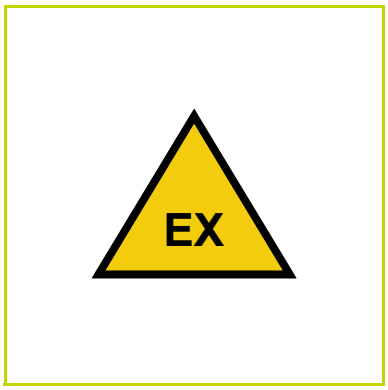
EX CERTIFICATE – RU

vibro-meter®

# ЕАЭС RU C-CH.АД07.В.04681/22
# for
# IPC707 signal conditioner

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Document reference ЕАЭС RU C-CH.АД07.В.04681/22
Edition 1 – June 2022

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# ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

## СЕРТИФИКАТ СООТВЕТСТВИЯ

EAC

№ ЕАЭС RU C-CH.АД07.В.04681/22

Серия RU № 0278213

**ОРГАН ПО СЕРТИФИКАЦИИ** Орган по сертификации Общество с ограниченной ответственностью «Центр Сертификации «ВЕЛЕС». Место нахождения (адрес юридического лица): 195009, РОССИЯ, город Санкт-Петербург, улица Академика Лебедева, дом 12, корпус 2, литера А, этаж 2, комната 26. Адрес места осуществления деятельности: 195009, РОССИЯ, город Санкт-Петербург, улица Академика Лебедева, дом 12 корпус 2 литер А, помещения № 6-9. Уникальный номер записи об аккредитации в реестре аккредитованных лиц № RA.RU.10АД07. Дата решения об аккредитации: 24.03.2016. Телефон: +74952211810. Адрес электронной почты: info@velessert.ru

**ЗАЯВИТЕЛЬ** ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ "МИР ТЕХНОЛОГИЙ"
Место нахождения (адрес юридического лица) и адрес места осуществления деятельности: 117041, Россия, город Москва, улица Адмирала Руднева, дом 4, этаж 6, помещение IV, офис 613
Основной государственный регистрационный номер 1187746469096.
Телефон: 74954814150 Адрес электронной почты: MirTekhnologiy@gmail.com

**ИЗГОТОВИТЕЛЬ** «MEGGITT SA»
Место нахождения (адрес юридического лица) и адрес места осуществления деятельности по изготовлению продукции: Швейцария, Route de Moncor 4, 1752 Villars-sur-Glane

**ПРОДУКЦИЯ** Усилитель сигнала IPC707
Маркировка взрывозащиты согласно приложению (бланки №№ 0869689, 0869690, 0869691). Продукция изготовлена в соответствии с Директивой 2014/34/EU.
Серийный выпуск

**КОД ТН ВЭД ЕАЭС** 8543708000

**СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ**
Технического регламента Таможенного союза "О безопасности оборудования для работы во взрывоопасных средах" (ТР ТС 012/2011)

**СЕРТИФИКАТ СООТВЕТСТВИЯ ВЫДАН НА ОСНОВАНИИ** Протокола испытаний № 6098ИЛПМВ от 05.05.2022 года, выданного Испытательным центром Общества с ограниченной ответственностью «ПРОММАШ ТЕСТ» (уникальный номер записи об аккредитации в реестре аккредитованных лиц RA.RU.21ВС05)
акта анализа состояния производства от 03.02.2022 года, выданного Органом по сертификации Общество с ограниченной ответственностью «Центр Сертификации «ВЕЛЕС»
Руководство по эксплуатации, технический паспорт и конструкторская документация
Схема сертификации: 1с

**ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ** Срок службы – 30 лет, срок хранения – 10 лет, условия хранения: при температуре -40 до +85°С, максимальная влажность 95% без конденсации. Стандарты, обеспечивающие соблюдение требований Технического регламента Таможенного союза ТР ТС 012/2011 "О безопасности оборудования для работы во взрывоопасных средах": согласно приложениям - бланки №№ 0869689, 0869690, 0869691.

**СРОК ДЕЙСТВИЯ С** 18.05.2022 **ПО** 17.05.2027 **ВКЛЮЧИТЕЛЬНО**

**Руководитель (уполномоченное лицо) органа по сертификации** (подпись) Ролзивон Галина Александровна (Ф.И.О.)

М.П.

**Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы))** (подпись) Шатило Андрей Алексеевич (Ф.И.О.)

АО «Опцион», Москва, 2019 г., «Б». Лицензия № 05-05-09/003 ФНС РФ. ТЗ № 968. Тел.: (495) 726-47-42, www.opcion.ru

ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

# ПРИЛОЖЕНИЕ

## К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-CH.АД07.В.04681/22

Серия RU № 0869689

### 1. Назначение и область применения

Сертификат соответствия распространяется на усилитель сигнала IPC707 (далее по тексту – усилитель сигнала) который предназначен для работы вместе с датчиками, имеющими пьезоэлектрический чувствительный элемент, который производит зарядовый выходной сигнал и требует внешнего формирователя сигнала (усилителя заряда).

Область применения – во взрывоопасных зонах классов 0, 1 и 2 по ГОСТ IEC 60079-10-1-2011 категорий взрывоопасных смесей IIA, IIB и IIC по ГОСТ Р МЭК 60079-20-1-2011, согласно маркировкам взрывозащиты электрооборудования, ГОСТ IEC 60079-14-2011 и другим нормативным документам, регламентирующим применение электрооборудования в потенциально взрывоопасных средах.

### 2. Описание оборудования и средств обеспечения взрывозащиты

Конструктивно усилитель сигнала IPC707 выполнен в литом алюминиевом корпусе. Монтаж усилителя сигнала производится на плоскую поверхность путем крепления винтами через монтажные отверстия в корпусе или на din-рейку посредством специального адаптера. Внутри корпуса расположена печатная плата с электронными компонентами. Корпус усилителя сигнала имеет съемные клеммные колодки которые можно отсоединить от главной части корпуса для упрощения установки и монтажа. Клеммные колодки имеют винтовые зажимы для подключения проводов. Усилитель сигнала IPC707 включает в себя фильтры радиопомех для защиты входного и выходного сигнала от радиочастот и других электромагнитных помех, взрывозащиту, дифференциальный усилитель заряда, конфигурируемые фильтры высоких и низких частот, интегратор для передачи выходного сигнала скорости, конфигурируемый усилитель и конфигурируемый выходной каскад для создания токового выходного сигнала или сигнала по напряжению согласно требованиям. Также усилитель сигнала IPC707 опционально может включать диагностическую схему, которая используется для обнаружения неисправностей измерительной цепи, состоящей из датчика, кабелей и усилителя.

Подробное описание конструкции усилителя сигнала IPC707 приведено в руководстве по эксплуатации.

**Основные технические данные:**

Основные технические данные усилителя сигнала IPC707 приведены в таблице 2.1

Таблица 2.1

| Наименование параметра | Значение параметра | |
|---|---|---|
| Маркировка взрывозащиты | 0Ex ia IIC T6…T4 Ga | 2Ex ec IIC T6…T4 Gc |
| Диапазон температур окружающей среды, °C:<br>- для температурного класса T4<br>- для температурного класса T5<br>- для температурного класса T6 | <br>от минус 40 до +85<br>от минус 40 до +80<br>от минус 40 до +70 | <br>от минус 40 до +85<br>от минус 40 до +80<br>от минус 40 до +65 |
| Степень защиты от внешних воздействий по ГОСТ 14254-2015 | IP20 | IP20 |
| Максимальное напряжение на сигнальных клеммах (SUP, COM, OUT), Umax, В | - | 30 |
| Максимальный ток на сигнальных клеммах (SUP, COM, OUT), Imax, мА | - | 20 |

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М.П.

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы)) (подпись) Ивашко Андрей Алексеевич (Ф.И.О.)

ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

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Параметры искробезопасных цепей усилителя сигнала IPC707 приведены в таблице 2.2.

Таблица 2.2

| Наименование параметра | Значение |
|---|---|
| ***Разъем J0 ( SUP, COM):*** | |
| Максимальное входное напряжение $U_i$, В | 28 |
| Максимальный входной ток $I_i$, мА | 100 |
| Максимальная входная мощность $P_i$, мВт | 700 |
| Максимальная внутренняя емкость $C_i$, нФ | 2,2 |
| Максимальная внутренняя индуктивность $L_i$, мкГн | 1 |
| ***Разъем J0 ( OUT, COM):*** | |
| Максимальное входное напряжение Ui, В | 28 |
| Максимальный входной ток Ii, мА | 100 |
| Максимальная входная мощность Pi, мВт | 700 |
| Максимальная внутренняя емкость Ci, нФ | 9,6 |
| Максимальная внутренняя индуктивность Li, мкГн | 565 |
| ***Разъем J1 (IN+, COM) (IN-, COM):*** | |
| Максимальное выходное напряжение Uo, В | 6,6 |
| Максимальный выходной ток Io, мА | 66 |
| Максимальная выходная мощность Po, мВт | 107 |
| Максимальная внешняя емкость Co, мкФ | 5,69 |
| Максимальная внешняя индуктивность Lo, мГн | 3,435 |

Взрывозащищенность усилителя сигнала IPC707 обеспечивается выполнением его конструкции в соответствии с общими требованиями по ГОСТ 31610.0-2014 (IEC 60079-0:2011), видом взрывозащиты «искробезопасная электрическая цепь «i» по ГОСТ 31610.11-2014 (IEC 60079-11:2011) и видом взрывозащиты «повышенная защита вида «e» по ГОСТ Р МЭК 60079-7-2012.

Внесение изготовителем в конструкцию и техническую документацию изменений, влияющих на взрывобезопасность и соответствие усилителя сигнала IPC707 требованиям ТР ТС 012/2011, возможно только по согласованию с органом по сертификации ООО «Центр Сертификации «ВЕЛЕС».

Данный сертификат соответствия подтверждает соответствие требованиям взрывобезопасности ТР ТС 012/2011 и не рассматривает любые другие виды безопасности усилителя сигнала IPC707.

**3. Оборудование соответствует требованиям:**

| | |
|---|---|
| ТР ТС 012/2011 | Технический регламент Таможенного союза «О безопасности оборудования для работы во взрывоопасных средах»; |
| ГОСТ 31610.0-2014 (IEC 60079-0:2011) | Взрывоопасные среды. Часть 0. Оборудование. Общие требования; |
| ГОСТ 31610.11-2014 (IEC 60079-11:2011) | Взрывоопасные среды. Часть 11. Оборудование с видом взрывозащиты "искробезопасная электрическая цепь "i". |
| ГОСТ Р МЭК 60079-7-2012 | Взрывозащищенные среды. Часть 7. Оборудование. Повышенная защита вида «e». |

**4. Маркировка**

Маркировка, наносимая на электрооборудование, должна включать следующие данные:

4.1 наименование предприятия-изготовителя или его зарегистрированный товарный знак;

4.2 обозначение типа оборудования;

«Центр Сертификации «ВЕЛЕС» М.П.

**Руководитель (уполномоченное лицо) органа по сертификации** (подпись) Родзивон Галина Александровна (Ф.И.О.)

**Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы))** (подпись) Шапило Андрей Алексеевич (Ф.И.О.)

АО «Опцион», Москва, 2020 г., «Б», ТЗ № 334.

ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

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Серия RU № 0869691

4.3 порядковый номер по системе нумерации предприятия-изготовителя;
4.4 маркировку взрывозащиты см. п. 2 «Основные технические данные»;
4.5 наименование или знак органа по сертификации и номер сертификата соответствия;
4.6 предупредительные надписи;
4.7 единый знак ЕАС обращения продукции на рынке государств - членов Таможенного союза;
4.8 специальный знак взрывобезопасности Ex в соответствии с ТР ТС 012/2011;
4.9 другие данные, которые должен отразить изготовитель, если это требуется технической документацией (диапазон температур окружающей среды, степень защиты оболочки и т.д.).

**5. Специальные условия применения**

Знак X, стоящий в маркировке взрывозащиты, означает, что при эксплуатации необходимо соблюдать следующие особые условия:
- усилитель сигнала IPC707 имеющий вид защиты Ex «e» должен быть установлен в шкаф имеющий степень защиты от внешних воздействий не ниже IP54.
- для усилителя сигнала IPC707 имеющий вид защиты Ex «e» должен быть установлена зашита по входу на непривышение 140% пикового значения по напряжению.
- искробезопасные клеммные колодки (платы IS) усилителя сигнала IPC707 имеющий вид защиты Ex «ia» должны быть подключается только к искробезопасному сертифицированному оборудованию.
- необходимо избегать трения и ударов о корпус

Руководитель (уполномоченное лицо) органа по сертификации _____ (подпись) Родзивон Галина Александровна (Ф.И.О.)

М.П.

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы)) _____ (подпись) Шапило Андрей Алексеевич (Ф.И.О.)

АО «Опцион», Москва, 2020 г., «Б», ТЗ № 334

# APPENDIX I: INMETRO CERTIFICATIONS

**Table I-1:** Related INMETRO certificates

| Product(s) covered | Certificate number |
|---|---|
| CA134 | INMETRO BVC20.3862-X |
| | INMETRO BVC20.3863-X |
| IPC707 | INMETRO BVC20.3861-X |

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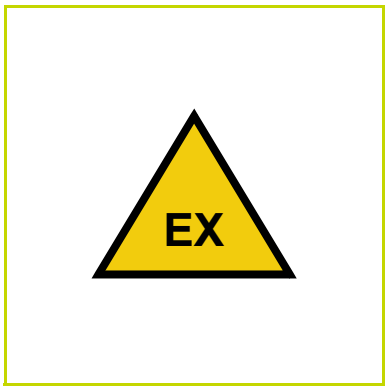
EX CERTIFICATE – INMETRO

vibro-meter®

# INMETRO BVC20.3862-X
# for
# CA134 piezoelectric accelerometer




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference INMETRO BVC20.3862-X
Edition 1 – January 2021

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www.meggitt.com

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BUREAU VERITAS Certification

# Certificate of Conformity

**AWARDED TO APPLICANT**

**MEGGITT SA**
ROUTE DE MONCOR 4
1752 VILLARS-SUR-GLÂNE – **SWITZERLAND**

**MANUFACTURER: MEGGITT SA**
ROUTE DE MONCOR 4
1752 VILLARS-SUR-GLÂNE – **SWITZERLAND**

**Bureau Veritas Certification certifies that the Product in the scope of supply specified below has been evaluated and found to comply with the requirements of the reference documents.**

**Documents of Reference**

ORDINANCE N° 179 FROM INMETRO, ISSUED IN MAY 18TH 2010,
ABNT NBR IEC 60079-0:2013 and ABNT NBR IEC 60079-11:2013.
CERTIFICATE ISSUED BASED ON THE MANUFACTURER EVALUATION OF QUALITY MANAGEMENT SYSTEM AND PRODUCT TESTS MODEL

**Scope of Supply**

ACCELEROMETER
TYPE: PNR 144-134-000-XXX
MARKING: Ex ia IIC T* or 510 °C Ga (*According to table 1)

Initial date of this Certificate: **JANUARY 20TH 2021.**
Certificate valid until: **JANUARY 19TH 2024.**

This Certificate of Conformity was issued according to the certification model 5 and is valid only accompanied by pages 1 to 5. The validity of this Certificate is linked to carrying out assessments maintenance and treatment of possible non-conformity in accordance with the Bureau Veritas Certification guidelines and in the specific Inmetro Ordinances (RAC).
To check the updated condition of regularity of this Certificate must be obtained from the product database and Certificate Services on Inmetro site.

Product Certification Contract: **20200003**

Certificate since: **JANUARY 20TH 2021.**

INMETRO Certificate Number: **BVC20.3862-X**

Vagner Valentino
Coordenador Técnico de Certificação de Produto

BUREAU VERITAS 2101201217001

Bureau Veritas Certification
Av. Alfredo Egídio de Souza Aranha, 100, Torre C, 3º andar, Centro Administrativo Santo Amaro
Cep: 04726-170, Chácara Santo Antônio, São Paulo, SP, Brasil
Tel.: + 55 11 2655 9000 - www.bureauveritascertification.com.br



BUREAU VERITAS Certification

# Certificate of Conformity

# BVC20.3862-X

**SPECIFICATION:**
This sensor is electro mechanic transducer delivering at its terminal blocks an electrical load proportional to the measured pressure.
It works with piezoelectric equipment mounted in compression.

**ELECTRICAL CHARACTERISTICS:**
Sensor: Ci ≤ 1,2nF, Li ≈ 0
Cable: Ci ≤ 250pF/m, Li ≈ 0

1 – Table - Temperature Class x Ambient Temperature

| Temperature Classification | Ambient Operating Temperature Range |
|---|---|
| T6 | -200 °C ≤ *Ta* ≤ +80 °C |
| T5 | -200 °C ≤ *Ta* ≤ +95 °C |
| T4 | -200 °C ≤ *Ta* ≤ +130 °C |
| T3 | -200 °C ≤ *Ta* ≤ +195 °C |
| T2 | -200 °C ≤ *Ta* ≤ +290 °C |
| T1 | -200 °C ≤ *Ta* ≤ +440 °C |
| 510 °C | -200 °C ≤ *Ta* ≤ +500 °C |

**TECHNICAL DOCUMENTATION:**

- Certificate of Conformity n° IECEX LCIE 06.0008X of 2013/10/25;
- Test Report LCIE n° 60044315-544914 of 2006/07/03;
- Test Report LCIE n° FR/LCI/ExTR06.0012/01 of 2010/10/25;
- Test Report LCIE n° FR/LCI/ExTR06.0012/02 of 2011/12/13;
- Test Report LCIE n° FR/LCI/ExTR06.0012/03 of 2013/10/16;
- Analysis Report (RA) n° 002/2020 of 2020/10/09;
- Factory Inspection performed in: 2020/11/18;
- Manual in Portuguese.

BUREAU VERITAS 2101201217002

Bureau Veritas Certification
Av. Alfredo Egídio de Souza Aranha, 100, Torre C, 3º andar, Centro Administrativo Santo Amaro
Cep: 04726-170, Chácara Santo Antônio, São Paulo, SP, Brasil
Tel.: + 55 11 2655 9000 - www.bureauveritascertification.com.br

# Certificate of Conformity
# BVC20.3862-X

| Drawing | Description | Revision | Date |
|---|---|---|---|
| PZ7653 | Capteur D'Acceleration | 0 | 01/10/2004 |
| 144-134-000 D 203 | Accelerometer Type CA 134 | 3 | 21/09/2016 |
| 144-134-000 D 612 | Accelerometer Type CA 134 | 4 | 01/07/2020 |

**OBSERVATIONS:**

1. The letter "X" after the Certificate number means the following special conditions for safe use:
   Electrical parameters of any IS certified equipment connected to the sensor shall not exceed the following values:
   Linear source: Ui ≤ 28V, Ii ≤ 100mA, Pi ≤ 0,7W
   Non linear source: Ui ≤ 28V, Ii ≤ 25mA, Pi ≤ 0,7W
   -200 °C < *Ta* < +500 °C
   Temperature classification:
   T6: Tamb <80 °C, T5: Tamb <95 °C, T4: Tamb <130 °C, T3: Tamb <195 °C, T2: Tamb <290 °C, T1: Tamb <440 °C, 510 °C: Tamb <500 °C.
   The materiel shall only be connected to a certified [ia] or [ib] apparatus and this combination, taking account to the length of joining cable, shall be compatible as regards intrinsic safety.

2. This Certificate is valid only for products with the same model and type as the tested prototype. Any modification in the project, as well as the use of components apart from those defined by the technical documentation, without previous authorization from Bureau Veritas Certification, will invalid this Certificate.

3. The Accelerometer shall be marked on the external surface and in a visible place, the conformity mark and the technical characteristics according to the specifications from standards ABNT NBR IEC 60079-0 / ABNT NBR IEC 60079-11 and the conformity assessment requiremnts, attached to INMETRO Ordince n° 179, published in May 18th 2010. This marking must be readable and durable, taking into consideration possible chemical corrosion.

4. The equipment must be installed in compliance with the relevant standards in electrical installations in explosive atmospheres and the manufacturer's recommendations



2101201217003

Certificate of Conformity
BVC20.3862-X

5. The activities of installation, inspection, maintenance, repair, overhaul and recovery of equipment are the responsibility of users and must be implemented in accordance with the requirements of current technical standards and the manufacturer's recommendations.

6. The Manufacturer shall provide manual of installation and safe use written in Portuguese.

| REVISIONS HISTORY | |
|---|---|
| **DATE OF ISSUE** | **DESCRIPTION** |
| 2021/01/20 | Initial Issue |

Bureau Veritas Certification
Av. Alfredo Egídio de Souza Aranha, 100, Torre C, 3º andar, Centro Administrativo Santo Amaro
Cep: 04726-170, Chácara Santo Antônio, São Paulo, SP, Brasil
Tel.: + 55 11 2655 9000 - www.bureauveritascertification.com.br


2101201217004

# Certificado de Conformidade

**CONFERIDO AO SOLICITANTE**

**MEGGITT SA**
ROUTE DE MONCOR 4
1752 VILLARS-SUR-GLÂNE – **SUIÇA**

**FABRICANTE: MEGGITT SA**
ROUTE DE MONCOR 4
1752 VILLARS-SUR-GLÂNE – **SUIÇA**

**O Bureau Veritas Certification certifica que o Produto constante no item escopo de fornecimento abaixo especificado, foi avaliado e encontrado em conformidade com os requisitos dos documentos de referência.**

**Documento de Referência**

PORTARIA INMETRO N° 179 de 18/05/2010, ABNT NBR IEC 60079-0:2013 e ABNT NBR IEC 60079-11:2013.

A CERTIFICAÇÃO PARA ESTE PRODUTO É O MODELO COM AVALIAÇÃO DO SISTEMA DE GESTÃO DA QUALIDADE DO PROCESSO DE PRODUÇÃO DO PRODUTO E ENSAIOS NO PRODUTO.

**Escopo de fornecimento**

ACELEROMETRO
MODELO: PNR 144-134-000-XXX
MARCAÇÃO: Ex ia IIC T* ou 510 °C Ga (*Conforme tabela 1)

Data de Início da certificação: **20 DE JANEIRO DE 2021.**

Data da validade da certificação: **19 DE JANEIRO DE 2024.**

Este Certificado de Conformidade foi emitido segundo modelo de certificação 5 e é válido somente acompanhado das páginas de 1 a 4. A validade deste Certificado de Conformidade está atrelada à realização das avaliações de manutenção e tratamento de possíveis não conformidades de acordo com as orientações do Bureau Veritas Certification e previstas no RAC específico.

Para verificação da condição atualizada de regularidade deste Certificado de Conformidade deve ser consultado o banco de dados de produtos e serviços certificados do Inmetro.

Número do contrato: **20200003**

Certificado desde: **20 DE JANEIRO DE 2021.**

Número do Certificado INMETRO: **BVC20.3862-X**

Vagner Valentino
Coordenador Técnico de Certificação de Produto

**Bureau Veritas Certification**
Av. Alfredo Egídio de Souza Aranha, 100, Torre C, 3º andar, Centro Administrativo Santo Amaro
Cep: 04726-170, Chácara Santo Antônio, São Paulo, SP, Brasil
Tel.: + 55 11 2655 9000 - www.bureauveritascertification.com.br



# Certificado de Conformidade
# BVC20.3862-X

**ESPECIFICAÇÕES:**

Este acelerômetro é um transdutor eletromecânico que entrega em seus blocos terminais uma carga elétrica proporcional à pressão medida.
Funciona com equipamentos piezoelétricos montados em compressão.

**CARACTERISTICAS ELÉTRICAS**

Sensor: Ci ≤ 1,2nF, Li ≈ 0
Cabo: Ci ≤ 250pF/m, Li ≈ 0

**Tabela 1 – Classe de Temperatura x Temperatura Ambiente**

| Classe de Temperatura | Faixa de Temperatura Ambiente de Operação |
|---|---|
| T6 | -200 °C ≤ *Ta* ≤ +80 °C |
| T5 | -200 °C ≤ *Ta* ≤ +95 °C |
| T4 | -200 °C ≤ *Ta* ≤ +130 °C |
| T3 | -200 °C ≤ *Ta* ≤ +195 °C |
| T2 | -200 °C ≤ *Ta* ≤ +290 °C |
| T1 | -200 °C ≤ *Ta* ≤ +440 °C |
| 510 °C | -200 °C ≤ *Ta* ≤ +500 °C |

**DOCUMENTAÇÃO TÉCNICA:**

- Certificado de Conformidade nº IECEX LCIE 06.0008X de 25/10/2013;
- Relatório de Ensaio LCIE n° 60044315-544914 de 03/07/2006;
- Relatório de Ensaio LCIE n° FR/LCI/ExTR06.0012/01 de 25/10/2010;
- Relatório de Ensaio LCIE n° FR/LCI/ExTR06.0012/02 de 12/12/2011;
- Relatório de Ensaio LCIE n° FR/LCI/ExTR06.0012/03 de 16/10/2013;
- Relatório de Análise (RA) n° 002/2020 de 09/10/2020;
- Data da auditoria no fabricante: 18/11/2020;
- Manual em Português.

**Bureau Veritas Certification**
Av. Alfredo Egídio de Souza Aranha, 100, Torre C, 3º andar, Centro Administrativo Santo Amaro
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# Certificado de Conformidade
# BVC20.3862-X

| Desenho | Descrição | Revisão | Data |
|---|---|---|---|
| PZ7653 | Capteur D'Acceleration | 0 | 01/10/2004 |
| 144-134-000 D 203 | Accelerometer Type CA 134 | 3 | 21/09/2016 |
| 144-134-000 D 612 | Accelerometer Type CA 134 | 4 | 01/07/2020 |

**OBSERVAÇÕES:**

1. A letra "X" após o número do certificado, denota a seguinte condições de uso seguro:
   Os parâmetros elétricos de qualquer equipamento certificado IS conectado ao sensor não devem exceder os seguintes valores:
   Fonte linear: Ui ≤ 28V, Ii ≤ 100mA, Pi ≤ 0,7W
   Fonte não linear: Ui ≤ 28V, Ii ≤ 25mA, Pi ≤ 0,7W
   -200 ° C < *Ta* <+500 ° C
   Classificação de temperatura:
   T6: Tamb <80 °C, T5: Tamb <95 °C, T4: Tamb <130 °C, T3: Tamb <195 °C, T2: Tamb <290 °C, T1: Tamb <440 °C, 510 °C: Tamb <500 °C.
   O material deve ser conectado apenas a um equipamento certificado [ia] ou [ib] e esta combinação, levando em consideração o comprimento do cabo de conexão, deve ser compatível com relação à segurança intrínseca.

2. Este Certificado de Conformidade é válido para os produtos de modelo e tipo idêntico ao protótipo ensaiado. Qualquer modificação de projeto ou utilização de componentes e materiais diferentes daqueles descritos na documentação deste processo, sem autorização prévia do Bureau Veritas Certification, invalidará o certificado.

3. Os acelerometros devem ter, gravado na sua superficie externa e em local visível, a Marca de Conformidade e as características técnicas da mesma de acordo com as especificações da Norma ABNT NBR IEC 60079-0 / ABNT NBR IEC 60079-11 e Requisitos de Avalização da Conformidade, anexo à Portaria 179 do INMETRO, publicada em 18 de Maio de 2010. Esta marcação deve ser legível e durável, levando-se em conta possivel corrosão química.

4. É de responsabilidade do usuário assegurar que os produtos sejam instalados em atendimento às Normas pertinentes para Instalações Elétricas em Atmosferas Explosivas e as recomendações do Fabricante.

Bureau Veritas Certification
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# Certificado de Conformidade
# BVC20.3862-X

5. As atividades de instalação, inspeção, manutenção, reparo, revisão e recuperação dos equipamentos são de responsabilidade dos usuários e devem ser executadas de acordo com os requisitos das normas técnicas vigentes e com as recomendações do fabricante.

6. O fabricante deve fornecer manual de instrução para instalação e uso seguro em Português

| HISTÓRICO DE REVISÕES | |
|---|---|
| **Data de emissão** | **Descrição** |
| 20/01/2021 | Emissão Inicial. |

Bureau Veritas Certification
Av. Alfredo Egídio de Souza Aranha, 100, Torre C, 3º andar, Centro Administrativo Santo Amaro
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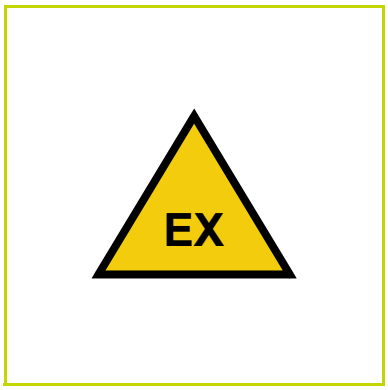
EX CERTIFICATE – INMETRO

vibro-meter®

# INMETRO BVC20.3863-X
# for
# CA134 piezoelectric accelerometer




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference INMETRO BVC20.3863-X
Edition 1 – January 2021

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www.meggitt.com

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BUREAU VERITAS Certification

# Certificate of Conformity

**AWARDED TO APPLICANT**

**MEGGITT SA**
ROUTE DE MONCOR 4
1752 VILLARS-SUR-GLÂNE – **SWITZERLAND**

**MANUFACTURER: MEGGITT SA**
ROUTE DE MONCOR 4
1752 VILLARS-SUR-GLÂNE – **SWITZERLAND**

**Bureau Veritas Certification certifies that the Product in the scope of supply specified below has been evaluated and found to comply with the requirements of the reference documents.**

**Documents of Reference**

ORDINANCE N° 179 FROM INMETRO, ISSUED IN MAY 18TH 2010,
ABNT NBR IEC 60079-0:2013 and ABNT NBR IEC 60079-15:2012.
CERTIFICATE ISSUED BASED ON THE MANUFACTURER EVALUATION OF QUALITY MANAGEMENT SYSTEM AND PRODUCT TESTS MODEL

**Scope of Supply**

ACCELEROMETER
TYPE: PNR 144-134-000-XXX
MARKING: Ex nA IIC T* or 510 °C Gc (*According to table 1)

Initial date of this Certificate: **JANUARY 20TH 2021.**
Certificate valid until: **JANUARY 19TH 2024.**

This Certificate of Conformity was issued according to the certification model 5 and is valid only accompanied by pages 1 to 5. The validity of this Certificate is linked to carrying out assessments maintenance and treatment of possible non-conformity in accordance with the Bureau Veritas Certification guidelines and in the specific Inmetro Ordinances (RAC).
To check the updated condition of regularity of this Certificate must be obtained from the product database and Certificate Services on Inmetro site.

Product Certification Contract: **20200003**

Certificate since: **JANUARY 20TH 2020.**

INMETRO Certificate Number: **BVC20.3863-X**

Vagner Valentino
Coordenador Técnico de Certificação de Produto

BUREAU VERITAS 2101201234001

Bureau Veritas Certification
Av. Alfredo Egídio de Souza Aranha, 100, Torre C, 3º andar, Centro Administrativo Santo Amaro
Cep: 04726-170, Chácara Santo Antônio, São Paulo, SP, Brasil
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BUREAU VERITAS Certification

# Certificate of Conformity

# BVC20.3863-X

**SPECIFICATION:**
This equipment is composed of an electromechanical transducer which delivers to an electrical load, connected to its terminal, a signal related to the measurement performed.

**ELECTRICAL CHARACTERISTICS:**
U ≤ 28V, I ≤ 100mA, P ≤ 0,7W

1 – Table - Temperature Class x Ambient Temperature

| Temperature Classification | Ambient Operating Temperature Range |
|---|---|
| T6 | -200 °C ≤ *Ta* ≤ +80 °C |
| T5 | -200 °C ≤ *Ta* ≤ +95 °C |
| T4 | -200 °C ≤ *Ta* ≤ +130 °C |
| T3 | -200 °C ≤ *Ta* ≤ +195 °C |
| T2 | -200 °C ≤ *Ta* ≤ +290 °C |
| T1 | -200 °C ≤ *Ta* ≤ +440 °C |
| 510 °C | -200 °C ≤ *Ta* ≤ +500 °C |

**TECHNICAL DOCUMENTATION:**

- Certificate of Conformity n° IECEX LCIE 10.0017X of 2011/12/23;
- Test Report LCIE n° FR/LCI/ExTR10.0019/00 of 2009/10/10;
- Test Report LCIE n° FR/LCI/ExTR10.0019/01 of 2010/10/25;
- Technical File n° 94576-589014 of 2010/07/26;
- Analysis Report (RA) n° 003/2020 of 2020/10/09;
- Factory Inspection performed in: 2020/11/18;
- Manual in Portuguese.

BUREAU VERITAS 2101201234002

Bureau Veritas Certification
Av. Alfredo Egídio de Souza Aranha, 100, Torre C, 3º andar, Centro Administrativo Santo Amaro
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Tel.: + 55 11 2655 9000 - www.bureauveritascertification.com.br

BUREAU VERITAS Certification

# Certificate of Conformity
# BVC20.3863-X

| Drawing | Description | Revision | Date |
|---|---|---|---|
| PZ5878 | Schematic CA134 With MI and MTLN-205-A Cable | 0 | 19/02/1993 |
| PZ3582 | Transducer CA134 | 0 | 27/11/1992 |
| PZ3583 | Transducer CA134 With Soft Line Integral Cable | 0 | 27/11/1992 |
| PZ3584 | Transducer CA134 With Hard Line Integral Cable an Connector | 0 | 27/11/1992 |
| PZ3585 | Transducer CA134 | 0 | 27/11/1992 |
| 144-134-000 D 203 | Accelerometer Type CA 134 | 3 | 21/09/2016 |
| 144-134-000 D 612 | Accelerometer Type CA 134 | 4 | 01/07/2020 |

**OBSERVATIONS:**

1. The letter "X" after the Certificate number means the following special conditions for safe use:
   Operating ambient temperature: -200 °C to +500 °C
   Temperature classification in function of the operating temperature:
   T6 at Tamb. +80 °C; T5 at Tamb. +95 °C
   T4 at Tamb. +130 °C; T3 at Tamb. +195 °C
   T2 at Tamb. +290 °C; T1 at Tamb. +440 °C
   T510 °C at Tamb. +500 °C

2. This Certificate is valid only for products with the same model and type as the tested prototype. Any modification in the project, as well as the use of components apart from those defined by the technical documentation, without previous authorization from Bureau Veritas Certification, will invalid this Certificate.

3. The Accelerometer shall be marked on the external surface and in a visible place, the conformity mark and the technical characteristics according to the specifications from standards ABNT NBR IEC 60079-0 / ABNT NBR IEC 60079-15 and the conformity assessment requiremnts, attached to INMETRO Ordince n° 179, published in May 18th 2010. This marking must be readable and durable, taking into consideration possible chemical corrosion.

BUREAU VERITAS 2101201234003

Bureau Veritas Certification
Av. Alfredo Egídio de Souza Aranha, 100, Torre C, 3º andar, Centro Administrativo Santo Amaro
Cep: 04726-170, Chácara Santo Antônio, São Paulo, SP, Brasil
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OCP 0018

BUREAU VERITAS Certification

# Certificate of Conformity
# BVC20.3863-X

4. The equipment must be installed in compliance with the relevant standards in electrical installations in explosive atmospheres and the manufacturer's recommendations.

5. The activities of installation, inspection, maintenance, repair, overhaul and recovery of equipment are the responsibility of users and must be implemented in accordance with the requirements of current technical standards and the manufacturer's recommendations.

6. The Manufacturer shall provide manual of installation and safe use written in Portuguese.

| REVISIONS HISTORY | |
|---|---|
| **DATE OF ISSUE** | **DESCRIPTION** |
| 2021/01/20 | Initial Issue |

BUREAU VERITAS 2101201234004

Bureau Veritas Certification
Av. Alfredo Egídio de Souza Aranha, 100, Torre C, 3º andar, Centro Administrativo Santo Amaro
Cep: 04726-170, Chácara Santo Antônio, São Paulo, SP, Brasil
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OCP 0018



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BUREAU VERITAS Certification

# Certificado de Conformidade

**CONFERIDO AO SOLICITANTE**

**MEGGITT SA**
ROUTE DE MONCOR 4
1752 VILLARS-SUR-GLÂNE – **SUIÇA**

**FABRICANTE: MEGGITT SA**
ROUTE DE MONCOR 4
1752 VILLARS-SUR-GLÂNE – **SUIÇA**

**O Bureau Veritas Certification certifica que o Produto constante no item escopo de fornecimento abaixo especificado, foi avaliado e encontrado em conformidade com os requisitos dos documentos de referência.**

**Documento de Referência**

PORTARIA INMETRO N° 179 de 18/05/2010, ABNT NBR IEC 60079-0:2013 e ABNT NBR IEC 60079-15:2012.

A CERTIFICAÇÃO PARA ESTE PRODUTO É O MODELO COM AVALIAÇÃO DO SISTEMA DE GESTÃO DA QUALIDADE DO PROCESSO DE PRODUÇÃO DO PRODUTO E ENSAIOS NO PRODUTO.

**Escopo de fornecimento**

ACELEROMETRO
MODELO: PNR 144-134-000-XXX
MARCAÇÃO: Ex nA IIC T* ou 510 °C Gc (*Conforme tabela 1)

Data de Início da certificação: **20 DE JANEIRO DE 2021.**

Data da validade da certificação: **19 DE JANEIRO DE 2024.**

Este Certificado de Conformidade foi emitido segundo modelo de certificação 5 e é válido somente acompanhado das páginas de 1 a 4. A validade deste Certificado de Conformidade está atrelada à realização das avaliações de manutenção e tratamento de possíveis não conformidades de acordo com as orientações do Bureau Veritas Certification e previstas no RAC específico.

Para verificação da condição atualizada de regularidade deste Certificado de Conformidade deve ser consultado o banco de dados de produtos e serviços certificados do Inmetro.

Número do contrato: **20200003**

Certificado desde: **20 DE JANEIRO DE 2021.**

Número do Certificado INMETRO: **BVC20.3863-X**

Vagner Valentino
Coordenador Técnico de Certificação de Produto

BUREAU VERITAS 2101201236001

Bureau Veritas Certification
Av. Alfredo Egídio de Souza Aranha, 100, Torre C, 3º andar, Centro Administrativo Santo Amaro
Cep: 04726-170, Chácara Santo Antônio, São Paulo, SP, Brasil
Tel.: + 55 11 2655 9000 - www.bureauveritascertification.com.br

Certificação de Produtos OCP 0018



BUREAU VERITAS Certification

# Certificado de Conformidade
# BVC20.3863-X

**ESPECIFICAÇÕES:**

Este acelerômetro é composto por um transdutor eletromecânico que entrega uma carga elétrica, conectada ao seu terminal, um sinal relacionado à medição realizada

**CARACTERISTICAS ELÉTRICAS**

U ≤ 28V, I ≤ 100mA, P ≤ 0,7W

**Tabela 1 – Classe de Temperatura x Temperatura Ambiente**

| Classe de Temperatura | Faixa de Temperatura Ambiente de Operação |
|---|---|
| T6 | -200 °C ≤ *Ta* ≤ +80 °C |
| T5 | -200 °C ≤ *Ta* ≤ +95 °C |
| T4 | -200 °C ≤ *Ta* ≤ +130 °C |
| T3 | -200 °C ≤ *Ta* ≤ +195 °C |
| T2 | -200 °C ≤ *Ta* ≤ +290 °C |
| T1 | -200 °C ≤ *Ta* ≤ +440 °C |
| 510 °C | -200 °C ≤ *Ta* ≤ +500 °C |

**DOCUMENTAÇÃO TÉCNICA:**

- Certificado de Conformidade nº IECEX LCIE 10.0017X de 23/12/2011;
- Relatório de Ensaio LCIE n° FR/LCI/ExTR10.0019/00 de 10/10/2009;
- Relatório de Ensaio LCIE n° FR/LCI/ExTR10.0019/01 de 25/10/2010;
- Technical File n° 94576-589014 de 26/07/2010;
- Relatório de Análise (RA) n° 003/2020 de 09/10/2020;
- Data da auditoria no fabricante: 18/11/2020;
- Manual em Português.

BUREAU VERITAS 2101201236002

Bureau Veritas Certification
Av. Alfredo Egídio de Souza Aranha, 100, Torre C, 3º andar, Centro Administrativo Santo Amaro
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Certificação de Produtos OCP 0018

Original copy (Brazilian Portugese)

# Certificado de Conformidade
# BVC20.3863-X

| Desenho | Descrição | Revisão | Data |
|---|---|---|---|
| PZ5878 | Schematic CA134 With MI and MTLN-205-A Cable | 0 | 19/02/1993 |
| PZ3582 | Transducer CA134 | 0 | 27/11/1992 |
| PZ3583 | Transducer CA134 With Soft Line Integral Cable | 0 | 27/11/1992 |
| PZ3584 | Transducer CA134 With Hard Line Integral Cable an Connector | 0 | 27/11/1992 |
| PZ3585 | Transducer CA134 | 0 | 27/11/1992 |
| 144-134-000 D 203 | Accelerometer Type CA 134 | 3 | 21/09/2016 |
| 144-134-000 D 612 | Accelerometer Type CA 134 | 4 | 01/07/2020 |

**OBSERVAÇÕES:**

1. A letra "X" após o número do certificado, denota a seguinte condições de uso seguro:
   Temperatura ambiente operacional: -200 °C a +500 °C.
   Classificação da temperatura em função da temperatura operacional:
   T6 em Tamb. +80 °C; T5 em Tamb. +95 °C
   T4 em Tamb. +130 °C; T3 em Tamb. +195 °C
   T2 em Tamb. +290 °C; T1 em Tamb. +440 °C
   T510 °C em Tamb. +500 °C

2. Este Certificado de Conformidade é válido para os produtos de modelo e tipo idêntico ao protótipo ensaiado. Qualquer modificação de projeto ou utilização de componentes e materiais diferentes daqueles descritos na documentação deste processo, sem autorização prévia do Bureau Veritas Certification, invalidará o certificado.

3. Os acelerometros devem ter, gravado na sua superfície externa e em local visível, a Marca de Conformidade e as características técnicas da mesma de acordo com as especificações da Norma ABNT NBR IEC 60079-0 / ABNT NBR IEC 60079-15 e Requisitos de Avalização da Conformidade, anexo à Portaria 179 do INMETRO, publicada em 18 de Maio de 2010. Esta marcação deve ser legível e durável, levando-se em conta possivel corrosão química.

Bureau Veritas Certification
Av. Alfredo Egídio de Souza Aranha, 100, Torre C, 3º andar, Centro Administrativo Santo Amaro
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Tel.: + 55 11 2655 9000 - www.bureauveritascertification.com.br



4. É de responsabilidade do usuário assegurar que os produtos sejam instalados em atendimento às Normas pertinentes para Instalações Elétricas em Atmosferas Explosivas e as recomendações do Fabricante.

5. As atividades de instalação, inspeção, manutenção, reparo, revisão e recuperação dos equipamentos são de responsabilidade dos usuários e devem ser executadas de acordo com os requisitos das normas técnicas vigentes e com as recomendações do fabricante.

6. O fabricante deve fornecer manual de instrução para instalação e uso seguro em Português

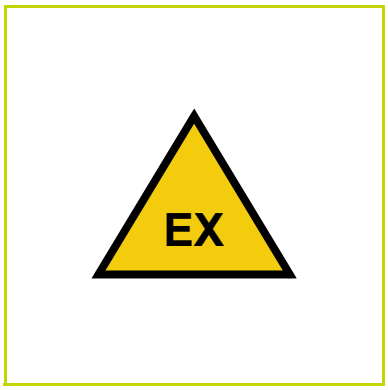
| HISTÓRICO DE REVISÕES | |
|---|---|
| **Data de emissão** | **Descrição** |
| 20/01/2021 | Emissão Inicial. |

Bureau Veritas Certification
Av. Alfredo Egídio de Souza Aranha, 100, Torre C, 3º andar, Centro Administrativo Santo Amaro
Cep: 04726-170, Chácara Santo Antônio, São Paulo, SP, Brasil
Tel.: + 55 11 2655 9000 - www.bureauveritascertification.com.br

EX CERTIFICATE – INMETRO

vibro-meter®

# INMETRO BVC20.3861-X
# for
# IPC707 signal conditioner




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference INMETRO BVC20.3861-X
Edition 1 – January 2021

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BUREAU VERITAS Certification

# Certificate of Conformity

**AWARDED TO APPLICANT**

**MEGGITT SA**
ROUTE DE MONCOR 4
1752 VILLARS-SUR-GLÂNE – **SWITZERLAND**

**MANUFACTURER: MEGGITT SA**
ROUTE DE MONCOR 4
1752 VILLARS-SUR-GLÂNE – **SWITZERLAND**

**Bureau Veritas Certification certifies that the Product in the scope of supply specified below has been evaluated and found to comply with the requirements of the reference documents.**

**Documents of Reference**

ORDINANCE N° 179 FROM INMETRO, ISSUED IN MAY 18TH 2010,
ABNT NBR IEC 60079-0:2013, ABNT NBR IEC 60079-7:2018 and
ABNT NBR IEC 60079-11:2013.
CERTIFICATE ISSUED BASED ON THE MANUFACTURER EVALUATION OF QUALITY MANAGEMENT SYSTEM AND PRODUCT TESTS MODEL

**Scope of Supply**

SIGNAL CONDITIONER IPC 707
TYPE: 244-707-000-xxx-A_
MARKING: ACCORDING TO PAGE N° 04

Initial date of this Certificate: **JANUARY 20TH 2021.**
Certificate valid until: **JANUARY 19TH 2024.**

This Certificate of Conformity was issued according to the certification model 5 and is valid only accompanied by pages 1 to 5. The validity of this Certificate is linked to carrying out assessments maintenance and treatment of possible non-conformity in accordance with the Bureau Veritas Certification guidelines and in the specific Inmetro Ordinances (RAC).
To check the updated condition of regularity of this Certificate must be obtained from the product database and Certificate Services on Inmetro site.

Product Certification Contract: **20200003**

Certificate since: **JANUARY 20TH 2021.**

INMETRO Certificate Number: **BVC20.3861-X**

Vagner Valentino
Coordenador Técnico de Certificação de Produto

BUREAU VERITAS 2101201205001

**Bureau Veritas Certification**
Av. Alfredo Egídio de Souza Aranha, 100, Torre C, 3º andar, Centro Administrativo Santo Amaro
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OCP 0018

BUREAU VERITAS Certification

# Certificate of Conformity

# BVC20.3861-X

**SPECIFICATION:**
IPC 707 Signal conditioner is an analogue electronic conditioner which converts the electrical charges coming from a piezoelectric sensor (sensor side) into an analogue voltage or current signal (signal side).
The electronic circuitry of the IPC 707 signal conditioner is totally potted and incorporated into an aluminium enclosure. IPC 707 Signal Conditioner is equipped with terminals (sensor side and signal side) and with an optional clip for DIN rail.

Signal side ouput configurations could be as following:
Voltage output: 3-wires transmission mode,
Current output: 2-wires transmission mode.

**ELECTRICAL CHARACTERISTICS:**
**Ex ia protection mode:**
Type: 244-707-000-012-A2

| Terminal | Intrinsic safety electrical parameters | |
|---|---|---|
| J0 (SUP, COM) | *Ui*: 28V, *Ii*: 100 mA, *Pi*: 700 mW | *Ci*: 2,2 nF, *Li*: 1 µH |
| J0 (OUT, COM) | | *Ci*: 9,6 nF, *Li*: 565 µH |
| J1 (IN+, COM) (IN-, COM) | *Uo*: 6,6V, *Io*: 66 mA, *Po*: 107 mW, *Co*: 5,69 µF, *Lo*: 3,435 mH | |

**Ex ec protection mode:**
Type: 244-707-000-012-A3

Umax: 30V;
Imax: 20 mA.

1 – Table - Temperature Class x Ambient Temperature

| Temperature Classification | Ambient Operating Temperature Range |
|---|---|
| T6 | -40 °C ≤ *Ta* ≤ +70 °C |
| T5 | -40 °C ≤ *Ta* ≤ +80 °C |
| T4 | -40 °C ≤ *Ta* ≤ +85 °C |

BUREAU VERITAS 2101201205002

**Bureau Veritas Certification**
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# Certificate of Conformity
# BVC20.3861-X

**TECHNICAL DOCUMENTATION:**

- Certificate of Conformity IECEX LCIE 18.0023X of 2018/08/30;
- Test Report LCIE n° FR/LCIE/ExTR18.0047/00 of 2018/07/27;
- Test Report LCIE n° FR/LCIE/ExTR18.0048/00 of 2018/08/16;
- Technical File n° 140555-682759 of 2018/07/19
- Technical File n° 140555-682748 of 2018/07/19
- Analysis Report (RA) n° 001/2020 of 2020/10/09;
- Factory Inspection performed in: 2020/11/18;
- Manual in Portuguese.

| Drawing | Description | Revision | Date |
|---|---|---|---|
| PZ 8643 | Wiring Diagram for Protection Mode ia | 0 | 13/01/2016 |
| PZ 8644 | Assy Drawing ia | 0 | 10/01/2018 |
| PZ8645 | Oscillator / Charge Amp / HP Filter | 0 | 10/01/2018 |
| PZ8645 | Integrator / LP Filter / Amplifier | 0 | 10/01/2018 |
| PZ8645 | Output Buffer / Power Supply | 0 | 10/01/2018 |
| PZ8645 | C2 C3 Cx Demod And Test | 0 | 10/01/2018 |
| PZ 8646 | Critical Components Part List | 0 | 10/01/2018 |
| PZ8647 | Copper Layer | 0 | 10/01/2018 |
| PZ 8649 | Assy Drawing ec | 0 | 10/01/2018 |
| PZ 8650 | Wiring Diagram ec | 0 | 10/01/2018 |
| 244-707-000 V 012 | SIGNAL CONDITIONER IPC707 | 5 | 01/07/2020 |



Certificate of Conformity
BVC20.3861-X

**MARKING:**
**Ex ia IIC T* Ga (* According to table 1)**
**-40 °C ≤ *Ta* ≤ +85 °C**
**Ui: **, Ii: **, Pi: **, Ci: **, Li: ****
**Uo: **, Io: **, Po: **, Co: **, Lo: ****
****completed by intrinsic safety electrical parameters of terminal concerned (see range details).**

**Ex ec IIC T* Gc (* According to table 1)**
**-40 °C ≤ *Ta* ≤ +85 °C**

**REDUCED MARKING:**
**Ex ia IIC T* Ga (* According to table 1)**

**Ex ec IIC T* Gc (* According to table 1)**

**OBSERVATIONS:**

1. The letter "X" after the Certificate number means the following special conditions for safe use:
   Ambient temperature range: -40 °C to +85 °C.
   The apparatus must be connected according to instruction manual.
   **a. Ex ia protection mode:**
   The intrinsic safety terminal blocks (IS boards) must be connected only to an intrinsically safe certified apparatus. These combinations shall comply with the requirements of the standard IEC 60079-25.
   The equipment contains more than 15% of of aluminum. It must be mounted in such a manner as to eliminate the risk of sparks caused by friction or impact.
   The grounding of the intrinsically safe circuits must be in accordance with requirements of clause 16.2.3 of IEC 60079-14 standard.
   **b. Ex ec protection mode:**
   For final installation, final end user shall take any precautions to install the apparatus into an IP54 enclosure and keep it connected in compliance with IEC 60079-14 requirements, providing and maintaining degree of protection at last IP54.
   The equipment shall only be used in an area of at least pollution degree 2, as defined in IEC 60664-1 standard.
   Transient protection shall be provided that is set at a level not exceeding 140% of the peak rated voltage value at the supply terminals to equipment.





Original copy (English)
MEGGITT

BUREAU VERITAS
Certification

# Certificate of Conformity

## BVC20.3861-X

2. This Certificate is valid only for products with the same model and type as the tested prototype. Any modification in the project, as well as the use of components apart from those defined by the technical documentation, without previous authorization from Bureau Veritas Certification, will invalid this Certificate.

3. The Signal Conditioner shall be marked on the external surface and in a visible place, the conformity mark and the technical characteristics according to the specifications from standards ABNT NBR IEC 60079-0 / ABNT NBR IEC 60079-7 / ABNT NBR IEC 60079-11 and the conformity assessment requirements, attached to INMETRO Ordince n° 179, published in May 18th 2010. This marking must be readable and durable, taking into consideration possible chemical corrosion.

4. The signal conditioner must have, fixed in a visible place and in a durable way, the following warning:

**"WARNING – DO NOT SEPARATE WHEN ENERGIZED"**
**"WARNING – SEPARATE ONLY IN A NON-HAZARDOUS AREA"**

5. The equipment must be installed in compliance with the relevant standards in electrical installations in explosive atmospheres and the manufacturer's recommendations

6. The activities of installation, inspection, maintenance, repair, overhaul and recovery of equipment are the responsibility of users and must be implemented in accordance with the requirements of current technical standards and the manufacturer's recommendations.

7. The Manufacturer shall provide manual of installation and safe use written in Portuguese.

| REVISIONS HISTORY | |
|---|---|
| DATE OF ISSUE | DESCRIPTION |
| 2021/01/20 | Initial Issue |

OCP 0018

Bureau Veritas Certification
Av. Alfredo Egídio de Souza Aranha, 100, Torre C, 3º andar, Centro Administrativo Santo Amaro
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BUREAU VERITAS
210120120500S

BUREAU VERITAS Certification

# Certificado de Conformidade

**CONFERIDO AO SOLICITANTE**

**MEGGITT SA**
ROUTE DE MONCOR 4
1752 VILLARS-SUR-GLÂNE – **SUIÇA**

**FABRICANTE: MEGGITT SA**
ROUTE DE MONCOR 4
1752 VILLARS-SUR-GLÂNE – **SUIÇA**

**O Bureau Veritas Certification certifica que o Produto constante no item escopo de fornecimento abaixo especificado, foi avaliado e encontrado em conformidade com os requisitos dos documentos de referência.**

**Documento de Referência**

PORTARIA INMETRO N° 179 de 18/05/2010, ABNT NBR IEC 60079-0:2013, ABNT NBR IEC 60079-7:2018 e ABNT NBR IEC 60079-11:2013.

A CERTIFICAÇÃO PARA ESTE PRODUTO É O MODELO COM AVALIAÇÃO DO SISTEMA DE GESTÃO DA QUALIDADE DO PROCESSO DE PRODUÇÃO DO PRODUTO E ENSAIOS NO PRODUTO.

**Escopo de fornecimento**

CONDICIONADOR DE SINAL IPC 707
MODELO: 244-707-000-xxx-A_
MARCAÇÃO: CONFORME PAG. N° 03

Data de Início da certificação: **20 DE JANEIRO DE 2021.**

Data da validade da certificação: **19 DE JANEIRO DE 2024.**

Este Certificado de Conformidade foi emitido segundo modelo de certificação 5 e é válido somente acompanhado das páginas de 1 a 5. A validade deste Certificado de Conformidade está atrelada à realização das avaliações de manutenção e tratamento de possíveis não conformidades de acordo com as orientações do Bureau Veritas Certification e previstas no RAC específico.

Para verificação da condição atualizada de regularidade deste Certificado de Conformidade deve ser consultado o banco de dados de produtos e serviços certificados do Inmetro.

Número do contrato: **20200003**

Certificado desde: **20 DE JANEIRO DE 2021.**

Número do Certificado INMETRO: **BVC20.3861-X**

Vagner Valentino
Coordenador Técnico de Certificação de Produto

BUREAU VERITAS 2101201209001

Certificação de Produtos OCP 0018

Bureau Veritas Certification
Av. Alfredo Egídio de Souza Aranha, 100, Torre C, 3° andar, Centro Administrativo Santo Amaro
Cep: 04726-170, Chácara Santo Antônio, São Paulo, SP, Brasil
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# Certificado de Conformidade
# BVC20.3861-X

**ESPECIFICAÇÕES:**

O condicionador de sinal IPC 707 é um condicionador eletrônico analógico que converte as cargas elétricas provenientes de um sensor piezelétrico (lado do sensor) em uma tensão analógica ou sinal de corrente (lado do sinal).
O circuito eletrônico do condicionador de sinal IPC 707 é totalmente encapsulado e incorporado em um invólucro de alumínio. O condicionador de sinais IPC 707 é equipado com terminais (lado do sensor e lado do sinal) e com um clipe opcional para trilho DIN.

As configurações de saída do lado do sinal podem ser as seguintes:
Saída de tensão: modo de transmissão de 3 fios;
Saída de corrente: modo de transmissão de 2 fios.

**CARACTERISTICAS ELÉTRICAS**

**Tipo de proteção Ex ia:**
Modelo: 244-707-000-012-A2

| Terminal | Parâmetros elétricos de segurança intrínseca | |
|---|---|---|
| J0 (SUP, COM) | *Ui*: 28V, *Ii*: 100 mA, *Pi*: 700 mW | *Ci*: 2,2 nF, *Li*: 1 µH |
| J0 (OUT, COM) | | *Ci*: 9,6 nF, *Li*: 565 µH |
| J1 (IN+, COM) (IN-, COM) | *Uo*: 6,6V, *Io*: 66 mA, *Po*: 107 mW, *Co*: 5,69 µF, *Lo*: 3,435 mH | |

**Tipo de proteção Ex ec:**
Modelo: 244-707-000-012-A3

Umax: 30V;
Imax: 20 mA

**Tabela 1 – Classe de Temperatura x Temperatura Ambiente**

| Classe de Temperatura | Faixa de Temperatura Ambiente de Operação |
|---|---|
| T6 | -40 °C ≤ *Ta* ≤ +70 °C |
| T5 | -40 °C ≤ *Ta* ≤ +80 °C |
| T4 | -40 °C ≤ *Ta* ≤ +85 °C |

BUREAU VERITAS 2101201209002

Certificação de Produtos OCP 0018

Bureau Veritas Certification
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# Certificado de Conformidade
# BVC20.3861-X

**DOCUMENTAÇÃO TÉCNICA:**

- Certificado de Conformidade IECEX LCIE 18.0023X de 30/08/2018;
- Relatório de Ensaio LCIE n° FR/LCIE/ExTR18.0047/00 de 27/07/2018;
- Relatório de Ensaio LCIE n° FR/LCIE/ExTR18.0048/00 de 16/08/2018;
- Technical File n° 140555-682759 de 19/07/2018;
- Technical File n° 140555-682748 de 19/07/2018;
- Relatório de Análise (RA) n° 001/2020 de 09/10/2020;
- Data da auditoria no fabricante: 18/11/2020;
- Manual em Português.

| Desenho | Descrição | Revisão | Data |
|---|---|---|---|
| PZ 8643 | Wiring Diagram for Protection Mode ia | 0 | 13/01/2016 |
| PZ 8644 | Assy Drawing ia | 0 | 10/01/2018 |
| PZ8645 | Oscillator / Charge Amp / HP Filter | 0 | 10/01/2018 |
| PZ8645 | Integrator / LP Filter / Amplifier | 0 | 10/01/2018 |
| PZ8645 | Output Buffer / Power Supply | 0 | 10/01/2018 |
| PZ8645 | C2 C3 Cx Demod And Test | 0 | 10/01/2018 |
| PZ 8646 | Critical Components Part List | 0 | 10/01/2018 |
| PZ8647 | Copper Layer | 0 | 10/01/2018 |
| PZ 8649 | Assy Drawing ec | 0 | 10/01/2018 |
| PZ 8650 | Wiring Diagram ec | 0 | 10/01/2018 |
| 244-707-000 V 012 | SIGNAL CONDITIONER IPC707 | 5 | 01/07/2020 |

**MARCAÇÃO**
**Ex ia IIC T* Ga (* Conforme tabela 1)**
**-40 °C ≤ *Ta* ≤ +85 °C**
**Ui: **, Ii: **, Pi: **, Ci: **, Li: ****
**Uo: **, Io: **, Po: **, Co: **, Lo: ****
** Conforme parâmetros elétricos de segurança intrínseca do terminal em questão (ver tabela).

**Ex ec IIC T* Gc (* Conforme tabela 1)**
**-40 °C ≤ *Ta* ≤ +85 °C**

**MARCAÇÃO REDUZIDA:**
**Ex ia IIC T* Ga (* Conforme tabela 1)**

**Ex ec IIC T* Gc (* Conforme tabela 1)**

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# Certificado de Conformidade
# BVC20.3861-X

**OBSERVAÇÕES:**

1. A letra "X" após o número do certificado, denota a seguinte condições de uso seguro:
   Faixa de temperatura ambiente: -40 °C a +85 °C.
   O equipamento deve ser conectado de acordo com o manual de instruções.
   **Tipo de proteção Ex ia:**
   Os blocos de terminais de segurança intrínseca (placas IS) devem ser conectados apenas a um equipamento intrinsecamente seguro certificado. Essas combinações devem atender aos requisitos da norma IEC 60079-25.
   O equipamento contém mais de 15% de alumínio. Deve ser montado de forma a eliminar o risco de centelhas causadas por atrito ou impacto.
   **Tipo de proteção Ex ec:**
   Para a instalação final, o usuário final deve tomar todas as precauções para instalar o equipamento em um invólucro IP54 e mantê-lo conectado em conformidade com os requisitos da norma IEC 60079-14, fornecendo e mantendo o grau de proteção IP54.
   O equipamento deve ser utilizado apenas em uma área de pelo menos grau de poluição 2, conforme definido na norma IEC 60664-1.
   A proteção contra transientes deve ser fornecida e definida em um nível não superior a 140% do valor de tensão nominal de pico nos terminais de alimentação do equipamento.
   O aterramento dos circuitos intrinsecamente seguros deve estar de acordo com os requisitos 16.2.3 da norma IEC 60079-14.

2. Este Certificado de Conformidade é válido para os produtos de modelo e tipo idêntico ao protótipo ensaiado. Qualquer modificação de projeto ou utilização de componentes e materiais diferentes daqueles descritos na documentação deste processo, sem autorização prévia do Bureau Veritas Certification, invalidará o certificado.

3. Os condicionadores de sinal devem ter, gravado na sua superfície externa e em local visível, a Marca de Conformidade e as características técnicas da mesma de acordo com as especificações da Norma ABNT NBR IEC 60079-0 / ABNT NBR IEC 60079-7 / ABNT NBR IEC 60079-11 e Requisitos de Avalização da Conformidade, anexo à Portaria 179 do INMETRO, publicada em 18 de Maio de 2010. Esta marcação deve ser legível e durável, levando-se em conta possivel corrosão química.

Bureau Veritas Certification
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# Certificado de Conformidade
# BVC20.3861-X

4. Os condicionadores de sinal devem ter, afixada em lugar visível e de modo indelével , as seguintes advertências:

**"ATENÇÃO – NÃO DESCONECTE QUANDO ENERGIZADO"**

**"ATENÇÃO – SEPARE SOMENTE EM ÁREA NÃO CLASSIFICADA"**

5. É de responsabilidade do usuário assegurar que os produtos sejam instalados em atendimento às Normas pertinentes para Instalações Elétricas em Atmosferas Explosivas e as recomendações do Fabricante.

6. As atividades de instalação, inspeção, manutenção, reparo, revisão e recuperação dos equipamentos são de responsabilidade dos usuários e devem ser executadas de acordo com os requisitos das normas técnicas vigentes e com as recomendações do fabricante.

7. O fabricante deve fornecer manual de instrução para instalação e uso seguro em Português

| HISTÓRICO DE REVISÕES | |
|---|---|
| **Data de emissão** | **Descrição** |
| 20/01/2021 | Emissão Inicial. |

BUREAU VERITAS 2101201209005

Bureau Veritas Certification
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Certificação de Produtos OCP 0018

# APPENDIX J: CNEx / CCC Ex CERTIFICATIONS

**Table J-1:** Related CNEx / CCC Ex certificates

| Product(s) covered | Certificate number |
|---|---|
| CA134 | CNEx 22.2014X |
| IPC707 | CCC Ex 2022312310000425 |

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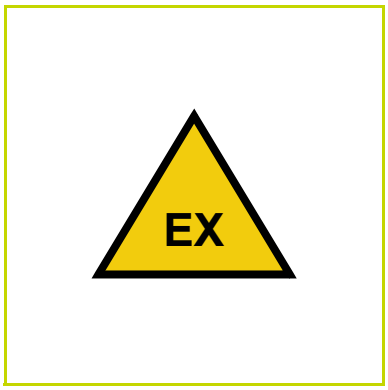
EX CERTIFICATE – CNEx

vibro-meter®

# CNEx 22.2014X
# for
# CA134 piezoelectric accelerometer




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference CNEx 22.2014X
Edition 1 – June 2022

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www.meggitt.com

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编号：CNEx22.2014X

CNEX 国家防爆

# 防爆合格证

| | |
|---|---|
| 制造单位 | Meggitt SA<br>Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland |
| 产品名称 | 加速计 |
| 型号规格 | 144-134-000-XXX |
| 防爆标志 | Ex ia IIC T6~T510℃ Ga |
| 产品标准 | -- |
| 总装图号 | PZ 6920, PZ 7653 |

经对上述产品图样及技术文件的审查和样品检验,确认符合下列标准：
GB3836.1-2010《爆炸性环境　第 1 部分：设备　通用要求》
GB3836.4-2010《爆炸性环境　第 4 部分：由本质安全型"i"保护的设备》

记事:见附页（共 1 页）。

中心主任

颁发日期　2022 年 04 月 08 日

本证有效期　2022 年 04 月 08 日至 2027 年 04 月 07 日

南阳防爆电气研究所
国家防爆电气产品质量检验检测中心

公众号

注：本证书仅对与认可文件和样品一致的产品有效。登录网站或关注公众号查询真伪　4886 7830 8963 9442
地址：中国河南省南阳市仲景北路20号
邮编：473008　电话：0377-63258564 传真：0377-63208175 网址：www.china-ex.com

编号：CNEx22.2014X

CNEX 国家防爆

# 防爆合格证 （附页）

共 1 页 第 1 页

1. 本产品已取得 IECEx 认证，证书编号：IECEx LCI 06.0008X，版本 3，颁发日期：2013-10-25。
2. 本安参数：
   传感器：Ci ≤ 1.2nF, Li ≈ 0
   电缆：Ci ≤ 250pF/m, Li ≈ 0
3. 安全使用条件：
   - 连接到本传感器的本安设备参数应满足以下要求:
     线性：Ui≤28V, Ii≤100mA, Pi≤0.7W;
     非线性：Ui≤28V, Ii≤25mA, Pi≤0.7W
   - 使用环境温度：-200℃< Ta < +500℃
   - 温度组别：T6 : Tamb < 80℃, T5 : Tamb < 95℃, T4 : Tamb < 130℃, T3 : Tamb < 195℃, T2 : Tamb < 290℃, T1 : Tamb < 440℃, 510℃ : Tamb < 500℃。
   - 本产品只能连接到已取得防爆合格证的[ia]或[ib]设备，考虑到连接电缆的长度，组合后本安参数应相互匹配。

中心主任

颁发日期　2022 年 04 月 08 日

本证有效期　2022 年 04 月 08 日至 2027 年 04 月 07 日

南阳防爆电气研究所
国家防爆电气产品质量检验检测中心

公众号

注：本证书仅对与认可文件和样品一致的产品有效。登录网站或关注公众号查询真伪
地址：中国河南省南阳市仲景北路20号
邮编：473008　电话：0377-63258564 传真：0377-63208175 网址：www.china-ex.com

Certificate number: CNEx22.2014X

# 防爆合格证

## Electrical Apparatus for Explosive Atmospheres

# CERTIFICATE OF CONFORMITY

| | |
|---|---|
| **Manufacturer** | Meggitt SA<br>Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland |
| **Product** | Accelerometer |
| **Type** | 144-134-000-XXX |
| **Marking** | Ex ia IIC T6~T510℃ Ga |
| **Standard(s)** | -- |
| **Drawing No.** | PZ 6920, PZ 7653 |

The drawings, technical documents and the samples are verified and certified according to standard(s) for safety as below:

| | |
|---|---|
| GB 3836.1-2010 | Explosive atmospheres - Part 1: Equipment - General requirements |
| GB 3836.4-2010 | Explosive atmospheres - Part 4: Equipment protection by intrinsic safety "i" |

Note:

See Annex (1 page in total).

**Director**

**Date:** 2022-04-08

**Valid until:** 2027-04-07

南阳防爆电气研究所
NANYANG EXPLOSION PROTECTED ELECTRICAL APPARATUS RESEARCH INSTITUTE
国家防爆电气产品质量检验检测中心
CHINA NATIONAL QUALITY SURVEY AND TEST CENTER FOR EXPLOSION PROTECTED ELECTRICAL PRODUCTS
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Tel:0377-63208864 Fax:0377 63208175 http://www.china-ex.com

注：本证书仅对与认可文件和样品一致的产品有效。 登录网站或关注公众号查询真伪 1577 0746 0059 4196

Note:This certificate is only valid for products which are identical with the sample(s) tested and verified.Holder of this certificate has the responsibility to ensure the products comply with relevant standards.

Certificate number: CNEx22.2014X

# 防爆合格证 （附页）

## Electrical Apparatus for Explosive Atmospheres

# CERTIFICATE OF CONFORMITY

Page 1 of 1

1. This product has been IECEx certified, certificate No. IECEx LCI 06.0008X, issue 3, dated on 2013-10-25.
2. SPECIFIC PARAMETERS OF THE MODE OF PROTECTION "ia" :
   Sensor : Ci ≤ 1.2nF, Li ≈ 0
   Cable : Ci ≤ 250pF/m, Li ≈ 0
3. Specific conditions of safety use:

- Electrical parameters of any IS certified equipment connected to the sensor shall not exceed the following values:
  Linear source : Ui ≤ 28V,Ii≤ 100mA,Pi≤ 0.7W;
  Non linear source : Ui≤ 28V,Ii≤ 25mA,Pi≤ 0.7W
- Ambient temperature range: -200℃< Ta < +500℃
- Temperature classification : T6 : Tamb < 80℃, T5 : Tamb < 95℃, T4 : Tamb < 130℃, T3 : Tamb < 195℃, T2 : Tamb < 290℃, T1 : Tamb < 440℃, 510℃ : Tamb < 500℃.
- The materiel shall only be connected to a certified [ia] or [ib] apparatus and this combination, taking account to the length of joining cable, shall be compatible as regards intrinsic safety.

**Director**

**Date:** 2022-04-08

**Valid until:** 2027-04-07

南阳防爆电气研究所
NANYANG EXPLOSION PROTECTED ELECTRICAL APPARATUS RESEARCH INSTITUTE
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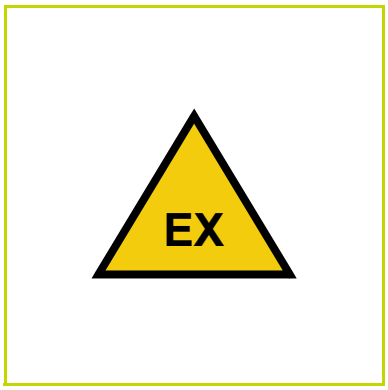
Note:This certificate is only valid for products which are identical with the sample(s) tested and verified.Holder of this certificate has the responsibility to ensure the products comply with relevant standards.

EX CERTIFICATE – CCC Ex

vibro-meter®

# CCC Ex 2022312310000425
# for
# IPC707 signal conditioner




Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference CCC Ex 2022312310000425
Edition 2 – December 2022

Meggitt SA, Route de Moncor 4, Case postale, 1701 Fribourg, Switzerland

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energy@ch.meggitt.com
www.meggittsensing.com/energy
www.meggitt.com

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# 中国国家强制性产品认证证书

编　号：2022312310000425

| | |
|---|---|
| 委　托　人 | Meggitt SA |
| 地　　址 | Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland |
| 生　产　者 | Meggitt SA |
| 地　　址 | Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland |
| 生产企业 | Meggitt SA |
| 生产地址 | Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland |
| 产品名称 | 信号调节器 |
| 型号规格 | 244-707-000-012-A*-B*-C*****-D*-E**-F*****-G* |
| 防爆标志 | Ex ia IIC T6/T5/T4 Ga, Ex ec IIC T6/T5/T4 Gc |
| 依据标准 | GB/T3836.1-2021, GB/T3836.3-2021, GB/T3836.4-2021 |
| 认证模式 | 型式试验+初始工厂检查+获证后监督 |

**上述产品符合 CNCA-C23-01: 2019《强制性产品认证实施规则　防爆电气》和 CNEX-C2301-2019《强制性产品认证实施细则　防爆电气》的要求。**

产品相关信息见附页（共 4 页）。

首次发证日期：2022 年 01 月 22 日

颁发日期：2022 年 10 月 25 日　　有效期至：2027 年 01 月 21 日

**证书有效期内本证书的有效性依据发证机构的定期监督获得保持。**

主任：

南阳防爆电气研究所有限公司

网址：www.ccc-cnex.com　ccc.china-ex.com　地址：中国河南省南阳市仲景北路20号　电话：0377-63239734　邮政编码：473008　邮箱：ccc@cn-ex.com

CN 0020333

# 中国国家强制性产品认证证书（附页）

编　号：2022312310000425



**产品相关信息：**

1、本证书覆盖产品如下：

- 244-707-000-012-A*-B*-C*****-D*-E**-F*****-G*

| 244-707-000-012 | - | A | * | - | B | * | - | C | ***** | - | D | * | - | E | ** | - | F | ***** | - | G | * |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1) | | | 2) | | | 3) | | | 4) | | | 5) | | | 6) | | | 7) |

1) 环境

| | |
|---|---|
| 2 | 防爆型式 Ex i |
| 3 | 防爆型式 Ex ec |

2) 诊断功能

| | |
|---|---|
| 1 | 无诊断功能 |
| 2 | 具有诊断功能（SIL） |

3) 传输灵敏度

| | |
|---|---|
| 0.1 | 无积分器 |
| 0.2 | |
| 0.5 | |
| 1 | |
| 2 | |
| 5 | |
| 10 | |
| 20 | |
| 50 | |

颁发日期：2022 年 10 月 25 日

主任：

南阳防爆电气研究所有限公司

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# 中国国家强制性产品认证证书
## （附页）

编　号：2022312310000425



| | |
|---|---|
| 981 | 有积分器 |
| 1962 | |
| 4905 | |
| 9810 | |
| 19620 | |
| 49050 | |
| 98100 | |

4) 传输单元

| | | |
|---|---|---|
| 1 | μA/pC | 无积分器 |
| 2 | mV/pC | |
| 3 | μA/pCs | 有积分器 |
| 4 | mV/pCs | |

5) 高通滤波器

| | |
|---|---|
| 0.5 | 以 Hz 为单位的值 |
| 1 | |
| 2 | |
| 5 | |
| 10 | |
| 20 | |

6) 低通滤波器

| | |
|---|---|
| 500 | 以 Hz 为单位的值 |
| 1000 | |
| 2000 | |
| 5000 | |
| 10000 | |
| 20000 | |

颁发日期：2022 年 10 月 25 日　　主任：

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# 中国国家强制性产品认证证书
## （附页）

编　号：2022312310000425



7) 安装

| | |
|---|---|
| 1 | 无 DIN 导轨适配器 |
| 2 | 带 DIN 导轨适配器 |

额定参数：
对本质安全型 Ex ia：

| 端子 | 本安参数 | |
|---|---|---|
| J0 (SUP, COM) | $U_i$：28V，$I_i$：100 mA，$P_i$：700 mW | $C_i$：2.2 nF，$L_i$：1 μH |
| J0 (OUT, COM) | | $C_i$：9.6 nF，$L_i$：565 μH |
| J1 (IN+, COM) (IN-, COM) | $U_o$：6.6V，$I_o$：66 mA，$P_o$：107 mW，$C_o$：5.69 μF，$L_o$：3.435 mH | |

对增安型 Ex ec：
$U_{max}$：30V，$I_{max}$：20 mA

温度组别对应表：

| 温度组别 | 环境温度范围 |
|---|---|
| T6 | -40°C ≤ $T_{amb}$ ≤ +70°C |
| T5 | -40°C ≤ $T_{amb}$ ≤ +80°C |
| T4 | -40°C ≤ $T_{amb}$ ≤ +85°C |

防爆标志：Ex ia IIC T6/T5/T4 Ga, Ex ec IIC T6/T5/T4 Gc

- 生产者应按照认证机构批准的技术文件组织生产。

2、安全使用条件：

- 环境温度：-40℃~+85℃。
- 设备必须按照使用说明书进行连接。
- 对于本质安全型 Ex ia：

颁发日期：2022 年 10 月 25 日　　主任：

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# 中国国家强制性产品认证证书
## （附页）

编　号：2022312310000425



- 本质安全接线端子（IS 板）必须且仅能连接到经本质安全认证的设备。它们组成的系统应符合 GB/T 3836.18 标准的要求。
- 该设备外壳材质铝含量超过 15%，其安装方式必须能够消除由于冲击或摩擦引起的点燃危险。
- 本安电路的接地必须符合 GB/T 3836.15 标准第 12.2.4 条的要求。

- 对增安型 Ex ec:

- 现场安装时，用户应将本产品安装到 IP54 的外壳中，并按照 GB/T 3836.15 要求安装接线，以保证最终达到 IP54 的防护等级。
- 根据 GB/T 16935.1，该设备只应在污染程度不低于 2 级的区域使用。
- 瞬态保护应提供不超过设备的供电端子额定峰值电压值 140%的保护。

- 其他见产品使用说明书。

3、证书关联报告：

- 产品型式试验报告：CQST2110C006，CQST2110C006/01
- 工厂检查报告：CN2022Q010015

4、证书变更信息：

- 2022 年 10 月 25 日第 1 次变更：产品认证依据标准变更。

颁发日期：2022 年 10 月 25 日

主任：穆大玉

南阳防爆电气研究所有限公司

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# CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

**No.**: 2022312310000425

| | |
|---|---|
| **Applicant** | Meggitt SA |
| **Address** | Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland |
| **Manufacturer** | Meggitt SA |
| **Address** | Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland |
| **Production Factory** | Meggitt SA |
| **Production Address** | Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland |
| **Product** | Signal Conditioner |
| **Model/Type** | 244-707-000-012-A*-B*-C*****-D*-E**-F*****-G* |
| **Ex marking** | Ex ia IIC T6/T5/T4 Ga, Ex ec IIC T6/T5/T4 Gc |
| **Reference Standards** | GB/T3836.1-2021, GB/T3836.3-2021, GB/T3836.4-2021 |
| **Certification mode** | Type Test + Initial Factory Inspection + Post-Certification Surveillance |

The product(s) is verified and certified according to CNCA-C23-01: 2019 *China Compulsory Certification Implementation Rule on Explosion Protected Electrical Product* and CNEX-C2301-2019 *Guideline of China Compulsory Certification Implementation Rule on Explosion Protected Electrical Product.*

See Annex for the detailed product information (4 pages)

Initial issue date: 2022-01-22

Issued date: 2022-10-25　　Valid to: 2027-01-21

The validity of this certificate is maintained through the regular supervision of the issuing authority during the validity period.

Where any discrepancy arises between the English translation and the original Chinese version, the Chinese version shall prevail.

Director: 穆大玉

Nanyang Explosion Protected Electrical Apparatus Research Institute Co.,Ltd.

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P.C.: 473008
Email: ccc@cn-ex.com

CN 0001433

# CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

## (Annex)

**No.:** 2022312310000425



**Product information:**

1. This certificate covers the following models:

- 244-707-000-012-A*-B*-C*****-D*-E**-F*****-G*

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 244-707-000-012 | - | A | * | - | B | * | - | C | ***** | - | D | * | - | E | ** | - | F | ***** | - | G | * |
| | | | 1) | | | 2) | | | 3) | | | 4) | | | 5) | | | 6) | | | 7) |

1) Environment

| | |
|---|---|
| 2 | Explosive Ex i |
| 3 | Explosive Ex ec |

2) Diagnostic

| | |
|---|---|
| 1 | Without diagnostic |
| 2 | With diagnostic(SIL) |

3) Transfer sensitivity

| | |
|---|---|
| 0.1 | Without integrator |
| 0.2 | |
| 0.5 | |
| 1 | |
| 2 | |
| 5 | |
| 10 | |
| 20 | |
| 50 | |
| 981 | With integrator |
| 1962 | |
| 4905 | |
| 9810 | |

Issued date: 2022-10-25

Director:

Nanyang Explosion Protected Electrical Apparatus Research Institute Co.,Ltd.

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Email: ccc@cn-ex.com

# CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

## (Annex)

**No.:** 2022312310000425



| | |
|---|---|
| 19620 | |
| 49050 | |
| 98100 | |

4) Transfer unit

| | | |
|---|---|---|
| 1 | µA/pC | Without integrator |
| 2 | mV/pC | |
| 3 | µA/pCs | With integrator |
| 4 | mV/pCs | |

5) HP Filter

| | |
|---|---|
| 0.5 | Value in Hz |
| 1 | |
| 2 | |
| 5 | |
| 10 | |
| 20 | |

6) LP Filter

| | |
|---|---|
| 500 | Value in Hz |
| 1000 | |
| 2000 | |
| 5000 | |
| 10000 | |
| 20000 | |

7) Installation

| | |
|---|---|
| 1 | Without rail DIN adaptor |
| 2 | With rail DIN adaptor |

Rating:
Ex ia protection mode:

| | |
|---|---|
| Terminal | Intrinsic safety electrical parameters |

Issued date: 2022-10-25

Director:

Nanyang Explosion Protected Electrical Apparatus Research Institute Co.,Ltd.

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Original copy (Chinese)
MEGGiTT

# CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

## (Annex)

**No.**: 2022312310000425



| | | |
|---|---|---|
| J0 (SUP, COM) | $U_i$: 28V, $I_i$ :100 mA, $P_i$ :700 mW | $C_i$ :2,2 nF, $L_i$ :1 μH |
| J0 (OUT, COM) | | $C_i$ :9,6 nF, $L_i$ :565 μH |
| J1 (IN+, COM) (IN-, COM) | $U_o$ :6.6V, $I_o$ :66 mA, $P_o$ :107 mW, $C_o$ :5.69 μF, $L_o$ :3.435 mH | |

Ex ec protection mode: $U_{max}$ : 30V, $I_{max}$ : 20 mA

Temperature classification table:

| Temperature classification | Ambient operating temperature range |
|---|---|
| T6 | -40°C ≤ $T_{amb}$ ≤ +70°C |
| T5 | -40°C ≤ $T_{amb}$ ≤ +80°C |
| T4 | -40°C ≤ $T_{amb}$ ≤ +85°C |

Ex marking: Ex ia IIC T6/T5/T4 Ga, Ex ec IIC T6/T5/T4 Gc

- Producers should organize production in accordance with the technical documents approved by the certification body.

2. Specific conditions of safety use:

- Ambient temperature: -40℃~+85℃.

- The apparatus must be connected according to instruction manual.

- Ex ia protection mode:

• The intrinsic safety terminal blocks (IS boards) must be connected only to an intrinsically safe certified apparatus. These combinations shall comply with the requirements of the standard GB/T 3836.18.

• The equipment contains more than 15% of of aluminum. It must be mounted in such a manner as to eliminate the risk of sparks caused by friction or impact.

• The grounding of the intrinsically safe circuits must be in accordance with

Issued date: 2022-10-25

Director:

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# CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

## (Annex)

**No.**: 2022312310000425



requirements of clause 12.2.4 of GB/T 3836.15 standard.

- Ex ec protection mode:

• For final installation, final end user shall take any precautions to install the apparatus into an IP54 enclosure and keep it connected in compliance with GB/T 3836.15 requirements, providing and maintaining degree of protection at last IP54.

• The equipment shall only be used in an area of at least pollution degree 2, as defined in GB/T 16935.1 standard.

• Transient protection shall be provided that is set at a level not exceeding 140% of the peak rated voltage value at the supply terminals to equipment.

- See instruction for other information.

3. Certificate related report(s):

- Type test report: CQST2110C006, CQST2110C006/01

- Factory inspection report: CN2022Q010015

4. Certificate change information:

- 1st change on October 25, 2022: Updated the standards for certification.

Issued date: 2022-10-25

Director:

Nanyang Explosion Protected Electrical Apparatus Research Institute Co.,Ltd.
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