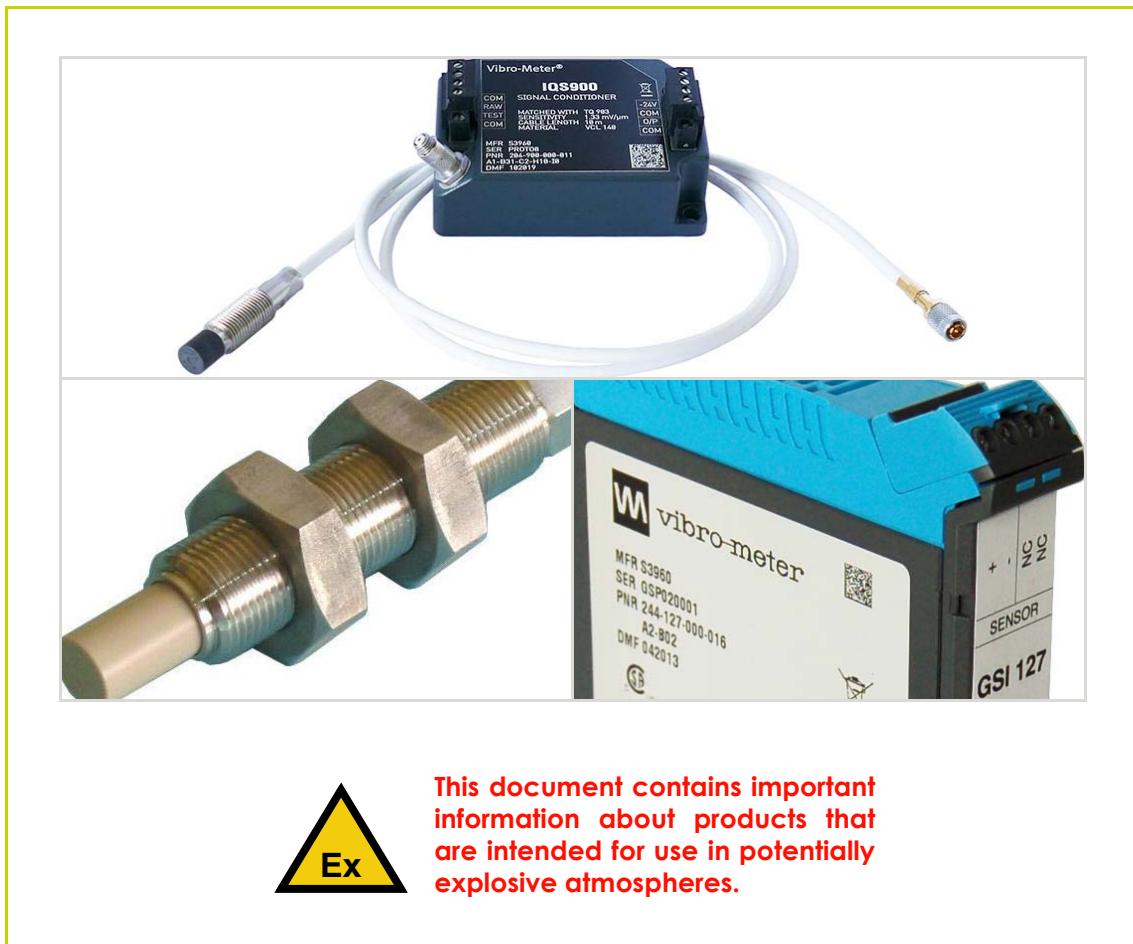


INSTALLATION MANUAL

vibro-meter®

Proximity measurement chains using
TQ9xx proximity sensors
with IQS900 signal conditioners



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

Document reference MAPROX9xx/E
Edition 4 – May 2022

REVISION RECORD SHEET

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1	25.05.2021	Peter Ward	Original edition.	PW
2	01.09.2021	Peter Ward	<p>Clarified that the TQxxx sensor should be left connected to the input of the IQS900 signal conditioner when the Test input signal is being used (see NOTE in 9.4.2 Test input functionality).</p> <p>Clarified that the Transfer function (outputs) in Table 9-2 are for the dynamic measurement component (AC) of the IQS900's output signal only.</p> <p>Corrected the cross references to the tables used in 9.4.2 Test input functionality.</p> <p>Updated Appendix F: KGS certifications: Added KGS 21-GA4BO-0352X, KGS 21-GA4BO-0353X and KGS 21-GA4BO-0355X (IQS9xx). Added KGS 21-GA4BO-0354X (TQ9xx).</p>	PW
3	04.02.2022	Peter Ward	<p>In 3.3 Installing an integral or extension cable, added Figure 3-3 to show a correctly tightened connection between the coaxial cable from the sensor / measurement chain to the input of the IQS900 signal conditioner (using self-locking miniature coaxial connectors).</p> <p>In 4.5 Replacing an IQS45x signal conditioner with an IQS900, updated Note 3 under Table 4-4, primarily to clarify that the separate COM terminals provided at the input and output of the IQS900 signal conditioner are electrically connected together internally.</p> <p>Updated Appendix C: ATEX certifications: Updated ITS 16 ATEX 101335 X and ITS 16 ATEX 101336 X (cable fittings / stuffing glands).</p> <p>Updated Appendix D: IECEx certifications: Updated IECEx BVS 16.0026U (ABA17x), and IECEx ITS 16.0011X, IECEx ITS 16.0012X and IECEx SEV 15.0019X (cable fittings / stuffing glands).</p> <p>Updated Appendix E: cCSAus certifications: Added cCSAus 80084516 (IQS9xx and TQ9xx).</p> <p>Added Appendix G: UK certifications: Added CML 21 UKEX 4542 X (GSI127). Added CML 21 UKEX 2548 X (IQS9xx). Added CML 21 UKEX 4549 X (IQS9xx and TQ9xx).</p> <p>Updated Appendix H: EAЭC RU certifications: Added EAЭC RU C-CH.AД07.B.03744/21 (IQS9xx and TQ9xx).</p>	PW

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PREFACE

About this manual

This manual describes how to install proximity measurement chains using TQ9xx proximity sensors (transducers) with IQS900 signal conditioners, from Meggitt's vibro-meter[®] product line.

It also describes the general use of these TQ9xx-based proximity measurement chains.

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 TQ9xx-based proximity 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 TQ9xx proximity sensors 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 mounting and connecting 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

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 TQ9xx-based proximity measurement chains using an IQS900 signal conditioner with diagnostics should also refer to the following document:

- *TQxxx proximity measurement chains using an IQS900 signal conditioner safety manual* (document reference MAIQS900-FS/E).



USE OF AN IQS900 SIGNAL CONDITIONER IN A SAFETY-RELATED APPLICATION ASSUMES THAT THE INSTRUCTIONS AND RECOMMENDATIONS IN THE TQXXX PROXIMITY MEASUREMENT CHAINS USING AN IQS900 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 xi for further information.**

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.

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 THE EQUIPMENT 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” PLACED AFTER AN EX CERTIFICATE NUMBER IS USED TO INDICATE EQUIPMENT THAT IS SUBJECT TO SPECIFIC CONDITIONS OF USE (SPECIAL CONDITIONS FOR SAFE USE), WHICH ARE SPECIFIED IN THE CERTIFICATE. A “U” PLACED AFTER AN EX CERTIFICATE NUMBER IS USED TO INDICATE COMPONENTS THAT ARE SUBJECT TO A SCHEDULE OF LIMITATIONS, WHICH ARE SPECIFIED IN THE CERTIFICATE.

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

AN IQS900 SIGNAL CONDITIONER WITH PROTECTION MODE “EX EC” 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 IQS900 SIGNAL CONDITIONER LOCATED IN AN EX ZONE 2 IN NORTH AMERICA (CCSAUS), THE FINAL ENCLOSURE IN WHICH THE IQS900 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 9 MAINTENANCE AND TROUBLESHOOTING.



If a TQ9xx proximity sensor is to be used in a potentially explosive atmosphere (hazardous area), then it is essential to use a version of the proximity measurement chain that is intrinsically safe.

Accordingly, all “sensor-side” components such as proximity sensors, signal conditioners, transmission cables, galvanic separation units, power supplies and safety barrier units, junction boxes and probe adaptors are available in Ex versions.

Hot surfaces and the risk of burning



HOT SURFACES CAN EXIST WITHIN AND ON A TQ9XX-BASED PROXIMITY MEASUREMENT CHAIN.

DEPENDING ON THE AMBIENT OPERATING TEMPERATURE, AND THE INSTALLATION AND COOLING OF A TQ9XX-BASED MEASUREMENT CHAIN, THE COMPONENTS CAN BECOME HOT TO TOUCH AND THERE IS THE RISK OF BURNING WHEN HANDLING.

REGARD THE COMPONENTS OF A TQ9XX-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[®] proximity sensors 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 TQ9xx proximity sensors.

- 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 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 the Handling precautions for electrostatic sensitive devices on page xi.

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 material, 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 TQ9xx-based proximity 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 TQ9XX-BASED PROXIMITY MEASUREMENT CHAINS

1.1 System description

This chapter provides an overview of proximity measurement chains using TQ9xx proximity sensors, from Meggitt's vibro-meter[®] product line.

These proximity measurement chains use a non-contact measurement technique based on the eddy current effect to measure the distance between a moving (vibrating) object and a proximity sensor (transducer). In order to achieve this, proximity sensors are generally mounted on non-vibrating surfaces. The proximity measurement chain provides a signal that is directly proportional to the relative movement between the proximity sensor and the surface of the target.

The non-contact technique is particularly suitable for monitoring various types of rotating machinery, including:

- The axial displacement of a machine shaft or rotor. This can be used to measure the relative shaft expansion or the condition (degree of wear) of thrust bearings. This corresponds to a **static** measurement.
- The relative vibration of a machine shaft in a radial direction. These radial vibrations are caused by shaft eccentricity, due to the presence of imbalance in the rotor or resonance. This corresponds to a **dynamic** measurement.

Figure 1-1 shows an electrical diagram of a typical proximity measurement chain, in which the following elements are present:

- 1) The target (that is, the object whose movement is to be measured)
- 2) TQ9xx proximity sensor
- 3) EA90x extension cable
- 4) IQS900 signal conditioner.

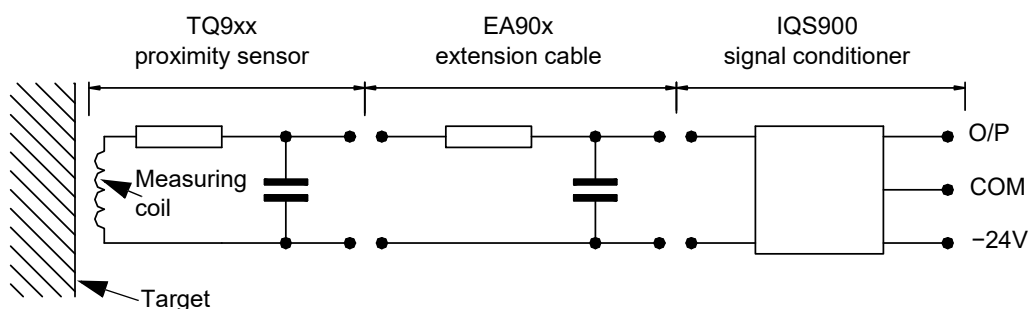


Figure 1-1: Equivalent electrical diagram of a proximity measurement chain

The tip of the proximity sensor contains a coil that forms part of an oscillating circuit. When the coil is excited by a high-frequency signal provided by the IQS900 signal conditioner, a magnetic field is emitted by the coil. If an electrically conductive material is moved into this field, the characteristics of the magnetic circuit change, causing the amplitude of the high-frequency signal present in the coil to vary. This amplitude is proportional to the distance between the tip of the sensor and the target.



Meggitt’s vibro-meter® proximity measurement chains are tuned systems and the total length of the cable from the TQ9xx proximity sensor to the IQS900 signal conditioner is selected at the time of ordering. It is not possible to mix and match individual components from other manufacturers.

Examples of proximity measurement chains (with optional accessories) and references to their associated wiring diagrams are summarised in Table 1-1.

Table 1-1: Examples of TQ9xx-based proximity measurement chains

TQ9xx-based proximity measurement chain components	Type			
Proximity sensor with integral cable	TQ9xx	✓	✓	✓
Probe mounting adaptor	PA15x	*	*	*
Cable feedthrough	SG1xx	*	*	*
Extension cable	EA90x	*	*	*
Flexible conduit (protection tube)	KS107	*	*	*
Interconnection protection	IP172	*	*	*
Junction box	JB118	*	*	*
Signal conditioner	IQS900	✓	✓	✓
Industrial housing	ABA17x	*	*	*
Current (2-wire) transmission cable	K2xx	**	**	**
Voltage (3-wire) transmission cable	K3xx	**	**	**
Galvanic separation unit	GSI127	*	*	*
Power supply	APF19x or ASPS	*	*	*
Mechanical diagram (see Figure x)		Figures 1-2 and 1-3		

Notes

* Optional.

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

Descriptions of the constituent components of proximity measurement chains are outlined in 1.2 Component descriptions.

Schematic mechanical diagrams of a range of possible proximity measurement chains are shown in 1.3 Mechanical diagrams.

1.2 Component descriptions

1.2.1 TQ9xx proximity sensors

A range of TQ9xx proximity sensors are available. The sensors differ in characteristics such as sensitivity, measurement range and limits, pressure capabilities, mounting (standard or reverse) and cabling requirements.

NOTE: Further information on a specific TQ9xx proximity sensor can be found in the corresponding data sheet.



IF A TQ9XX PROXIMITY SENSOR 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 IX.



If a TQ9xx proximity sensor is to be used in a potentially explosive atmosphere (hazardous area), then it is essential to use a version of the proximity measurement chain that is intrinsically safe.

Accordingly, all “sensor-side” components such as proximity sensors, signal conditioners, transmission cables, galvanic separation units, power supplies and safety barrier units, junction boxes and probe adaptors are available in Ex versions.

1.2.1.1 Integral cable

Every TQ9xx proximity sensor is equipped with an integral low-impedance coaxial cable with FEP insulation, terminated by a self-locking miniature coaxial connector (male).

A TQ9xx proximity sensor's integral cable may require additional protection depending on the environment, such as:

- 1- Stainless steel flexible protection tube (mechanical protection).
- 2- Stainless steel flexible protection tube enclosed in a heat-shrinkable sleeve (mechanical and electrical protection).
- 3- Stainless steel flexible protection tube enclosed in an FEP sheath (mechanical and electrical protection, with resistance to almost all chemicals and low permeability to liquids, gases and moisture).
- 4- Stainless steel flexible protection tube, double-wall spiral, electrically welded (mechanical protection and leak-tight).
- 5- KS107 flexible conduit with a protection rating of IP68 (mechanical protection and leak-tight).

1.2.2 PA15x probe mounting adaptors

When the layout of a machine does not allow a TQxxx proximity sensor to be mounted inside the housing, a probe adaptor can be used to allow mounting through the machine housing. A probe adaptor also allows the sensor-to-target distance to be adjusted and the proximity sensor to be replaced from outside the machine housing. In this way, the machine does not have to be stopped or disassembled during adjustment.

NOTE: Refer to a specific data sheet for the specifications of a probe mounting adaptor.

1.2.3 SG1xx cable feedthroughs

When a TQxxx proximity sensor is mounted inside the machine housing, the TQxxx's integral cable can be passed through the wall of the machine housing using a leak-tight SG1xx cable feedthrough. To ensure a splash-proof feedthrough, SG10x cable feedthroughs use a double cable stuffing gland to secure both a coaxial cable and a stainless-steel flexible protective sheath, while SG164 cable feedthroughs use a Viton[®] seal. All SG1xx cable feedthroughs have a protection rating of IP68.

NOTE: Refer to a specific data sheet for the specifications of a cable feedthrough.

1.2.4 EA90x extension cables

An EA90x extension cable is a low-impedance coaxial cable with FEP insulation. For some applications, a TQ9xx proximity sensor can be delivered with an integral cable length of 5 m or 10 m. In which case, no EA90x extension cable is necessary.

NOTE: Refer to a specific proximity measurement chain data sheet for further information on the possible lengths of integral and extension cables.

Mechanical protection of the EA90x extension cable may be necessary, depending on the application. The protection available is similar to that for an integral cable (see 1.2.1.1 Integral cable), however, not all options may be available.

EA90x extension cables are terminated by self-locking miniature coaxial connectors (female and male) in order to connect between the integral cable of a TQ9xx sensor and an IQS900 signal conditioner.

The connection between a TQ9xx proximity sensor's integral cable and an EA90x extension cable can be mechanically protected and electrically isolated using:

- The protective housing used by the PA151 and PA152 probe adaptors (if included in the proximity measurement chain)
- IP172 interconnection protection
- A JB118 junction box.

The PA15x and JB118 housings have a protection rating of IP65 and are available in intrinsically safe (Ex) versions.

NOTE: It is essential that the connection between the integral cable and the extension cable is electrically isolated.

1.2.5 IP172 interconnection protection

An IP172 interconnection protector is a fluorosilicone rubber boot that provides mechanical and electrical protection to the connection between a TQ9xx proximity sensor's integral cable and an EA90x extension cable. These interconnection protectors are resistant to chemicals, fuels and solvents and can be retrofitted to any TQxxx-based proximity measurement chain.

IP172 interconnection protection has a protection rating of IP54.

1.2.6 JB118 junction box

A JB118 junction box provides a protection rating of IP65 to the connection between a TQxxx proximity sensor's integral cable and an EA90x extension cable in any TQxxx-based proximity measurement chain. These junction boxes are made of polyester and are available with a range of cable stuffing glands for operation with cables of different diameters.

1.2.7 IQS900 signal conditioner



IF AN IQS900 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 IX.

A TQ9xx proximity sensor operates in conjunction with an IQS900 signal conditioner. The signal conditioner transforms the signal from a proximity sensor into a current output or a voltage output signal suitable for transmission to an external monitoring and/or protection system. Optionally, the IQS900 signal conditioner supports diagnostics (that is, built-in self-test (BIST) circuitry) that are used to indicate problems with a measurement chain consisting of a sensor, cabling and the IQS900 signal conditioner.

NOTE: Like all configurable IQS900 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 IQS900 is connected to its "COM" signals/terminals. Accordingly, the housing of an IQS900 must be electrically isolated from ground (GND) in order to eliminate earth loops and help ensure the correct operation of the measurement chain.
For further information, see 4.4 Installing an IQS900 signal conditioner and 4.4.2 Mounting procedure.

NOTE: A TQ9xx-based proximity measurement chain using an IQS900 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.

A TQ9xx-based proximity measurement chain using an IQS900 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 *TQxxx proximity measurement chains using an IQS900 signal conditioner safety manual* for further information on using the IQS900 in safety-related systems (functional safety contexts).

An IQS900 signal conditioner has a self-locking miniature coaxial connector (female) in order to connect to a TQ9xx proximity sensor's integral cable or an EA90x extension cable.

(When replacing an IQS45x signal conditioner with an IQS900, the coaxial connector connects to the TQ4xx proximity sensor's integral cable or the EA40x extension cable.)

1.2.8 ABA17x industrial housings

An ABA17x industrial housing can be used to enclose and protect IQS900 signal conditioners. The ABA17x industrial housings are available in different sizes to contain and protect different numbers of signal conditioners. All ABA17x housings offer a protection rating of IP66 and versions for use in a hazardous area (potentially explosive atmosphere) are available.

An ABA17x contains one or more DIN rails and an IQS900 is mounted using an MA130 mounting adaptor. The mounting adaptor is made from electrically insulating material to help ensure that earth loops are avoided.

1.2.9 K209 and K210 cables

A K209 or K210 cable is used as a current transmission cable to connect an IQS900 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 (or other safety barrier) to the electronic monitoring system.

1.2.10 K309 and K310 cables

A K309 or K310 cable is used as a voltage transmission cable to connect an IQS900 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.

1.2.11 GSI127 galvanic separation unit

A GSI127 galvanic separation unit is used by TQ9xx 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. The GSI127 also converts the measured current (2-wire signal transmission) or voltage (3-wire signal transmission) 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 8.2 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).

For voltage (3-wire) signal transmission in potentially explosive atmospheres, the GSI127 can replace the GSV14x power supply and safety barrier unit, eliminating the need for additional external Zener barriers.

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 APF19x power supply (see 1.2.12 APF19x power supplies) or ASPS auxiliary sensor power supply (see 1.2.13 ASPS auxiliary sensor power supply).

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

1.2.12 APF19x power supplies

An APF19x power supply could be required to power external hardware requiring a 24 V_{DC} power supply, such as a GSI127 galvanic separation unit (see 1.2.11 GSI127 galvanic separation unit). The APF19x requires a mains AC (or high-voltage DC) input and is usually installed on a DIN rail outside the rack, generally in a cubicle housing.

1.2.13 ASPS auxiliary sensor power supply

An ASPS auxiliary sensor power supply is used to power external hardware requiring a 24 V_{DC} power supply, such as a GSI127 galvanic separation unit (see 1.2.11 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 APF19x power supply mounted externally, thereby reducing wiring and simplifying the installation.

1.3 Mechanical diagrams

Figure 1-2 and Figure 1-3 show some examples of the TQ9xx-based proximity measurement chains available.

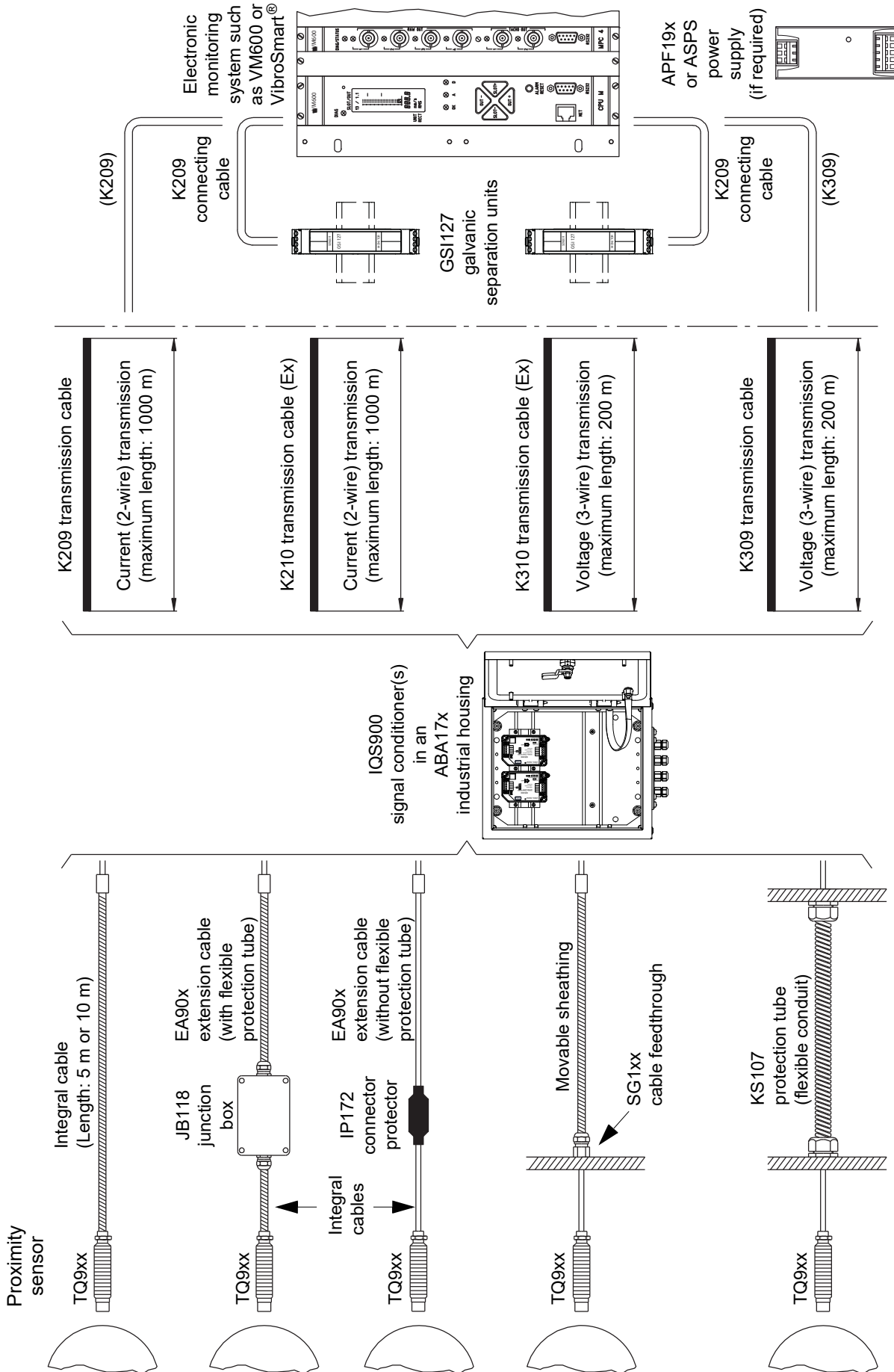


Figure 1-2: Example TQ9xx-based proximity measurement chains (1 of 2)

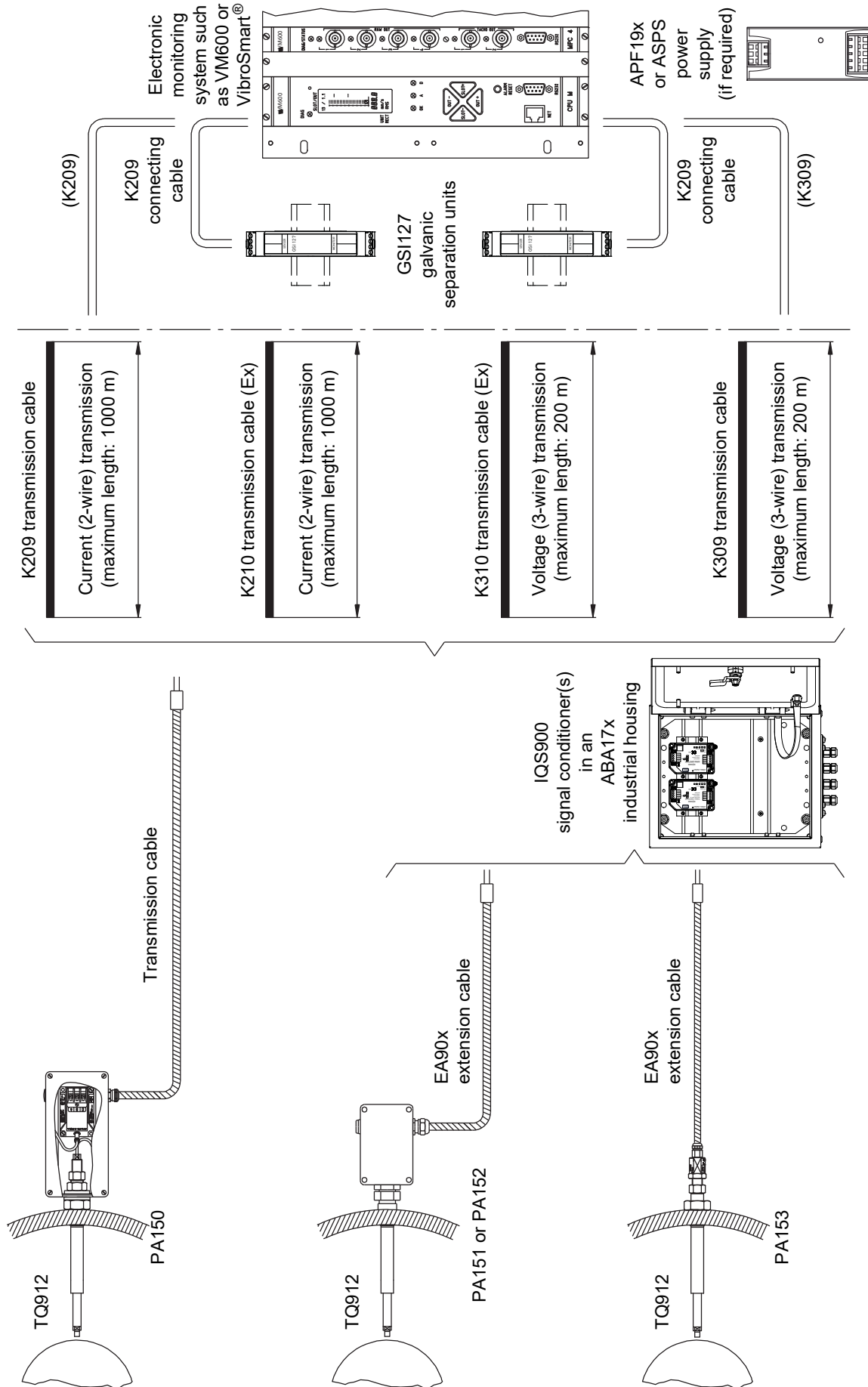


Figure 1-3: Example TQ9xx-based proximity measurement chains (2 of 2)

2 INSTALLING PROXIMITY SENSORS

This chapter provides general guidelines on installing and fixing proximity sensors. The information applies to all TQ9xx sensors used in proximity measurement chains.

NOTE: Refer to a specific proximity sensor data sheet for further information.

2.1 General considerations

2.1.1 Requirements for equipment used 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 CONDITIONS AND LIMITATIONS SPECIFIED IN THE EX CERTIFICATES FOR THE PRODUCT.

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

2.1.2 Factors influencing measurements

Care should always be taken when mounting the various elements of the proximity measurement chain in order to guarantee long-term reliability.



Adhere to the constraints outlined in 2.2 Mounting constraints when mounting the proximity sensor. Otherwise, the performance of the proximity measurement chain may be impaired.

A proximity sensor can be mounted inside or through the machine housing, depending on the characteristics of the machine. A number of mounting accessories are available, of which only standard accessories are covered in this chapter. These instructions are not suitable for all applications and certain modifications may be required so that the accessory does not interfere with the measurement process.

NOTE: If necessary, contact Meggitt for further information on adapting a proximity measurement chain.

A number of factors may cause the characteristics of a proximity measurement chain to differ from the theoretical characteristics. These are principally:

- The target material used (see 2.1.2.1 Influence of the target material)
- The ambient temperature (see 2.1.2.2 Operating temperature range)
- Mechanical and electrical imperfections (see 2.1.2.3 Runout effects)
- Violation of certain mounting constraints (see 2.2 Mounting constraints).

2.1.2.1 Influence of the target material

A proximity sensor requires an electrically conductive target material. The target material can be steel, copper, aluminium, our standard VCL 140 and so on. The system sensitivity and the linear part of the measurement range are heavily dependent on the target material.

For information on the effect of the target material on sensitivity, see Figure 6-3 which shows the voltage-distance characteristics for targets made of VCL 140 steel (equivalent to AISI 4140) and other metals.

2.1.2.2 Operating temperature range

The electrical conductivity and permeability of the target material, as well as the cable capacitance and other factors, are dependent on the ambient temperature. Therefore, the operating temperature can affect the precision of results.

NOTE: Refer to a specific proximity sensor data sheet for further information on the maximum temperature drift.

2.1.2.3 Runout effects

The runout is the sum of two effects that are characteristic of a non-ideal target:

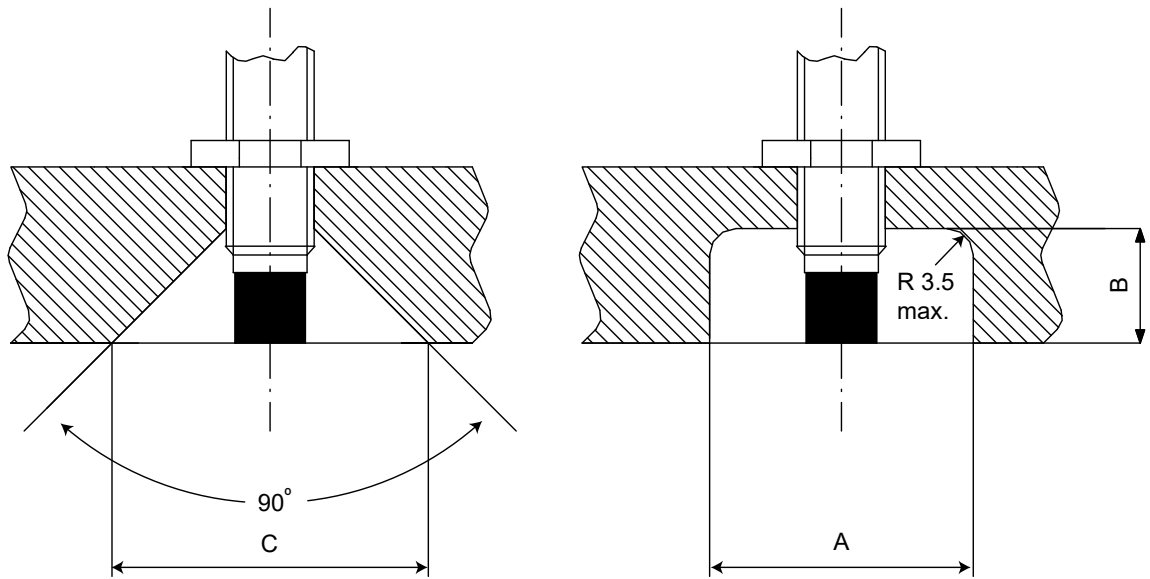
- 1) Mechanical runout is caused by physical imperfections in the target. In the case of a rotating shaft, this could be due to a lack of perfect coaxiality or circularity. It is also a function of the surface state, as imperfections in the shaft's surface (such as scratches) will cause mechanical runout.
- 2) Electrical runout is mainly caused by an unequal distribution of the electrical conductivity on the shaft's surface (such as the presence of "magnetic spots").

During measurements with a proximity sensor, runout effects lead to an apparent signal that does not exist. These error sources can be eliminated digitally by the electronic monitoring system.

2.2 Mounting constraints

When mounting a proximity sensor, it is important to ensure that certain mounting constraints are respected, otherwise the performance of the proximity measurement chain will be impaired. These constraints are shown in Figure 2-1 to Figure 2-8.

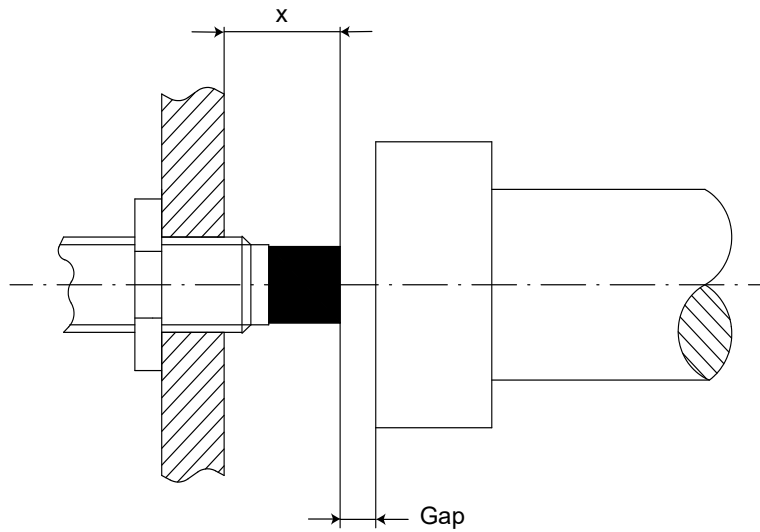
2.2.1 Free space around the head of the proximity sensor



Proximity sensor type	Minimum value for full measurement range (mm)			Minimum value for half of measurement range (mm)		
	A	B	C	A	B	C
TQ901	20	9	30	16	6	26
TQ902/TQ912	34	13	46	24	10	36
TQ903	70	23	130	54	10	70

Figure 2-1: Minimum free space around the head of proximity sensors

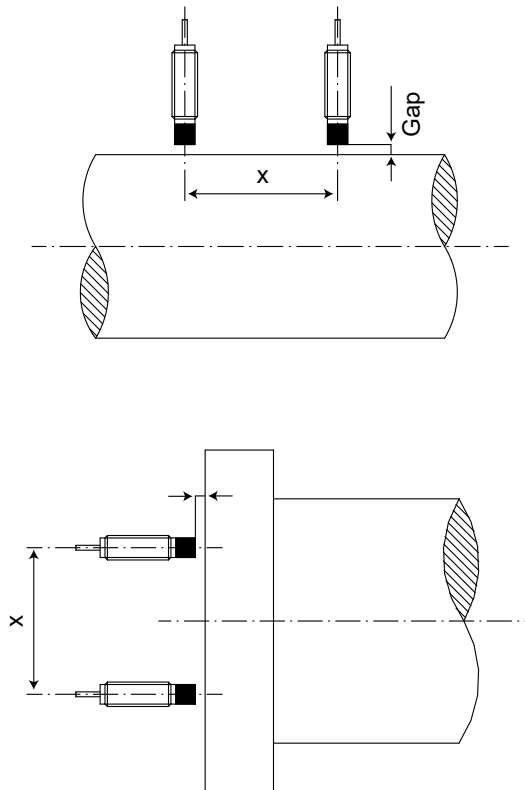
2.2.2 Distance between head of the proximity sensor and mounting support



Range	Minimum value of x (mm)		
	TQ901	TQ902/TQ912	TQ903
Full measurement range	9	13	23
Half of measurement range	6	10	10

Figure 2-2: Minimum distance between the head of the proximity sensor and the mounting support

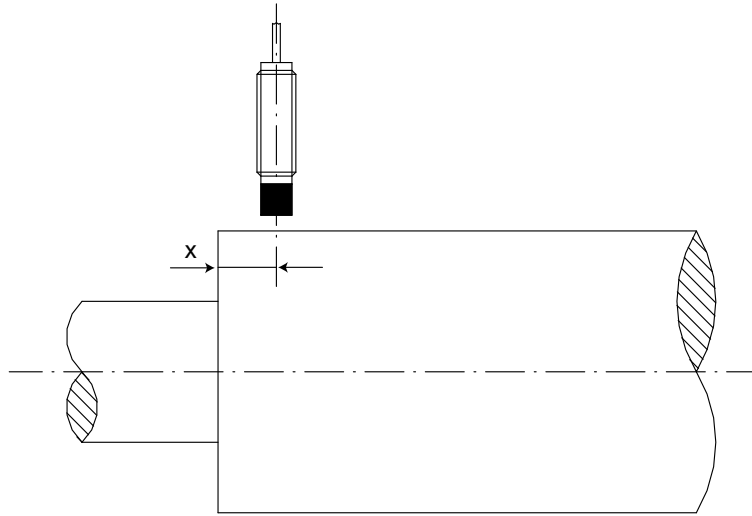
2.2.3 Distance between two proximity sensors



Range	Minimum value of x (mm)		
	TQ901	TQ902/TQ912	TQ903
Full measurement range	26	51	105
Half of measurement range	21	30	61

Figure 2-3: Minimum distance between two proximity sensors

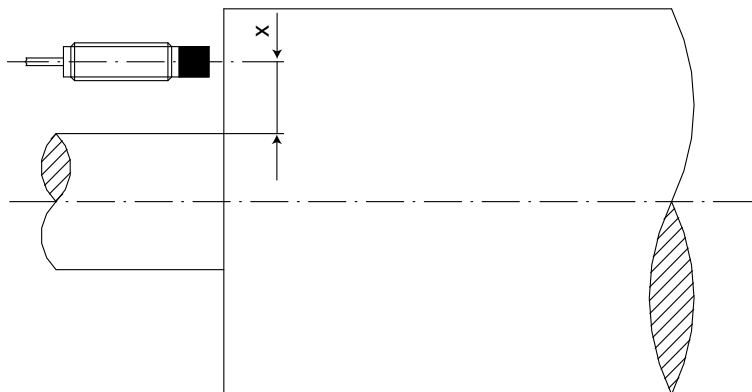
2.2.4 Distance between proximity sensor and shoulder (radial measurement)



Range	Minimum value of x (mm)		
	TQ901	TQ902/TQ912	TQ903
Full measurement range	7	9	18
Half of measurement range	5	6	9

Figure 2-4: Minimum distance between the proximity sensor and shoulder for radial measurements

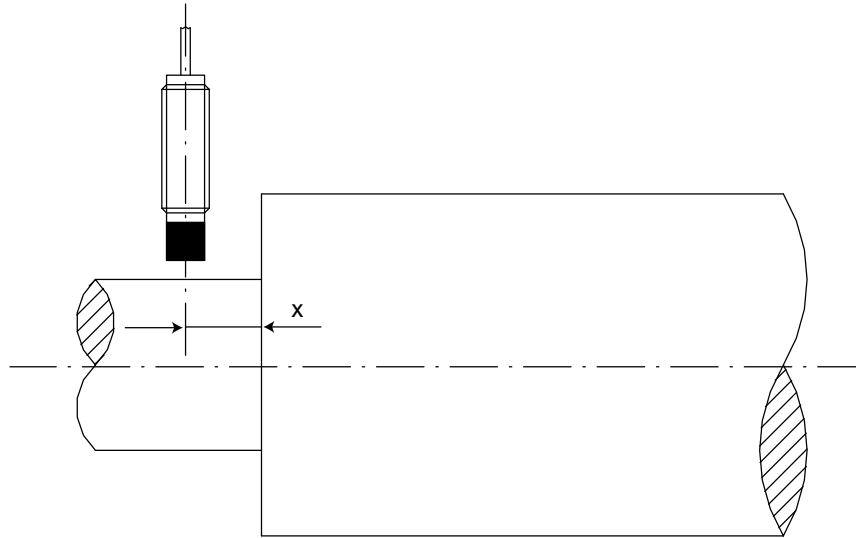
2.2.5 Distance between proximity sensor and shoulder (axial measurement)



Range	Minimum value of x (mm)		
	TQ901	TQ902/TQ912	TQ903
Full measurement range	8	14	28
Half of measurement range	7	9	18

Figure 2-5: Minimum distance between the proximity sensor and shoulder for axial measurements

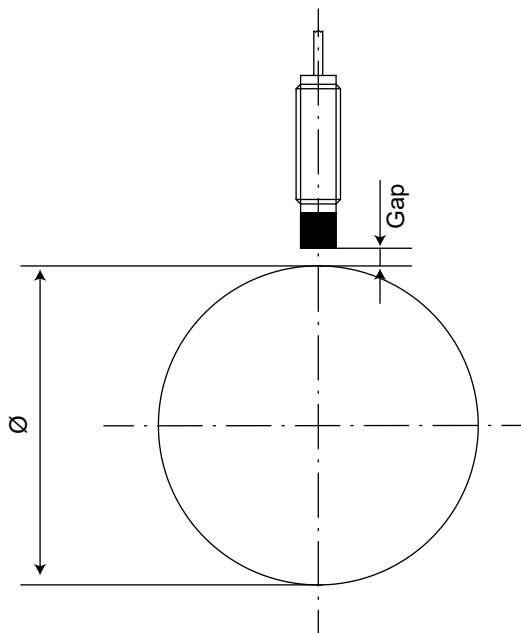
2.2.6 Distance between proximity sensor and shaft end



Range	Minimum value of x (mm)		
	TQ901	TQ902/TQ912	TQ903
Full measurement range	8	14	28
Half of measurement range	7	9	18

Figure 2-6: Minimum distance between the proximity sensor and the shaft end

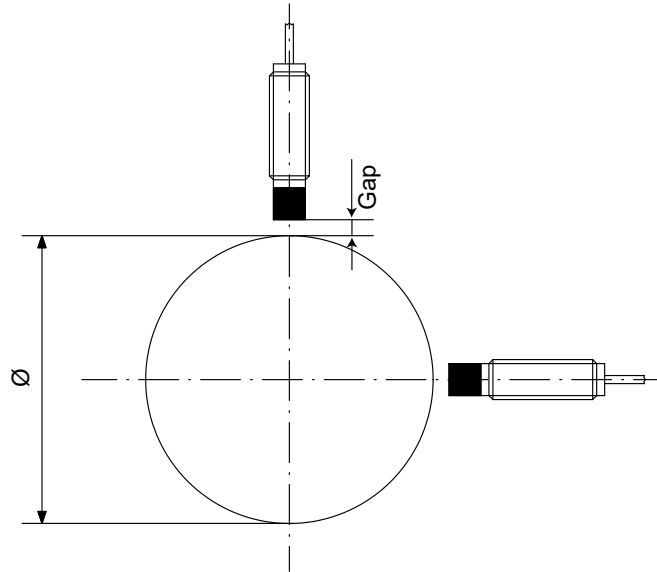
2.2.7 Shaft diameter for a single proximity sensor



Proximity sensor type	Error (%) when Gap = Gap _{MAX}			Error (%) when Gap = Gap _{MAX} / 2		
	Diam. 80 mm	Diam. 50 mm	Diam. 20 mm	Diam. 80 mm	Diam. 50 mm	Diam. 20 mm
TQ901	2.5	3.5	5.5	1	1.5	2
TQ902/TQ912	2.5	5	10	1	1.5	3.5
TQ903	Not applicable			Not applicable		

Figure 2-7: Measurement error for a single proximity sensor as a function of shaft diameter

2.2.8 Shaft diameter for two proximity sensors mounted at 90°



Proximity sensor type	Noise (µmpp) when Gap = Gap _{MAX}				Noise (µmpp) when Gap = Gap _{MAX} / 2			
	Diam. 90 mm	Diam. 70 mm	Diam. 50 mm	Diam. 30 mm	Diam. 80 mm	Diam. 60 mm	Diam. 40 mm	Diam. 20 mm
TQ901	3	3	3.3	15	0.8	0.9	1	18
TQ902/TQ912	9	11	32	320	1.6	2	9	230
TQ903	Not applicable				Not applicable			

Figure 2-8: Influence of shaft diameter on crosstalk noise between two proximity sensors mounted at 90°

2.3 Mounting a proximity sensor

2.3.1 Mounting supports used inside the machine housing

Various mounting supports exist, a range of which are shown in Figure 2-9 to Figure 2-12.

For both Figure 2-9 and Figure 2-10, the mounting support has been drilled and threaded to accommodate the proximity sensor. So, for a standard proximity sensor, only one retaining nut is required (Figure 2-9).

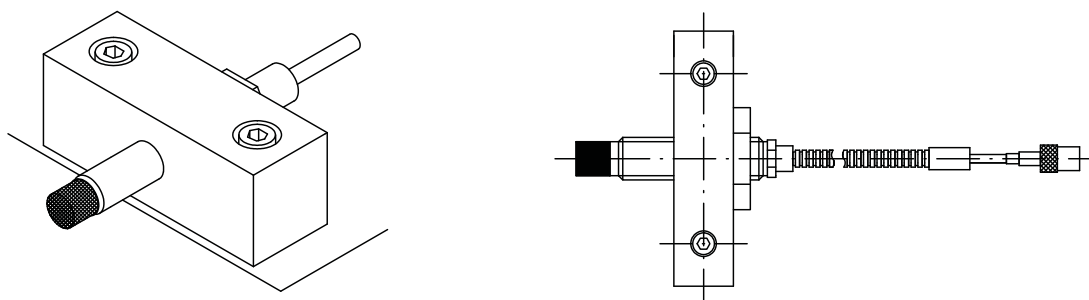


Figure 2-9: Mounting support (drilled and threaded) for a standard proximity sensor

However, a reverse mounted proximity sensor, such as a TQ912 or TQ932, is supplied with an integral retaining nut (Figure 2-10).

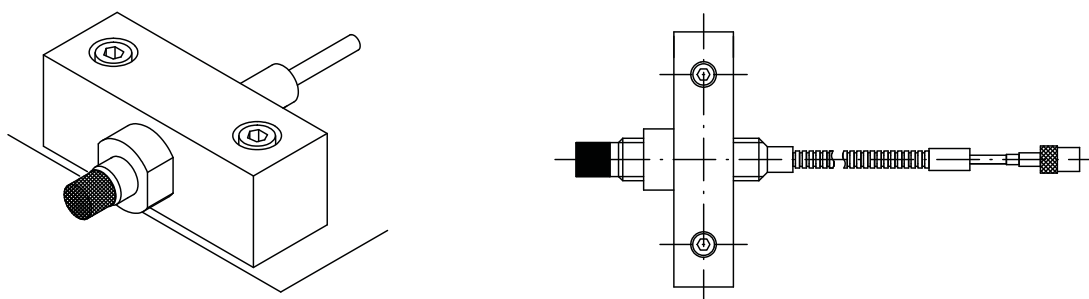


Figure 2-10: Mounting support (drilled and threaded) for a reverse mount proximity sensor

The mounting support in Figure 2-11 has been drilled but not threaded, so two retaining nuts are required in this case. Figure 2-12 shows another variant in which the proximity sensor has been clamped.

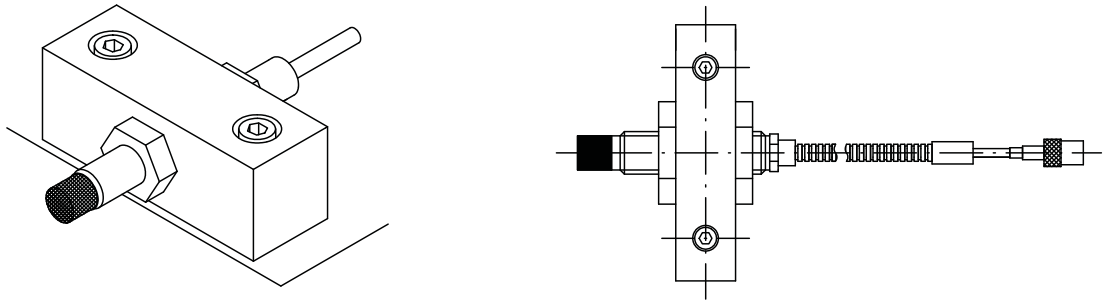


Figure 2-11: Mounting support (drilled but not threaded) requiring two retaining nuts

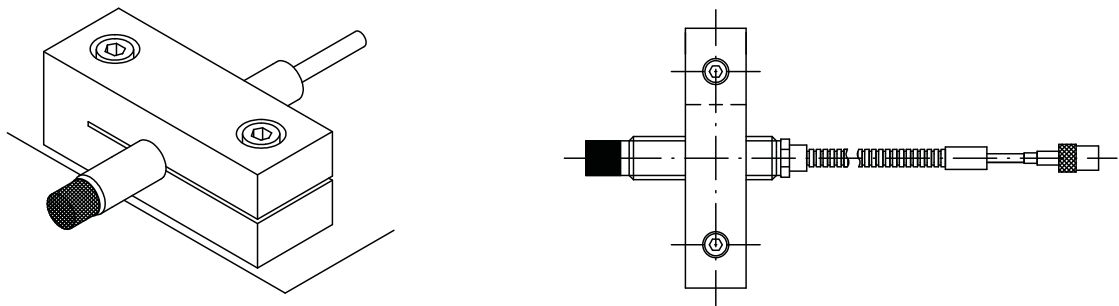


Figure 2-12: Mounting support using a clamp

2.3.2 Tightening torque

Table 2-1 lists tightening torque values required for proper assembly of a proximity sensor mounted as in Figure 2-13.



Failure to respect the recommended tightening torque when mounting a proximity sensor can lead to permanent sensor damage.

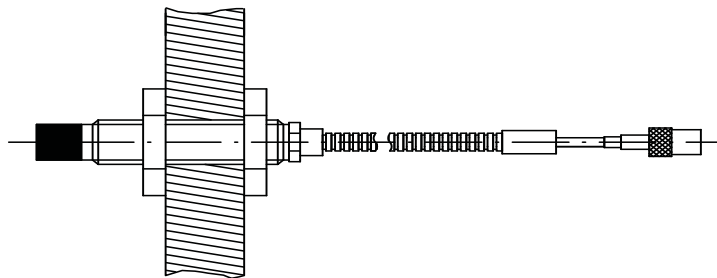


Figure 2-13: Sensor assembly

Table 2-1: Recommended tightening torques

Diameter (mm) x thread pitch (mm) <i>ISO standard</i>	Torque	
	Metric (N·m)	Imperial (lb-ft)
M6 x 0.75	2.0	1.5
M8 x 1.0	5.0	3.7
M10 x 1.0	7.0	5.2
M10 x 1.5	7.0	5.2
M14 x 1.5	20.0	14.8
M16 x 1.5	20.0	14.8
M20 x 1.5	20.0	14.8
M30 x 1.5	30.0	22.1

Diameter (inch) - pitch <i>UTS standard</i>	Torque	
	Metric (N·m)	Imperial (lb-ft)
1/4" - 28 UNF	2.0	1.5
3/8" - 24 UNF	7.0	5.2
1/2" - 20 UNF	20.0	14.8
5/8" - 18 UNF	20.0	14.8

2.3.3 Probe adaptors

2.3.3.1 Mounting a PA150 probe adaptor

This procedure describes how to mount a PA150 probe adaptor on a machine housing, using the component references (ref. x) given in Figure 2-14.

- 1- Disconnect the cables from the IQS900 signal conditioner (ref. 7).
- 2- Undo the fixing bolt (ref. 4), remove the U-plate (ref. 9) and separate the probe housing (ref. 10) and the probe adaptor rod (ref. 1).
- 3- Bore a threaded hole in the machine housing to match the thread of the probe adaptor (ref. 2).
- 4- Apply a strip of Teflon to the thread of the adaptor (ref. 2) before screwing it into the machine housing. This improves the leak-proof quality of the adaptor.
- 5- Screw the adaptor (ref. 2) into the machine housing and ensure that it is tight using the fixing bolt (ref. 3).
- 6- Set the initial gap mechanically (see 6.1 Measurement and mechanical adjustment of the initial gap) by adjusting the probe adaptor rod (ref. 1) using the 4-flat bolt (ref. 6). Once the required distance is obtained, tighten the fixing nut (ref. 5) to secure the rod.
- 7- Put the probe housing (ref. 10) over the probe adaptor as far as the washer.
- 8- Insert the U-plate (ref. 9) between the inside of the probe housing (ref. 10) and the washer and tighten.
- 9- If not already assembled, screw the cable stuffing gland (ref. 11) into the probe housing (ref. 10).
- 10- Feed the transmission cable through the cable stuffing gland (ref. 11), then tighten the stuffing gland to ensure the probe housing is leak-proof.
- 11- Reconnect the cables to the IQS900 signal conditioner (4.4 Installing an IQS900 signal conditioner).
- 12- Screw the cover (ref. 8) onto the probe housing (ref. 10).

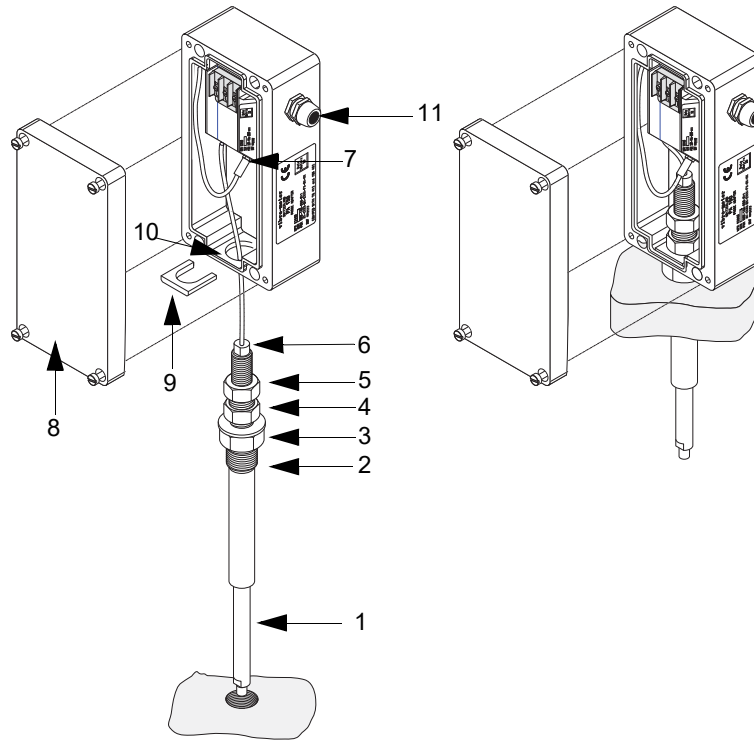


Figure 2-14: Mounting a PA150 probe adaptor

2.3.3.2 Mounting PA151 and PA152 probe adaptors

This procedure describes how to mount a PA151 or PA152 probe adaptor on a machine housing, using the component references (ref. x) given in Figure 2-15.

- 1- Undo the fixing bolt (ref. 4), remove the U-plate (ref. 8) and separate the probe housing (ref. 9) from the probe adaptor rod (ref. 1).
- 2- Bore a threaded hole in the machine housing to match the thread of the probe adaptor (ref. 2).
- 3- Apply a strip of Teflon to the thread of the adaptor (ref. 2) before screwing it into the machine housing. This improves the leak-proof quality of the adaptor.
- 4- Screw the adaptor (ref. 2) into the machine housing and ensure that it is tight using the fixing bolt (ref. 3).
- 5- Set the initial gap mechanically (see 6.1 Measurement and mechanical adjustment of the initial gap) by adjusting the probe adaptor rod (ref. 1) using the 4-flat bolt (ref. 6). Once the required distance is obtained, tighten the fixing nut (ref. 5) to secure the rod.
- 6- Put the probe housing (ref. 9) over the probe adaptor as far as the housing fixing bolt (ref. 3).
- 7- Insert the U-plate (ref. 8) between the inside of the probe housing (ref. 9) and the fixing bolt (ref. 4) and tighten.
- 8- If not already assembled, screw the cable stuffing gland (ref. 10) into the probe housing (ref. 9).
- 9- Feed the integral cable or EA90x extension cable through the cable stuffing gland (ref. 10), then tighten the stuffing gland to ensure the probe housing is leak-proof.
- 10- If there is an EA90x extension cable, connect the extension cable to the integral cable, as described in 3.3 Installing an integral or extension cable.
- 11- Screw the cover (ref. 7) onto the probe housing (ref. 9).

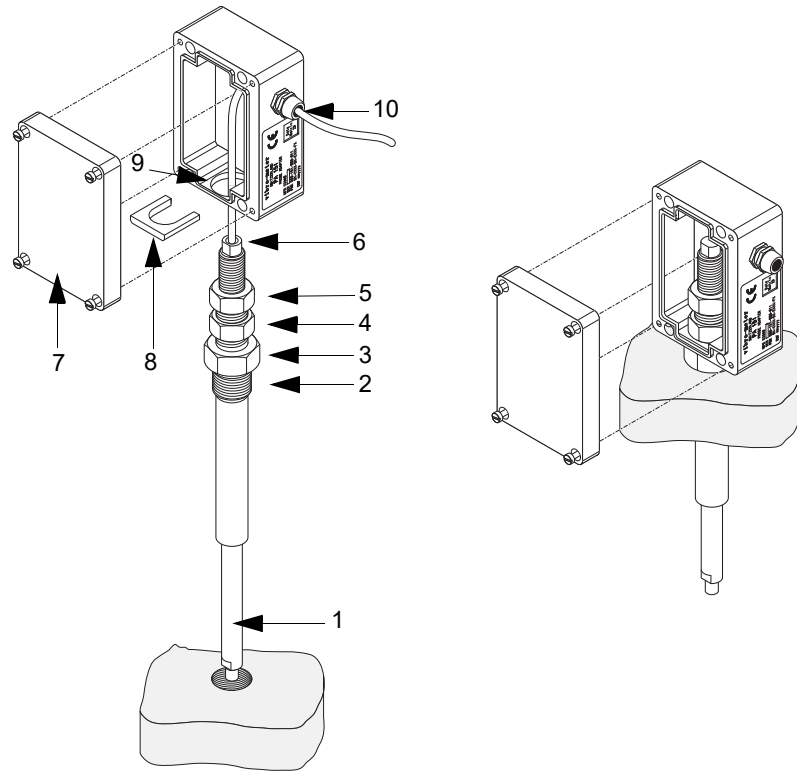


Figure 2-15: Mounting a PA151 or PA152 probe adaptor

2.3.3.3 Mounting a PA153 probe adaptor

This procedure describes how to mount a PA153 probe adaptor on a machine housing, using the component references (ref. x) given in Figure 2-16.

- 1- Bore a threaded hole in the machine housing to match the thread of the probe adaptor (ref. 2).
- 2- Apply a strip of Teflon to the conical thread of the adaptor (ref. 2) before screwing it into the machine housing. This improves the leak-proof quality of the adaptor.
- 3- Screw the adaptor (ref. 2) into the machine housing and ensure that it is tight before tightening the fixing bolt (ref. 3).
- 4- Unscrew the cable stuffing gland support (ref. 6) from the probe adaptor rod (ref. 1).
- 5- Set the initial gap mechanically (see 6.1 Measurement and mechanical adjustment of the initial gap) by adjusting the probe adaptor rod (ref. 1) using the 4-flat bolt (ref. 5). Once the required distance is obtained, tighten the fixing nut (ref. 4) to secure the rod.
- 6- Screw the cable stuffing gland support (ref. 6) onto the probe adaptor rod (ref. 1).
- 7- Tighten the cable stuffing gland to the cable.

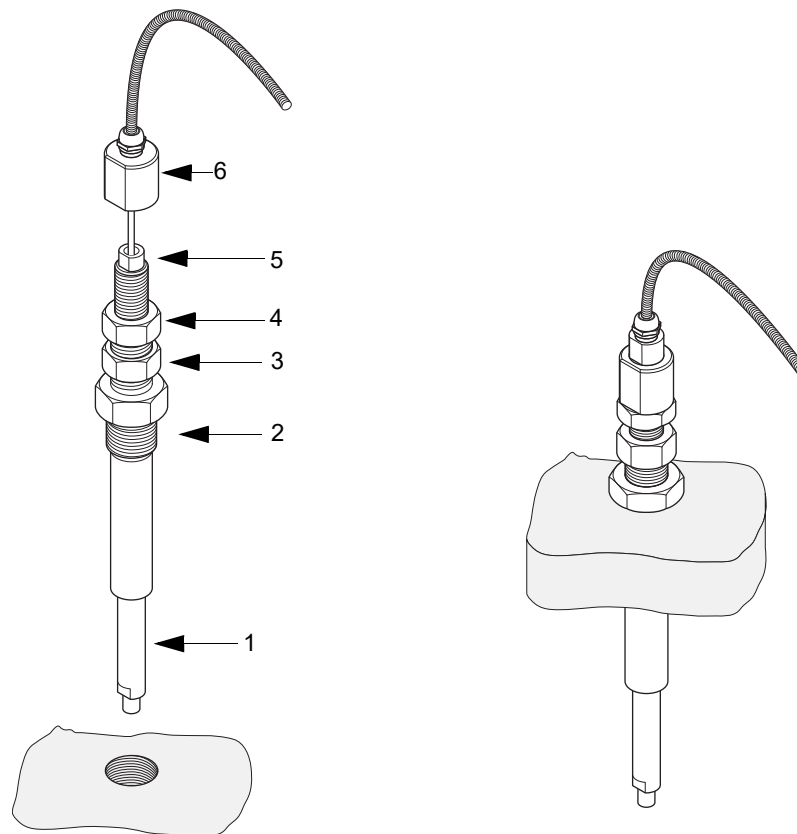


Figure 2-16: Mounting a PA153 probe adaptor

3 INSTALLING CABLES

This chapter provides general guidelines on installing cables, cable feedthroughs and cable protectors in TQ9xx-based proximity measurement chains.

NOTE: Further information on a specific cable can be found in the corresponding data sheet.

The information contained in this chapter applies to installing the following:

- Cable feedthroughs
- TQ9xx sensor integral cables
- EA90x extension cables
- IP172 cable protectors
- K2xx or K3xx transmission cables
- K2xx connecting cables.

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 USING PROTECTION MODE “EX I” ONLY MUST BE DETERMINED AS PER THE CONDITIONS AND LIMITATIONS SPECIFIED IN THE EX CERTIFICATES FOR THE PRODUCT.

FOR THE CONNECTION BETWEEN A TQ9XX SENSOR (WITH INTEGRAL CABLE) AND AN EA90X EXTENSION CABLE, THE USER MUST ENSURE A PROTECTION RATING OF AT LEAST IP54 OR EQUIVALENT.

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

3.1.2 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 information on the minimum bend radius of a specific cable can be found in the corresponding data sheet.



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

3.1.3 Total system (chain) length

The combined length of the TQ9xx sensor integral cable and the EA90x extension cable is known as the total system length (TSL) and must be one of the appropriate possible lengths defined by Meggitt.

NOTE: Further information on the total system lengths (TSLs) available for a specific proximity measurement chain can be found in the corresponding data sheet.



Because Meggitt's vibro-meter[®] proximity measurement chains are tuned systems, never shorten or lengthen a TQ9xx proximity sensor's integral cable or an EA90x extension cable. The original total system (chain) length must be conserved. Otherwise, calibration of the proximity measurement chain will be inaccurate.

3.1.4 Operating temperature range



The temperature where a cable is installed must remain permanently within its operating temperature range.

NOTE: For further information on the temperature range of a specific cable, refer to the corresponding data sheet.

3.1.5 Minimizing sources of electromagnetic interference

Signals in the proximity measurement chain, like all electrical signals, are sensitive to electromagnetic interference (EMI). This is particularly true near the proximity sensor, 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 8 Electrical connections).
- 2- If possible, place cables in a grounded steel protection tube to provide additional electrical and mechanical protection.
- 3- Do not run signal cables through conduits used for other purposes such as power cables or communications lines.

3.1.6 Cable conduits

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

The conduit must be well grounded according to industry standards in order to provide protection against EMI.

The conduit should be reasonably waterproof to prevent water or other liquids entering it. If there is a risk of this happening, or of condensation forming in the conduit, then adequate drainage should be provided.

3.1.7 Interconnection protection

IP172 interconnection protection is installed using the IP172 tool and silicone grease provided in the IP172 interconnection protection mounting kit. Although silicone grease is not regarded as a health or environmental hazard, avoid contact with skin and eyes, and wash your hands after use.



The following precautions should be considered when using silicone grease.

- **Ventilation: Not required.**
- **Hand/skin protection: Use suitable protective gloves and wear appropriate clothing if risk of skin contact.**
- **Eye protection: Wear safety goggles or face shield if risk of splashing.**
- **General: Adhere to the usual precautionary measures required when handling chemicals.**

3.2 Cable feedthroughs

3.2.1 Mounting a cable feedthrough



BEFORE MOUNTING A CABLE FEEDTHROUGH, THE MACHINE HOUSING SHOULD BE PREPARED WITH A THREADED HOLE TO MATCH THE CABLE FEEDTHROUGH'S ADAPTOR. REFER TO THE SG10X OR SG164 DATA SHEETS FOR THE DIMENSIONS OF THE ADAPTOR AND ANY FURTHER INFORMATION.

The thread of the SG1xx cable feedthrough should be made leak-tight by adding a strip of Teflon before screwing it into the machine housing as shown in Figure 3-1.

3.2.2 Connecting cables to a cable feedthrough

The SG10x cable feedthroughs are composed of a double cable stuffing gland to secure both a coaxial cable (Figure 3-2, ref. 1) and a stainless steel flexible protective sheathing (Figure 3-2, ref. 2).

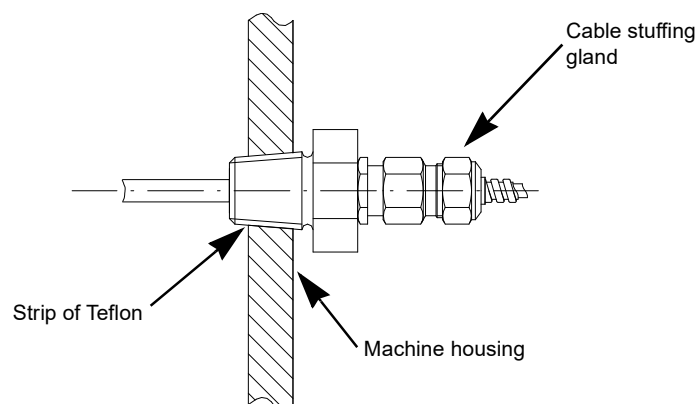


Figure 3-1: Mounting a SG10x cable feedthrough

Note: All dimensions in mm unless otherwise stated.

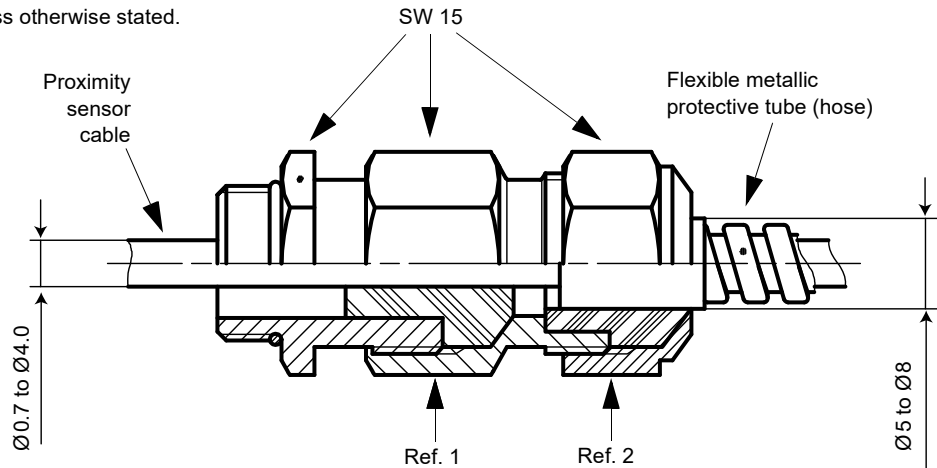


Figure 3-2: Connecting cables to a SG10x cable feedthrough

3.3 Installing an integral or extension cable



The integral cable or extension cable should never be shortened, under any circumstances. Any excess cable should be passed in a loop before the junction box and fixed using cable clamps.

A TQ9xx sensor’s integral cable and an EA90x extension cable are connected using their complementary mating self-locking miniature coaxial connector (hand-tightened, until locked).

The self-locking miniature coaxial connectors should be screwed together as far as possible in order to ensure a reliable connection:

- Do not stop screwing the connectors together after the first “click”.
- Continue screwing the connectors together for multiple clicks while pushing the male connector against the female connector, until the connection is hand-tight (that is, cannot be tightened any further by hand).

NOTE: The female connector is spring-loaded and must be pushed back in order to achieve a correct assembly.

As an example, Figure 3-3 shows a correctly tightened connection between the coaxial cable from the sensor / measurement chain to the input of the IQS900 signal conditioner (using self-locking miniature coaxial connectors).

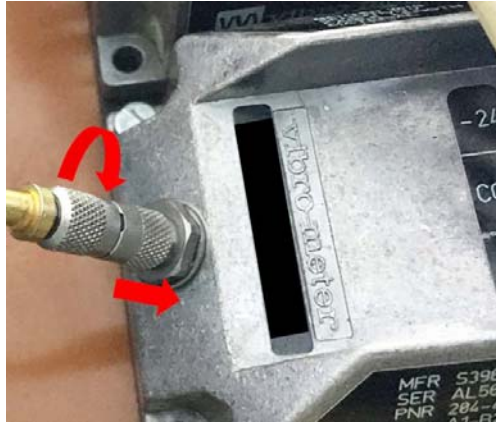


Figure 3-3: A correctly tightened connection between the coaxial cable from the sensor / measurement chain to the input of the IQS900 signal conditioner (using self-locking miniature coaxial connectors)

In addition, it is advisable to use heat-shrinkable sleeves to ensure that the connectors do not become loose. This may occur when the connectors are in close proximity to the machine being measured and are thus susceptible to vibrations produced by the machine.

Outside the machine housing, it is possible to use a rigid metal cable duct rather than clamping the cable.

NOTE: The proximity sensor mounting support and the proximity sensor should not be disassembled once the proximity measurement chain has been installed, otherwise the sensor-to-target distance will be altered and the cable may become twisted.

3.4 Protecting the connection between integral and extension cables

The connection between a TQ9xx sensor's integral cable and an EA90x extension cable can be mechanically protected and electrically isolated using one of the following:

- IP172 interconnection protection (see 3.4.1 Installing IP172 interconnection protection). IP172 interconnection protection is available as an ordering option for new TQ9xx and EA90x assemblies, but can also be easily and quickly retrofitted to existing TQxxx-based proximity measurement chains using the equipment provided in the IP172 interconnection protection mounting kit.
- A JB118 junction box (see 4.2 Installing a junction box).
- The protective housing associated with the PA151 / PA152 probe adaptor, if included in the proximity measurement chain (see 2.3.3.2 Mounting PA151 and PA152 probe adaptors).

3.4.1 Installing IP172 interconnection protection

IP172 interconnection protection is used to provide a basic level of mechanical and electrical protection to the connection between a TQ9xx sensor's integral cable and an EA90x extension cable.

IP172 interconnection protection is used on the connection between TQxxx and EAxxx cables that uses miniature coaxial connectors. IP172 interconnection protectors are compatible with the self-locking miniature coaxial connectors used by TQ9xx-based proximity measurement chains (and later TQ4xx-based chains – refer to the *Proximity measurement systems using TQ4xxx proximity sensors with IQS45x signal conditioners installation manual*).

An IP172 interconnection protector is a protective fluorosilicone rubber boot that consists of two parts (male and female). The parts of the interconnection protector are assembled behind the miniature coaxial connectors on the cables to be joined. Then, after the electrical connection is made using the connectors, the two parts of the interconnection protector are push-fit assembled to surround and protect the connection.

For compatibility with the orientation of IP172 interconnection protection used on TQ9xx sensors and EA90x extension cable assemblies:

- The male IP172 interconnection protector (refer to the IP172 data sheet) should be assembled on the TQ9xx sensor and integral cable assembly, as shown in Figure 3-4.
- The female IP172 interconnection protector (refer to the IP172 data sheet) should be assembled on the EA90x extension cable assembly, as shown in Figure 3-5.

Installing an IP172 is a simple procedure but does require that the connection between the TQ9xx sensor and EA90x extension cable is broken for a few minutes.

3.4.1.1 Equipment required

IP172 interconnection protection is assembled on the TQ9xx and EA90x cables using the equipment provided in the IP172 interconnection protection mounting kit:


- IP172 interconnection protectors
- IP172 tool
- Silicone grease.

NOTE: Only use silicone grease with the flurosilicone-based IP172 interconnection protectors.

Hydrocarbon-based greases can damage the flurosilicone of the interconnection protector, for example, causing changes in size or a softening of the rubber.

Protecting the connection between a TQ9xx sensor's integral cable and an EA90x extension cable requires three steps:

- 1- Assembling the male IP172 interconnection protector on the TQ9xx's integral cable.
- 2- Assembling the female IP172 interconnection protector on the EA90x extension cable.
- 3- Joining the two parts of the IP172 interconnection protection.

Refer to the  IP172 *interconnection protection mounting kit data sheet* for additional information, including replacement part ordering information.

3.4.1.2 Assembling the male IP172 interconnection protector on a TQ9xx sensor's integral cable


3.4.1.2.1 Prerequisites

- TQ9xx with integral cable
- IP172 interconnection protector: male part (refer to the IP172 data sheet)
- IP172 tool: male part (refer to the IP172 data sheet)
- Silicone grease.

Before starting, separate the TQ9xx sensor's integral cable and the EA90x extension cable by unscrewing the miniature coaxial connectors, if required.

3.4.1.2.2 Procedure

To assemble the male IP172 interconnection protector on the TQ9xx sensor's integral cable, see Figure 3-4 and:

- 1- Screw the miniature coaxial connector of the TQ9xx's integral cable onto the male part of the IP172 tool (hand-tightened).
- 2- Orientate the small diameter opening of the male IP172 interconnection protector with the tool. Lubricate the small diameter opening of the interconnection protector (or the tool itself) with a pea-sized amount of silicone grease, as indicated by the  symbol in Figure 3-4).

The silicone grease is used as a lubricant, to protect the interconnection protector from damage as it moves over the miniature coaxial connector. It is not a sealant, so don't use too much.

NOTE: Silicone grease should be kept away from the electrically conductive contacts of the connector because it could interfere with the electrical signals passing through the connector.

- 3- Slide the interconnection protector along the length of the tool until it passes the miniature coaxial connector and is completely on the TQ9xx's integral cable.
If necessary, a bar (such as a screwdriver) can be inserted through the opening in the end of the tool for an improved grip.

NOTE: To avoid damaging the TQ9xx's integral cable, do not use the cable for leverage when assembling the interconnection protector on the cable. Instead, hold the tool firmly in one hand and move the interconnection protector along the tool using the other hand. If an adequate quantity of silicone grease is used, the interconnection protector will slide over the miniature coaxial connector.

- 4- Unscrew the miniature coaxial connector of the TQ9xx's integral cable from the IP172 tool.
- 5- Clean any excess silicone grease from the TQ9xx's integral cable (and the tool) using a clean paper towel or cloth, being careful to keep the miniature coaxial connector free of the silicone grease.

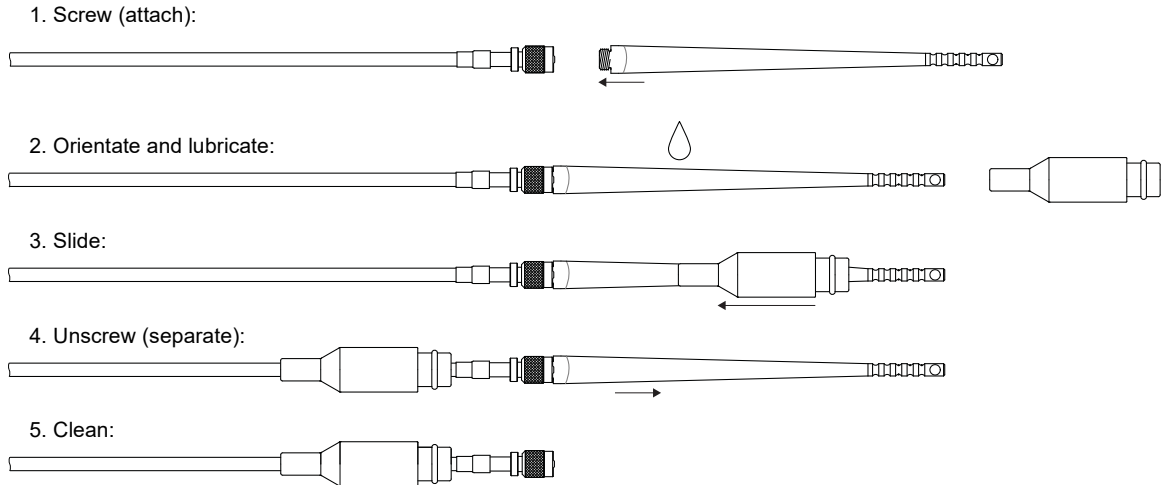


Figure 3-4: Assembling the male IP172 interconnection protector on a TQ9xx sensor's integral cable

3.4.1.3 Assembling the female IP172 interconnection protector on an EA90x extension cable


3.4.1.3.1 Prerequisites

- EA90x extension cable
- IP172 interconnection protector: female part (refer to the IP172 data sheet)
- IP172 tool: female part (refer to the IP172 data sheet)
- Silicone grease.

Before starting, separate the TQ9xx sensor's integral cable and the EA90x extension cable by unscrewing the miniature coaxial connectors, if required.

3.4.1.3.2 Procedure

To assemble the female IP172 interconnection protector on the EA90x extension cable, see Figure 3-5 and:

- 1- Screw the female part of the IP172 tool onto the miniature coaxial connector of the EA90x extension cable (hand-tightened).
- 2- Orientate the small diameter opening of the female IP172 interconnection protector with the tool. Lubricate the small diameter opening of the interconnection protector (or the tool itself) with a pea-sized amount of silicone grease, as indicated by the  symbol in Figure 3-5).

The silicone grease is used as a lubricant, to protect the interconnection protector from damage as it moves over the miniature coaxial connector. It is not a sealant, so don't use too much.

NOTE: Silicone grease should be kept away from the electrically conductive contacts of the connector because it could interfere with the electrical signals passing through the connector.

- 3- Slide the interconnection protector along the length of the tool until it passes the miniature coaxial connector and is completely on the EA90x extension cable.
If necessary, a bar (such as a screwdriver) can be inserted through the opening in the end of the tool for an improved grip.

NOTE: To avoid damaging the EA90x extension cable, do not use the cable for leverage when assembling the interconnection protector on the cable. Instead, hold the tool firmly in one hand and move the interconnection protector along the tool using the other hand. If an adequate quantity of silicone grease is used, the interconnection protector will slide over the miniature coaxial connector.

- 4- Unscrew (disassemble) the IP172 tool from the miniature coaxial connector of the EA90x extension cable.
- 5- Clean any excess silicone grease from the EA90x extension cable (and the tool) using a clean paper towel or cloth, being careful to keep the miniature coaxial connector free of the silicone grease.

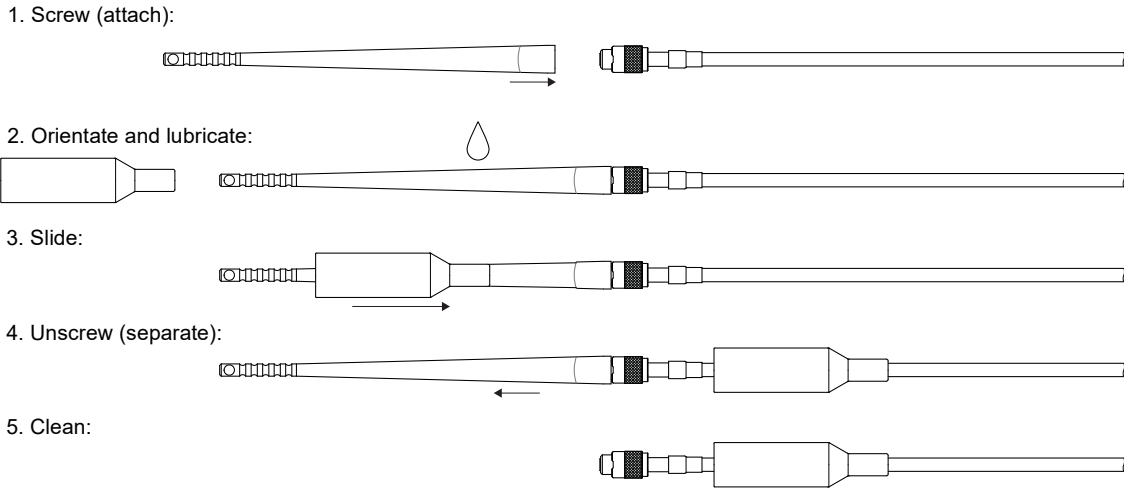


Figure 3-5: Assembling the female IP172 interconnection protector on an EA90x extension cable

3.4.1.4 Joining the two parts of the IP172 interconnection protection

To join the two parts of the IP172 interconnection protection and protect the connection between a TQ9xx sensor and an EA90x extension cable, see Figure 3-6 and:

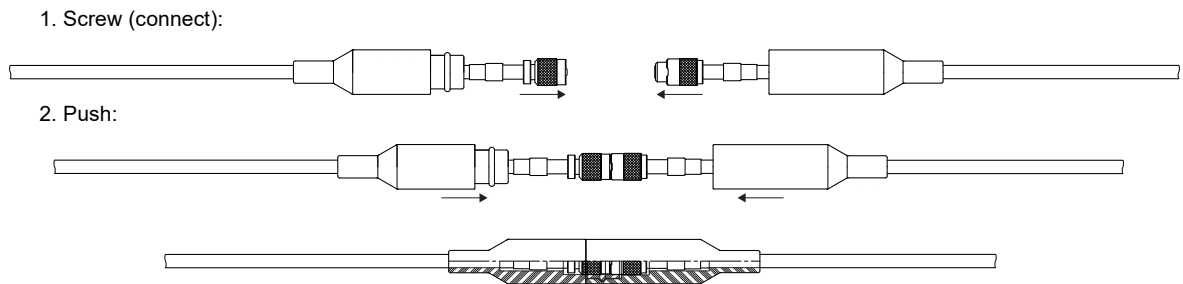


Figure 3-6: Joining the two parts of the IP172 interconnection protection

- 1- Screw the self-locking miniature coaxial connectors of the TQ9xx sensor’s integral cable and the EA90x extension cable together (hand-tightened, until locked).

NOTE: The connectors should be screwed together as far as possible in order to ensure a reliable connection:

- Do not stop screwing the connectors together after the first “click”.
- Continue screwing the connectors together for multiple clicks while pushing the male connector against the female connector, until the connection is hand-tight (that is, cannot be tightened any further by hand).

Note: The female connector is spring-loaded and must be pushed back in order to achieve a correct assembly.

See 3.3 Installing an integral or extension cable and Figure 3-3.

- 2- Push the male interconnection protector on the TQ9xx sensor’s integral cable into the female interconnection protector on the EA90x extension cable.

The two parts of the interconnection protection will temporarily deform as they are brought together, then return to an unstressed state in the final (assembled) position.

- 3- The IP172 interconnection protection is completely assembled when the raised ring of male interconnection protector fits into the annular groove of the female interconnection protector and all surfaces are flush (aligned).

The friction of the fluorosilicone and the geometry of the annular ring/groove provide a retaining (release) force that must be overcome in order to separate the IP172 interconnection protection.

As IP172 interconnection protection is push-fit assembled, it can be disassembled at any time by pulling the two parts of the interconnection protector apart (for example, to inspect the connection). IP172 interconnection protection is reusable by pushing the parts of the interconnection protector together again.

To permanently remove IP172 interconnection protection, the interconnection protectors can be carefully cut away from the cables.

After installing IP172 interconnection protection, ensure that the cables are appropriately fixed (see 3.3 Installing an integral or extension cable).

3.5 Installing transmission cables and connecting cables

See 3.1 General precautions before continuing with the installation and fixing a transmission or connecting cable.

The cables covered in this section are:

- The K2xx or K3xx transmission cables between an IQS900 signal conditioner and an electronic monitoring system.
- The K2xx or K3xx transmission cables between an IQS900 signal conditioner and a GSI127 galvanic separation unit, and the K2xx connecting cables between a GSI127 galvanic separation unit and an electronic monitoring system.

The cables listed above can be mounted according to standards for low-voltage installations. However, care should be taken to minimize the effects of EMI (3.1.5 Minimizing sources of electromagnetic interference).

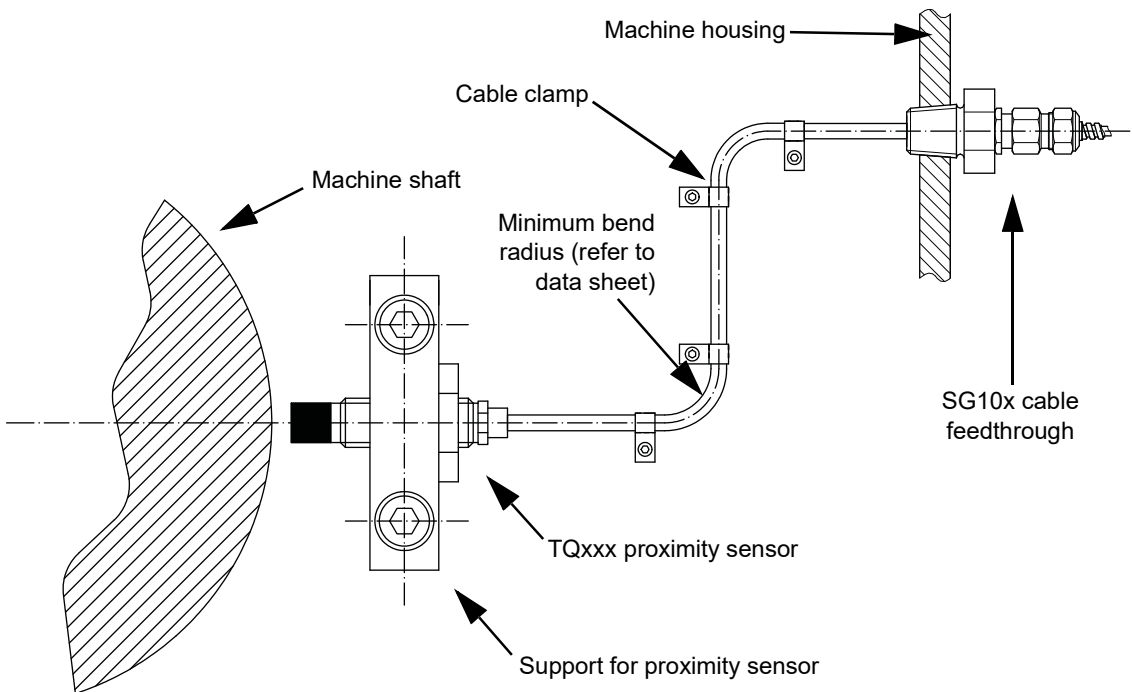


Figure 3-7: Example of cabling inside a machine housing using an SG10x cable feedthrough

4 INSTALLING JUNCTION BOXES, INDUSTRIAL HOUSINGS AND SIGNAL CONDITIONERS

This chapter provides general guidelines on mounting and installing junction boxes, ABA17x industrial housings and IQS900 signal conditioners in TQ9xx-based proximity 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:

- JB118 junction boxes used to protect the connection between a TQ9xx sensor's integral cable and an EA90x extension cable (see 4.2 Installing a junction box).
- ABA17x industrial housings (see 4.3 Installing an ABA17x industrial housing).
- IQS900 signal conditioners (see 4.4 Installing an IQS900 signal conditioner).

4.1 General precautions

4.1.1 Junctions boxes in potentially explosive atmospheres



JB118 JUNCTION BOXES CAN BE INSTALLED IN POTENTIALLY EXPLOSIVE ATMOSPHERES (EX ZONES).

FOR FURTHER INFORMATION, SEE EQUIPMENT INSTALLED IN POTENTIALLY EXPLOSIVE ATMOSPHERES AND THE EX CERTIFICATES IN THE APPENDICES OF THIS MANUAL. (THE 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 SUCH ENVIRONMENTS.

4.1.2 Industrial housings and signal conditioners in potentially explosive atmospheres



ABA17X INDUSTRIAL HOUSINGS CAN BE INSTALLED IN POTENTIALLY EXPLOSIVE ATMOSPHERES (EX ZONES).

AN IQS900 SIGNAL CONDITIONER WITH PROTECTION MODE “EX EC” 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 IQS900 SIGNAL CONDITIONER LOCATED IN AN EX ZONE 2 IN NORTH AMERICA (CCSAUS), THE FINAL ENCLOSURE IN WHICH THE IQS900 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).

IN ADDITION, FOR THE CONNECTION BETWEEN A TQ9XX SENSOR (WITH INTEGRAL CABLE) AND AN EA90X EXTENSION CABLE, THE USER MUST ENSURE A PROTECTION RATING OF AT LEAST IP54 OR EQUIVALENT (SEE 3 INSTALLING CABLES).

FOR FURTHER INFORMATION, SEE EQUIPMENT INSTALLED IN POTENTIALLY EXPLOSIVE ATMOSPHERES AND THE EX CERTIFICATES IN THE APPENDICES OF THIS MANUAL. (THE 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 SUCH ENVIRONMENTS.

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 IQS900 SIGNAL CONDITIONER WITH PROTECTION MODE “EX EC” LOCATED IN AN EX ZONE 2 (HAZARDOUS AREA), DO NOT INSTALL OR REPLACE THE IQS900 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.



When connecting cables in a metallic junction box, care should be taken to ensure their connectors do not touch the box. Insulating the connectors with a heat-shrinkable sleeve will prevent this. In the case of the JB118 and PA150 this is not necessary as these boxes are made of polyester.

4.2.1 Mounting a JB118 junction box

The JB118 junction box has internal mounting holes for easy and safe installation on various 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.

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

- 3- Remove the cover of the junction box (see Figure 4-1).
- 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).
- 6- Fix the cover back on the junction box.

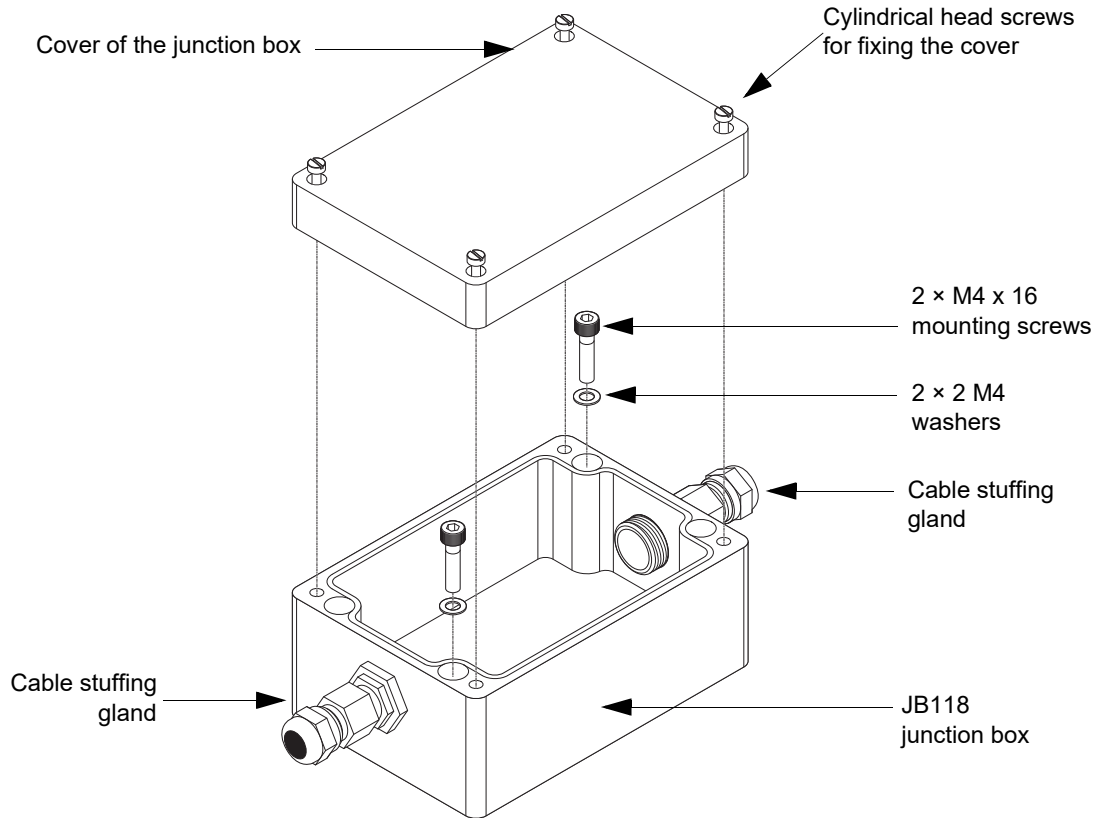


Figure 4-1: Mounting a JB118 junction box

4.2.2 Connecting cables within a junction box

- 1- Mount the junction box (see 4.2.1 Mounting a JB118 junction box).
- 2- Loosen the cable stuffing glands on the junction box and feed the cables through.
- 3- Connect the TQ9xx sensor's integral cable and the EA90x extension cable within the junction box.
- 4- Tighten the cable stuffing glands and check that the cables are securely fastened by the stuffing glands (fittings). This helps ensure that the cabling and the junction box are protected and secure.
- 5- Screw the cover back on the 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 4-6).

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 IQS900 signal conditioner and 4.4.5 Connecting cables).

4.4 Installing an IQS900 signal conditioner

4.4.1 About the IQS900 signal conditioner

The IQS900 signal conditioner is a highly-configurable product that can be ordered with different product options – such as choice of environment (standard or Explosive (“Ex”)), measurement range and sensitivity (including output signal (current or voltage)), diagnostics (with or without), total system length (TSL) and installation (with or without DIN-rail mounting adaptor) – which effectively result in different versions of the product.

When ordering an IQS900, the part number (PNR) and ordering option codes are used to specify the complete configuration of the signal conditioner. For example, a complete IQS900 ordering number including part number (PNR) and ordering option codes is:
204-900-000-011-Ax-Bxx-Cx-Hxx-Ix.

NOTE: Refer to a *TQ9xx*, *EA90x* and *IQS900 proximity measurement chain data sheet* for further information on ordering option codes.

NOTE: All configurable product options for an IQS900 signal conditioner must be made at the time of ordering.
All IQS900 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 IQS900 signal conditioner, it can either be with or without the optional diagnostics circuitry (that is, built-in self-test (BIST)).

In general, the output signal from an IQS900 signal conditioner consists of a dynamic component (AC) that corresponds to the measured vibration (displacement) and a quasi-static component (DC) that corresponds to the measured gap.

For an IQS900 signal conditioner with diagnostics, the quasi-static DC component also functions as a diagnostic indicator. More specifically, the IQS900's diagnostic circuitry (BIST) continuously checks the integrity of the measurement chain and will drive/saturate the quasi-static measurement/diagnostic component (DC) of the output signal outside of its normal operating range to indicate a problem with the measurement chain (sensor, cabling and/or the IQS900 signal conditioner itself). In other words, the output signal from an IQS900 with diagnostics changes to indicate the validity of a measurement, so that you always know when it is safe to run your machinery.

An IQS900 signal conditioner without diagnostics does not check the integrity of the measurement chain and the quasi-static component (DC) of the output signal is simply a DC value that corresponds to the measured gap.

See also Figure 4.4.1.3.

The ordering option code **Cx** is used to specify the configuration of an IQS900's optional diagnostics as follows:

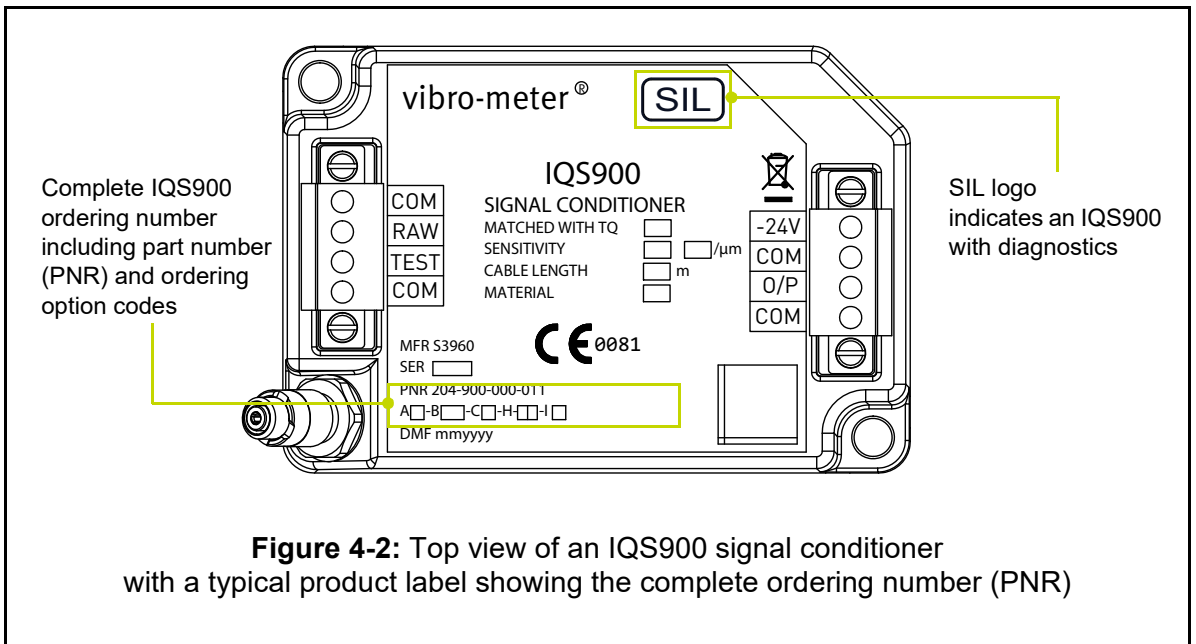
- Ordering number 204-900-000-011-Ax-Bxx-**C2**-Hxx-lx for an IQS900 **with diagnostics**.
- Ordering number 204-900-000-011-Ax-Bxx-**C1**-Hxx-lx for an IQS900 **without diagnostics**.

NOTE: An IQS900 signal conditioner with diagnostics (ordering option code **C2**) is recommended for use in safety-related applications.

NOTE: Refer to a *TQ9xx, EA90x and IQS900 proximity measurement chain data sheet* for further information on ordering option codes.

4.4.1.2 Identifying different versions

As shown in Figure 4-2, the product label on the top of an IQS900 signal conditioner shows the complete ordering number – including part number (PNR) and ordering option codes.



NOTE: An IQS900 signal conditioner with diagnostics, suitable for use in safety-related applications, is identified by the ordering option code **C2** and a **SIL** logo.

Always check an IQS900 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 4-3, the output from an IQS900 signal conditioner in a TQ9xx-based proximity measurement chain is an analogue signal consisting of a dynamic measurement component (AC) and a quasi-static measurement/diagnostic component (DC).

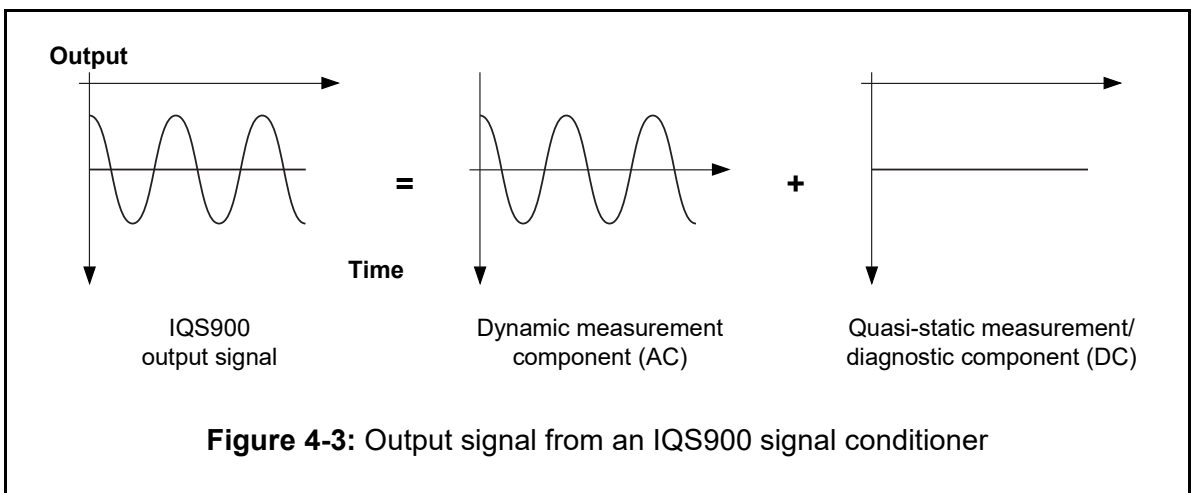


Figure 4-3: Output signal from an IQS900 signal conditioner

For the output signal from an IQS900 signal conditioner in a with diagnostics:

- The dynamic measurement component (AC) corresponds to the measured vibration.
- The quasi-static measurement/diagnostic component (DC) corresponds to either the gap (distance) to the target/shaft or the status of the measurement chain.

For an IQS900 with diagnostics, internal electronic circuitry continuously checks the integrity of the measurement chain (sensor, cabling and signal conditioner) and updates the value of the measurement/diagnostic component (DC) as follows:

- During normal operation, the measurement/diagnostic component (DC) is a value within the normal operating range that corresponds to the gap (distance) to the target/shaft.
- When there is a problem with the TQ9xx-based measurement chain, the measurement/diagnostic component (DC) is a value outside of the normal operating range to indicate a problem with the measurement chain or its power supply.

NOTE: For an IQS900 with diagnostics, any measurement/diagnostic component (DC) value within the normal operating range of the IQS900 corresponds to normal operation of a TQ9xx-based measurement chain. All other values indicate a problem with the measurement chain.

Table 4-1 lists the permitted values for the measurement/diagnostic component (DC) of the output signal from an IQS900 with diagnostics.

NOTE: Refer to the latest version of the *TQxxx proximity measurement chains using an IQS900 signal conditioner safety manual* for more information on an IQS900 with diagnostics.

For the output signal from an IQS900 signal conditioner without diagnostics:

- The dynamic measurement component (AC) corresponds to the measured vibration.
- The quasi-static measurement/diagnostic component (DC) corresponds to the gap (distance) to the target/shaft only.

For an IQS900 without diagnostics:

- During normal operation, the measurement component (DC) is a value within the normal operating range that corresponds to the gap (distance) to the target/shaft.

NOTE: For an IQS900 without diagnostics, the measurement/diagnostic component (DC) output provides measurements only. There is no diagnostics.

Table 4-2 lists the permitted values for the quasi-static measurement/diagnostic component (DC) of the output signal from an IQS900 without diagnostics.

Table 4-1: Permitted values for the quasi-static measurement/diagnostic component (DC) of the output signal from an IQS900 with diagnostics

Measurement /diagnostic component (DC) value	Measurement chain OK?	Description
-15.5 to -20.5 mA _{DC} or -1.6 to -17.6 V _{DC} (within the normal operating range)	Yes	Normal operation. The measurement components (AC and DC) of the output signal can be trusted.
>-15.5 or <-20.5 mA _{DC} or >-1.6 or <-17.6 V _{DC} (outside of the normal operating range)	No	Problem with the measurement chain (sensor, cabling and/or signal conditioner)

Notes

The output signal from an IQS900 signal conditioner can be either a current (mA) or a voltage (V) signal, depending on the configured measurement range and sensitivity (which also determines the type of output signal).

Table 4-2: Permitted values for the quasi-static measurement/diagnostic component (DC) of the output signal from an IQS900 without diagnostics

Measurement /diagnostic component (DC) value	Description
-15.5 to -20.5 mA _{DC} or -1.6 to -17.6 V _{DC} (within the normal operating range)	Normal operation

Notes

The output signal from an IQS900 signal conditioner can be either a current (mA) or a voltage (V) signal, depending on the configured measurement range and sensitivity (which also determines the type of output signal).

4.4.1.4 Valid TQ9xx, EA90x and IQS900 measurement chains

In order to support the correct operation of an IQS900 signal conditioner with diagnostics, the TQ9xx-based measurement chain must be “valid”, that is, consist of a TQ9xx proximity sensor, an optional EA90x extension cable and an IQS900 signal conditioner with diagnostics.

4.4.1.5 TQ9xx-based proximity measurement chains in safety-related applications

When a TQ9xx-based proximity 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), A TQ9XX-BASED PROXIMITY MEASUREMENT CHAIN SHOULD CONSIST OF A TQ9XX PROXIMITY SENSOR, AN OPTIONAL EA90X EXTENSION CABLE AND AN IQS900 SIGNAL CONDITIONER WITH DIAGNOSTICS.

It is the end-user's responsibility to ensure that the recommendations in the *TQxxx proximity measurement chains using an IQS900 signal conditioner safety manual* are implemented as appropriate.

NOTE: Refer to the *TQxxx proximity measurement chains using an IQS900 signal conditioner safety manual* for further information on using TQ9xx-based proximity measurement chains in safety-related systems (functional safety contexts).

4.4.2 Mounting procedure



SEE 4.1 GENERAL PRECAUTIONS BEFORE INSTALLING AN IQS900 SIGNAL CONDITIONER.

An IQS900 signal conditioner can be installed in different ways, depending on its configured installation option:

- IQS900 with DIN-rail mounting adaptor
An IQS900 with a DIN-rail mounting adaptor (ordering option **I1**) should be installed on a 35 mm wide symmetrical DIN rail such as a TH 35-7.5.
- IQS900 without DIN-rail mounting adaptor
An IQS900 without a DIN-rail mounting adaptor (ordering option **I0**) should be installed on a base plate or other mounting surface.

An IQS900 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 IQS900's housing features a self-locking miniature coaxial connector and removable screw-terminal connectors that can be unplugged from the main body of the housing to simplify installation of the signal conditioner (see Figure 4-6).

4.4.2.1 Grounding

NOTE: The metal housing (electrically conductive) of an IQS900 is connected to its “COM” signals/terminals. Accordingly, an IQS900 must be installed and operated without a direct electrical connection between the IQS900 and ground (GND).

Installation and operation of an IQS900 without a direct electrical connection between the IQS900 and ground (GND) is required for measurement chains that comply with required CE and SIL electromagnetic compatibility (EMC) standards.

See 8.2 General wiring diagrams.

4.4.2.2 Installing on a DIN rail

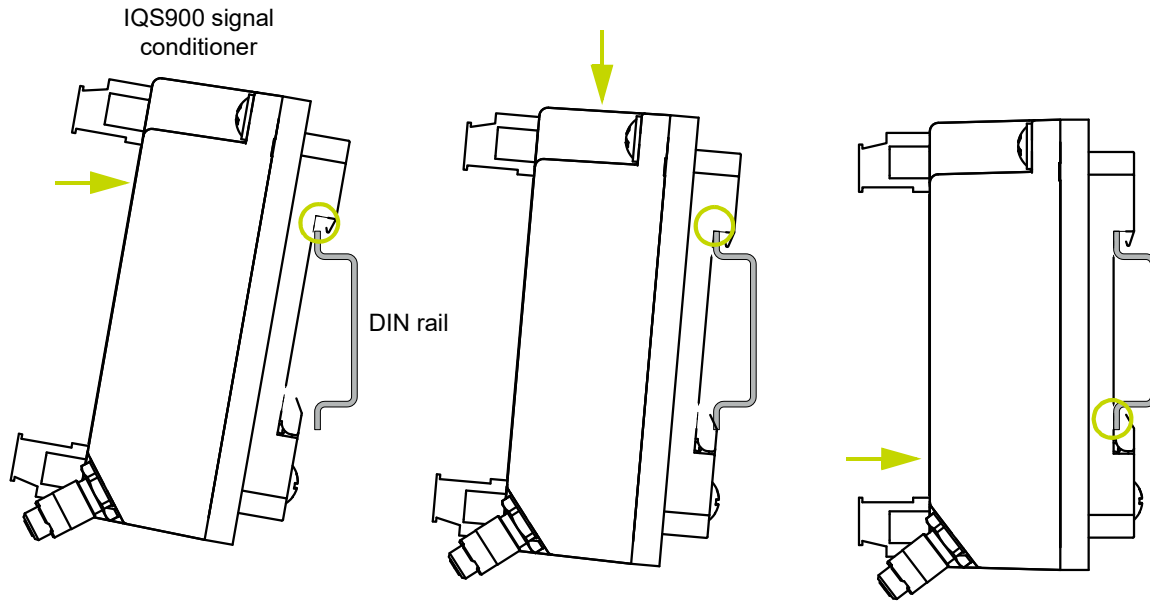
An IQS900 signal conditioner with a DIN-rail mounting adaptor is easily installed on or removed from a DIN rail (see Figure 4-4). No special tools are required.

To install an IQS900 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 IQS900 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 4.4.5 Connecting cables and 8.2 General wiring diagrams).

Similarly, to remove an IQS900 signal conditioner from a DIN rail:

- 1- Disconnect the cables from the signal conditioner (see 4.4.5 Connecting cables).
- 2- Push against the spring-loaded end of the DIN-rail mounting adaptor (thereby compressing the springs), while pivoting the IQS900 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.



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, while pivoting the IQS900 signal conditioner in order to hook it over the DIN rail.

Figure 4-4: Installing an IQS900 signal conditioner on a DIN rail

For an IQS900 signal conditioner installed on a DIN-rail, an electrical connection between the IQS900 and ground (GND) should be made by clamping the cable shield (“COM”) to a grounding bracket at the entrance of the industrial housing, rack or cabinet/cubicle.

See 8.2 General wiring diagrams.

4.4.2.3 Installing on a base plate or other mounting surface

To install an IQS900 signal conditioner without a DIN-rail mounting adaptor on a base plate or other mounting surface:

- 1- Mount the IQS900 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 IQS900 housing.
- 3- Connect the cables to the signal conditioner (see 4.4.5 Connecting cables and 8.2 General wiring diagrams).

NOTE: The IQS900 signal conditioner has two mounting holes, while an IQS45x signal conditioner has four mounting holes. The mounting hole dimensions are equivalent as the IQS900 replaces the IQS45x.

Similarly, to remove an IQS900 signal conditioner from a base plate or other mounting surface:

- 1- Disconnect the cables from the IQS900 signal conditioner (see 4.4.5 Connecting cables).
- 2- Unfasten the two mounting screws.
- 3- Remove the IQS900 signal conditioner.

For an IQS900 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 IQS900 and ground (GND) can be made through the metal housing of the IQS900 and the metal of the enclosure/machine on which it is mounted.

4.4.3 Removing and inserting self-locking miniature coaxial connectors

See 3.3 Installing an integral or extension cable.

4.4.4 Removing and inserting screw-terminal connectors

To remove a screw-terminal connector from the main body of an IQS900 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 IQS900 signal conditioner:

- 1- Push the screw-terminal connector into the main body of the unit.
- 2- Fasten the two captive fixing screws.

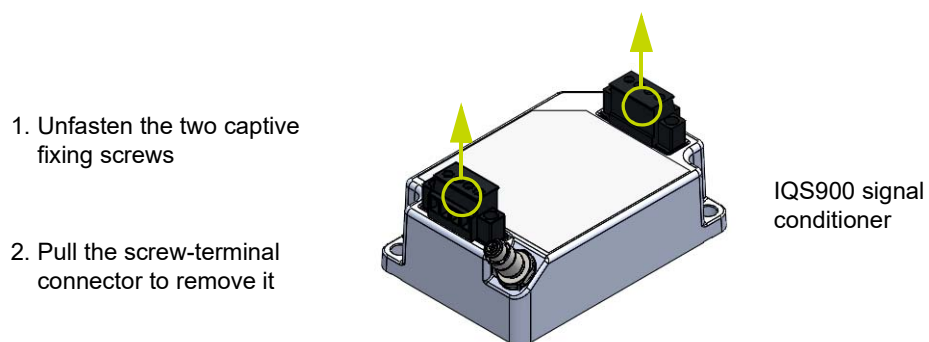


Figure 4-5: Removing a screw-terminal connector from the main body of an IQS900 signal conditioner

4.4.5 Connecting cables



SEE 4.1 GENERAL PRECAUTIONS BEFORE CONNECTING CABLES TO AN IQS900 SIGNAL CONDITIONER.

A coaxial cable (TQ9xx sensor’s integral cable or an EA90x extension cable) is used to connect a TQ9xx proximity sensor to the input of an IQS900 signal conditioner.

A transmission cable is used to connect the output of the IQS900 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” uses a self-locking miniature coaxial connector and the transmission cable to the “monitor-side” uses a removable screw-terminal connector (see Figure 4-5 and Figure 4-6).

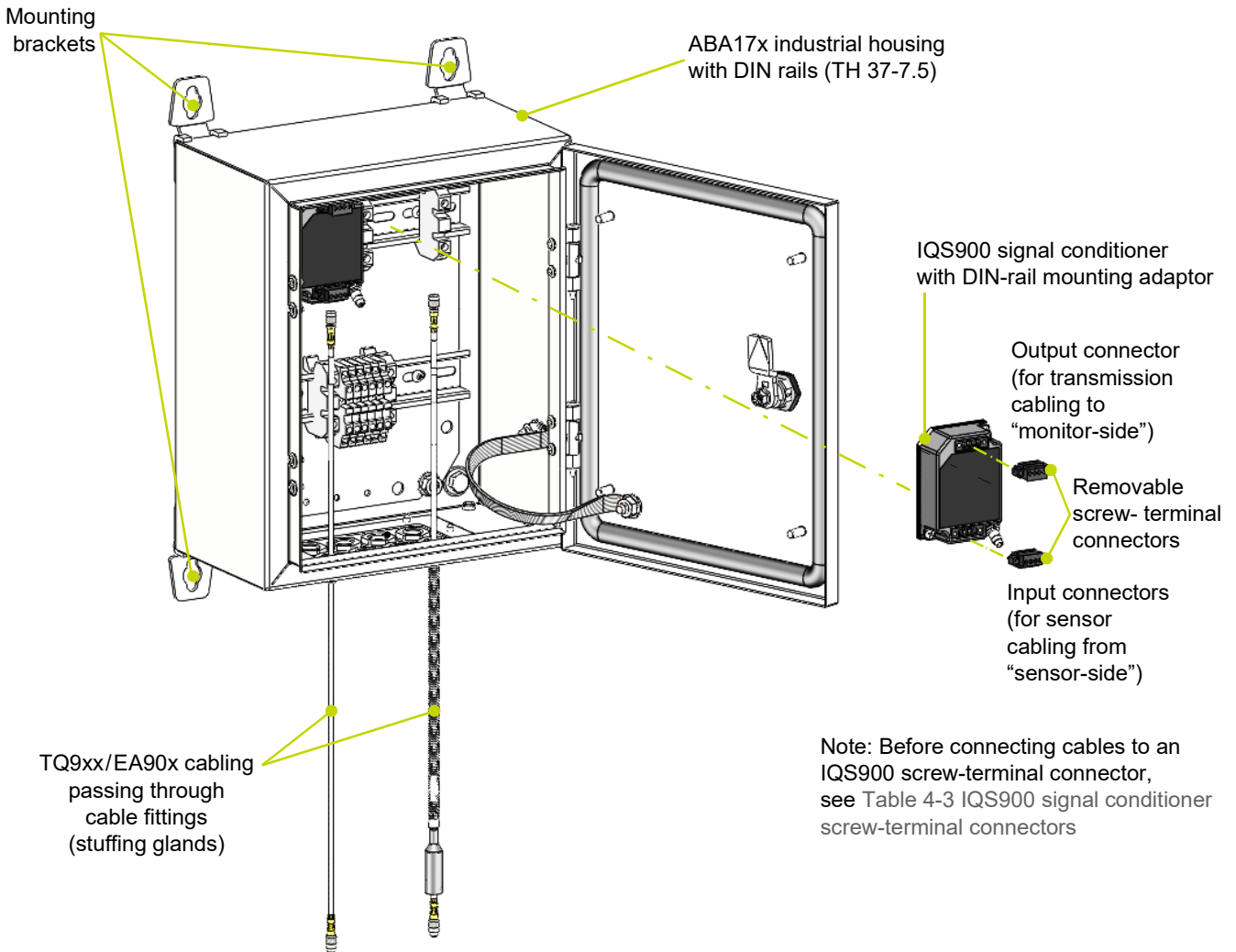


Figure 4-6: IQS900 signal conditioners in an ABA17x industrial housing

NOTE: The IQS900’s housing features a self-locking miniature coaxial connector and removable screw-terminal connectors that can be disconnected from the main body of the housing to simplify installation of the signal conditioner.

The self-locking miniature coaxial connector at the input to an IQS900 signal conditioner connects directly to a TQ9xx proximity sensor's integral cable or an EA90x extension cable assembly.

When connecting a TQ9xx sensor's integral cable or an EA90x extension cable to an IQS900 signal conditioner, see 3.3 Installing an integral or extension cable.

The screw-terminal connector at the input to an IQS900 signal conditioner has connections labelled "COM", "TEST", "RAW" and "COM", which are available for troubleshooting activities such as commissioning and/or fault-finding (see 9 Maintenance and troubleshooting).

The screw-terminal connector at the output from an IQS900 signal conditioner has connections labelled "-24V", "COM", "O/P" and "SHD", which are used for connection to the transmission cable that connects to the "monitor-side", as follows:

- For operation with an IQS900 signal conditioner configured with a current output signal (2-wire signal transmission), three of the output screw terminals are used ("-24V", "COM" and "SHD"). The other screw terminal is not connected ("O/P").
- For operation with an IQS900 signal conditioner configured with a voltage output signal (3-wire signal transmission), all of the output screw terminals are used ("-24V", "COM", "O/P" and "SHD").

NOTE: The shield of the transmission cable to the "monitor-side" must be connected to the "SHD" output of the IQS900 signal conditioner.

See 4.4.2.1 Grounding for information on grounding and 8.2 General wiring diagrams for detailed wiring diagrams of TQ9xx-based proximity measurement chains using an IQS900 signal conditioner.

To connect cables to an IQS900 signal conditioner:

- 1- Ensure that the power supply to the equipment is turned off.
- 2- Mount the industrial housing and IQS900 signal conditioner (see 4.3 Installing an ABA17x industrial housing and 4.4 Installing an IQS900 signal conditioner).
- 3- Strip the insulation off the wires of the "monitor-side" cable assembly, as required.
- 4- Open the door (cover) of the industrial housing.
- 5- Loosen the cable stuffing glands on the industrial housing and feed the cables through.
- 6- Make the electrical connections within the industrial housing:
 - Connect the coaxial cable from the sensor / measurement chain to the input of the IQS900 signal conditioner – using the miniature coaxial connectors (see 3.3 Installing an integral or extension cable).
 - Connect the output of the IQS900 signal conditioner to the transmission cable used for connection to "monitor-side" circuitry such as a GSI127 galvanic separation unit or a monitoring system – using the removable screw-terminal connector.
 - See Figure 4-6, Table 4-3 and 8.2 General wiring diagrams.
- 7- Tighten the cable stuffing glands and check that the cables are firmly held by the stuffing glands (fittings). This helps ensure that the cabling and the industrial housing are protected and secure.
 - The tightening torque values for the proper assembly of cable fittings (stuffing glands) on ABA17x industrial housings are given in Figure B-1 (see Appendix B: Tightening torque values for cable fittings).
- 8- Close the door (or fix the cover) of the industrial housing.

Table 4-3: IQS900 signal conditioner screw-terminal connectors

IQS900 screw-terminal connectors	Metric	Imperial
Clamping range (min. to max.)	0.2 to 1.5 mm ²	24 to 16 AWG
Tightening torque (min. to max.)	0.2 to 0.25 N•m	0.15 to 0.18 lb-ft

If required, see 4.5 Replacing an IQS45x signal conditioner with an IQS900.

4.4.6 Configuring the external monitoring system

The external monitoring and/or protection system used with a TQ9xx-based proximity measurement chain using an IQS900 signal conditioner must be configured to use the appropriate measurement/diagnostic component values provided by the IQS900 (that is, the DC component of the IQS900's output signal).

See 7 Configuring an external monitoring system.

4.5 Replacing an IQS45x signal conditioner with an IQS900



SEE 4.1 GENERAL PRECAUTIONS BEFORE REPLACING AN IQS45x SIGNAL CONDITIONER WITH AN IQS900.

An IQS900 signal conditioner is typically mounted in an ABA17x industrial housing, while an IQS45x signal conditioner is typically mounted in an ABA17x or ABA15x industrial housing.

NOTE: When replacing an IQS45x signal conditioner with an IQS900, 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, ABA15x or equivalent).

4.5.1 Uninstalling the IQS45x

An IQS45x signal conditioner is generally mounted in an ABA17x or ABA15x or industrial housing. The sensor cabling from the “sensor-side” uses a miniature coaxial connector and the transmission cable to the “monitor-side” uses screw-terminals (see Figure 4-7).

To uninstall an IQS45x 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 4-7 for an ABA15x industrial housing).
- 3- Identify the coaxial sensor cable from the “sensor-side” and each wire for the transmission cable to the “monitor-side” that are connected to the IQS45x. See Figure 4-7 and use Table 4-4 to record the number and/or colour for each wire.
- 4- To disconnect the “sensor-side” circuitry (TQ4xx sensor), unscrew the miniature coaxial connector of the coaxial sensor cable from the left/bottom of the IQS45x signal conditioner. See 4.4.3 Removing and inserting self-locking miniature coaxial connectors.
- 5- To disconnect the “monitor-side” circuitry (electronic monitoring system), unscrew the screw terminals of the transmission cable from the right/top of the IQS45x signal conditioner. See 4.4.4 Removing and inserting screw-terminal connectors.
- 6- Remove the cables from the cable stuffing glands of the industrial housing.
- 7- Remove the IQS45x from the device mounting plate or DIN rail.

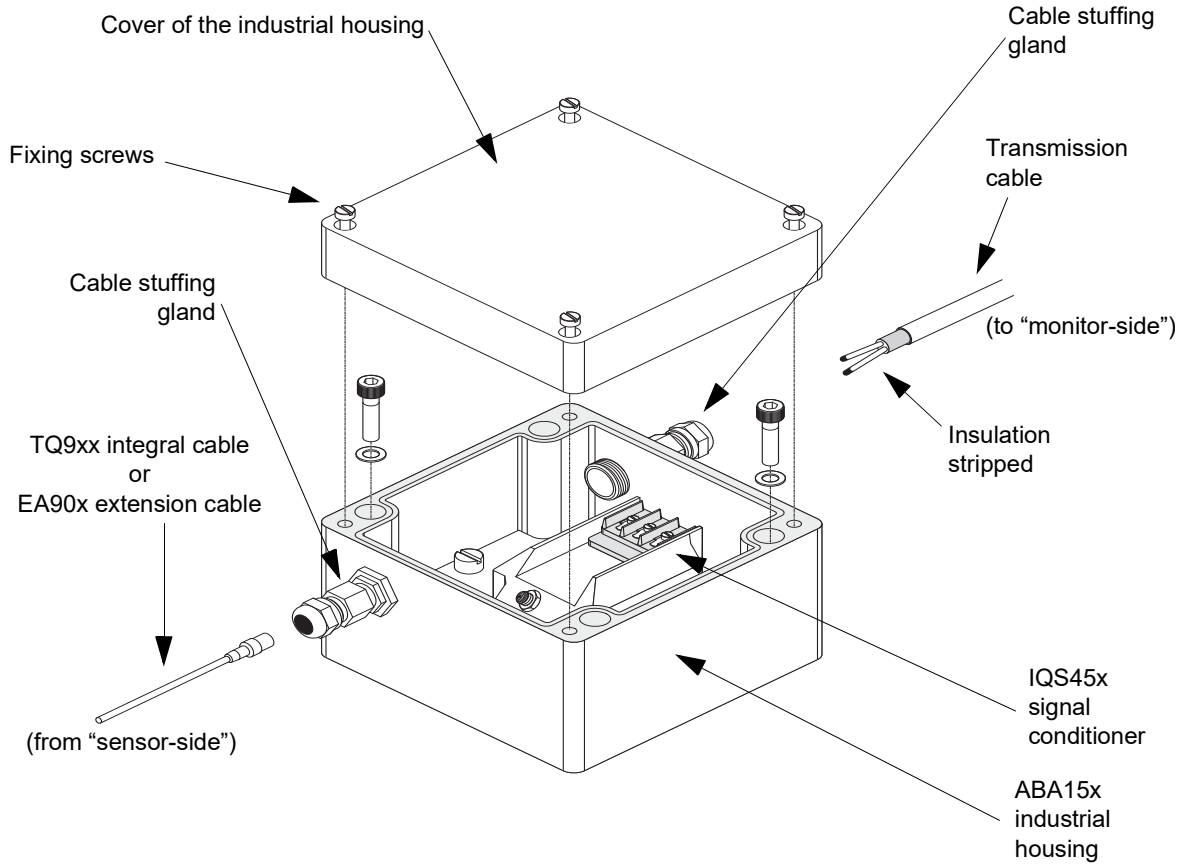


Figure 4-7: An IQS45x signal conditioner in an ABA15x industrial housing

Table 4-4: IQS45x wire identification and mapping to an IQS900

Sensor cabling (“sensor-side”)				Transmission cable (“monitor-side”)			
IQS45x ¹ terminal	Wire no.	Wire colour	IQS900 ² terminal	IQS45x ¹ terminal	Wire no.	Wire colour	IQS900 ² terminal
Coaxial connector			Coaxial connector	-24			-24V
			COM	COM			COM ³
			TEST	O/P			O/P
			RAW				COM ³
			COM				

Notes

1. The metal housing of an IQS45x is connected to its COM input/terminal. Therefore, an IQS45x must be electrically isolated from ground (GND), for example, by installing the IQS45x on or in a device that insulates it from ground.
2. The metal housing of an IQS900 is connected to its COM inputs/terminals. Therefore, an IQS900 must be electrically isolated from ground (GND), for example, by installing the IQS900 on or in a device that insulates it from ground.
See 4.4.2 Mounting procedure and 8.2 General wiring diagrams.
3. For improved performance and interfacing flexibility, the IQS900 provides separate COM terminals at the input and output of the signal conditioner (all of which are electrically connected together internally). When interfacing to an IQS900, the COM terminal that is physically closest to an “active” signal terminal should be used as the reference for shielding and/or grounding, as required. For example, COM & TEST and RAW & COM at the input; -24V & COM & COM or -24V & COM & O/P & COM at the output, as required (see 8.2 General wiring diagrams). In contrast, the IQS45x provides only a single COM terminal at the output that is used as the reference for both shielding and grounding, as required.

4.5.2 Installing and connecting the IQS900

An IQS900 signal conditioner is generally mounted in an ABA17x industrial housing. The sensor cabling from the “sensor-side” uses a self-locking miniature coaxial connector and the transmission cable to the “monitor-side” uses a removable screw-terminal connector.

To replace an IQS45x with an IQS900 signal conditioner:

- 1- Ensure that the procedure outlined in 4.5.1 Uninstalling the IQS45x 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 IQS900 in the industrial housing (see 4.4.2 Mounting procedure).
- 4- If necessary, adapt the length of the transmission cable.

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

NOTE: If a transmission 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.



Because Meggitt’s vibro-meter[®] proximity measurement chains are tuned systems, never shorten or lengthen a TQ9xx proximity sensor’s integral cable or an EA90x extension cable. See 3.1.3 Total system (chain) length.

- 5- Loosen the cable stuffing glands on the ABA17x industrial housing and feed the cables through (see 4.3.1 Mounting an ABA17x industrial housing).
- 6- To connect the “sensor-side” circuitry (TQ9xx sensor), screw the self-locking miniature coaxial connector of the coaxial sensor cable to the miniature coaxial connector on the left/bottom of the IQS900 signal conditioner. See 4.4.3 Removing and inserting self-locking miniature coaxial connectors.
- 7- To connect the “monitor-side” circuitry (electronic monitoring system), connect the transmission cable to the screw terminals of the screw-terminal connector on the right/top of the IQS900 signal conditioner. See 4.4.4 Removing and inserting screw-terminal connectors.

For each transmission cable wire to be connected:

- Strip the end of each cable wire to expose approximately 5 mm of conductor.
 - Determine which IQS900 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.
- 8- Tighten the cable stuffing glands and check that the cables are securely fastened by the stuffing glands (fittings). This helps ensure that the cabling and the industrial housing are protected and secure.
 - The tightening torque values for the proper assembly of cable fittings (stuffing glands) on ABA17x industrial housings are given in Figure B-1 (see Appendix B: Tightening torque values for cable fittings).
 - 9- Close the door (or fix the cover) of the industrial housing.

NOTE: The IQS900’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.

4.5.3 Configuring the external monitoring system

When an IQS45x signal conditioner is replaced with an IQS900 signal conditioner, the external monitoring and/or protection system used with the TQ9xx-based proximity measurement chain must be updated to use the appropriate measurement/diagnostic component values provided by the IQS900 (that is, the DC component of the IQS900’s output signal).

See 7 Configuring an external monitoring system.

5 INSTALLING GALVANIC SEPARATION UNITS

This chapter provides general guidelines on mounting galvanic separation units in TQxxx-based proximity 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 B03 (for IQS900/IQS4xx using current (2-wire) transmission) or B05 (for IQS900/IQS4xx using voltage (3-wire) transmission) can be used in TQxxx-based proximity 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

GSI127 GALVANIC SEPARATION UNITS CAN BE INSTALLED IN POTENTIALLY EXPLOSIVE ATMOSPHERES (EX ZONES).

GSI127 GALVANIC SEPARATION UNITS ACTING AS SAFETY BARRIERS MUST BE INCLUDED IN TQXXX-BASED PROXIMITY MEASUREMENT CHAINS THAT ARE INSTALLED IN POTENTIALLY EXPLOSIVE ATMOSPHERES 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 EQUIPMENT INSTALLED IN POTENTIALLY EXPLOSIVE ATMOSPHERES AND THE EX CERTIFICATES IN THE APPENDICES OF THIS MANUAL. (THE 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 SUCH ENVIRONMENTS.

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 vertically 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.

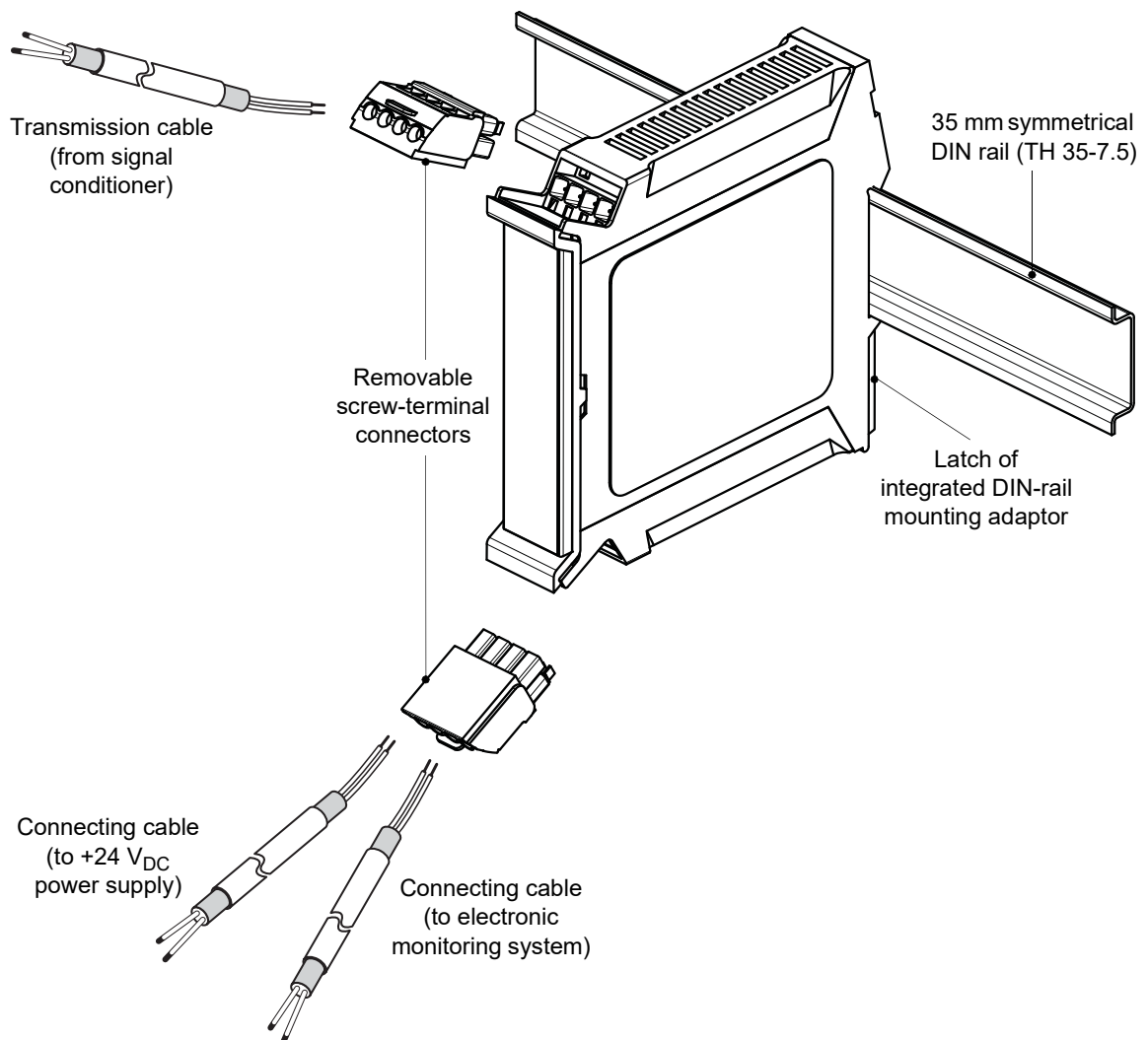


Figure 5-1: A GSI127 galvanic separation unit on a DIN rail (shown with connections for 2-wire current transmission)

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.

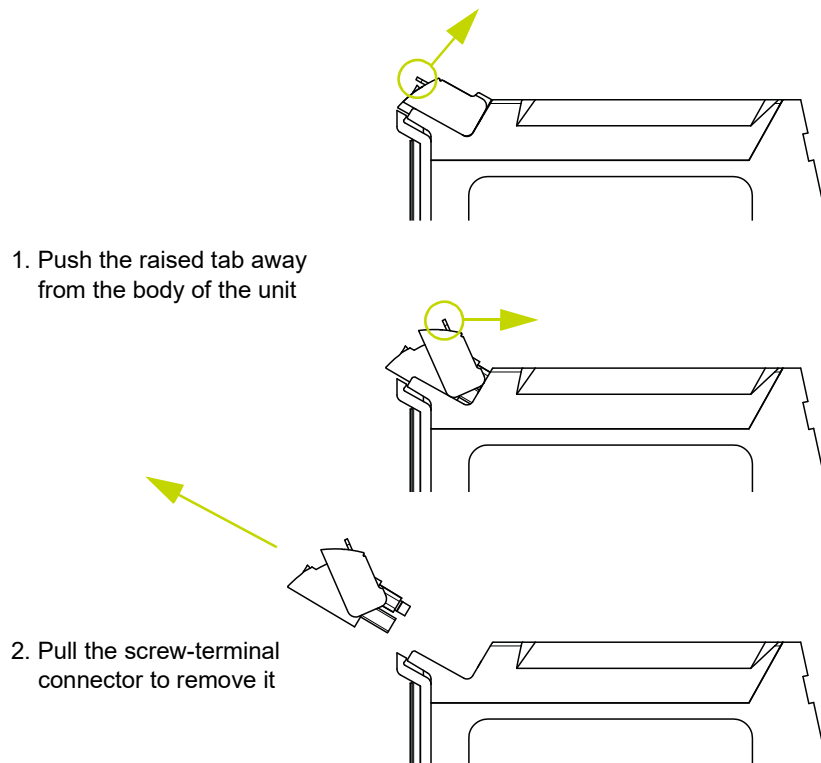


Figure 5-2: Removing a screw-terminal connector from the main body of a GSI127 unit

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 proximity measurement chain's sensor-side circuitry (IQS900 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 rack-based electronic monitoring system.

There is a block of four screw terminals on the top front of the GSI127, labelled "SENSOR", out of which, 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 the IQS900 signal conditioner (2-wire signal transmission), a GSI127 with ordering option B03 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 the IQS900 signal conditioner (3-wire signal transmission), a GSI127 with ordering option B05 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 B05) and uses all of the MONITOR screw terminals, labelled "24 VDC +", "24 VDC -", "SIGNAL 0V" and "SIGNAL O/P".

See [8 Electrical connections](#) for detailed wiring diagrams of TQ9xx-based proximity 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](#), [5.4 Replacing a GSI123 galvanic separation unit with a GSI127](#) or [5.5 Replacing a GSV14x power supply and safety barrier 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.

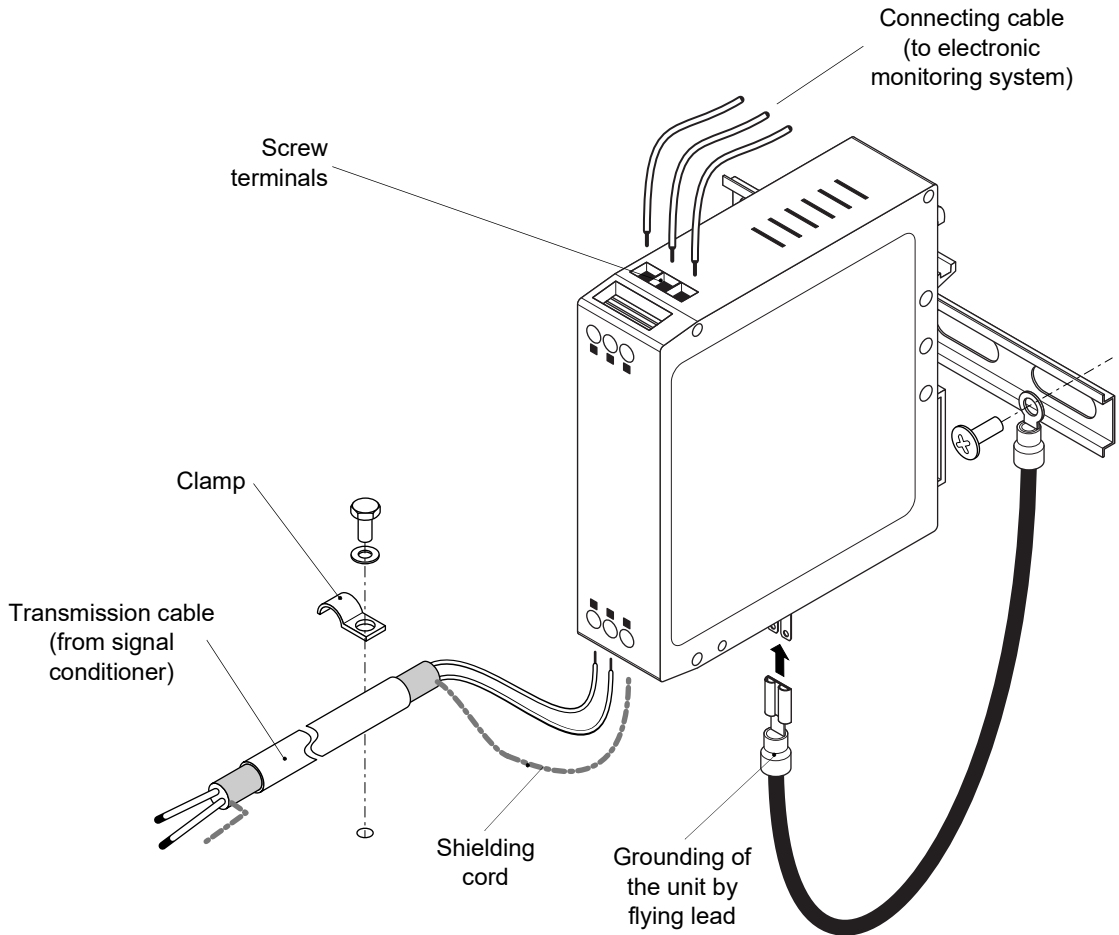


Figure 5-3: A GSI124 galvanic separation unit

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 proximity measurement chain’s 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 8 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 in a proximity measurement chain, 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 8 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 GSI123 galvanic separation unit with a GSI127

5.4.1 Uninstalling the GSI123



SEE 5.1 GENERAL PRECAUTIONS BEFORE REPLACING A GSI123 GALVANIC SEPARATION UNIT WITH A GSI127.

A GSI123 galvanic separation unit is generally mounted in an industrial housing, rack or cabinet. This unit is 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 the GSI123 using AMP Faston 6.3 lugs (see Figure 5-4) that are crimped to the wires.

To uninstall a GSI123:

- 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 GSI123. See Figure 5-4 and use Table 5-2 to record the number and/or colour for each wire.
- 3- On the GSI123, 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 GSI123, 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 GSI123 has been uninstalled and disassemble the mounting plate from the DIN rail (see Figure 5-5).

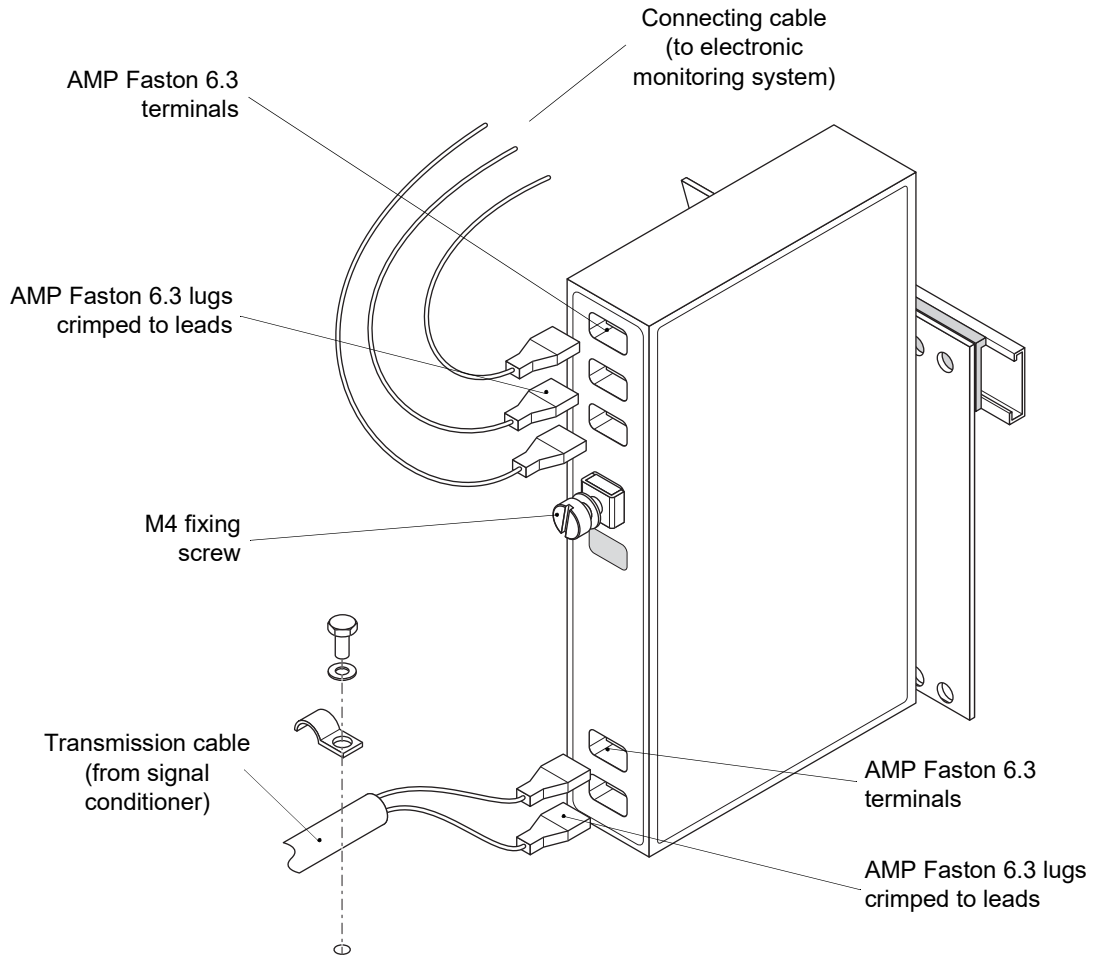


Figure 5-4: A GSI123 galvanic separation unit

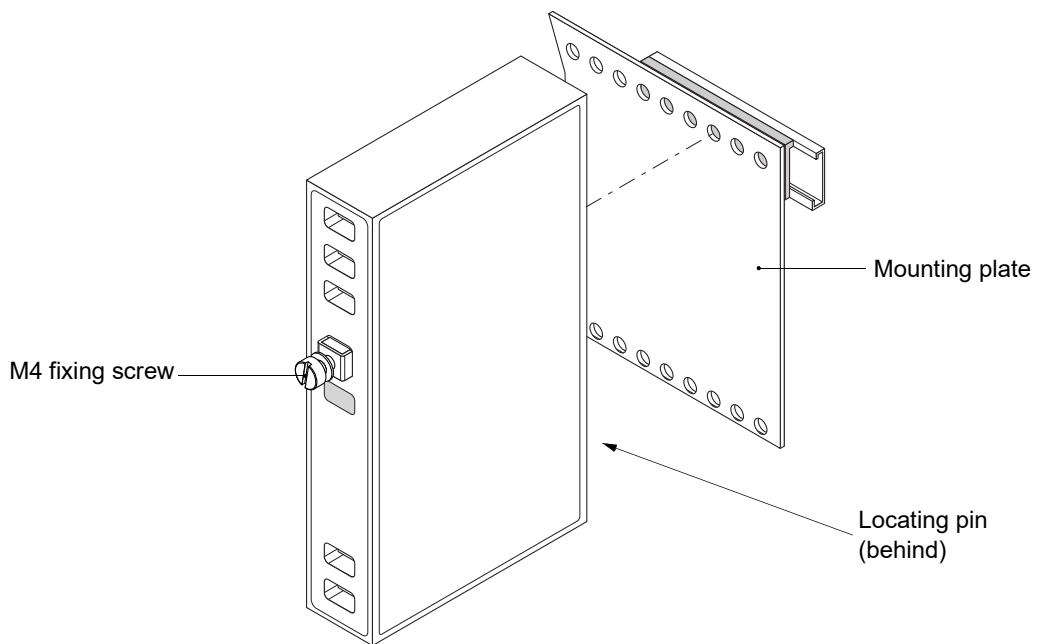


Figure 5-5: The mounting plate used by GSI123 galvanic separation units

Table 5-2: GSI123 wire identification and mapping to a GSI127

Transmission cable (sensor-side)				Connecting cable (monitor-side)				
GSI123 terminal	Wire no.	Wire colour	GSI127 terminal ¹	GSI123 terminal	Wire no.	Wire colour	GSI127 terminal	
+			+	SIGNAL			O/P	SIGNAL
-			-	0V ²			0V	
				0V ²			+	24 VDC
				-24V			-	

Notes

1. The shield of the transmission cable from the proximity measurement chain's 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 8 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 GSI123 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 GSI123 with a GSI127 in a proximity measurement chain, 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 GSI123 with a GSI127:

- 1- Ensure that the procedure outlined in 5.4.1 Uninstalling the GSI123 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 8 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.

5.5 Replacing a GSV14x power supply and safety barrier unit with a GSI127

5.5.1 Uninstalling the GSV14x



SEE 5.1 GENERAL PRECAUTIONS BEFORE REPLACING A GSV14x POWER SUPPLY AND SAFETY BARRIER UNIT WITH A GSI127.

A GSV14x power supply and safety barrier unit is generally mounted in an industrial housing, rack or cabinet. These units are normally installed using a single M4 screw but can be mounted using a mounting kit (DIN rail, nut assembly and bracket).

NOTE: Further information on mounting accessories for a GSV14x power supply and safety barrier unit can be found in the GSI/GSV mounting accessories data sheet.

The transmission cable from the sensor-side circuitry and the connecting cable to the monitor-side circuitry are connected to the GSV14x using lugs (see Figure 5-6) that are crimped to the wires.

To uninstall a GSV14x:

- 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 GSV14x. See Figure 5-6 and use Table 5-3 to record the number and/or colour for each wire.
- 3- On the GSV14x, pull the four lugs free from the upper half of the unit in order to disconnect the connecting cable to the monitor-side circuitry (electronic monitoring system and power supply).
- 4- On the GSV14x, pull the four 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 GSV14x has been uninstalled and disassemble the mounting kit from the DIN rail (see Figure 5-6).

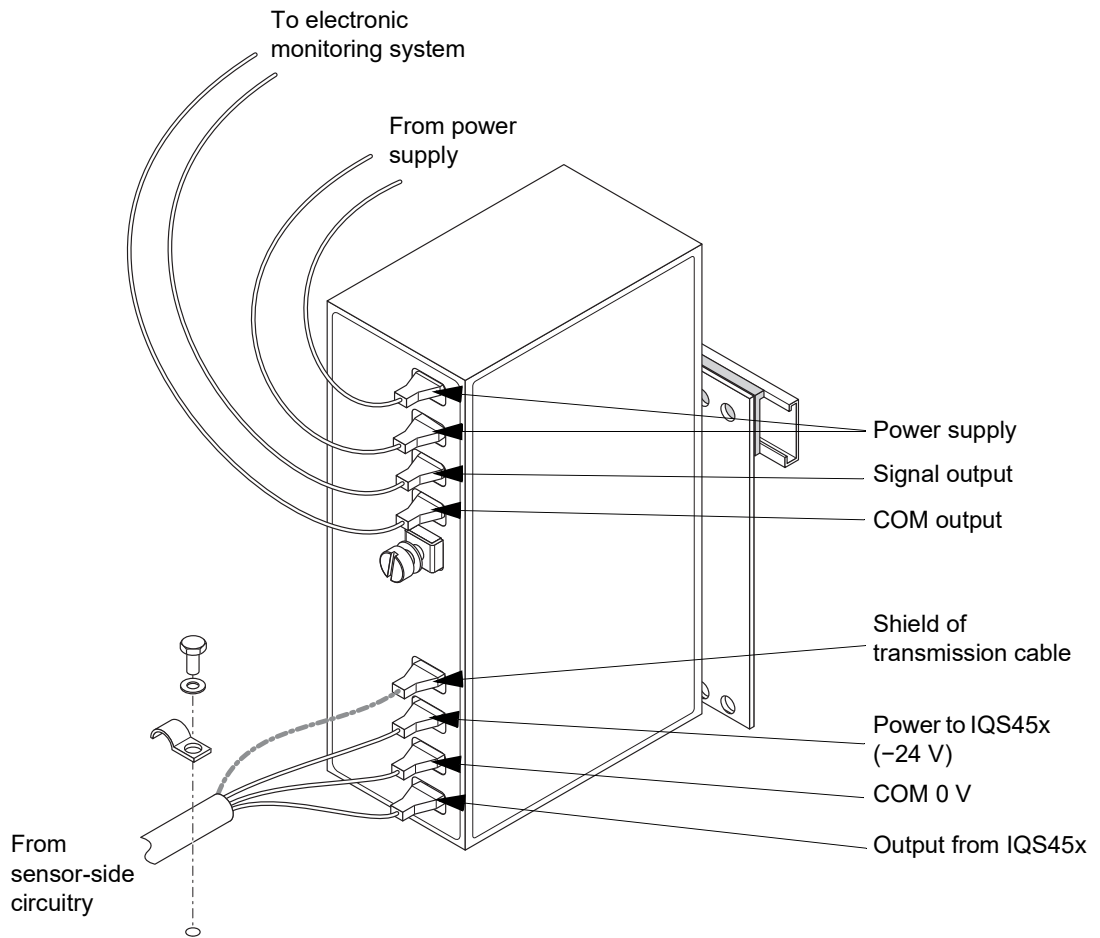


Figure 5-6: A GSV14x power supply and safety barrier unit

Table 5-3: GSV14x wire identification and mapping to a GSI127

Transmission cable (sensor-side)				Connecting cable (monitor-side)				
GSV14x terminal	Wire no.	Wire colour	GSI127 terminal	GSV14x terminal	Wire no.	Wire colour	GSI127 terminal	
COM 0V			COM	SIGNAL			0V	SIGNAL
-24V			-	COM			O/P	
OUTPUT			I/P	PS+			+	24 VDC
PA ¹				PS-			-	

Notes

1. The shield of the transmission cable from the proximity measurement chain's 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 8 Electrical connections.

5.5.2 Installing and connecting the GSI127

To replace a GSV14x with a GSI127:

- 1- Ensure that the procedure outlined in 5.5.1 Uninstalling the GSV14x 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 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 8 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 5-3.
 - 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 terminals that can unplugged from the main body of the housing to simplify installation of the unit.

6 MEASURING AND ADJUSTING THE INITIAL GAP

This chapter provides general guidelines on measuring and adjusting the initial gap of an installed TQ9xx-based proximity measurement chain. The adjustment of the initial gap can be mechanical and/or electrical.

Mechanical adjustment of the initial gap must be performed when a new proximity measurement chain is installed, that is, before the measurement system is used.

Electrical adjustment of the initial gap should be performed after the mechanical adjustment of the initial gap and before the measurement system is used. This is a calibration of the electronic monitoring system used with the proximity measurement chain and can be checked periodically if required (see 9 Maintenance and troubleshooting).

The information contained in this chapter applies to installed proximity measurement chains.

6.1 Measurement and mechanical adjustment of the initial gap

Mechanical adjustment of the initial gap should be performed when installing a TQ9xx-based proximity sensor by adjusting the distance between the tip of the sensor and the target – with the power to the machine turned off.

NOTE: Mechanical adjustment of the initial gap should be performed with the power to the machine turned off.

The initial gap can be measured mechanically by inserting a feeler gauge of the required thickness between the tip of the proximity sensor and the target. The physical position of the proximity sensor can then be adjusted to create the required initial gap.

The sensor-to-target distance must always be within the measurement range of the proximity sensor in order to ensure the correct operation of the measurement chain. Therefore, knowledge of the approximate magnitude of the relative movement between the target and the proximity sensor is necessary. Knowledge of the expected direction of movement is also required.

If the direction of movement alternates, for example, a relative vibration measurement, then the initial gap should be set in the middle of the proximity sensor's measurement range. See the example in Figure 6-1 (a) for a TQ902 proximity sensor.

If the direction of movement tends to be in one direction only, for example, an axial position measurement, then the initial gap should be set at one end of the proximity sensor's measurement range according to the expected direction of movement. See the example in Figure 6-1 (b) for a TQ902 proximity sensor.

In either case, it is important to leave sufficient safety margin to prevent the proximity sensor touching the target. The following initial gaps are suggested:

TQ901, TQ902/TQ912 (sensitivity 8 mV/μm):	0.2 mm
TQ902/TQ912 (sensitivity 4 mV/μm), TQ922/TQ932:	0.3 mm
TQ903, TQ923:	0.75 mm.

NOTE: Further information on measurement range specifications can be found in the corresponding data sheet.

NOTE: If an electrical adjustment of the initial gap is also to be made (see 6.2 Electrical adjustment of the initial gap), then do not fix the proximity sensor using an industrial adhesive yet.

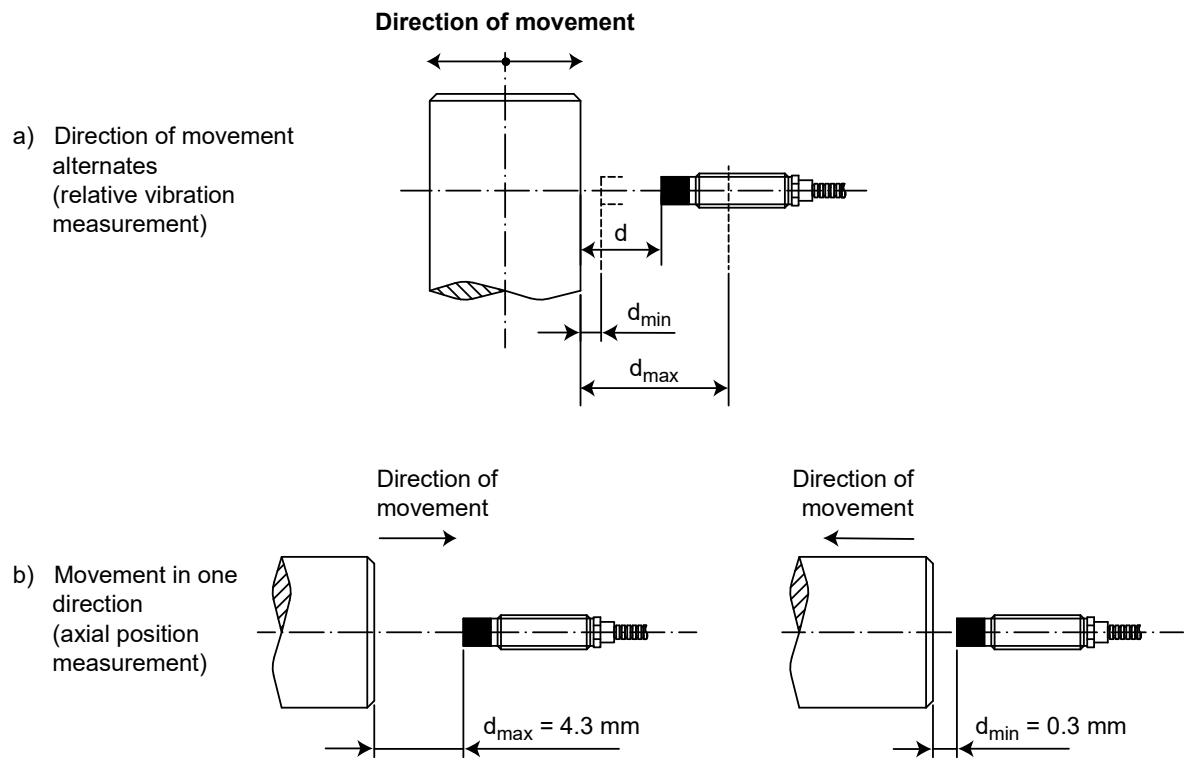


Figure 6-1: Example of initial gap adjustment for a TQ902 (sensitivity 4 mV/μm) with a VCL 140 target

6.2 Electrical adjustment of the initial gap

Assuming that the initial gap is set mechanically in the linear part of the measurement range (see 6.1 Measurement and mechanical adjustment of the initial gap), the output voltage of the proximity measurement chain is normally around -9 V . Figure 6-2 shows that as the distance between the target and the proximity sensor varies:

- the DC component corresponds to the initial gap (DC gap)
- the AC voltage component, superimposed on the DC component, corresponds to the vibration of the target.

Figure 6-3 shows the voltage-distance characteristics for targets made of VCL 140 steel (equivalent to AISI 4140) and other metals. In practice, the target may be made of a different alloy, so it will have its own unique voltage-distance characteristics.

NOTE: For the true measurement range of the proximity measurement chain refer to the proximity sensor's data sheet.

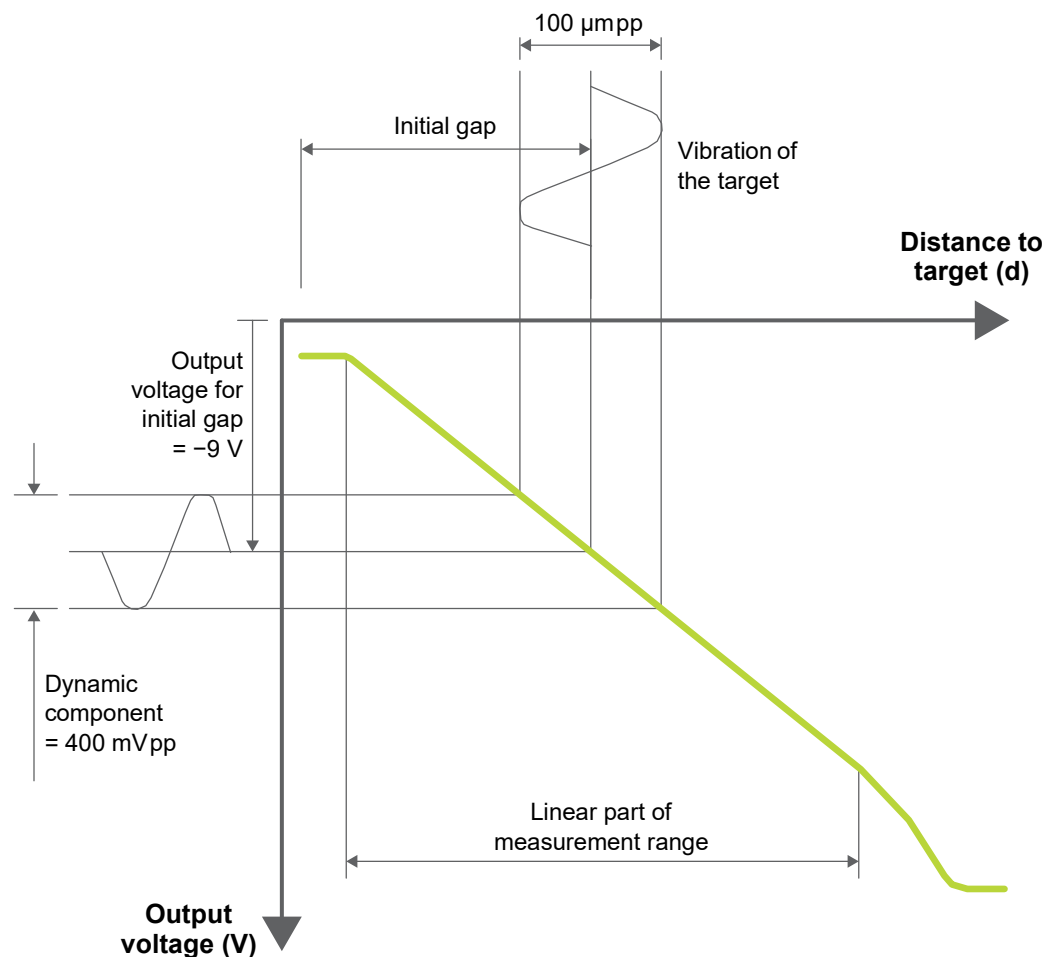


Figure 6-2: Example showing voltage output by the proximity measurement chain as a function of target distance (d)

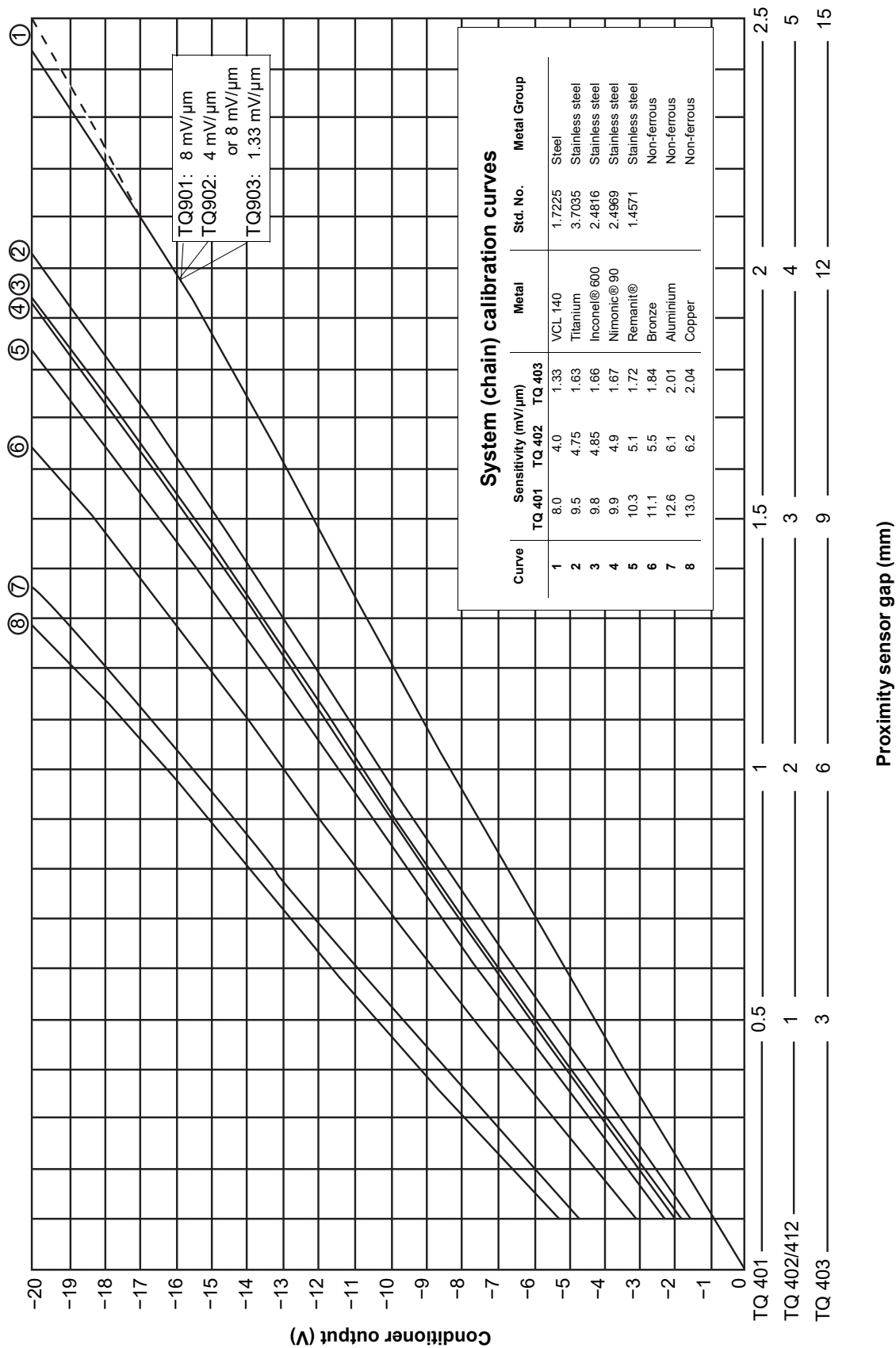


Figure 6-3: TQ9xx-based proximity measurement chain calibration curves for VCL 140 steel and other metals

6.2.1 Adjusting systems using current (2-wire) signal transmission

For TQ9xx-based proximity measurement chains using an IQS900 with a current-modulated output signal (that is, current (2-wire) signal transmission), the following procedure shows how to adjust the initial gap electrically.

- 1- Connect a -24 V_{DC} power supply between the “-24V” and “COM” terminals of the IQS900 signal conditioner (see Figure 6-4).
- 2- Connect an ammeter (DMM) in series with the power supply (see Figure 6-4).
- 3- Check the data sheet for the specific type of TQ9xx proximity sensor used and note the theoretical limits of the (linear) measurement range.
- 4- Set the sensor-to-target distance to the theoretical minimum and maximum values using feeler gauges, and to several values in between. Measure the current at each setting and construct a table showing the current-distance characteristics.

NOTE: If electrically conductive feeler gauges are being used, it is important to remove them from the gap between the proximity sensor and the target *before* taking the current reading. If a conductive feeler gauge is left between the proximity sensor and the target, the current measurement will be incorrect.

- 5- The current is subsequently converted into a voltage by the GSI127 galvanic separation unit for a system using current (2-wire) signal transmission. For example, a VCL 140 target has the following transfer function:

- | | | |
|------------------|-----------------------------|----------------------------|
| • At minimum GAP | Current = -15.5 mA | Voltage = -1.6 V |
| • At maximum GAP | Current = -20.5 mA | Voltage = -17.6 V |

This transfer function can also be expressed as follows:

- $\text{Voltage (V)} = -3.2\text{ (V/mA)} \times \text{current (value in mA)} + 48\text{ V}$

- 6- Using the formula above, calculate the voltage corresponding to the measured current value for each measurement setting in step 4.
- 7- Plot a curve of the voltage-distance characteristics (see Figure 6-2 for an example).
- 8- The linear part of the measurement range and the system sensitivity ($\text{mV}/\mu\text{m}$) can be determined using the curve plotted in step 7.

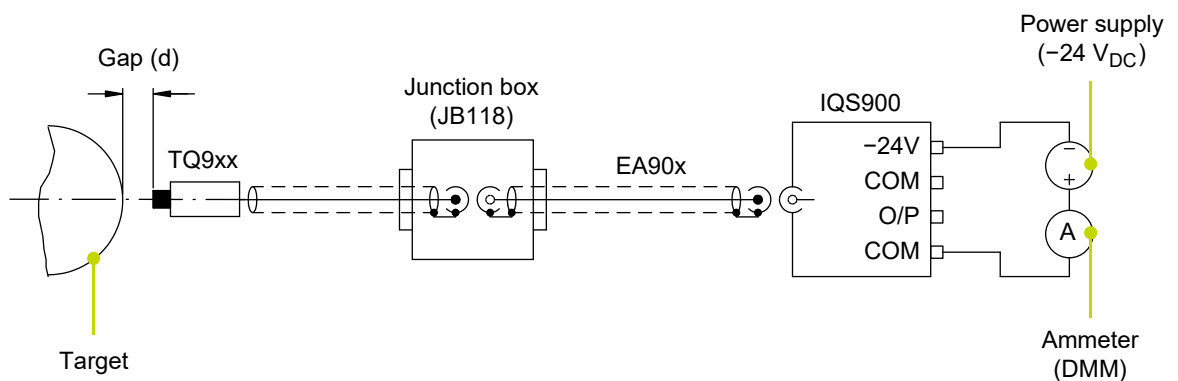


Figure 6-4: Characterisation for systems using current (2-wire) signal transmission

Alternatively, this procedure could be adapted to use the IQS900 signal conditioner's Raw voltage output signal with a voltmeter (DMM) between the "RAW" and "COM" terminals – instead of using an ammeter (DMM) in series with the power supply to measure output signal current. See 9.4.1 Raw output functionality.

6.2.2 Adjusting systems using voltage (3-wire) signal transmission

For TQ9xx-based proximity measurement chains using an IQS900 with a voltage-modulated output signal (that is, voltage (3-wire) signal transmission), the following procedure shows how to adjust the initial gap electrically.

- 1- Connect a -24 V_{DC} power supply between the "-24V" and "COM" terminals of the IQS900 signal conditioner (see Figure 6-5).
- 2- Connect a voltmeter (DMM) between the "O/P" and "COM" terminals (see Figure 6-5).
- 3- Check the data sheet for the specific type of TQ9xx proximity sensor used and note the theoretical limits of the (linear) measurement range.
- 4- Set the sensor-to-target distance to the theoretical minimum and maximum values using feeler gauges, and to several values in between. Measure the voltage at each setting.

NOTE: If electrically conductive feeler gauges are being used, it is important to remove them from the gap between the proximity sensor and the target *before* taking the current reading. If a conductive feeler gauge is left between the proximity sensor and the target, the current measurement will be incorrect.

- 5- Plot a curve of the voltage-distance characteristics (see Figure 6-2 for an example).
- 6- The linear part of the measurement range and the system sensitivity ($\text{mV}/\mu\text{m}$) can now be determined using the curve plotted in step 5.

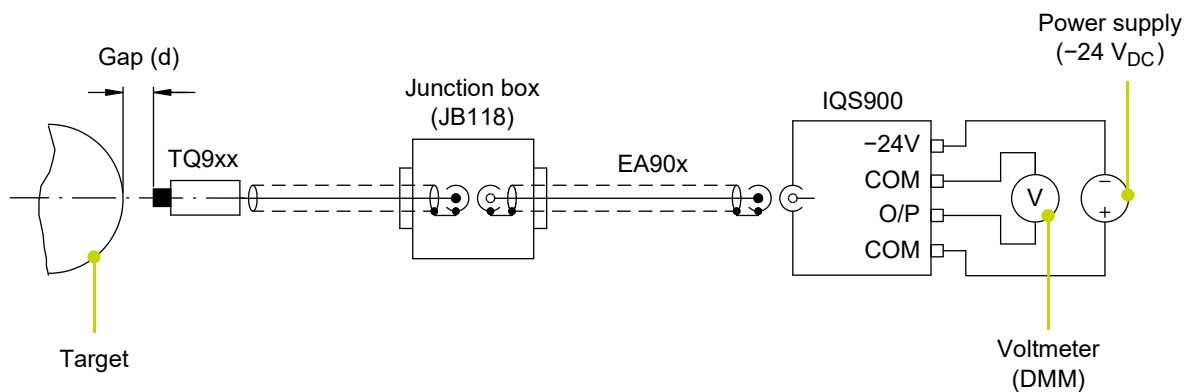


Figure 6-5: Characterisation for systems using voltage (3-wire) signal transmission

Alternatively, this procedure could be adapted to use the IQS900 signal conditioner's Raw voltage output signal with a voltmeter (DMM) between the "RAW" and "COM" terminals – instead of using a voltmeter (DMM) to measure output signal current. See 9.4.1 Raw output functionality.

7 CONFIGURING AN EXTERNAL MONITORING SYSTEM

For the external monitoring and/or protection system – such as a VM600 or VibroSmart® system – used with a TQ9xx-based measurement chain using an IQS900 signal conditioner, it is important that the alarm levels (alert and/or danger) configured for the proximity measurements are appropriate for both the configuration of the IQS900 signal conditioner (with or without diagnostics) and the machinery/system under protection.

In addition, the external monitoring and/or protection system used with a TQ9xx-based measurement chain using an IQS900 signal conditioner with diagnostics should be capable of detecting and reporting the status of the measurement chain as communicated by the quasi-static measurement/diagnostic component (DC) of the IQS900's output signal, as described in 7.1 IQS900 with diagnostics and 7.2 IQS900 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 (measurement/diagnostic component (DC)) of the signal measured by the monitoring system goes outside the region defined by upper and lower OK levels.

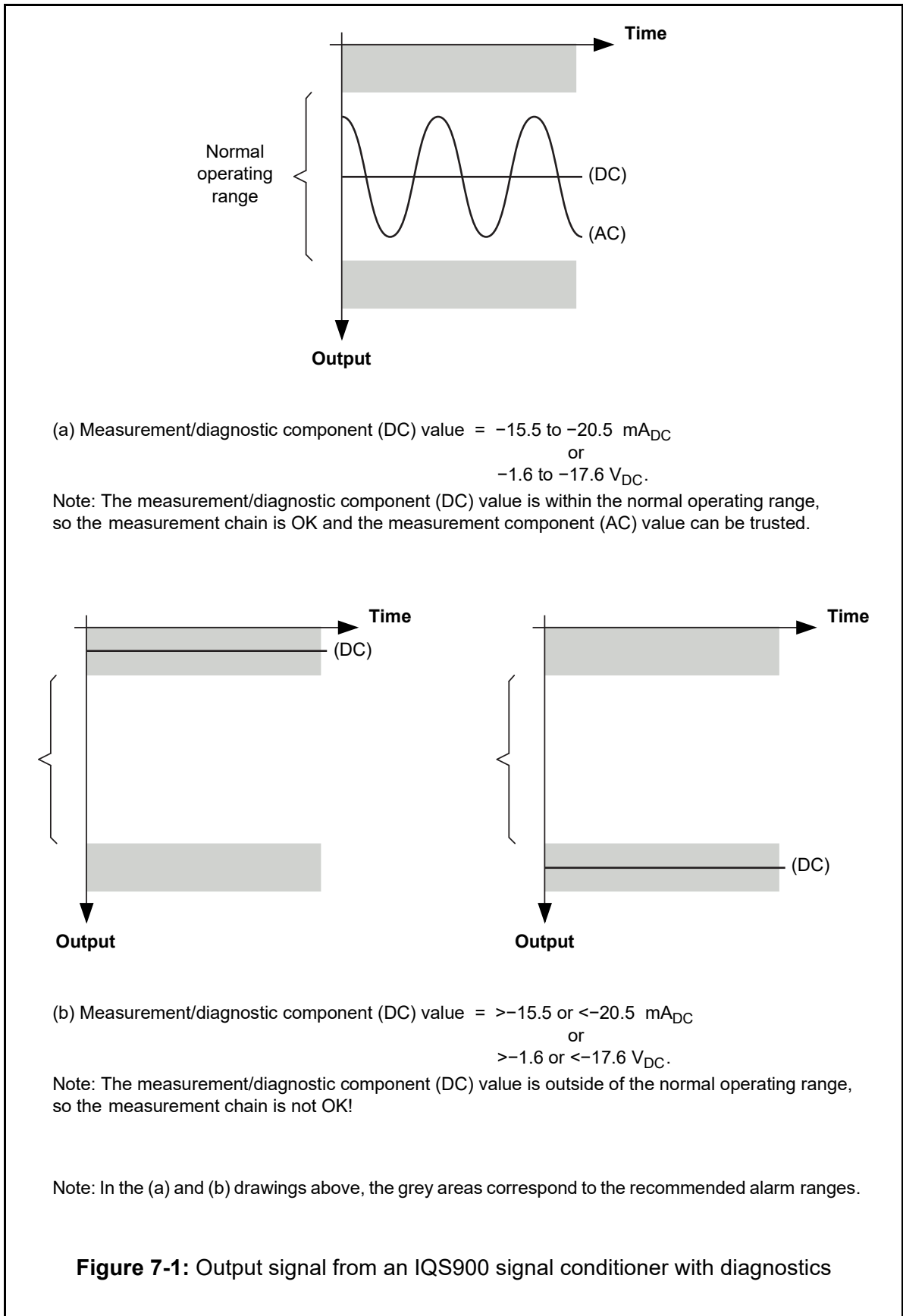
NOTE: Refer to the monitoring and/or protection system documentation for further information.

7.1 IQS900 with diagnostics

In a TQ9xx-based measurement chain using an IQS900 signal conditioner with diagnostics, the IQS900 continuously:

- Runs health checks on the components of the TQ9xx-based proximity measurement chain (sensor, cabling and signal conditioner).
- Drives/saturates the quasi-static measurement/diagnostic component (DC) of its output signal outside of its normal operating range to indicate a problem with the measurement chain.
- 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 IQS900 signal conditioner with diagnostics should monitor the measurement/diagnostic component (DC) of the IQS900's output signal for the values described in Figure 7-1 and Table 4-1.



7.1.1 Defining the alarm levels

As shown in Figure 7-1 (a), during normal operation, an IQS900 signal conditioner with diagnostics will update its output signal as follows:

- Quasi-static measurement/diagnostic component (DC) to a value within the normal operating range of -15.5 to -20.5 mA_{DC} or -1.6 to -17.6 V_{DC} that corresponds to the measured gap.
- Dynamic measurement component (AC) to a value within the normal operating range of -15.5 to -20.5 mA_{DC} or -1.6 to -17.6 V_{DC} that corresponds to the measured vibration (displacement).

NOTE: Measurements (gap and vibration) depend on the measurement range and sensitivity configured for the IQS900 (see 4.4.1 About the IQS900 signal conditioner).

As shown in Figure 7-1 (b), after the detection of a general problem with the measurement chain (sensor, cabling and signal conditioner itself), an IQS900 signal conditioner with diagnostics will update its output signal as follows:

- Quasi-static measurement/diagnostic component (DC) to a value outside of the normal operating range, that is, >-15.5 or <-20.5 mA_{DC} or >-1.6 to <-17.6 V_{DC}.

7.2 IQS900 without diagnostics

In a TQ9xx-based measurement chain using an IQS900 signal conditioner without diagnostics, the IQS900 continuously:

- Updates the quasi-static measurement/diagnostic component (DC) of its output signal corresponding to the measured gap.
- 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 IQS900 signal conditioner with diagnostics should monitor the measurement/diagnostic component (DC) of the IQS900's output signal for the values described in Figure 7-1 and Table 4-2.

7.2.1 Defining the alarm levels

As shown in Figure 7-1 (a), during normal operation, an IQS900 signal conditioner without diagnostics will update its output signal as follows:

- Quasi-static measurement/diagnostic component (DC) to a value within the normal operating range of -15.5 to -20.5 mA_{DC} or -1.6 to -17.6 V_{DC} that corresponds to the measured gap.
- Dynamic measurement component (AC) to a value within the normal operating range of -15.5 to -20.5 mA_{DC} or -1.6 to -17.6 V_{DC} that corresponds to the measured vibration (displacement).

NOTE: Measurements (gap and vibration) depend on the measurement range and sensitivity configured for the IQS900 (see 4.4.1 About the IQS900 signal conditioner).

8 ELECTRICAL CONNECTIONS

8.1 General precautions



IN ORDINARY APPLICATIONS (NON-EXPLOSIVE ATMOSPHERES), NO CERTIFICATIONS ARE REQUIRED FOR THE USE OF TQ9XX-BASED PROXIMITY MEASUREMENT CHAINS.

HOWEVER, IN POTENTIALLY EXPLOSIVE ATMOSPHERES (EX ZONES), CERTIFICATIONS ARE REQUIRED FOR THE USE OF THESE MEASUREMENT CHAINS. THE ACTUAL 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 8-1 AND FIGURE 8-2) OUTLINES THE 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 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 USING PROTECTION MODE “EX I” ONLY **MUST BE DETERMINED** AS PER THE CONDITIONS AND LIMITATIONS SPECIFIED IN THE EX CERTIFICATES FOR THE PRODUCT, WHICH ARE SUMMARISED IN FIGURE 8-3.

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



8.2 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 8-1.

Table 8-1: Index of wiring diagrams

TQ9xx-based proximity measurement chain details	Wiring diagram	Figure
<p>TQ9xx proximity probe with integral cable and/or EA90x extension cable, IQS900 signal conditioner (in an ABA housing), transmission cabling, optional GSI127 galvanic separation unit and optional APF19x power supply – using a single cubicle for industrial applications.</p> <p> 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.</p>	011-900-000E011 (sheet 1 of 3)	8-1
<p>As above, but using two cubicles for industrial applications. The cubicles are separated by a maximum of 50 m of connecting cable.</p> <p> 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.</p>	011-900-000E011 sheet 2 of 3)	8-2
<p>As above, but summarising the Ex parameters for the measurement chain calculations.</p>	011-900-000E011 (sheet 3 of 3)	8-3

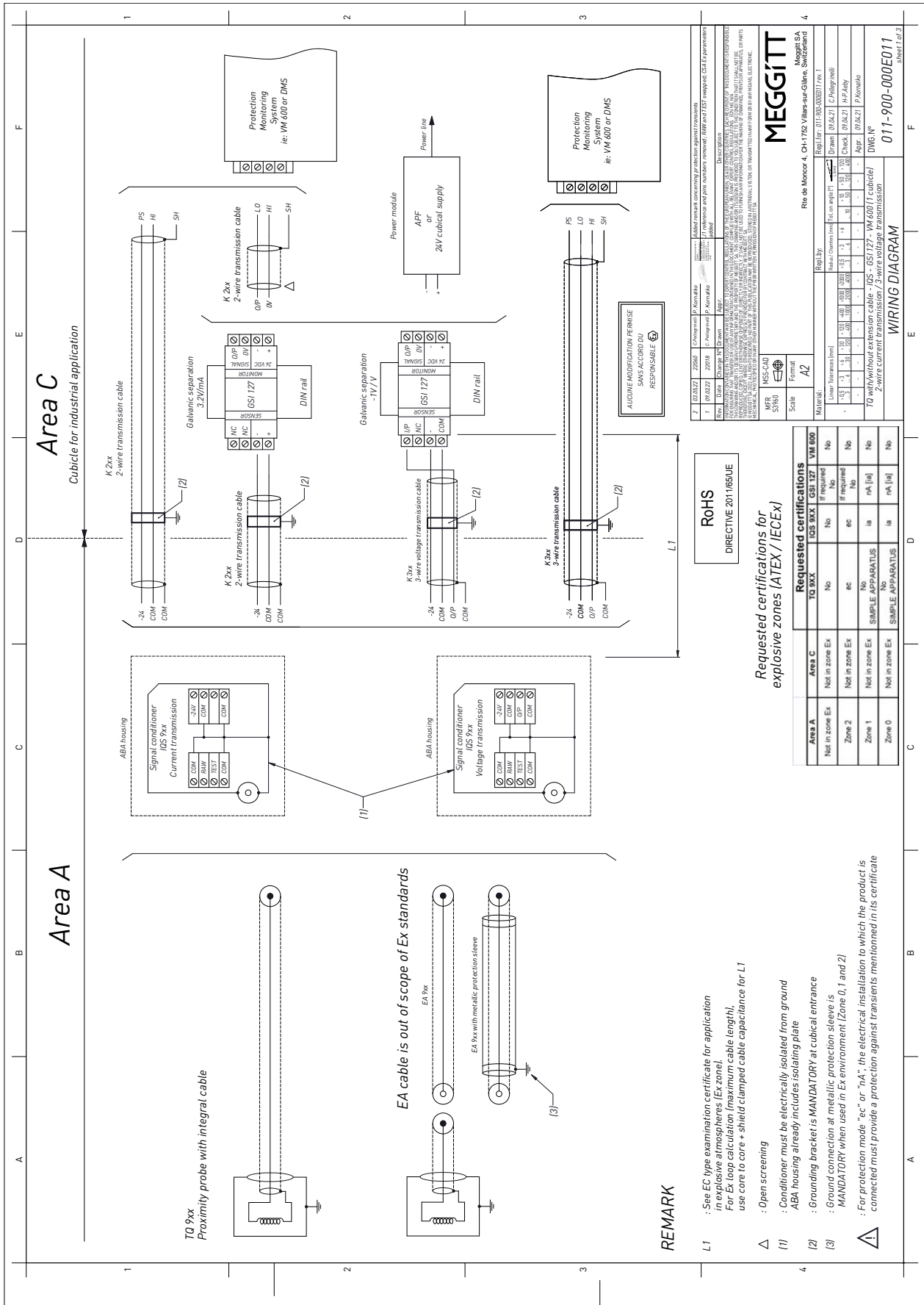
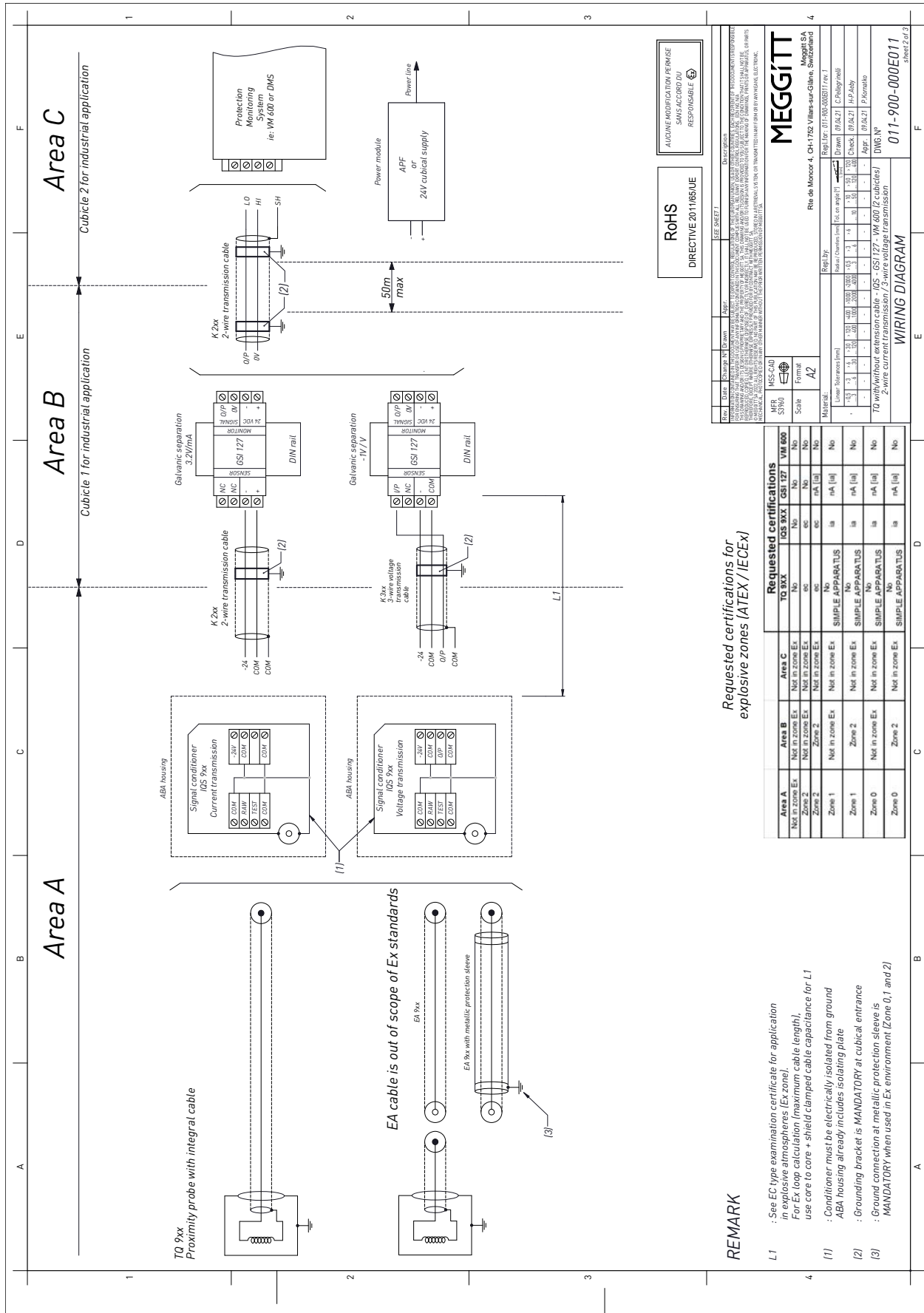


Figure 8-1: TQ9xx-based proximity measurement chains – using a single cubicle for industrial applications suitable for use in non-explosive or potentially explosive atmospheres



RoHS
DIRECTIVE 2011/65/EU

AUQUINE MODIFICATION PERMISE
SANS ACCORD DU
RESPONSABLE

Requested certifications for explosive zones (ATEX / IECEx)

Area	Area A		Area B		Area C		Requested certifications	
	Zone 1	Zone 2	Zone 1	Zone 2	Zone 1	Zone 2	TO 9xx	IOS 9xx / GSI 127 / VM 600
Not in zone Ex	Not in zone Ex	Not in zone Ex	Not in zone Ex	Not in zone Ex	Not in zone Ex	Not in zone Ex	ec	ec
Zone 1	Zone 1	Zone 2	Zone 1	Zone 2	Zone 1	Zone 2	ia	ia
Zone 0	Zone 0	Zone 0	Zone 0	Zone 0	Zone 0	Zone 0	ia	ia
Zone 0	Zone 0	Zone 0	Zone 0	Zone 0	Zone 0	Zone 0	ia	ia

MEGGITT

Rte de Moncor 4, CH-1750 Villes-sur-Glâne, Switzerland

Reg. No: 0153000007 / Rev. 1

Drawn: [02.02.21] / P.Habib

Check: [02.02.21] / P.Habib

Apr. [02.02.21] / P.Habib

DWG. N° 011-900-000E011

WIRING DIAGRAM

REMARK

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

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

(2) : Grounding bracket is MANDATORY at cubical entrance

(3) : Ground connection at metallic protection sleeve is MANDATORY when used in Ex environment (Zone 0, 1 and 2)

Figure 8-2: TQ9xx-based proximity measurement chains suitable for use in non-explosive or potentially explosive atmospheres – using two cubicles for industrial applications

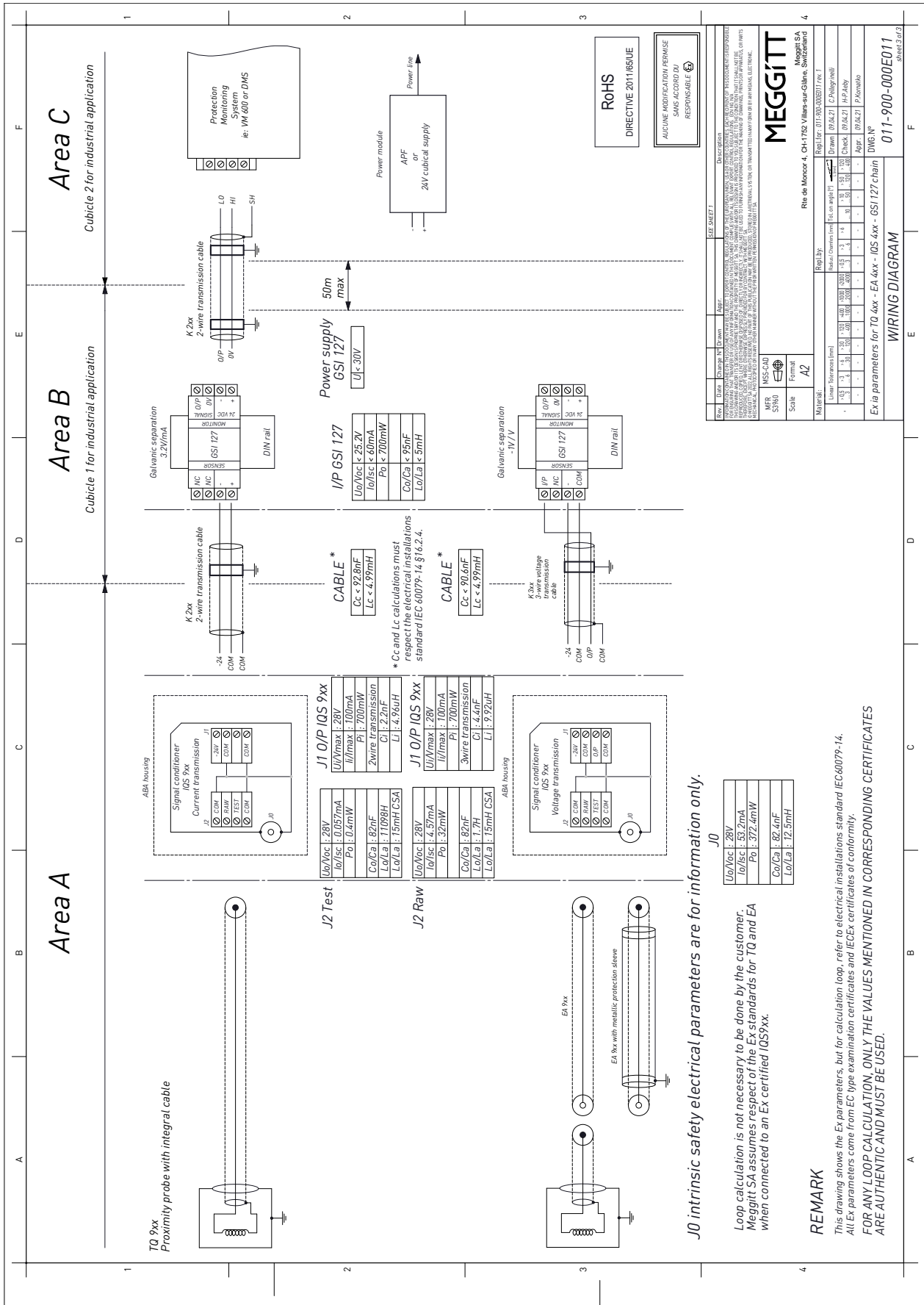


Figure 8-3: TQ9xx-based proximity measurement chains suitable for use in non-explosive or potentially explosive atmospheres – summarising the Ex parameters for the measurement chain

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9 MAINTENANCE AND TROUBLESHOOTING

9.1 General

The calibration of a TQ9xx-based proximity measurement chain can be checked periodically by following the instructions given in 6.2 Electrical adjustment of the initial gap.

Apart from periodic calibration, no specific maintenance is required for the TQ9xx-based proximity measurement chains described in this manual, that is, for TQ9xx proximity sensors, cabling or associated equipment such as IQS900 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 11.1 Contacting us for the contact details relevant to repairing defective hardware.

9.2 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 (EX ZONES) MUST RESPECT THE CONDITIONS AND LIMITATIONS SPECIFIED IN THE EX CERTIFICATES FOR THE PRODUCT.

FOR FURTHER INFORMATION, SEE EQUIPMENT INSTALLED IN POTENTIALLY EXPLOSIVE ATMOSPHERES AND THE EX CERTIFICATES IN THE APPENDICES OF THIS MANUAL. (THE 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 SUCH ENVIRONMENTS.

9.3 Cleaning

It is not required to clean the components of TQ9xx-based proximity 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.

9.4 Troubleshooting

To support troubleshooting activities such as commissioning and/or fault-finding on TQ9xx-based proximity measurement chains (or TQ4xx-based proximity measurement chains using an IQS900 signal conditioner), the IQS900 signal conditioner provides two dedicated pins/signals:

- RAW output
- TEST input.

The RAW output signal uses the pins/connections labelled “RAW” and “COM”, and the TEST input signal uses the pins/connections labelled “TEST” and “COM”, on the screw-terminal connector at the input to an IQS900 signal conditioner (see Figure 4-2).

These pins/signals allow the measurement chain/system operation to be tested in situ, thereby simplifying commissioning and troubleshooting.

9.4.1 Raw output functionality

The Raw output signal (“RAW” and “COM” pins) provides a “raw” voltage output signal that corresponds to the internal signals of the IQS900 signal conditioner.

NOTE: The Raw output signal is always a voltage, even for IQS900 signal conditioners configured with a current output (see Table 9-1).

The Raw output signal allows sensor / measurement chain operation to be verified without disconnecting any outputs from the IQS900 signal conditioner, even for an IQS900 configured with a current output (see Table 9-1).

NOTE: For reference, IQS45x signal conditioners configured with a current output require that the IQS45x output is disconnected from the external monitoring system in order to check the operation of the signal conditioner.

Test equipment such as a multimeter or a oscilloscope can be quickly and easily connected to the Raw output in order to display and verify the operation of a measurement chain/system from sensor to signal conditioner.

Table 9-1 lists IQS900 signal conditioner output sensitivities – for different IQS900 configurations, as determined by the IQS900 ordering option code **Bx**.

Table 9-1: IQS900 signal conditioner output sensitivities

Proximity sensor type	Measurement range	Sensitivity (main output)	IQS900 ordering option code (Bx)	Raw output sensitivity ("RAW" output)
TQ901 (or TQ401)	2 mm	8 mV/μm	B11	4 mV/μm
		2.5 μA/μm	B12	
TQ9x2 (or TQ4x2)	2 mm	8 mV/μm	B21	
		2.5 μA/μm	B22	
	4 mm	4 mV/μm	B23	2 mV/μm
		1.25 μA/μm	B24	
TQ9x3 (or TQ4x3)	12 mm	1.33 mV/μm	B31	0.665 mV/μm
		0.417 μA/μm	B32	

9.4.2 Test input functionality

The Test input signal ("TEST" and "COM" pins) allows an AC voltage input signal to be injected at the input to the IQS900 signal conditioner, effectively emulating the dynamic measurement component (AC) of an input signal from a TQ9xx (or TQ4xx) sensor.

NOTE: The output signal corresponding to the Test input is available at the IQS900 signal conditioners output ("O/P" and "COM" pins) as a current or as a voltage depending on the IQS900's configuration, and at the Raw output ("RAW" and "COM" pins) as a voltage (see Table 9-2).

The Test input signal allows a known dynamic signal to be injected at the input to the IQS900 signal conditioner in order to more easily verify the operation of the IQS900 and any attached equipment.

The Test input signal must be an AC only signal in the range 10 Hz to 50 kHz as this corresponds to the dynamic measurement component (AC) of the IQS900's output signal. When the Test input signal is being used, the gap from the sensor / measurement chain is still used as the quasi-static measurement/diagnostic component (DC) of the IQS900's output signal.

NOTE: When using the Test input signal:

- The Test input signal corresponds to the dynamic measurement component (AC) of the IQS900's output signal.
- The gap from the TQxxx sensor / measurement chain corresponds to the measurement/diagnostic component (DC) of the IQS900's output signal.

Accordingly, when using the Test input signal:

- The TQxxx sensor (and any cabling) should be left connected to the input of the IQS900 signal conditioner, via the self-locking miniature coaxial connector. (If the TQxxx sensor is disconnected, the IQS900's output signal will saturate and the output corresponding to the Test input signal will not be seen.)
- It is recommended that the machinery being monitored is not running (for example, power to the machine turned off), so that the Test input signal is the only AC signal.

Test equipment such as a signal generator can be quickly and easily connected to the Test input in order to inject a known signal and verify the operation of a measurement chain/system from signal conditioner to the external monitoring system.

Table 9-2 lists IQS900 signal conditioner transfer functions – for different IQS900 configurations, as determined by the IQS900 ordering option code **Bx**

Table 9-2: IQS900 signal conditioner output transfer functions

Test input	IQS900 output	IQS900 ordering option code (Bx)	Transfer function (output)
Frequency range: 50 Hz to 10 kHz. Voltage range: see Table 9-3 and Table 9-4.	Main output (current signal)	B12, B22, B24 or B32	$I_{OUTPUT} = (V_{INJECTED} \times 0.5) \text{ in mA}$ Note: Output signal available via “-24” and “COM” pins.
	Main output (voltage signal)	B11, B21, B23 or B31	$V_{OUTPUT} = V_{INJECTED} \times 1.6$ Note: Gain of 4 dB. Output signal available via “O/P” and “COM” pins.
	Raw output (voltage signal)	B11, B12, B21, B22, B23, B24, B31 or B32	$V_{OUTPUT} = V_{INJECTED} \times 0.8$ Note: Gain of -2 dB. Output signal available via “RAW” and “COM” pins.

Notes

The **Transfer function (output)** calculations are for the dynamic measurement component (AC) of the IQS900’s output signal only (the DC component corresponds to the gap seen by the TQxxx sensor).

For the **Main output (current signal)**, the I_{OUTPUT} is in mA.

Table 9-3 lists recommended Test input signals for an IQS900 signal conditioner without diagnostics (standard version).

Table 9-4 lists recommended Test input signals for an IQS900 signal conditioner with diagnostics (SIL safety version).

Table 9-3: Recommended Test input signals for an IQS900 signal conditioner without diagnostics (standard version)

Test input signal (from signal generator)		Expected IQS900 output		
Description	Voltage (AC)	Main output (current signal)	Main output (voltage signal)	Raw output (voltage signal)
Min. gap	$\pm 100 \text{ mV}_{\text{PK-PK}}$	$-15.5 \text{ mA}_{\text{DC}}$ $\pm 0.05 \text{ mA}_{\text{PK-PK}}$	$-1.6 \text{ V}_{\text{DC}}$ $\pm 160 \text{ mV}_{\text{PK-PK}}$	$-0.8 \text{ V}_{\text{DC}}$ $\pm 80 \text{ mV}_{\text{PK-PK}}$
Small (1/4) gap	$\pm 3 \text{ V}_{\text{PK-PK}}$	$-X \text{ mA}_{\text{DC}}$ $\pm 1.5 \text{ mA}_{\text{PK-PK}}$	$-X \text{ V}_{\text{DC}}$ $\pm 4.8 \text{ V}_{\text{PK-PK}}$	$-X \text{ V}_{\text{DC}}$ $\pm 2.4 \text{ V}_{\text{PK-PK}}$
Mid. (1/2) gap	$\pm 4 \text{ V}_{\text{PK-PK}}$	$-18 \text{ mA}_{\text{DC}}$ $\pm 2 \text{ mA}_{\text{PK-PK}}$	$-9.6 \text{ V}_{\text{DC}}$ $\pm 6.4 \text{ V}_{\text{PK-PK}}$	$-4.8 \text{ V}_{\text{DC}}$ $\pm 3.2 \text{ V}_{\text{PK-PK}}$
Big (3/4) gap	$\pm 3 \text{ V}_{\text{PK-PK}}$	$-X \text{ mA}_{\text{DC}}$ $\pm 1.5 \text{ mA}_{\text{PK-PK}}$	$-X \text{ V}_{\text{DC}}$ $\pm 4.8 \text{ V}_{\text{PK-PK}}$	$-X \text{ V}_{\text{DC}}$ $\pm 2.4 \text{ V}_{\text{PK-PK}}$
Max. gap	$\pm 100 \text{ mV}_{\text{PK-PK}}$	$-20.5 \text{ mA}_{\text{DC}}$ $\pm 0.05 \text{ mA}_{\text{PK-PK}}$	$-17.6 \text{ V}_{\text{DC}}$ $\pm 160 \text{ mV}_{\text{PK-PK}}$	$-8.8 \text{ V}_{\text{DC}}$ $\pm 80 \text{ mV}_{\text{PK-PK}}$

Notes

X value depends on the sensitivity of the IQS900 signal conditioner.

Table 9-4: Recommended Test input signals for an IQS900 signal conditioner with diagnostics (SIL safety version)

Test input signal (from signal generator)		Expected IQS900 output		
Description	Voltage (AC)	Main output (current)	Main output (voltage)	Raw output (voltage)
Min. gap	$\pm 100 \text{ mV}_{\text{PK-PK}}$	Not applicable – see note below		
Small (1/4) gap	$\pm 3 \text{ V}_{\text{PK-PK}}$	$-X \text{ mA}_{\text{DC}}$ $\pm 1.5 \text{ mA}_{\text{PK-PK}}$	$-X \text{ V}_{\text{DC}}$ $\pm 4.8 \text{ V}_{\text{PK-PK}}$	$-X \text{ V}_{\text{DC}}$ $\pm 2.4 \text{ V}_{\text{PK-PK}}$
Mid. (1/2) gap	$\pm 4 \text{ V}_{\text{PK-PK}}$	$-18 \text{ mA}_{\text{DC}}$ $\pm 2 \text{ mA}_{\text{PK-PK}}$	$-9.6 \text{ V}_{\text{DC}}$ $\pm 6.4 \text{ V}_{\text{PK-PK}}$	$-4.8 \text{ V}_{\text{DC}}$ $\pm 3.2 \text{ V}_{\text{PK-PK}}$
Big (3/4) gap	$\pm 3 \text{ V}_{\text{PK-PK}}$	$-X \text{ mA}_{\text{DC}}$ $\pm 1.5 \text{ mA}_{\text{PK-PK}}$	$-X \text{ V}_{\text{DC}}$ $\pm 4.8 \text{ V}_{\text{PK-PK}}$	$-X \text{ V}_{\text{DC}}$ $\pm 2.4 \text{ V}_{\text{PK-PK}}$
Max. gap	$\pm 100 \text{ mV}_{\text{PK-PK}}$	Not applicable – see note below		

Notes

An IQS900 signal conditioner with diagnostics monitors the IQS900's output signal, and injecting a Test input signal at min. or max. gap would attempt to drive the IQS900's output beyond its normal operating range (-15.5 to -15.5 mA / -1.6 to -17.6 V), which would be detected as a problem with the measurement chain – resulting in the quasi-static measurement/diagnostic component (DC) of the output signal being driven/saturated outside of its normal operating range.

X value depends on the sensitivity of the IQS900 signal conditioner.

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10 END-OF-LIFE PRODUCT DISPOSAL

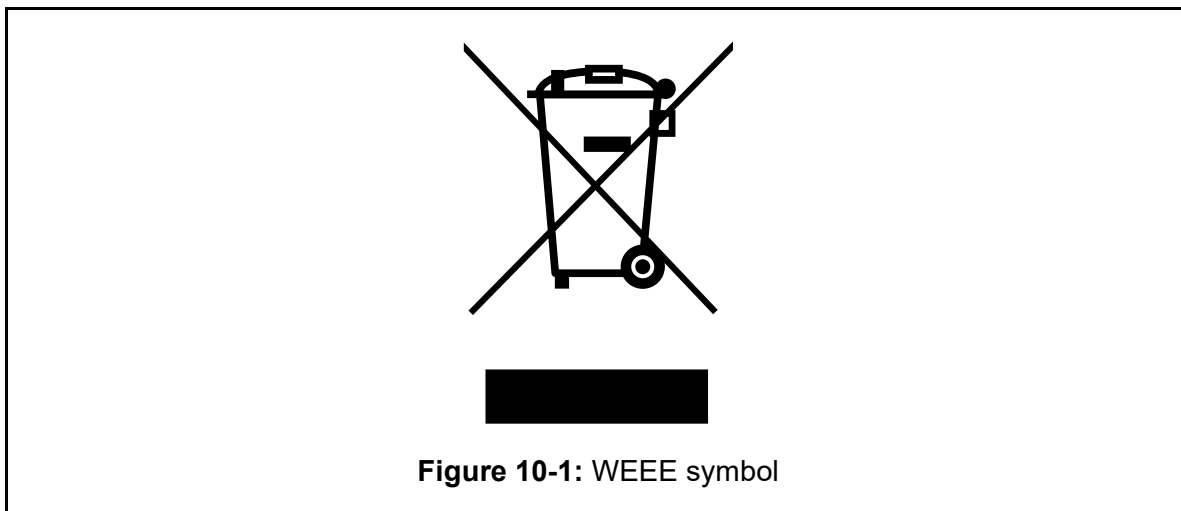
A TQ9xx-based proximity measurement chain is an electrical/electronic product, therefore, it must be disposed of in a acceptable manner at the end of its useful life. This is important in order to reduce pollution and improve resource efficiency.

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 10-1).



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

11 SERVICE AND SUPPORT

11.1 Contacting us

Meggitt's worldwide customer support network offers a range of support, including 11.2 Technical support and 11.3 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

11.2 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 11.1 Contacting us).

11.3 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 11-4.

11.4 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 11-8 and return it to Meggitt SA's main office (see 11.1 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.

For a TQxxx-based proximity measurement chain using an IQS900 signal conditioner with diagnostics, when was it installed and first operated (dd.mm.yyyy)?:

For a TQxxx-based proximity measurement chain using an IQS900 signal conditioner with diagnostics, 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:

*Proximity measurement chains using TQ9xx proximity sensors
installation manual*

Reference: MAPROX9xx/E

Version: Edition 4

Date of issue: May 2022

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? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Is the information technically accurate? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Is more technical detail required? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Are the instructions clear and complete? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Are the descriptions easy to understand? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Are the examples and diagrams/photos helpful? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Are there enough examples and diagrams/photos? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Is the style/wording easy to read? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Is any information not included? | <input type="checkbox"/> Yes | <input type="checkbox"/> 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: ENVIRONMENTAL SPECIFICATIONS

Table A-1 summarises the environmental specifications for TQ9xx-based proximity measurement chains consisting of a TQ9xx proximity sensor with integral cable, optional EA90x extension cable and an IQS900 signal conditioner.

NOTE: Further information on the environmental specifications for a specific TQ9xx-based proximity measurement chain can be found in the corresponding data sheet.

Table A-1: Environmental specifications summary

Power supply (to IQS900)	
Input voltage range (nominal) for a current output signal	-18 to -30 V _{DC}
Input voltage range monitoring with a current output signal	-17.28 ±0.45 V _{DC} to -30.25 ±0.80 V _{DC}
Input voltage range (nominal) for a voltage output signal	-19 to -30 V _{DC}
Input voltage range monitoring with a voltage output signal	-19.00 ±0.50 V _{DC} to -30.25 ±0.80 V _{DC}
Current consumption (with nominal 24 V _{DC} supply)	25 mA max.
Overvoltage protection (diode)	Protection starts between -31.4 and -34.7 V _{DC} at an ambient temperature of 23°C ±5°C (73°F ±9°F)
Power-up time	<30 seconds
<p>Notes</p> <p>The power supply requirements are slightly different depending on whether an IQS900 signal conditioner is configured with a current output signal (2-wire signal transmission) or a voltage output signal (3-wire signal transmission).</p> <p>The power supply input to an IQS900 signal conditioner must meet the required specifications in order to ensure that the IQS900's diagnostics circuitry can drive/saturate the quasi-static measurement/diagnostic component (DC) of the output signal as required under all circumstances.</p> <p>The IQS900 signal conditioner should be powered (energised) using a limited-power, low-voltage power supply such as a sensor power supply output provided by a VM600 or VibroSmart[®] monitoring and/or protection system, a GSI127 galvanic separation unit or other suitable power supply.</p> <p>In safety-related applications, an IQS900 must be powered using a limited-power, low-voltage power supply with a safe limitation of -30 V_{DC} (nominal), even in the event of a single fault with the power supply.</p>	

Table A-1: Environmental specifications summary (continued)

Temperature	
Operating	TQ9xx sensor: -40 to 180 °C (-40 to 356 °F). TQ9xx sensor and cabling (integral and EA90x): TBC. Cabling (integral and EA90x), connectors and optional protection: -40 to 200 °C (-40 to 392 °F). IQS900 signal conditioner: -40 to 85 °C (-40 to 185 °F).
Storage	-40 to 85 °C (-40 to 185 °F)
Pressure	
Operating	TQ9xx sensor: 6 bar (100 psid) between sensor tip and body
Humidity	
Operating	TQ9xx sensor and integral cable: <ul style="list-style-type: none"> • 0 to 95%, non-condensing. • 100% max., condensing (not submerged). IQS900 signal conditioner: <ul style="list-style-type: none"> • 0 to 95%, non-condensing.
Electromagnetic compatibility (EMC)	
Emissions and immunity	According to: <ul style="list-style-type: none"> • IEC/EN 61000-6-2:2005. • IEC/EN 61000-6-4:2007 + A1:2011. • IEC/EN 61326-1:2013. • IEC/EN 61326-3-2:2008 (SIL).
Safety	
Electrical safety	Conforms to IEC/EN 61010-1: Safety requirements for electrical equipment for measurement, control and laboratory use. Also CAN/CSA C22.2 61010-1-12 / UL 61010-1:2012.

Table A-1: Environmental specifications summary (continued)

Other	
Protection rating (according to IEC 60529)	TQ9xx sensor: IP68 for the head of the sensor (sensor tip and integral cable). IQS900 signal conditioner: IP20. Note: The IQS900 is suitable for indoor use only unless it is installed in an industrial housing or enclosure that ensures a higher level of environmental protection.
Indoor use	Limited to indoor use only
Pollution degree	2. Note: For use in environments where, normally, only non-conductive pollution occurs. Occasionally, however, a temporary conductivity caused by condensation may be expected.
Altitude	Max. 4000 m (13100 ft). Note: Reduced air density affects cooling ability.

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APPENDIX B: TIGHTENING TORQUE VALUES FOR CABLE FITTINGS

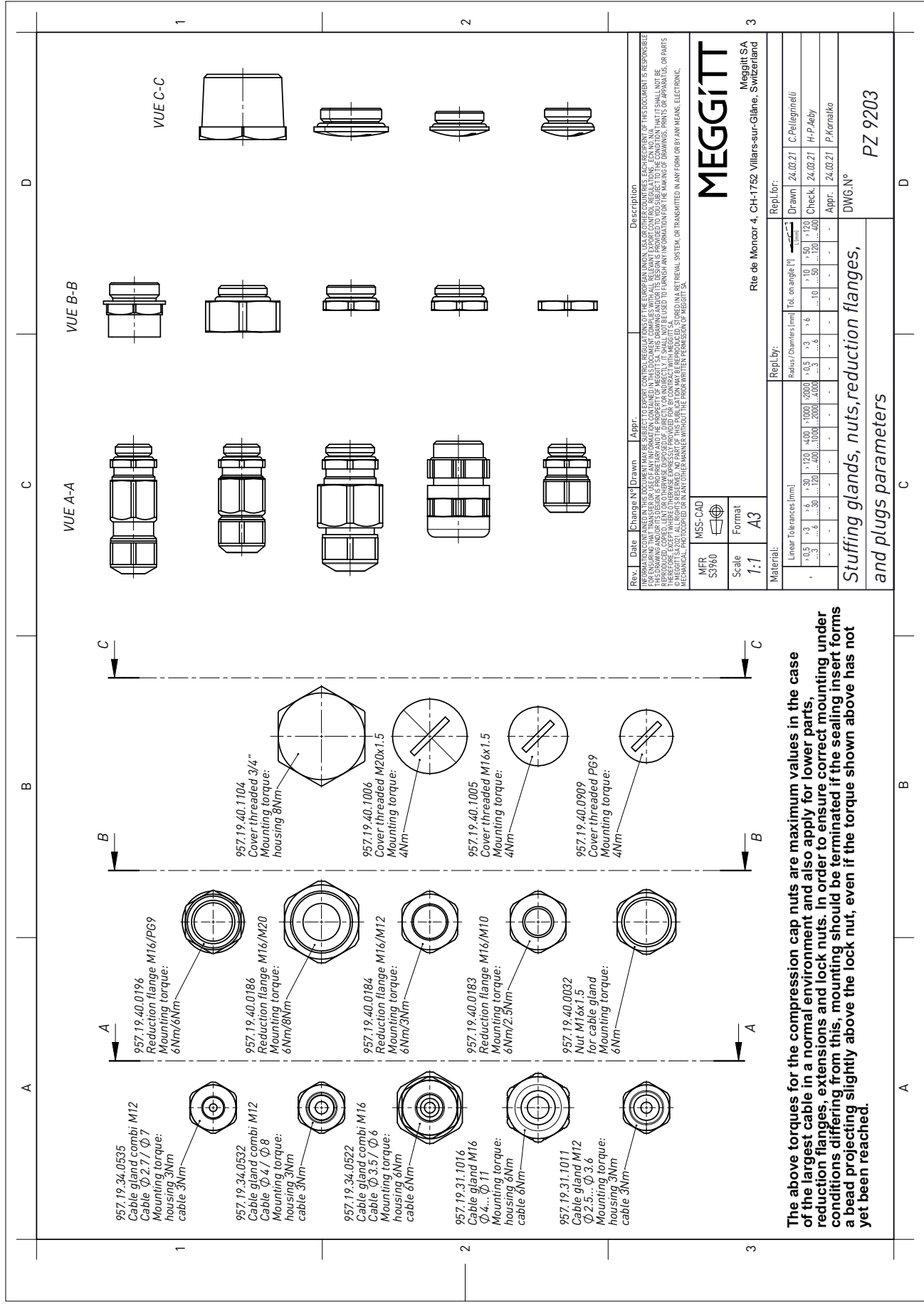
Figure B-1 outlines the recommended tightening torque values for the proper assembly of cable fittings (stuffing glands) on ABA17x industrial housings.

In Figure B-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 B-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.



The above torques for the compression cap nuts are maximum values in the case of the largest cable in a normal environment and also apply for lower parts, reduction flanges, extensions and lock nuts. In order to ensure correct mounting under conditions differing from this, mounting should be terminated if the sealing insert forms a bead projecting slightly above the lock nut, even if the torque shown above has not yet been reached.

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

APPENDIX C: ATEX CERTIFICATIONS

Table C-1: Related ATEX certificates

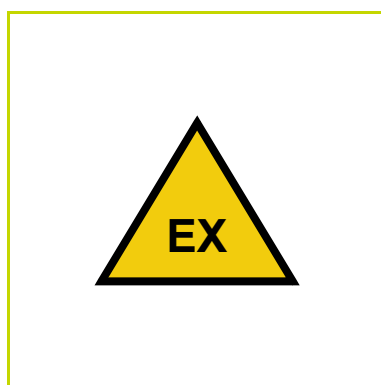
Product(s) covered	Certificate number
ABA160, JB118 and PA151	PTB 01 ATEX 1061 U
ABA161 and PA150	PTB 98 ATEX 3101 U
ABA17x	BVS 15 ATEX E 112 U
	Presafe 14 ATEX 5378 U
GSI127	LCIE 13 ATEX 3037 X
IQS9xx	LCIE 21 ATEX 3002 X
IQS9xx and TQ9xx	LCIE 21 ATEX 1004 X
Cable fittings (stuffing glands)	ITS 16 ATEX 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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Anlage

- (13)
- (14) **EU-Baumusterprüfbescheinigung PTB 01 ATEX 1061 U, Ausgabe: 1**

- (1) **EU-Baumusterprüfbescheinigung**
- (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.

- (9) Die Ergebnisse der Prüfung sind in dem vertraulichen Prüfbericht PTB Ex 16-16032 festgehalten.
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 IIC Db**

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



Dr.-Ing. D. Markus
Oberregierungsrat

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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- (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)			
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)			
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)			
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)			
kleinste	177 mm	177 mm	145 mm
größte	360 mm	360 mm	145 mm

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

- Umgebungstemperaturbereich
 -55 °C bis +127 °C mit Silikonichtung
 -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, M10x80, 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 IIC 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.



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 Braunschweig, 7. September 2016
 Im Auftrag

Dr.-Ing. D. Wapbus
 Oberregierungsrat





EU-TYPE-EXAMINATION CERTIFICATE

(Translation)

- (1) **PTB 01 ATEX 1061 U** **Issue: 1**
- (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**
- (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.
- (9) The examination and test results are recorded in the confidential Test Report PTB Ex 16-16032.
- (10) 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**
- (11) 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.
- (12) 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.

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. Marquardt
 Oberregierungsrat

sheet 1/4

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



SCHEDULE

- (13)
- (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	Width	Height	Depth
Type 26.08.08.06 to 26.41.40.20 (Ex-standard-enclosure)	min.	75 mm	56 mm
	max.	405 mm	201 mm
Type 26.88.01.00 to 26.88.04.00 (Ex-Okta Box-enclosure)	min.	81 mm	75 mm
	max.	200 mm	125 mm
Type 26.14.01.00 to 26.14.03.00 (Ex-PF-enclosure)	min.	170 mm	136 mm
	max.	541 mm	136 mm
Type 26.12.20.00 to 26.40.60.00 (Mini-Polyglas-Ex-enclosure and Polyglas-Ex-enclosure)	min.	120 mm	100 mm
	max.	605 mm	252 mm
Type 26.01.22.15 to 26.01.44.15 (Ex-Combi Box-enclosure)	min.	177 mm	145 mm
	max.	360 mm	145 mm

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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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SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 01 ATEX 1061 U Issue: 1

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)

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.

Ingress protection IP 66 acc. to IEC 60529
Thread stud of the earth bolt compl. ... M6x60, M8x50, M10x60, M12x80

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



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 IIC 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.

sheet 3/4

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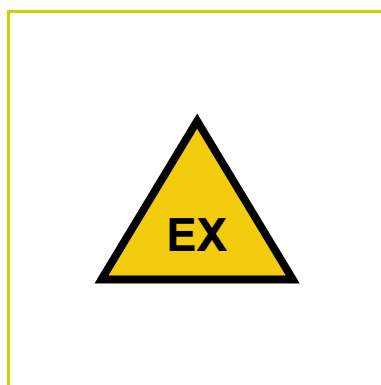
EU-Type Examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • 38116 Braunschweig • GERMANY

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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Anlage

- (13)
- (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 Silikonichtung
 -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.

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



EU-Baumusterprüfbescheinigung

- (1)
- (2) Komponente zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen
Richtlinie 2014/34/EU
- (3) EU-Baumusterprüfbescheinigungsnummer
PTB 98 ATEX 3101 U
- (4) Produkt: Leergehäuse Typ 25.*****
- (5) Hersteller: ROSE Systemtechnik GmbH
- (6) Anschrift: Erbweg 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.
- (9) 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. Meyer
Oberregierungsrat



EU-TYPE EXAMINATION CERTIFICATE
(Translation)

(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 Oberregler

sheet 1/3

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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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 Oberregler

Seite 3/3

EG-Baumusterprüfbescheinigungen ohne Unterschrift und ohne Siegel haben keine Gültigkeit. Diese EG-Baumusterprüfbescheinigung darf nur, unverändert, weiterverbreitet werden. Auszüge oder Änderungen bedürfen der Genehmigung der Physikalisch-Technischen Bundesanstalt. Physikalisch-Technische Bundesanstalt • Bundesallee 100 • 38116 Braunschweig • DEUTSCHLAND



SCHEDULE TO EU-TYPE-EXAMINATION CERTIFICATE PTB 98 ATEX 3101 U Issue:1

- (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, 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

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.



sheet 2/3

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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- (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 Braunschweig, September 8, 2016
On behalf of PTB:



Dr.-Ing. D. Magnus
Oberregierungsrat

sheet 3/3

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.

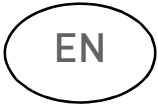
Physikalisch-Technische Bundesanstalt • Bundesallee 100 • 38116 Braunschweig • GERMANY

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ATEX certificate:
BVS 15 ATEX E 112 U
for
ABA17x

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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.



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13 Anlage zur EU-Baumusterprüfbescheinigung
 BVS 15 ATEX E 112 U

14 Beschreibung des Produktes Gegenstand und Typ
 Leergehäuse Typ eCAM ** ** ** **

Stahl oder Edelstahl Typ	Baugröße	
	Breite ¹⁾ [mm]	Höhe ²⁾ / Tiefe ³⁾ [mm]
eCAM 12 12 08 bis	120	120 / 80
	400	400 / 200
eCAM 20 20 10 bis	200	200 / 100
	1000	1200 / 500

Gehäuse mit verschraubtem Deckel (Abmaße Bereich)

15.1 Das Leergehäuse Typ eCAM ** ** ** ist in der Züschuszeit Erhöhte Sicherheit „e“ für den Bereich mit EPL Gb oder Schutz durch Gehäuse „I“ 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 Verschlusscharnier ausgeführt werden.

15.2 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.

Seite 2 von 2 zu BVS 15 ATEX E 112 U
 Dieses Zertifikat darf nur vollständig und unentgeltlich weitervertrieben werden.
 DEKRA EXAM GmbH, Dorenstr. 6, 44699 Bochum, Deutschland
 Telefon +49 234 3099 105, Telefax +49 234 3099 110, ex@exam.de

1 EU-Baumusterprüfbescheinigung

2 Komponenten, die zum Einbau in Geräte und Schutzsysteme vorgesehen sind
 Richtlinie 2014/54/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. 0169 gemäß Artikel 17 der Richtlinie 2014/54/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 I 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: "g"
 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.

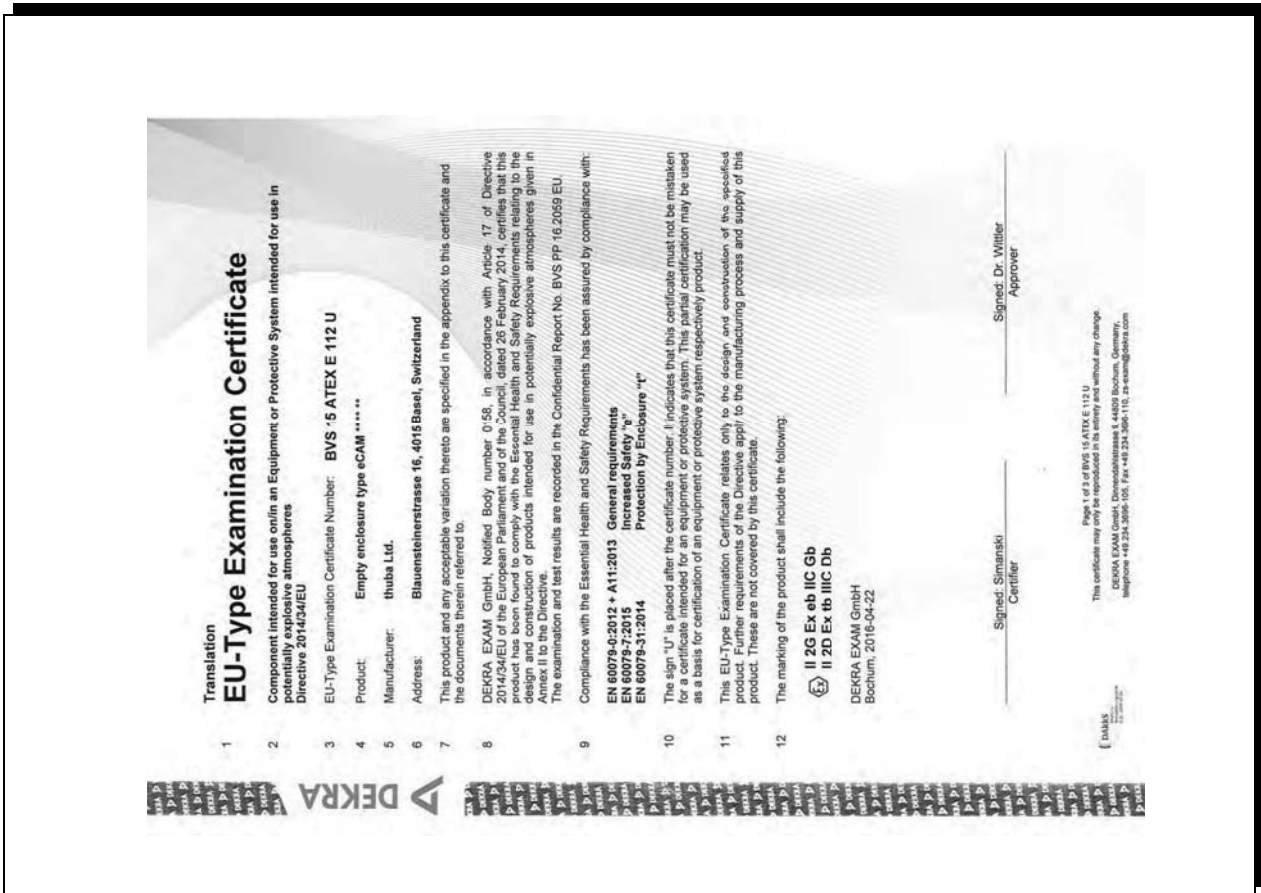
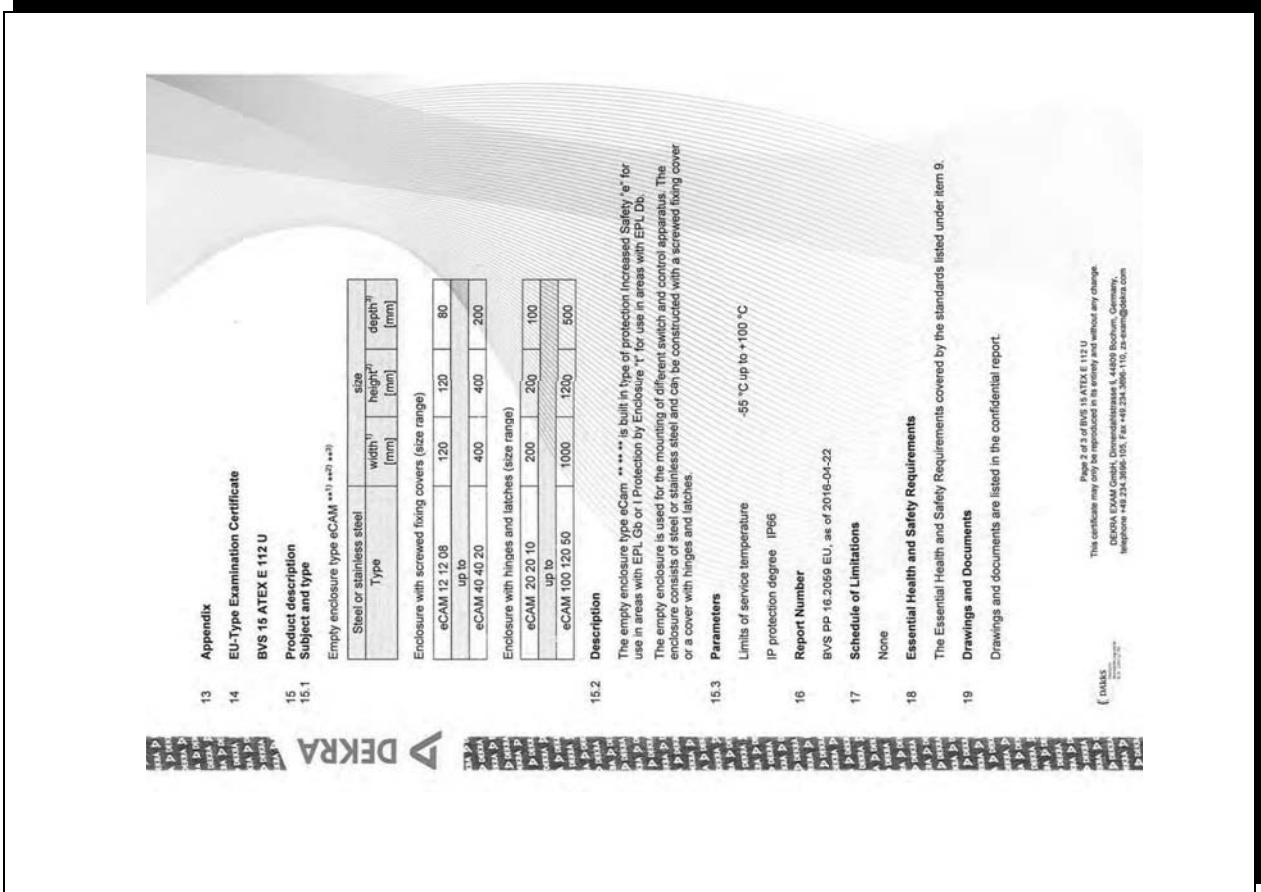
11 Diese EU-Baumusterprüfbescheinigung bezieht sich nur auf den Entwurf und Bau der beschriebenen Produkte.
 Für den Herstellungsprozess und die Abgabe der Produkte sind weitere Anforderungen der Richtlinie zu erfüllen, die nicht durch diese Bescheinigung abgedeckt sind.

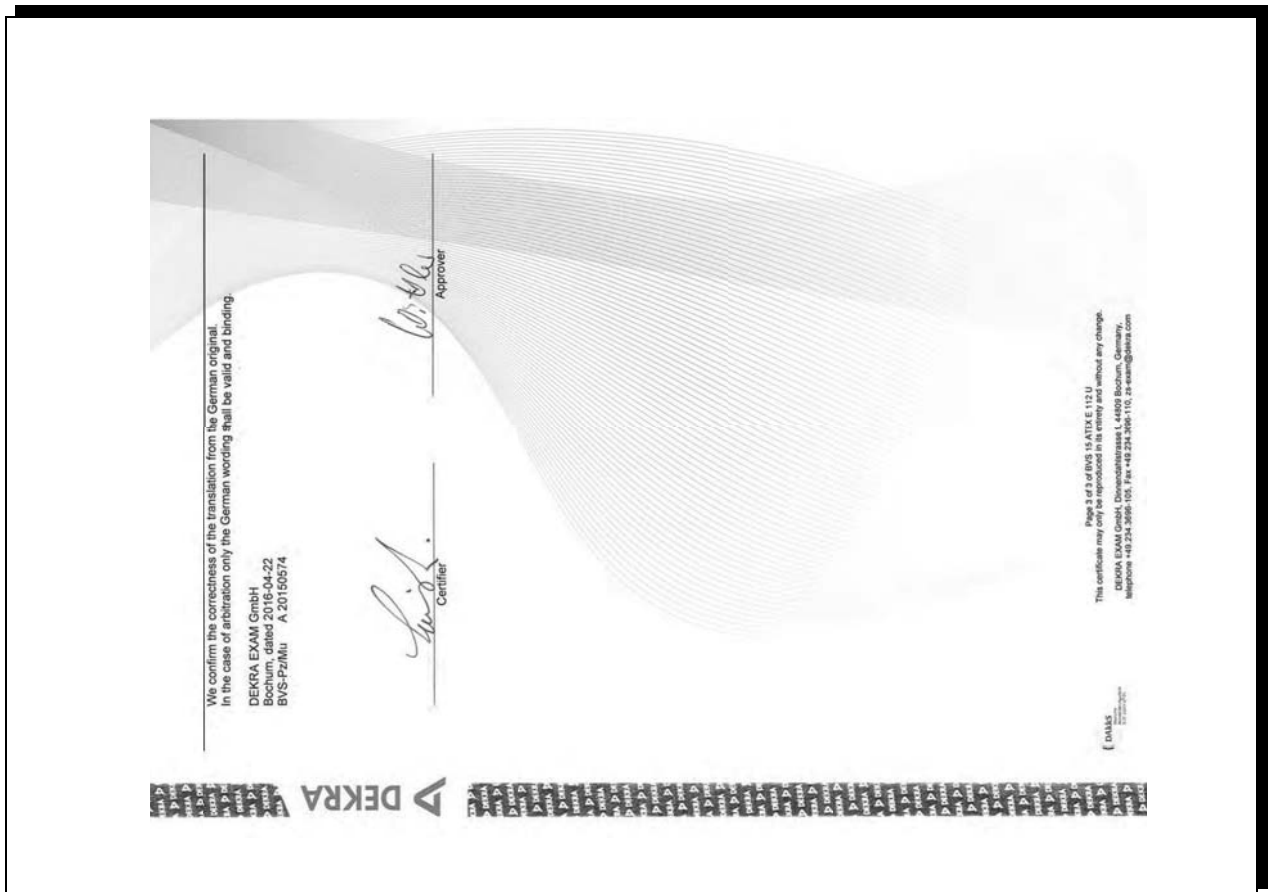
12 Die Kennzeichnung des Produktes muss die folgenden Angaben enthalten:
 II 2G Ex eb IIC Gb
 II 2D Ex tb IIC Db
 DEKRA EXAM GmbH
 Bochum, den 22.04.2016

[Signature]
 Fachzertifizierer

[Signature]
 Zertifizierer

Seite 1 von 2 zu BVS 15 ATEX E 112 U
 Dieses Zertifikat darf nur vollständig und unentgeltlich weitervertrieben werden.
 DEKRA EXAM GmbH, Dorenstr. 6, 44699 Bochum, Deutschland
 Telefon +49 234 3099 105, Telefax +49 234 3099 110, ex@exam.de





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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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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

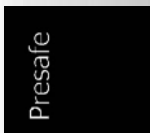
[15] **Description of Equipment or Protective System**
 CuboX empty boxes made of stainless steel or painted steel in various sizes. Enclosures can be fitted with optional plastic window or gland plates, mounting accessories like DIN-rails, mounting plates, brackets & Metric or NPT thread coupler. Lid 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	AI51 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, Gaustadalleen 30, 0373 Oslo, Norway



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 Nielttisen 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.

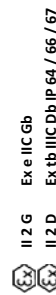
[8] DNV Nemko Presafe AS, notified body number 2460 in accordance with Article 9 of Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety requirements relating to the design and construction of equipment 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:



Date of issue: 2014-12-10



This Certificate replaces previously certificate DNV 11 ATEX 98909U issued by DNV

Bjørn Spongsveen
 For DNV Nemko Presafe AS
 Information on electronic signature: www.dnv.com

DNV Nemko Presafe AS, Gaustadalleen 30, 0373 Oslo, Norway

Presafe

EC-Type Examination Certificate

Product Nomenclature:

[X]	[Version]	[Material]	[Surface]	[Cut type]	[width] [height] [depth]	KOT8...	Customer specific features (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

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



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

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



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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.

DESCRIPTION OF PRODUCT
The GSI 127 interface provides galvanic insulation 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.

DETAIL DE LA GAMME
244-127-000-XXX-A2-BY
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).

RANGE DETAILS
244-127-000-XXX-A2-BY
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).

MARQUAGE
Le marquage du produit doit comprendre :
MEGGITT SA ou VIBRO-METER ou MFR S3960
Adresse :
Type : 244-127-000-XXX-A2-BY
N° de fabrication : ...
Année de fabrication : ...
© I13 (1) G
Ex nA [Ia G] 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_i: 25.2 V; I_i: 60 mA; P_i: 0.7 W; C_i: 95 nF; L_i: 5 mH
Pour 244-127-000-XXX-A2-B20 à B39 :
U_i: 25.2 V; I_i: 45 mA; P_i: 0.5 W; C_i: 95 nF; L_i: 10 mH

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-BY
Serial number: ...
Year of construction: ...
© I13 (1) G
Ex nA [Ia G] 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_i: 25.2 V; I_i: 60 mA; P_i: 0.7 W; C_i: 95 nF; L_i: 5 mH
For 244-127-000-XXX-A2-B20 to B39:
U_i: 25.2 V; I_i: 45 mA; P_i: 0.5 W; C_i: 95 nF; L_i: 10 mH

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.

The equipment shall also bear the usual marking required by the product standards applying to such equipment under the manufacturer responsibility.

13 CONDITIONS PARTICULIÈRES D'UTILISATION
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.

ESSENTIAL HEALTH AND SAFETY REQUIREMENTS
Covered by standards listed at 8.

14 EXIGENCES ESSENTIELLES DE SANTÉ ET DE SÉCURITÉ
Couvertes par les normes listées au point 8.

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GERAT-BOJ-013-18-02
Page 2 of 3

LCIE
Laboratoire Central des Industries Électriques
Une société de Bureau Veritas

33 Avenue du Général Leclerc
92260 Fontenay-aux-Roses
FRANCE

WWW.LCIE.FR



ATTESTATION D'EXAMEN UE DE TYPE
EU TYPE EXAMINATION CERTIFICATE

1 Version : 01 LCIE 13 ATEX 3037 X Issue : 01

Directive 2014/34/UE
Appareil ou Système de Protection destiné à être utilisé en Explosives Atmosphères

Product :
GSI 127 interface

Type : 244-127-000-XXX-A2-BY

Manufacturer :
MEGGITT SA
Route de Moncor 4
1752 Villars-sur-Glâne
SUISSE

3 Ce produit et ses variantes éventuelles acceptées sont décrits dans l'annexe de la présente attestation et dans les documents descriptifs cités en référence.

4 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° : 108046-614347; 141529-6365013

5 Le respect des Exigences Essentielles de Sécurité et de Santé est assuré par la conformité à :
EN 60079-0:2012 + A11:2013
EN 60079-11:2012
EN 60079-15:2010

6 L'appareil ne doit être installé que 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.

7 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 maintenance du produit. Ces dernières ne sont pas couvertes par la présente attestation.

8 Le marquage du produit est mentionné dans l'annexe de cette attestation.

9 Le respect des Exigences Essentielles de Santé et de Sécurité est assuré par la conformité avec :
EN 60079-0:2012 + A11:2013
EN 60079-11:2012
EN 60079-15:2010

10 Le marquage du produit est mentionné dans l'annexe de cette attestation.

11 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.

12 Le marquage du produit est mentionné dans l'annexe de cette attestation.

Responsable de Certification
Certification Officer

Laboratoire Central des Industries Électriques
Industries Electriques
33 Avenue du Général Leclerc
92260 Fontenay-aux-Roses
France

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Page 1 of 3

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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

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 COMPLÉMENTAIRES

ADDITIONAL INFORMATION

Essais individuels

Chaque transformateur T1 devra être soumis à un essai diélectrique sous tension d'essai de 1500 V ; 50/60 Hz appliquée entre enroulement primaire et les enroulements secondaires pendant au moins 60 s conformément au paragraphe 11.2 de la norme EN 60079-11:2012.

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 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.

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/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.

In accordance with Article 41 of Directive 2014/34/UE, EC-Type Examination Certificates referring to Directive 94/9/EC that were in existence prior to the date of application of Directive 2014/34/UE (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/UE. New issues of such certificates may continue to bear the original certificate number issued prior to 20 April 2016.

17 DÉTAILS DES MODIFICATIONS

DETAILS OF CHANGES

Version 00 : Evaluation de la conformité selon les normes (3105/2013) EN 60079-0:2012, EN 60079-11:2012 et EN 60079-15:2010.

Issue 00 : Conformity assessment according to (2013/05/01) EN 60079-0:2012, EN 60079-11:2012 and EN 60079-15:2010 standards.

- 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 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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LCIE
Laboratoire Central des Industries Electriques
Une société de Bureau Veritas

33 Avenue du Général Leclerc
92260 Fontenay-aux-Roses
FRANCE

WWW.LCIE.FR

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

Seite 1/3

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.

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).

KENNZEICHNUNG


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: $U \leq 30 \text{ V}$, $I \leq 150 \text{ mA}$

Sensor oder Signalconditioner Ausgang:

Für 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 : 5mH

Für 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 : 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**

- 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.
- Der Benutzer muss sicherstellen, die Lage des Modul entspricht den Anforderungen der Norm EN 60079-0 und der Schutzklasse IP54 oder gleichwertig.
- Umgebungstemperatur betreiben: -40 bis $+70 \text{ °C}$

14 **WESENTLICHE ANFORDERUNGEN IM BEZUG AUF SICHERHEIT UND GESUNDHEIT**

Abgedeckt nach den Normen aufgeführt unter Punkt 8.

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-Prüfzertifikaten) 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.

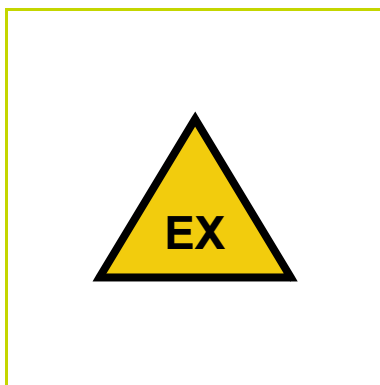
Seite 3/3

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EX CERTIFICATE – ATEX

vibro-meter®

LCIE 21 ATEX 3002 X
for
IQS9xx signal conditioners



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 21 ATEX 3002 X
Edition 1 – April 2021

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ATTESTATION D'EXAMEN UE DE TYPE - ANNEXE EU TYPE EXAMINATION CERTIFICATE - SCHEDULE



1 Version : 00 **LCIE 21 ATEX 3002 X** Issue : 00

Directive 2014/34/EU
Appareil ou Système de Protection destiné à être utilisé en Atmosphères Explosibles

Directive 2014/34/EU
Equipment or Protective System Intended for use in Potentially Explosive Atmospheres

Produit :
IQS 9** Conditionneur de signal

Type : 204-9**-000-***

Fabricant :
Meggitt SA

Adresse :
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.

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 Cotrac Certification de Produits et Services, n°5-0014. Portée disponible sur www.cofrac.fr.

Les résultats des vérifications et essais figurent dans le(s) rapport(s) confidentiel(s) N° : 166151-748385

8 Le respect des Exigences Essentielles de Sécurité et de Santé est assuré par la conformité à :

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.

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.

11 Le marquage du produit est mentionné dans l'annexe de cette attestation.

Fontenay-aux-Roses, le 1er avril 2021

Responsable de Certification
Certification Officer
Jilien Gauthier




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Page 1 / 4

1 Version : 00 **LCIE 21 ATEX 3002 X** Issue : 00

DESCRIPTION DU PRODUIT

Le IQS 9** est un conditionneur de signal qui est utilisé dans un système de mesure de proximité.

DESCRIPTION OF PRODUCT

The IQS 9** is a signal conditioner which is used in a proximity measurement system.

Le conditionneur de signal est composé d'une enveloppe en aluminium, qui contient une carte de circuit imprimée encapsulée, deux blocs de jonction «J1 et J2», un connecteur «J0» et d'un clip optionnel pour rail DIN.

The signal conditioner is composed of an aluminum enclosure, which houses an encapsulated printed circuit board, two terminal blocks «J1 and J2», one connector «J0» and with an optional clip for DIN rail.

Le conditionneur de signal peut être alimenté en deux configurations, soit par transmission à 2 fils (I/P), soit par transmission à 3 fils (O/P).

The signal conditioner can be power supplied with two configuration, either by 2 wire transmission (I/P) or 3 wire transmission (O/P).

DETAIL DE LA GAMME

204 - 9 - * - * - 000 - * - * - *

	Numéro de modification mineure / Minor modification number (PFF = Form Fit Function) 0 à 10 = Le numéro est incrémenté à chaque modification / Each modification increase the number by 1
	Versions personnalisées (matériau cible ou montage spécial) Customized version (special target material or mounting) 00 à 10 = 99
	Type de conditionneur / Conditioner type 00 = Sortie analogique / Analog output 10 = Sortie 4-20mA / 4-20mA output 11 à 10 = 99 = Autre / Other

CARACTERISTIQUES

Connexion Connection	Paramètres électriques de sécurité intrinsèque Intrinsic safety electrical parameters
Bloc de jonction «J1» - transmission à 2 fils (I/P) Terminal block «J1» - 2 wire transmission (I/P)	U _i : 28 V; I _i : 100 mA; P _i : 700 mW; L _i : 4.96 µH; C _i : 2.2 nF
Bloc de jonction «J1» - transmission à 3 fils (O/P) Terminal block «J1» - 3 wire transmission (O/P)	U _i : 28 V; I _i : 100 mA; P _i : 700 mW; L _i : 9.92 µH; C _i : 4.4 nF
Bloc de jonction «J2» - Raw O/P Terminal block «J2» - Raw O/P	U _o : 28 V; I _o : 4.57 mA; P _o : 32 mW; L _o : 1.7 H; C _o : 82 nF
Bloc de jonction «J2» - Test I/P Terminal block «J2» - Test I/P	U _o : 28 V; I _o : 0.057 mA; P _o : 0.4 mW; L _o : 11098 H; C _o : 82 nF
Connecteur «J0» - Capteur I/P Connector «J0» - Sensor I/P	U _o : 28 V; I _o : 53.2 mA; P _o : 372.4 mW; L _o : 12.5 mH; C _o : 82.4 nF

RATINGS

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ATTESTATION D'EXAMEN UE DE TYPE - ANNEXE
EU TYPE EXAMINATION CERTIFICATE - SCHEDULE



LCIE 21 ATEX 3002 X

Issue : 00

1 Version : 00

MARQUAGE

Le marquage du produit doit comprendre :
vibro-meter® ou MEGGITT SA ou MFR S3960
Adresse :
Type : 204-9*-000-*** (1)
N° de fabrication : ...
Année de fabrication : ...
Ex la IIC T6 ou T5 Ga (2)
Ex la IIC T200 80°C...T200 115°C Da (2)
LCIE 21 ATEX 3002 X
-40°C ≤ T_{amb} ≤ +85°C
U₁...; I₁...; P₁...; C₁...; L₁... (3)
(1): complété par la désignation de type
(2): voir les conditions particulières d'utilisation.
(3): complétées par les paramètres électriques de sécurité intrinsèque de la connexion concernée.

Le marquage peut être réduit ainsi:
vibro-meter® ou MEGGITT SA ou MFR S3960
Type : 204-9*-000-*** (1)
N° de fabrication : ...
Année de fabrication : ...
Ex la IIC T6 ou T5 Ga (2)
Ex la IIC T200 80°C...T200 115°C Da (2)
LCIE 21 ATEX 3002 X
-40°C ≤ T_{amb} ≤ +85°C
(1): complété par la désignation de type.
(2): voir les conditions particulières d'utilisation.
L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concernent sous la responsabilité du fabricant.

13 CONDITIONS PARTICULIÈRES D'UTILISATION

- L'appareil ne doit être raccordé qu'à des matériels associés isolés galvaniquement de sécurité intrinsèque certifiés ou à un matériel simple. Cette association doit être compatible vis-à-vis de la sécurité intrinsèque conformément aux exigences de la norme EN 60079-25.
- Classe de température du conditionneur de signal en fonction de la plage de température ambiante d'utilisation:

Classe de température Temperature class	Température ambiante Ambient temperature
T6	-40°C ≤ T _{amb} ≤ +70°C
T5	-40°C ≤ T _{amb} ≤ +85°C
T200 80°C	-40°C ≤ T _{amb} ≤ +50°C
T200 95°C	-40°C ≤ T _{amb} ≤ +65°C
T200 115°C	-40°C ≤ T _{amb} ≤ +85°C

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ATTESTATION D'EXAMEN UE DE TYPE - ANNEXE
EU TYPE EXAMINATION CERTIFICATE - SCHEDULE



LCIE 21 ATEX 3002 X

Issue : 00

1 Version : 00

MARKING

The marking of the product shall include the following :
vibro-meter® or MEGGITT SA or MFR S3960
Address :
Type : 204-9*-000-*** (1)
Serial number : ...
Year of construction : ...
Ex la IIC T6 or T5 Ga (2)
Ex la IIC T200 80°C...T200 115°C Da (2)
LCIE 21 ATEX 3002 X
-40°C ≤ T_{amb} ≤ +85°C
U₁...; I₁...; P₁...; C₁...; L₁... (3)
(1): completed with type designation.
(2): see the specific conditions of use.
(3): completed by intrinsic safety electrical parameters of the connection concerned.

The marking can be reduce as following:
vibro-meter® or MEGGITT SA or MFR S3960
Type : 204-9*-000-*** (1)
Serial number : ...
Year of construction : ...
Ex la IIC T6 or T5 Ga (2)
Ex la IIC T200 80°C...T200 115°C Da (2)
LCIE 21 ATEX 3002 X
-40°C ≤ T_{amb} ≤ +85°C
(1): completed with type designation.
(2): see the specific conditions of use.
The equipment shall also bear the usual marking required by the product standards applying to such equipment under the manufacturer responsibility.

17 DETAILS DES MODIFICATIONS DE L'ATTESTATION

Version 00 : Evaluation du IQS 9** conditionneur de signal, type 204-9*-000-*** selon les normes suivantes :
- EN IEC 60079-0:2018,
- EN 60079-11:2012.

ESSENTIAL HEALTH AND SAFETY REQUIREMENTS

Covered by standards listed at 8.

DESCRIPTIVE DOCUMENTS

1. Dossier technique / Technical file
2. Manuel d'installation / Installation manual

N°	Description	Reference	Rev.	Date	Page(s)
1.	Dossier technique / Technical file	DT-1076	00	2021/03/25	50
2.	Manuel d'installation / Installation manual	MAPROX9xx/E	--	--	--

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.

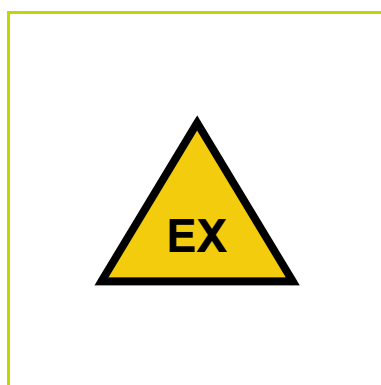
DETAILS OF CERTIFICATE CHANGES

Issue 00 : Assessment of the IQS 9** signal conditioner, type 204-9*-000-*** according to following standards:
- EN IEC 60079-0:2018,
- EN 60079-11:2012.

EX CERTIFICATE – ATEX

vibro-meter®

LCIE 21 ATEX 1004 X
for
TQ9xx proximity sensors
and IQS9xx signal conditioners



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 21 ATEX 1004 X
Edition 1 – April 2021

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ATTESTATION D'EXAMEN DE TYPE - ANNEXE TYPE EXAMINATION CERTIFICATE - SCHEDULE



1 Version : 00

LCIE 21 ATEX 1004 X

Issue : 00

1 **Directive 2014/34/EU**
Appareil ou Système de Protection destiné à être utilisé en Atmosphères Explosibles

2 **Directive 2014/34/EU**
Equipment or Protective System Intended for use in Potentially Explosive Atmospheres

3 **Produit :**
Capteur de proximité TQ 9**
et Conditionneur de signal IQS 9**

Type: 111-9-000-*** & 204-9**-000-*****

4 **Fabricant :** MEGGITT SA
Route de Moncor 4
1752 Villars-sur-Glâne
SUISSE

5 **Adresse :**

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.

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° : 166153-748396

8 Le respect des Exigences Essentielles de Sécurité et de Santé est assuré par la conformité à :
EN IEC 60079-0:2018 ; EN 60079-7:2015 + A1:2018

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.

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.

11 Le marquage du produit est mentionné dans l'annexe de cette attestation.

Fontenay-aux-Roses, le 30 mars 2021

Responsable de Certification
Julien Gauthier

LABORATOIRE CENTRAL DES
INDUSTRIES ELECTRIQUES
S.A.S au capital de 15.745.984 €
RCS Nanterre B 408 363 174
N° de SIRET : 481 200 000 000 000
F. 92240 FONTENAY-AUX-ROSES

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LCIE
Laboratoire Central des Industries Electriques
Une société de Bureau Veritas

33 Avenue du Général Leclerc
92240 Fontenay-aux-Roses
FRANCE

WWW.LCIE.FR

1 Version : 00

LCIE 21 ATEX 1004 X

Issue : 00

DESCRIPTION DU PRODUIT

Le capteur de proximité TQ 9** et le conditionneur de signal IQS 9** font partie d'un système de mesure de proximité. Le système peut également comprendre un câble de rallonge EA 9** non couvert par la présente attestation.

Ce système de proximité permet une mesure sans contact du déplacement relatif des éléments mobiles d'une machine tel que l'arbre. La tension ou le courant de sortie du système est proportionnelle à la distance entre la tête du capteur et la cible métallique.

Le capteur TQ 9** est équipé d'un câble coaxial intégral, terminé par un connecteur coaxial miniature autobloquant. Sa partie active est constituée d'une bobine de fil noyée dans la tête du capteur en matériau thermoplastique. Le corps fileté du capteur est en acier inoxydable.

Le conditionneur de signal IQS 9** est doté d'un modulateur/démodulateur haute-fréquence fournissant le courant d'excitation de la bobine du capteur. Ceci génère un champ électromagnétique à l'extrémité du capteur qui crée alors des courants de Foucault dans la cible métallique. Lorsque la cible se déplace, les courants de Foucault changent, ce qui entraîne un changement des caractéristiques électriques du capteur TQ 9** que le conditionneur de signal convertit en un signal proportionnel à la distance à la cible. L'électronique du conditionneur est montée dans un boîtier en aluminium et elle est totalement enrobée dans du silicone.

Le conditionneur de signal possède un connecteur coaxial pour la connexion au capteur. La sortie du conditionneur peut être configurée comme un signal de courant (mode de transmission 2 fils) ou de tension (mode de transmission 3 fils). À des fins de test, l'IQS 9** comprend également un signal de sortie de tension «brute» et un signal d'entrée de test qui permettent de tester in situ la chaîne de mesure / le fonctionnement du système.

DESCRIPTION OF PRODUCT

The TQ 9** proximity sensor and the IQS 9** signal conditioner are part of a proximity measurement system. The system can also include an EA 9** extension cable which is not covered by this certificate.

The proximity system allows a contactless measurement of the relative displacement of moving machine elements such as the shaft. The system output voltage or current is proportional to the distance between the sensor head and the metallic target.

The TQ 9** sensor has an integral coaxial cable, terminated with a self-locking miniature coaxial connector. Its active part comprises of a coil of wire that is moulded inside the sensor head made of a thermoplastic material. The sensor body is made of stainless steel.

The IQS 9** signal conditioner contains a high-frequency modulator/demodulator that supplies the driving signal to the coil of the sensor. This generates an electromagnetic field in the sensor head, which then induces eddy currents into the metallic target. When the target moves, the eddy currents change, which causes a change in the electrical characteristics of the TQ 9** that the signal conditioner converts into a signal that is proportional to the distance to the target. The electronics of the conditioner is mounted in a metallic housing and it is totally embedded into a silicone casting compound.

The signal conditioner has a coaxial connector for the connection to the proximity sensor. The output of the IQS 9** conditioner can be configured as a current (2-wire transmission mode) or a voltage signal (3-wire transmission mode). For test purposes, the IQS 9** includes a "raw voltage output signal" and a test input signal that allow the measurement chain/system operation to be tested in situ.

DETAILS OF THE SIGNAL CONDITIONER

204 - - - - - 9 - - - - - * * * * * 000

Numéro de modification mineure / Minor modification number (FFF = Form Fit Function) 0 à 99 (le numéro est incrémenté à chaque modification / each modification increases the number by 1)	Version personnalisée (matériau cible ou montage spécial) / Customized version (special target material or mounting) 00 à 99
Type de conditionneur / Conditioner type 00 = Sortie analogique / Analog output 10 = Sortie 4-20mA / 4-20mA output 11 à 99 = Autre / Other	

La désignation du type de l'IQS 9** sera complétée par des caractères, liés par exemple à la plage de mesure et à la sensibilité, à la longueur totale du système ou encore au type de montage.

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LCIE
Laboratoire Central des Industries Electriques
Une société de Bureau Veritas

33 Avenue du Général Leclerc
92240 Fontenay-aux-Roses
FRANCE

WWW.LCIE.FR

**ATTESTATION D'EXAMEN DE TYPE - ANNEXE
TYPE EXAMINATION CERTIFICATE - SCHEDULE**



LCIE 21 ATEX 1004 X

Issue : 00

1 Version : 00

Captreur de proximité TQ 9 :**

111 - 9 - * - * - * - 000 - * - * - *

TQ 9 Proximity sensor:**

<p>Numéro de modification mineure / Minor modification number (FFF = Form Fit Function) 0 à/à 9 (le numéro est incrémenté à chaque modification) / (each modification increases the number by 1)</p> <p>Types de câbles, de protection de câble et de manchon de protection (Voir les applications des clients) Cable, cable protection and protection sheath types (according to customers' applications) 00 à/à/à 99</p>	<p>Dimension de l'élément de mesure (Pointe de capteur) <i>Dimension of the measurement element (Sensor tip)</i></p> <p>1 = <input type="checkbox"/> 5mm nominal 2 = <input type="checkbox"/> 6mm nominal 3 = <input type="checkbox"/> 10mm nominal 4 à/à 9 = Autres dimensions / Other dimensions</p> <p>Type de corps (droit, inversé, à angle droit 90° ou personnalisés) <i>Housing type (straight, reverse, right-angle 90° or customized)</i> 0 à/à/à 9</p>
--	---

La désignation de type du TQ 9** sera complétée par des caractères, liés par exemple au type de filage du corps du capteur, à la longueur du corps, à la longueur intégrale du câble ou encore à la longueur totale du système.

CARACTÉRISTIQUES

- Pour le conditionneur de signal IQS 9**, mode de transmission 2 fils (signal de sortie courant):
- Tension maximale : 30 V DC
 - Consommation de courant maximale: 22 mA
 - Consommation de puissance maximale: 0,7 W

- Pour le conditionneur de signal IQS 9**, mode de transmission 3 fils (signal de sortie tension):
- Tension maximale : 30 V DC
 - Consommation de courant maximale: 9,5 mA
 - Consommation de puissance maximale: 0,3 W

MARQUAGE

Le marquage du produit doit comprendre :

Pour le capteur de proximité TQ 9 :**

MEGGITT SA ou VIBRO-METER ou MFR S3960
 Adresse : ...**000-*** (1)
 N° de fabrication : ...
 Année de fabrication : ...
 Ex ec IIC T6...T3 Gc (2)
 LCIE 21 ATEX 1004 X
 -40 °C ≤ T_{amb} ≤ +180 °C

AVERTISSEMENT – NE PAS CONNECTER OU DECONNECTER SOUS TENSION

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**ATTESTATION D'EXAMEN DE TYPE - ANNEXE
TYPE EXAMINATION CERTIFICATE - SCHEDULE**



LCIE 21 ATEX 1004 X

Issue : 00

1 Version : 00

Marquage réduit:

MEGGITT SA ou VIBRO-METER ou MFR S3960
 Type : 111-9**-000-*** (1)
 N° de fabrication : ...
 Année de fabrication : ...
 Ex ec IIC T6...T3 Gc (2)
 LCIE 21 ATEX 1004 X

Pour le conditionneur de signal IQS 9 :**

MEGGITT SA ou VIBRO-METER ou MFR S3960
 Adresse : ...**000-*** (1)
 Type : 204-9**-000-*** (1)
 N° de fabrication : ...
 Année de fabrication : ...
 Ex ec IIC T6...T5 Gc (2)
 LCIE 21 ATEX 1004 X
 -40 °C ≤ T_{amb} ≤ +85 °C

Marquage réduit:

MEGGITT SA ou VIBRO-METER ou MFR S3960
 Type : 204-9**-000-*** (1)
 N° de fabrication : ...
 Année de fabrication : ...
 Ex ec IIC T6...T5 Gc (2)
 LCIE 21 ATEX 1004 X
 -40 °C ≤ T_{amb} ≤ +85 °C

Marquage complet:

MEGGITT SA ou VIBRO-METER ou MFR S3960
 Adresse : ...**000-*** (1)
 Type : 204-9**-000-*** (1)
 N° de fabrication : ...
 Année de fabrication : ...
 Ex ec IIC T6...T5 Gc (2)
 LCIE 21 ATEX 1004 X
 -40 °C ≤ T_{amb} ≤ +85 °C

MARQUAGE

Le marquage du produit doit inclure le suivant :

Pour le capteur de proximité TQ 9 :**

MEGGITT SA ou VIBRO-METER ou MFR S3960
 Adresse : ...**000-*** (1)
 N° de fabrication : ...
 Année de fabrication : ...
 Ex ec IIC T6...T3 Gc (2)
 LCIE 21 ATEX 1004 X
 -40 °C ≤ T_{amb} ≤ +180 °C

AVERTISSEMENT – NE PAS CONNECTER OU DECONNECTER SOUS TENSION

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ATTESTATION D'EXAMEN DE TYPE - ANNEXE TYPE EXAMINATION CERTIFICATE - SCHEDULE

1 Version : 00 Issue : 00

LCIE 21 ATEX 1004 X

- c Le matériel doit être utilisé dans une zone assurément au moins un degré de pollution 2 tel que défini dans IEC 60664-1.
The equipment shall only be used in an area of at least pollution degree 2, as defined in IEC 60664-1.
- d La protection contre les transitions 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 conditionneur de signal IQS 9**.
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 IQS 9** signal conditioner.
- e Les connexions ne doivent pas être connectées ou déconnectées sous tension.
Connections shall not be connected or disconnected when energized.
- f La tête du capteur doit être protégée contre tout risque de danger mécanique.
The sensor head shall be protected against any risk of mechanical danger.
- g Un degré de protection IP54 minimum, conformément à la norme EN 60079-0, doit être garanti au point de raccordement du capteur de proximité TQ 9** avec le câble de rallonge EA 9**.
A minimum degree of protection IP54, in accordance with EN 60079-0, shall be ensured at the point of connection of the proximity sensor TQ 9** with the EA 9** extension cable.
- h Il est de la responsabilité de l'utilisateur d'assurer une continuité de terre adéquate du corps métallique du capteur via le dispositif de montage.
It is the user's responsibility to provide adequate earth continuity of the sensor's metallic body via the mounting arrangement.
- i L'équipement doit être installé conformément au manuel d'instructions fourni par le fabricant.
The equipment shall be installed according to the instruction manual provided by the manufacturer.

14 **EXIGENCES ESSENTIELLES DE SANTE ET DE SECURITE**
Coverées 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	Référence	Rev.	Date	Page(s)
1.	Dossier technique / Technical file	DI-1077	00	2021-03-08	72
2.	Manuel d'installation / Installation manual	MAPROX9xxE	--	--	--

16 **INFORMATIONS COMPLEMENTAIRES**

ADDITIONAL INFORMATIONS

Essais individuels
Chaque exemplaire du capteur TQ 9** doit être soumis à un essai de rigidité diélectrique conformément à la clause 7.1 de l'EN 60079-7 sous 500 V eff.
Routine tests
Each sample of the TQ 9** sensor shall be subjected to a dielectric strength test according to clause 7.1 of EN 60079-7 under 500 V r.m.s.

17 **DETAILS DES MODIFICATIONS DE L'ATTESTATION**

DETAILS OF CERTIFICATE CHANGES

Version 00 : Certification initiale selon EN IEC 60079-0:2018 et EN 60079-7:2015 + A1:2018.
Issue 00 : Initial certification according to EN IEC 60079-0:2018 and EN 60079-7:2015 + A1:2018.

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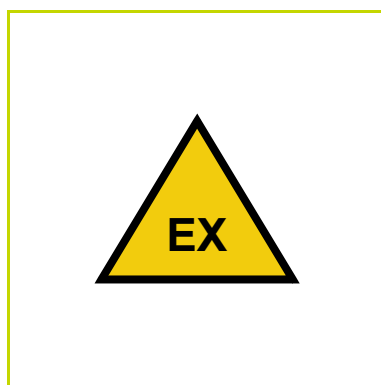
Page 5 of 5

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EX CERTIFICATE – ATEX

vibro-meter®

ITS 16 ATEX 101335 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 101335 X
Edition 2 – January 2022

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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 or 140 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 N°	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 N°	LEVEL	DATE
Exe Glass Filled Nylon Stopping Plugs	CO-M	1	05/04/16
EExe II Dome Head Stopping Plugs	PD-E	1	28/03/16
Exd I&IIIC & 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	IECEX/ITS16.0012X, 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
 None
 Limiting temperature
 -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 diameter 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

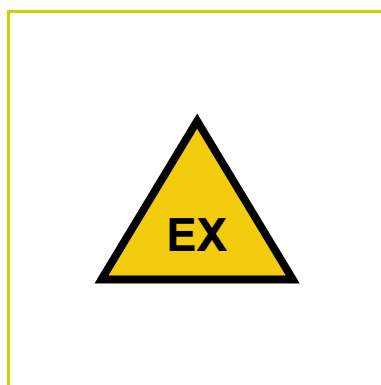
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EX CERTIFICATE – ATEX

vibro-meter®

ITS 16 ATEX 101336 X
for
cable fittings (stuffing glands)



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Document reference ITS 16 ATEX 101336 X
Edition 2 – January 2022

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EU TYPE-EXAMINATION CERTIFICATE



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 N°	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	IECEXTS16.0011X	1	15-11-2016
	ITS16ATEX101336X		

Copies of the above listed documents are kept at Intertek Italia S.p.A. archive.

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 N° 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 N°: G102174344B Issue 1 dated September 2016 and Report I04393371HD-00.1b 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

I 2 G Ex db I Cb

I M2 Ex db I Mb

I 2 G Ex db I Cb

I 2 D Ex db I IIC Db I P6X Ta = see schedule

Types AR & AU Adaptors, Type BB & BJ Reducers

I 2 G Ex db I Cb

I 2 D Ex db I IIC Db I P 66 Ta = see schedule

September 1, 2020
Certificate issue date



PDR N° 2778
Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Mutual Recognition Agreements

Alessandro Savio
Alessandro Savio
Certification Officer
Intertek Italia S.p.A. (NB 2575)

This certificate has been issued by Intertek Italia S.p.A. NB 2575 on transfer from Intertek 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.

Intertek Italia S.p.A. Via Miglioli, Z/A - 20063 Cernusco sul Naviglio, Milano - Italy



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 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

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 derated 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

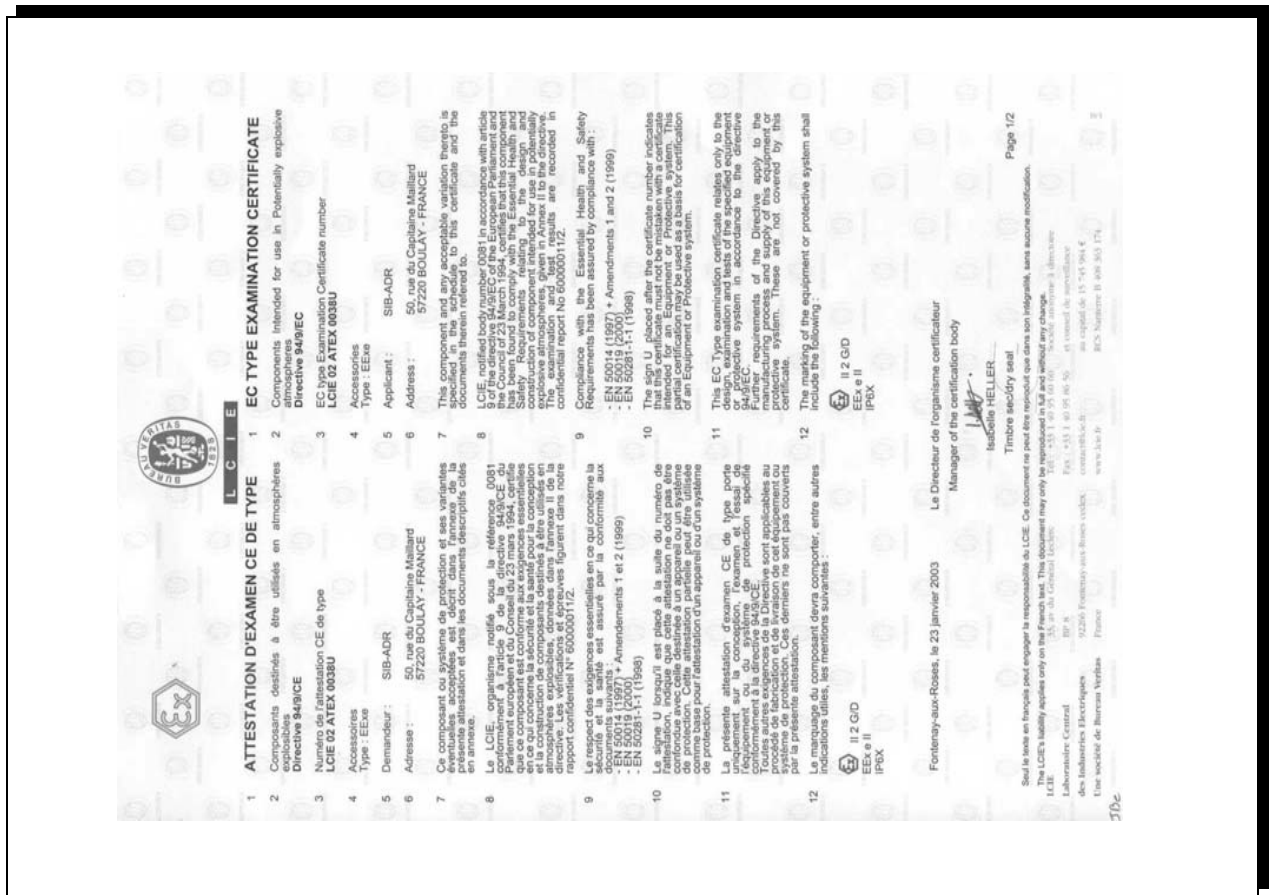
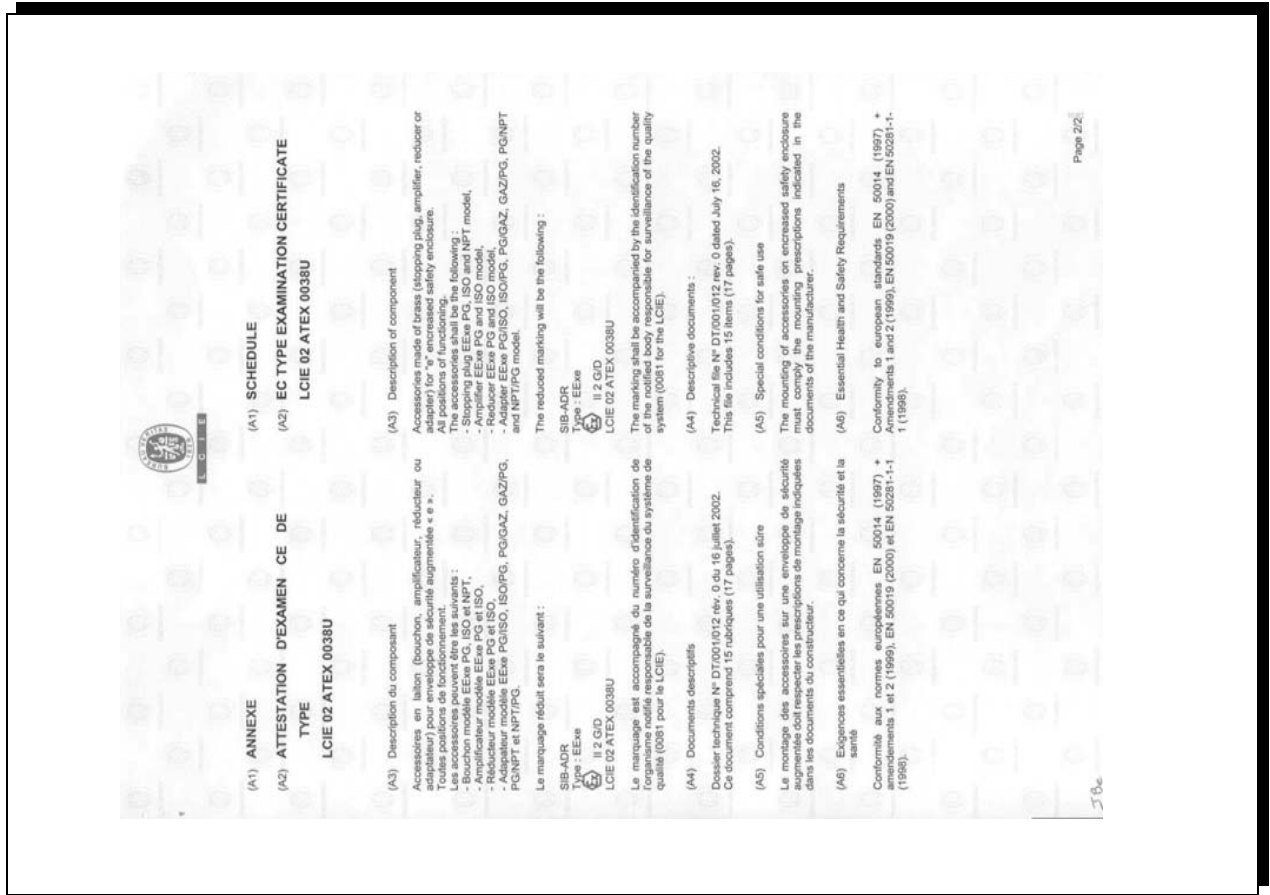
Although the certificate is available in two languages (English and French), the liability of the notified body applies only on the text of the original copy of the certificate that it published.



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.



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LCIE **Team ATEX**

13 ANNEXE **13 SCHEDULE**

14 AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE **14 SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE**

LCIE 02 ATEX 0038 U / 01 LCIE 02 ATEX 0038 U / 01

17 CONDITIONS SPECIALES POUR UNE UTILISATION SURE **17 SPECIAL CONDITIONS FOR SAFE USE**

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 « IPXX » (pour les atmosphères Poussières), l'implantation et les assemblages réalisés doivent être conformes aux documents descriptifs du constructeur.

For the assembling of the caps, reducers or amplifiers on "e" increased safety enclosures (for Gas atmospheres) or on IPXX protected enclosures (for Dust atmospheres), the fitting up and the assembling realized shall must be in accordance with the descriptive documents on the manufacturer.

Game de température d'utilisation comprise entre :
- 20 °C et + 80 °C.

Using ambient temperature range between :
- 20 °C and + 80 °C.

18 EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE **18 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**

Le respect des exigences essentielles de sécurité et de santé est conforme à :

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 VERIFICATIONS ET ESSAIS INDIVIDUELS **19 ROUTINE VERIFICATIONS AND TESTS**

Nilant
None

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LCIE **Team ATEX**

1 AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE **1 SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE**

2 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/CE)**

LCIE 02 ATEX 0038 U / 01 LCIE 02 ATEX 0038 U / 01

3 Numéro de l'avenant : **3 Supplementary certificate number :**

4 Appareil ou système de protection : **4 Equipment or protective system :**

Type : EE'x ; Cap, Réducteur ou Amplifier models
Components

5 Demandeur : **5 Applicant :** SIB ADR

15 DESCRIPTION DE L'AVENANT **15 DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE**

Mise à jour des normes
Update standards

Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 00055106-555530 / 04
The examination and test results are recorded in confidential report N° 00055106-555530 / 04

Le marquage doit être :
The marking shall be :

SIB ADR (ou logo SIB)
Ex II 2 G D
Ex e II
Ex II 2 G D
LCIE 02 ATEX 0038 U
Type et pas de filetage

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concernent.
The equipment shall also bear the usual marking required by the manufacturing standards applying to such equipment.

16 DOCUMENTS DESCRIPTIFS **16 DESCRIPTIVE DOCUMENTS**

Decrès de certification N° DA00704 rev 0 du 12 février 2007. Ce dossier comprend 15 rubriques (17 pages).
Certification file N° DA00704 rev 0 dated February 12th 2007. This file includes 15 items (17 pages).

Fontenay-aux-Roses, le 4 mai 2007

Le responsable de certification ATEX
ATEX certification manager


LCIE **Team ATEX**

LCIE **Team ATEX**

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LCIE

13 SCHEDULE

14 SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE

LCIE 02 ATEX 0038 U / 02

1 AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE

2 Composant destiné à être utilisé en atmosphères explosives (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. (Schiemmer Industry & Building Paris)
 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

Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 133536-668141-05

Paramètres spécifiques du ou des modes de protection :
 Conformité à :
 Néant

Le marquage doit être :
 SIB
 Adresse : ...
 Type : EEX'e
 N° de fabrication : ...
 Année de fabrication : ...

II 2 GD
 Ex eb IIC
 Ex to IIC
 IP54
 LCIE 02 ATEX 0038 U

16 DOCUMENTS DESCRIPTIFS

Dossier de certification N° DA/02/02 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_{amb} ≤ +80°C

18 EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE

Couverte par les normes listées au point 15

19 VERIFICATIONS ET ESSAIS INDIVIDUELS

Néant

1 SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE

2 Component intended for use in Potentially explosive atmospheres (Directive 94/9/CE)

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. (Schiemmer Industry & Building Paris)
 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

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° of fabrication : ...
 Année de fabrication : ...

II 2 GD
 Ex eb IIC
 Ex to IIC
 IP54
 LCIE 02 ATEX 0038 U

16 DESCRIPTIVE DOCUMENTS

Certification file N° DA/02/02 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_{amb} ≤ +80°C


18 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS


Covered by standards listed at 15

19 ROUTINE VERIFICATIONS AND TESTS

None

Fontenay-aux-Roses, le 6 mai 2015

Le Responsable de Certification ATEX
 ATEX Certification Officer
 Jean-Christophe




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 France

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 www.lcie.fr

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ATEX certificate:
LCIE 03 ATEX 0033 U
for
Stuffing gland

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EN

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FR



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

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DIESE SEITE WURDE ABSICHTLICH LEER GELASSEN**

(A1) ANNEXE	(A1) SCHEDULE
(A2) ATTESTATION D'EXAMEN CE DE TYPE LCIE 03 ATEX 0033 U	(A2) EC TYPE EXAMINATION CERTIFICATE LCIE 03 ATEX 0033 U
(A3) DESCRIPTION DU COMPOSANT	(A3) DESCRIPTION OF COMPONENT
Les bouchons permettent d'obtenir 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 fileté, 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 :	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 counter nut made of brass. The reduced marking is the following: S.I.B.-A.D.R. Type: EEEx EEx e II IP6X LCIE 03 ATEX 0033U
(A4) DOCUMENTS DESCRIPTIFS	(A4) DESCRIPTIVE DOCUMENTS
Dossier technique N° DT/001/03 rév. 0 du 25 novembre 2003. Ce document comprend 8 rubriques (13 pages).	Technical file N° DT/001/03 rev.0 dated November 25, 2003. This file includes 8 items (13 pages).
(A5) CONDITIONS SPECIALES POUR UTILISATION SURE	(A5) SPECIAL CONDITIONS FOR SAFE USE
Lors du montage des bouchons, des réducteurs ou des amplificateurs sur des enveloppes de sécurité augmentées « e » (pour les atmosphères Cbz) 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.	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 must be in accordance with the descriptive documents on the manufacturer. Using ambient temperature range between : -20 °C and + 55 °C.

(A1) ANNEXE	(A1) SCHEDULE
(A2) ATTESTATION D'EXAMEN CE DE TYPE LCIE 03 ATEX 0033 U	(A2) EC TYPE EXAMINATION CERTIFICATE LCIE 03 ATEX 0033 U
(A3) DESCRIPTION DU COMPOSANT	(A3) DESCRIPTION OF COMPONENT
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(A4) DOCUMENTS DESCRIPTIFS	(A4) DESCRIPTIVE DOCUMENTS
Dossier technique N° DT/001/03 rév. 0 du 25 novembre 2003. Ce document comprend 8 rubriques (13 pages).	Technical file N° DT/001/03 rev.0 dated November 25, 2003. This file includes 8 items (13 pages).
(A5) CONDITIONS SPECIALES POUR UTILISATION SURE	(A5) SPECIAL CONDITIONS FOR SAFE USE
Lors du montage des bouchons, des réducteurs ou des amplificateurs sur des enveloppes de sécurité augmentées « e » (pour les atmosphères Cbz) 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.	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 must be in accordance with the descriptive documents on the manufacturer. Using ambient temperature range between : -20 °C and + 55 °C.



LCIE

1 AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE

1 SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE

2 Appareil ou système de protection destiné à être utilisé en atmosphères explosibles (Directive 94/9/CE)
Equipment or protective system intended for use in potentially explosive atmospheres (Directive 94/9/CE)

3 Numéro de l'avenant : LCIE 03 ATEX 0033 U / 01
Supplementary certificate number : LCIE 03 ATEX 0033 U / 01

4 Appareil ou système de protection : Composants Amplificateur
Type : EEXe ; modèles Bouchon, Réducteur, Amplificateur
Type : EEXe ; Cap, Reducer or Amplifier models

5 Demandeur : SIB ADR
Applicant : SIB ADR

15 DESCRIPTION DE L'AVENANT

15 DESCRIPTION OF THE SUPPLEMENTARY CERTIFICATE

Mise à jour des normes
Update standards

Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 60055106-555530 / 03
The examination and test results are recorded in confidential report N° 60055106-555530 / 03

Le marquage doit être :
The marking shall be :

SIB ADR (ou logo SIB)
SIB ADR (or SIB logo)

Ex II 2 G / D
Ex II 2 G / D

Ex II
Ex II

Ex ID A21
Ex ID A21

LCIE 03 ATEX 0033 U
LCIE 03 ATEX 0033 U

Type et pas de filetage
Type and size of thread

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concernent.
The equipment shall also bear the usual marking required by the manufacturing standards applying to such equipment.

16 DOCUMENTS DESCRIPTIFS

16 DESCRIPTIVE DOCUMENTS

Dossier de certification N° DA/007/05 rev 0 du 12 février 2007. Ce dossier comprend 9 rubriques (13 pages).
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




Vincent CRAVELLO

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Société Anonyme
au capital de 15 745 984 €
RCS Nanterre B 408 303 178

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LCIE

(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

(A6) ESSENTIAL HEALTH AND SAFETY REQUIREMENTS

Conformité aux normes européennes EN 50014 (1987) + amendements 1 et 2 (1999), EN 50019 (2000) et EN 50281-1-1 (1998) + amendement 1 (2002).
Conformity to the European standards EN 50014 (1987) + Amendments 1 and 2 (1999), EN 50019 (2000) and EN 50281-1-1 (1998) + Amendment 1 (2002).

Le matériel est dispensé d'épreuve individuelle.
The equipment is exempted of individual test.

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LCIE

1 AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE SUPPLEMENTAIRE EC TYPE EXAMINATION CERTIFICATE

- 2 **Composant** destiné à être utilisé en atmosphères explosives (Directive 94/9/CE)
- 3 Numéro de l'avenant : LCIE 03 ATEX 0033 U / 02
- 4 **Composant :**
 - Type : EEeX
 - Modèles : Bouchon, réducteur et amplificateur
 - Demander : S.I.B.-A.D.R.
- 5 **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 concernés :

Unchangé.

Le marquage doit être : Unchangé.

16 **DOCUMENTS DESCRIPTIFS**
 Dossier de certification N° DA009/06 Rév. 1 du 23/06/2009. Ce document comprend 9 rubriques (13 pages).

17 **CONDITIONS SPECIALES POUR UNE UTILISATION SURE**
 Modifié comme suit :
 Les accessoires ne doivent pas être soumis à un choc supérieur à 4 joules.

18 **EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE**
 Couvertes par les normes listées au point 15.

19 **VERIFICATIONS ET ESSAIS INDIVIDUELS**
 Néant.

20 **ROUTINE VERIFICATIONS AND TESTS**
 None.

21 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS**
 Covered by standards listed at 15.

22 **ROUTINE VERIFICATIONS AND TESTS**
 None.

Le responsable de certification ATEX
 ATEX certification manager
Michel EQUI

Fontenay-aux-Roses, le 24 juillet 2009

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 RCS Nanterre B 400 803 173
 024-Avenant III_C.E_cp_ar - rev2.DOC
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024-Avenant III_C.E_cp_ar - rev2.DOC
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 024-Avenant III_C.E_cp_ar - rev2.DOC
 Page 2 sur 2



LCIE

1 AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE

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 : LCIE 03 ATEX 0033 U / 03

Type : EEEx e
 Modèles : Bouchon, réducteur et amplificateur

5 Demandeur : S.I.B (Schlemmer Industry & Building Paris)
 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) :
 Le marquage doit être :
 S.I.B
 Adresse : ...
 Type : EEEx e
 N° de fabrication : ...
 Année de fabrication : ...
 II 2 GD
 Ex eb IIC
 Ex tb IIC
 IP6X
 LCIE 03 ATEX 0033 U

None
 The marking shall be :
 S.I.B
 Address : ...
 Type : EEEx e
 N° de fabrication : ...
 Année de fabrication : ...
 II 2 GD
 Ex eb IIC
 Ex tb IIC
 IP6X
 LCIE 03 ATEX 0033 U

Fontenay-aux-Roses, le 7 mai 2015

Le Responsable de Certification ATEX
 ATEX Certification Officer
 Julien Gauhier




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LCIE

13 ANNEXE SCHEDULE
 14 AVENANT D'ATTESTATION D'EXAMEN CE DE TYPE SUPPLEMENTARY EC TYPE EXAMINATION CERTIFICATE

LCIE 03 ATEX 0033 U / 03
 16 DOCUMENTS DESCRIPTIFS
 Dossier de certification N° DA/00303 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 augmentées (pour les atmosphères Gaz) ou sur des enveloppes « Ex t » (pour les atmosphères poussières), l'aménagement et l'assemblage devra être en accord avec les documents descriptifs du fabricant.

18 EXIGENCES ESSENTIELLES DE SECURITE ET DE SANTE
 Couverte par les normes listées au point 15
 Neant.

19 VERIFICATIONS ET ESSAIS INDIVIDUELS
 Neant.

20 VERIFICATIONS ET ESSAIS INDIVIDUELS
 Neant.

21 ROUTINE VERIFICATIONS AND TESTS
 None.

22 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS
 Covered by standards listed at 15
 None.

23 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 température :
 -20°C ≤ T_{service} ≤ +55°C for all the range
 -35°C ≤ T_{service} ≤ +95°C :
 Polycarbonate référencé A9541016
 Polyamide 6 référencé A9380300 et A9380301

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Page 2 sur 2
 024-Avenant II_CE_gp_ar-1663.DOC

IP(1)



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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DIESE SEITE WURDE ABSICHTLICH LEER GELASSEN**



Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

Anlage

- (13)
- (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 verriegelten 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 Dichtensatz 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
 Dichtensatz und Dichttring 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

EG-Baumusterprüfbescheinigungen ohne Unterschrift und ohne Siegel haben keine Gültigkeit.
 Diese EG-Baumusterprüfbescheinigung darf nur unangetastet weitervertriebt werden.
 Auszüge oder Änderungen bedürfen der Genehmigung der Physikalisch-Technischen Bundesanstalt.
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Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin



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

Braunschweig, 8. Juni 2011

Zertifizierungssektor Explosionschutz
 Im Auftrag

 Dr.-Ing.-U. Klausmeyer
 Direktor und Professor

Seite 1/3

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ZSEK101004.de



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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ATEX certificate:

EN

PTB 98 ATEX 3130

for

Cable stuffing glands



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



Physikalisch-Technische Bundesanstalt
 Braunschweig und Berlin

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	high
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 Explosionschutz
 By order: Braunschweig, November 12, 1998



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.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • D-38116 Braunschweig



Physikalisch-Technische Bundesanstalt
 Braunschweig und Berlin



(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:



Zertifizierungsstelle Explosionschutz
 Braunschweig, November 12, 1998



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.

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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:

Beauftragt von:
Telefondurchwahl: +49 (0) 531-562-31515
Telefaxdurchwahl: +49 (0) 531-562-31505
E-Mail: Monika.Schumann@ptb.de

Datum: 14. Januar 2008

Normgenerationsänderung 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:

☒ II 2 G Ex e II

☒ II 2 D Ex ID 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

☒ II 2 G Ex e II

☒ II 2 D Ex ID 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

Achtung/ Neue Bankverbindung:

Bundeskasse Halle
Konto: 800 010 00
BLZ: 800 000 00

Telefon (Zentrale): 0531 562-0
Telefon (E-Mail): 0531 562-302
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Internet: http://www.ptb.de

Hausanschrift, Lieferanschrift:
PTB
38116 Braunschweig
Deutschland

PTB Berlin-Charlottenburg
Postfach 10 15 53
10557 Berlin
Deutschland

00 00 000



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: ☒ 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:

☒ II 2 G/D EEx e II IP66

Test report: PTB Ex 03-13301

Zertifizierungsstelle Explosionsschutz
By order: Braunschweig, September 18, 2003

Altefeld
Dipl.-Phys. U. Volker

Sheet 1/1

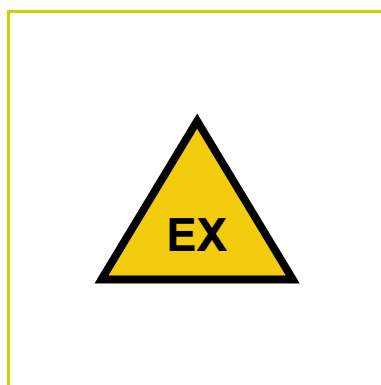
EC-type-examination. Certificates without signature and official stamp shall not be valid. The certificates may be circulated
only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
In case of dispute, the German text shall prevail.

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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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Attestation d'Examen UE de Type

- (1) **SEV 15 ATEX 0151**
- (2) **Pressé-étoupe et accessoires**
Type Progress **...KB EX**
- (3) **Agro AG**
Korbackerweg 7, 150, 5502 Hunzenschwil, SWITZERLAND
- (4) **Le type de ce produit ainsi que toute autre variante acceptable de celui-ci sont spécifiés dans l'annexe de cette attestation d'examen.**
- (5) **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.**
- (6) **Les résultats de l'examen sont consignés dans le rapport d'essai confidentiel. 18-Ex-0130.01**
- (7) **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
- (8) **Les conditions spécifiées au point 18 constituent une exception. 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.**
- (9) **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 dépendant pas l'objet de cette attestation.**
- (10) **Le produit portera un marquage incluant les éléments suivants:**
II 2 G Ex eb IIC Gb
II 2 D Ex tb IIC Db

Eurofins Electrosuisse Product Testing AG
Notified Body ATEX

Martin Pflüss
Product Certification



Annexe

Attestation d'Examen UE de Type no. SEV 15 ATEX 0151

- (13) **Description du produit**
Les presse-étoupe Progress *** KB Ex laiton ou acier servent à monter des câbles et conduites dans une enveloppe électrique présentant une enveloppe à sécurité augmentée «eb» et protection par le matériel électrique. 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.
- (14) **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)
- (15) **Progress MS EMV easyCONNECT KB EX**
(Laiton nikkélé avec mâchoires de serrage, M16...M63; Pg9...Pg48; NPT3/8"...NPT2")
Progress S2 EMV easyCONNECT KB EX
(Laiton nikkélé avec mâchoires de serrage, M12...M63; Pg7...Pg48; NPT1/4"...NPT2")
Progress S4 EMV easyCONNECT KB EX
(Laiton nikkélé avec mâchoires de serrage, M12...M63; Pg7...Pg48; NPT1/4"...NPT2")
- (16) **Classification de l'installation et utilisation:** fixe
IP 66 / IP68
Indice de protection: -60 °C ... +100 °C pour types de métal
Plage de température ambiante nominale: 18-Ex-0130.01
- (17) **Rapport d'essai**
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 »

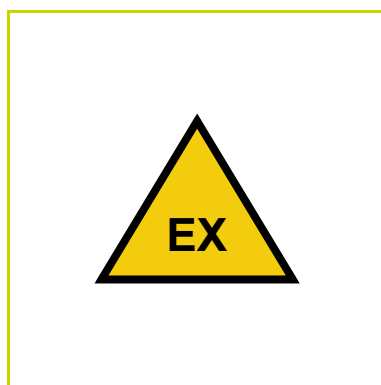


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EX CERTIFICATE – ATEX

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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Attestation d'Examen UE de Type

- (1) **Attestation d'Examen UE de Type**
- (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 60079-0:2012+A11:13	EN 60079-7:15

- (10) Les conditions spécifiées au point 18 constituent une exception. 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 IIC Db

Eurofins Electrovisuelle Product Testing AG
Notified Body ATEX

Marin Plüss
Product Certification



Annexe

- (13)
- (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; Pg9...Pg48)
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) S4 EX (M8...M10) [résistance aux chocs réduite]
En supplément, les variantes client suivantes sont incluses:
EX1000.12.91.900; EX1100.12.91.900; EX1700.12.86.903.91; EX1700.12.86.900.91;
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 [résistance aux chocs réduite]
(Laiton nikkéléé avec mâchoires de serrage, M12; Pg7; NPT1/4") [résistance aux chocs réduite]

Classification de l'installation et utilisation: mobile / fixe / portatif
IP 66 / IP68
Indice de protection: -60 °C ... +100 °C pour types de métal
-20 °C ... +85 °C pour types GFK
Plage de température ambiante nominale: -50 °C ... +60 °C pour MS FK EX, A2 FK EX, A4 FK EX





- (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**
Aucune
- Thème**
- (19) **Dessins et documents**
Voir rapport d'essai « Documents du fabricant »



APPENDIX D: IECEX CERTIFICATIONS

Table D-1: Related IECEX certificates

Product(s) covered	Certificate number
ABA160 and JB118	IECEX PTB 08.0003U
ABA161	IECEX PTB 08.0005U
ABA17x	IECEX BVS 16.0026U
	IECEX PRE 14.0042U
GSI127	IECEX LCIE 13.0026X
IQS9xx	IECEX LCIE 21.0006X
IQS9xx and TQ9xx	IECEX LCIE 21.0005X
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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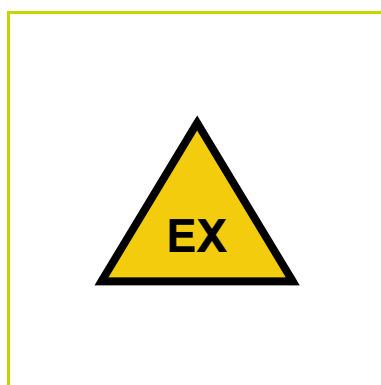
EX CERTIFICATE – IECEx

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

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IECEX Certificate of Conformity

Page 2 of 4
Issue No: 4

Certificate No.: **IECEX PTB 08.0003U**

Date of Issue: 2016-09-12

Manufacturer: **ROSE Systemtechnik GmbH**
Erbweg 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 Explosive atmospheres – Part 0: General requirements
Edition:6.0

IEC 60079-31:2013 Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "r"
Edition:2

IEC 60079-7:2015 Explosive atmospheres – Part 7: Equipment protection by increased safety "e"
Edition:5.0

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/EX/TR08.0007/04**

Quality Assessment Report: **DE/TUR/QAR08.0009/06**



IECEX Certificate of Conformity

Page 1 of 4
Issue No: 4

Certificate No.: **IECEX PTB 08.0003U**

Status: **Current**

Date of Issue: 2016-09-12

Applicant: **ROSE Systemtechnik GmbH**
Erbweg 13
32457 Porta Westfalica
Germany

Equipment: **Empty Enclosure Type 26:*******

Optional accessory:

Type of Protection: **Increased Safety "eb", Protection by enclosures "ib"**

Marking: Ex eb IIC Gb
Ex tb IIC D b

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate history:
Issue 3 (2012-03-12)
Issue 2 (2009-08-17)
Issue 1 (2008-11-24)
Issue 0 (2008-03-12)

Approved for issue on behalf of the IECEx Certification Body:

Position: **Dr.-Ing. Detlev Markus**
Head of Working Group "Flame Transmission Processes"



Signature: _____
(for printed version)

Date: _____

1. The 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



IECEX Certificate of Conformity

Page 4 of 4
Issue No: 4

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](#)

IECEX Certificate of Conformity

Page 3 of 4
Issue No: 4

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 2E, *****, 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



Attachment to Certificate
IECEX PTB 08.0003U, Issue No. 4



Applicant: ROSE Systemtechnik GmbH
Erbweg 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	Width	Height	Depth
Type 26.08.08.06 to 26.41.40.20 (Ex-standard-enclosure)	min.	75 mm	56 mm
	max.	405 mm	201 mm
Type 26.88.01.00 to 26.88.04.00 (Ex-Okta Box-enclosure)	min.	81 mm	75 mm
	max.	200 mm	125 mm
Type 26.14.01.00 to 26.14.03.00 (Ex-PF-enclosure)	min.	170 mm	136 mm
	max.	541 mm	136 mm
Type 26.12.00.00 to 26.40.60.00 (Mini-Polyglas-Ex-enclosure and Polyglas-Ex-enclosure)	min.	200 mm	100 mm
	max.	405 mm	252 mm
Type 26.01.22.15 to 26.01.44.15 (Ex-Combi Box-enclosure)	min.	177 mm	145 mm
	max.	360 mm	145 mm

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

Page 1 of 2



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

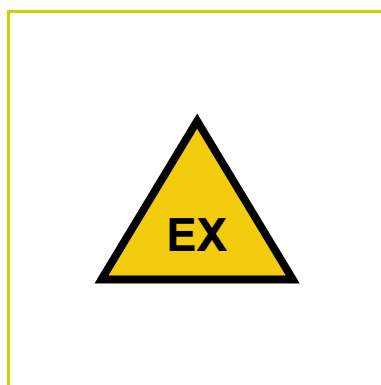
Page 2 of 2

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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

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IECEX Certificate of Conformity

Certificate No: IECEX PTB 08.0005U

Date of Issue: 2016-09-08

Manufacturer: ROSE Systemtechnik GmbH
Erbweg 13
32457 Porta Westfalica
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 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 electrical safety and performance requirements other than those expressly included in the Standards listed above.

Issue No. 2
Page 2 of 4

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report: DEPTBEXTR08.0004/02
Quality Assessment Report: DE/TUR/QAR08.0009/06

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

Status: Current

Date of Issue: 2016-09-08

Applicant: ROSE Systemtechnik GmbH
Erbweg 13
32457 Porta Westfalica
Germany

Equipment: Empty Enclosure Type 25: *****
Optional accessory:

Type of Protection: Increased Safety "eb", Protection by enclosures "tp"

Marking: Ex eb IIC Gb
Ex tb IIC Db

Approved for issue on behalf of the IECEx Certification Body: Dr.-Ing. Detlev Markus

Position: Head of Working Group "Flame Transmission Processes"

Signature: *D. Markus*
(for printed version)


Date: 27.09.16

Issue No. 2
Page 1 of 4


Certificate history:
Issue No. 2 (2016-09-08)
Issue No. 1 (2012-02-29)
Issue No. 0 (2008-03-07)

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:



Physikalisch-Technische Bundesanstalt (PTB)
Bundesallee 100
38116 Braunschweig
Germany



IECEx Certificate of Conformity

Certificate No: IECEx PTB 08.0005U

Date of Issue: 2016-09-08

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

Issue No: 2

Page 4 of 4



IECEx Certificate of Conformity

Certificate No: IECEx PTB 08.0005U

Date of Issue: 2016-09-08

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

Issue No: 2

Page 3 of 4

Schedule



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:	DE/PTB/EXTR08.0004/02
EXTR Reference Number*: (automatic numbering)	Issued
EXTR Free Reference Number*:	DE/PTB/EXTR08.0004/00
Date of Issue*: (yyymmdd)	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 Erbeweg 13 - 15 32457 Porta Westfalica
Country of Manufacture*:	Germany
Ex Protection*:	Increased Safety "eb" Protection by Enclosures "ip"
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

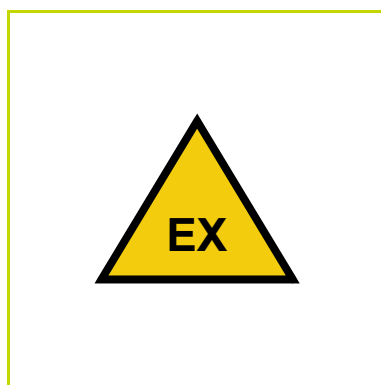
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EX CERTIFICATE – IECEx

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

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IECEX Certificate of Conformity

Page 2 of 5
Issue No: 1

Certificate No.: **IECEX BVS 16.0026U**

Date of issue: 2019-02-20

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 Explosive atmospheres – Part 0: General requirements
Edition:6.0

IEC 60079-31:2013 Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2


IEC 60079-7:2015 Explosive atmospheres – Part 7: Equipment protection by increased safety "g"
Edition:5.0

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

Page 1 of 5
Issue No: 1

Certificate No.: **IECEX BVS 16.0026U**

Status: **Current**

Date of Issue: 2019-02-20

Applicant: **thuba Ltd.**
Blauensteinerstrasse 16
4002 Basel
Switzerland

Ex Component: Empty enclosure type eCAME ** ** *

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 "g"**

Marking: Ex eb IIC Gb
Ex tb IIC Db

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 history:
Issue 0 (2016-05-10)

Approved for issue on behalf of the IECEx
Certification Body:



Jörg Koch
Head of Certification Body

Position:

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.

DEKRA
On the safe side.

Certificate issued by:
DEKRA Testing and Certification GmbH
Certification Body
Dimmoldstrasse 9
44809 Bochum
Germany




IECEX Certificate of Conformity

Page 4 of 5
Issue No: 1

Certificate No.: **IECEX BVS 16.0026U**
Date of issue: 2019-02-20

DETAILS OF CERTIFICATE CHANGES for issues 1 and above)
Update for the new Ex component certificate layout.



IECEX Certificate of Conformity

Page 3 of 5
Issue No: 1

Certificate No.: **IECEX BVS 16.0026U**
Date of issue: 2019-02-20

Ex Component(s) covered by this certificate is described below:

Subject and Type
Empty enclosure type eCAM **1)** **2)** **3)

Type	size		
	width ¹⁾ [mm]	height ²⁾ [mm]	depth ³⁾ [mm]
Enclosure with screwed fixing covers (size range)			
eCAM 12 12 08	120	80	
up to			
eCAM 40 40 20	400	200	
Enclosure with hinges and latches (size range)			
eCAM 20 20 10	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 "i" 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
Certificate No.: IECEX BVS 16.0026U	Page 5 of 5
Date of issue: 2019-02-20	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

EN



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

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IECEX Certificate of Conformity

Certificate No.: IECEX PRE 14.0042U
Date of Issue: 2014-10-31
Manufacturer: Ensto Finland Oy
 Enso Mielisen katu 2
 06101 Porvoo
 Finland

Additional Manufacturing location(s):
 Ensto Finland Oy
 Insinöinkatu 1
 FI-50100 Mikkeli
 Finland

Issue No. 0
Page 2 of 3

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 60790 - 2011	Explosive atmospheres - Part 0: General requirements
Edition: 6.0	
IEC 60079-31 : 2013	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "Y"
Edition: 2	
IEC 60079-7 : 2006-07	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
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:
 NOIPREXTR14.0046/00

Quality Assessment Report:
 FIMT/QAR11.0003/02

IECEX Certificate of Conformity

Certificate No.: IECEX PRE 14.0042U
Status: Current
Date of Issue: 2014-10-31
Applicant: Ensto Finland Oy
 Enso Mielisen katu 2
 P.O.Box 77, 06101 Porvoo
 Finland

Electrical Apparatus: Empty Junction box, Cubo X
Optional accessory:

Type of Protection: Ex e/Ex t

Marking: Ex e IIC Gb
 Ex t IIC Gb
 Tamb: -50°C/-50°C to +45°C/+45°C

Approved for issue on behalf of the IECEX Certification Body: Björn Spongsveen
 Certification Manager


Position:
Signature:
 (for printed version)
Date:

Issue No. 0
Page 1 of 3

Certificate history:
 Issue No. 0 (2014-10-31)

INTERNATIONAL ELECTROTECHNICAL COMMISSION
 IEC Certification Scheme for Explosive Atmospheres
 for rules and details of the IECEX Scheme visit www.ieceex.com

Certificate issued by:
 DNV Nemko Presafe AS
 Gaustadalleen 30
 P.O.Box 73 Blindern
 0314 Oslo
 Norway



A DNV & NEMKO COMPANY

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.

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...	Examples:
								Customer specific feaatures (Total No. Holes/Mounting Lugs) Max width: 1000 mm Max height: 2000 mm No restriction on depth	X2ANP303015C –Combo X3ANP303015C –Combo with standard lock X3ANP303015S –Box with AISI lock X3ANP303015 –Box with Standard lock
								[F]: Standard flange plate [FC]: Custom sized flange plate(s) [P]: Plain walls or cut-outs	X3ANP10010015D – Two doors with standard locks X3ANP10010015DS – Two doors with AISI locks
								[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'.

Issue No: 0
Page 3 of 3

Certificate No: IECEx PRE 14.0042U

Date of issue: 2014-10-31

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 11.0006U

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



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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IECEx certificate:

EN

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**

Certificate No: IECEX LCIE 13.0026X Issue No: 1
 Date of Issue: 2016-11-30 Page 2 of 4
 Manufacturer: MEGGITT SA
 Route de Moncor 4
 1752 VILLARS SUR GLANE
 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 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
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/LCIE/EXTR13.0024/00 FR/LCIE/EXTR16.0048/00
 Quality Assessment Report: FR/LC/QAR05.0006/09



**IECEX Certificate
of Conformity**


**INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres**
for rules and details of the IECEX Scheme visit www.ieceex.com



Certificate No.: IECEX LCIE 13.0026X Issue No: 1 Certificate history:
 Status: Current Issue No. 1 (2016-11-30)
 Issue No. 0 (2013-05-31)
 Date of Issue: 2016-11-30 Page 1 of 4
 Applicant: MEGGITT SA
 Route de Moncor 4
 1752 VILLARS SUR GLANE
 Switzerland
 Equipment: GSI 127 Interface - Type: 244-127-000-XXX-A2-BTY
 Optional accessory:
 Type of Protection: Ex nA [ia]
 Marking: Ex nA [ia] Ga IIC T4 Gc
 (refer to attachment for full marking)



Approved for issue on behalf of the IECEX: Julien Gauthier
 Certification Body: Certification Officer
 Position: 
 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-92280 Fontenay-aux-Roses
 France



IECEx Certificate of Conformity	
	
Certificate No:	IECEX LCIE 13.0026X
Date of Issue:	2016-11-30
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:	<ul style="list-style-type: none"> - 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
DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):	
Issue No. 1:	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. 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.

IECEx Certificate of Conformity	
	
Certificate No:	IECEX LCIE 13.0026X
Date of Issue:	2016-11-30
Issue No. 1:	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. 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.
Annex:	IECEX LCIE 13.0026X Issue 01 - Annex 01 - GSI127.pdf
Schedule	
EQUIPMENT:	<i>Equipment and systems covered by this certificate are as follows:</i>
	The GSI 127 interface provides galvanic insulation between power supply circuit or signal treatment circuit (Ex mA) 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.



**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_s: 25.2 V; I_s: 60 mA; P_s: 0.7 W; C_s: 95 nF; L_s: 5 mH

For 244-127-000-XXX-A2-B20 to B39: U_s: 25.2 V; I_s: 45 mA; P_s: 0.5 W; C_s: 95 nF; L_s: 10 mH

RATINGS

Power supply: U ≤ 30 V, I ≤ 150 mA

Sensor or conditioner:

- For 244-127-000-XXX-A2-B01 to B19: U_s: 25.2 V; I_s: 60 mA; P_s: 0.7 W; C_s: 95 nF; L_s: 5 mH

- For 244-127-000-XXX-A2-B20 to B39: U_s: 25.2 V; I_s: 45 mA; P_s: 0.5 W; C_s: 95 nF; L_s: 10 mH

ROUTINE TEST

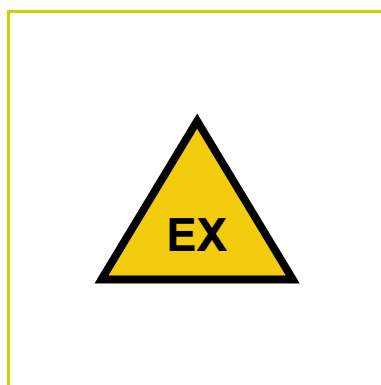
Each transformer T1 shall be submitted to dielectric strength test under test voltage of 1500 V, 50/60 Hz applied between the primary winding and the secondary windings during at least 60 s in accordance with clause 11.2 of IEC 60079-11:2011 Ed. 6 standard.

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EX CERTIFICATE – IECEx

vibro-meter®


IECEx LCIE 21.0006X
for
IQS9xx signal conditioners



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 21.0006X
Edition 1 – April 2021

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IECEX Certificate of Conformity

Page 2 of 3
Issue No: 0

Certificate No.: **IECEX LCIE 21.0006X**

Date of issue: 2021-04-01

Manufacturer: **MEGGITT SA**
Route de Moncor 4
1752 Villars-sur-Glâne
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 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0


IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

This Certificate **does not** indicate compliance with 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/EXTR21.0015/00](#)

Quality Assessment Report:
[FR/LC/QAR06.0006/15](#)



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 21.0006X**

Status: **Current**

Date of issue: 2021-04-01

Applicant: **MEGGITT SA**
Route de Moncor 4
1752 Villars-sur-Glâne
Switzerland

Equipment: **IQS 9** Signal conditioner**

Optional accessory:


Type of Protection: **Ex Ia**

Marking: **Ex Ia IIC T6 or T5 Ga**
Ex Ia IIIC T200 80°C...T200 115°C Da

Page 1 of 3
Issue No: 0

Julien GAUTHIER
Certification Officer

Approved for issue on behalf of the IECEX
Certification Body:



LABORATOIRE CENTRAL DES
INDUSTRIES ELECTRIQUES
13 Avenue du Général Leclerc
FR-92260 Fontenay-aux-Roses
F. +33147361200

Position: **Julien GAUTHIER**
Certification Officer

Signature: *(Signature)*
(for printed version)


Date: **2021-04-01**


Certificate history:

(Refer to the annex of the certificate for the full marking)

Certificate issued by:

Laboratoire Central des Industries Electriques (LCIE)
33 Avenue du General Leclerc
FR-92260 Fontenay-aux-Roses
France





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IECEx Certificate of Conformity



Certificate No.: **IECEX LCIE 21.0006X**

Date of issue: 2021-04-01

Page 3 of 3

Issue No: 0

EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The IQS 9** is a signal conditioner which is used in a proximity measurement system.

The signal conditioner is composed of an aluminum enclosure, which houses an encapsulated printed circuit board, two terminal blocks "J1 and J2", one connector "J0" and with an optional clip for DIN rail.

The signal conditioner can be power supplied with two configuration, either by 2 wire transmission (I/P) or 3 wire transmission (OP).

Refer to the annex of the certificate for the full description.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- The apparatus must only be connected to galvanically isolated associated intrinsically safe apparatus or simple apparatus. This combination must be compatible as regard the intrinsic safety rules according to requirements of IEC 60079-25 standard.
- Temperature class of the signal conditioner depending on the ambient operating temperature range:

Temperature class	Ambient temperature	
Gas	T6	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +70^{\circ}\text{C}$
	T5	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +85^{\circ}\text{C}$
Dust	T ₂₀₀ 80°C	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +50^{\circ}\text{C}$
	T ₂₀₀ 95°C	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +65^{\circ}\text{C}$
	T ₂₀₀ 115°C	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +85^{\circ}\text{C}$

- The enclosure of the signal conditioner is made of aluminium. It must be mounted in such a manner as to eliminate the risk of sparks caused by impact or friction.
- The apparatus must be installed per drawing n° PZ 9010 rev. 00 dated 2021/03/25.

Annex:

[IECEX LCIE 21.0006X issue 00 - Annex 01 - Meggitt SA.pdf](#)



FULL EQUIPMENT DESCRIPTION

The IQS 9** is a signal conditioner which is used in a proximity measurement system.

The signal conditioner is composed of an aluminum enclosure, which houses an encapsulated printed circuit board, two terminal blocks "J1 and J2", one connector "J0" and with an optional clip for DIN rail.

The signal conditioner can be power supplied with two configuration, either by 2 wire transmission (I/P) or 3 wire transmission (OP).

Title	Reference	Rev. Level	Date
Technical file	DT-1076	00	2021/03/25
Installation manual	MAPROX9xxE	--	--

MARKING

Complete marking :

vibro-meter® or MEGGITT SA or MFR S3960
 Address: ...
 Type: 204-9*-000-*** (1)
 Serial number: ...
 Year of construction: ...
 Ex Ia IIC T6 or T5 Ga (2)
 Ex Ia IIIC T₂₀₀ 80°C...T₂₀₀ 115°C Da (2)
 IECEX LCIE 21.0006 X
 $-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +85^{\circ}\text{C}$
 U; ...; I; ...; P; ...; C; ...; L; ... (3)
 U; ...; I; ...; P; ...; C; ...; L; ... (3)
 U; ...; I; ...; P; ...; C; ...; L; ... (3)
 (1): completed with type designation.
 (2): see the specific conditions of use.
 (3): completed by intrinsic safety electrical parameters of the connection concerned.

Reduced marking :

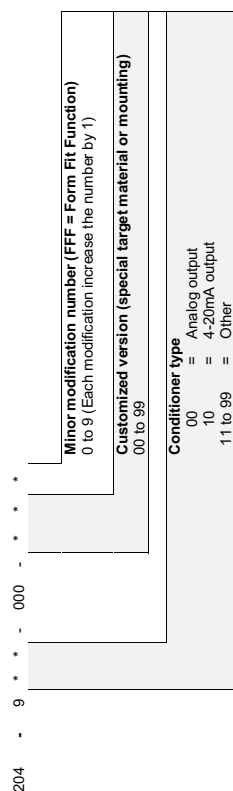
vibro-meter® or MEGGITT SA or MFR S3960
 Type: 204-9*-000-*** (1)
 Serial number: ...
 Year of construction: ...
 Ex Ia IIC T6 or T5 Ga (2)
 Ex Ia IIIC T₂₀₀ 80°C...T₂₀₀ 115°C Da (2)
 IECEX LCIE 21.0006 X
 $-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +85^{\circ}\text{C}$
 (1): completed with type designation.
 (2): see the specific conditions of use



Annex 01 to Certificate
IECEX LCIE 21.0006X issue 00



RANGE DETAILS



RATINGS

Connection	Intrinsic safety electrical parameters
Terminal block "J1" - 2 wire transmission (I/P)	U _i : 28 V; I _i : 100 mA; P _i : 700 mW; L _i : 4.96 µH; C _i : 2.2 nF
Terminal block "J1" - 3 wire transmission (O/P)	U _i : 28 V; I _i : 100 mA; P _i : 700 mW; L _i : 9.92 µH; C _i : 4.4 nF
Terminal block "J2" - Raw O/P	U _o : 28 V; I _o : 4.57 mA; P _o : 32 mW; L _o : 1.7 H; C _o : 82 nF
Terminal block "J2" - Test I/P	U _o : 28 V; I _o : 0.057 mA; P _o : 0.4 mW; L _o : 1.1098 H; C _o : 82 nF
Connector "J0" - Sensor I/P	U _o : 28 V; I _o : 53.2 mA; P _o : 372.4 mW; L _o : 12.5 mH; C _o : 82.4 nF

ROUTINE TESTS

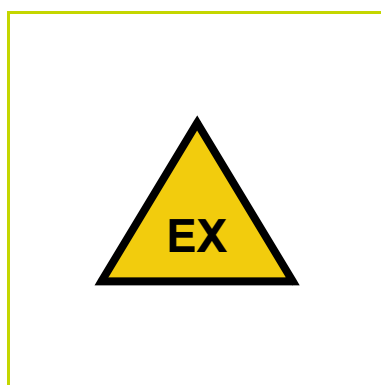
None.

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EX CERTIFICATE – IECEx

vibro-meter®


IECEx LCIE 21.0005X
for
TQ9xx proximity sensors
and IQS9xx signal conditioners



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 21.0005X
Edition 1 – April 2021

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IECEx Certificate of Conformity

Page 2 of 3
Issue No: 0

Certificate No.: IECEx LCIE 21.0005X
Date of issue: 2021-03-30

Manufacturer: MEGGITT SA
Route de Moncor 4
1752 Villars-sur-Glâne
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 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0


IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

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: FR/LC/EXTR21.0014/00

Quality Assessment Report: FR/LC/QAR06.0006/15



IECEx Certificate of Conformity

Page 1 of 3
Issue No: 0

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 21.0005X
Status: Current
Date of issue: 2021-03-30

Applicant: MEGGITT SA
Route de Moncor 4
1752 Villars-sur-Glâne
Switzerland

Equipment: TQ 9** Proximity sensor and IQS 9** Signal conditioner, resp. types 111-9**-000-*** and 204-9**-000-***


Optional accessory:

Type of Protection: ec
Exec IIC T6...T3 Gc for TQ 9** proximity sensor
Exec IIC T6...T5 Gc for IQS 9** signal conditioner
See annex for full marking.


Certificate history:

Approved for issue on behalf of the IECEx
Certification Body:



Position: Julien GAUTHIER
Certification Officer



LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES
33 Avenue du General Leclerc
FR-92260 Fontenay-aux-Roses
F. 02266 FONTENAY-AUX-ROSES 0021-03-30

Signature: 
(for printed version)

Date:

Certificate issued by:
Laboratoire Central des Industries Electriques (LCIE)
33 Avenue du General Leclerc
FR-92260 Fontenay-aux-Roses
France

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.



MARKING

• **For the TQ 9** proximity sensor:**

MEGGITT SA or VIBRO-METER or MFR S3960
 Address : ...
 Type : 111-9**-000-*** (1)
 Serial number : ...
 Year of construction : ...
 Ex ec IIC T6...T5 Gc (2)
 IECEx LCIE 21.0005X
 -40 °C ≤ T_{amb} ≤ +180 °C

WARNING – DO NOT CONNECT/DISCONNECT WHEN ENERGIZED

Reduced marking:

MEGGITT SA or VIBRO-METER or MFR S3960
 Type : 111-9**-000-*** (1)
 Serial number : ...
 Year of construction : ...
 Ex ec IIC T6...T5 Gc (2)
 IECEx LCIE 21.0005X

• **For the IQS 9** signal conditioner:**

MEGGITT SA or VIBRO-METER or MFR S3960
 Address : ...
 Type : 204-9**-000-*** (1)
 Serial number : ...
 Year of construction : ...
 Ex ec IIC T6...T5 Gc (2)
 IECEx LCIE 21.0005X
 -40 °C ≤ T_{amb} ≤ +85 °C

Reduced marking:

MEGGITT SA or VIBRO-METER or MFR S3960
 Type : 204-9**-000-*** (1)
 Serial number : ...
 Year of construction : ...
 Ex ec IIC T6...T5 Gc (2)
 IECEx LCIE 21.0005X
 -40 °C ≤ T_{amb} ≤ +85 °C

(1) Completed as per the type
 (2) See the specific conditions of use

IECEx Certificate of Conformity

Certificate No.: IECEx LCIE 21.0005X

Date of issue: 2021-03-30

Page 3 of 3

Issue No: 0

EQUIPMENT:
 Equipment and systems covered by this Certificate are as follows:

The TQ 9** proximity sensor and the IQS 9** signal conditioner are part of a proximity measurement system. The system can also include an EA 9** extension cable which is not covered by this certificate.

The proximity system allows a contactless measurement of the relative displacement of moving machine elements such as the shaft. The system output voltage or current is proportional to the distance between the sensor head and the metallic target.

The TQ 9** sensor has an integral coaxial cable, terminated with a self-locking miniature coaxial connector. Its active part comprises of a coil of wire that is moulded inside the sensor head made of a thermoplastic material. The sensor body is made of stainless steel.

The IQS 9** signal conditioner contains a high-frequency modulator/demodulator that supplies the driving signal to the coil of the sensor. This generates an electromagnetic field in the sensor head, which then induces eddy currents into the metallic target. When the target moves, the eddy currents change, which causes a change in the electrical characteristics of the TQ 9** that the signal conditioner converts into a signal that is proportional to the distance to the target. The electronics of the conditioner is mounted in a metallic housing and it is totally embedded into a silicone casting compound.

The signal conditioner has a coaxial connector for the connection to the proximity sensor. The output of the IQS 9** conditioner can be configured as a current (2-wire transmission mode) or a voltage signal (3-wire transmission mode). For test purposes, the IQS 9** includes a "raw" voltage output signal and a test input signal that allow the measurement chain/system operation to be tested in situ.

SPECIFIC CONDITIONS OF USE: YES as shown below:

See annex for whole specific conditions of use.

Annex:

[Annex 01 to Certificate IECEx LCIE 21.0005X issue 0.pdf](#)



FULL CONDITIONS OF CERTIFICATION

- a. Temperature class of the equipment depending on the ambient operating temperature range:
 - TQ 9** Proximity sensor:
 - T6 : for $-40\text{ °C} \leq T_{\text{amb}} \leq +75\text{ °C}$
 - T5 : for $-40\text{ °C} \leq T_{\text{amb}} \leq +90\text{ °C}$
 - T4 : for $-40\text{ °C} \leq T_{\text{amb}} \leq +125\text{ °C}$
 - T3 : for $-40\text{ °C} \leq T_{\text{amb}} \leq +180\text{ °C}$
 - IQS 9** Signal conditioner:
 - T6 : for $-40\text{ °C} \leq T_{\text{amb}} \leq +70\text{ °C}$
 - T5 : for $-40\text{ °C} \leq T_{\text{amb}} \leq +85\text{ °C}$
- b. The IQS 9** signal conditioner shall be installed in a certified enclosure that provides a degree of protection of at least IP54, according to IEC 60079-0.
- c. The equipment shall only be used in an area of at least pollution degree 2, as defined in IEC 60664-1.
- d. 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 IQS 9** signal conditioner.
- e. Connections shall not be connected or disconnected when energized.
- f. The sensor head shall be protected against any risk of mechanical danger.
- g. A minimum degree of protection IP54, in accordance with IEC 60079-0, shall be ensured at the point of connection of the proximity sensor TQ 9** with the EA 9** extension cable.
- h. It is the user's responsibility to provide adequate earth continuity of the sensor body via the mounting arrangement.
- i. The equipment shall be installed according to the instruction manual provided by the manufacturer.

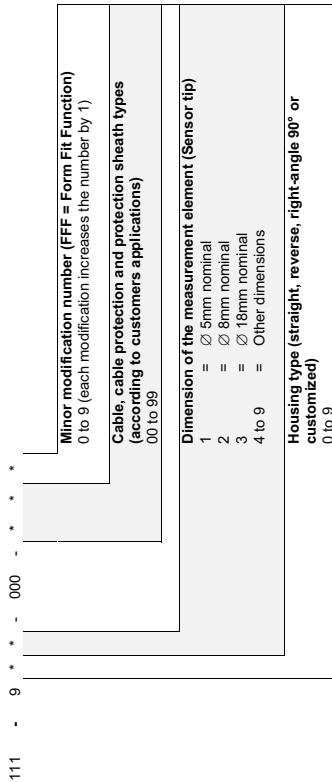
ROUTINE TESTS

Each sample of the TQ 9** sensor shall be subjected to a dielectric strength test according to clause 7.1 of IEC 60079-7 under 500 V r.m.s.



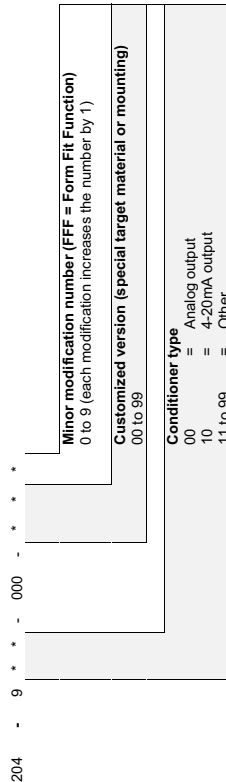
RANGE DETAILS

- For TQ 9** proximity sensor:



TQ 9** type designation above will be completed by digits for example related to the thread type of sensor body, the body length, the integral cable length or whether the total system length.

- For IQS 9** signal conditioner:



IQS 9** type designation above will be completed by digits for example related to the measuring range and sensitivity, the total system length or whether the type of mounting.

RATINGS

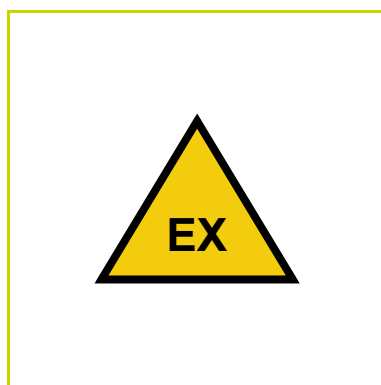
- For signal conditioner IQS 9**, 2-wire transmission mode (output current signal):
- Maximum voltage: 30 V DC
 - Maximum current consumption: 22 mA
 - Maximum power consumption: 0.7 W
- For signal conditioner IQS 9**, 3-wire transmission mode (output voltage signal):
- Maximum voltage: 30 V DC
 - Maximum current consumption: 9.5 mA
 - Maximum power consumption: 0.3 W

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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

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IECEX Certificate of Conformity

Page 2 of 6
Issue No: 2

Certificate No.: **IECEX ITS 16.0011X**

Date of Issue: **2019-08-06**

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/II C Mb/Gb
Ex eb I/II C Mb/Gb
Ex tb III C Db IP 6X
Ta = see schedule

Type AB & AJ Adaptors, Type BB & BJ Reducers
Ex eb I/II C Gb, Ex tb I/II C Db IP 66
Ta = see schedule

Approved for issue on behalf of the IECEX Certification Body:

Position:

Signature: (for printed version)

Date:

V K Varma
Certification Officer



1. This certificate and schedule may only be reproduced in full.

2. The status and authenticity of this certificate may be verified by visiting www.ieceex.com or use of this QR Code.



Certificate issued by:
Intertek Testing & Certification Limited
11'S House, Cleeve Road
Leatherhead
Surrey, KT22 7SA
United Kingdom



IECEX Certificate of Conformity

Page 1 of 6
Issue No: 2

Certificate No.: **IECEX ITS 16.0011X**

Status: **Current**

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/II C Mb/Gb
Ex eb I/II C Mb/Gb
Ex tb III C Db IP 6X
Ta = see schedule

Type AB & AJ Adaptors, Type BB & BJ Reducers
Ex eb I/II C Gb, Ex tb I/II C Db IP 66
Ta = see schedule

Approved for issue on behalf of the IECEX Certification Body:


Position:

Signature: (for printed version)


Date:

1. This certificate and schedule may only be reproduced in full.

2. The status and authenticity of this certificate may be verified by visiting www.ieceex.com or use of this QR Code.



Certificate issued by:
Intertek Testing & Certification Limited
11'S House, Cleeve Road
Leatherhead
Surrey, KT22 7SA
United Kingdom



IECEX Certificate of Conformity

Certificate No.: **IECEX ITS 16.0011X**

Date of issue: 2019-08-06

Manufacturer: **Eaton Electrical Systems Ltd Trading as Raxton or Redapt**
Kingsway South
Wesgate
Westfieldlands
W5A 8FE,
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 Explosive atmospheres - Part 0: General requirements
Edition:6.0

IEC 60079-1:2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

IEC 60079-7:2015 Explosive atmospheres – Part 7: Equipment protection by increased safety "g"
Edition:3.0

Page 3 of 6

Issue No: 2

Test Reports:
GB/ITS/EXTR16.0013/00 **GB/ITS/EXTR16.0013/02**
GB/ITS/EXTR16.0013/01 **GB/ITS/EXTR16.0013/02**
Quality Assessment Reports:
GB/SIR/QAR06.0014/08 **GB/SIR/QAR07.0016/06**

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:

IECEX Certificate of Conformity

Certificate No.: **IECEX ITS 16.0011X**

Date of issue: 2019-08-06

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 Earthead 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 nylon 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 DSDN)

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
PC 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 Aluminium shall not be marked for Group 1 applications.

SPECIFIC CONDITIONS OF USE: YES as shown below:
1. When used for Increased Safety (Ex'e) or Protection by enclosure (Ex'ib) applications, a suitable method of sealing to the associated enclosure shall be provided.

Page 4 of 6

Issue No: 2




IECEx Certificate of Conformity

Page 6 of 6
Issue No: 2

Certificate No.: **IECEX ITS 16.0011X**

Date of issue: 2019-08-06

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
 Issue 1: Update of OAR 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 b
 Issue 2: Nylon material references revised Drawing AB-AJ-BB-BJ revised to Issue 2.



IECEx Certificate of Conformity

Page 5 of 6
Issue No: 2

Certificate No.: **IECEX ITS 16.0011X**

Date of issue: 2019-08-06

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 derated 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

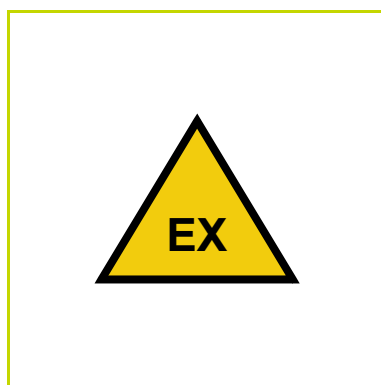
Note: Unless fitted with an interface sealing O-ring with lower properties, temperatures shall then be limited as per the manufacturer's instructions

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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

Page 2 of 5
Issue No: 3

Certificate No.: **IECEX ITS 16.0012X**

Date of Issue: 2019-10-23

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 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/EXTR16.001400 GB/ITS/EXTR16.001403	GB/ITS/EXTR16.0014/01	GB/ITS/EXTR16.0014/02
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Quality Assessment Report:
GB/SIR/QAR06.0014/08



IECEx Certificate of Conformity

Page 1 of 5
Issue No: 3

Certificate No.: **IECEX ITS 16.0012X**

Status: **Current**

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-J, PH-E, PA-D, PA-U, PB-U/PB-D and PD-E4 Stopping plugs**

Optional accessory:

Certificate history:
Issue 2 (2019-02-22)
Issue 1 (2018-04-27)
Issue 0 (2016-12-20)


Marking:
Ex db , eb, tb
IECEX ITS 16.0012X
Ex db IIIC Mb/Gb
Ex eb IIIC 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 (Dependent on construction material and O-ring fitted). See specific conditions of use for particular model.

Approved for issue on behalf of the IECEx Certification Body:
V K Varma
Certification Officer


Signature: _____
(for printed version)


Date: _____

1. This certificate and schedule may only be reproduced in full.
2. This certificate is issued on behalf 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
175 House, Cleeve Road
Leatherhead
Surrey, KT22 7SA
United Kingdom





IECEx Certificate of Conformity

Page 3 of 5
Issue No. 3

Certificate No.: **IECEX ITS 16.0012X**
Date of issue: 2019-10-23

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 fully described as follows:

Type CB: Roundhexagon socket/external mounting, Type CK: Hexagon head, Type CL: Flushroom head, Type CT: 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: Ex db I/IC Mb/Gb, Ex db I/IC Mb/Gb, Ex db I/IC 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/IC Mb/Gb, Ex db I/IC Mb, Ex db I/IC Db IP6X

The PHE 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 flushroom head, there is also a version made from 30% Glass Filled Nylon which are intended for Ex eb and to only.

Material options:
• Brass BS 2972 (CZ121) • Mild Steel to BS970 (EN1A) • Stainless Steel to BS970 (316) • Aluminium BS1474, 6062T6 • 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 311 • 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 Viton -20°C to +180°C * Silicone -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: 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

Page 4 of 5
Issue No: 3

Certificate No.: **IECEX ITS 16.0012X**
Date of issue: 2019-10-23


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 G10326724	
Issue 2: Update of OAR 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 CO-M and PD-E revised to Issue 2. Intertek Project No G104038337	

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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

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IECEx Certificate of Conformity

Certificate No.: IECEx LCI 10.0009U
 Date of issue: 2015-05-07
 Issue No.: 1
 Page 2 of 4

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 Explosive atmospheres - Part 0: General requirements Edition: 6.0
- IEC 60079-31 : 2008 Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't' Edition: 1
- IEC 60079-7 : 2006-07 Explosive atmospheres – Part 7: Equipment protection by increased safety "e" 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:
 FRLCIEEXTR10.0012/00 FRLCIEEXTR10.0012/01

Quality Assessment Report:
 FRLC/QAR10.0003/06

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
 Status: **Current**
 Date of issue: 2015-05-07
 Issue No.: 1
 Page 1 of 4

Certificate history:
 Issue No. 1 (2015-5-7)
 Issue No. 0 (2010-5-11)


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 IIC
 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

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 activities (Certificates, OARs, Ex-TRs) can be registered under the references "LCI" or "LCIE".



IECEX Certificate of Conformity

Issue No.: 1
Page 4 of 4


Certificate No.: IECEx LCI 10.0009U
Date of issue: 2015-05-07

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 Certificate of Conformity

Issue No.: 1
Page 3 of 4

Certificate No.: IECEx LCI 10.0009U
Date of issue: 2015-05-07

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 A9380301) and neoprene. For each size and component, there is the possibility of an ISO metric thread pitch 1,5 mm (ISO 965 (1988)) 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°C ≤ Tservice ≤ + 55°C (For all the range)
-35°C ≤ Tservice ≤ +95°C (Polycarbonate referenced A9541016)
-35°C ≤ Tservice ≤ +90°C (Polyamide 6 referenced A9380300 and A9380301)

CONDITIONS OF CERTIFICATION: NO

IECEX LCI 10.0009U issue 01
Annex n°01


L C I E

Marking :

SIB
Address
Type : EEx e
Serial number
Year of construction
Ex eb IIC
Ex tb IIIC
IP6X
IECEX LCI 10.0009U

The 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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IECEx certificate:

EN

PTB 03.0000



for

Cable stuffing glands



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

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IECEX Certificate of Conformity

Certificate No.: IECEx PTB 03.0000

Date of Issue: 2011-09-12

Manufacturer: Cooper Crouse-Hinds GmbH
 Neuer Weg Nord 47
 D-69412 Eberbach
 Germany

Additional Manufacturing location(s):

Issue No.: 2

Page: 2 of 4

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 60079-31 : 2008	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure 't'
Edition: 1	
IEC 60079-7 : 2006-07	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
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:
 DE/PTB/EXTR11.0013/00

Quality Assessment Report:
 DE/BVSIQAR11.0009/00

IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres
for rules and details of the IECEX Scheme visit www.ieceex.com

Certificate No.: IECEx PTB 03.0000

Status: Current

Date of Issue: 2011-09-12

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 Dn IP66/IP65
 alternately
 Ex eb IIC
 Ex tb III C IP66/IP65

Issue No.: 2

Page: 1 of 4

Certificate history:
 Issue No. 2 (2011-09-12)
 Issue No. 1 (2011-02-04)
 Issue No. 0 (2003-09-15)

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: _____



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

IECEX PTB 03.0000

2011-08-12

Issue No: 2

Page 4 of 4



Certificate No: IECEX PTB 03.0000
 Date of Issue: 2011-08-12

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

New QAR

Annex:
Attachment-IECEX PTB 03_0000_Rev1.pdf

IECEx Certificate of Conformity

IECEX PTB 03.0000

2011-09-12

Issue No: 2

Page 3 of 4

Certificate No: IECEX PTB 03.0000
 Date of Issue: 2011-09-12

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. Depending on the size they can be used for enclosures in the type of protection Increased safety "e" and Protection by enclosure "Ip". 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 "Ip"
 Size M63 x 1,5: type of protection Increased safety "e"

Technical data and Nomenclature: see attachment.

SPECIFIC CONDITIONS OF USE: NO



Attachment to Certificate
IECEX PTB 03.0000, Revision 1



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 "lb". 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 "lb"

Size M63 x 1,5; type of protection Increased safety "e"

Technical data

Designation M16x1,5 – M50x1,5	Unique specimen	Package
Blanking element M16 x 1,5	GHG 960 6633 P ...	without O-Ring
Blanking element M20 x 1,5	GHG 960 6634 P ...	with O-Ring
Blanking element M25 x 1,5	GHG 960 6635 P ...	GHG 960 1952 R ...
Blanking element M32 x 1,5	GHG 960 6636 P ...	GHG 960 1952 R ...
Blanking element M40 x 1,5	GHG 960 6637 P ...	GHG 960 1952 R ...
Blanking element M50 x 1,5	GHG 960 6638 P ...	GHG 960 1952 R ...
Designation M63 x 1,5	Unique specimen	Package
Blanking element M63 x 1,5	GHG 960 1924 R0068	GHG 960 1952 R ...

Service temperature range	-55 °C to +95 °C
M16 x 1,5 to M50 x 1,5	-20 °C to +80 °C
M63 x 1,5	high
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 +49 531 592-3905



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)

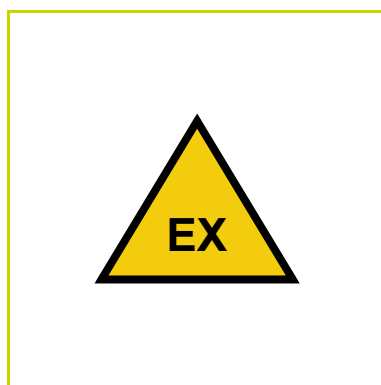
Bundesallee 100, 38116 Braunschweig, Germany
Postfach 33 45, 38023 Braunschweig, Germany
Telephone +49 531 592-0, Telefax +49 531 592-3905

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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

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IECEX Certificate of Conformity

Page 2 of 4
Issue No: 2

Certificate No.: IECEx PTB 11.0019X

Date of issue: 2020-04-22

Manufacturer: **Pflitsch GmbH & Co. KG**
Ernst-Pflitsch-Straße 1
42499 Hückeswagen
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	Explosive atmospheres - Part 0: Equipment - General requirements
IEC 60079-31:2013	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-7:2017	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

Edition: 7.0
Edition: 2
Edition: 5.1

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/EX-TR11.0032/02

Quality Assessment Report:
DE/PTB/QAR10.0003/04




IECEX Certificate of Conformity

Page 1 of 4
Issue No: 2

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

Status: Current

Date of Issue: 2020-04-22

Applicant: **Pflitsch GmbH & Co. KG**
Ernst-Pflitsch-Straße 1
42499 Hückeswagen
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 "tp"**

Marking: Ex eb IIC Gb
Ex tb IIC 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





IECEX Certificate of Conformity


Page 4 of 4
Issue No: 2

Certificate No.: **IECEX PTB 11.0019X**
Date of issue: 2020-04-22

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+AL:2017 (Ed. 5.1) and IEC 60079-31:2013 (Ed. 2).

Annex:
[COCA-11.0019X Issue 2.pdf](#)



IECEX Certificate of Conformity

Page 3 of 4
Issue No: 2

Certificate No.: **IECEX PTB 11.0019X**
Date of issue: 2020-04-22

EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The cable gland type blueglobe HT xx xx xxxx xx, blueglobe HTAC xxx xx x 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 "ib". 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.



Attachment to Certificate
IECEx PTB 11.0019X, Issue No. 2



Applicant:

Pfiffisch GmbH & Co. KG
Ernst-Pfiffisch-Straße 1
42499 Hückeswagen
Germany

Electrical Apparatus:

Cable gland type blueglobe HT xx x xx xxxxx xx,
blueglobe HT AC xxx xx x xx xxxxx xx and
blueglobe HT TRI xx x xx xxxxx xx

Description

The cable gland type blueglobe HT xx x xx xxxxx xx, blueglobe HT AC xxx xx x xx xxxxx xx and blueglobe HT TRI xx x xx xxxxx 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 "fb". 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	≥ 2 mm ≥ 1 mm
Plastic, wall thickness	≥ 5 mm
Metal, wall thickness	≥ 3 mm
Mounted in enclosures with threaded holes	Depending on the nominal size, see list below
Plastic, wall thickness	metric: 5 Nm to 20 Nm
Metal, wall thickness	-55 °C to +160 °C -55 °C to +90 °C
Torque	IP66 and IP 68 in accordance with IEC 60529
Ambient temperatures	
Insert and connecting O-ring	
Bolt	
Protection against solid foreign objects, water and contact	

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 11.0019X, Issue No. 2



max. Torque blueglobe and blueglobe TRI

blueglobe HT and blueglobe TRI HT		blueglobe TRI	
Thread	Moulded inlet	Torque Pressure screw / double nipple	Cable diameter with inlet
M12	X	5 Nm	---
M16	X	8 Nm	7,0 – 4,0
M20	X	10 Nm	9,0 – 5,0
M25	X	15 Nm	16,0 – 11,0
M32		15 Nm	20,0 – 16,0
M40		20 Nm	25,0 – 20,0
			26,0 – 20,0
			32,0 – 26,0

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	Moulded inlet	Torque Pressure screw / double nipple	Cable diameter with inlet	Cable diameter without inlet	Clamping range of AC group	Mechanical strength
M20	X	15 Nm	14,0 – 9,0	---	13,0 – 9,0	7 J
M25	X	15 Nm	20,0 – 16,0	16,0 – 11,0	15,0 – 10,0	7 J
M32		15 Nm	25,0 – 20,0	---	17,0 – 14,0	7 J
M40		15 Nm	32,0 – 26,0	26,0 – 20,0	23,0 – 19,0	7 J
		20 Nm	32,0 – 26,0	---	27,0 – 23,0	7 J
					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

Physikalisch-Technische Bundesanstalt (PTB)

Bundesallee 100, 38116 Braunschweig, Germany
Postfach 33 45, 38023 Braunschweig, Germany
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Attachment to Certificate
IECEX PTB 11.0019X, Issue No. 2



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 armoured 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

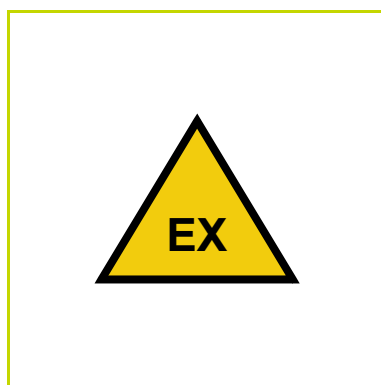
Only permanently wired cables may be entered. The user shall provide the required strain relief.
The maximum thermal load of the cables and conduits entered is to be taken into account.

Physikalisch-Technische Bundesanstalt (PTB)
Bundesallee 100, 38116 Braunschweig, Germany
Postfach 33 45, 33023 Braunschweig, Germany
Telephone +49 531 592-0, Telefax +49 531 592-3605

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

Certificate No: IECEx SEV 15.0018

Date of Issue: 2018-11-15

Manufacturer: AGRO AG
Korbäckweg 7
5502 Hunzenschwil
Switzerland

Additional Manufacturing location(s):

Issue No: 1

Page 2 of 4

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 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 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:
CHISEVEXTR15.002001

Quality Assessment Report:
CHISEV/DIAR12.0001105

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

Status: Current

Date of Issue: 2018-11-15

Applicant: AGRO AG
Korbäckweg 7
5502 Hunzenschwil
Switzerland

Equipment: Cable glands and accessories Type Progress *** **** KB EX
Optional accessory: Thread adapters; Blanking elements; Counter nuts

Type of Protection: Increased safety "eb" and protection by enclosure "tb"

Marking: Ex eb IIC Gb
Ex Ib III C Db

Approved for issue on behalf of the IECEx Certification Body: Martin Plüss

Position: Manager Product Certification

Signature: _____
(for printed version)

Date: _____

Issue No: 1


Page 1 of 4

Certificate history:
Issue No. 1 (2018-11-15)
Issue No. 0 (2016-01-13)

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 Electro Suisse Product Testing AG
Luppenstrasse 3
CH-8320 FEHRLTORF
Switzerland



Electro Suisse
Product Testing

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

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 "ib". 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.

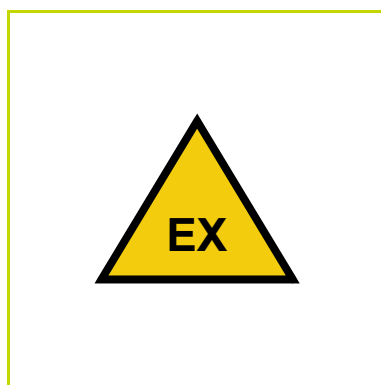
- Type References:
Progress MS *** KB EX (M16...M63; Pkg...Pg48; NPT3/8" ...NPT2")
Progress S2 *** KB EX (M12...M63; Pkg...Pg48; NPT1/4" ...NPT2")
Progress S4 *** KB EX (M12...M63; Pkg...Pg48; NPT1/4" ...NPT2")
Thread adapters (Reductions, Extensions) MS EX (M16...M63; Pkg...Pg48)
Thread adapters (Reductions, Extensions) S2 EX (M12...M63; Pkg...Pg48)
Blanking elements MS EX, S2 EX, S4 EX (M6...M63; Pkg...Pg48)
Counter nuts MS EX, S2 EX, S4 EX (M6...M63; Pkg...Pg48)
Progress MS EMV easyCONNECT KB EX (brass Ni with clamping jaws, M16...M63; Pkg...Pg48; NPT3/8" ...NPT2")
Progress S2 EMV easyCONNECT KB EX (stainless steel A2 with clamping jaws, M12...M63; Pkg...Pg48; NPT1/4" ...NPT2")
Progress S4 EMV easyCONNECT KB EX (stainless steel A4 with clamping jaws, M12...M63; Pkg...Pg48; NPT1/4" ...NPT2")

SPECIFIC CONDITIONS OF USE: NO

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

Page 2 of 4
Issue No: 4

Certificate No.: **IECEX SEV 15.0019X**
Date of Issue: 2020-12-03

Manufacturer: **AGRO AG**
Korbackenweg 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 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 "e"
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:
CH/SEVEXTR15.0021/04

Quality Assessment Report:
CH/SEV/QAR12.0001/06

IECEX Certificate of Conformity

Page 1 of 4
Issue No: 4

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**
Status: **Current**
Date of Issue: 2020-12-03

Applicant: **AGRO AG**
Korbackenweg 7
5502 Hunzenschwil
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
Ex tb III C Db


Approved for issue on behalf of the IECEx Certification Body:
Martin Plüss
Manager Product Certification


Position:
Signature: (for printed version)
Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is issued on behalf 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
Luppenstrasse 3
CH-8320 FEHRALTORF
Switzerland





IECEx Certificate of Conformity

Page 3 of 4
Issue No: 4

Certificate No.: **IECEX SEV 15.0019X**
Date of issue: 2020-12-03

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 'eP' and protection by enclosure 'IP'. 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;
EX1700.17.86.900.91;
EX1710.12.86.901.91;
EX1710.12.86.903.91;

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

Page 4 of 4
Issue No: 4

Certificate No.: **IECEX SEV 15.0019X**
Date of issue: 2020-12-03

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
New types of cable glands Progress made in stainless steel were added

APPENDIX E: cCSAus CERTIFICATIONS

Table E-1: Related cCSAus certificates

Product(s) covered	Certificate number
GSI127	cCSAus 70001999
IQS9xx and TQ9xx	cCSAus 80084516

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cCSAus certificate:

EN

70001999

for

GSI 127



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

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Certificate: 70001999
Project: 70112845

Master Contract: 175074
Date Issued: 2017-01-19

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. 60079-1:14	Explosive Atmospheres - Part 1: Equipment protection by intrinsic safety "n"
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 60079-1:13	Electrical apparatus for Explosive Gas Atmospheres - Part 1: 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



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 [Iia Ga] IIC T4 Gc
Class I, Zone 2, AEx nA [Iia 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)



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 GS1 127 Interface with IS Output, to add new models with Alternate specification, and an update to the Type designation of 2444-127-000-XX-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 GS1127 for Class I, Division 2, with intrinsically safe outputs

**Hazardous area Zones 0, 1, 2
Class I, division 1, groups A, B, C, D**

**Standard area (Cubic for industrial application)
or hazardous area Zone 2**

2-wire transmission

3-wire transmission

DEVELOPMENT

CSA	IEC
Ca	Co
Li	Lo
Vmax	Vo
Imax	Io
PI	PI

DEVICES

CSA	IEC
Ca	Co
Li	Lo
Vmax	Vo
Imax	Io
PI	PI

Grounding bracket is recommended at cubical entrance

**Standard area (Cubic for industrial application)
or hazardous area Zone 2**

Intrinsically safe device

**Hazardous area Zones 0, 1, 2
Class I, division 1, groups A, B, C, D**

Intrinsically safe device

Conditions of Acceptability:

- 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.
- The Transducer Side of the device shall only be connected to intrinsically safe certified associated apparatus or simple apparatus.
- 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.

NOTIFICATION

NO MODIFICATION ALLOWED
WITHOUT PRIOR AUTHORISATION
OF NOTIFIED BODY

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 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 : -40°C to +70°C
- ambient temperature : -40°C to +85°C
- storage temperature

Coordinates to obtain technical assistance provided:
Meggit SA / re de Moncor 4 / PO box / 1701 Fribourg / Switzerland

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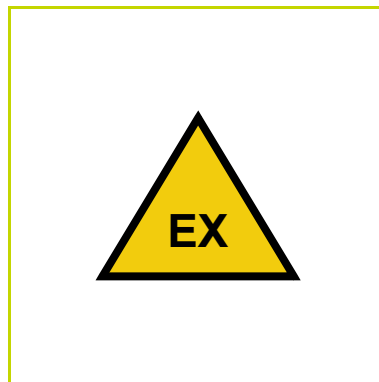
EX CERTIFICATE – cCSAus

vibro-meter®

cCSAus 80084516

for


TQ9xx proximity sensors
and IQS9xx signal conditioners



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 80084516
Edition 1 – January 2022

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Certificate of Compliance

Master Contract: 175074


Date Issued: 2022-01-21

Certificate: 80084516

Project: 80084516

Issued To: Meggitt SA
Rte de Moncor 4
Villars-sur-Glane, Fribourg, 1752
Switzerland

Attention: Carlo Pellegginelli



Issued by: *Hossain Saleh*
Hossain Saleh

PRODUCTS

CLASS 2258 04 - PROCESS CONTROL EQUIPMENT - Intrinsiclly Safe Entity - For Hazardous Locations

CLASS 2258 84 - PROCESS CONTROL EQUIPMENT - Intrinsiclly Safe Entity - For Hazardous Locations - Certified to US Standards

IS Class I, Division 1, Groups A, B, C, and D T6 or T5

Ex ia IIC T6 or T5 Ga

Class I, Zone 0, AEx ia IIC T6 or T5 Ga

Class II, Division 1, Groups E, F, and G T80°C...T115°C

Ex ia IIC T80°C...T115°C Da


Zone 20, AEx ia IIC T80°C...T115°C Da

The IQS 9** is a signal conditioner which is used in a proximity measurement system. The signal conditioner is composed of an aluminum enclosure, which houses an encapsulated printed circuit board, two terminal blocks "J1 and J2", one connector "J0", and with an optional clip for DIN rail. The signal conditioner can be power supplied with two configurations, either by 2 wire transmission (I/P) or 3 wire transmission (O/P).

DOD-507 Rev. 2019-04-30

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Page 1



Master Contract: 175074

Date Issued: 2022-01-21

Certificate: 80084516

Project: 80084516

Nomenclature for IQS 9:**

204-9ab-000-cde

ab: Conditioner Type

00 = Analog output

10 = 4-20mA output

11 to 99 = Other

cd: Customized version (special target material or mounting)

00 to 99

e: Minor modification number (FFF = Form Fit Function)

0 to 9 = (Each modification increases the number by 1)

IQS 9** type designation above will be completed by digits for example related to the measuring range and sensitivity, the total system length or whether the type of mounting.

Entity Parameter Values:

Terminal Block "J1" - 2 wire transmission (I/P): U_i/V_{max} = 28V, I_i/I_{max} = 100mA, P_i = 700mW, C_i = 2.2nF, L_i = 4.96uH

Terminal Block "J1" - 3 wire transmission (O/P): U_i/V_{max} = 28V, I_i/I_{max} = 100mA, P_i = 700mW, C_i = 4.4nF, L_i = 9.92uH

Terminal Block "J2" - Raw O/P: U_o/V_{oc} = 28V, I_o/I_{sc} = 4.57mA, P_o = 32mW, C_o/C_a = 82nF, L_o/L_a = 15mH

Terminal Block "J2" - Test I/P: U_o/V_{oc} = 28V, I_o/I_{sc} = 0.057mA, P_o = 0.4mW, C_o/C_a = 82nF, L_o/L_a = 15mH

Connector "J0" - Sensor I/P: U_o/V_{oc} = 28V, I_o/I_{sc} = 53.2mA, P_o = 372.4mW, C_o/C_a = 82.4nF, L_o/L_a = 12.5mH

Thermal Ratings:

Gas: T6 for Tamb: -40°C to +70°C; T5 for Tamb: -40°C to +85°C

Dust: T80°C for Tamb: -40°C to +50°C; T95°C for Tamb: -40°C to +65°C; T115°C for Tamb: -40°C to +85°C

Notes:

- The above model is fixed connection, Pollution Degree 2, Installation/Overvoltage Category I.
- Mode of operation: Continuous.
- Environmental Conditions: Extended, -40°C to +85°C, RH% of 0-95% (non-condensing), altitude up to 4000m, Indoor use.

Conditions of Acceptability:

- The signal conditioner must only be connected to galvanically isolated associated intrinsically safe apparatus or simple apparatus. This combination must be compatible with the intrinsic safety rules according to requirements of CSA/UL 60079-25 standards.
- Temperature code of the signal conditioner depending on the ambient operating temperature range: Gas - T6 for Tamb: -40°C to +70°C; T5 for Tamb: -40°C to +85°C.

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Certificate: 80084516
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Dust - T80°C for Tamb: -40°C to +50°C; T95°C for Tamb: -40°C to +65°C; T115°C for Tamb: -40°C to +85°C.

3. The enclosure of the signal conditioner is made of aluminum. It must be mounted in such a manner as to eliminate the risk of sparks caused by impact or friction.
4. The signal conditioner must be installed per Wiring Diagram PZ 9196.
5. The final installation of the signal conditioner shall meet the requirements of CEC Part I (for Canada) and NEC (for USA) for wiring method in Class I/II, Division 1 and Class I, Zone 0 or Zone 20 and is subject to acceptance of local authority having jurisdiction.
6. End-use shall ensure the signal conditioner 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

TQ 9 Proximity Sensor:**

Class I, Division 2, Groups A, B, C, and D T6...T3
Ex ec IIC T6...T3 Gc
Class I, Zone 2, AEx ec IIC T6...T3 Gc

IQS 9 Signal Conditioner:**

Class I, Division 2, Groups A, B, C, and D T6...T5
Ex ec IIC T6...T5 Gc
Class I, Zone 2, AEx ec IIC T6...T5 Gc

The TQ 9** proximity sensor and the IQS 9** signal conditioner are part of a proximity measurement system. The system can also include an EA 9** extension cable which is not covered by this certificate. The proximity system allows a contactless measurement of the relative displacement of moving machine elements such as the shaft. The system output voltage or current is proportional to the distance between the sensor head and the metallic target.

The TQ 9** sensor has an integral coaxial cable, terminated with a self-locking miniature coaxial connector. Its active part comprises of a coil of wire that is molded inside the sensor head made of a thermoplastic material. The sensor body, is made of stainless steel.

The IQS 9** signal conditioner contains a high-frequency modulator/demodulator that supplies the driving signal to the coil of the sensor. This generates an electromagnetic field in the sensor head, which then induces eddy currents into the metallic target. When the target moves, the eddy currents change, which causes a change in the electrical characteristics of the TQ 9** that the signal conditioner converts into a signal that is proportional to the distance to the target. The electronics of the conditioner is mounted in a metallic housing and it is totally embedded into a silicone casting compound.

The signal conditioner has a coaxial connector for the connection to the proximity sensor. The output of the IQS 9** conditioner can be configured as a current (2-wire transmission mode) or a voltage signal (3-wire transmission mode). For test purposes, the IQS 9** includes a "raw" voltage output signal and a test input signal that allow the measurement chain/system operation to be tested in situ.

Nomenclature for TQ 9 Proximity Sensor:**

111-9ab-000-cde

DDO-507 Rev. 2019-04-30

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Certificate: 80084516
Project: 80084516

Master Contract: 175074
Date Issued: 2022-01-21

- a: Housing Type (straight, reverse, right-angle 90° or customized) 0 to 9
- b: Dimension of the measurement element (Sensor tip)
 - 1 = Diameter 5mm nominal
 - 2 = Diameter 8mm nominal
 - 3 = Diameter 18mm nominal
 - 4 to 9 = Other dimensions
- cd: Cable, cable protection and protection sheath types (according to customers applications) 00 to 99
- e: Minor modification number (FFF = Form Fit Function) 0 to 9 = (Each modification increases the number by 1)

TQ 9** type designation above will be completed by digits for example related to the thread type of sensor body, the body length, the integral cable length or whether the total system length.

Nomenclature for IQS 9 Signal Conditioner:**

204-9ab-000-cde
ab = Conditioner type
00 = Analog output
10 = 4-20mA output
11 to 99 = Other
cd: Customized version (special target material or mounting) 00 to 99
e: Minor modification number (FFF = Form Fit Function) 0 to 9 = (Each modification increases the number by 1)

IQS 9** type designation above will be completed by digits for example related to the measuring range and sensitivity, the total system length or whether the type of mounting.

Electrical Ratings:

IQS 9** Signal Conditioner, 2-wire transmission mode (output current signal): Vmax = 30Vdc, Imax = 22mA, Pmax = 0.7W
IQS 9** Signal Conditioner, 3-wire transmission mode (output voltage signal): Vmax = 30Vdc, Imax = 9.5mA, Pmax = 0.3W

Thermal Ratings:

TQ 9** Proximity Sensor: T6 for Tamb: -40°C to +75°C; T5 for Tamb: -40°C to +90°C; T4 for Tamb: -40°C to +125°C; T3 for Tamb: -40°C to +180°C
IQS 9** Signal Conditioner: T6 for Tamb: -40°C to +70°C; T5 for Tamb: -40°C to +85°C

Notes:

DDO-507 Rev. 2019-04-30

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Master Contract: 175074
Date Issued: 2022-01-21

Certificate: 80084516
Project: 80084516

UL 61010-1, 3rd edition (2012), AMD1: 2018	Electrical Equipment For Measurement, Control, and Laboratory Use; Part 1: General Requirement
ANSI/UL 121201-2017 Ninth Edition	Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations
ANSI/UL 913 Eighth Edition (R2019)	Intrinsically Safe and Associated Apparatus For Use In Class I, II, and III, Division 1, Hazardous (Classified) Locations
ANSI/UL 60079-0:19	Explosive Atmospheres - Part 0: Equipment - General requirements
ANSI/UL 60079-7:17	Explosive Atmospheres - Part 7: Equipment protection by increased safety "e"
ANSI/UL 60079-11:2018	Explosive Atmospheres - Part 11: Equipment protection by intrinsic safety "i"

MARKINGS

Refer to MARKINGS section of Descriptive Report 80084516.

Notes:

Products certified under Class C225802, C225804, C225882, C225884 have been certified under CSA's ISO/IEC 17065 accreditation with the Standards Council of Canada (SCC).
www.scc.ca



Master Contract: 175074
Date Issued: 2022-01-21

Certificate: 80084516
Project: 80084516

- The above model is fixed connection, Pollution Degree 2, Installation/Overvoltage Category I.
- Mode of operation: Continuous.
- Environmental Conditions: Extended. Indoor use, -40°C to +85°C, altitude up to 4000m, RH% of 0-95% (non-condensing).

Conditions of Acceptability:

- 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.
- 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 IQS9** signal conditioner.
- The equipment shall be used in an area of not more than pollution degree 2 as defined in IEC 60664-1.
- For Zone 2 application, this device (IQS 9**) 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.
- For Division 2 application, this device (IQS 9**) 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.
- The signal conditioner and the proximity sensor must be installed per Wiring Diagram PZ 9189.
- 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".
- The sensor head shall be protected against any risk of mechanical danger.
- The TQ 9** sensor cable shall be installed within metallic conduit per requirements of CEC Part I and NEC.
- When extension cable EA 9** is used as part of the system, it shall be installed within metallic conduit as defined in the CEC Part I and NEC. The interconnection between the EA 9** and TQ 9** must be installed within an enclosure or junction box with IP54 rating for Zone 2, and with an enclosure or junction box with Type 4 rating for Class I, Division 2 hazardous location.
- The final installation of the device shall meet the requirements of CEC Part I (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.
- End-user shall ensure proper earthing of the device upon installation.

APPLICABLE REQUIREMENTS

CAN/CSA C22.2 No. 61010-1-12, UPD1: 2015, UPD2: 2016, AMD1: 2018	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements
CSA C22.2 No. 213-17	Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations
CAN/CSA-C22.2 No. 60079-0:19	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 (R2018)	Explosive Atmospheres - Part 11: Equipment protection by intrinsic safety "i"



Supplement to Certificate of Compliance

Certificate: 80084516

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
80084516	2022-01-21	Original cCSAus certification of intrinsically safe "ia," and increased safety "ec," protected IQS 9** Signal Conditioner and increased safety "ec," protected IQ 9** Proximity Sensor.

Standard area or hazardous area Zone 2

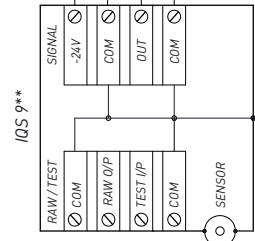
Hazardous area Zone 0 or 20

Terminal block "J2"
RAW O/P

U_0/V_{oc} : 28 V
 I_0/I_{sc} : 4.37 mA
 P_0 : 32 mW
 C_0/C_a : 82 nF
 L_0/L_a : 15 mH

Terminal block "J2"
TEST I/P

U_0/V_{oc} : 28 V
 I_0/I_{sc} : 0.057 mA
 P_0 : 0.4 mW
 C_0/C_a : 82 nF
 L_0/L_a : 15 mH



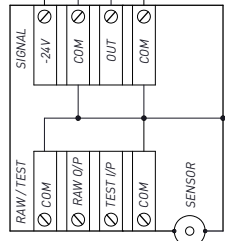
Terminal block "J1"
2 wire transmission I/P/P

U_0/V_{max} : 28 V
 I_0/I_{max} : 100 mA
 P_0 : 700 mW
 C_0 : 2.2 nF
 L_0 : 4.96 uH

(Not used)

Connector "J1"
SENSOR I/P

U_0/V_{oc} : 28 V
 I_0/I_{sc} : 53.2 mA
 P_0 : 372.4 mW
 C_0/C_a : 82.4 nF
 L_0/L_a : 12.5 mH



Terminal block "J1"
3 wire transmission O/P/P

U_0/V_{max} : 28 V
 I_0/I_{max} : 100 mA
 P_0 : 700 mW
 C_0 : 4.4 nF
 L_0 : 9.92 uH

Conditions of Acceptability

- The apparatus must only be connected to galvanically isolated associated signal conditioners. The signal conditioners must be compatible with the intrinsic safety rules according to requirements of CSA/UL 60079-25 standards.
- Temperature code of the signal conditioner depending on the ambient operating temperature range: -70°C; T5 for Tamb: -40°C to +65°C; T115°C for Tamb: -40°C to +85°C; Dust: -T80°C for Tamb: -40°C to +85°C; T115°C for Tamb: -40°C to +65°C;
- The enclosure of the signal conditioner is made of aluminum. It must be mounted in such a manner as to eliminate the risk of sparks caused by impact or friction.
- The final installation of the device shall meet the requirements of CEC (for Canada) and NEC (for USA) for wiring method in Class I/II, Division 1 and Class I, Zone 0 or Zone 20 and is subject to acceptance of local authority having jurisdiction.
- End-use shall ensure the device is properly connected to Earth upon installation.

GAS ENVIRONMENT

CSA21CA80084516X
175074

IS Class I, Division 1, Groups A, B, C, and D T6 or T5
Ex ia IIC T6 or T5 Ga
Class I, Zone 0, AEx ia IIC T6 or T5 Ga

T6 for +70°C
T5 for +85°C
-40°C ≤ Tamb ≤ +85°C

DUST ENVIRONMENT

CSA21CA80084516X
175074

Class II, Division 1, Groups E, F, and G T80°C...T115°C
Ex ia IIC T80°C...T115°C Da
Zone 20, AEx ia IIC T80°C...T115°C Da

T80°C for +50°C
T95°C for +85°C
T115°C for +85°C
-40°C ≤ Tamb ≤ +85°C

WARNING
- This product may neither be modified or repaired

ATTENTION
- Ce produit ne peut pas être modifié ou réparé



Note

- Choose associated apparatus and intrinsically safe devices such that the following conditions are met :

$$U_0 < 28V$$

$$I_0 < 100mA$$

- Ex ia is defined as intrinsically safe.
- Install associated apparatus in accordance with manufacturers instructions.

Rev.	Date	Changes	Drawn	Appr.	Description
1					ISSUE FOR PRODUCTION OF THE PRODUCT. THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF MEGGITT SA. IT IS TO BE USED ONLY FOR THE MANUFACTURE OF THE PRODUCT. ANY REVISIONS TO THIS DRAWING SHALL BE MADE BY THE DRAWING OFFICE. THE USER SHALL BE RESPONSIBLE FOR THE CORRECT INFORMATION FOR THE MANUFACTURE OF THE PRODUCT. THE USER SHALL BE RESPONSIBLE FOR THE CORRECT INFORMATION FOR THE MANUFACTURE OF THE PRODUCT. THE USER SHALL BE RESPONSIBLE FOR THE CORRECT INFORMATION FOR THE MANUFACTURE OF THE PRODUCT.

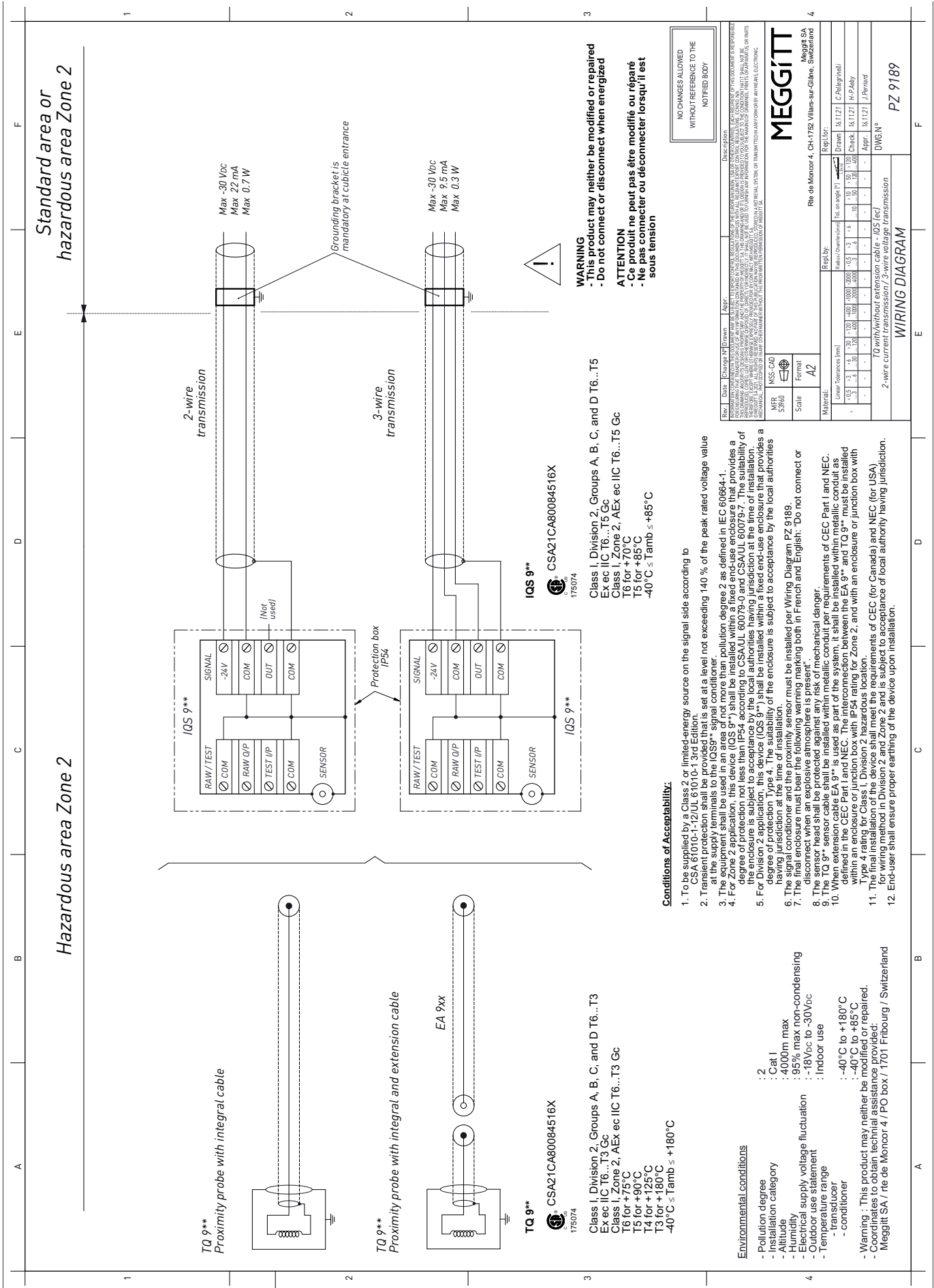
MFR	57940	MSS-CAD	Formal	A2
Scale		Material		

Rep. by:		Drawn	Check	Appr.
Lower Tolerances (mm)	0.5	1.3	6	30
Baker's Conversion (mm)	0.03	0.3	1.3	6

Material:		IQS 90x (ia)	
NO CHANGES ALLOWED WITHOUT REFERENCE TO THE NOTIFIED BODY		WIRING DIAGRAM	
		DWG.N° PZ 9196	

Environmental conditions

- Pollution degree : 2
- Installation category : Cat I
- Altitude : 4000m max
- Humidity : 95% max non-condensing
- Electrical supply voltage fluctuation : -18VDC to -30VDC
- Outdoor use statement : Indoor use
- Temperature range signal conditioner : -40°C to +85°C
- Warning : This product may neither be modified or repaired.
- The product is intended to be used with certified safety barrier.
- To insure an installation conform with an explosive environment, it is crucial to respect the criteria mentioned into the corresponding Ex certificates.
- Coordinates to obtain technical assistance provided: Meggitt SA / Route de Moncor 4 / 1762 Villars-sur-Glâne / Switzerland / Phone +41 26 407 11 11



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

NO CHANGES ALLOWED
WITHOUT REFERENCE TO THE
NOTIFIED BODY

MEGGITT
Rte de Moncor 4, CH-1702 Villars-sur-Glâne, Switzerland
Meggit SA

MFR	MS-CAD	Scale	A2
S390	Format		
Material:			
Linear	Material	Rept. by:	
1	1.5	1.5	1.5
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
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88	88	88	88
89	89	89	89
90	90	90	90
91	91	91	91
92	92	92	92
93	93	93	93
94	94	94	94
95	95	95	95
96	96	96	96
97	97	97	97
98	98	98	98
99	99	99	99
100	100	100	100

WIRING DIAGRAM

2-wire current transmission
3-wire voltage transmission

APPENDIX F: KGS CERTIFICATIONS

Table F-1: Related KGS certificates

Product(s) covered	Certificate number
GSI127	KGS 17-GA4BO-0325X
IQS9xx	KGS 21-GA4BO-0352X
	KGS 21-GA4BO-0353X
	KGS 21-GA4BO-0355X
TQ9xx	KGS 21-GA4BO-0354X

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KGS certificate:

KO

17-GA4B0-0325X

for

GS1127



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

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인 증 조 건

1. 제조공장
Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland에서 제조하는 제품에 한함

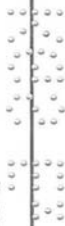
2. 제품개요
The GSI 127 interface provides galvanic insulation between power supply circuit or signal treatment circuit (Ex nA) and a sensor or a conditioner (Ex ia). The equipment consists of electronic board and screwed terminals blocks mounted inside a plastic enclosure. Conformal coating is applied on 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°C to +70°C.

5. 인증(반경)사항
IECEX LCIE 13.0026X Issue No.1 에 의해 작성되었음

6. 그 밖의 사항
- 안전인증종의 품격관리, 확인검사 수검, 반경사항 신고 등 인증 받은 자의 의무 준수
- 첨부 인증조건에 따라 확인시험을 실시할 것



안 전 인 증 서

제17-0325호

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 안전·보건기준에 적합하므로 안전인증표시의 사용을 인증합니다.

품 목
GSI 127 Interface
형식·모델 / 용량·등급 / 인증번호

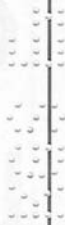
형식·모델	용량·등급	인증번호
244-127-000-***-A2-B*	Uc=25.2V, Io=60mA, Po=0.7W, Cp=95nF, Lc=5mH Ex nA[ia] IIC T4	17-GA4B0-0325X

인 증 기 준
방호장치 안전인증 고시(고용노동부고시 제2016-54호)
인 증 조 건
뒷면 참조

2017년 04월 28일



한국가스안전공사 사장





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 S3860

Address: ...

Type: 244-127-000-XXX-A2-BYY

Serial number: ...

Year of construction: ...

Part number: ...

IECEx: IECEx 11.024X

Power supply: U ≤ 30 V, I ≤ 150 mA

Sensor or conditioner:

For 244-127-000-XXX-A2-B01 to B19: U_s: 25.2 V; I_s: 60 mA; P_s: 0.7 W; C_s: 95 nF; L_s: 5 mH

For 244-127-000-XXX-A2-B20 to B39: U_s: 25.2 V; I_s: 45 mA; P_s: 0.5 W; C_s: 95 nF; L_s: 10 mH

RATINGS

Power supply: U ≤ 30 V, I ≤ 150 mA

Sensor or conditioner:

- For 244-127-000-XXX-A2-B01 to B19: U_s: 25.2 V; I_s: 60 mA; P_s: 0.7 W; C_s: 95 nF; L_s: 5 mH

- For 244-127-000-XXX-A2-B20 to B39: U_s: 25.2 V; I_s: 45 mA; P_s: 0.5 W; C_s: 95 nF; L_s: 10 mH

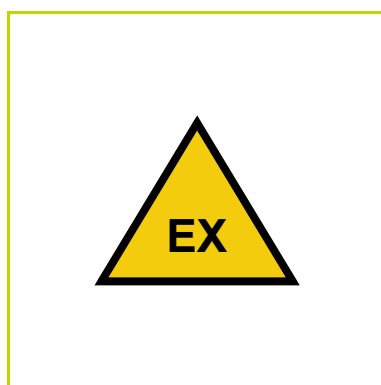
ROUTINE TEST

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.

EX CERTIFICATE – KGS

vibro-meter®

KGS 21-GA4BO-0352X
for
IQS9xx signal conditioners
(dust applications (D))



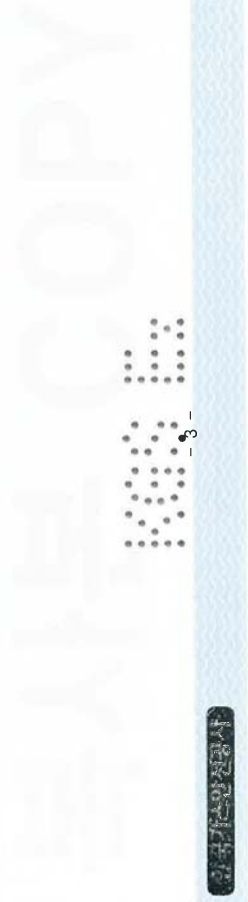
Note: Although the Ex certificate may be included in more than one language, the liability of the notified body applies only on the text of the original copy of the certificate that it published.

Document reference KGS 21-GA4BO-0352X
Edition 1 – August 2021

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동일 형식 일람 표

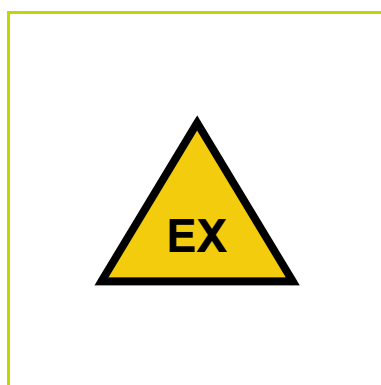
사업장명	Meggitt SA	개정일자 및 번호	인증번호	21-GA4BO-0352X
형식 및 모델번호	** (conditional type)	000	** (Customized version)	* (Minor modification number)
동일 형식 항목 및 내역				
204	00 = Analog output 10 = 4-20mA output 11 to 99 = Other		00 to 99	0 to 9 (Each modification increase the number by 1)
				비고



EX CERTIFICATE – KGS

vibro-meter®

KGS 21-GA4BO-0353X
for
IQS9xx signal conditioners
(gas/vapour/mist applications (G))



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-0353X
Edition 1 – August 2021

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인 증 조 건

- 제조공장:
Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland에 위치한 Meggitt S.A에서 생산한 제품 중 아래 인증번호의 제품에 한함.
- 제품개요
The IQS 9** is a signal conditioner which is used in a proximity measurement system.
The signal conditioner is composed of an aluminum enclosure, which houses an encapsulated printed circuit board, two terminal blocks "J1 and J2", one connector "J0" and with an optional clip for DIN rail.
The signal conditioner can be power supplied with two configuration, either by 2 wire transmission (I/P) or 3 wire transmission(O/P).

Connection	Intrinsic safety electrical parameters
Terminal block "J1" - 2 wire transmission (I/P)	U _i : 28 V; I _i : 100 mA; P _i : 700 mW; L _i : 4.96 μH; C _i : 2.2 nF
Terminal block "J1" - 3 wire transmission (O/P)	U _i : 28 V; I _i : 100 mA; P _i : 700 mW; L _i : 9.92 μH; C _i : 4.4 nF
Terminal block "J2" - Raw O/P	U _o : 28 V; I _o : 157 mA; P _o : 32 mW; L _o : 1.7 μH; C _o : 82 nF
Terminal block "J2" - Test I/P	U _o : 28 V; I _o : 0.057 mA; P _o : 0.1 mW; L _o : 11098 nH; C _o : 82 nF
Connector "J0" - Sensor I/P	U _o : 28 V; I _o : 53.2 mA; P _o : 372.1 mW; L _o : 12.5 mH; C _o : 82.1 nF

- 인증범위: 본 인증서는 아래의 형식에 한하여 유효함.
- 동일형식 일람표 참조
 - 안전한 사용을 위한 조건
가. 해당 기기는 전기적으로 절연된 관련 -기구나 단순 기기에 연결되어야 한다. 해당 결함은 IEC 60079-25 기준의 요구 사항에 따른 부정인수치에 따라 호환 가능하다
나. 주변 작동 온도 범위에 따른 Signal conditioner의 온도 등급
- | 온도 등급 | 주변 온도 |
|-------|----------------------|
| T6 | -40°C ≤ Tamb ≤ +70°C |
| T5 | -40°C ≤ Tamb ≤ +85°C |
- 다. Signal conditioner의 외함은 알루미늄으로 만들어져 있음. 충격이나 마찰이 발생할 수 있는 스퍼크를 제거하는 방식으로 장착해야 함.
라. 해당 기기는 도면 n° PZ 9010 rev. 00 날짜: 2021/03/25에 따라 설치되어야 함
마. 사용자 설명서를 참고 할 것.

- 인증(변경)사항
IECEX LCIE 21.0006X issue 00에 의해 작성되었음
- 그 밖의 사항
가. 안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수
나. 본 안전인증서는 반드시 관련 IECEX 인증서(IECEX LCIE 21.0006X issue 00)와 함께 사용할 것



안 전 인 증 서

Meggitt S.A

Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland

위 사업장에서 제조하는 아래의 품목이 「산업안전보건법」 제84조 및 같은 법 시행규칙 제110조제1항에 따른 안전인증 심사 결과 안전·보건기준에 적합하므로 안전인증 표시의 사용을 인증합니다.

품 목
IQS 9** Signal conditioner
형식 · 모델 / 용량 · 등급 / 인증번호

형식·모델	용량 · 등급	인증번호
204-9**-000-*** (동일형식 일람표 참고)	[뒷면 제품개요 참조] Ex ia IIC T6 or T5 Ga	21-GA4BO-0353X

인 증 기 준
방호장치 안전인증 고시(고용노동부고시 제2021-22호)

인 증 조 건
Tamb : -40 °C ~ +85 °C, 뒷면참조

2021 년 07 월 08 일



한국가스안전공사 사장



동일 형식 일람표

사업장명	Meggitt SA	개정일자 및 번호	0	인증번호	21-GA4BO-0353X
형식 및 모델번호	** (conditional type)	000	** (Customized version)	* (Minor modification number)	비고
204	00 = Analog output 10 = 4-20mA output 11 to 99= Other		00 to 99	0 to 9 (Each modification increase the number by 1	

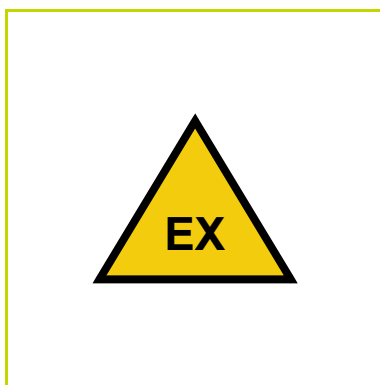


21-GA4BO-0353X

EX CERTIFICATE – KGS

vibro-meter®

KGS 21-GA4BO-0355X
for
IQS9xx signal conditioners



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-0355X
Edition 1 – August 2021

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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:
The IQS 9** signal conditioner contains a high-frequency modulator/demodulator that supplies the driving signal to the coil of the sensor. This generates an electromagnetic field in the sensor head, which then induces eddy currents into the metallic target. When the target moves, the eddy currents change, which causes a change in the electrical characteristics of the TQ 9** that the signal conditioner converts into a signal that is proportional to the distance to the target. The electronics of the conditioner is mounted in a metallic housing and it is totally embedded into a silicone casting compound. The signal conditioner has a coaxial connector for the connection to the proximity sensor. The output of the IQS 9** conditioner can be configured as a current (2-wire transmission mode) or a voltage signal (3-wire transmission mode). For test purposes, the IQS 9** includes a "raw" voltage output signal and a test input signal that allow the measurement chain/system operation to be tested in situ.
3. 인증범위: 본 인증서는 아래의 형식번호에 한하여 유효함
-동일형식 일람표 참조
4. 안전한 사용을 위한 조건
가. 온도등급
T6 : for -40 °C ≤ Tamb ≤ +70 °C
T5 : for -40 °C ≤ Tamb ≤ +85 °C
나. IQS9** signal conditioner는 IEC 60079-0에 따른 최소 보호등급 IP54를 제공하는 인증 받은 외함 내부에 설치되어야 함.
다. 통전시에는 연결이나 분리해서는 안됨.
라. 해당 기기의 공급 터미널에서 Peak rated voltage의 경우, 140%가 넘지 않도록 과도 보호를 설정해야 함.
마. IEC 60079-0에 의해 최소 보호등급 IP 54가 EA9** extension sensor와 Proximity sensor TQ 9의 연결 부분에서 보정되어야 함.
바. 사용자 책임 : 장착을 통해, 센서의 몸체가 적절한 접지 연속성이 유지되도록 해야 함.
사. 제조업체에 의해 제공되는 사용설명서에 따라 기기가 설치되어야 함.
5. 인증(변경)사항
IECEX LCIE 21.0005X issue 00에 의해 작성되었음.
6. 그 밖의 사항
가. 안전인증품의 품질관리, 확인상사 수검, 변경사항 신고 등 인증 받은 자의 의무 준수
나. 본 안전인증서는 반드시 관련 IECEX 인증서(IECEX LCIE 21.0005X issue 0)와 함께 사용할 것



안 전 인 증 서

Meggitt S.A

Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland

위 사업장에서 신청하는 아래의 품목이 「산업안전보건법」 제84조 및 같은 법 시행규칙 제110조제1항에 따른 안전인증 심사 결과 안전·보건기준에 적합하므로 안전인증 표시의 사용을 인증합니다.

품	목	인증번호
IQS 9** Signal conditioner		
형식·모델 / 용량·등급 / 인증번호		
204-9**-000-*** (동일형식 일람표 참고)	최대 30 V DC, 22mA, 0.7W Ex ec IIC T6...T5 Gc	21-GA4BO-0355X

인 증 기 준
방호장처 안전인증 고시(고용노동부고시 제2021-22호)
인 증 조 건
Tamb : -40°C ~ +85°C, 뒷면참조
2021년 7월 08일



한국가스안전공사 사장



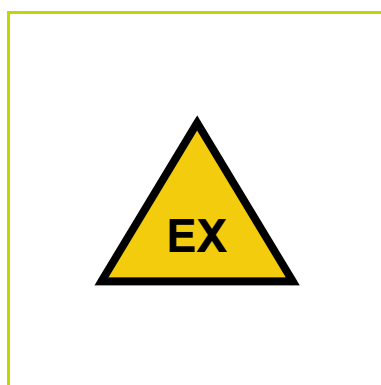
동일 형식 일람 표

사업장명	Meggitt SA	개정일자 및 번호	0	인증번호	21-GA4BO-0355X
형식 및 모델번호	** (conditional type)	000	** (Customized version)	*	비고
204	00 = Analog output 10 = 4-20mA output 11 to 99= Other		00 to 99	0 to 9 (Each modification increase the number by 1)	

EX CERTIFICATE – KGS

vibro-meter®

KGS 21-GA4BO-0354X
for
TQ9xx proximity 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.

Document reference KGS 21-GA4BO-0354X
Edition 1 – August 2021

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인 증 조 건

1. 제조공장:
Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland에 위치한 Meggitt S.A에서 생산한 제품 중 아래 인증번호의 제품에 한함.
2. 제품개요
The TQ 9** proximity sensor and the IQS 9** signal conditioner are part of a proximity measurement system.
The system can also include an EA 9** extension cable which is not cover by this certificate. The proximity system allows a contactless measurement of the relative displacement of moving machine elements such as the shaft. The system output voltage or current is proportional to the distance between the sensor head and the metallic target.
The TQ 9** sensor has an integral coaxial cable, terminated with a self-locking miniature coaxial connector. Its active part comprises of a coil of wire that is moulded inside the sensor head made of a thermoplastic material. The sensor body is made of stainless steel.

3. 인증범위: 본 인증서는 아래의 형식번호에 한하여 유효함
-동일형식 일람표 참조
4. 안전한 사용을 위한 조건
가. 온도등급
T6 : for $-40\text{ }^{\circ}\text{C} \leq T_{amb} \leq +75\text{ }^{\circ}\text{C}$
T5 : for $-40\text{ }^{\circ}\text{C} \leq T_{amb} \leq +90\text{ }^{\circ}\text{C}$
T4 : for $-40\text{ }^{\circ}\text{C} \leq T_{amb} \leq +125\text{ }^{\circ}\text{C}$
T3 : for $-40\text{ }^{\circ}\text{C} \leq T_{amb} \leq +180\text{ }^{\circ}\text{C}$
나. 용접시에는 연결이나 분리해서는 안됨.
다. 해당 기기는 IEC 60664-1에서 정의된 오염도가 2이하인 지역에서 사용되어야 함.
다. IEC 60079-0에 의해 최소 보호등급 IP 54가 EA9** extension sensor와 Proximity sensor TQ 9의 연결 부분에서 보장되어야 함.
라. 사용자 책임 : 장치를 통해, 센서의 물체가 적절한 접지 연속성이 유지되도록 해야 함.
마. 제조업체에 의해 제공되는 사용설명서에 따라 기기가 설치되어야 함.

5. 인증(변경)사항
IECEX LCIE 21.0005X issue 00에 의해 작성되었음.
6. 그 밖의 사항
가. 안전인증품의 품질관리, 확인서서 수검 변경사항 신고 등 인증 받은 자의 의무 준수
나. 본 안전인증서는 반드시 관련 IECEx 인증서(IECEX LCIE 21.0005X issue 0)와 함께 사용할 것



안 전 인 증 서

Meggitt S.A

Route de Moncor 4, 1752 Villars-sur-Glâne, Switzerland

위 사업장에서 신청하는 아래의 품목이 「산업안전보건법」 제84조 및 같은 법 시행규칙 제110조제1항에 따른 안전인증 심사 결과 안전·보건기준에 적합하므로 안전인증 표시의 사용을 인증합니다.

형식·모델	111-9**-000-*** (동일형식 일람표 참고)	인증번호	21-GA4BO-0354X
품명	TQ 9** Proximity sensor	인증번호	
형식·모델 / 용량·등급 / 인증번호	최대 30 V DC, 22mA, 0.7W Ex ec IIC T6...T3 Gc	인증번호	

인 증 기 준
방호장치 안전인증 고시(고용노동부고시 제2021-22호)
인 증 조 건
 $-40\text{ }^{\circ}\text{C} \leq T_{amb} \leq +180\text{ }^{\circ}\text{C}$, 텃면침조
2021년 7월 08일



한국가스안전공사 사장



한국가스안전공사

동인형식인람표

사업장명	Meggitt SA	개정일자 및 번호	0	인증번호	21-GA4BO-0354X
형식 및 모델번호	동인형식 항목 및 내역				
111	* (Housing type)	* (Dimension of the measurement element)	000	** (Cable, Cable protection and protection sheath types)	* (Minor modification number)
	0 to 9	1= ∅ 5mm nominal 2= ∅ 8 mm nominal 3= ∅ 18mm nominal 4 to 9 = Other dimensions		00 to 99	0 to 9



APPENDIX G: UK CERTIFICATIONS

Table G-1: Related UK certificates

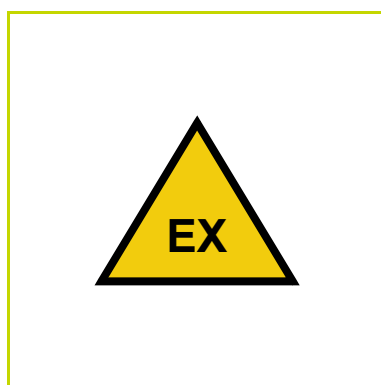
Product(s) covered	Certificate number
GSI127	CML 21 UKEX 4542 X
IQS9xx	CML 21 UKEX 2548 X
IQS9xx and TQ9xx	CML 21 UKEX 4549 X

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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

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CML 21UKEX4542X
Issue 0

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.

7 The examination and test results are recorded in the confidential reports listed in Section 12. 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.

This certificate shall only be copied in its entirety and without change
www.CMLEx.com

1 of 2

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. 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.

This certificate shall only be copied in its entirety and without change
www.CMLEx.com

2 of 2

Version: 4.0 Approval: Approved

**ATTESTATION D'EXAMEN UE DE TYPE - ANNEXE
EU TYPE EXAMINATION CERTIFICATE - SCHEDULE**



1 Version : 01 **LCIE 13 ATEX 3037 X** Issue : 01

Directive 2014/34/UE
Appareil ou Système de Protection destiné à être utilisé en Atmosphères Explosibles

2 **Produit :** GSI 127 Interface
Equipment or Protective System intended for use in Potentially Explosive Atmospheres

3 **Type :** 244-127-000-XXX-A2-BYY
Product : GSI 127 interface

4 **Fabricant :** MEGGITT SA
Manufacturer :

5 **Adresse :** Route de Mensor 4
1752 Villars-sur-Glâne
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.

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.

8 Le respect des Exigences Essentielles de Sécurité et de Santé est assuré par la conformité à :
108046-614947; 141529-685013

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.

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.

11 Le marquage du produit est mentionné dans l'annexe de cette attestation.
Fontenay-aux-Roses, le 30 novembre 2016

Responsable de Certification
Certification Officer

LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES
INDUSTRIES ELECTRIQUES
S.A.S au capital de 15 341 000 €
RCS Nanterre 488 378 123
33 Avenue du Général Leclerc
F - 92266 FONTENAY-AUX-ROSES



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LCIE
Laboratoire Central des Industries Electriques
Une société de Bureau Veritas

33 Avenue du Général Leclerc
92260 Fontenay-aux-Roses
FRANCE

WWW.LCIE.FR

1 Version : 01 **LCIE 13 ATEX 3037 X** Issue : 01

DESCRIPTION DU PRODUIT

L'interface GSI 127 fournit une isolation galvanique entre le circuit d'alimentation ou le circuit de traitement du 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 : ...
Ex nA [ja Gaj] IIC T4 Gc
Ex nA [ja Gaj] 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_c: 25.2 V ; I_c: 60 mA ; P_c: 0.7 W ; C_c: 95 nF ; L_c: 5 mH
Pour 244-127-000-XXX-A2-B20 à B39 :
U_c: 25.2 V ; I_c: 45 mA ; P_c: 0.5 W ; C_c: 95 nF ; L_c: 10 mH

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concernent sous la responsabilité du fabricant.

CONDITIONS PARTICULIERES D'UTILISATION

- 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.
- 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.
- Température ambiante d'utilisation : -40°C à +70°C.

EXIGENCES ESSENTIELLES DE SANTE ET DE SECURITE

Couvertes par les normes listées au point 8.

DESCRIPTION OF PRODUCT

The GSI 127 interface provides galvanic isolation 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 [ja Gaj] IIC T4 Gc
Ex nA [ja Gaj] 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_c: 25.2 V ; I_c: 60 mA ; P_c: 0.7 W ; C_c: 95 nF ; L_c: 5 mH
For 244-127-000-XXX-A2-B20 to B39 :
U_c: 25.2 V ; I_c: 45 mA ; P_c: 0.5 W ; C_c: 95 nF ; L_c: 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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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 : 01 Issue : 01
LCIE 13 ATEX 3037 X

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.

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 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.

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/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.

In accordance with Article 41 of Directive 2014/34/UE, EC-Type Examination Certificates referring to Directive 94/9/EC that were in existence prior to the date of application of Directive 2014/34/UE (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/UE. 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 : Evaluation de la conformité selon les normes (81/05/2013) EN 60079-0:2012 EN 60079-11:2012 et EN 60079-15:2010.

Issue 00 : Conformity assessment according to EN 60079-0:2012 EN 60079-11:2012 and EN 60079-15:2010 standards.

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 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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 CERT-ATEX-FORM 04 Rev. 02 Page 3 of 3

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 92240 Fontenay-aux-Roses
 FRANCE

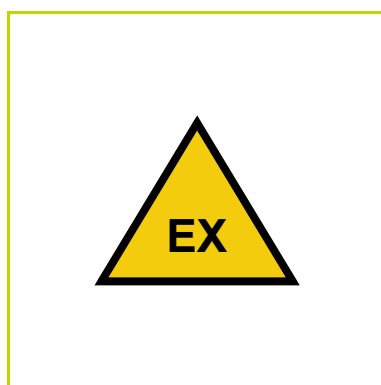
WWW.LCIE.FR

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EX CERTIFICATE – UK

vibro-meter®

CML 21 UKEX 2548 X
for
IQS9xx signal conditioners



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 2548 X
Edition 1 – September 2021

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CML 21UKEX2548X
Issue 0

UK Type Examination Certificate CML 21UKEX2548X 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 IQS 9** Signal conditioner
- 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.
- 7 The examination and test results are recorded in the confidential reports listed in Section 12.
- 8 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.
- 9 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.
- 10 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
- 11 The equipment shall be marked with the following:
 Refer to attached certificate LCIE 21 ATEX 3002 X, Issue 00 for specific marking of explosion protection symbols.
Refer to attached certificate LCIE 21 ATEX 3002 X, Issue 00 for marked code and ambient temperature range.

This certificate shall only be copied in its entirety and without change
www.CMLEx.com

1 of 2

L. A. Brisk
Certification Officer

11 Description

For product description refer to attached certificate LCIE 21 ATEX 3002 X, Issue 00.

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	03 Aug 2021	R14182/00	Issue of the prime certificate. LCIE 21 ATEX 3002 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 21 ATEX 3002 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 21 ATEX 3002 X, Issue 00.

2 of 2

This certificate shall only be copied in its entirety and without change
www.CMLEx.com
Version: 4.0 Approval: Approved

**ATTESTATION D'EXAMEN UE DE TYPE - ANNEXE
EU TYPE EXAMINATION CERTIFICATE - SCHEDULE**



Issue : 00

LCIE 21 ATEX 3002 X

1 Version : 00

DESCRIPTION DU PRODUIT

Le IQS 9** est un conditionneur de signal qui est utilisé dans un système de mesure de proximité.

Le conditionneur de signal est composé d'une enveloppe en aluminium, qui contient une carte de circuit imprimé encapsulée, deux blocs de jonction «J1 et J2», un connecteur «J0» et d'un clip optionnel pour rail DIN.

Le conditionneur de signal peut être alimenté en deux configurations, soit par transmission à 2 fils (I/P), soit par transmission à 3 fils (O/P).

DESCRIPTION OF PRODUCT

The IQS 9** is a signal conditioner which is used in a proximity measurement system.

The signal conditioner is composed of an aluminum enclosure, which houses an encapsulated printed circuit board, two terminal blocks «J1 and J2», one connector «J0» and with an optional clip for DIN rail.

The signal conditioner can be power supplied with two configurations, either by 2 wire transmission (I/P) or 3 wire transmission (O/P).

DETAIL DE LA GAMME

204 - 9 - - - - 000 - - - - -

Numéro de modification mineure / Minor modification number (FFF = Form Fit Function)
0 à/à 9 (le numéro est incrémente à chaque modification / Each modification increase the number by 1)

Versión personalizada (matériau cible ou montage spécial) Customized version (special target material or mounting)
00 à/à 99

Type de conditionneur / Conditioner type

00 = Sorte analogique / Analog output
10 = Sorte 4-20mA / 4-20mA output
11 à/à 99 = Autre / Other

CARACTERISTIQUES

RATINGS

Connexion / Connector	Paramètres électriques de sécurité intrinsèque / Intrinsic safety electrical parameters
Bloc de jonction "J1" - transmission à 2 fils (I/P) / Terminal block "J1" - 2 wire transmission (I/P)	U _i : 28 V; I _i : 100 mA; P _i : 700 mW; L _i : 4.96 µH; C _i : 2.2 nF
Bloc de jonction "J1" - transmission à 3 fils (O/P) / Terminal block "J1" - 3 wire transmission (O/P)	U _i : 28 V; I _i : 100 mA; P _i : 700 mW; L _i : 9.92 µH; C _i : 4.4 nF
Bloc de jonction "J2" - Raw O/P / Terminal block "J2" - Raw O/P	U _o : 28 V; I _o : 4.57 mA; P _o : 32 mW; L _o : 1.7 H; C _o : 82 nF
Bloc de jonction "J2" - Test I/P / Terminal block "J2" - Test I/P	U _o : 28 V; I _o : 0.057 mA; P _o : 0.4 mW; L _o : 11098 H; C _o : 82 nF
Connecteur "J0" - Capteur I/P / Connector "J0" - Sensor I/P	U _o : 28 V; I _o : 53.2 mA; P _o : 372.4 mW; L _o : 12.5 mH; C _o : 82.4 nF

LCIE 21 ATEX 3002 X

1 Version : 00

Directive 2014/34/UE

Appareil ou Système de Protection destiné à être utilisé en Atmosphères Explosibles

3 Produit : IQS 9** Conditionneur de signal

Type: 204-9**-000-**-**

4 Fabricant :

Manufacturier : 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 explosives, données dans l'annexe II de la Directive.
Accréditation Cotrac Certification de Produits et Services, n°5-0014. Portée disponible sur www.cotrac.fr.

LCIE, Notified Body number 0081 in accordance with article 17 of the Directive 2014/34/UE 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.cotrac.fr.

8 Les résultats des vérifications et essais figurent dans le(s) rapport(s) confidentiel(s) N° : 166151-748385

The examination and test results are recorded in confidential report(s) N°:

9 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

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.

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 Le marquage du produit est mentionné dans l'annexe de cette attestation.
Fontenay-aux-Roses, le 1er avril 2021

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.
The marking of the product is specified in the schedule to this certificate.

Responsable de Certification

Certification Officer

Adrien Gauthier



LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES
S.A.S au capital de 15 240 000 €
RCS Nanterre B 409 303 174
N° de SIRET 752 409 303 174
13 avenue du Général Leclerc
92260 Fontenay-aux-Roses
FRANCE

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CERT-ATEX-FORM 04 Rev. 06

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CERT-ATEX-FORM 04 Rev. 06

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33 Avenue du Général Leclerc
92260 Fontenay-aux-Roses
FRANCE

ATTESTATION D'EXAMEN UE DE TYPE - ANNEXE EU TYPE EXAMINATION CERTIFICATE - SCHEDULE

ATTESTATION D'EXAMEN UE DE TYPE - ANNEXE EU TYPE EXAMINATION CERTIFICATE - SCHEDULE

1 Version : 00 LCIE 21 ATEX 3002 X Issue : 00

MARQUAGE

Le marquage du produit doit comprendre :
vibro-metel® ou MEGGITT SA ou MFR S3960
Adresse : ...
Type : 204-9**-000-**-** (1)
N° de fabrication : ...
Année de fabrication : ...
⊗ II 1 G D
Ex ia IIC T₂₀₀ T₆ ou T5 Ga (2)
Ex ia IIIC T₂₀₀ 80°C...T₂₀₀ 115°C Da (2)
LCIE 21 ATEX 3002 X
-40°C ≤ T_{amb} ≤ +85°C
U_i : ...; f_i : ...; P_i : ...; C_i : ...; L_i : ... (3)
U_e : ...; f_e : ...; P_e : ...; C_e : ...; L_e : ... (3)
(1) : compléte par la désignation de type.
(2) : voir les conditions particulières d'utilisation.
(3) : complétees par les paramètres électriques de sécurité intrinsèque de la connexion concernée.

MARKING

The marking of the product shall include the following :
vibro-metel® or MEGGITT SA or MFR S3960
Address : ...
Type : 204-9**-000-**-** (1)
Serial number : ...
Year of construction : ...
⊗ II 1 G D
Ex ia IIC T₂₀₀ or T5 Ga (2)
Ex ia IIIC T₂₀₀ 80°C...T₂₀₀ 115°C Da (2)
LCIE 21 ATEX 3002 X
-40°C ≤ T_{amb} ≤ +85°C
U_i : ...; f_i : ...; P_i : ...; C_i : ...; L_i : ... (3)
U_e : ...; f_e : ...; P_e : ...; C_e : ...; L_e : ... (3)
(1) : completed with type designation.
(2) : see the specific conditions of use.
(3) : completed by intrinsic safety electrical parameters of the connection concerned.

Le marquage peut être réduit ainsi :

vibro-metel® ou MEGGITT SA ou MFR S3960
Type : 204-9**-000-**-** (1)
N° de fabrication : ...
Année de fabrication : ...
⊗ II 1 G D

Ex ia IIC T₆ ou T5 Ga (2)
Ex ia IIIC T₂₀₀ 80°C...T₂₀₀ 115°C Da (2)
LCIE 21 ATEX 3002 X
-40°C ≤ T_{amb} ≤ +85°C
(1) : compléte par la désignation de type.
(2) : voir les conditions particulières d'utilisation.

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concernent sous la responsabilité du fabricant.

13 CONDITIONS PARTICULIÈRES D'UTILISATION

a. L'appareil ne doit être raccordé qu'à des matériels associés isolés galvaniquement de sécurité intrinsèque certifiés ou à un matériel simple. Cette association doit être compatible vis-à-vis de la sécurité intrinsèque conformément aux exigences de la norme EN 60079-25.

b. Classe de température du conditionneur de signal en fonction de la plage de température ambiante d'utilisation :

Classe de température Temperature class	Température ambiante Ambient temperature
T6	-40°C ≤ T _{amb} ≤ +70°C
T5	-40°C ≤ T _{amb} ≤ +85°C
T ₂₀₀ 80°C	-40°C ≤ T _{amb} ≤ +50°C
T ₂₀₀ 95°C	-40°C ≤ T _{amb} ≤ +65°C
T ₂₀₀ 115°C	-40°C ≤ T _{amb} ≤ +85°C

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1 Version : 00 LCIE 21 ATEX 3002 X Issue : 00

c. L'enveloppe du conditionneur de signal est en aluminium, elle doit être montée de manière à éliminer le risque d'étincelles causées par le frottement ou choc.
d. L'appareil devra être installé comme défini dans le plan n° PZ 9010 rév. 00 du 25/03/2021.

The enclosure of the signal conditioner is made of aluminium. It must be mounted in such a manner as to eliminate the risk of sparks caused by impact or friction.
The apparatus must be installed per drawing n° PZ 9010 rev. 00 dated 2021/03/25.

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-1076	00	2021/03/25	50
2.	Manuel d'installation / Installation manual	MAPROX9xx/E	-	-	-

DESCRIPTIVE DOCUMENTS

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/UE.

17 DETAILS DES MODIFICATIONS DE L'ATTESTATION

Version 00 : Evaluation du IQS 9** conditionneur de signal, type 204-9**-000-**-** selon les normes suivantes :
- EN IEC 60079-0:2018,
- EN 60079-11:2012.

DETAILS OF CERTIFICATE CHANGES

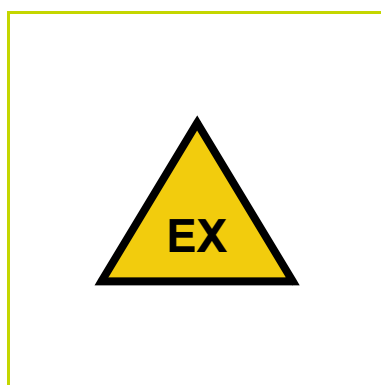
Issue 00 : Assessment of the IQS 9** signal conditioner, type 204-9**-000-**-** according to following standards:
- EN IEC 60079-0:2018,
- EN 60079-11:2012.

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EX CERTIFICATE – UK

vibro-meter®

CML 21 UKEX 4549 X
for
TQ9xx proximity sensors
and **IQS9xx signal conditioners**



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 4549 X
Edition 1 – September 2021

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CML 21UKEX4549X
Issue 0

Type Examination Certificate CML 21UKEX4549X 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 **TQ 9** Proximity sensor and IQS 9** Signal conditioner**
- 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.
- 7 The examination and test results are recorded in the confidential reports listed in Section 12. 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 + A1:2018

- 10 The equipment shall be marked with the following:
 Refer to attached certificate LCIE 21 ATEX 1004 X, Issue 00 for specific marking of explosion protection symbols.
Refer to attached certificate LCIE 21 ATEX 1004 X, Issue 00 for marked code and ambient temperature range.

This certificate shall only be copied in its entirety and without change
www.CMLEx.com

1 of 2

L. A. Brisk
Certification Officer

11 Description

For product description refer to attached certificate LCIE 21 ATEX 1004 X, Issue 00.

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	04 Aug 2021	R14182J/00	Issue of the prime certificate. LCIE 21 ATEX 1004 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 21 ATEX 1004 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 21 ATEX 1004 X, Issue 00.

This certificate shall only be copied in its entirety and without change
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2 of 2

Version: 4.0 Approval: Approved



**ATTESTATION D'EXAMEN DE TYPE - ANNEXE
TYPE EXAMINATION CERTIFICATE - SCHEDULE**

LCIE

Issue : 00

1 Version : 00 LCIE 21 ATEX 1004 X

Directive 2014/34/EU
Appareil ou Système de Protection destiné à être utilisé en Atmosphères Explosibles

Product : Equipement or Protective System Intended for use in Potentially Explosive Atmospheres
TQ 9 Proximity sensor and IQS 9** Signal conditioner**
Type : 111-9**-000-*** & 204-9**-000-***

Fabricant : MEGGITT SA
Adresse : Route de Mensor 4
1752 Villars-sur-Glâne
SUISSE

Ce produit et ses variantes éventuelles acceptées sont décrits dans l'annexe de la présente attestation et dans les documents décrits cités en référence.

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 explosives, données dans l'annexe II de la Directive.

Les résultats des vérifications et essais figurent dans le(s) rapport(s) confidentiel(s) N° : 166153-748396

Le respect des Exigences Essentielles de Sécurité et de Santé est assuré par la conformité à : EN IEC 60079-0:2018 ; EN 60079-7:2015 + A1:2018

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.

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.

Le marquage du produit est mentionné dans l'annexe de cette attestation.
Fontenay-aux-Roses, le 30 mars 2021

Responsable de Certification
LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES
Julien Gaudiller
RCS Nanterre B 003 263 124
23 Avenue du Général Leclerc
P. 92266 FONTENAY-AUX-ROSES

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CERT-ATEX-FORM 05 Rev. 05

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33 Avenue du Général Leclerc
92260 Fontenay-aux-Roses
FRANCE
WWW.LCIE.FR

1 Version : 00 LCIE 21 ATEX 1004 X

DESCRIPTION DU PRODUIT

Le capteur de proximité TQ 9** et le conditionneur de signal IQS 9** font partie d'un système de mesure de proximité. Le système peut également comprendre un câble de rallonge EA 9** non couvert par la présente attestation.

Ce système de proximité permet une mesure sans contact du déplacement relatif des éléments mobiles d'une machine tel qu'un arbre. La tension ou le courant de sortie du système est proportionnel(e) à la distance entre la tête du capteur et la cible métallique.

Le capteur TQ 9** est équipé d'un câble coaxial intégral, terminé par un connecteur coaxial miniature auto-bloquant. Sa partie active est constituée d'une bobine de fil nouée dans la tête du capteur en matériau thermoplastique. Le corps filé du capteur est en acier inoxydable.

Le conditionneur de signal IQS 9** est doté d'un modulateur/démodulateur haute-fréquence fournissant le courant d'excitation de la bobine du capteur. Ceci génère un champ électromagnétique à l'extrémité du capteur qui crée alors des courants de Foucault dans la cible métallique. Lorsque la cible se déplace, les courants de Foucault changent, ce qui entraîne un changement des caractéristiques électriques du capteur TQ 9** que le conditionneur de signal convertit en un signal proportionnel à la distance à la cible. L'électronique du conditionneur est montée dans un boîtier en aluminium et elle est totalement enrobée dans du silicone. Le conditionneur de signal possède un connecteur coaxial pour la connexion au capteur. La sortie du conditionneur peut être configurée comme un signal de courant (mode de transmission 2 fils) ou de tension (mode de transmission 3 fils). A des fins de test, l'IQS 9** comprend également un signal de sortie de tension «brute» et un signal d'entrée de test qui permettent de tester in situ la chaîne de mesure / le fonctionnement du système.

DETAIL DE LA GAMME

Conditionneur de signal IQS 9 :**

204 * * * * * 000

Numéro de modification mineure / Minor modification number (FFF = Form Fit Function) 0 à/à 9 (le numéro est incréments à chaque modification / each modification increases the number by 1)
Version personnalisée (matériau cible ou montage spécial) / Customized version (special target material or mounting) 00 à/à 99
Type de conditionneur / Conditionner type 00 = Sortie analogique / Analog output 10 = Sortie 4-20mA / 4-20mA output 11 à/à 99 = Autre / Other

La désignation du type de l'IQS 9** sera complétée par des caractères, liés par exemple à la plage de mesure et à la sensibilité, à la longueur totale du système ou encore au type de montage.

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ATTESTATION D'EXAMEN DE TYPE - ANNEXE TYPE EXAMINATION CERTIFICATE - SCHEDULE

ATTESTATION D'EXAMEN DE TYPE - ANNEXE TYPE EXAMINATION CERTIFICATE - SCHEDULE

1 Version : 00

LCIE 21 ATEX 1004 X

Issue : 00

Captreur de proximité TQ 9 :**

111 * 9 * * * 000 - * * *

TQ 9 Proximity sensor:**

111 * 9 * * * 000 - * * *

<p>Numéro de modification mineure / Minor modification number (FFF = Form Fit F-unction) 0 à/à 9 (le numéro est incrémenté à chaque modification) / (each modification increases the number by 1)</p>	
<p>Types de câble, de protection de câble et de manchon de protection (selon les applications des clients) Cable, cable protection and protection sheath types (according to customers applications) 00 à/à 99</p>	
<p>Dimension de l'élément de mesure (Pointe de capteur) Dimension of the measurement element (Sensor tip)</p>	
1	= ∅ 5mm nominal
2	= ∅ 8mm nominal
3	= ∅ 18mm nominal
4 à/à 9	= Autres dimensions / Other dimensions
<p>Type de corps (droit, inversé, à angle droit 90° ou personnalisé) Housing type (straight, reverse, right-angle 90° or customized) 0 à/à 9</p>	

La désignation de type du TQ 9** sera complétée par des caractères, liés par exemple au type de filage du corps du capteur, à la longueur du corps, à la longueur intégrale du câble ou encore à la longueur totale du système.

TQ 9** type designation will be completed by digits for example related to the thread type of sensor body, the body length, the integral cable length or whether the total system length.

CARACTÉRISTIQUES

- Pour le conditionneur de signal IQS 9** , mode de transmission 2 fils (signal de sortie courant):
- Tension maximale : 30 V DC
 - Consommation de courant maximale: 22 mA
 - Consommation de puissance maximale: 0,7 W
- Pour le conditionneur de signal IQS 9** , mode de transmission 3 fils (signal de sortie tension):
- Tension maximale : 30 V DC
 - Consommation de courant maximale: 9,5 mA
 - Consommation de puissance maximale: 0,3 W

RATINGS

- For signal conditioner IQS 9** , 2-wire transmission mode (output current signal):
- Maximum voltage: 30 V DC
 - Maximum current consumption: 22 mA
 - Maximum power consumption: 0,7 W
- For signal conditioner IQS 9** , 3-wire transmission mode (output voltage signal):
- Maximum voltage: 30 V DC
 - Maximum current consumption: 9,5 mA
 - Maximum power consumption: 0,3 W

MARKAGE

Le marquage du produit doit comprendre :

Pour le capteur de proximité TQ 9 :**

- MEGGITT SA ou VIBRO-METER ou MFR S3960
 Adresse : ...
 Type : 111-9**-000-*** (1)
 N° de fabrication : ...
 Année de fabrication : ...
 ☒ II 3 G
 Ex ec IIC T6...T3 Gc (2)
 LCIE 21 ATEX 1004 X
 -40 °C ≤ T_{amb} ≤ +180 °C

MARKING

The marking of the product shall include the following :

For the TQ 9 proximity sensor:**

- MEGGITT SA or VIBRO-METER or MFR S3960
 Address : ...
 Type : 111-9**-000-*** (1)
 Serial number : ...
 Year of construction : ...
 ☒ II 3 G
 Ex ec IIC T6...T3 Gc (2)
 LCIE 21 ATEX 1004 X
 -40 °C ≤ T_{amb} ≤ +180 °C

AVERTISSEMENT – NE PAS CONNECTER OU DECONNECTER SOUS TENSION

WARNING – DO NOT CONNECT/DISCONNECT WHEN ENERGIZED

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1 Version : 00

LCIE 21 ATEX 1004 X

Issue : 00

Marquage réduit:

- MEGGITT SA ou VIBRO-METER ou MFR S3960
 Type : 111-9**-000-*** (1)
 N° de fabrication : ...
 Année de fabrication : ...
 ☒ II 3 G
 Ex ec IIC T6...T3 Gc (2)
 LCIE 21 ATEX 1004 X

Reduced marking:

- MEGGITT SA or VIBRO-METER or MFR S3960
 Type : 111-9**-000-*** (1)
 Serial number : ...
 Year of construction : ...
 ☒ II 3 G
 Ex ec IIC T6...T3 Gc (2)
 LCIE 21 ATEX 1004 X

Pour le conditionneur de signal IQS 9 :**

- MEGGITT SA ou VIBRO-METER ou MFR S3960
 Adresse : ...
 Type : 204-9**-000-*** (1)
 N° de fabrication : ...
 Année de fabrication : ...
 ☒ II 3 G
 Ex ec IIC T6...T5 Gc (2)
 LCIE 21 ATEX 1004 X
 -40 °C ≤ T_{amb} ≤ +85 °C

For the IQS 9 signal conditioner:**

- MEGGITT SA or VIBRO-METER or MFR S3960
 Address : ...
 Type : 204-9**-000-*** (1)
 Serial number : ...
 Year of construction : ...
 ☒ II 3 G
 Ex ec IIC T6...T5 Gc (2)
 LCIE 21 ATEX 1004 X
 -40 °C ≤ T_{amb} ≤ +85 °C

Marquage réduit:

- MEGGITT SA ou VIBRO-METER ou MFR S3960
 Type : 204-9**-000-*** (1)
 N° de fabrication : ...
 Année de fabrication : ...
 ☒ II 3 G
 Ex ec IIC T6...T5 Gc (2)
 LCIE 21 ATEX 1004 X
 -40 °C ≤ T_{amb} ≤ +85 °C

Reduced marking:

- MEGGITT SA or VIBRO-METER or MFR S3960
 Type : 204-9**-000-*** (1)
 Serial number : ...
 Year of construction : ...
 ☒ II 3 G
 Ex ec IIC T6...T5 Gc (2)
 LCIE 21 ATEX 1004 X
 -40 °C ≤ T_{amb} ≤ +85 °C

(1) Complété selon le type

(2) Voir les conditions particulières d'utilisation

L'appareil doit également comporter le marquage normalement prévu par les normes de construction qui le concernent sous la responsabilité du fabricant.

(1) Complété as per the type

(2) See the specific conditions of use

The product shall also bear the usual marking required by the product standards applying to such equipment under the manufacturer responsibility.

13 CONDITIONS PARTICULIÈRES D'UTILISATION

a Classe de température de l'équipement en fonction de la gamme de température ambiante de fonctionnement:

Captreur de proximité TQ 9** :

- T6 : for -40 °C ≤ T_{amb} ≤ +75 °C
- T5 : for -40 °C ≤ T_{amb} ≤ +90 °C
- T4 : for -40 °C ≤ T_{amb} ≤ +125 °C
- T3 : for -40 °C ≤ T_{amb} ≤ +180 °C

Conditionneur de signal IQS 9** :

- T6 : for -40 °C ≤ T_{amb} ≤ +70 °C
- T5 : for -40 °C ≤ T_{amb} ≤ +85 °C

SPECIFIC CONDITIONS OF USE

Temperature class of the equipment depending on the ambient operating temperature range:

TQ 9** Proximity sensor:

- T6 : for -40 °C ≤ T_{amb} ≤ +75 °C
- T5 : for -40 °C ≤ T_{amb} ≤ +90 °C
- T4 : for -40 °C ≤ T_{amb} ≤ +125 °C
- T3 : for -40 °C ≤ T_{amb} ≤ +180 °C

IQS 9** Signal conditioner:

- T6 : for -40 °C ≤ T_{amb} ≤ +70 °C
- T5 : for -40 °C ≤ T_{amb} ≤ +85 °C

The IQS 9** signal conditioner shall be installed in an enclosure that provides a degree of protection of at least IP54, according to EN 60079-0.

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LCIE
 Laboratoire Central des Industries Electriques
 Une société de Bureau Veritas

WWW.LCIE.FR

33 Avenue du Général Leclerc
 92240 Fontenay-aux-Roses
 FRANCE

WWW.LCIE.FR

ATTESTATION D'EXAMEN DE TYPE - ANNEXE
TYPE EXAMINATION CERTIFICATE - SCHEDULE



1 Version : 00 **LCIE 21 ATEX 1004 X** Issue : 00

- c Le matériel doit être utilisé dans une zone assurant au moins un degré de pollution 2 tel que défini dans l'IEC 60664-1.
 The equipment shall only be used in an area of at least pollution degree 2, as defined in IEC 60664-1.
- d 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 conditionneur de signal IQS 9**.
 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 IQS 9** signal conditioner.
- e Les connexions ne doivent pas être connectées ou déconnectées sous tension.
 Connections shall not be connected or disconnected when energized.
- f La tête du capteur doit être protégée contre tout risque de danger mécanique.
 The sensor head shall be protected against any risk of mechanical danger.
- g Un degré de protection IP54 minimum, conformément à la norme EN 60079-0, doit être garanti au point de raccordement du capteur de proximité TQ 9** avec le câble de rallonge EA 9**.
 A minimum degree of protection IP54, in accordance with EN 60079-0, shall be ensured at the point of connection of the proximity sensor TQ 9** with the EA 9** extension cable.
- h Il est de la responsabilité de l'utilisateur d'assurer une continuité de terre adéquate du corps métallique du capteur via le dispositif de montage.
 It is the user's responsibility to provide adequate earth continuity of the sensor's metallic body via the mounting arrangement.
- i L'équipement doit être installé conformément au manuel d'instructions fourni par le fabricant.
 The equipment shall be installed according to the instruction manual provided by the manufacturer.

14 EXIGENCES ESSENTIELLES DE SANTE ET DE SECURITE

Couvertes par les normes listées au point 8.

15 DOCUMENTS DESCRIPTIFS

N°	Description	Référence	Rev.	Date	Page(s)
1.	Dossier technique / Technical file	DT-1077	00	2021-03-08	72
2.	Manuel d'installation / Installation manual	MAPROX9xxIE	--	--	--

16 INFORMATIONS COMPLEMENTAIRES

Essais individuels
 Chaque exemplaire du capteur TQ 9** doit être soumis à un essai de rigidité diélectrique conformément à la clause 7.1 de l'EN 60079-7 sous 500 V eff.
Routine tests
 Each sample of the TQ 9** sensor shall be subjected to a dielectric strength test according to clause 7.1 of EN 60079-7 under 500 V r.m.s.

17 DETAILS DES MODIFICATIONS DE L'ATTESTATION

Version 00 : Certification initiale selon EN IEC 60079-0:2018 et EN 60079-7:2015 + A1:2018.
 Issue 00 : Initial certification according to EN IEC 60079-0:2018 and EN 60079-7:2015 + A1:2018.

DETAILS OF CERTIFICATE CHANGES

Issue 00 : Initial certification according to EN IEC 60079-0:2018 and EN 60079-7:2015 + A1:2018.

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 CERT-ATEX-FORM 05 Rev. 05

APPENDIX H: EAЭC RU CERTIFICATIONS

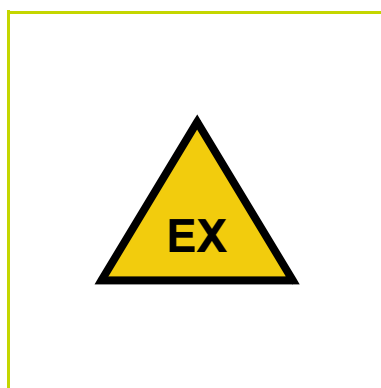
Table H-1: Related EAЭC RU certificates

Product(s) covered	Certificate number
ABA17x	EAЭC RU C-CH.AД07.B.02998/21
GSI127	EAЭC RU C-CH.AД07.B.03008/21
IQS9xx and TQ9xx	EAЭC RU C-CH.AД07.B.03744/21
PA151	EAЭC RU C-CH.AД07.B.03022/21

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EX CERTIFICATE – RU

EAЭC RU C-CH.AΔ07.B.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 EAЭC RU C-CH.AΔ07.B.02998/21
Edition 1 – March 2021

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ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

Eurasian Conformity Mark (Eurasian Conformity Mark)

СЕРТИФИКАТ СООТВЕТСТВИЯ

№ ЕАЭС RU C-CH.AД07.B.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.10AД07 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: АВА17х
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.21BC05) 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]
(подпись)

Розайон Галина Александровна
(ф.и.о.)

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы))

[Подпись]
(подпись)

Щатило Андрей Алексеевич
(ф.и.о.)



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 АВА17х модели eSAM (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
 Ex tb IIIC Db U
 Диапазон температур окружающей среды, °C 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 «е» по ГОСТ Р МЭК 60079-7-2012 и видом взрывозащиты от воспламенения пыли «d» 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 "е";
ГОСТ Р МЭК 60079-31-2010	Взрывоопасные среды. Часть 31. Оборудование с видом взрывозащиты от воспламенения пыли "d".

Руководитель (уполномоченное лицо) органа по сертификации

Галина Александровна
(подпись)

«Центр Сертификации «ВЕЛЕС» М.П.

Розинзон Галина Александровна
(ф.и.о.)

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы))

Андрей Алексеевич
(подпись)

Шатило Андрей Алексеевич
(ф.и.о.)

ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

ПРИЛОЖЕНИЕ

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-CH.AД07.B.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

Родзифон
(подпись)



Родзифон Галина Александровна
(ф.и.о.)

Эксперт (эксперт-аудитор)
(эксперты (эксперты-аудиторы))

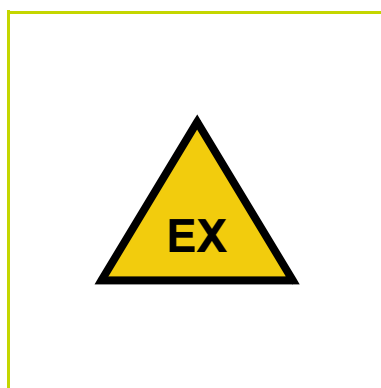
Шатило
(подпись)

Шатило Андрей Алексеевич
(ф.и.о.)

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EX CERTIFICATE – RU

EAЭC RU C-CH.AΔ07.B.03008/21
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 EAЭC RU C-CH.AΔ07.B.03008/21
Edition 1 – March 2021

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ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ



СЕРТИФИКАТ СООТВЕТСТВИЯ

№ 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 № 2691 ИЛПМВ

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.21BC05) 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 приложению - бланки №№ 0765078, 0765079.

СРОК ДЕЙСТВИЯ С 18.02.2021

ПО 15.02.2026

ВКЛЮЧИТЕЛЬНО

Руководитель (уполномоченное лицо) органа по сертификации

[Подпись]
(подпись)

«Центр Сертификации «ВЕЛЕС»
М.П.

Родзиков Галина Александровна
(Ф.И.О.)

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы))

[Подпись]
(подпись)

Шатило Андрей Алексеевич
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ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

ПРИЛОЖЕНИЕ

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-CH.AД07.B.03008/21

Серия RU № 0765078

1. Назначение и область применения

Сертификат соответствия распространяется на блоки гальванической развязки, типа: GS1127 (далее по тексту – блоки гальванической развязки), предназначенные для эксплуатации совместно с электрометрическими усилителями, преобразователями сигнала и электроникой (подключаемой или встроенной), используемой различными измерительными цепями вибрметров.

Область применения – взрывоопасные зоны класса 2 по ГОСТ IEC 60079-10-1-2011 категорий взрывоопасных смесей ПА, ПВ и ПС 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 GS1127 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: 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 GS1127 исполнения B01 – B19	Блок GS1127 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 «m» по ГОСТ 31610.15-2014/IEC 60079-15:2010.

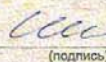
Руководитель (уполномоченное
лицо) органа по сертификации


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ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

ПРИЛОЖЕНИЕ

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-CH.AД07.B.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 ЕАЭС 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 °С до плюс 70 °С;
- блоки гальванической развязки должны устанавливаться в корпусе со степенью защиты от внешних воздействий не ниже IP54.

Руководитель (уполномоченное
лицо) органа по сертификации

[Подпись]
(подпись)

Эксперт (эксперт-аудитор)
(эксперты (эксперты-аудиторы))

[Подпись]
(подпись)



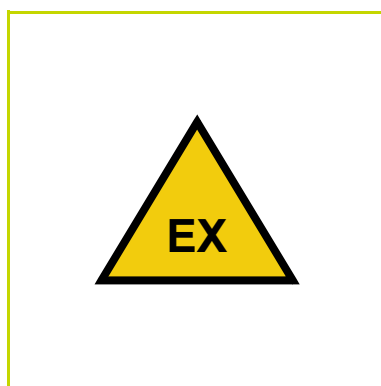
Родзивон Галина Александровна
(ф.и.о.)

Шатило Андрей Алексеевич
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EX CERTIFICATE – RU

EAЭC RU C-CH.AΔ07.B.03744/21
for
TQ9xx and IQS9xx
proximity measurement systems



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 EAЭC RU C-CH.AΔ07.B.03744/21
Edition 1 – October 2021

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ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ	
СЕРТИФИКАТ СООТВЕТСТВИЯ	
EAEC	№ EAЭС RU C-CH.AД07.B.03744/21
	Серия RU № 0264962
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.10AД07. 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 Оборудование измерительное: преобразователи вихретоковые типа TQ с усилителем сигнала IQS Маркировка взрывозащиты согласно приложению (бланки №№ 0778837, 0778838, 0778839). 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 № 3910ИЛП1МВ от 26.08.2021 года, выданного Испытательным центром Общества с ограниченной ответственностью «ПРОММАШ ТЕСТ» (уникальный номер записи об аккредитации в реестре аккредитованных лиц RA.RU.21BC05) акта анализа состояния производства от 23.07.2021 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. Анализ состояния производства проведен путем дистанционной оценки. Стандарты, обеспечивающие соблюдение требований Технического регламента Таможенного союза ТР ТС 012/2011 "О безопасности оборудования для работы во взрывоопасных средах", согласно приложениям - бланки №№ 0778837, 0778838, 0778839	
СРОК ДЕЙСТВИЯ С	02.09.2021
ВКЛЮЧИТЕЛЬНО	ПО 01.09.2026
Руководитель (уполномоченное лицо) органа по сертификации	Родзичева Ирина Александровна (ф.и.о.)
Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы))	Андрей Алексеевич (ф.и.о.)

ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

ПРИЛОЖЕНИЕ

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-CH.АД07.В.03744/21

Серия **RU** № **0778837**

1. Назначение и область применения

Сертификат соответствия распространяется на оборудование измерительное: преобразователи вихрековые типа TQ с усилителем сигнала IQS, предназначенное для бесконтактного измерения относительного смещения движущихся деталей машин, при измерении относительной вибрации и осевого положения вращающихся валов машин, а также в генераторах переменного тока, турбокомпрессорах и насосах.

Область применения – взрывоопасные зоны класса 0, 1 и 2 по ГОСТ IEC 60079-10-1-2011 категорий взрывоопасных смесей IIА, IIВ и IIС по ГОСТ Р МЭК 60079-20-1-2011 и взрывоопасные зоны классов 20, 21 и 22 по ГОСТ Р МЭК 60079-10-2-2011 содержащие взрывоопасную пыль подгрупп IIА, IIВ и IIС 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 вихрековые преобразователи типа TQ состоят из вихрекового датчика TQ9XX, специального кабеля и усилителя сигнала IQS9XX. Вместе они образуют откалиброванную систему измерения перемещения, в которой каждый компонент является сменным.

Вихрековые датчики TQ9XX выполнены из нержавеющей стали с внешней резьбой для их крепления. Активная часть датчика – катушка провода, которая находится внутри наконечника прибора. К датчикам подсоединен специальный кабель, который может иметь различную длину и имеет коаксиальный разъем для подключения к усилителю сигнала. Усилитель сигнала IQS9XX выполнен в прессованном алюминиевом корпусе. На корпусе имеется коаксиальный разъем для подключения кабеля от вихревого датчика, а также клеммная колодка с винтовыми зажимами для внешнего подключения. Усилитель сигнала IQS9XX содержит высокочастотный модулятор/демодулятор, который подает управляющий сигнал на датчик. Последний генерирует необходимое электромагнитное поле, которое используется для измерения расстояния. Схема усилителя изготовлена из высококачественных электронных компонентов. Питание поступает в систему измерения перемещения от сопряженных процессорных модулей или стоечного источника питания.

Подробное описание конструкции устройств приведено в руководстве по эксплуатации.

Основные технические данные приведены в таблице 2.1.

Таблица 2.1

Наименование параметра	Значение
Маркировка взрывозащиты:	
- вихрековой датчик TQ9XX	Ex 2Ex e IIC T6...T3 Gc X
- усилитель сигнала IQS9XX	Ex 2Ex e IIC T6...T5 Gc X Ex 0Ex ia IIC T6...T5 Ga X Ex ia IIC T200 80°C...T200 115°C Da X
Диапазон температур окружающей среды, °C:	
- вихрековой датчик TQ9XX	
T6	от -40 до +75
T5	от -40 до +90
T4	от -40 до +125
T3	от -40 до +180
- усилитель сигнала IQS9XX	
- для взрывоопасных газовых сред	
T6	от -40 до +70
T5	от -40 до +85
- для взрывоопасных пылевых сред	
T200 80°C	от -40 до +50
T200 95°C	от -40 до +65
T200 115°C	от -40 до +85
Степень защиты от внешних воздействий по ГОСТ 14254-2015:	
- вихрековой датчик TQ9XX	IP54
- усилитель сигнала IQS9XX	IP20
Электрические параметры:	
Максимальное напряжение питания, В	30 DC
Максимальный ток, mA	9,5 (IQS9XX 3-х проводной) / 10 (IQS9XX 2-х проводной)

Руководитель (уполномоченное лицо) органа по сертификации

Александровна
(подпись)



Александровна

(ф.и.о.)

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы))

Андрей Алексеевич
(подпись)

Андрей Алексеевич

(ф.и.о.)

ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

ПРИЛОЖЕНИЕ

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Серия RU № 0778838

Параметры искробезопасных цепей усилителя сигнала приведены в таблице 2.2.

Таблица 2.2

Наименование разъема	U ₀ , В	I ₀ , мА	P ₀ , мВт	C ₀ , нФ	L ₀ , Гн	U ₁ , В	I ₁ , мА	P ₁ , мВт	C ₁ , нФ	L ₁ , мкГн
клеммная колодка «J1» - 2-проводная передача (I/P)	-	-	-	-	-	28	100	700	2,2	4,96
клеммная колодка «J1» - 3-проводная передача (O/P)	-	-	-	-	-	28	100	700	4,4	9,92
клеммная колодка «J2» - Raw O/P	28	4,57	32	82	1,7	-	-	-	-	-
клеммная колодка «J2» - Test I/P	28	0,057	0,4	82	11098	-	-	-	-	-
разъем «J0» - Sensor I/P	28	53,2	372,4	82,4	0,0125	-	-	-	-	-

Взрывозащищенность оборудования обеспечивается выполнением его 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 «искробезопасная электрическая цепь «i» по ГОСТ 31610.11-2014 (IEC 60079-11:2011).

Внесение изготовителем в конструкцию и техническую документацию изменений, влияющих на взрывобезопасность и соответствие оборудования 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 оборудования.

3. Оборудование соответствует требованиям:

ТР ТС 012/2011

ГОСТ 31610.0-2014 (IEC 60079-0:2011)

ГОСТ Р МЭК 60079-7-2012

ГОСТ 31610.11-2014 (IEC 60079-11:2011)

Технический регламент Таможенного союза «О безопасности оборудования для работы во взрывоопасных средах»:

Взрывоопасные среды. Часть 0. Оборудование. Общие требования. Взрывоопасные среды. Часть 7. Оборудование. Повышенная защита вида "e";

Взрывоопасные среды. Часть 11. Оборудование с видом взрывозащиты "искробезопасная электрическая цепь "i"

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 ЕАЭС 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.).

Руководитель (уполномоченное
лицо) органа по сертификации

Эксперт (эксперт-аудитор)
(эксперты (эксперты-аудиторы))

(подпись)

(подпись)



Ирина Александровна

(ф.и.о.)

Иванов Андрей Алексеевич

(ф.и.о.)

ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

ПРИЛОЖЕНИЕ

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-CH.AД07.B.03744/21

Серия RU № 0778839

5. Специальные условия применения

Знак X, стоящий после Ex-маркировки, означает, что при эксплуатации необходимо соблюдать следующие специальные условия:

- Для преобразователей вихретоковых типа TQ9XX с усилителями сигнала IQS9XX с видом взрывозащиты Ex e:
- оборудование должно эксплуатироваться при температурах окружающей среды в соответствии с таблицей 2.1;
 - усилители сигнала IQS9XX должны устанавливаться в корпусе со степенью защиты от проникновения не ниже IP54;
 - оборудование должно эксплуатироваться только в зоне со степенью загрязнения не выше 2, согласно EN 60664-1;
 - при эксплуатации должно быть предусмотрено устройство защиты от переходных процессов для предотвращения воздействия случайных кратковременных скачков напряжения, превышающих номинальное значение, установленное для оборудования;
 - никакие коммутации оборудования не должны осуществляться под напряжением;
 - головка датчика не должна подвергаться ударам, трению или другому механическому воздействию;
 - в точке подключения датчика приближения TQ9XX с удлинительным кабелем EA9XX должна быть обеспечена степень защиты от внешних воздействий не менее IP54;
 - пользователь несет ответственность за обеспечение надлежащего заземления корпуса датчика с помощью монтажного приспособления;
 - оборудование должно быть установлено в соответствии с инструкцией по эксплуатации, предоставленной производителем.

Для усилителей сигнала IQS9XX с видом взрывозащиты Ex ia:

- к оборудованию 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 измерительного оборудования. Внешние допустимые индуктивность и электрическая емкость искробезопасных цепей таких устройств должны быть не менее максимальных значений внутренних индуктивности и электрической емкости искробезопасных цепей оборудования с учетом параметров линии связи;
- оборудование должно эксплуатироваться при температурах окружающей среды в соответствии с таблицей 2.1;
- корпус усилителя сигнала выполнен из алюминия. Он должен быть установлен таким образом, чтобы исключить риск искрения, вызванного ударами или трением;
- устройство должно быть установлено в соответствии с чертежом № PZ 9010 вер. 00 от 25.03.2021 г.

Руководитель (уполномоченное
лицо) органа по сертификации

(подпись)

Эксперт (эксперт-аудитор)
(эксперты (эксперты-аудиторы))

(подпись)



Ирина Александровна

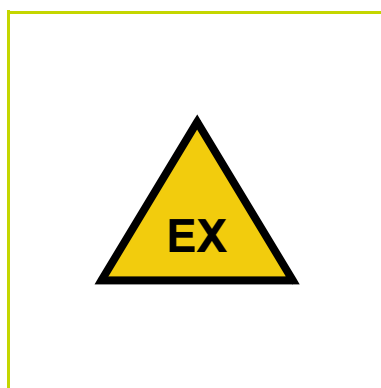
(Ф.И.О.)

Шарин Андрей Алексеевич

(Ф.И.О.)

EX CERTIFICATE – RU

EAЭC RU C-CH.AΔ07.B.03022/21
for
PA151 probe mounting adaptor



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 EAЭC RU C-CH.AΔ07.B.03022/21
Edition 1 – March 2021

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ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ



СЕРТИФИКАТ СООТВЕТСТВИЯ

№ ЕАЭС RU C-CH.АД07.В.03022/21

Серия **RU** № **0225723**

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 Монтажный адаптер PA151
Маркировка взрывозащиты согласно приложению (бланки №№ 0765108, 0765109). Продукция изготовлена в соответствии с Директивой 2014/34/EU и технической документацией изготовителя для работы во взрывоопасных средах.
Серийный выпуск

КОД ТН ВЭД ЕАЭС 9031908500

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 № 2687ИЛПМВ от 11.02.2021 года, выданного Испытательным центром Общества с ограниченной ответственностью "ПРОММАШ ТЕСТ" (регистрационный номер аттестата аккредитации RA.RU.21BC05) 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 №№ 0765108, 0765109.

СРОК ДЕЙСТВИЯ С 19.02.2021
ВКЛЮЧИТЕЛЬНО

ПО 18.02.2022

Руководитель (уполномоченное
лицо) органа по сертификации

(подпись)



Резицвон Галина Александровна
(Ф.И.О.)

Эксперт (эксперт-аудитор)
(эксперты (эксперты-аудиторы))

(подпись)

Мартынюк Дмитрий Олегович
(Ф.И.О.)

ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

ПРИЛОЖЕНИЕ

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-CH.AД07.B.03022/21

Серия **RU** № **0765108****1. Назначение и область применения**

Сертификат соответствия распространяется на монтажный адаптер PA151 (далее по тексту - монтажный адаптер), предназначенный для выполнения внешнего монтажа бесконтактного датчика обратного крепления.

Область применения – монтажный адаптер является Ex-компонентом и предназначен для применения в сборе с электрооборудованием, предназначенным для установки во взрывоопасных зонах классов 1 и 2 по ГОСТ ИЕС 60079-10-1-2011 категорий взрывоопасных смесей ПА, ПВ, ПС по ГОСТ Р МЭК 60079-20-1-2011, согласно маркировке взрывозащиты электрооборудования, ГОСТ ИЕС 60079-14-2011 и другим нормативным документам, регламентирующим применение электрооборудования в потенциально взрывоопасных средах.

2. Описание оборудования и средств обеспечения взрывозащиты

Конструктивно корпус монтажного адаптера PA151 может быть выполнен в виде короба из армированного стекловолокном полиэстера или нержавеющей стали. Сверху короб закрывается крышкой с неопреновой прокладкой для уплотнения. В корпусе монтажного адаптера имеется кабельный ввод для внешнего подключения, отверстие для крепления стержня из нержавеющей стали и место для установки бесконтактного датчика виброперемещений типа TQ. Съёмный корпус и U-образный фиксатор облегчают регулировку зазора или замену датчика даже во время работы установки. Регулируемый стержень из нержавеющей стали и корпус из полиэстера в сборе защищают кабельное соединение преобразователя с удлинителем. Монтажный адаптер PA151 вместе с соответствующим кабелем, дополнительной гибкой защитной оболочкой и кабельными вводами облегчает монтаж и обеспечивает правильное функционирование системы бесконтактного датчика.

Подробное описание конструкции монтажного адаптера PA151 приведено в руководстве по эксплуатации на устройство.

Основные технические данные:

Маркировка взрывозащиты	<input checked="" type="checkbox"/> Ex e IIC Gb U
Диапазон температур окружающей среды, °C	от минус 40 до +100
Степень защиты от внешних воздействий по ГОСТ 14254-2015	IP65

Взрывозащищенность монтажного адаптера обеспечивается выполнением его конструкции в соответствии с общими требованиями по ГОСТ 31610.0-2014 (ИЕС 60079-0:2011) и видом взрывозащиты «повышенная защита вида «е» по ГОСТ Р МЭК 60079-7-2012.

Внесение изготовителем в конструкцию и техническую документацию изменений, влияющих на взрывобезопасность и соответствие монтажного адаптера 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 монтажного адаптера.

3. Оборудование соответствует требованиям:

ТР ТС 012/2011	Технический регламент Таможенного союза «О безопасности оборудования для работы во взрывоопасных средах»;
ГОСТ 31610.0-2014 (ИЕС 60079-0:2011)	Взрывоопасные среды. Часть 0. Оборудование. Общие требования;
ГОСТ Р МЭК 60079-7-2012	Взрывоопасные среды. Часть 7. Оборудование. Повышенная защита вида "е".

Руководитель (уполномоченное
лицо) органа по сертификации

Галина Александровна
(подпись)



Резилов Галина Александровна
(ф.и.о.)

Эксперт (эксперт-аудитор)
(эксперты (эксперты-аудиторы))

Дмитрий Олегович
(подпись)

Куртынюк Дмитрий Олегович
(ф.и.о.)

ЕВРАЗИЙСКИЙ ЭКОНОМИЧЕСКИЙ СОЮЗ

ПРИЛОЖЕНИЕ

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ЕАЭС RU C-CH.AД07.B.03022/21

Серия **RU** № **0765109**

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 сертификацииЭксперт (эксперт-аудитор)
(эксперты (эксперты-аудиторы))
(подпись)
(подпись)Филизон Галина Александровна
(Ф.И.О.)Мартынюк Дмитрий Олегович
(Ф.И.О.)

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