PRODUCT OVERVIEW

VM600 CPUx and IOCx rack controller and communications interface card pairs

VM600 CPUM, CPUR and CPUR2
rack controller and communications interface cards

A VM600 rack controller and communications interface for every application

A VM600 CPUx and IOCx rack controller and communications interface card pair is a central processing unit (CPU) card pair that acts as a system controller and data communications gateway for a VM600 rack-based machinery protection system (MPS) and/or condition monitoring system (CMS) from Meggitt's Vibro-Meter® product line.

CPUx/IOCx rack controller functionality makes it easier and faster to work with a VM600 machinery monitoring system – for installation, configuration, management and general operation. A CPUx/IOCx can manage the configuration of MPC4/IOC4T and AMC8/IOC8T card pairs, enabling hot-swapping. It can also manage the configuration of XMx16/ XIO16T card pairs, eliminating the need for a VibroSight Server in certain applications.

CPUx/IOCx communications interface functionality makes it easy to further process and share data from monitoring cards (MPC4, AMC8 and/or XMC16) with third-party systems such as a DCS or PLC using industry standard fieldbuses.

Accordingly, a CPUx/IOCx rack controller card pair is recommended for most applications using multiple monitoring cards in a VM600 rack.

Different versions of CPUx/IOCx card pair

CPUM/IOCN
The CPUM/IOCN card pair is the original version with a front-panel display and support for Modbus RTU / TCP and PROFINET (PNR 200-595-VVV-VVV).

CPUR/IOCR
The CPUR/IOCR card pair is a version with rack controller redundancy and support for Modbus RTU / TCP (PNR 600-007-VVV-VVV).

CPUR2/IOCR2
The CPUR2/IOCR2 card pair is a version with mathematical processing of fieldbus data and support for Modbus TCP and PROFIBUS DP (PNR 600-026-000-VVV).

The CPUx/IOCx card pair comparison table on the following pages provides more detailed information.

Trusted by the biggest names in the industry

Over 65 years of sensor and systems expertise means that our solutions are trusted by original equipment manufacturers (OEMs) globally and have become standard-fit components on machinery used in power generation, oil & gas and other industrial applications.

CPUx/IOCx card pair comparison table

	CPUM / IOCN	CPUR / IOCR	CPUR2 / IOCR2
Description	Original version of CPUx/IOCx card pair with a front-panel display and support for Modbus RTU / TCP and PROFINET	Version of CPUx/IOCx card pair with rack controller redundancy and support for Modbus RTU / TCP	Version of CPUx/IOCx card pair with mathematical processing of fieldbus data and support for Modbus TCP and PROFIBUS DP
Part numbers (PNRs)	CPUM: 200-595-SSs-HHh IOCN: 200-566-000-HHh	CPUR: 600-007-VVV-VVV IOCR: 601-002-000-VVV	CPUR2: 600-026-VVV-VVV IOCR2: 620-022-000-VVV
Input/output card required?	No – CPUM can operate alone (IOCN is optional)	Yes – operates as card pair only	
Card compatibility	MPC4/IOC4T, AMC8/IOC8T via VME (internal). XMC16/XIO16T via Ethernet (external).	MPC4/IOC4T, AMC8/IOC8T via VME (internal)	MPC4/IOC4T via VME (internal). XMC16/XIO16T via Ethernet (external).
Rack compatibility	All VM600 ABE04x system racks	Later VM600 ABE04x system racks with I²C interface (VME utility bus), PNR 204-04x-100-013 or later.	
Monitoring card configuration management	Yes – MPC4, AMC8 and XMC16	Yes – MPC4 and AMC8	Yes – MPC4, AMC8 and XMC16
Front-panel display	Yes – CPUM LCD display with: • Configuration and status information for CPUM. • Measurements (with bargraph) and other information for MPC4 and AMC8.	No	
CPUx/IOCx card pair redundancy	No	Yes – true rack controller and communications redundancy using two functionally equivalent CPUR/IOCR card pairs in the same VM600 rack	No
Fieldbus data processing	Yes – mathematical processing of data to be shared by fieldbus and "data freeze" detection function		
Front-panel alarm reset (AR) button	Yes	No	Yes
MPS rack (CPUx) security	Yes	No	Yes – with removable key
Event logging	Yes – up to 10 000 events	Yes – up to 1000 events	No
Status indication	Front-panel LEDs (CPUM)	Front-panel LEDs (CPUR)	Front-panel LEDs (CPUR2 and IOCR2)
CPUx/IOCx card pair status (health) monitoring	No	Yes – downloadable diagnostic log files	Yes – downloadable diagnostic log files
Relays (outputs)	No	Five	Two

PRODUCT OVERVIEW
VM600 CPUx and IOCx rack controller and communications interface card pairs

Document reference PO-014/EN
Version 02 – 04.02.2020
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2 / 4

CPUx/IOCx card pair comparison table (*continued*)

	CPUM / IOCN	CPUR / IOCR	CPUR2 / IOCR2
Communication interfaces	Ethernet: 2 × 10/100BASE-TX up to 100 Mbps. Serial: 1 × RS-232 up to 115.2 kBaud, 1 × RS-232 or RS-485 (half or full duplex) up to 115.2 kBaud. Note: An optional serial communications module can be fitted to the CPUM in order to add additional serial interfaces: 2 × RS-422 or RS-485 (half or full duplex) up to 115.2 kBaud.	Ethernet: 1 × 10/100/1000BASE-T(X) up to 1 Gbps. Serial: 2 × RS-232 or RS-422 or RS-485 (half or full duplex) up to 115.2 kBaud.	Ethernet: 2 × 10/100/1000BASE-T(X) up to 1 Gbps (system). 2 × 10/100BASE-TX up to 100 Mbps (fieldbus). Serial: 2 × RS-485 (half or full duplex) up to 12 Mbps.
System communications	VM600 MPSx software communicates with a CPUM/IOCN via Ethernet or a serial link (RS-232)	VM600 MPSx software communicates with a CPUR/IOCR via Ethernet or a serial link (RS-232 / RS-485). VibroSight® software communicates with a card pair via Ethernet.	VM600 MPSx software communicates with a CPUR2/IOCR2 via Ethernet. VibroSight® software communicates with a card pair via Ethernet.
Fieldbus communications	One serial fieldbus interface supporting Modbus RTU. One Ethernet fieldbus interface supporting Modbus TCP and/or PROFINET (100 Mbps) and one Ethernet fieldbus interface supporting Modbus TCP (10 Mbps). Up to four fieldbus interfaces can run at any one time. Note: An optional (second) serial communications module can be fitted to support additional serial fieldbuses.	Two serial fieldbus interfaces supporting Modbus RTU. One Ethernet fieldbus interface supporting Modbus TCP. Up to two fieldbus interfaces can run at any one time. For example, one Modbus RTU and one Modbus TCP link can run simultaneously.	Two Ethernet fieldbus interfaces supporting Modbus TCP. Two serial fieldbus interfaces supporting PROFIBUS DP. The system Ethernet interfaces also support Modbus TCP. Up to two fieldbus interfaces can run at any one time. Note: Modbus RTU is not currently supported.
Fieldbus configuration	A default Modbus server configuration file with standard register mapping for MPC4 and AMC8 cards in slots 3 to 14 of a VM600 rack is supplied	No default Modbus server configuration file is supplied. A custom configuration is generated depending on the application.	No default Modbus server configuration file is supplied. Specific configurations are available for gas-turbine combustion monitoring and/or control applications.
Fieldbus interface	Modbus: 2 × 65536 registers/words and 2 × 65536 coils/bits available. PROFINET: Maximum slot size of 128 bytes.	Modbus: 2 × 65536 registers/words and 2 × 65536 coils/bits available.	Modbus: 2 × 65536 registers/words and 2 × 65536 coils/bits available. PROFIBUS: Maximum of 244 input bytes and 244 output bytes per interface (port).
Fieldbus communications redundancy	Yes – with multiple fieldbuses (Ethernet and/or serial)	Yes – with two fieldbuses (Ethernet and serial or serial and serial)	Yes – with two fieldbuses (serial)

Document reference PO-014/EN
Version 02 – 04.02.2020
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PRODUCT OVERVIEW
VM600 CPUx and IOCx rack controller and communications interface card pairs

3 / 4

CPUx/IOCx card pair comparison table (*continued*)

	CPUM / IOCN	CPUR / IOCR	CPUR2 / IOCR2
Rack configuration	MPC4 and AMC8 cards configured via Ethernet or a serial link using VM600 MPSx. CPUM card configured via Ethernet using CPUM Configurator.	MPC4 and AMC8 cards configured via Ethernet or a serial link using VM600 MPSx. CPUR card configured via Ethernet using VibroSight®.	MPC4 cards configured via Ethernet using VM600 MPSx. CPUR2 card configured via Ethernet using VibroSight®.
Software compatibility	VM600 MPSx and CPUM Configurator	VM600 MPSx and VibroSight®	
Time reference	Network time protocol (NTP) server (externally) or CPUM's real-time clock (internally)	Network time protocol (NTP) server or local clock on computer running VibroSight® (externally) or CPUR's real-time clock (internally)	Network time protocol (NTP) server (externally) or CPUR2's real-time clock (internally)
Time synchronisation	Network time protocol (NTP)		
Hot swapping of protection cards with automatic configuration	Yes		
Hot swapping of CPUx/IOCx card pair	No	Yes	
Operating temperature	−20 to 65 °C (−4 to 149 °F)	0 to 65 °C (32 to 149 °F)	

Note: Refer to the VM600 CPUM/IOCN, VM600 CPUR/IOCR and VM600 CPUR2/IOCR2 data sheets for more information.

Applications

- Rack controller for a VM600 rack-based machinery monitoring system.
- Communications gateway between a VM600 system and third-party systems with support for industry standard fieldbuses: Modbus, PROFIBUS and/or PROFINET.
- Enables sharing of measurement data from VM600 monitoring cards in machinery protection, condition monitoring and/or combustion monitoring applications.
- For applications requiring a front-panel display and/or support for Modbus RTU / TCP and/or PROFINET, select a CPUM/IOCN card pair.
- For applications requiring rack controller redundancy and/or support for Modbus RTU / TCP, select CPUR/IOCR card pairs.
- For applications requiring mathematical processing of fieldbus data and/or support for Modbus TCP and/or PROFIBUS DP, select a CPUR2/IOCR2 card pair.

Contact your local Meggitt representative or Meggitt SA for further information.

PRODUCT OVERVIEW
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Document reference PO-014/EN
Version 02 – 04.02.2020
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4 / 4