MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Amikon cover with selected official Vibro-Meter pages

VM600 MACHINERY PROTECTION PLATFORM

VM600 CPU M 200-595-074-122/20

0-595-100-014

VM600 CPUM RACK CONTROLLER AND IOCN COMMUNICATION MODULE

OFFICIAL SOURCES

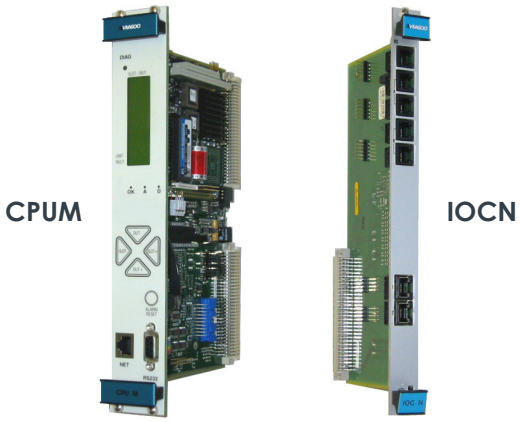
Vibro-Meter official product documentation. Selected pages retain their original content, color and aspect ratio.

MEGGITT

DATA SHEET

Vibro-Meter®

VM600 CPUM and IOCN modular CPU card and input/output card



KEY FEATURES AND BENEFITS

- From the Vibro-Meter® product line
- VM600 CPUM/IOCN rack controller and communications interface card pair with support for Modbus RTU/TCP and PROFINET, and a front-panel display
- "One-Shot" configuration management of protection cards (MPC4 and AMC8) in a VM600 rack using an Ethernet or RS-232 serial connection to a computer running the VM600 MPSx software
- Front-panel display for visualisation of monitored outputs and alarm limits from protection cards
- Front-panel alarm reset (AR) button
- VM600 MPS rack (CPUM) security
- Industry standard fieldbus communications interfaces: Modbus RTU/TCP and PROFINET
- Two Ethernet connections and up to three serial connections (RS-232 / RS-422 / RS-485) can run simultaneously
- Communications redundancy with multiple fieldbuses: Ethernet and/or serial

KEY BENEFITS AND FEATURES *(continued)*

- VM600 system event and measurement event logs available via the VM600 MPSx software
- Supports live insertion and removal of protection cards ("hot-swapping") with automatic configuration
- Ethernet (100 Mbps) communication
- Front-panel status indicators (LEDs)
- Compatible with all VM600 ABE04x system racks

APPLICATIONS

- Rack controller for a VM600 system
- Communications gateway between VM600 and third-party systems, such as a DCS or PLC
- Enables sharing of measurement data from VM600 monitoring cards in machinery protection, condition monitoring and/or combustion monitoring applications

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DESCRIPTION

Introduction

The VM600 CPUM and IOCN modular CPU card and input/output card is a rack controller and communications interface 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.

Different versions of CPUx/IOCx card pair

Different versions of CPUx/IOCx rack controller and communications interface card pair are available, as follows:

- The CPUM/IOCN is the original version with a front-panel display and support for Modbus RTU/TCP and PROFINET (PNR 200-595-VVV-VVV).
- The CPUR/IOCR is a version with rack controller redundancy and support for Modbus RTU/TCP (PNR 600-007-VVV-VVV).
- The CPUR2/IOCR2 is a version with mathematical processing of fieldbus data and support for Modbus TCP and PROFIBUS DP (PNR 600-026-000-VVV).

VM600 rack-based monitoring systems

The Vibro-Meter® VM600 rack-based monitoring system is part of Meggitt's solution for the protection and monitoring of rotating machinery used in the power generation and oil & gas industries. The VM600 is recommended when a centralised monitoring system with a medium to large number of measurement points (channels) is required. It is typically used for the monitoring and/or protection of larger machinery such as gas, steam and hydro turbines, and generators, smaller machines such as compressors, fans, motors, pumps and propellers, as well as balance-of-plant (BOP) equipment.

A VM600 system consists of a 19" rack, a rack power supply and one or more monitoring card pairs. Optionally, relay cards and rack controller and communications interface cards can also be included.

Two types of VM600 rack are available: a VM600 ABE04x system rack (6U) that can house up to 12 monitoring card pairs, and a VM600 ABE056 slimline rack (1U) that can house 1 monitoring card pair. VM600 racks are typically mounted in standard 19" rack cabinets or enclosures installed in an equipment room.

Different VM600 monitoring cards are available for machinery protection, condition monitoring and/or combustion monitoring applications. For example, machinery protection cards such as the MPC4/IOC4T machinery protection card pair and AMC8/IOC8T analogue monitoring card pair, and condition monitoring cards such as the XMV16/XIO16T monitoring card pair for vibration and XMC16/XIO16T monitoring card pair for combustion.

The RLC16 relay card is an optional card used to provide additional relays when the four relays per MPC4/IOC4T or AMC8/IOC8T card pair are not enough.

The CPUx/IOCx rack controller and communications interface card pairs (CPUM/IOCN, CPUR/IOCR or CPUR2/IOCR2) are optional cards used to provide additional VM600 system functionality such as configuration management, "hot-swapping" with automatic reconfiguration, front-panel display, CPUx/IOCx card pair redundancy, fieldbus data processing, front-panel alarm reset (AR) button, MPS rack (CPUx) security, system event and measurement event logging, fieldbus communications (Modbus, PROFIBUS and/or PROFINET) and/or communications redundancy.

Note: Different versions of CPUx/IOCx rack controller and communications interface card pair support different combinations of VM600 system functionality.

VM600 rack-based monitoring systems complement the VibroSmart® module-based distributed monitoring systems that are also available from Meggitt's Vibro-Meter® product line.

DESCRIPTION *(continued)*

CPUM/IOCN card pair and VM600 racks

The CPUM/IOCN card pair is used with a VM600 ABE04x system rack and a CPUM card can be used either alone or with an associated IOCN card as a card pair, depending on the application/system requirements.

The CPUM is a double-width card that occupies two VM600 rack slots (card positions) and the IOCN is a single-width card that occupies a single VM600 slot. The CPUM is installed in the front of the rack (slots 0 and 1) and an associated IOCN is installed in the rear of the rack in the slot directly behind the CPUM (slot 0). Each card connects directly to the rack's backplane using two connectors.

Note: The CPUM/IOCN card pair is compatible with all VM600 ABE04x system racks.

CPUM rack controller and communications interface functionality

The modular, highly versatile design of the CPUM means that all VM600 rack configuration, display and communications interfacing can be performed from a single card in a "networked" rack. The CPUM card acts as a "rack controller" and allows an Ethernet link to be established between the rack and a computer running one of the VM600 MPSx software packages (MPS1 or MPS2).

The CPUM front panel features an LCD display that shows information for the CPUM itself and for protection cards in a VM600 rack. The SLOT and OUT (output) keys on the CPUM front panel are used to select which signal to display.

As a fieldbus communications interface for a VM600 monitoring system, the CPUM communicates with MPC4 and AMC8 cards via the VME bus and with XMx16/XIO16T card pairs via an Ethernet link in order to obtain measurement data and then share this information with third-party systems such as a DCS or PLC.

LEDs on the CPUM front panel indicate the OK, Alert (A) and Danger (D) status for the currently selected signal. When Slot 0 is selected, the LEDs indicate the overall status of the whole rack. When the DIAG (diagnostic) LED shows green continuously, the CPUM card is operating normally, and when the DIAG LED blinks, the CPUM card is operating normally but access to the CPUM card is restricted due to VM600 MPS rack (CPUM) security.

The ALARM RESET button on the front panel of the CPUM card can be used to clear the alarms latched by all protection cards (MPC4 and AMC8) in the rack. This is a rack-wide equivalent of resetting alarms individually for each card using discrete signal interface alarm reset (AR) inputs or VM600 MPSx software commands.

The CPUM card consists of a carrier board with two PC/104 type slots that can accept different PC/104 modules: a CPU module and an optional serial communications module.

All CPUM cards are fitted with a CPU module that supports two Ethernet connections and two serial connections. That is, both the Ethernet redundant and serial redundant versions of the card.

The primary Ethernet connection is used for communication with the VM600 MPSx software via a network and for Modbus TCP and/or PROFINET communications. The secondary Ethernet connection is used for Modbus TCP communications. The primary serial connection is used for communication with the VM600 MPSx software via a direct connection. The secondary serial connection is used for Modbus RTU communications.

Optionally, a CPUM card can be fitted with a serial communications module (in addition to the CPU module) in order to support additional serial connections. This is the serial redundant version of the CPUM card.

The CPUM module's primary Ethernet and serial connections are available via connectors (NET and RS232) on the front panel of the CPUM. However, if the associated IOCN card is used, the primary Ethernet connection can be routed to a connector (1) on the front panel of the IOCN (instead of the connector on the CPUM (NET)). When the associated IOCN card is used, the secondary Ethernet and serial connections are available via connectors (2 and RS) on the front panel of the IOCN.

IOCN card

The IOCN card acts as a signal and communications interface for the CPUM card. It

DESCRIPTION *(continued)*

also protects all inputs against electromagnetic interference (EMI) and signal surges to meet electromagnetic compatibility (EMC) standards.

The IOCN card's Ethernet connectors (1 and 2) provide access to the primary and secondary Ethernet connections, and the serial connector (RS) provides access to the secondary serial connection.

In addition, the IOCN card includes two pairs of serial connectors (A and B) that provide access to the additional serial connections (from the optional serial communications module) that can be used to configure multi-drop RS-485 networks of VM600 racks.

Front-panel display

The CPUM front panel features an LCD display that uses display pages to show important information for the cards in a VM600 rack. For the CPUM itself, card run time, rack system time, rack (CPUM) security status, IP address/netmask and version information are displayed. While for MPC4 and AMC8 cards, measurements, card type, version and run time are displayed.

For MPC4 and AMC8 cards, the level of the selected monitored output is displayed on a bargraph and numerically, with the Alert and Danger levels also indicated on the bar-graph. Measurement identification (slot and output number) is shown at the top of the display.

VM600 MPS rack (CPUM) security

The CPUM supports features that can be used to limit the functionality of a VM600 rack's machinery protection system (MPS) that is available via the system Ethernet connections of a CPUM/IOCN card pair. Enabling VM600 MPS rack (CPUM) security helps to reduce the possibility of interference in the machinery protection function of the rack itself and in the machinery being monitored. Accordingly, CPUM rack security makes it easier for operators to comply with international security/critical infrastructure regulations.

The security features consists of two specific levels of protection integrated in the CPUM card: CPUM access lock (a "hardware" security feature) and VM600 MPSx password validation (a "software" security feature). Refer to the *VM600 machinery protection system (MPS) hardware manual* and the *VM600 MPSx software manuals* for further information.

VM600 event logging

The CPUM card automatically logs VM600 system events and measurement events to non-volatile memory in order to provide valuable information on the operating history of a system. Up to 10000 of the most recent events are stored on the card for download as user-readable event log files using the VM600 MPSx software.

Software

The CPUM/IOCN is software configurable using the CPUM Configurator software.

The VM600 MPSx software supports the configuration and operation of MPC4/IOC4T card pairs for machinery protection applications, including the processing and presentation of measurement data for analysis. VM600 MPSx is also used to configure and manage CPUM/IOCN card pairs.

Note: The VM600 MPSx software is from the Vibro-Meter® product line.

Applications information

The VM600 CPUM/IOCN rack controller and communications interface card pair is recommended for applications using multiple monitoring cards in a VM600 rack.

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

The communications interface functionality makes it easy to further process and share data from the monitoring cards (MPC4, AMC8 and/or XMC16) in a VM600 machinery protection, condition monitoring and/or combustion monitoring system with third-party systems such as a DCS or PLC using industry standard fieldbuses.

For further information, contact your local Meggitt representative.

SPECIFICATIONS

Processing functions

Rack controller

- VM600 monitoring card configuration management : Acts as a rack controller that manages the configuration of MPC4/IOC4T and AMC8/IOC8T card pairs, including support for "hot-swapping" with automatic configuration.
  Can also manage the configuration of XMx16/XIO16T card pairs, for applications that do not require a VibroSight Server.
- Front-panel display : LCD display that uses display pages to show important information for the cards in a VM600 rack:
  • Card run time, rack system time, rack (CPUM) security status, IP address/netmask and version info are displayed for the CPUM.
  • Measurements (bargraph with alarm levels, and numerically), card type, version, and run time are displayed for the MPC4 and AMC8 cards in the rack.
- Fieldbus data processing (mathematical processing) : Further processing of system data (measurement data and status information) before being shared by fieldbus.
  The further processing supported includes basic mathematical functions such as arithmetic and logical operations, data selection, comparison, min/max and scaling functions, bit manipulation and packing/unpacking functions, and many supporting functions.
  There is also a data freeze detection function that can be used to help detect if a data value has stopped being updated.
- Alarm reset : CPUM front-panel button used to manually clear the alarms (and relays) latched by MPC4/IOC4T and AMC8/IOC8T card pairs in the rack
- VM600 MPS rack (CPUM) security : Used to limit the functionality of a machinery protection system (MPS) that is available via the system Ethernet connections of a CPUM/IOCN card pair, helping to reduce the possibility of interference in the machinery protection function of the rack itself and/or in the machinery being monitored
- Event logging : VM600 system event and measurement event logging with up to 10000 of the most recent events stored on the CPUM (in non-volatile memory).
  Note: System event logs and measurement event logs are downloaded from a CPUM using the VM600 MPSx software.
- Status indication : CPUM front-panel LEDs (front of VM600 rack) indicate the mode of operation and status of the CPUM card

Communications interface

- VM600 rack (system) communications : Uses a VME communications link for communications with MPC4/IOC4T and AMC8/IOC8T card pairs (via the VME bus on the VM600 rack's backplane).
  Uses a system Ethernet connection for communications with a computer running software such as VM600 MPSx.
- Fieldbus communications (data gateway) : Acts as a fieldbus server (slave) device that obtains data from cards in the VM600 rack (that is, from MPC4/IOC4T and AMC8/IOC8T card pairs) to share with fieldbus client (master) devices such as a DCS or PLC:
  • The CPUM can act as a Modbus server and use the fieldbus interfaces to share data via Modbus RTU and/or Modbus TCP.
  Note: The configuration of the fieldbus interfaces and the definition of the data to be shared via fieldbus is defined by a Modbus configuration file that is uploaded to the CPUM card using the CPUM Configurator software.

SPECIFICATIONS *(continued)*

Fieldbus interfaces

Number of channels	: Multiple fieldbus interfaces (ports). Ethernet and/or serial: Modbus and/or PROFINET.
Data transfer	
• Modbus	: Up to 131072 registers/words and 131072 coils/bits total. That is, up to 2 × 65536 registers/words and 2 × 65536 coils/bits (holding and discrete).
• PROFINET	: Maximum slot size of 128 bytes. Note: PROFINET is supported by later versions of the CPUM card running firmware version 081 or later. It was originally only supported by earlier versions of the CPUM card running a special PROFINET version of firmware (version 801) that is no longer supported. Contact your local Meggitt representative or Meggitt SA for further information.

CPU module (CPUM PC/104 slot 1)

Note: The CPU module is fitted to all versions of the CPUM card.

Module type	: PFM-541I or equivalent
Processor type	: AMD Geode™ LX800
Processor Speed	: 500 MHz
Memory	: 256 MB DRAM
Power supply to module (input)	: 5 V_{DC}, <1.8 A
Operating system	: QNX

Communication interfaces – serial

Number	: 2
Primary serial interface	
• Network interface	: RS-232
• Data transfer rate	: Up to 115.2 kBaud
• Network topologies	: Point-to-point
• Protocols	: Meggitt TCP/IP proprietary protocol for communication with the VM600 MPSx software
• Function	: VM600 rack configuration and communications using the VM600 MPSx software
• Connector	: RS232 on CPUM card (see **Connectors on page 10**)
Secondary serial interface (requires IOCN card)	
• Network interface	: RS-232 or RS-485 (half-duplex (2-wire) or full-duplex (4-wire))
• Data transfer rate	: Up to 115.2 kBaud
• Distance between devices	: According to the relevant standard
• Network topologies	: Point-to-point for RS-232 links. Point-to-point or linear (daisy-chained) for RS-485 networks.
• Protocols	: Modbus RTU
• Function	: Fieldbus Modbus RTU communications
• Connector	: RS on IOCN card (see **Connectors on page 10**)
• RS-485 (fieldbus) isolation	: 500 V_{DC}

SPECIFICATIONS *(continued)*

Communication interfaces – Ethernet

Number	: 2
Primary Ethernet interface	
• Network interface	: 10/100BASE-TX – Ethernet / Fast Ethernet
• Data transfer rate	: Up to 100 Mbps
• Distance between devices	: Up to 100 m
• Protocols	: Meggitt TCP/IP proprietary protocol for communication with the VM600 MPSx software, Modbus TCP and/or PROFINET
• Function	: VM600 rack configuration and communications using the VM600 MPSx software, fieldbus Modbus TCP communications and/or fieldbus PROFINET communications
• Connectors	: NET on CPUM card or 1 on IOCN card (see **Connectors on page 10**)
Secondary Ethernet interface (requires IOCN card)	
• Network interface	: 10/100BASE-TX – Ethernet / Fast Ethernet
• Data transfer rate	: Up to 10 Mbps
• Distance between devices	: Up to 100 m
• Protocols	: Modbus TCP
• Function	: Fieldbus Modbus TCP communications
• Connector	: 2 on IOCN card (see **Connectors on page 10**)

Serial communications module (CPUM PC/104 slot 2)

Note: The serial communications module is optional and is only fitted to the serial redundant version of the CPUM card.

Module type	: AIM104-COM4 or equivalent
Power supply to module (input)	: 5 V_{DC}, <220 mA
Isolation	: >100 V_{DC}

Communication interfaces – serial

Number	: 2
Serial interfaces	
• Network interface	: RS-422 or RS-485 (half-duplex (2-wire) or full-duplex (4-wire))
• Data transfer rate	: Up to 115.2 kBaud
• Distance between devices	: According to the relevant standard
• Network topologies	: Point-to-point for RS-232 links. Point-to-point or linear (daisy-chained) for RS-422/ RS-485 networks.
• Protocols	: Modbus RTU
• Function	: Fieldbus Modbus RTU communications
• Connectors	: A and B on IOCN card (see **Connectors on page 10**)
• RS-485 (fieldbus) isolation	: 500 V_{DC}

Notes
Jumpers on the CPUM and IOCN cards are used to configure the required operation of serial and Ethernet interfaces and connectors. Refer to the *VM600 machinery protection system (MPS) hardware manual* for further information.

SPECIFICATIONS *(continued)*

System communications

Internal : VME bus interface (A24 / D16 master mode) for communication with protection cards (MPC4 and AMC8) via VM600 rack backplane

External : System communication interfaces (serial and Ethernet) for communication with VM600 MPSx software running on an external computer.
See **Communication interfaces – serial on page 6** and **Communication interfaces – Ethernet on page 7**.

External communication links/connections

- Connection to a computer/network : A serial communication interface (RS232 on CPUM card) can be used for connections/communications between a CPUM/IOCN card pair and a computer/network, using a standard serial cable.
See **Communication interfaces – serial on page 6** and **Connectors on page 10**.

  An Ethernet communication interface (NET on CPUM card or 1 on IOCN card) can be used for connections/communications between a CPUM/IOCN card pair and a computer/network, using standard cabling.
See **Communication interfaces – Ethernet on page 7** and **Connectors on page 10**.

- Connection to a fieldbus (third-party system) : A serial fieldbus communication interface (RS on IOCN card) can be used for connections/communications between a CPUM/IOCN card pair and serial-based fieldbuses (Modbus RTU).
See **Communication interfaces – serial on page 6** and **Connectors on page 10**.

  An Ethernet fieldbus communication interface (NET on CPUM card or 1 on IOCN card, or 2 on IOCN card) can be used for connections/communications between a CPUM/IOCN card pair and Ethernet-based fieldbuses (Modbus TCP).
See **Communication interfaces – Ethernet on page 7** and **Connectors on page 10**.

- VM600 MPSx software : Used for the configuration and operation of MPC4/IOC4T and AMC8/IOC8T card pairs (using the CPUM/IOCN card pair as a communications gateway)
- VibroSight® software : Used for the configuration of CPUM cards

Configuration

CPUM/IOCN card pair : Software configurable via Ethernet or serial, using a computer running the VM600 MPSx and CPUM Configurator software.
Note: Serial (RS-232 / RS-422 / RS-485) line configuration and Ethernet port to connector routing is determined by jumpers on the CPUM and IOCN cards.

SPECIFICATIONS *(continued)*

Time synchronisation

Time reference for CPUM	: Network time protocol (NTP) server or CPUM's internal real-time clock (RTC) with battery backup
Protocol used between VM600 cards and host computer	: Network time protocol (NTP)

Note: When VM600 system event and/or measurement event logging is used, the time and date must be configured for the CPUM in order for the timestamps in the event log files to be correct.

Environmental

Operating	
• Temperature	: −20 to 65°C (−4 to 149°F)
• Humidity	: 0 to 90% relative humidity, non-condensing
Storage	
• Temperature	: −25 to 80°C (−13 to 176°F)
• Humidity	: 0 to 90% relative humidity, non-condensing

Approvals

Conformity	: CE marking, European Union (EU) declaration of conformity. EAC marking, Eurasian Customs Union (EACU) certificate/ declaration of conformity.
Electromagnetic compatibility	: TR CU 020/2011
Electrical safety	: TR CU 004/2011
Environmental management	: RoHS compliant
Russian federal agency for technical regulation and metrology (Rosstandart)	: Pattern approval certificate CH.C.28.004.A N° 60224, dated 11.11.2015

Power supply (to CPUM/IOCN)

Source	: VM600 rack power supply
Voltage	: 5 V_{DC}
Power consumption	
• CPUM	: <10 W
• IOCN	: <2 W
Total power consumption (CPUM/IOCN card pair)	: ≤12 W

Control inputs (buttons)

CPUM

ALARM RESET	: Used to reset all latched alarms (and associated relays) for all protection cards in the VM600 rack (MPC4/IOC4T and AMC8/ IOC8T)
OUT+ and OUT−	: Used to select a measurement channel for the currently selected protection card (slot)
SLOT+ and SLOT−	: Used to select a slot (protection card) in the VM600 rack Note: OUT and SLOT button combinations are also used to enable or disable VM600 rack (CPUM) security, that is, limit the VM600 MPSx software to "read only" operations.

SPECIFICATIONS *(continued)*

Status indicators (LEDs)

CPUM

DIAG	: Green LED used to indicate the status of the CPUM card: off, normal operation and status of VM600 MPS rack (CPUM) security
OK	: Green LED used to indicate the status of the OK system check (sensor OK link check) for the currently selected measurement channel
A (Alert)	: Yellow LED used to indicate the status of the alarm monitoring (Alert or Alert−) for the currently selected measurement channel
D (Danger)	: Red LED used to indicate the status of the alarm monitoring (Danger or Danger−) for the currently selected measurement channel

Note: In addition to the LED indicators, a front-panel display is fitted to all versions of the CPUM card.

Connectors

CPUM

• NET	: 8P8C (RJ45), female. Used for the primary Ethernet connection.
• RS232	: DE-9 (9-pin D-sub), female Used for the primary serial connection.

IOCN

• RS	: 6P6C (RJ12/RJ25), female. Used for the secondary serial connection.
• A	: Two 6P6C (RJ12/RJ25), female. Used for additional serial connections (requires the optional serial communications module).
• B	: Two 6P6C (RJ12/RJ25), female. Used for additional serial connections (requires the optional serial communications module).
• 1	: 8P8C (RJ45), female. Can be used for the primary Ethernet connection (instead of the CPUM connector (NET)).
• 2	: 8P8C (RJ45), female. Used for the secondary Ethernet connection.

Physical

CPUM

• Height	: 6U (262 mm, 10.3 in)
• Width	: 40 mm (1.6 in)
• Depth	: 187 mm (7.4 in)
• Weight	: 0.40 kg (0.88 lb) approx.

IOCN

• Height	: 6U (262 mm, 10.3 in)
• Width	: 20 mm (0.8 in)
• Depth	: 125 mm (4.9 in)
• Weight	: 0.25 kg (0.55 lb) approx.

ORDERING INFORMATION

To order please specify

Type	Designation	Ordering number (PNR)
CPUM	Different versions of the VM600 modular CPU card:	
	– Ethernet redundant Modular CPU card with a CPU module that supports two Ethernet interfaces and two serial interfaces. This CPUM supports Ethernet interfaces on the front panel (CPUM) and the rear panel (IOCN), a serial interface (RS-232) on the front panel (CPUM) and a serial interface (isolated RS-232/RS-485) on the rear panel (IOCN).	200-595-0Ss-33h (601-003-000-VVV\3\610-1CC-CCC when pre-configured See notes)
	– Ethernet redundant varnished Same as the (standard) Ethernet redundant version, with a conformal coating for additional environmental protection.	200-595-0Ss-33hl (601-003-000-VVV\3V\610-1CC-CCC when pre-configured See notes)
	– Serial redundant Modular CPU card with a CPU module that supports two Ethernet interfaces and two serial interfaces, and a serial communications module that supports additional serial interfaces. This CPUM supports Ethernet interfaces on the front panel (CPUM) and the rear panel (IOCN), a serial interface (RS-232) on the front panel (CPUM) and a serial interface (isolated RS-232/RS-485) on the rear panel (IOCN). It also supports two additional serial interfaces (RS-422/RS-485) on the rear panel (IOCN).	200-595-0Ss-53h (601-003-000-VVV\5\610-1CC-CCC when pre-configured See notes)
IOCN	Different versions of the input/output card for the CPUM:	
	– Ethernet redundant	200-566-000-1Hh
	– Ethernet redundant varnished Same as the (standard) Ethernet redundant version, with a conformal coating for additional environmental protection.	200-566-000-1HhL

Notes
Different versions of the CPUM card can be supplied pre-configured with different configurations, as denoted by the 9-digit code in the ordering number (610-1CC-CCC).
"1CC-CCC" represents the different configurations that can be used by a finished product. For example, 610-100-000 corresponds to the 'standard' configuration that is uploaded to a CPUM card (200-595-0Ss-HHh), if no other configuration is specified. For information on other configurations. Contact your local Meggitt representative or Meggitt SA for further information.
"Ss" represents the firmware (embedded software) version and "Hh" the hardware version of a card. "S/H" increments for major modifications that can affect product interchangeability and "s/h" increments for minor modifications that have no effect on interchangeability.
"VVV" represents the different firmware (embedded software) versions and hardware versions that can be used by a finished product.

RELATED PRODUCTS

ABE04x	VM600 system racks	: Refer to corresponding data sheet
CPUR and IOCR	VM600 rack controller and communications interface card pair Note: With rack controller redundancy and support for Modbus RTU/TCP	: Refer to corresponding data sheet
CPUR2 and IOCR2	VM600 rack controller and communications interface card pair Note: With mathematical processing of fieldbus data and support for Modbus TCP and PROFIBUS	: Refer to corresponding data sheet
AMC8 and IOC8T	VM600 analog monitoring card and input/output card	: Refer to corresponding data sheet
MPC4 and IOC4T	VM600 machinery protection card and input/output card	: Refer to corresponding data sheets
RLC16	VM600 relay card	: Refer to corresponding data sheet

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