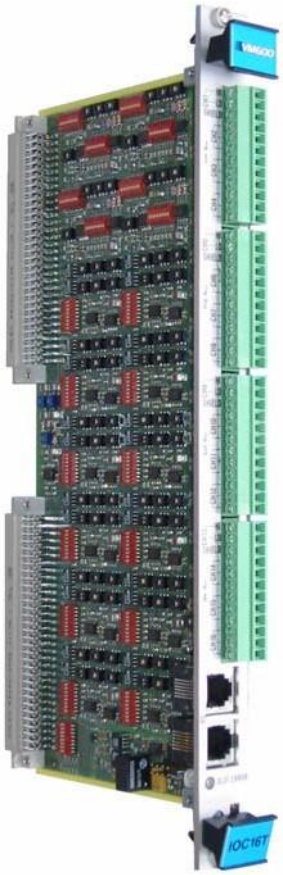
Vibro-Meter

IOC 16T

Input / Output Card
Type IOC 16T

FEATURES

- 16 channel interface card for use with the VM600 Series CMC 16 (Condition Monitoring Card)
- Screw terminal strip connectors (48 terminals)
- Ensures EMI protection for all inputs
- Provides signal conditioning for all inputs
- Channel functions selectable via DIL switches
- First 4 channels can be selected as tacho or dynamic inputs (i.e. vibration)
- Last 12 channels can be selected as dynamic or process inputs
- Inputs can be routed via VM600 Raw Bus and Tacho Bus
- On-board isolated serial RS-485 communication option
- Live insertion / removal of cards



IOC 16T

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extreme environments

DESCRIPTION

The IOC 16T Input / Output Card acts as a signal interface for the VM600 series CMC 16 (Condition Monitoring Card). It is installed in the rear of an ABE 04X or ABE 055 (Portable CMS) rack, and connects directly to the rack backplane via two connectors.

Each IOC 16T is associated with a specific CMC 16 and is mounted directly behind it in the rack. The IOC 16T contains a terminal strip to connect the transmission cables coming from transducers and conditioners. However, if these signals are already available via the VM600 backplane 'Raw Bus' and 'Tacho Bus' lines, then these can be selected directly without any need for additional wiring.

The card protects all inputs against electromagnetic interference (EMI) and signal surges and also meets EMC (electromagnetic compatibility) standards.

Tacho inputs, signals from accelerometers, velocimeters and proximity probes, or any dynamic or quasi-static signals are conditioned by dedicated circuitry which performs tasks such as pulse shaping, level adjustment and AC/DC selection.

Micro-switches (DILs) are provided to facilitate selection of conditioner and access method (i.e. screw terminals or backplane). The IOC 16T also provides isolation from the plant and ensures feedthrough of inputs to the CMC 16.

Two methods of communication are supported; VMEbus connection to a CPU M module in slot 0 of the VM600 rack and subsequent Ethernet link, or direct isolated multi-drop RS-485 serial connection[1] via RJ connectors provided on the IOC 16T.

1.Supported by Unix based 501 software only.

SPECIFICATIONS

SPEED/PHASE REFERENCE INPUT

Triggering method	: Rising or falling edge
Input voltage range	: 1 V_p to 24 V_p (AC coupled in the -24 V / +24 V range)
Frequency range	: 0.25 to 10 000 Hz
Maximum pulses per revolution	: 128 for speed calculation (1 only for phase reference)
Minimum rise time	: 4 volts/second
Minimum pulse duration	: 10 μs
Maximum common mode voltage	: 50 V
Maximum number allowed	: 4, must be selected from among the first 4 channels*

*For best results, and optimum configuration, tacho channels should be defined starting from Channel 1.

VIBRATION AND ANALOG INPUTS

Accuracy	
• *AC measurement (voltage based)*	: 1% of input FSD
• *DC measurement (voltage based)*	: 1% of input FSD
• *DC measurement (current based)*	: 2% of input FSD, or 1% with externally mounted resistors.
Input range (switched selected)	
• *AC measurement*	: 0.1, 0.2, 0.5, 1.0, 2.0, 4.0, 10.0, 20.0 V FSD
• *DC measurement*	: 0 to +24 V FSD or -24 to 0 V FSD (fixed)
• *DC thermocouple*	: 61.022 mV FSD
Maximum frequency span	: 20 kHz
Minimum frequency	: AC measurement with 0.16 Hz HP filter (at -3 dB)
DC bandwidth	: DC measurement with 0.20 Hz LP filter (at -3 dB)
Signal / noise	: > 70 dB up to 10 kHz > 60 dB at 20 kHz
Crosstalk isolation	: < -75 dB
Maximum common mode voltage	: 50 V for vibration/process inputs, 3 V for thermocouple inputs

SPECIFICATIONS *(Continued)*

Input impedance	: 200 kΩ

COMMUNICATIONS

Ethernet LAN via CPU M card

VMEbus to CPU-M

• *Type*	: D16 / A24 slave mode
• *Transmit/receive rate*	: 1 Mbyte/s

Serial communication*

• *Type*	: RS-485 multi-drop line (disabled)
• *Maximum distance to PC*	: 1220 m (4000 ft) without repeaters
• *Transmit/receive rate*	: 19 200, 38 400 Baud (asynchronous)
• *Isolation*	: 50 V

*Supported by 501X software only.

POWER SUPPLY TO IOC CARD

Supply voltage	: 5 V_{DC} ± 5%, +12 V_{DC} and -12 V_{DC}
Consumption from +5 V_{DC} supply	: 2 W
Consumption from +12 V_{DC} supply	: 1.2 W max.
Consumption from -12 V_{DC} supply	: 1 W max.

ENVIRONMENTAL

Operating

• *Temperature*	: 0°C to +65°C (+32°F to +149°F)
• *Humidity*	: 0 to 90% non-condensing

Storage

• *Temperature*	: -40°C to +85°C (-40°F to +185°F)
• *Humidity*	: 0 to 90% non-condensing

PHYSICAL

Height	: 6 U (262 mm, 10.31 inches)
Width	: 20 mm (0.8 inches)
Depth	: 125 mm (4.9 inches)
Weight	: 0.30 kg (0.66 lb) with connectors

ORDERING INFORMATION

To order please specify :

Type	Designation	Ordering Number
IOC 16T	Input / Output Card for CMC 16 (Condition Monitoring Card)	200-565-000-HHh

Note : "HHh" represents the hardware version. "H" increments for major modifications that can affect product interchangeability. "h" increments for minor modifications that have no effect on interchangeability.

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Sales offices

Vibro-Meter has offices in more than 30 countries. For a complete list, please visit our website.

Your local agent

Head office

Vibro-Meter SA
Rte de Moncor 4
P.O. Box
CH-1701 Fribourg
Switzerland

Tel: +41 26 407 11 11
Fax: +41 26 407 13 01

www.vibro-meter.com

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