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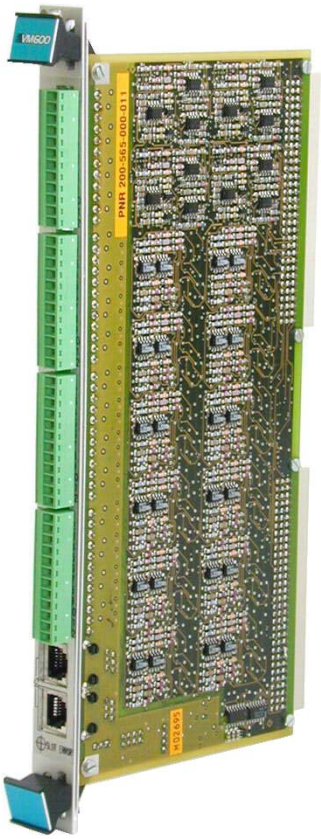
ISO 9001

IOC 16T

Input / Output Card Type IOC 16T



FEATURES

- **16 channel interface card for CMC 16 (Condition Monitoring Card)**
- **Screw terminal strip (48 terminals)**
- **Ensures EMI protection for all inputs and outputs**
- **Provides signal conditioning for all inputs**
- **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**
- **Channel 16 can be selected as dynamic, process or cold junction compensation input for thermocouples**
- **Inputs can be routed via VM 600 Raw Bus and Tacho Bus**
- **On-board isolated Serial RS-485 communication option**
- **Live insertion / removal of cards**

DESCRIPTION

The IOC 16T Input / Output Card acts as a signal interface for the VM 600 series CMC 16 (Condition Monitoring Card). It is installed in the rear of the ABE 04X 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 VM 600 backplane 'Raw Bus' and 'Tacho Bus' lines, then these can be selected directly without any need for additional wiring.

The card protects all inputs and outputs 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 perform tasks such as pulse shaping, level adjustment, AC/DC selection and cold junction compensation. Micro-switches 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 VM 600 rack and subsequent Ethernet link, or direct isolated multi-drop RS-485 serial connection via RJ connectors provided on the IOC 16T.

SPECIFICATIONS

SPEED/PHASE REFERENCE INPUT

Triggering method	: Rising or falling edge
Input voltage range	: 1 to 24 V pulse (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, amongst the first 4 channels

VIBRATION AND ANALOG INPUTS

Accuracy

• *AC measurement*	: 1% of input FSD
• *DC measurement*	: 1% of input FSD

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*	: ±24 V FSD
• *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
Input impedance	: 200 kΩ

COMMUNICATIONS

VMEbus to CPU-M

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

Serial communication

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

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* : -25°C to +65°C (-13°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	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.