DATA SHEET

vibro-meter®

VM600 IOC4T capacitive-coupling adaptor

IOC4T capacitive-coupling adaptor (shown in J3 of IOC4T card)

KEY FEATURES AND BENEFITS

- From the vibro-meter® product line
- Capacitive-coupling adaptor: 1 µF series capacitor and/or straight-through connections
- Designed for operation with MPC4/IOC4T card pairs
- Inserts directly into the J3 screw-terminal connector of an IOC4T card

APPLICATIONS

- Machinery protection and/or basic condition monitoring
- Reduces external circuitry and wiring when the raw outputs on an IOC4T card are connected to test and measurement, or third-party equipment

DESCRIPTION

The IOC4T capacitive-coupling adaptor is designed for use with MPC4/IOC4T card pairs in the VM600 series of machinery protection systems and condition and performance monitoring systems, from Meggitt's vibro-meter® product line.

The MPC4/IOC4T card pair provides "raw" output signals that are buffered versions of the signals on the card pair's four dynamic channels (AC range: ±10 V_{PEAK}, DC range: 0 to 20 V_{DC} or 0 to −20 V_{DC}). These raw signals are available via the BNC connectors on the front panel of the MPC4 card (front of the VM600 rack) and also via a screw-terminal connector on the front panel of the IOC4T card (rear of the VM600 rack).

The MPC4/IOC4T card pair's raw signals are intended for the connection of various items of test and measurement equipment, or other third-party equipment, to the card pair. However, some test equipment such as analog recorders, often provide only DC-coupled inputs which can result in the equipment being saturated by the DC component of a raw signal and the AC component being lost.

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DESCRIPTION *(continued)*

Accordingly, the IOC4T capacitive-coupling adaptor has been added to the VM600 product range in order to allow devices without AC-coupled inputs to be more easily integrated with VM600 rack-based machinery monitoring systems.

Each IOC4T capacitive-coupling adaptor incorporates dedicated passive circuitry for each raw output signal of an MPC4/IOC4T card pair (corresponding to the four dynamic channels) in order to AC couple the signal and remove the DC component, or provide a straight-through (short-circuit) connection that contains both AC and DC components. The option for each individual IOC4T adaptor channel is specified at the time of ordering (see **Ordering information on page 4**).

Applications information

The IOC4T capacitive-coupling adaptor is effectively an extender that inserts directly into the J3 screw-terminal connector on the IOC4T card that provides the raw outputs. To ensure retention and mechanical support, the IOC4T adaptor should be secured to the connector of the card using the Allen (hex) driver tool provided with the adaptor.

The mating connector, with screw-terminal connections to the field wiring, then inserts directly into the IOC4T capacitive-coupling adaptor.

For specific applications, contact your local Meggitt representative.

SPECIFICATIONS

Electrical

Coupling capacitor

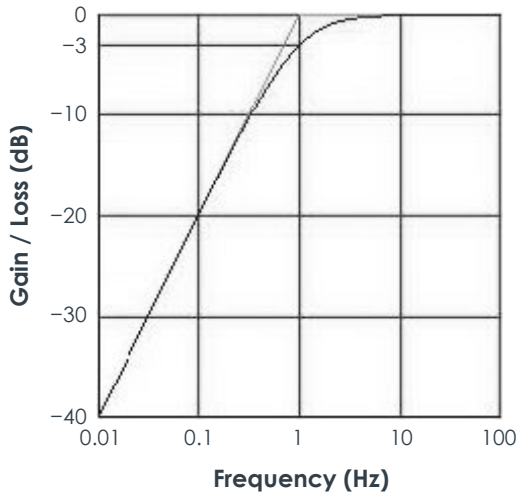
• Capacitance	: 1 µF
• Tolerance	: ±20%
Circuit	: Series capacitor, forming a high-pass (HP) filter in series with the input impedance of the attached equipment
Cutoff frequency	: The cutoff frequency (*fc*) can be calculated using the standard high-pass (HP) filter formula:

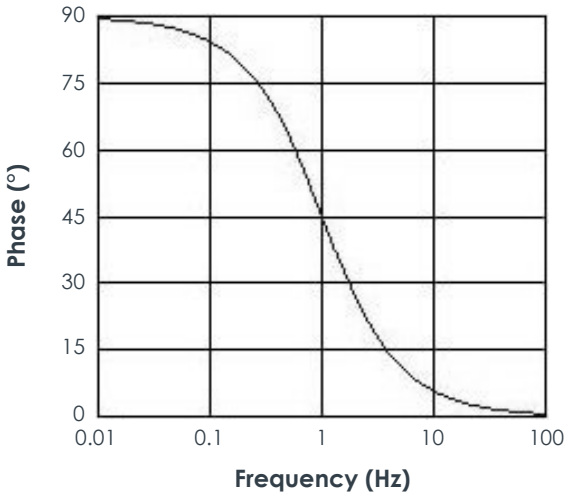
$$fc = 1/(2 \times \pi \times R \times C) = 159155/R$$

Note: As equipment input impedances are usually greater than 100 kΩ, the cutoff frequency is typically lower than 1.6 Hz.

SPECIFICATIONS *(continued)*

Typical response curves





Note: In practice, the actual cutoff frequency depends on the input impedance of the attached equipment.

Environmental

Temperature

- Operating : −25 to 65°C (−13 to 149°F)
- Storage : −40 to 85°C (−40 to 185°F)

Humidity

- Operating : 0 to 90% non-condensing
- Storage : 0 to 95% non-condensing

Approvals

Environmental management : RoHS compliant

Physical

Mounting : The IOC4T capacitive-coupling adaptor inserts directly into the J3 screw-terminal connector of the IOC4T card.
The IOC4T adaptor has two captive retaining bolts that should be used to secure it to the connector of the card using the Allen (hex) driver tool provided (see **Ordering information on page 4**).

Dimensions

- Height : 72 mm (2.8 in)
- Width : 14 mm (0.5 in)
- Depth : 35 mm (1.4 in)

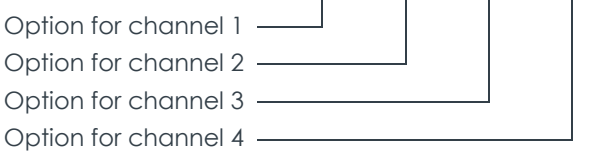
Note: When inserted, an IOC4T adaptor adds approximately 28 mm (1.1 in) between the IOC4T card and its mating connector.

ORDERING INFORMATION

To order please specify

Ordering number (PNR):

200-560-910-0xx / A□ / B□ / C□ / D□



The capacitive-coupling options for each channel are:

0 For a straight through (short-circuit) connection. The raw output signal for this channel will contain both AC components and DC components.

1 For a 1 µF capacitor connected in series. The raw output signal for this channel will contain AC components only.

Notes

As an MPC4/IOC4T card pair can connect to a range of different equipment, an IOC4T capacitive-coupling adaptor must be ordered using a PNR (ordering number above) with options that specify the capacitive-coupling required by each individual adaptor channel in a specific application.

An IOC4T capacitive-coupling adaptor is supplied with an Allen (hex) driver with a ball end suitable for the captive retaining bolts that should be used to secure the adaptor in the J3 screw-terminal connector of an IOC4T card.

RELATED PRODUCTS

IOC4T voltage-drop adaptor	VM600 IOC4T voltage-drop adaptor	: Refer to corresponding data sheet
MPC4 and IOC4T	VM600 machinery protection card pair	: Refer to corresponding data sheets

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The Energy & Equipment division includes the Energy Sensing and Controls product group that specialises in sensing and monitoring solutions for a broad range of energy infrastructure, and control valves for industrial gas turbines, primarily for the Power Generation, Oil & Gas and Services markets. Energy & Equipment is headquartered in Switzerland (Meggitt SA) and incorporates the vibro-meter® product line, which has over 65 years of sensor and systems expertise and is trusted by original equipment manufacturers (OEMs) globally.

In this publication, a dot (.) is used as the decimal separator and thousands are separated by thin spaces. Example: 12345.67890.

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