

DATA SHEET

vibro-meter®

VM600 IOC4T voltage-drop adaptor



IOC4T
voltage-drop
adaptor
(shown in J1
of IOC4T card)

KEY FEATURES AND BENEFITS

- From the vibro-meter® product line
- Voltage-drop adaptor:
–27 V input to –24 V outputs,
–27 V input to –18 V outputs and/or
straight-through connections
- Designed for operation with MPC4/IOC4T
card pairs
- Inserts directly into the J1 and/or J2
screw-terminal connectors of an IOC4T card

APPLICATIONS

- Machinery protection and/or basic
condition monitoring
- Reduces external circuitry and wiring when an
IOC4T card is used to supply power to third-
party sensors / measurement chains
(front ends)

DESCRIPTION

The IOC4T voltage-drop 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 includes a sensor power supply for each of the channels (four dynamic and two speed/phase reference) that can provide an output of either $-27.2 V_{DC}$, $+27.2 V_{DC}$, $+15 V_{DC}$ or $+6.16 mA$, when enabled. This sensor power supply (PS) output is software configurable individually for each channel in order to support the widest possible wide range of vibro-meter® sensors and conditioners, including those with current-modulated signals.

This MPC4/IOC4T sensor power supply can also be used to provide power to generic devices (non-vibro-meter®). However, some popular machinery protection products, including from Bently Nevada™, are not directly compatible with the default power supply outputs.



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DESCRIPTION *(continued)*

Accordingly, the IOC4T voltage-drop adaptor has been added to the VM600 product range in order to allow an even wider range of sensors, signal conditioners and other devices to be more easily integrated with VM600 rack-based machinery monitoring systems.

Each IOC4T voltage-drop adaptor incorporates dedicated passive circuitry for each channel of an MPC4/IOC4T card pair (four dynamic and two speed/phase reference) in order to reduce the $-27.2 V_{DC}$ sensor power supply's output to either $-24 V_{DC}$ or $-18 V_{DC}$, or provide a straight-through (short-circuit) connection to the $-27.2 V_{DC}$ output. 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 voltage-drop adaptor is effectively an extender that inserts directly into the appropriate screw-terminal connector depending on the channels of the IOC4T card used: J1 for the dynamic signals and/or J2 for speed/phase reference signals. 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 connectors, with screw-terminal connections to the field wiring, then inserts directly into the IOC4T voltage-drop adaptor.

For specific applications, contact your local Meggitt representative.

SPECIFICATIONS

Electrical

Input voltage	: $-27.2 V_{DC}$ (from MPC4/IOC4T sensor power supply)
Output voltages	
• $-24 V$ output (nominal)	: $-25.1 V_{DC}$ with no load. $-22.8 V_{DC}$ at full load (25 mA).
• $-18 V$ output (nominal)	: $-18.3 V_{DC}$ with no load. $-17.7 V_{DC}$ at full load (25 mA).
Stability of the output	: 2% (approx.)
Output current limitation	: ≤ 25 mA (from MPC4)

Compatible sensors

A wide range of sensors from third-part suppliers can be supported, including the following:

Example $-24 V$ devices

• Bently Nevada 3300 5 mm proximity transducer systems	: Requires -17.5 to $-26 V_{DC}$ without barriers at 12 mA maximum consumption, -23 to $-26 V_{DC}$ with barriers. Operation at a more positive voltage than $-23.5 V_{DC}$ can result in reduced linear range.
• Bently Nevada 3300 XL 8 mm proximity transducer systems	: As above
• Bently Nevada 3300 XL NSv™ proximity transducer systems	: As above
• Bently Nevada 330400 and 330425 accelerometer acceleration transducers	: Requires $-24 \pm 0.5 V_{DC}$, at a 2 mA (nominal) bias current

SPECIFICATIONS *(continued)*

Example –18 V devices

- Bently Nevada 3000 series proximator model CA 3120-190 (200 mV/mil) : Requires –18 V_{DC}
- Bently Nevada model 9513 velocity-to-displacement converter : As above

Ex barriers

- MTL Instruments MTL7766– safety barrier (negatively-polarised shunt-diode) : Typically used with –24 V_{DC}.
Note: The 3-wire transmitters used with vibration monitoring equipment are invariably supplied by a –24 V_{DC} power supply, hence a recommended barrier choice is the negatively-polarised MTL7796–.

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 voltage-drop adaptor inserts directly into the J1 and/or J2 screw-terminal connectors 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 : 12 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):

200-560-900-0xx / A / B / C / D



The voltage-drop options for each channel are:

- 0** For a straight through (short-circuit) connection. The MPC4 sensor power supply (PS) output can be set to $-27.2 V_{DC}$, $+27.2 V_{DC}$, $+15 V_{DC}$ or $+6.16 mA$ as required by the attached sensor, signal conditioner or other circuitry.
- 1** For a $-24 V_{DC}$ output. The MPC4 sensor power supply (PS) output must be set to $-27.2 V_{DC}$.
- 2** For a $-18 V_{DC}$ output. The MPC4 sensor power supply (PS) output must be set to $-27.2 V_{DC}$.

Notes

As an MPC4/IOC4T card pair can accept a wide range of different sensors / measurement chains, an IOC4T voltage-drop adaptor must be ordered using a PNR (ordering number above) with options that specify the voltage-drop required by each individual adaptor channel in a specific application.

For example:

- A voltage-drop adaptor for use with dynamic channels (connector J1 on the IOC4T) requires an option for each dynamic input, that is, options for channels 1 to 4.
- A voltage-drop adaptor for use with the speed/phase reference channels (connector J2 on the IOC4T) requires an option for each speed/phase reference input, that is, options for channels 1 and 2 but with option 0 specified for channels 3 and 4.

An IOC4T voltage-drop adaptor is supplied with an Allen (hex) driver tool with a ball end suitable for the captive retaining bolts that should be used to secure the adaptor in the J1 and/or J2 screw-terminal connectors of an IOC4T card.

RELATED PRODUCTS

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

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