

Input / Output Card Type IOC 4T

FEATURES

- ▶ 6-channel signal interface card for MPC 4 (Machinery Protection Card)
- ▶ Screw terminal strip (48 terminals)
- ▶ Ensures EMI protection for all inputs and outputs
- ▶ Contains 4 relays which can be attributed to alarm signals under software control
- ▶ 32 fully-programmable open-collector outputs to RLC card (jumper selectable)
- ▶ Provides buffered raw, voltage and current vibration outputs
- ▶ Live insertion of cards possible



DESCRIPTION

The IOC 4T Input / Output Card acts as a signal interface for the VM 600 series MPC 4 (Machinery Protection Card). It is installed in the rear of the ABE 04X rack and connects directly to the rack backplane via two connectors.

Each IOC 4T is associated with a specific MPC 4 and is mounted directly behind it in the rack. The IOC 4T operates in slave mode and reads data and clock signals from the MPC 4 via an Industry Pack (IP) interface through connector P2.

The IOC 4T contains a terminal strip to connect the transmission cables coming from the transducers/conditioners. This strip is also used for the inputting and outputting of all signals from/to an external control system.

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

The IOC 4T ensures feedthrough of the raw vibration and speed signals from the sensors to the MPC 4. These signals, once processed, are passed back to the IOC 4T. For the vibration signals, 4 on-board digital-to-analog converters (DAC) provide calibrated signal outputs in the range 0-10 V. Four built-in voltage-to-current converters allow signals in the range 4-20 mA to be obtained (jumper selectable).

The IOC 4T contains 4 "local" relays that can be attributed to any specific alarm signals under software control. In a typical application, these may be used to signal an MPC 4 fault or a problem detected by a common alarm (Sensor OK, Alarm and Danger).

In addition, 32 digital signals representing alarms are passed to the backplane and may be used by an optional RLC relay card mounted in the rack (jumper selectable).

SPECIFICATIONS

VIBRATION INPUTS

Filtering : Filtered for protection against electro-magnetic interference (conforms to EC standards).
Refer to MPC 4 data sheet for additional specifications.

VIBRATION OUTPUTS

Filtering : Filtered for protection against electro-magnetic interference (conforms to EC standards).
Refer to MPC 4 data sheet for additional specifications.

SPEED/PHASE REFERENCE INPUTS

Filtering : Filtered for protection against electro-magnetic interference (conforms to EC standards).
Refer to MPC 4 data sheet for additional specifications.

CONTROL SIGNAL INPUTS

Operating principle : Detection of open or closed circuit on the input
DANGER BYPASS (DB) : A closed contact between DB and RET inputs allows operator to inhibit the DANGER relay outputs.
TRIP MULTIPLY (TM) : When there is a closed contact between TM and RET inputs, alarm levels are multiplied by a scale factor (software settable).
When TM is open, scale factor is not taken into account.
ALARM RESET (AR) : A closed contact between AR and RET inputs resets latched alarms

SPECIFICATIONS *(Continued)***ALARM OUTPUTS**

Quantity and type : 32 outputs on backplane bus for use by RLC 16 cards

DC OUTPUTS

Number of outputs : 4 per IOC 4T card

Signal range : 0 to 10 V or 4 to 20 mA (jumper selectable on IOC for each output)
Note: An output range of 0 to 23 mA is available for applications where the current signal is also used to monitor open and short circuits.

Accuracy : $\leq \pm 0.5\%$

Linearity error : $\leq \pm 0.5\%$

Admissible load on output : > 100 k Ω for voltage output
 > 325 Ω for current output

RELAY OUTPUTS

Relay names : RL1, RL2, RL3, RL4

Make : Siemens

Type : PE 014005

Contact arrangement : 1 x NO or 1 x NC contact / relay (user selectable)

Coil voltage : 5 V_{DC}

Coil resistance : 125 $\Omega \pm 10\%$

Nominal current : 0.35 A_{DC} / 5 A_{AC}

Nominal voltage : 300 V_{DC} / 250 V_{AC}

Max. break power without contact protection : 100 W (1250 VA)

Pick-up / drop-out / bounce time (contact NO) : Typically 5 / 2 / 1 ms

Test voltage, coil - contact : 4000 V_{AC}

Test voltage, open contact : 1000 V_{AC}

Mechanical life : 30 x 10⁶ operations

Electrical life : 10⁵ operations

COMMUNICATIONS

Bus to MPC 4 card : Similar to Industry Pack (IP)

POWER SUPPLY TO IOC 4T

Consumption from +5 V_{DC} supply : 1.5 W

Consumption from ± 12 V_{DC} supply : 0.7 W, plus an additional 0.25 W per current output used

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

SPECIFICATIONS *(Continued)*

EMC regulations : EN 50081-2
EN 50082-2

PHYSICAL

Height : 6 U (262 mm, 10.31 in)
Width : 20.1 mm
Depth : 125 mm
Weight : 0.25 kg

ORDERING INFORMATION

To order please specify :

Type	Designation	Ordering Number
IOC 4T	Input / Output Card	
	- Standard version	200-560-000-1Hh
	- Separate circuits in accordance with IEC/CEI 60255-5 standard	200-560-000-2Hh

Note : "Hh" 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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