

tM-P3POR3

3-channel Isolated Digital Input and
3-channel PhotoMOS Relay Module

Features

- Wet Contact, Source- or Sink-type Digital Inputs
- PhotoMos Relay Outputs
- Photocoupler Isolation
- No Arcing, No Bounce, and No Switching Noise
- All DI Channels Can Be Used As 16-bit Counters
- Configurable Power-on Value and Safe Value Settings
- Dual Watchdog

Introduction

The tM-P3POR3 provides 3 digital input channels and 3 PhotoMOS relay output channels, each of which features photocoupler isolation. All output channels are PhotoMOS relays, while the digital input channels can be configured as either sink- or source-type through wiring. All input channels can be used as 16-bit counters. There are options for configuring power-on and safe digital output values. PhotoMOS relays provide a faster response time, greater electrical endurance, and no spike. 4 kV ESD protection and 3750 VDC intra-module isolation are also provided.

System Specifications

CPU Module	
Watchdog Timer	Module, Communication (Programmable)
Isolation	
Intra-module Isolation	3750 VDC for Digital Input 2000 VDC for PhotoMOS Relay Output
EMS Protection	
EFT (IEC 61000-4-4)	±4 kV for Power
ESD (IEC 61000-4-2)	±4 kV Contact for Each Terminal ±8 kV Air for Random Point
LED Indicators	
Status	1 x Power and Communication
COM Ports	
Ports	1 x RS-485
Baud Rate	1200 ~ 115200 bps
Data Format	(N, 8, 1), (N, 8, 2), (O, 8, 1), (E, 8, 1)
Protocol	DCON, Modbus RTU, Modbus ASCII
Power	
Reverse Polarity Protection	Yes
Consumption	0.4 W max.
Powered from Terminal Block	10 ~ 30 VDC
Mechanical	
Dimensions (mm)	52 x 98 x 27 (W x L x H)
Installation	DIN-Rail Mounting
Environmental	
Operating Temperature	-25 ~ +75 °C
Storage Temperature	-30 ~ +75 °C
Humidity	10 ~ 95% RH, Non-condensing

Applications

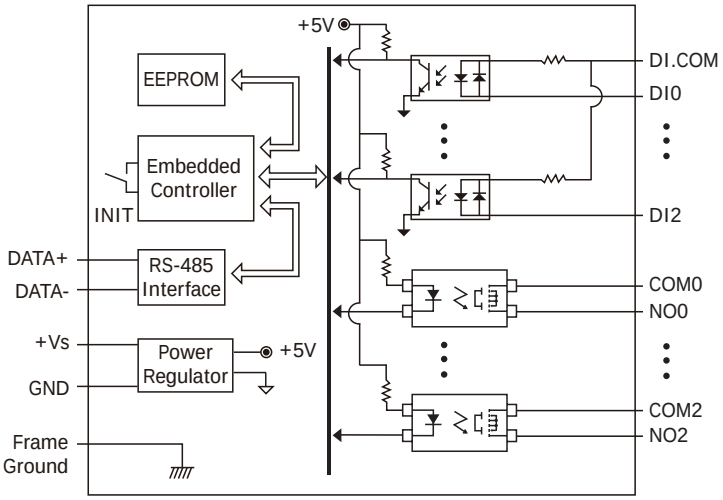
- All Kinds of On/Off Control
- Industrial Machinery
- Food and Beverage Systems
- Control Systems
- Industrial Automation
- Building Automation
- Semiconductor Fabrication

I/O Specifications

Digital Input/Counter	
Channels	3
Type	Wet Contact
Sink/Source (NPN/PNP)	Sink/Source
ON Voltage Level	+3.5 ~ +50 VDC
OFF Voltage Level	+1 VDC max.
Max. Counts	65535 (16-bit)
Frequency	100 Hz
Min. Pulse Width	5 ms
Input Impedance	10 kΩ, 0.66 W
Overvoltage Protection	70 VDC
Relay Output	
Channels	3
Type	PhotoMOS Relay
Operate Time	5 ms (Max.)
Release Time	0.5 ms (Max.)
Electrical Endurance	No Arcing, No Bounce, and No Switching Noise
Power on Value	Programmable
Safe Value	Programmable

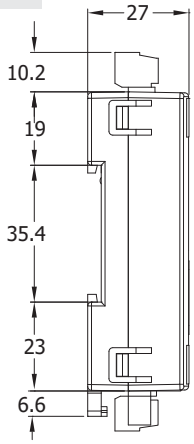
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Internal I/O Structure

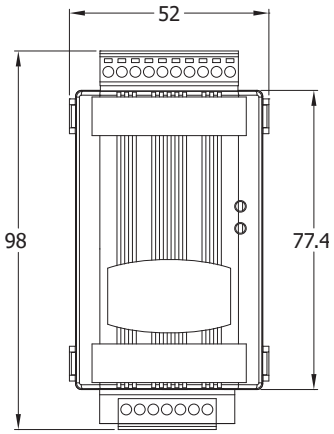


Dimensions (Units: mm)

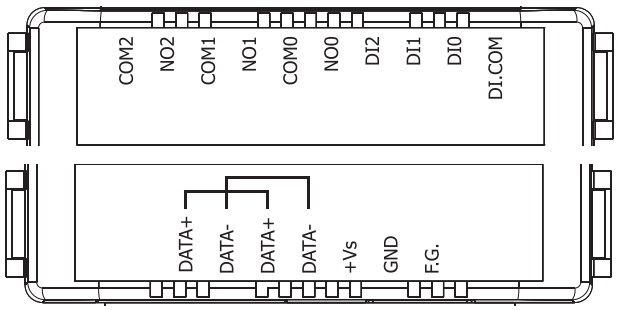
Left Side View



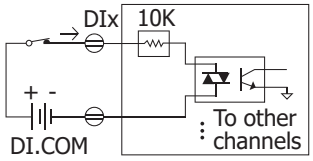
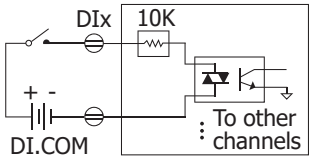
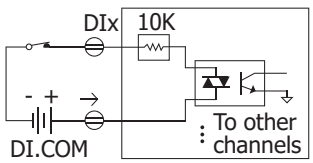
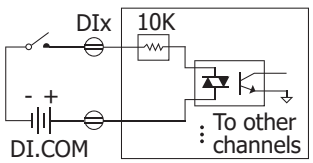
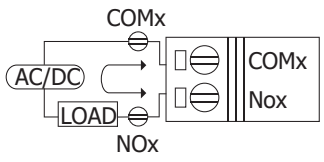
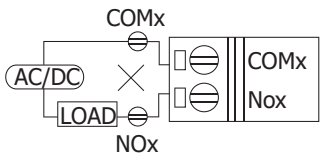
Front View



Pin Assignments



Wire Connections

Digital Input/ Counter	ON State Readback as 1	OFF State Readback as 0
Sink	+3.5 ~ +50 VDC	OPEN or <1.0 VDC
		
Source	+3.5 ~ +50 VDC	OPEN or <1.0 VDC
		
PhotoMOS Relay	**ON State, Readback as 1**	**OFF State, Readback as 0**
Relay Output		

Ordering Information

tM-P3POR3 CR	3-channel Isolated DI (Wet) and 3-channel PhotoMOS Relay Module (RoHS)

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