



tM-P4A4

4-channel Isolated DI and 4-channel Isolated DO Module

Features

- 4-channel Sink-type Digital Inputs
- 4-channel Source-type Digital Outputs
- Photocoupler Isolation
- All DI Channels Can Be Used As 16-bit Counters
- Configurable Power-on Value and Safe Value Settings
- Dual Watchdog



Introduction

The tM-P4A4 provides 4 channels for digital input and 4 channels for digital output, each of which features photocoupler isolation. The tM-P4A4 supports source-type output with short circuit protection, while the input is sink-type. All input channels can be used as 16-bit counters. There are options for configuring power-on and safe digital output values. 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 |
| 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 | 0.5 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 |

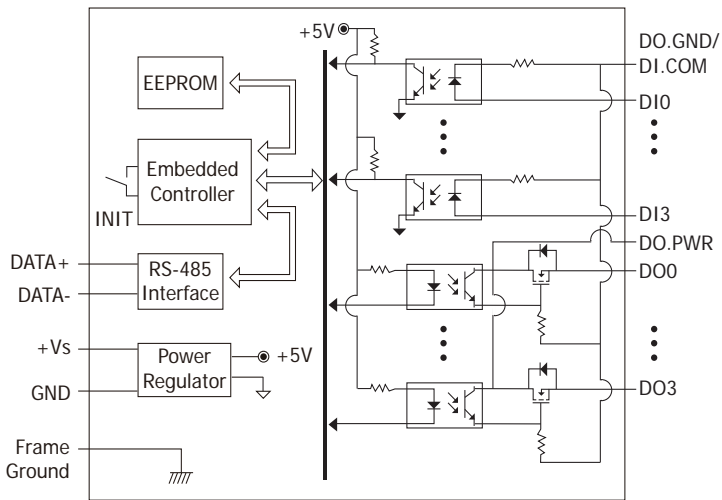
Applications

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

I/O Specifications

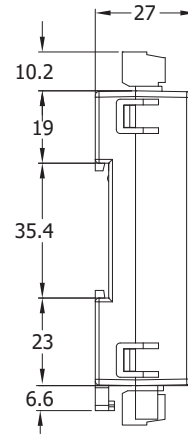
| Digital Input/Counter | |
|--------------------------|-------------------------|
| Channels | 4 |
| Type | Wet Contact |
| Sink/Source (NPN/PNP) | Sink |
| ON Voltage Level | +4.0 ~ +50 VDC |
| OFF Voltage Level | +1 V max. |
| Max. Counts | 65535 (16-bit) |
| Frequency | 100 Hz |
| Min. Pulse Width | 5 ms |
| Input Impedance | 10 KΩ, 0.66 W |
| Overvoltage Protection | 70 VDC |
| Digital Output | |
| Channels | 4 |
| Type | Isolated Open Collector |
| Sink/Source (NPN/PNP) | Source |
| Load Voltage | +10 ~ +40 VDC |
| Max. Load Current | 650 mA/channel |
| Overvoltage Protection | 47 VDC |
| Overload Protection | 1.4 A |
| Short-Circuit Protection | Yes |
| Power on Value | Programmable |
| Safe Value | Programmable |

Internal I/O Structure

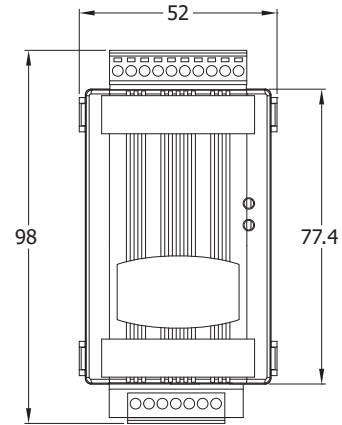


Dimensions (Units: mm)

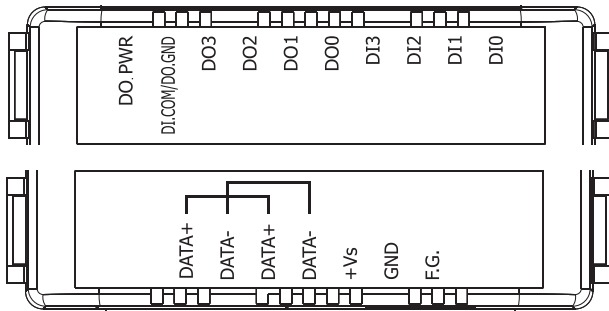
Left Side View



Front View



Pin Assignments



Wire Connections

| Digital Input/Counter | ON State, Readback as 1 +4.0 ~ +50 VDC | OFF State, Readback as 0 OPEN or <1 VDC |
|-----------------------|---|--|
| Sink | | |
| Output Type | ON State, Readback as 1 Relay ON | OFF State, Readback as 0 Relay OFF |
| Drive Relay | | |
| Resistance Load | | |

Ordering Information

| | |
|------------|--|
| tM-P4A4 CR | 4-channel Isolation DI (Wet) and 4-channel Isolated DO (Source, PNP) Module (RoHS) |
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