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Tiny RS-485 Remote I/O Modules

tM-P4C4

tM-P4C4

4-channel Isolated Digital Input and
4-channel Isolated Digital Output Module

Features

- Sink-type Digital Outputs
- Source-type Digital Inputs
- Photocouple Isolation
- All Channels Can Be Used As 16-bit Counters
- Dual Watchdog
- Configurable Power-on Value Settings
- Configurable Safe Value Settings
- Cost-effective
- Wide Operating Temperature Range: -25 ~ +75°C

CE FC RoHS

Introduction

The tM-P4C4 provides 4 channels for digital input and 4 channels for digital output, each of which features photocouple isolation. The tM-P4C4 supports sink-type output with short circuit protection, while input is source-type. All input channels can be used an 16-bit counters. There are options for configuring power-on and safe digital output values. 4 kV ESD protection and 3750 V_{DC} intra-module isolation are also provided.

Applications

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

Pin Assignments

DI.COM/DO.PWR DO.GND DO3 DO2 DO1 DO0 DI3 DI2 DI1 DI0

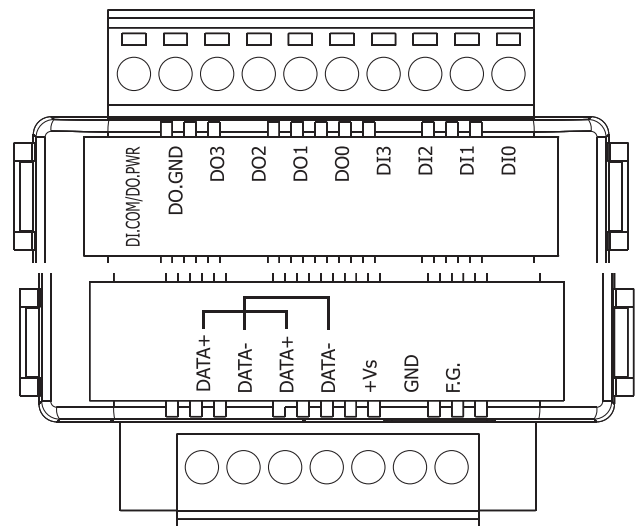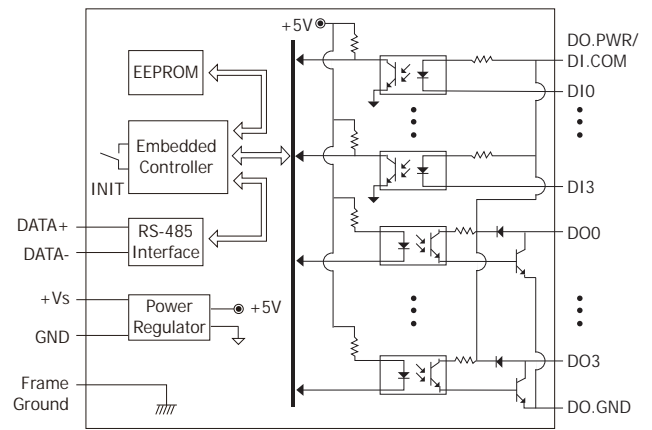DATA+ DATA- DATA+ DATA- +Vs GND F.G.

System Specifications

Communication	
Interface	RS-485
Format	(N, 8, 1), (N, 8, 2), (O, 8, 1), (E, 8, 1)
Baud Rate	1200 ~ 115200 bps
Protocol	DCON, Modbus/RTU, Modbus/ASCII
Dual Watchdog	Yes, Module (2.3 seconds), Communication (Programmable)
LED Indicators	
Power	1 LED as Power Indicator
Isolation	
Intra-module Isolation, Field-to-Logic	3750 V_{DC}
EMS Protection	
ESD (IEC 61000-4-2)	±4 kV Contact for Each Terminal
	±8 kV Air for Random Point
EFT (IEC 61000-4-4)	±4 kV for Power
Power Requirements	
Reverse Polarity Protection	Yes
Powered from Terminal Block	Yes, 10 ~ 30 V_{DC}
Consumption	0.5 W Max.
Mechanical	
Dimensions (W x L x H)	52 mm x 98 mm x 27 mm
Installation	DIN-Rail Mounting
Environment	
Operating Temperature	-25 ~ +75°C
Storage Temperature	-30 ~ +75°C
Humidity	10 ~ 95% RH, Non-condensing

I/O Specifications

Digital Input/Counter		
Input Channels	4	
Type	Wet Contact (Source)	
On Voltage Level	+3.5 V_{DC} ~ 50 V_{DC}	
Off Voltage Level	+1 V Max.	
Input Impedance	10 KΩ, 0.66 W	
Counters	Channels	4
	Max. Count	65535 (16-bit)
	Max. Input Frequency	100 Hz
	Min. Pulse Width	5 ms
Overvoltage Protection	70 V_{DC}	
Digital Output		
Output Channels	4	
Type	Isolated Open Collector (Sink)	
Max. Load Current	700 mA/channel	
Load Voltage	3.5 V_{DC} ~ 50 V_{DC}	
Overvoltage Protection	60 V_{DC}	
Overload Protection	Yes	
Short Circuit Protection	Yes	
Power-on Value	Yes, Programmable	
Safe Value	Yes, Programmable	

Wire Connections

Digital Input/ Counter	ON State Readback as 1	OFF State Readback as 0
	+3.5 ~ +50 V_{DC}	OPEN or <1 V_{DC}
Source		

Output Type	ON State Readback as 1	OFF State Readback as 0
	Relay ON	Relay OFF
Drive Relay		
Resistance Load		

Block Diagram

Dimensions (Units: mm)

| Left Side View | Front View | Right Side View | Rear View | Bottom View |

Top View
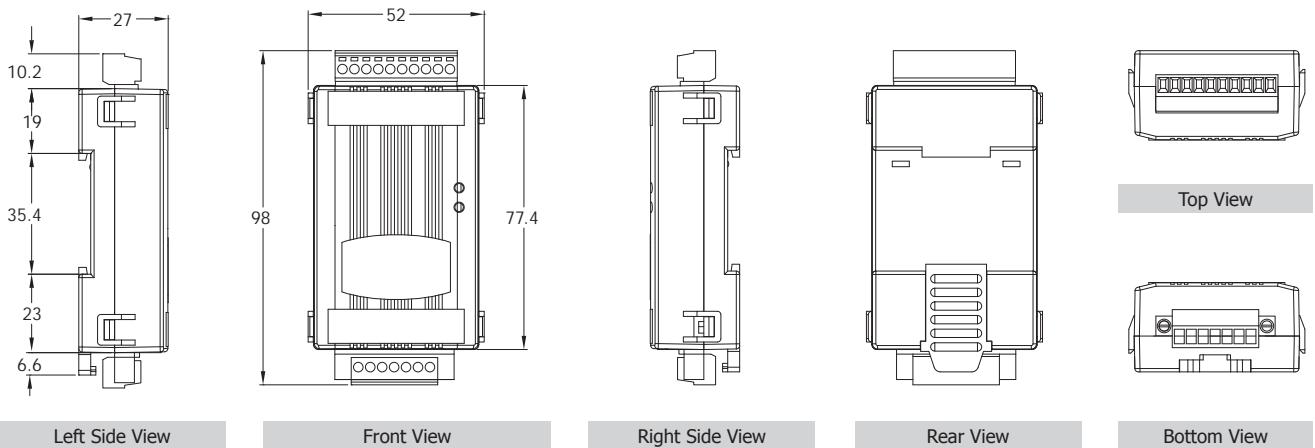
Ordering Information

tM-P4C4 CR	4-channel Isolation Digital Input and 4-channel Isolation Digital Output Module (RoHS)

Related Products

	tM-7561 CR	Isolated USB to RS-485 Converter (RoHS)
	tM-7520U CR	Isolated RS-232 to RS-485 Converter (RoHS)

	tM-7510U CR	Isolated RS-485 Repeater (RoHS)
	MDR-20-24 CR	24W Single Output Industrial DIN-Rail Power Supply (RoHS)