



tM-DA1P1R1

1-channel AO, 1-channel DI and
1-channel Power Relay Module

Features

- Multifunction (1 AO, 1 DI and 1 DO)
- 1-channel Isolated Analog Output
- 1-channel Isolated Digital Input
- 1-channel Power Relay Output
- Configurable Power-on Value and Safe Value Settings



Introduction

The tM-DA1P1R1 is an RS-485 Interface module that offers 1 analog output channel, 1 digital input channel, and 1 relay output channel. Analog output resolution is 12-bit with an output range of 0~10V and 0~20mA. The Digital input channel is a dry contact type and provides a 16-bit counter function. The Relay output type is a Form C, and all I/O terminals provide 4 kV ESD protection and 3 kV intra-module isolation.

Applications

- Industrial Automation
- Industrial Machinery
- Building Automation
- Dimmer Control
- Food and Beverage Systems
- Semiconductor Fabrication
- Control Systems

System Specifications

CPU Module	
Watchdog Timer	Communication (Programmable)
Isolation	
Intra-module Isolation	2500 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	1.8 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 ~ +80 °C
Humidity	10 ~ 95% RH, Non-condensing

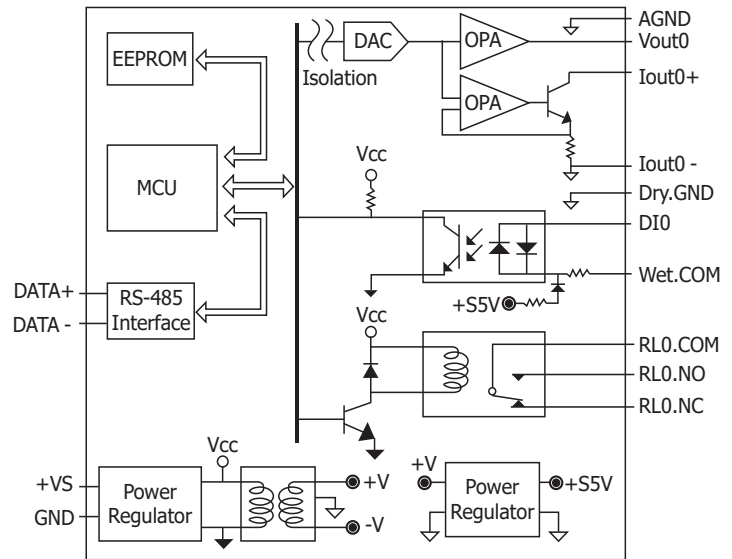
I/O Specifications

Analog Output		
Channels	1	
Type	Voltage, Current	
Range	Voltage	0 ~ 10 V
	Current	0 ~ 20 mA, 4 ~ 20 mA
Resolution	12-bit	
Accuracy	±0.1% of FSR	
DA Output Response Time	10 ms	
Voltage Output Capability	20 mA	
Current Load Resistance	500 Ω	
Digital Input/Counter		
Channels	1	
Type	Dry Contact, Wet Contact	
Sink/Source (NPN/PNP)	Dry	Source
	Wet	Sink/Source
ON Voltage Level	Dry	Close to GND
	Wet	+3.5 ~ +50 VDC
OFF Voltage Level	Dry	Open
	Wet	+1 VDC Max.
Max. Counts	65535 (16-bit)	
Frequency	100 Hz	
Min. Pulse Width	5 ms	
Input Impedance	10 KΩ, 0.5 W	
Overvoltage Protection	70 VDC	

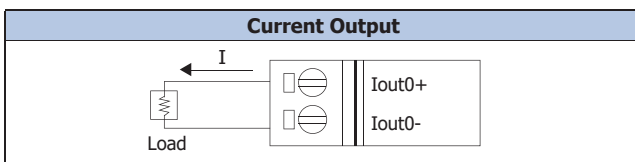
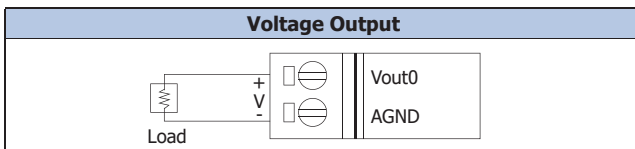
I/O Specifications

Relay Output	
Channels	1
Type	Power Relay, Form C
Contact Rating	NO : 10 A @ 250 VAC NC : 6 A @ 250 VAC
Operate Time	15 ms Max.
Release Time	5 ms Max.
Electrical Endurance	5 X 10 ⁴ OPS
Mechanical Endurance	1 X 10 ⁷ OPS
Power on Value	Programmable
Safe Value	Programmable

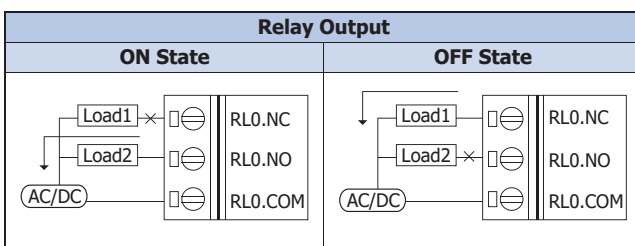
Internal I/O Structure



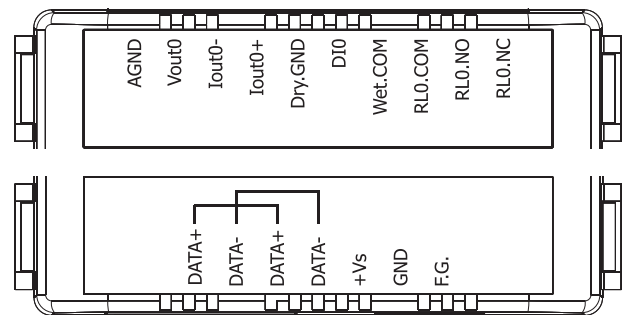
Wire Connections



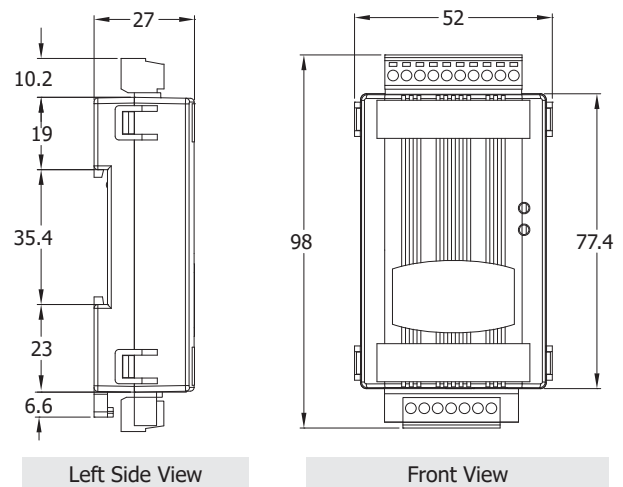
Digital Input/Counter		
Wiring	ON State Readback as 1	OFF State Readback as 0
Dry Contact	Close to Dry.GND	Open
Wet Contact	+3.5 ~ +50 Vdc	+1 Vdc Max.



Pin Assignments



Dimensions (Units: mm)



Ordering Information

tM-DA1P1R1 CR	1-channel Isolated AO, 1-channel Isolated DI (Wet) and 1-channel Power Relay Module (RoHS)
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