

M-7003-G

8-ch AI and 4-ch Relay Module

Features

- Voltage and Current Inputs
- Relay Outputs
- High Resolution: 16-bit
- Photocoupler Isolation
- Built-in Dual Watchdog

Introduction

M-7003 is a 16-bit, 8-channel analog input, and 4-channel relay output module. All of its channels are Form A type relay module that provides programmable input range on all analog channels (±150 mV, ±500 mV, ±1 V, ±5 V, ±10 V, ±20 mA, 0 ~ 20 mA, and 4 ~ 20 mA). Each analog channel is allowed to configure an individual range and has 120 VDC High Over-voltage Input Protection. Jumper selectable for voltage or current input. The sampling rate of M-7003 is changeable; there are fast mode and normal mode for your consideration. M-7003 also has a qualification for 4 kV ESD protection as well as 2500 VDC intra-module isolation.

Applications

- Building Automation
- Factory Automation
- Machine Automation
- Remote Maintenance
- Remote Diagnosis
- Testing Equipment

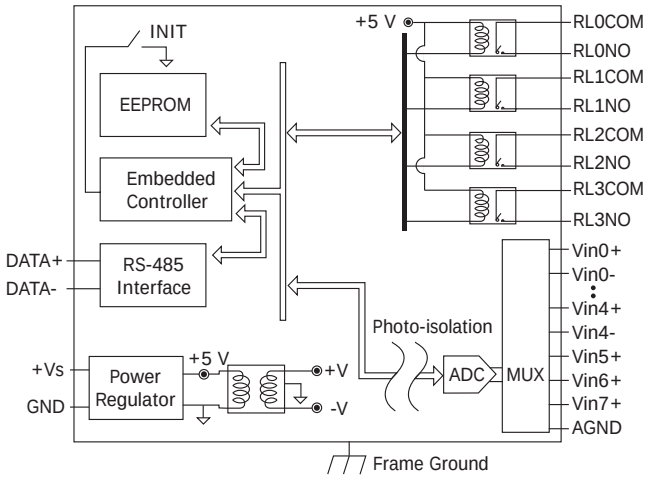
Specifications

CPU Module		
Watchdog Timer		Module, Communication (Programmable)
Isolation		
Intra-module Isolation		2500 VDC
EMS Protection		
EFT (IEC 61000-4-4)		±4 kV for Power Line
ESD (IEC 61000-4-2)		±4 kV Contact for Each Terminal
Surge (IEC 61000-4-5)		±3 kV for Power Line
LED Indicators		
Status		1 x Power and Communication
Analog Input		
Channels		8 (5 Differential and 3 Single-ended)
Type		Voltage, Current
Range		±150 mV, ±500 mV, ±1 V, ±5 V, ±10 V, ±20 mA , 0 ~ 20 mA, 4 ~ 20 mA (Jumper selectable)
Resolution		16-bit
Accuracy		Normal Mode: 0.1% Fast Mode: 0.5%
Sampling Rate		Normal Mode: 10 Hz Fast Mode: 60 Hz
Input Impedance	Voltage	20 MΩ (Diff.), 10 MΩ (Single-ended)
	Currnet	139 Ω
Common Voltage Protection		±15 VDC
Overvoltage Protection		120 VDC
Individual Channel Configuration		Yes

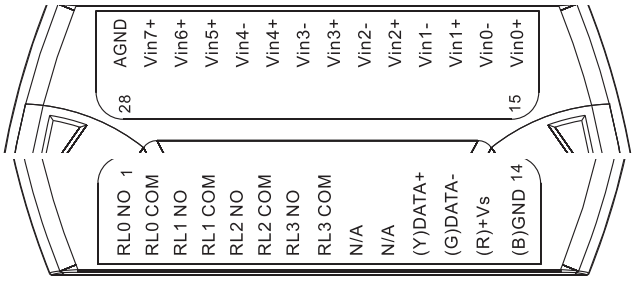
Relay Output	
Channels	4
Type	Power Relay (Form A)
Contact Rating	5 A @ 250 VAC 5 A @ 30 VDC
Operate Time	3 ms
Release Time	2 ms
Electrical Endurance	10^5 ops.
Mechanical Endurance	2 x 10^7 ops.
Power on Value	Programmable
Safe Value	Programmable
COM Ports	
Ports	1 x RS-485
Baud Rate	1200 ~ 115200 bps
Data Format	(N, 8, 1) (N, 8, 2) (E, 8, 1) (O, 8, 1)
Protocol	Modbus RTU, DCON
Power	
Reverse Polarity Protection	Yes
Input Range	+10 ~ +30 VDC
Consumption	1.8 W
Mechanical	
Dimensions (mm)	72 x 123 x 35 (W x L x H)
Installation	DIN-Rail Mounting
Environment	
Operating Temperature	-25 ~ +75 °C
Storage Temperature	-40 ~ +85 °C
Humidity	10 ~ 95% RH, Non-condensing

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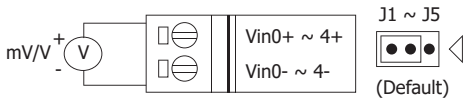
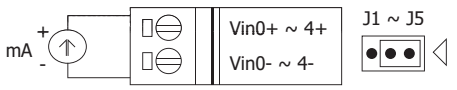
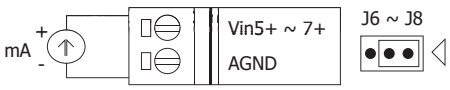
Internal I/O Structure

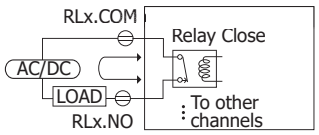
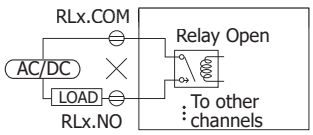


Pin Assignments



Wire Connections

Analog Input	Differential	Single-ended
Voltage Input		
Current Input		

Power Relay	ON State Readback as 1	OFF State Readback as 0
Relay Output		

Ordering Information

M-7003-G CR	8-ch AI and 4-ch Relay Module using DCON and Modbus Protocols (Gray Cover) (RoHS)

Accessories

tM-7520U CR 	Tiny Isolated RS-232 to RS-485 Converter (RoHS)
tM-7561 CR 	Tiny USB to Isolated RS-485 Converter with CA-USB18 Cable (RoHS)
tM-SG4 CR 	RS-485 Pull-high/Pull-low and Termination Resistor Module (RoHS)
I-7514U CR 	Isolated 4-channel RS-485 Repeater/Hub/Splitter (Gray Cover) (RoHS)
SG-770 CR 	7/14 channel Surge Protector (RoHS)
SG-3000 Series 	Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Input Transformers

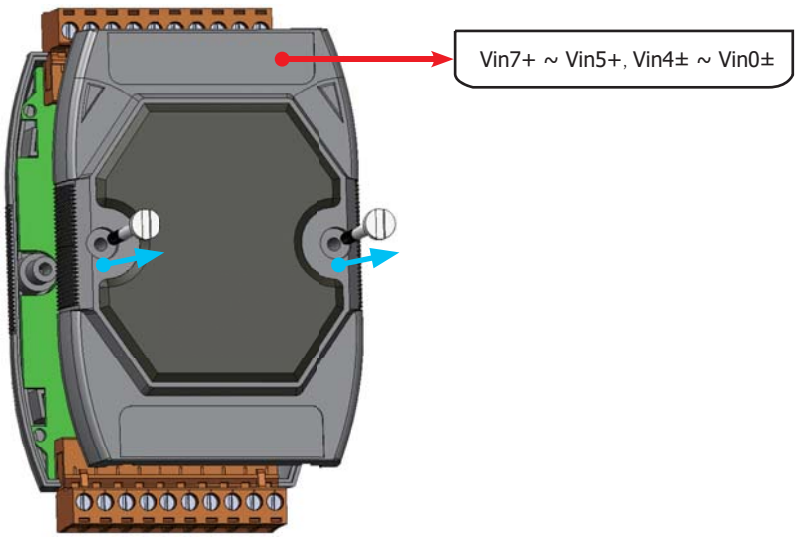
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Jumper

Notice:

1. Remove the top cover of the module before adjusting the jumper. Additionally, some modules may have two screws on the back cover.

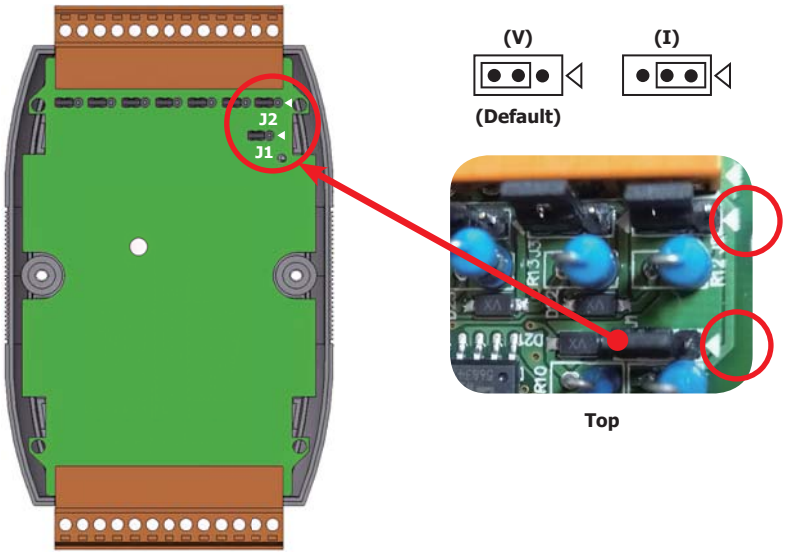
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2. Users can locate the Jx/JPx jumpers on the board by checking the I/O labels on the cover.

Channel	Vin7+	Vin6+	Vin5+	Vin4±	Vin3±	Vin2±	Vin1±	Vin0±
Jumper	J8	J7	J6	J5	J4	J3	J2	J1

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