



M-7002

4-channel AI, 5-channel DI and 4-channels Relay Output Module

Features

- Voltage and Current Inputs
- +/-240 V_{rms} Overvoltage Protection
- High Resolution: 16 bit
- 2500 V_{dc} Intra-Module Isolation
- Sink and Source Type Digital Inputs
- Photocouple Isolation
- Support Relay Outputs
- DIN-Rail Mountable
- Dual Watchdog
- Wide Operating Temperature Range: -25 ~ +75°C



Introduction

The M-7002 is a 16-bit, 4-channel differential analog inputs 5-channel digital inputs and 4-channels for relay output. 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) and digital output can be set alarm output with short-circuit protection and overload protection. Each analog channel is allowed to configure an individual range and has 240 V_{rms} high overvoltage protection. Jumper selectable for voltage or current input. The sampling rate of M-7002 is changeable; there are fast mode and normal mode for your consideration. M-7002 also has qualification for 4 kV ESD protection as well as 2500 V_{dc} intra-module isolation.

Applications

Building Automation, Factory Automation, Machine Automation, Remote Maintenance, Remote Diagnosis, Testing Equipment.

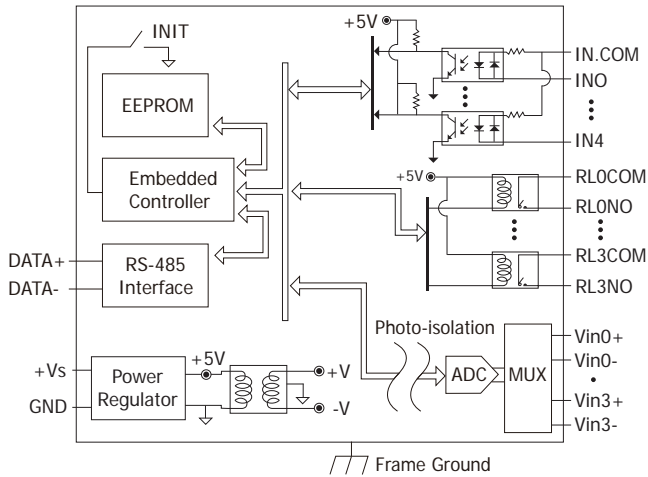
I/O Specifications

Models	M-7002	
Analog Input		
Channel	4	
Wiring	Differential	
Input Range	+/-150 mV, +/-500 mV, +/-1 V, +/-5 V, +/-10 V, +/-20 mA, 0~20 mA, 4~20 mA (Jumper selectable)	
Resolution	12/16-bit	
Accuracy	Normal Mode	0.1%
	Fast Mode	0.5%
Sampling Rate	Normal Mode	10 Hz
	Fast Mode	60 Hz
Input Impedance	Voltage	2 M
	Current	139 Ω
Common Voltage Protection	+/-200 V _{dc}	
Individual Channel Configuration	Yes	
Overvoltage Protection	240 V _{rms}	
Digital Input/Counter		
Channel	5	
Contact	Wet	
Sink/Source (NPN/PNP)	Sink/Source	
On Voltage Level	10 ~ 50 V _{dc}	
Off Voltage Level	+4 V _{dc} Max.	
Counter (50 Hz, 16-bit)	Yes	
Input Impedance	10 kΩ	
Overvoltage Protection	+/-70 V _{dc}	
Isolation Voltage	3750 V _{dc}	
Relay Output		
Channel	4	
Type	Power Relay (Form A)	
Contact Rating	5 A @ 250 V _{ac} 5 A @ 30 V _{dc}	
Surge Strength	3000 V _{dc}	
Operate Time	6 ms	
Release Time	3 ms	
Mechanical Endurance	2 × 10 ⁷ ops.	
Electrical Endurance	10 ⁵ ops.	
Power-on Value	Yes	
Safe Value	Yes	

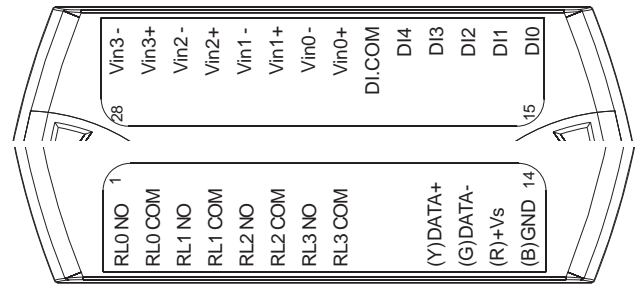
System Specifications

Models	M-7002
Communication	
Interface	RS-485
Format	N, 8, 1
Baud Rate	1200 ~ 115200 bps
Protocol	DCON Modbus/RTU
Dual Watchdog	Yes, Module (1.6 Seconds), Communication (Programmable)
LED Indicator/Display	
System LED Indicator	Yes, 1 LED as Power/Communication Indicator
I/O LED Indicator	-
7-Segment LED Display	Yes
Isolation	
Intra-Module Isolation, Field-to-Logic	2500 V _{dc}
EMS Protection	
ESD (IEC 61000-4-2)	+/-4 kV
EFT (IEC 61000-4-4)	+/-4 kV
Surge (IEC 61000-4-5)	+/-3 kV
Power	
Reverse Polarity Protection	Yes
Input Range	10 ~ 30 V _{dc}
Consumption	1.8 W
Mechanical	
Dimensions (W x L x H)	72 mm x 123 mm x 35 mm
Installation	DIN-Rail or Wall Mounting
Environment	
Operating Temperature	-25 ~ +75°C
Storage Temperature	-40 ~ +85°C
Humidity	10 ~ 95% RH, Non-condensing

Internal I/O Structure



Pin Assignments



Wire Connections

Voltage Input Wire Connection		Current Input Wire Connection	
Digital Input/Counter	Readback as 1	Readback as 0	
	+10 ~ +50 V _{DC}	OPEN or < 4 V _{DC}	
Sink			
Source			
Power Relay	ON State Readback as 1	OFF State Readback as 0	
Relay Output			

Ordering Information

M-7002 CR	4-channel AI, 5-channel DI and 4-channels Relay Output Module with DCON and Modbus Protocol (Gray Cover) (RoHS)
-----------	---

Accessories

	tM-7520U CR	RS-232 to RS-485 converter (RoHS)
	tM-7561 CR	USB to RS-485 converter (RoHS)
	I-7514U CR	4-channel RS-485 Hub (RoHS)
	SG-3000 series	Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Inputs

3 RS-485 Remote I/O Modules

3 I-7000 and M-7000 Modules

M-7002