



**M-7024U**

**M-7024UD**

4-ch 16-bit AO Module with 4 DI and 4 DO

**Features**

- Multi-function (4 AO, 4 DI, and 4 DO)
- Source-type Current Output
- 16-bit Analog Output
- Individual Channel Configuration
- Open Wire Detection for Current Output
- Configurable Power-on Value and Safe Value Settings



**Introduction**

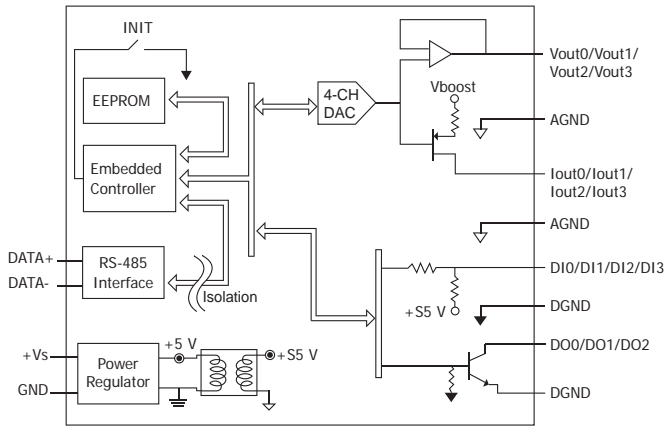
The M-7024U is a multi-function module that includes 4 analog output channels, 4 digital input channels, 4 digital output channels. It provides a programmable output range on all analog outputs channels (0 ~ 5 V, +/-5 V, 0 ~ 10 V, +/-10 V, +4 ~ +20 mA or 0 ~ +20 mA). Each analog output channel can be configured for an individual range and the module also features per-channel open wire detection for +4 ~ +20 mA outputs, together with 8 kV ESD Protection as well as 2500 VDC intra-module isolation. Options for configuring power-on and safe values are also included.

**System Specifications**

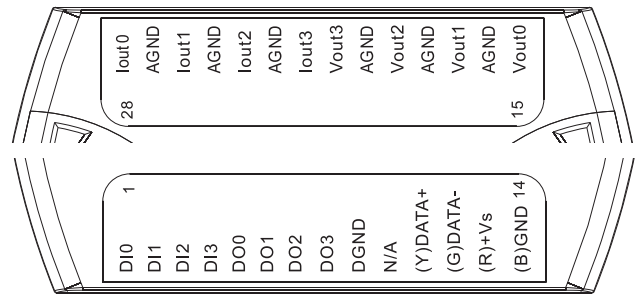
Model	M-7024U	M-7024UD
<b>CPU Module</b>		
Watchdog Timer	Module, Communication (Programmable)	
<b>Display</b>		
Type	-	I/O LED Indicator
<b>Isolation</b>		
Intra-module Isolation	2500 VDC	
<b>EMS Protection</b>		
EFT (IEC 61000-4-4)	±4 kV for Power Line	
ESD (IEC 61000-4-2)	±8 kV Contact for Each Terminal	
<b>LED Indicators</b>		
Status	7024U/UD	1 x Power and Communication
	7024UD	4 x Analog Input 4 x Digital Input 4 x Digital Output
<b>Analog Output</b>		
Channels	4	
Type	Voltage, Current	
Range	Voltage	0 ~+5 VDC, ±5 VDC, 0 ~ +10 VDC, ±10 VDC
	Current	0 ~ +20 mA, +4 ~ +20 mA
Resolution	16-bit	
Accuracy	±0.02%% of FSR	
Short Circuit Protection	Yes	
DA Output Response Time	10 ms per channel	
Programmable Output Slope	Voltage	0.0625 ~ 512 V/Second
	Current	0.125 ~ 1024 mA/Second
Current Output Wiring	Source	
Open Wire Detection	For 4 ~ 20 mA Only	
Current Output Capacity	1000 Ω	
Power-on Value	Programmable	
Safe Value	Programmable	
<b>Environment</b>		
Operating Temperature	-25 ~ +75 °C	
Storage Temperature	-40 ~ +85 °C	
Humidity	10 ~ 95% RH, Non-condensing	

Model	M-7024U	M-7024UD
<b>Digital Input/Counter</b>		
Channels	4	
Type	Dry Contact, Wet Contact	
ON Voltage Level	Dry: Close to GND Wet: +1 VDC Max.	
OFF Voltage Level	Dry: Open Wet: +4 ~ +30 VDC	
Max. Counts	65535 (16-bit)	
Frequency	100 Hz	
Min. Pulse Width	5 ms	
Effective Distance	500 m Max.	
Overvoltage Protection	+60 VDC	
<b>Digital Output</b>		
Channels	4	
Type	Open Collector	
Sink/Source (NPN/PNP)	Sink	
Load Voltage	+3.5 ~ +50 VDC	
Load Current	700 mA/Channel	
Overvoltage Protection	60 VDC	
Overload Protection	1.4 A	
Short-circuit Protection	Yes	
Power on Value	Programmable	
Safe Value	Programmable	
<b>COM Ports</b>		
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	
<b>Power</b>		
Reverse Polarity Protection	Yes	
Input Range	+10 ~ +30 VDC	
Consumption	4.0 W	4.5 W
<b>Mechanical</b>		
Dimensions (mm)	72 x 123 x 35 (W x L x H)	
Installation	DIN-Rail Mounting	

## Internal I/O Structure



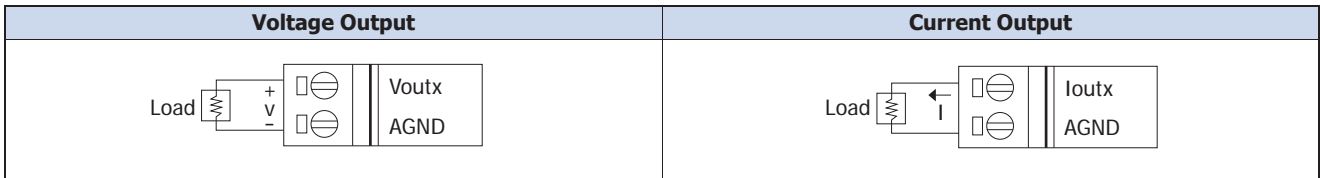
## Pin Assignments



## Applications

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

## Wire Connections



Digital Input/Counter	ON State Readback as 1	OFF State Readback as 0
	+1 VDC Max.	+4 ~ 30 VDC
Wet Contact (Sink)		
Dry Contact (Source)		
Digital Output	ON State Readback as 1	OFF State Readback as 0
Open Collector (Sink)		

## Ordering Information

<b>M-7024U-G CR</b>	4-ch 16-bit AO Module with 4 DI and 4 DO using DCON and Modbus Protocols (Gray Cover) (RoHS)
<b>M-7024UD-G CR</b>	4-ch 16-bit AO Module with 4 DI, 4 DO and LED Display, using DCON and Modbus Protocols (Gray Cover) (RoHS)

## Accessories

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