

**M-7055U**

**M-7055UD**

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

**Features**

- Digital Input and Digital Output selectable as either sink- or source-type via wire connection.
- All Digital Input Channels can be used as 16-bit Counters
- Built-in Dual Watchdog
- 8 kV ESD Protection
- 2000 Vdc Intra-module Isolation
- Configurable Power-on Value Settings
- Configurable Safe Value Settings
- Wide Operating Temperature Range: -25 to +75°C



**Introduction**

The M-7055U module provides 8 isolated channels for Digital Input and 8 isolated channels for Digital Output. Digital Input and Digital Output can be selected as either sink- or source-type via wire connection. All Digital Input channels are also able to be used as 16-bit counters. There are options to enable both power-on and safe values. The M-7055UD has 16 LED indicators that can be used to monitor the status of the Digital Input and Digital Output channels. The M-7055U(D) also provides  $\pm 8$  kV ESD,  $\pm 4$  kV EFT and  $\pm 2$  kV surge protection, as well as 2000 Vdc intra-module isolation to enhance noise protection capabilities in harsh industrial environments.

**Applications**

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

**System Specifications**

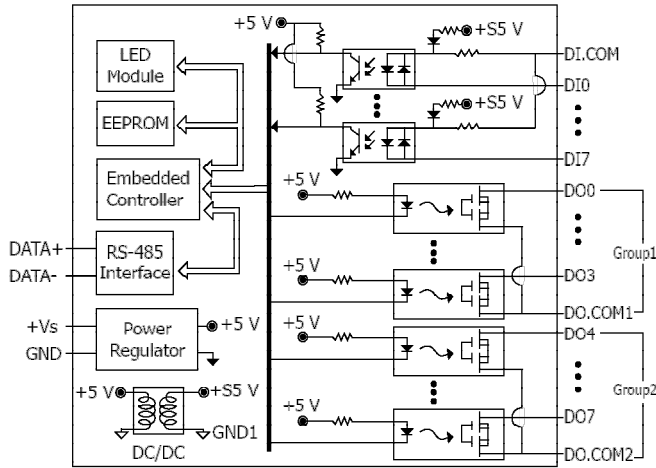
Model	M-7055U	M-7055UD
<b>Communication</b>		
Interface	RS-485	
Bias Resistor	No (Usually supplied by the RS-485 Master. Alternatively, add a tM-SG4 or SG-785.)	
Format	(N, 8, 1), (N, 8, 2), (E, 8, 1), (O, 8, 1)	
Baud Rate	1200 to 115200 bps	
Protocol	Modbus RTU, DCON	
Dual Watchdog	Yes, Module (1.6 Seconds), Communication (Programmable)	
<b>LED Indicators/Display</b>		
System LED Indicator	Yes, 1 as Power/Communication Indicator	
I/O LED Indicators	-	Yes, 8 as Digital Input Indicators and 8 as Digital Output Indicators
7-segment LED Display	-	
<b>Isolation</b>		
Intra-module Isolation, Field-to-Logic	2000 Vdc	
<b>EMS Protection</b>		
ESD (IEC 61000-4-2)	$\pm 8$ kV Contact for each Terminal $\pm 15$ kV Air for Random Point	
EFT (IEC 61000-4-4)	$\pm 4$ kV for Power Line	
Surge (IEC 61000-4-5)	$\pm 2$ kV	
<b>Power</b>		
Reverse Polarity Protection	Yes	
Input Range	10 ~ 48 VDC	
Consumption	0.9 W (Max.)	1.0 W (Max.)
<b>Mechanical</b>		
Dimensions (L x W x H)	123 mm x 72 mm x 35 mm	
Installation	DIN-Rail or Wall Mounting	
<b>Environment</b>		
Operating Temperature	-25 to +75°C	
Storage Temperature	-40 to +85°C	
Humidity	10 to 95% RH, Non-condensing	

**I/O Specifications**

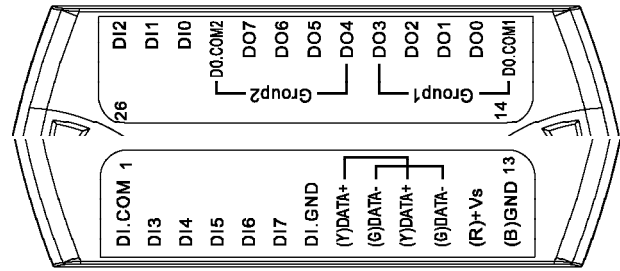
Model	M-7055U	M-7055UD
<b>Digital Input/Counter</b>		
Channels	8	
Type	Dry Contact	Source
	Wet Contact	Sink/Source
Wet Contact	ON Voltage Level	+10 ~ 50 Vdc
	OFF Voltage Level	+4 Vdc Max.
Dry Contact	ON Voltage Level	Close to GND
	OFF Voltage Level	Open
Counters	Max. Count	65535 (16-bit)
	Max. Input Frequency	100 Hz
	Min. Pulse Width	5 ms
Input Impedance	10 k $\Omega$	
Channel-to-Channel Isolation	-	
Overvoltage Protection	$\pm 70$ VDC	
<b>Digital Output</b>		
Channels	8	
Type	Push-Pull	
Sink/Source (NPN/PNP)	Sink/Source	
Load Voltage	+3.5 ~ 80 Vdc	
Max. Load Current	500 mA / Channel	
Overvoltage Protection	-	
Short Circuit Protection	-	
Power-on Value	Yes	
Safe Value	Yes	

M-7055U(D)

### Internal I/O Structure



### Pin Assignments



### Wire Connections

Input Type	ON State Readback as 1	OFF State Readback as 0
Dry Contact	Close to GND	Open
Wet Contact (Sink)	+10 ~ +50 VDC	+4 VDC Max.
Wet Contact (Source)	+10 ~ +50 VDC	+4 VDC Max.

DO Group	ON State Readback as 1	OFF State Readback as 0
DO0 ~ DO3 (Sink)		
DO0 ~ DO3 (Source)		
DO Group 2	ON State Readback as 1	OFF State Readback as 0
DO4 ~ DO7 (Sink)		
DO4 ~ DO7 (Source)		

### Ordering Information

M-7055U CR	8-channel Isolated Digital Input and 8-channel Isolated Digital Output Module, Sink- or Source-type selectable via Wire Connection (RoHS)
M-7055UD CR	M-7055U with LED Display (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 Input Transformers

M-7055U(D)