

**M-7054(D)****M-7054P(D)**

16-channel Isolated Universal Digital Input/Output Module

Features

- 16-channel Universal Digital Input/Output
- M-7054(D)
 - 100 mA Load Current per Channel
 - ± 4 kV ESD Protection
- M-7054P(D)
 - 500 mA Load Current per Channel with Short Circuit Protection
 - ± 8 kV ESD Protection
 - ± 3 kV Surge Protection for Power Line
- All Digital Input Channels can be used as 16-bit Counters
- ± 4 kV EFT Protection
- 3750 VDC Intra-module Isolation
- Configurable Power-on Value Settings
- Configurable Safe Value Settings
- Wide Operating Temperature Range: -25 to $+75^{\circ}\text{C}$

**Introduction**

The M-7054(P) provides 16 channels for universal Digital Input/Output, which can be selected via wire connections. The Digital Input channels are source type and can be used as 16-bit counters, while the Digital Output channels are sink type with short circuit protection and options for configuring power-on and safe Digital Output values. The M-7054(P) also provides ± 8 kV ESD, ± 4 kV EFT and ± 3 kV surge protection and 3750 Vdc intra-module isolation to enhance noise protection capabilities in industrial environments.

Applications

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

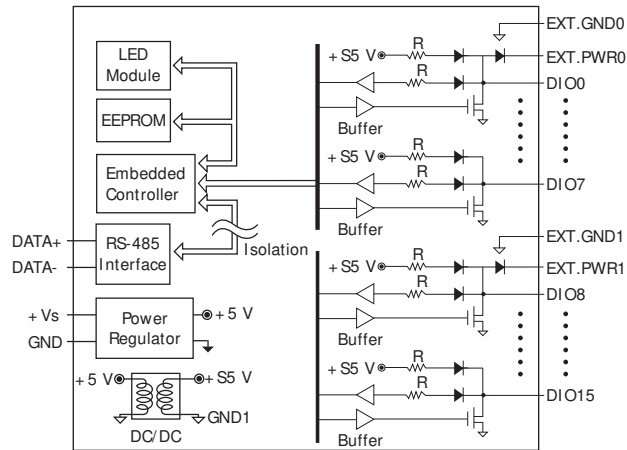
System Specifications

Model	M-7054	M-7054D	M-7054P	M-7054PD
Communication				
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			
Baud Rate	1200 to 115200 bps			
Protocol	Modbus RTU, DCON			
Dual Watchdog	Yes, Module (1.6 Seconds), Communication (Programmable)			
LED Indicators/ Display				
System LED Indicator	Yes, 1 as Power/Communication Indicator			
I/O LED Indicators	-	Yes	-	Yes
7-segment LED Display	-			
Isolation				
Intra-module Isolation, Field-to-Logic	3750 Vdc			
EMS Protection				
ESD (IEC 61000-4-2)	± 4 kV Contact for each Terminal		± 8 kV Contact for each Terminal	
	± 8 kV Air for Random Point		± 16 kV Air for Random Point	
EFT (IEC 61000-4-4)	± 4 kV for Power Line			
Surge (IEC 61000-4-5)	-		± 3 kV for Power Line	
Power				
Reverse Polarity Protection	Yes			
Input Range	+10 ~ +30 VDC			
Consumption	1.2 W	1.3 W	1.2 W	1.3 W
Mechanical				
Dimensions (L x W x H)	123 mm x 72 mm x 35 mm			
Installation	DIN-Rail or Wall Mounting			
Environment				
Operating Temperature	-25 to +75°C			
Storage Temperature	-40 to +85°C			
Humidity	10 to 95% RH, Non-condensing			

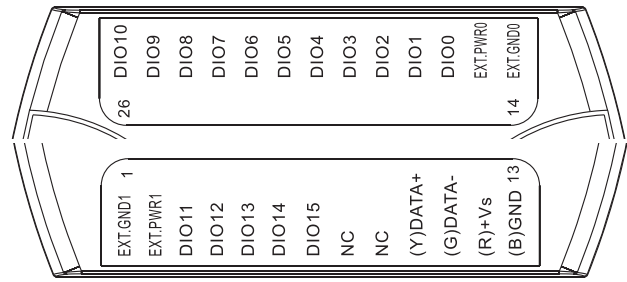
I / O Specifications

Model		M-7054 M-7054D	M-7054P M-7054PD
Universal Digital Input/ Output			
Channels		16-channel Isolated Universal Digital Input/Output (Configurable via Wire Connection)	
Digital Input	Dry Contact	ON Voltage Level	Close to GND
		OFF Voltage Level	Open
	Counters	Max. Count	16-bit (0~65535)
		Max. Input Frequency	100 Hz
		Min. Pulse Width	10 ms
Digital Output	Overvoltage Protection		± 35 Vdc ± 60 Vdc
	Output Type		Sink
	Max. Load Current		100 mA 500 mA
	Load Voltage		$+5 \sim 30$ Vdc $+5 \sim 50$ Vdc
	Overvoltage Protection		- 60 Vdc
	Overload Protection		- Yes
	Short Circuit Protection		- Yes
	Power-on Value		Yes, Programmable
	Safe Value		Yes, Programmable

Internal I/O Structure



Pin Assignments



Wire Connections

Input Type	ON State LED ON Readback as 1	OFF State LED OFF Readback as 0
	Close to GND	Open
Dry Contact DIO0 ~ DIO7		
Dry Contact DIO8 ~ DIO15		
Output Type	ON State Readback as 1	OFF State Readback as 0
Drive Relay DIO0 ~ DIO7		
Drive Relay DIO8 ~ DIO15		

Ordering Information

M-7054 CR	16-channel Isolated Universal Digital Input/Output Module using the DCON and Modbus Protocols (Gray Cover) (RoHS)
M-7054D CR	M-7054 with LED Display (Gray Cover) (RoHS)
M-7054P CR	M-7054 with High Load Current Output (Gray Cover) (RoHS)
M-7054PD CR	M-7054P with LED Display (Gray Cover) (RoHS)

Accessories

	tM-7520U CR	RS-232 to RS-485 Converter (RoHS)
	tM-7561 CR	USB to RS-485 Converter (RoHS)
	tM-SG4 CR	RS-485 Bias and Termination Resistor Module (RoHS)

	I-7514U CR	4-channel RS-485 Hub (RoHS)
	SG-770 CR	7-channel Differential or 14-channel Single-ended Surge Protector (RoHS)
	SG-3000 Series	Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Input Transformers