



**I-7059(D)**

**M-7059(D)**

8-channel Isolated DI Module

**Features**

- AC Digital Inputs
- Differential Inputs
- Photocouple Isolation
- DI Channels Can Be Used As 16-bit Counters
- Channel-to-Channel Isolation
- 4 kV ESD Protection
- 5000 V<sub>rms</sub> Isolation Voltage
- Dual Watchdog
- Wide Operating Temperature Range: -25 ~ +75°C



**Introduction**

The I-7059 offers 8 differential channels for AC digital input, each of which features channel-to-channel Photocouple isolation with an on voltage level of between 10 V<sub>AC</sub> and 80 V<sub>AC</sub>. All DI channels are also able to be used as 16-bit counters. I-7059D has 8 LED indicators for DI channel status monitoring. 4 kV ESD protection and 5000 V<sub>rms</sub> intra-module isolation are standard. The hardware specifications for the M-7059 are the same as the I-7059 and both support the Modbus RTU and DCON protocols which can be configured via software.

**Applications**

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

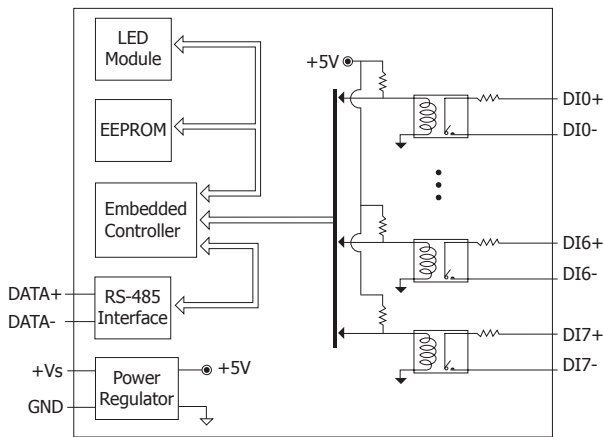
**System Specifications**

Models	I-7059	I-7059D	M-7059	M-7059D
<b>Communication</b>				
Interface	RS-485			
Format	N, 8, 1			
Baud Rate	1200 ~ 115200 bps			
Protocol	DCON		Modbus RTU, DCON	
Dual Watchdog	Yes, Module (1.6 Seconds), Communication (Programmable)			
<b>LED Indicator/Display</b>				
System LED Indicator	Yes, 1 LED as Power/Communication Indicator			
I/O LED Indicator	-	Yes	-	Yes
7-Segment LED Display	-			
<b>Isolation</b>				
Intra-Module Isolation, Field-to-Logic	5000 V <sub>rms</sub>			
<b>EMS Protection</b>				
ESD (IEC 61000-4-2)	4 kV Contact for Each Terminal			
	8 kV Air for Random Point			
EFT (IEC 61000-4-4)	+/-4 kV for Power			
<b>Power</b>				
Reverse Polarity Protection	Yes			
Input Range	10 ~ 30 V <sub>DC</sub>			
Consumption	0.3 W	0.7 W	0.3 W	0.7 W
<b>Mechanical</b>				
Dimensions (W x L x H)	72 mm x 123 mm x 35 mm			
Installation	DIN-Rail or Wall Mounting			
<b>Environment</b>				
Operating Temperature	-25 ~ +75°C			
Storage Temperature	-40 ~ +85°C			
Humidity	10 ~ 95% RH, Non-condensing			

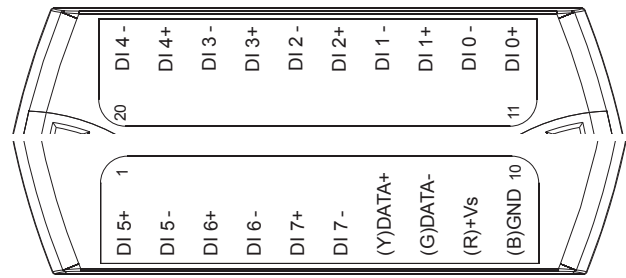
**I/O Specifications**

Models	I-7059	I-7059D	M-7059	M-7059D
<b>Digital Input/Counter</b>				
Channels	8			
Contact	Wet			
Wiring	Differential			
On Voltage Level	10 ~ 80 V <sub>AC</sub>			
Off Voltage Level	3 V <sub>AC</sub> Max.			
Counters	Max. Count	65535 (16-bit)		
	Max. Input Frequency	100 Hz		
	Min. Pulse Width	5 ms		
Input Impedance	10 KΩ			
Channel to Channel Isolation	Yes, +/-2 kV			
Overvoltage Protection	120 V <sub>AC</sub>			

### Internal I/O Structure



### Pin Assignments



### Wire Connections

Digital Input/Counter	ON State Readback as 1 +10 ~ +80 V <sub>AC</sub>	OFF State Readback as 0 Open or <3 V <sub>AC</sub>
AC Digital Input		

### Ordering Information

<b>I-7059 CR</b>	8-channel Isolated DI Module with DCON Protocol (Blue Cover) (RoHS)
<b>I-7059-G CR</b>	8-channel Isolated DI Module with DCON Protocol (Gray Cover) (RoHS)
<b>I-7059D CR</b>	I-7059 with LED Display (Blue Cover) (RoHS)
<b>I-7059D-G CR</b>	I-7059 with LED Display (Gray Cover) (RoHS)
<b>M-7059-G CR</b>	8-channel Isolated DI Module with DCON and Modbus Protocol (Gray Cover) (RoHS)
<b>M-7059D-G CR</b>	M-7059 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 Pull-high/Pull-low 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 Inputs