

## Features

- AC/DC Digital Input
- 8 Differential Input Channels
- All Channels Can be used as 16-bit Counters
- Channel-to-Channel Isolation
- ±4 kV ESD Protection
- 3750 Vdc Isolation Voltage
- Dual Watchdog
- Wide Operating Temperature Range: -25 to +75°C



## Introduction

The I-7058/I-7059 module offers 8 differential channels for AC/DC Digital Input, each of which features channel-to-channel Photocoupleisolation. All DI channels are also able to be used as 16-bit counters. The I-7058D/I-7059D module has 8 LED indicators that can be used to monitor the status of the DI channels. ESD protection of ±4 kV and 3750 VDC intra-module isolation are standard. M-7058D/M-7059D module has the same hardware specifications as the I-7058/I-7059 module, but provides additional support for the Modbus RTU protocol as well as the DCON protocol.

## System Specifications

Model	I-7058	I-7058D	I-7059	I-7059D
	M-7058	M-7058D	M-7059	M-7059D
<b>Communication</b>				
Interface	RS-485			
Bias Resistor	Yes			
Format	(N, 8, 1) (N, 8, 2) (E, 8, 1) (O, 8, 1)			
Baud Rate	1200 to 115200 bps			
Protocol	DCON (for the I-7058/I-7059 series) Modbus RTU, DCON (for the M-7058/M-7059 series)			
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 LEDs as Digital Input Indicators	-	Yes, 8 LEDs as Digital Input Indicators
7-segment LED Display	-			
<b>Isolation</b>				
Intra-module Isolation, Field-to-Logic	3750 Vdc			
<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 Line			
Surge (IEC 61000-4-5)	-			
<b>Power</b>				
Reverse Polarity Protection	Yes			
Input Range	+10 ~ +30 Vdc			
Consumption	0.3 W	1 W	0.3 W	1 W
<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			

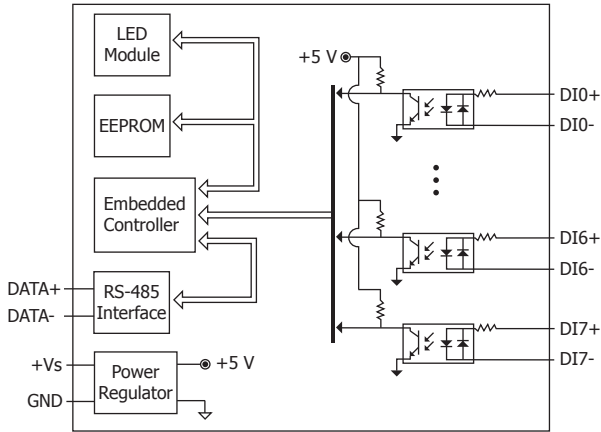
## Applications

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

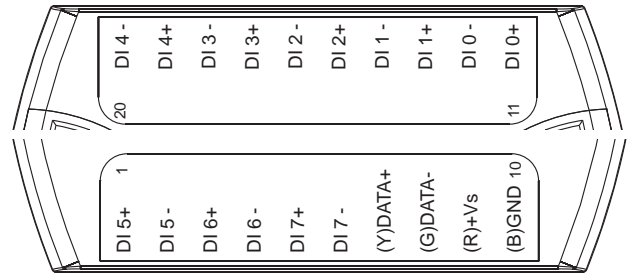
## I/O Specifications

Model	I-7058	I-7058D	I-7059	I-7059D
	M-7058	M-7058D	M-7059	M-7059D
<b>Digital Input/Counter</b>				
Channels	8			
Type	Dry Contact	-		
	Wet Contact	Sink/Source		
Wet Contact	ON Voltage Level	80 ~ 250 VAC		10 ~ 80 VAC
		80 ~ 250 Vdc		15 ~ 80 Vdc
	OFF Voltage Level	30 VAC/Vdc Max.		3 VAC/Vdc Max.
Counters	Max. Count	65535 (16-bit)		
	Max. Input Frequency	100 Hz		
	Min. Pulse Width	5 ms		
Input Impedance	68 kΩ		10 kΩ	
Channel-to-Channel Isolation	Yes, ±2 kV			
Overvoltage Protection	300 VAC/Vdc Max.		120 VAC/Vdc Max.	

## Internal I/O Structure



## Pin Assignments



## Wire Connections

Digital Input/Counter	ON State Readback as 1				OFF State Readback as 0			
	I-7058 M-7058	I-7058D M-7058D	I-7059 M-7059	I-7059D M-7059D	I-7058 M-7058	I-7058D M-7058D	I-7059 M-7059	I-7059D M-7059D
AC Digital Input	80 ~ 250 VAC		10 ~ 80 VAC		OPEN or < 30 VAC Max.		OPEN or < 3 VAC Max.	
DC Digital Input	80 ~ 250 Vdc		15 ~ 80 Vdc		OPEN or < 30 Vdc Max.		OPEN or < 3 Vdc Max.	

## Ordering Information

<b>I-7058 CR</b>	8-channel Isolated AC/DC Digital Input Module using the DCON Protocol (Blue Cover) (RoHS) Art. No. 113914
<b>I-7058D CR</b>	I-7058 with LED Display (Blue Cover) (RoHS) Art. No. 113915
<b>I-7058D-G CR</b>	I-7058 with LED Display (Gray Cover) (RoHS)
<b>M-7058-G CR</b>	8-channel Isolated AC/DC Digital Input Module using the DCON and Modbus Protocol (Gray Cover) (RoHS) Art. No. 125595
<b>M-7058D-G CR</b>	M-7058 with LED Display (Gray Cover) (RoHS) Art. No. 125596
<b>I-7059 CR</b>	8-channel Isolated AC/DC Digital Input Module using the DCON Protocol (Blue Cover) (RoHS) Art. No. 116915
<b>I-7059-G CR</b>	8-channel Isolated AC/DC Digital Input Module using the DCON Protocol (Gray Cover) (RoHS)
<b>I-7059D CR</b>	I-7059 with LED Display (Blue Cover) (RoHS) Art. No. 116916
<b>I-7059D-G CR</b>	I-7059 with LED Display (Gray Cover) (RoHS)
<b>M-7059-G CR</b>	8-channel Isolated AC/DC Digital Input Module using the DCON and Modbus Protocol (Gray Cover) (RoHS) Art. No. 125629
<b>M-7059D-G CR</b>	M-7059 with LED Display (Gray Cover) (RoHS) Art. No. 125630

## 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