

**I-7018(R)**

**M-7018(R)**

8-channel Analog Input Module

**Features**

- 8-channel Differential Analog Inputs for M-7018
- 8-channel Differential or 6-channel Differential and 2-channel Single Ended for I-7018
- Overvoltage Protection is up to 240 V<sub>rms</sub>
- Current/Voltage/Thermocouple Input
- High Resolution: 16-bit
- High Resolution: 16-bit
- 3000 V<sub>dc</sub> Intra-Module Isolation
- +/-35 V<sub>dc</sub> Overvoltage Protection
- Dual Watchdog
- Wide Operating Temperature Range: -25 ~ +75°C



**Introduction**

I-7018 is an analog input module provides 8-channel differential or 6-channel differential and 2-channel single ended by jumper selection. Its input type includes voltage, current and thermocouple and all channels are available for the same type. It requires an optional external 125 Ω resistor for current input. It also features 3000 V<sub>dc</sub> intra-module isolation as well as +/-35 V<sub>dc</sub> overvoltage protection. M-7018 supports Modbus RTU and DCON protocols which can be configured via software and provide 8-channel differential analog inputs. Other hardware specifications are the same as I-7018.

**Applications**

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

**I/O Specifications**

Models	I-7018	I-7018R	M-7018	M-7018R
<b>Analog Input</b>				
Channels	6-channel Differential and 2-channel Single-ended, or 8-channel Differential		8-channel Differential	
Wiring	Differential			
Sensor Type	Thermocouple	J, K, T, E, R, S, B, N, C		
	Voltage	+/-1.5 mV, +/-50 mV, +/-100 mV, +/-500 mV, +/-1 V, +/-2.5 V		
	Current	+/-20 mA, 0 ~ 20 mA, 4 ~ 20 mA (requires optional external 125 Ω resistor)		
Resolution	16-bit			
Accuracy	0.1%			
Sampling Rate	10 Hz			
Input Impedance	> 400 kΩ			
Common Voltage Protection	+/-15 V <sub>dc</sub>			
Individual Channel Configuration	-			
Overvoltage Protection	+/-35 V <sub>dc</sub>	240 V <sub>rms</sub>		
Open Wire Detection (for thermocouple only)	-	Yes		
Temperature Outputs Consistency	-			
Stable Temperature Output in the Field	-			

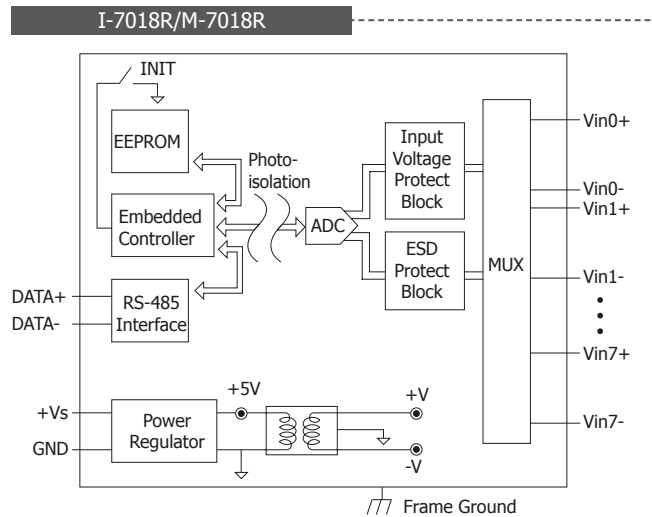
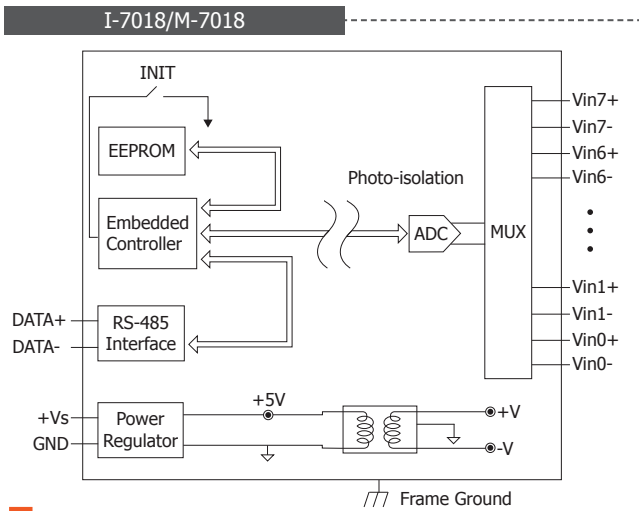
**System Specifications**

Models	I-7018	I-7018R	M-7018	M-7018R
<b>Communication</b>				
Interface	RS-485			
Format	(N, 8, 1) (N, 8, 2) (E, 8, 1) (O, 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	-			
7-Segment LED Display	-			
<b>Isolation</b>				
Intra-Module Isolation, Field-to-Logic	3000 V <sub>dc</sub>			
<b>EMS Protection</b>				
ESD (IEC 61000-4-2)	-			
EFT (IEC 61000-4-4)	-			
<b>Power</b>				
Reverse Polarity Protection	Yes			
Input Range	10 ~ 30 V <sub>dc</sub>			
Consumption	1.0 W	1.8 W	1.0 W	1.0 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			

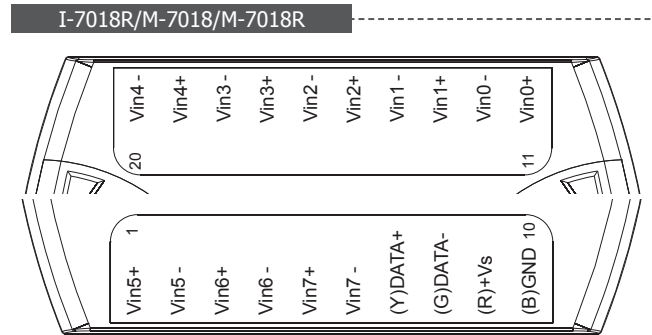
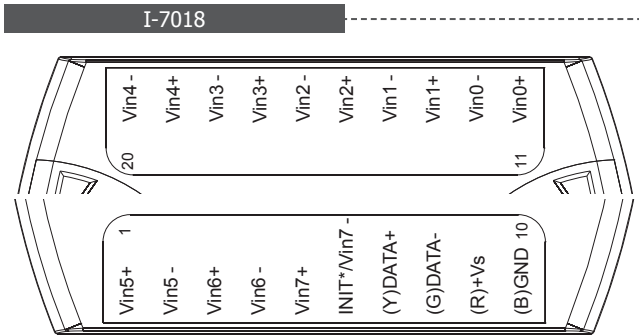
**Thermocouple Type**

Type Cod	Thermocouple Type	Temperature Range
0E	Type J	-210 ~ +760°C
0F	Type K	-270 ~ +1372°C
10	Type T	-270 ~ +400°C
11	Type E	-270 ~ +1000°C
12	Type R	0 ~ +1768°C
13	Type S	0 ~ +1768°C
14	Type B	0 ~ +1820°C
15	Type N	-270 ~ +1300°C
16	Type C	0 ~ +2320°C
17	Type L	-200 ~ +800°C
18	Type M	-200 ~ +100°C
19	Type L <sup>2</sup> <sub>DIN43710</sub>	-200 ~ +900°C

## Internal I/O Structure



## Pin Assignments



## Wire Connections

**I-7018/I-7018R/M-7018/M-7018R**  
**Analog Input Channel 0 to 5 Wire Connection**

mV/V: mA:

Thermocouple:

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**I-7018**  
**Analog Input Channel 6 and 7 Wire Connection**

8 differentil mode: INIT\* Mode:

mA:

Thermocouple:

Note: To access the jumpers, the cover must be opened.

## Ordering Information

<b>I-7018 CR</b>	8-channel Analog Input Module with DCON Protocol (Blue Cover) (RoHS)
<b>I-7018-G CR</b>	8-channel Analog Input Module with DCON Protocol (Gray Cover) (RoHS)
<b>I-7018R CR</b>	8-channel Analog Input Module with DCON Protocol (Blue Cover) (RoHS)
<b>I-7018R-G CR</b>	8-channel Analog Input Module with DCON Protocol (Gray Cover) (RoHS)
<b>M-7018-G CR</b>	8-channel Analog Input Module with DCON and Modbus Protocol (Gray Cover) (RoHS)
<b>M-7018R-G CR</b>	8-channel Analog Input Module with DCON and Modbus Protocol (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