



I-7019R

M-7019R

8-channel Universal Analog Input Module

Features

- 8-channel Universal Analog Input
- 240 V_{rms} Overvoltage Protection
- Individual Channel Configuration
- Jumper Selectable Voltage, Current or Thermocouple Input
- Open Thermocouple Detection
- 4 kV ESD Protection
- 3000 Vdc Intra-module Isolation
- Dual Watchdog
- Wide Operating Temperature Range: -25 to +75°C



Introduction

The I-7019R is an Analog Input module that includes 8 differential Analog Input channels. Voltage, current or thermocouple input can be selected for all Analog Input channels via a jumper and each channel can be configured for an individual range. The voltage input range can be from ± 15 mV to 10 V, the current input range can be either +4 to +20 mA, 0 to +20 mA, or ± 20 mA, and types J, K, T, E, R, S, B, N, C, L, M, LDIN43710 can be used for the thermocouple input. Up to 8 different Analog Input types can be connected to a single module. Overvoltage protection of up to 240 V_{rms} is provided. The module also features per-channel open wire detection for the thermocouple and +4 to +20 mA input types, and provides 4 kV ESD protection as well as 3000 VDC intra-module isolation. The M-7019R supports both the Modbus RTU and DCON protocols, which can be configured via software, and all hardware specifications are the same as the I-7019R.

System Specifications

Model	I-7019R	M-7019R
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) (N, 8, 2) (E, 8, 1) (O, 8, 1)	
Baud Rate	1200 to 115200 bps	
Protocol	DCON	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	-	
7-segment LED Display	-	
Isolation		
Intra-module Isolation, Field-to-Logic	3000 Vdc	
EMS Protection		
ESD (IEC 61000-4-2)	± 4 kV	
EFT (IEC 61000-4-4)	± 4 kV	
Power		
Reverse Polarity Protection	Yes	
Input Range	+10 ~ +30 Vdc	
Consumption	1.2 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	

Applications

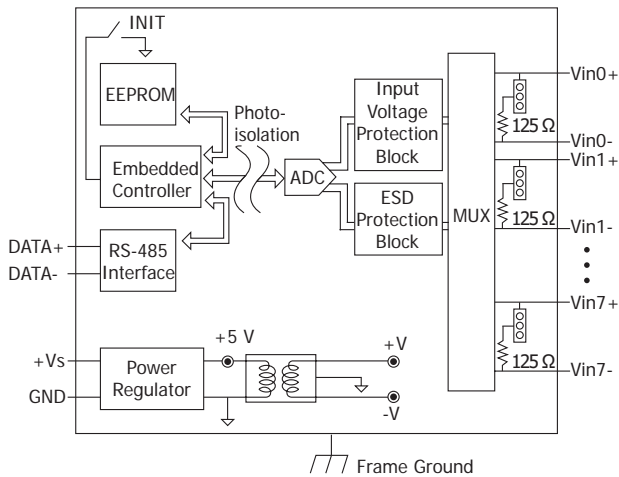
Building Automation, Factory Automation, Machine Automation, Remote Maintenance, Remote Diagnosis, Testing Equipment.

I/O Specifications

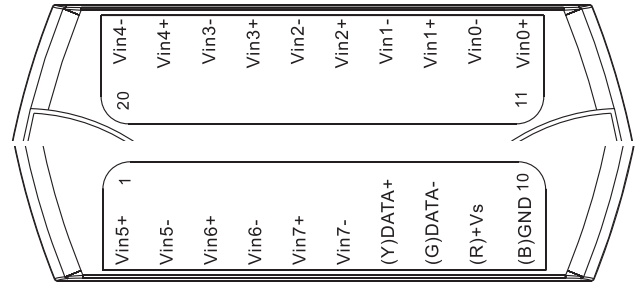
Model	I-7019R	M-7019R
Analog Input		
Channels	8	
Wiring	Differential	
Sensor Types	Thermocouple	J, K, T, E, R, S, B, N, C, L, M, LDIN43710
	Voltage	± 15 mV, ± 50 mV, ± 100 mV, ± 150 mV, ± 500 mV, ± 1 V, ± 2.5 V, ± 5 V, ± 10 V
	Current	± 20 mA, 0 ~ +20 mA, +4 ~ +20 mA (Jumper selectable)
Resolution	16-bit	
Accuracy	0.1% of FSR	
Sampling Rate	8 Hz (Total)	
Input Impedance	Voltage	2 M Ω
	Current	125 Ω
	Thermocouple	> 400 k Ω
Common Voltage Protection	± 200 Vdc	
Individual Channel Configuration	Yes	
Overvoltage Protection	240 V _{rms}	
Open Wire Detection (for thermocouple only)	Yes	
Temperature Outputs Consistency	-	
Stable Temperature Output in the Field	-	

Note: For highly-accurate thermocouple measurement, ICP DAS recommends selecting the I-7018Z/I-7019Z module, which features automatic cold-junction compensation for each channel, ensuring consistent and stable temperature output.

Internal I/O Structure



Pin Assignments



Wire Connections

Voltage Input	
Current Input	
Thermocouple Input	

Ordering Information

I-7019R CR	8-channel Universal Analog Input Module using the DCON Protocol (Blue Cover) (RoHS)
I-7019R-G CR	8-channel Universal Analog Input Module using the DCON Protocol (Gray Cover) (RoHS)
M-7019R-G CR	8-channel Universal Analog Input Module using the DCON and Modbus Protocols (Gray Cover)

Accessories

tM-7520U CR	Tiny Isolated RS-232 to RS-485 Converter (RoHS)
tM-7561 CR	Tiny USB to Isolated RS-485 Converter with CA-USB18 Cable (RoHS)
tM-SG4 CR	RS-485 Pull-high/Pull-low and Termination Resistor Module (RoHS)
I-7514U CR	Isolated 4-channel RS-485 Repeater/Hub/Splitter (Gray Cover) (RoHS)
SG-770 CR	7/14 channel Surge Protector (RoHS)
SG-3000 Series	Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Input Transformers