



I-7019R M-7019R

8-ch Universal AI Module with High Voltage Protection

Features

- 8 Universal Analog Inputs
- Individual Channel Configuration
- Jumper Selectable Voltage, Current or Thermocouple Input
- High Over-voltage Input Protection
- High Common Voltage Protection
- Open Thermocouple Detection
- Built-in Dual Watchdog

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 Vrms 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.

Applications

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

System Specifications

Model	I-7019R	M-7019R
CPU Module		
Watchdog Timer	Module, Communication (Programmable)	
Isolation		
Intra-module Isolation	3000 VDC	
EMS Protection		
EFT (IEC 61000-4-4)	±4 kV for Power Line	
ESD (IEC 61000-4-2)	±4 kV Contact for Each Terminal	
LED Indicators		
Status	1 x Power and Communication	
COM Ports		
Ports	1 x RS-485	
Baud Rate	1200 ~ 115200 bps	
Data Format	(N, 8, 1), (N, 8, 2), (E, 8, 1), (O, 8, 1)	
Protocol	DCON	Modbus RTU, DCON
Power		
Reverse Polarity Protection	Yes	
Input Range	+10 ~ +30 VDC	
Consumption	1.2 W	
Mechanical		
Dimensions (mm)	72 x 123 x 35 (W x L x H)	
Installation	DIN-Rail Mounting	
Environment		
Operating Temperature	-25 ~ +75 °C	
Storage Temperature	-40 ~ +85 °C	
Humidity	10 ~ 95% RH, Non-condensing	

I/O Specifications

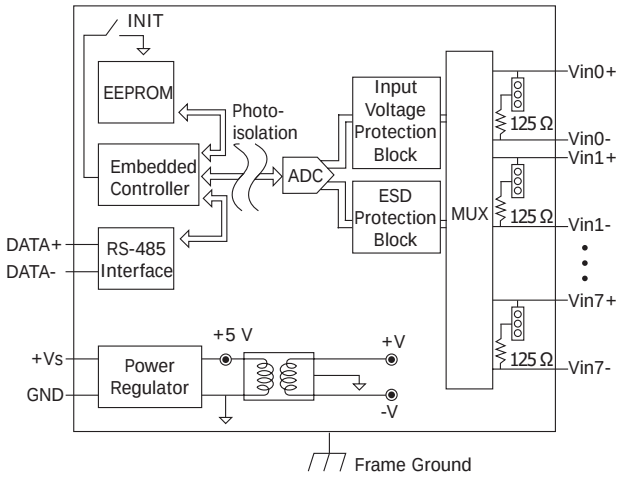
Model		I-7019R	M-7019R
Analog Input			
Channels		8 Differential	
Type		Voltage, Current, Thermocouple	
Sensor Types	Thermocouple	J, K, T, E, R, S, B, N, C, L, M, LDIN43710	
Range	Voltage	±15 mV, ±50 mV, ±100 mV, ±150 mV, ±500 mV, ±1 V, ±2.5 V, ±5 V, ±10 V	
	Current	±20 mA, 0 ~ +20 mA, +4 ~ +20 mA (Jumper selectable)	
Resolution		16-bit	
Accuracy		0.1% of FSR	
Sampling Rate		8 Hz (Total)	
Input Impedance	Voltage	2 MΩ	
	Current	125 Ω	
	Thermocouple	> 400 kΩ	
Common Voltage Protection		±200 VDC	
Overvoltage Protection		240 Vrms	
Individual Channel Configuration		Yes	
Open Wire Detection		For Thermocouple (*Note1) and 4 ~ 20 mA	

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

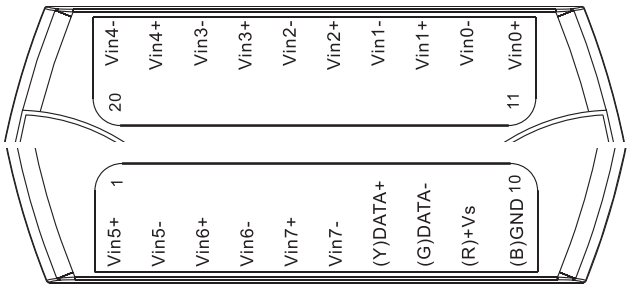
Note1: Firmware version B3.7 or later.

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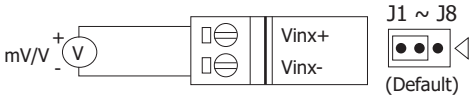
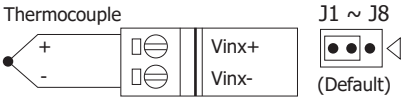
Internal I/O Structure



Pin Assignments



Wire Connections

Voltage Input

Current Input

Thermocouple Input


Ordering Information

I-7019R CR	8-ch Universal AI Module with High Voltage Protection, using DCON Protocol (Blue Cover) (RoHS)
I-7019R-G CR	8-ch Universal AI Module with High Voltage Protection, using DCON Protocol (Gray Cover) (RoHS)
M-7019R-G CR	8-ch Universal AI Module with High Voltage Protection, using DCON and Modbus Protocols (Gray Cover) (RoHS)

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

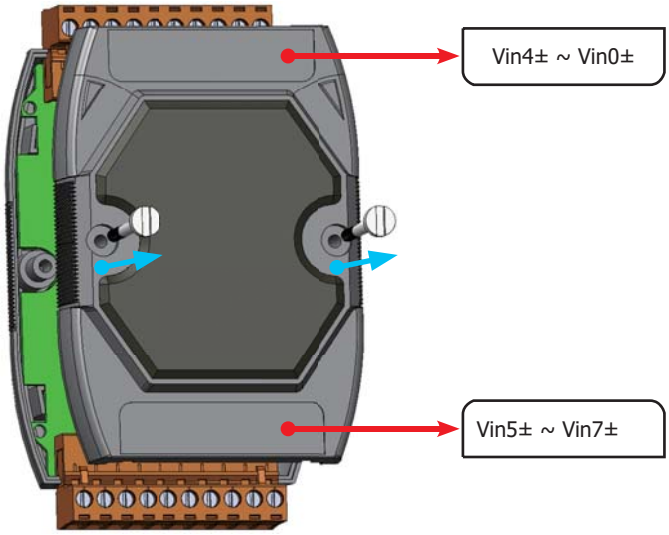
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Jumper

Notice:

1. Remove the top cover of the module before adjusting the jumper. Additionally, some modules may have two screws on the back cover.

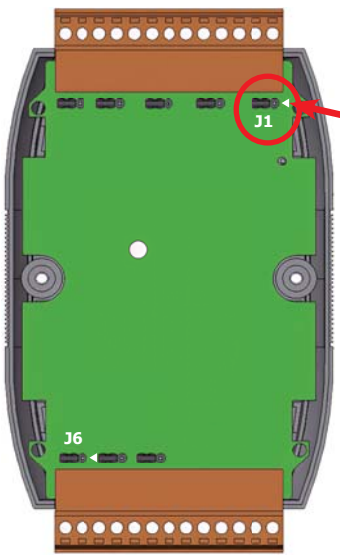
I-7019R, M-7019R

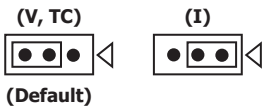


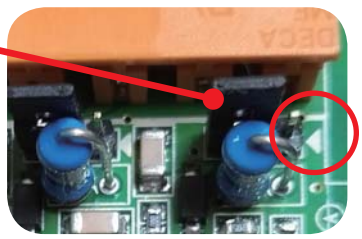
2. Users can locate the Jx/JPx jumpers on the board by checking the I/O labels on the cover.

Channel	Vin4±	Vin3±	Vin2±	Vin1±	Vin0±
Jumper	J5	J4	J3	J2	J1

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Top

Channel	Vin5±	Vin6±	Vin7±
Jumper	J6	J7	J8

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