

I-7018P

8-ch Thermocouple Input Module

Features

- Additional Thermocouple Types, L and M
- 8 Differential, or 6 Differential and 2 Single-ended Analog Inputs
- Current, Voltage, and Thermocouple Inputs
- High Resolution: 16-bit
- Built-in Dual Watchdog

Introduction

The I-7018P is an Analog Input module that features current and voltage input, as well as thermocouple input. The module provides 8-channel differential or 6-channel differential and 2-channel single-ended input that can be selected via a jumper, and all channels can be configured for the same input type. Note that an optional external 125 Ω resistor is required for current input. The I-7018P supports two additional thermocouple types, L and M, compared to the I-7018/7018R.

Applications

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

System Specifications

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)	±2 kV Contact for Each Terminal
Surge (IEC 61000-4-5)	±0.5 kV for Power Line
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
Power	
Reverse Polarity Protection	Yes
Input Range	+10 ~ +30 VDC
Consumption	1.0 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

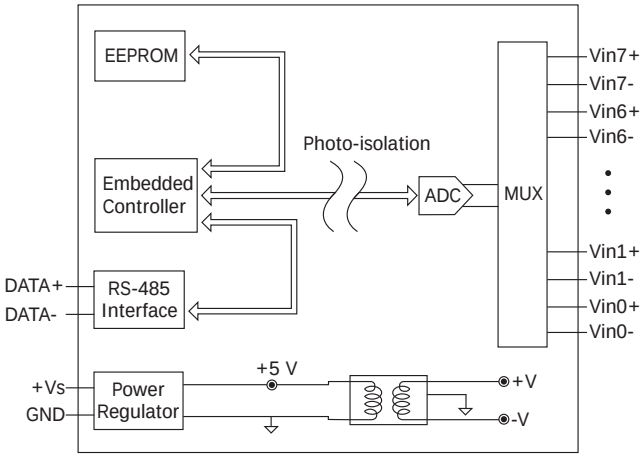
I/O Specifications

Analog Input		
Channels		6 Differential and 2 Single-ended, or 8 Differential
Type		Voltage, Current, Thermocouple
Sensor Types	Thermocouple	J, K, T, E, R, S, B, N, C, L, M
Range	Voltage	±15 mV, ±50 mV, ±100 mV, ±500 mV, ±1 V, ±2.5 V
	Current	±20 mA (requires an optional external 125 Ω resistor)
Resolution		16-bit
Accuracy		0.1% of FSR
Sampling Rate		10 Hz
Input Impedance		> 400 kΩ
Common Voltage Protection		±15 VDC
Overvoltage Protection		±80 VDC

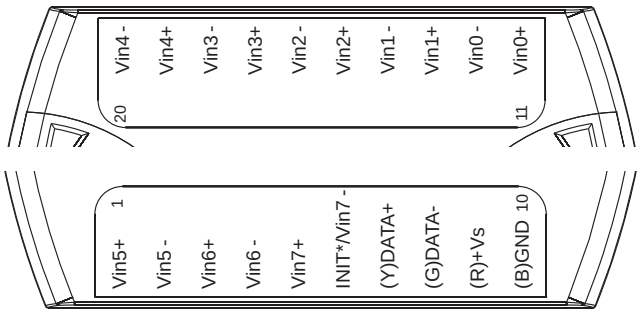
Note:
For highly-accurate thermocouple measurement, ICP DAS recommends selecting the I-7018Z/I-7019Z module, which features automatic cold-junction compensation for each channel, ensuring consistent and stable temperature output.

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Internal I/O Structure



Pin Assignments



Wire Connections

Channels 0 to 5	Channels 6 to 7
Analog Input	
Voltage	8-ch Diff. Mode (JP2): mV/V → Vin6+, Vin6-, Vin7+, INIT/Vin7-; INIT* Mode (JP2): mV/V → Vin6+, Vin6-, Vin7+, INIT/Vin7-
Current	mA → 125 Ω → Vinx+, Vinx-; Requires an Optional External 125 Ω Resistor. mA → 125 Ω → Vin6+, Vin6-, Vin7+, INIT/Vin7-; Requires an Optional External 125 Ω Resistor
Thermo-couple	Thermocouple → Vinx+, Vinx-. mV/V Thermocouple → Vin6+, Vin6-, Vin7+, INIT/Vin7-

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

Ordering Information

I-7018P CR	8-ch Thermocouple Input Module using DCON Protocol (Gray Cover) (RoHS)
I-7018P-G CR	8-ch Thermocouple Input Module using DCON Protocol (Blue 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
2AB125R CR	IP Resistor, 125 ohm, 0.1%, 1/4W, MF, 50 ppm/°C (1PCS) (RoHS)

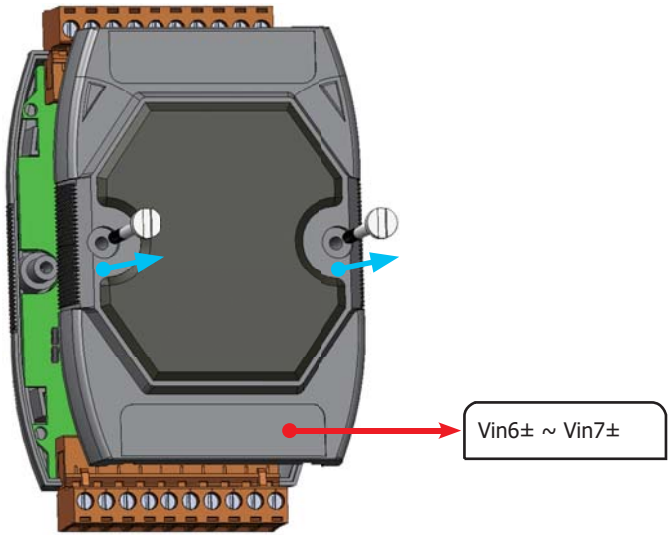
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Jumper

Notice:

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

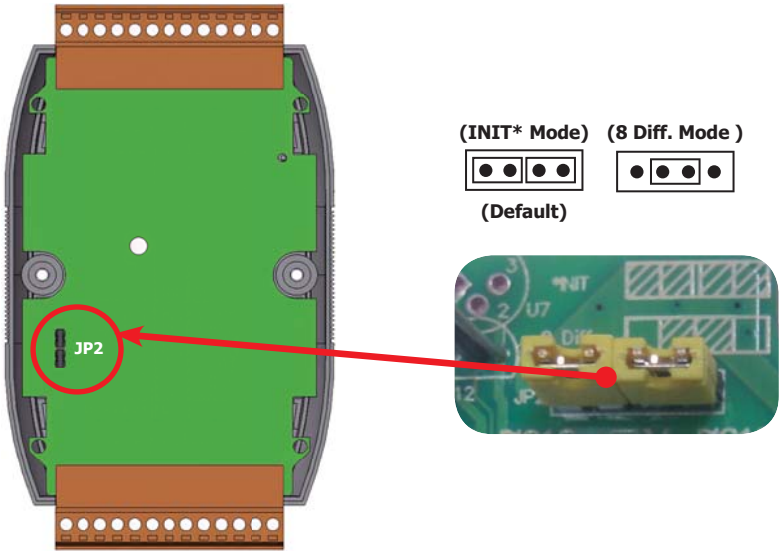
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2. Users can locate the Jx/JPx jumpers on the board by checking the I/O labels on the cover.

Channel	Vin6±	Vin7±
Jumper	JP2	

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