

M-7018-16

16-ch Thermocouple Input Module

Features

- 16 Differential Analog Inputs
- Current, Voltage, and Thermocouple Inputs
- Adjustable CJC offset
- Open Thermocouple Detection
- Built-in Dual Watchdog

Introduction

The M-7018-16 is an analog input module that includes 16 differential analog input channels. The voltage input range can be from ±15 mV to ±2.5 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 thermocouple can be used for the thermocouple input. Overvoltage protection of up to 30 VDC is provided. The module also features per-channel open wire detection for the thermocouple input types, and provides 4 kV ESD protection as well as 3000 VDC intra-module isolation.

System Specifications

CPU Module		
Watchdog Timer		Module, Communication (Programmable)
Isolation		
Intra-module Isolation		3000 VDC
EMS Protection		
EFT (IEC 61000-4-4)		±4 kV to Power
ESD (IEC 61000-4-2)		±4 kV Contact for Each Terminal
Surge (IEC 61000-4-5)		±2 kV for Power Line
LED Indicators		
Status		1 x Power and Communication
Analog Input		
Channels		16 Differential
Type		Voltage Current Thermocouple
Sensor Type	Thermocouple	J, K, T, E, R, S, B, N, C
Range	Voltage	±15 mV, ±50 mV, ±100 mV, ±500 mV, ±1 V, ±2.5 V
	Current	±20 mA, 0 ~ +20 mA, +4 ~ +20 mA (requires an optional external 125 Ω resistor)
Resolution		16-bit
Accuracy		±0.1% of FSR
Sampling Rate		10 Hz (Total)
Input Impedance		> 400 kΩ
Common Voltage Protection		25 VDC
Overvoltage Protection		±30 VDC
Open Wire Detection		For Thermocouple Only
COM Ports		
ESD (IEC 61000-4-2)		1 x RS-485
Baud Rate		1200 ~ 115200 bps
Data Format		(N, 8, 1) (N, 8, 2) (E, 8, 1) (O, 8, 1)
Protocol		Modbus RTU, DCON

Power	
Reverse Polarity Protection	Yes
Input Range	+10 ~ +30 VDC
Consumption	0.5 W
Mechanical	
Dimensions (mm)	76 x 120 x 42 (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

Applications

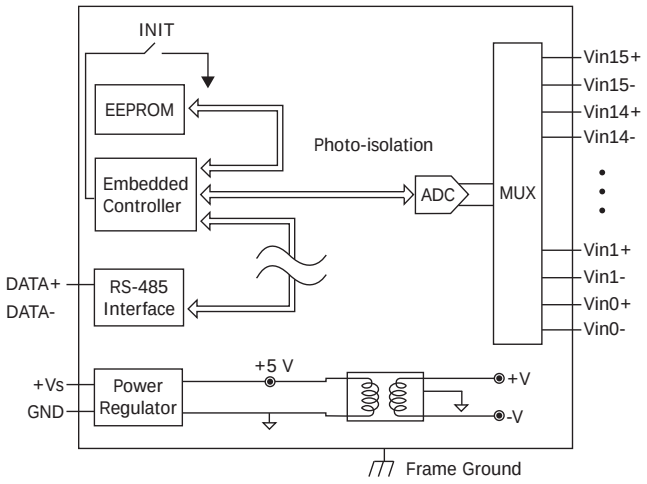
- Building Automation
- Factory Automation
- Machine Automation
- Remote Maintenance
- Remote Diagnosis
- Testing Equipment

Thermocouple Type

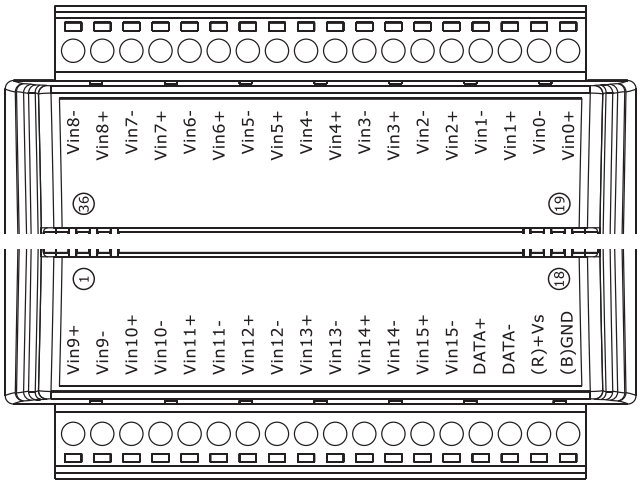
Type Code	Thermocouple Type	Temperature Range
0E	J	-210 to +760°C
0F	K	-270 to +1372°C
10	T	-270 to +400°C
11	E	-270 to +1000°C
12	R	0 to +1768°C
13	S	0 to +1768°C
14	B	0 to +1820°C
15	N	-270 to +1300°C
16	C	0 to +2320°C

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Internal I/O Structure

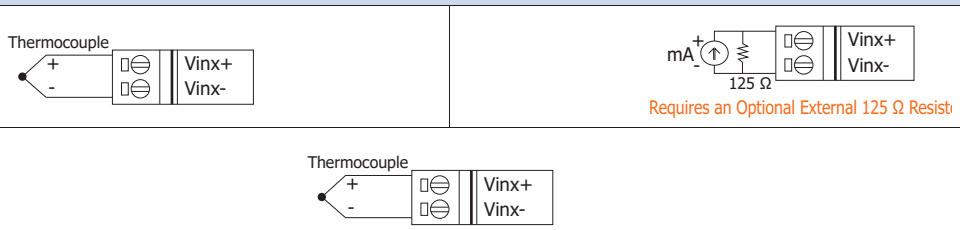


Pin Assignments

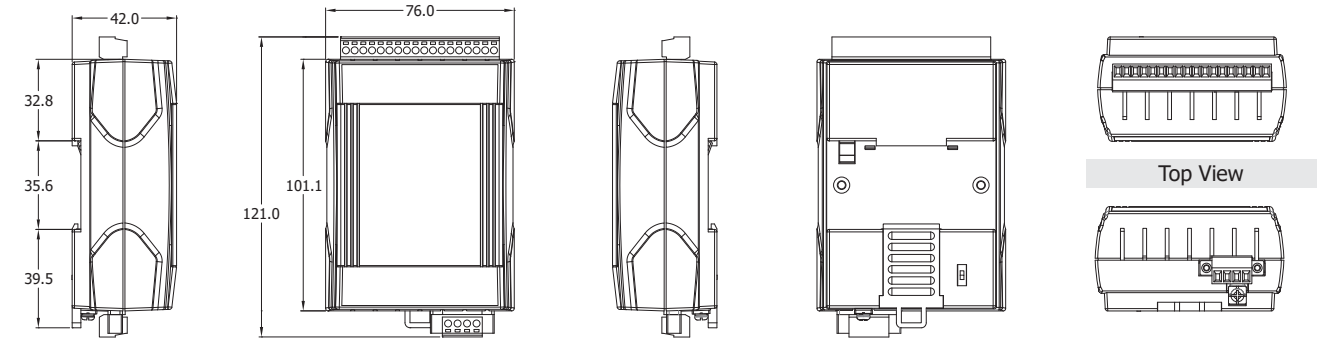


Wire Connections

M-7018-16



Dimensions (Units: mm)



Left View | Front View | Right View | Rear View | Top View | Bottom View

Ordering Information

M-7018-16-G CR	16-ch Thermocouple Input Module 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
2AB125R CR 	IP Resistor, 125 ohm, 0.1%, 1/4W, MF, 50 ppm/°C (1PCS) (RoHS)

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