

M-2018-16

16-channel Thermocouple Input Module

Features

- 16-channel Differential Analog Input
- ±120 VDC Overvoltage Protection
- Current, Voltage or Thermocouple Input
- Adjustable CJC offset
- Open Thermocouple Detection
- Dual Watchdog

Introduction

The M-2018-16 is an analog input module that includes 16 differential 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, $L_{DIN43710}$ thermocouple can be used for the thermocouple input. Overvoltage protection of up to 120 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 for Power Line
ESD (IEC 61000-4-2)	±4 kV Contact for each Terminal ±8 kV Air for Random Point
Surge (IEC 61000-4-5)	±1 kV for Power Line
LED Indicators	
Status	1 x Power and Communication
COM Ports	
Ports	1 x RS-485
Baud Rate	1200 to 115200 bps
Data Format	(N, 8, 1) (N, 8, 2) (E, 8, 1) (O, 8, 1)
Protocol	Modbus RTU, DCON
Bias Resistor	10 kΩ (DIP switch selectable)
Power	
Reverse Polarity Protection	Yes
Input Range	+10 ~ +48 VDC
Consumption	0.5 W
Mechanical	
Dimensions (mm)	31 x 157 x 132 (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

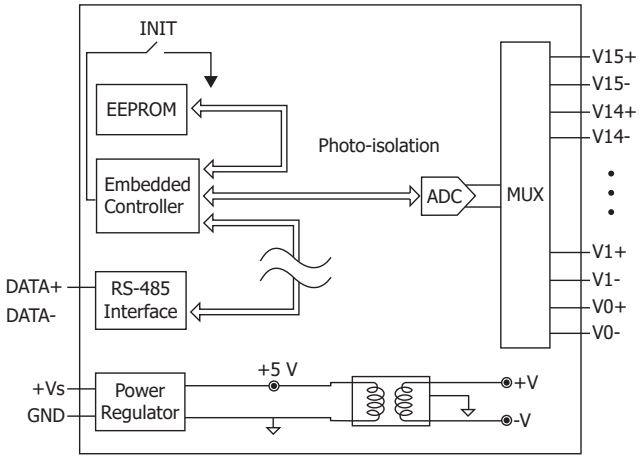
- Building Automation
- Factory Automation
- Machine Automation
- Remote Maintenance
- Remote Diagnosis
- Testing Equipment

I/O Specifications

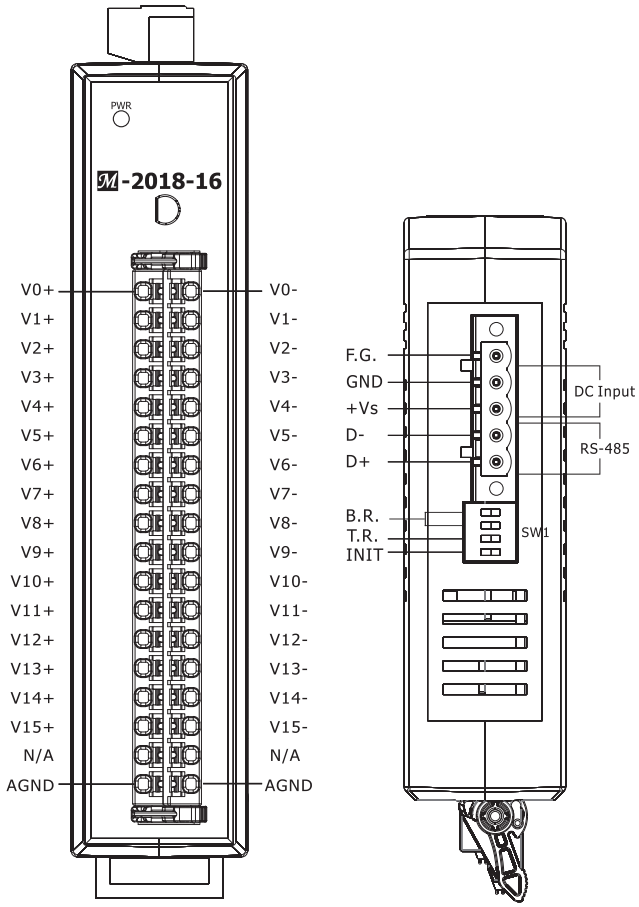
Analog Input		
Channels		16 Differential
Sensor Types	Thermocouple	J, K, T, E, R, S, B, N, C
	Voltage	±15 mV, ±50 mV, ±100 mV, ±500 mV, ±1 V, ±2.5 V
	Current	±20 mA, 0 ~ +20 mA, +4 ~ +20 mA (requires an optional external 125 Ω resistor)
Resolution		16-bit
Accuracy		0.1% of FSR
Sampling Rate		10 Hz (Total)
Input Impedance		> 400 kΩ
Common Voltage Protection		25 VDC
Overvoltage Protection		120 VDC
Open Wire Detection (for thermocouple only)		Yes
Individual Channel Configuration		-

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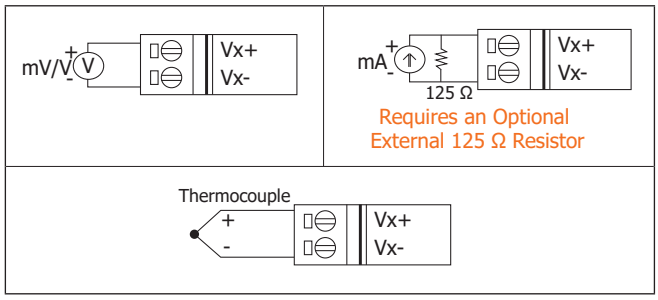
Internal I/O Structure



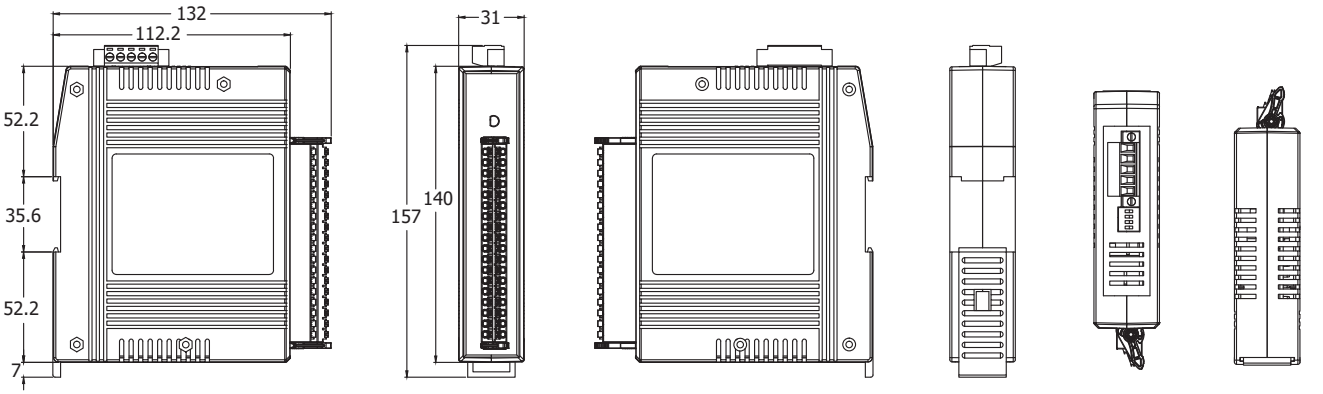
Pin Assignments



Wire Connections



Dimensions (Units: mm)



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

Ordering Information

M-2018-16 CR	16-channel Analog Input Module using the DCON and Modbus Protocols (RoHS)

Accessories

2AB125R	125 Ω, 0.1% DIP Resistor used for Current Type Input Modules

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