



M-2017

8-channel Analog Input Module

Features

- 8-channel Differential Analog Input
- DIP Switch Selectable Voltage or Current Input
- 240 Vrms Overvoltage Protection
- Supports Fast and Normal Mode Sampling
- 4 kV ESD and EFT Protection
- Overcurrent Protection
- Individual Channel Configuration
- Dual Watchdog
- 3000 VDC Intra-Module Isolation, Field to Logic
- Wide Operating Temperature Range: -25°C to 75°C



Introduction

The M-2017 is an Analog Input module that includes 8 differential Analog Input channels. The module provides a programmable input range on all Analog Input channels, and each channel can be configured for an individual input range, providing a high overvoltage protection of 240 Vrms and 50mA overcurrent protection at 110 VDC/VAC. Voltage and current input is DIP switch selectable. The sampling rate for the M-2017 module is adjustable and can be set to either fast or normal mode. The module also features per-channel open wire detection for current input of 4 to 20 mA, and provides 8 kV ESD protection, 4 kV EFT protection, 2 kV surge protection, and 3000 VDC intra-module isolation. The M-2017 module supports both the Modbus RTU and DCON protocols, which can be configured via software.

System Specifications

Communication Interface	
Interface	RS-485
Bias Resistor	Yes, 1k Ω bias resistor by switch selectable
Format	N81, N82, E81, O81
Baud Rate	1200 to 115200 bps
Protocol	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 Isolated, Field-to-Logic	3000 VDC
EMS Protection	
ESD (IEC 61000-4-2)	8 kV Contact for each terminal and 16 kV Air Random Point
EFT (IEC 61000-4-4)	± 4 kV for Power
Surge (IEC 61000-4-5)	± 2 kV for power liner
Power	
Reverse Polarity Protection	Yes
Input Voltage Range	+10 ~ +48 VDC
Power Consumption	0.7 W Max
Mechanical	
Dimensions (L x W x H)	110 x 33 x 96 mm
Installation	DIN-Rail
Environment	
Operating Temperature	-25°C to +75°C
Storage Temperature	-30°C to +80°C
Relative Humidity	10 ~ 95% RH, Non-condensing

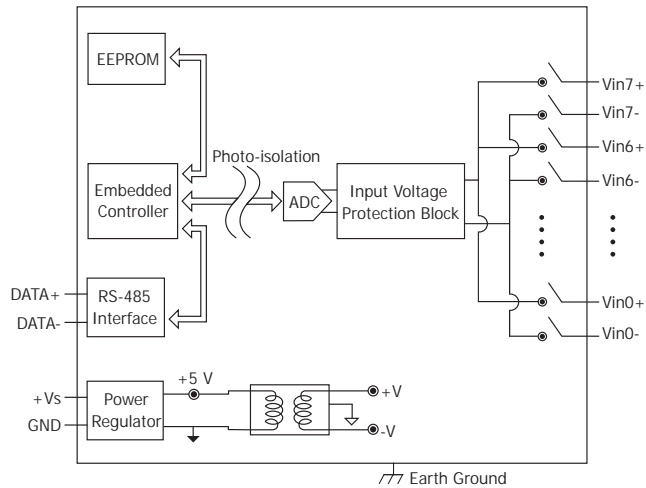
Applications

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

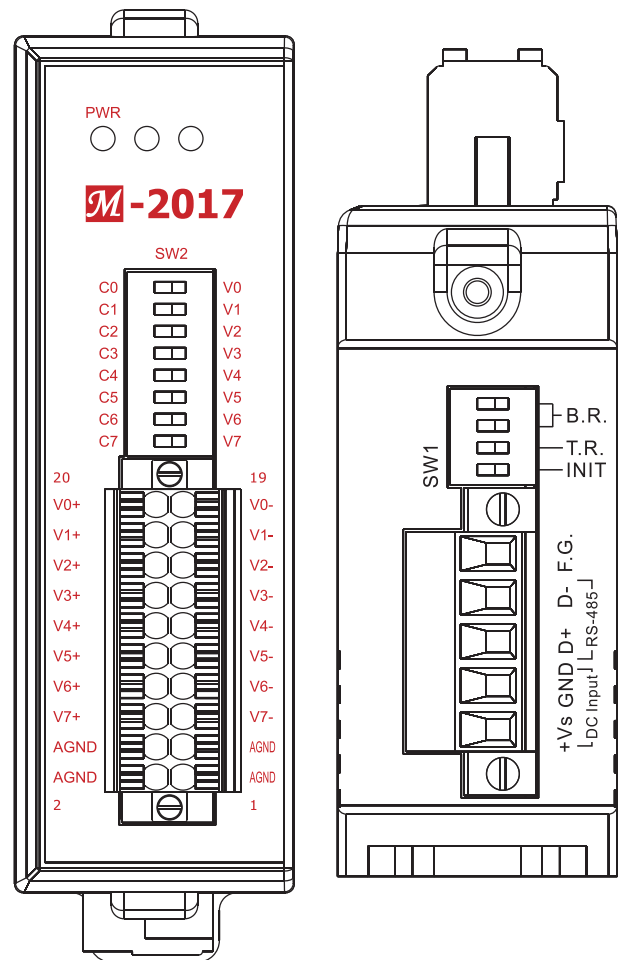
I/O Specifications

Analog Input		
Input Channels	8 Differential	
Input Range	Voltage	± 150 mV, ± 500 mV, ± 1 V, ± 5 V, ± 10 V
	Current	± 20 mA, 0 ~ 20 mA, 4 ~ 20 mA (DIP switch selectable)
Resolution	16-bit	
Sampling Rate	Normal Mode: 10 Samples/Sec. (Total) Fast Mode: 60 Samples/Sec. (Total)	
Accuracy	Normal Mode: $\pm 0.1\%$ of FSR Fast Mode: $\pm 0.5\%$ of FSR	
Common Voltage Protection	± 200 VDC	
Overcurrent Protection	Yes, 50 mA at 110 VDC	
Input Impedance	1 M Ω	
Over Voltage Protection	240 Vrms	
Individual Channel Configuration	Yes	
Connection	20-Pin Removable Terminal Block	

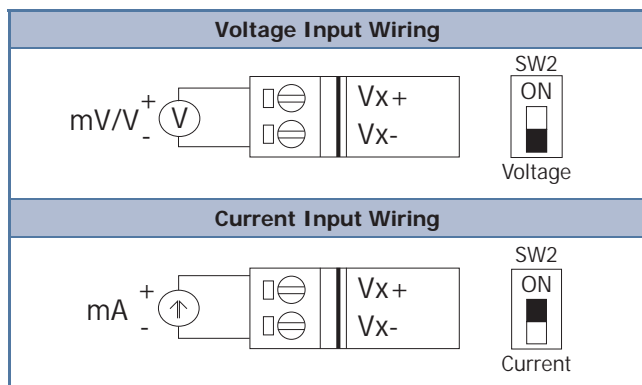
Internal I/O Structure



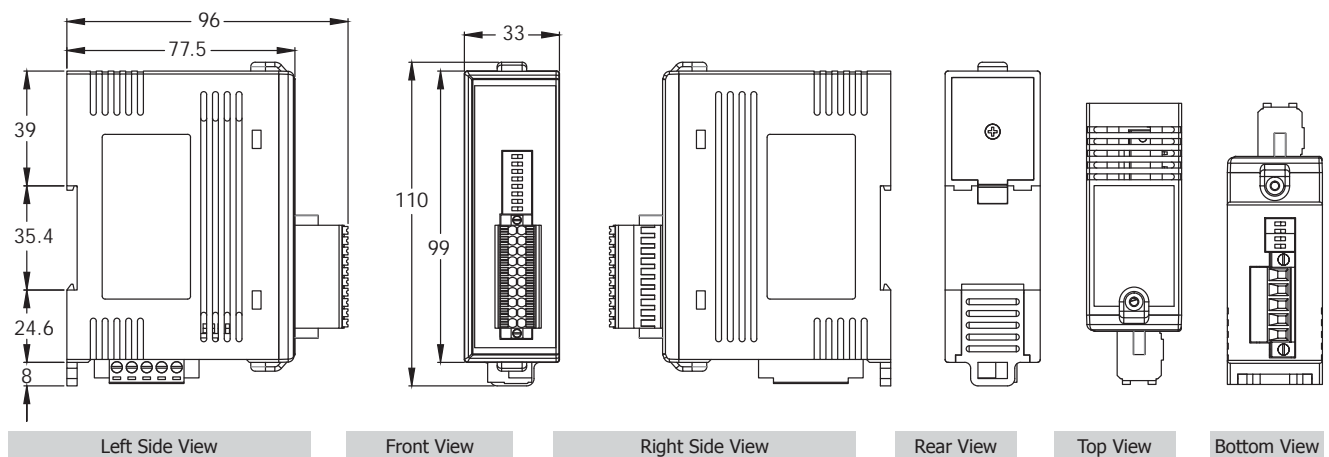
Pin & Terminal Assignments



Wire Connections



Dimensions (Units: mm)



Ordering Information

M-2017 CR	8-channel Isolated Analog Input Module With High Voltage Protection (RoHS)
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Accessories

tM-7520U CR	RS-232 to RS-485 Converter (RoHS)
tM-7561 CR	USB to RS-485 Converter (RoHS)