



## 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 (W x L x H)	33 x 110 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

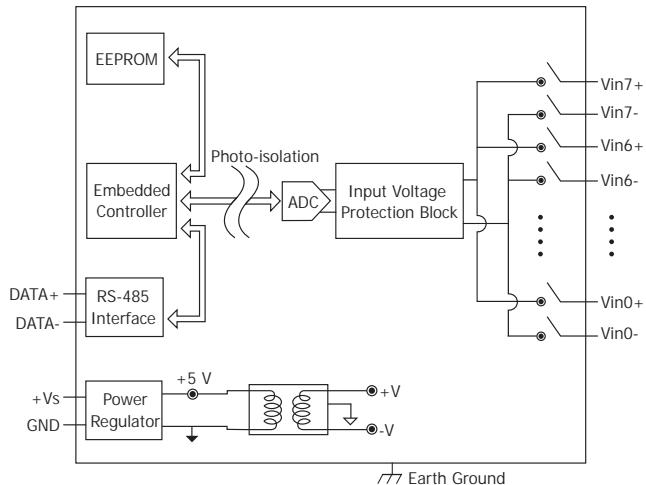
#### Applications

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

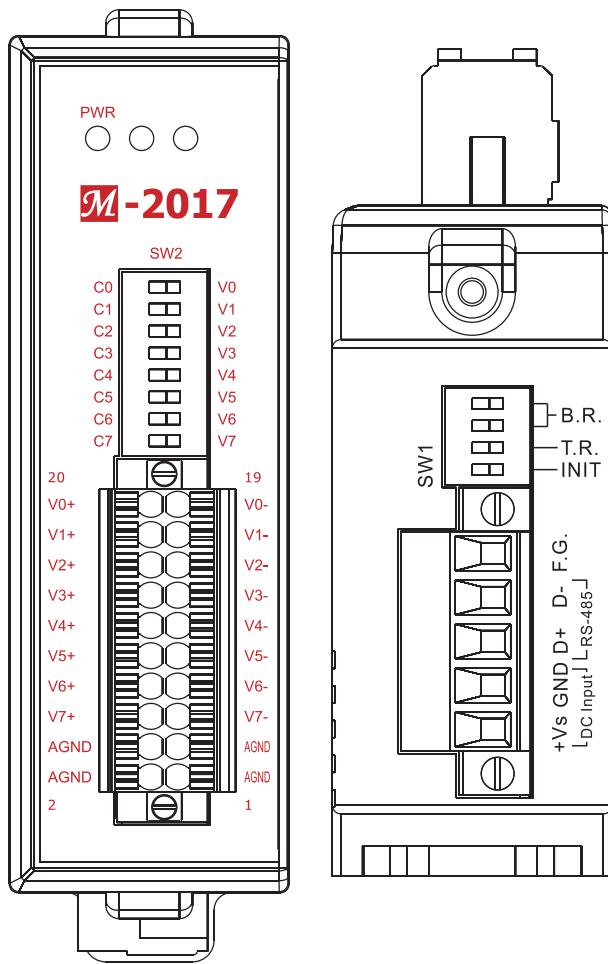
#### I/O Specifications

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: ±0.1% of FSR
		Fast Mode: ±0.5% of FSR
Common Voltage Protection		±200 VDC
Overcurrent Protection		Yes, 50 mA at 110 VDC
Input Impedance		1 MΩ
Over Voltage Protection		240 Vrms
Individual Channel Configuration		Yes
Connection		20-Pin Removable Terminal Block

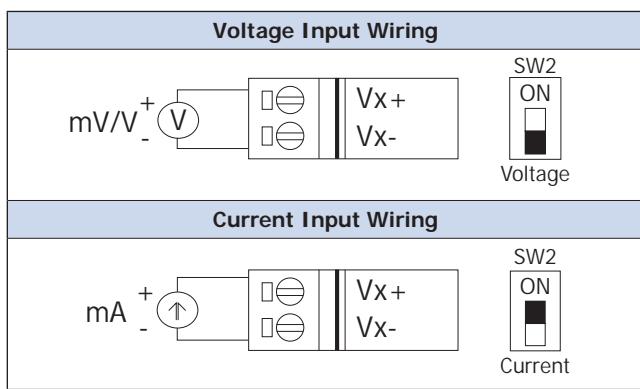
## Internal I/O Structure



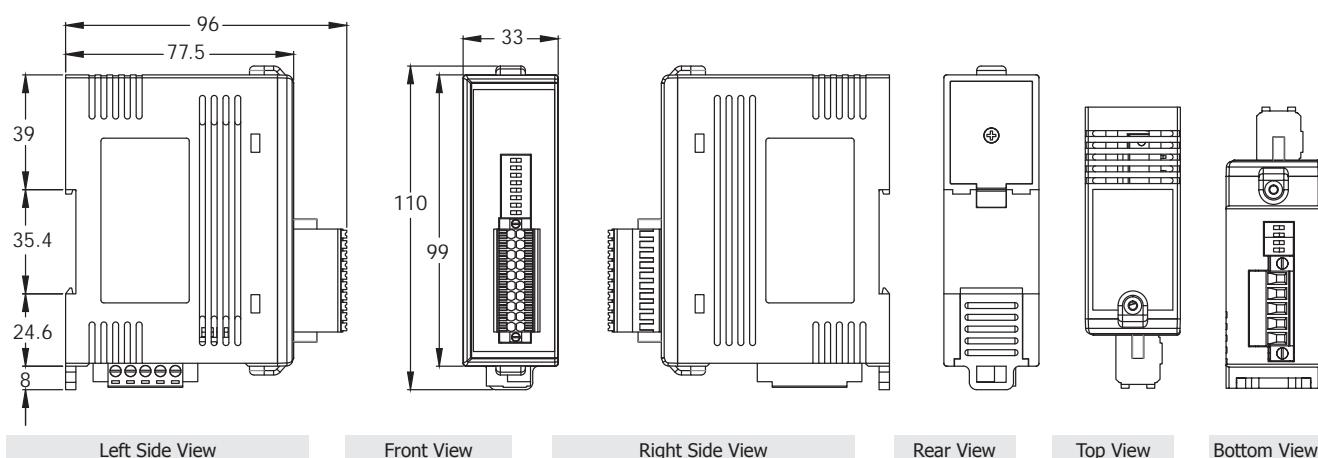
## Pin & Terminal Assignments



## 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)