



tM-AD2

2-channel Isolated Analog Input Module with High Voltage Protection

Introduction

The tM-AD2 is an analog input module that includes 2 single-ended analog input channels and provides a programmable input range on all analog inputs (0 ~ 500 mV, 0 ~ 1 V, 0 ~ 2.5 V, 0 ~ 5 V, 0 ~ 10 V, 0 ~ 20 mA, 4 ~ 20 mA). It provides a high overvoltage protection of 120 Vdc. The sampling rate of the tM-AD2 is adjustable and is available in either fast or normal mode and it also provides 4 kV ESD protection as well as 2500 Vdc intra-module isolation.

Applications

- Industrial Automation
- Industrial Machinery
- Building Automation
- Food and Beverage Systems
- Semiconductor Fabrication
- Control Systems

System Specifications

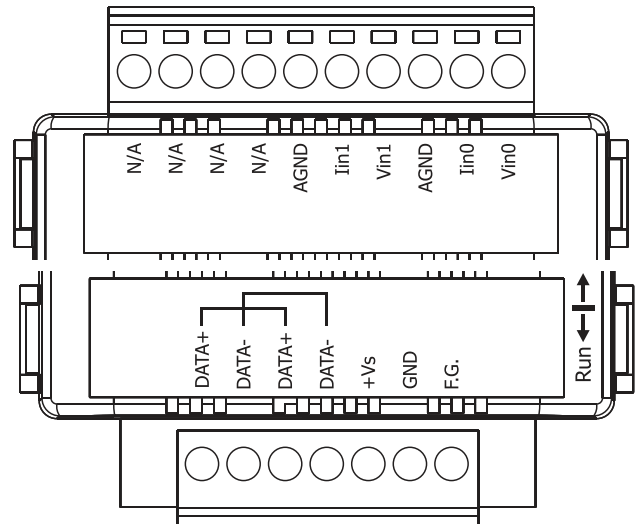
Communication	
Interface	RS-485
Format	(N, 8, 1), (N, 8, 2), (O, 8, 1), (E, 8, 1)
Baud Rate	1200 ~ 115200 bps
Protocol	DCON, Modbus/RTU, Modbus/ASCII
Dual Watchdog	Yes, Module (2.3 seconds), Communication (Programmable)
LED Indicators	
Power	1 LED as Power Indicator
Isolation	
Intra-module Isolation, Field-to-Logic	2500 Vdc
EMS Protection	
ESD (IEC 61000-4-2)	±4 kV Contact for Each Terminal ±8 kV Air for Random Point
EFT (IEC 61000-4-4)	±4 kV for Power
Power Requirements	
Reverse Polarity Protection	Yes
Powered from Terminal Block	Yes, 10 ~ 30 Vdc
Consumption	0.7 W Max.
Mechanical	
Dimensions (W x L x H)	52 mm x 98 mm x 27 mm
Installation	DIN-Rail Mounting
Environment	
Operating Temperature	-25 ~ +75°C
Storage Temperature	-30 ~ +75°C
Humidity	10 ~ 95% RH, Non-condensing

Features

- 2-channel Single-ended Inputs
- Voltage Inputs and Current Inputs
- 120 Vdc Overvoltage Protection
- Resolution: 14/12 bits
- Adjustable Sampling Rate
- 4 kV ESD and EFT Protection
- 3 kV Surge Protection
- Dual Watchdog
- 2500 Vdc Intra-module Isolation
- Cost-effective
- Wide Operating Temperature Range: -25 ~ +75°C



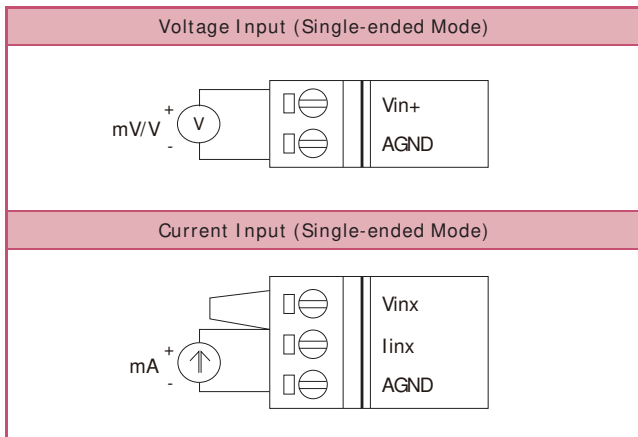
Pin Assignments



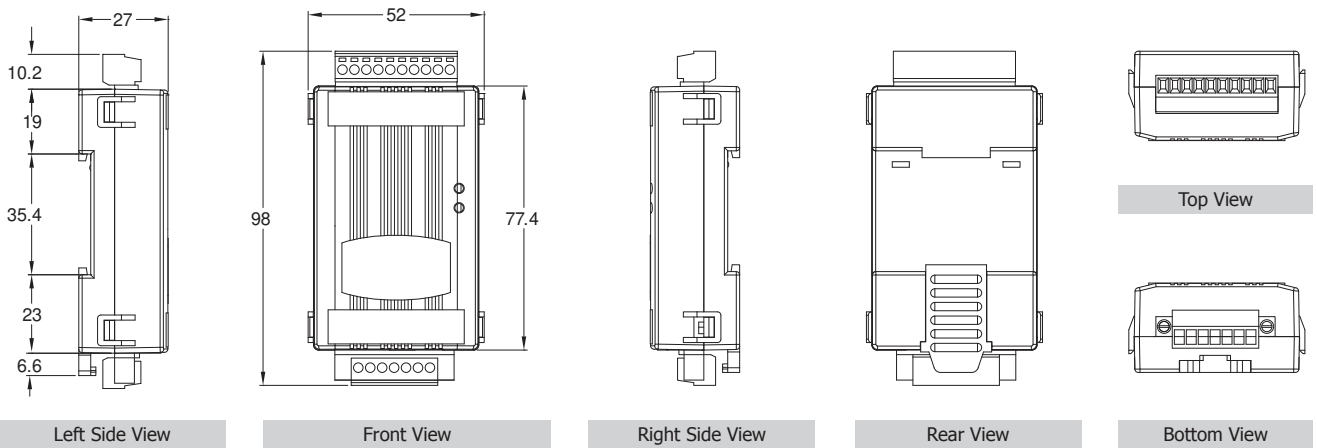
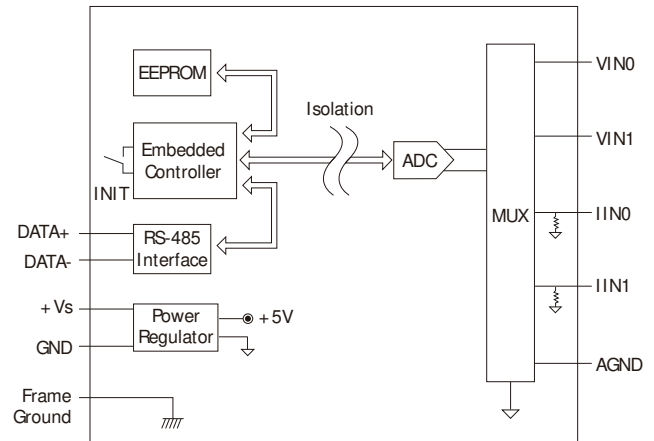
I/O Specifications

Analog Input		
Input Channels	2 Single-ended	
Type	0 ~ 500 mV, 0 ~ 1 V, 0 ~ 2.5 V, 0 ~ 5 V, 0 ~ 10 V, 0 ~ 20 mA, 4 ~ 20 mA	
Resolution	Normal Mode	14-bit
	Fast Mode	12-bit
Sampling Rate	Normal Mode	10 Hz total
	Fast Mode	200 Hz total
Accuracy	Normal Mode	+/-0.1%
	Fast Mode	+/-0.5%
Zero Drift	+/-20 uV/°C	
Span Drift	+/-25 ppm/°C	
Input Impedance	Voltage	10 MΩ
	Current	125 Ω
Overvoltage Protection	120 Vdc	
Overcurrent Protection	Yes, 50 mA at 110 Vdc	
Open Wire Detection for 4 ~ 20 mA	Yes	

Wire Connections



Block Diagram



Ordering Information

tM-AD2 CR	2-channel Isolated Analog Input Module with High Voltage Protection(RoHS)
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Related Products

 tM-7561 CR	Isolated USB to RS-485 Converter (RoHS)	 tM-7510U CR	Isolated RS-485 Repeater (RoHS)
 tM-7520U CR	Isolated RS-232 to RS-485 Converter (RoHS)	 MDR-20-24 CR	24W Single Output Industrial DIN-Rail Power Supply (RoHS)

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Tiny RS-485 Remote I/O Modules