



## M-7017RMS

8-ch True RMS Input Module

### Features

- 8 True RMS Inputs
- $\pm 0.15\%$  Factory Calibrated Accuracy
- The RMS Input Range Can be from +150 mVrms to +10 Vrms
- Designed for Standard Operating Frequencies of 45 Hz to 10 KHz
- Individual Channel Configurable



### Introduction

The M-7017RMS is an 8-channel differential AC input module that is used to convert the AC input signals to their True RMS DC values. The RMS input range can be from +150 mVrms to +10 Vrms, and each channel can be configured individually. The M-7017RMS is a complete, high-accuracy, RMS-to-DC converter that computes the True RMS DC value of any complex waveform. It also features 4 kV ESD protection, 2500 VDC intra-module isolation and  $\pm 35$  VDC overvoltage protection.

### System Specifications

CPU Module	
Watchdog Timer	Module, Communication (Programmable)
Isolation	
Intra-module Isolation	2500 VDC
EMS Protection	
EFT (IEC 61000-4-4)	$\pm 4$ kV for Power Line
ESD (IEC 61000-4-2)	$\pm 4$ kV Contact for Each Terminal $\pm 8$ kV Air for Random Point
Surge (IEC 61000-4-5)	$\pm 0.5$ kV for Power Line
LED Indicators	
Status	1 x Power and Communication
COM Ports	
Ports	1 x RS-485
Baud Rate	1200 ~ 115200 bps
Data Format	(N, 8, 1), (N, 8, 2), (E, 8, 1), or (O, 8, 1)
Protocol	Modbus RTU, DCON
Power	
Reverse Polarity Protection	Yes
Input Range	+10 ~ +30 VDC
Consumption	0.9 W
Mechanical	
Dimensions (mm)	72 x 123 x 35 (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

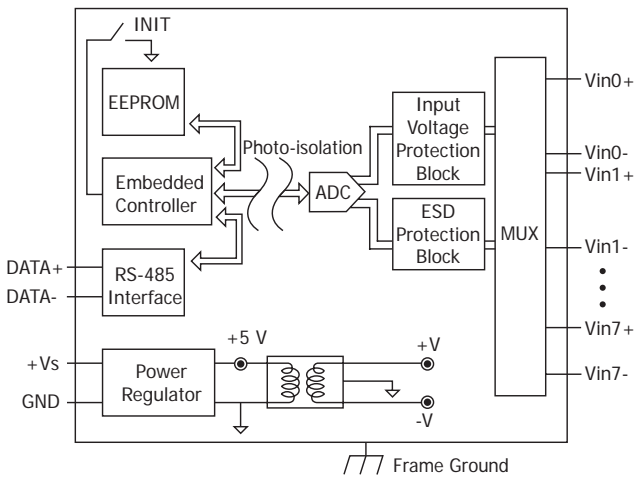
### Applications

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

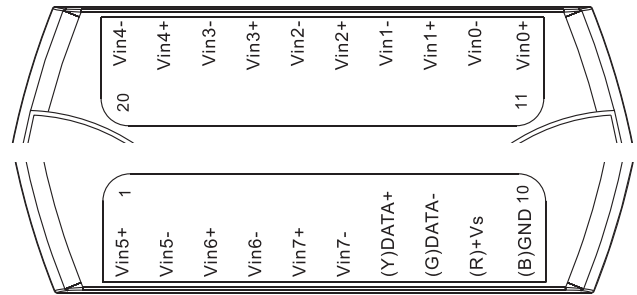
### I/O Specifications

Analog Input		
Channels	8 Differential	
Type	True RMS	
Range	0 ~ +10 Vrms, 0 ~ +5 Vrms, 0 ~ +1 Vrms, 0 ~ +500 mVrms, 0 ~ +150 mVrms	
Resolution	16-bit	
Accuracy	Sinusoid	
	50/60 Hz	$\pm 0.15\%$ of FSR
	45 Hz to 10 kHz	$\pm 0.5\%$ of FSR
	Non-Sinusoid	
	Crest Factor = 1 to 2	$\pm 0.2\%$ of FSR
	Crest Factor = 2 to 3	$\pm 0.35\%$ of FSR
Accuracy	DC	
	0 ~ +10V, 0 ~ +5V, 0 ~ +1V	$\pm 0.3\%$ of FSR
	0 ~ +500 mV, 0 ~ +150 mV	$\pm 0.7\%$ of FSR
Sampling Rate	10 Hz (Total)	
Input Impedance	>2 M $\Omega$	
Overvoltage Protection	$\pm 35$ VDC	
Individual Channel Configuration	Yes	

## Internal I/O Structure

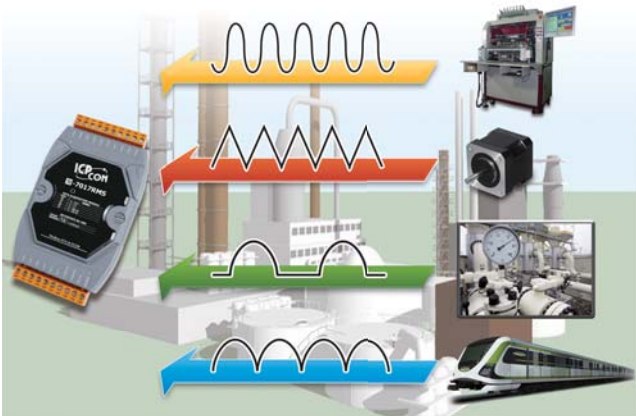


## Pin Assignments

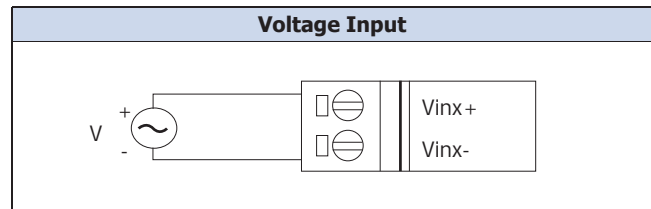


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## Wire Connections










## Ordering Information

### M-7017RMS-G CR

8-ch True RMS Input Module using DCON and Modbus Protocols (Gray Cover) (RoHS)

## Accessories

<b>DN-843V-600V</b> 	3-channel 600 VDC Voltage Attenuator with non-isolation
<b>DN-848VI-80V CR</b> 	8-channel 80 VDC Voltage Attenuator with channel to channel isolation (RoHS)
<b>DN-848VI-150V CR</b> 	8-channel 150 VDC Voltage Attenuator with channel to channel isolation (RoHS)
<b>DN-843I-CT-1 CR</b> 	3-channel 1 A Current Transformer (RoHS)
<b>DN-843I-CT-50 CR</b> 	3-channel 50 A Current Transformer (RoHS)
<b>SG-770 CR</b> 	7/14 channel Surge Protector (RoHS)
<b>SG-3000 series</b> 	Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Input Transformers