



### Introduction

The I-87017W-RMS 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 I-87017W-RMS 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, 3000 VDC intra-module isolation and +/-35 VDC overvoltage protection.

### System Specifications

Communication	
Interface	RS-485
Format	N, 8, 1
Baud Rate	1200 to 115200 bps
Protocol	DCON
Dual Watchdog	Yes, Module (1.6 Seconds), Communication (Programmable)
LED Indicators/Display	
System LED Indicators	Yes, 1 as Power/Communication Indicator
I/O LED Indicators	16 as High/Low Alarm Signals
Isolation	
Intra-module Isolation, Field-to-Logic	3000 Vdc
EMS Protection	
ESD (IEC 61000-4-2)	±4 kV Contact for each Terminal ±8 kV Air for Random Point
Power	
Power Consumption	1.0 W Max.
Mechanical	
Dimensions (L x W x H)	115 mm x 30 mm x 102 mm
Environment	
Operating Temperature	-25 to +75°C
Storage Temperature	-40 to +85°C
Humidity	10 to 95% RH, Non-condensing

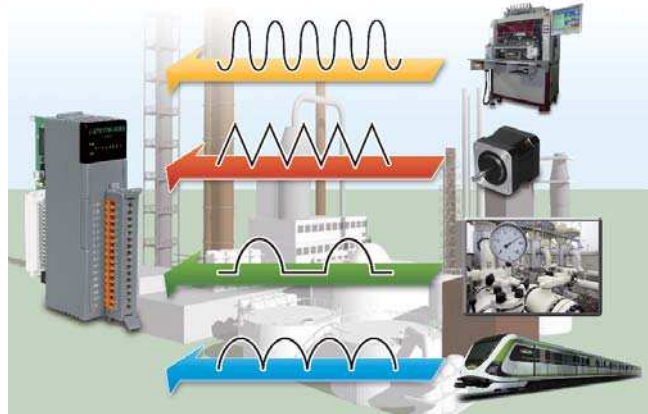
### Features

- 8-channel True RMS Input
- ±0.15% Factory Calibrated Accuracy
- The RMS input range can be from +150 mVrms to +10 Vrms
- Designed for Standard Operation with Frequencies of 45 Hz to 10 KHz
- 0.15% Additional Error to Crest Factor of 3
- Individual Channel Configurable
- 4 kV ESD Protection
- ±35 VDC Overvoltage Protection
- 3000 Vdc Intra-module Isolation
- RoHS Compliant
- Wide Operating Temperature Range: -25 to +75°C



### Applications

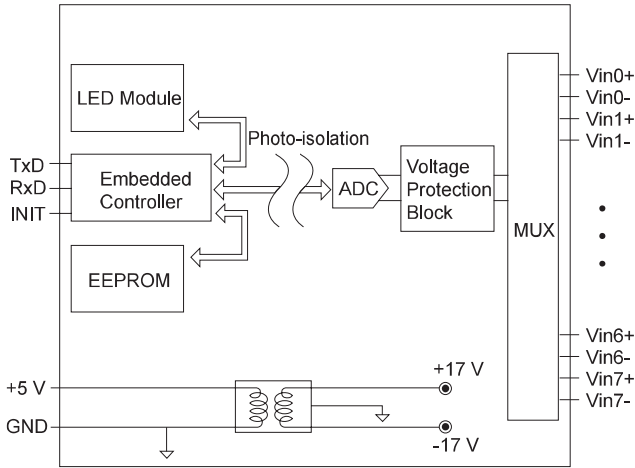
- Building Automation
- Machine Automation
- Remote Diagnosis
- Factory Automation
- Remote Maintenance
- Testing Equipment



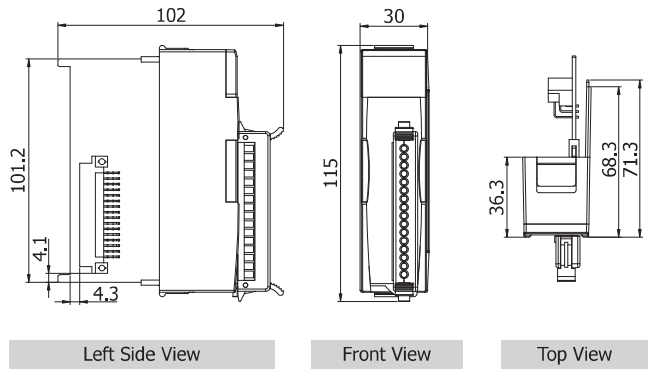
### I/O Specifications

Analog Input		
Channels	8	
Wiring	Differential	
Range	0 ~ +10 Vrms, 0 ~ +5 Vrms, 0 ~ +1 Vrms, 0 ~ +500 mVrms, 0 ~ +150 mVrms	
Resolution	16-bit	
Accuracy	Sinusoid	
	50/60 Hz	±0.15% of FSR
	45 Hz to 10 kHz	±0.5% of FSR
	Non-Sinusoid	
	Crest Factor = 1 to 2	±0.2% of FSR
	Crest Factor = 2 to 3	±0.35% of FSR
DC	0 ~ +10 Vrms/ 0 ~ +5Vrms/ 0 ~ +1 Vrms	±0.3% of FSR
	Other	±0.7% of FSR
	Sampling Rate	10 Hz (Total)
-3dB Bandwidth	15.7 Hz	
Zero Drift	±20 μV/°C	
Span Drift	±25 ppm/°C	
Common Mode Rejection	86 dB	
Normal Mode Rejection	100 dB	
Input Impedance	>2 MΩ	
Individual Channel Configuration	Yes	
Overvoltage Protection	±35 VDC	

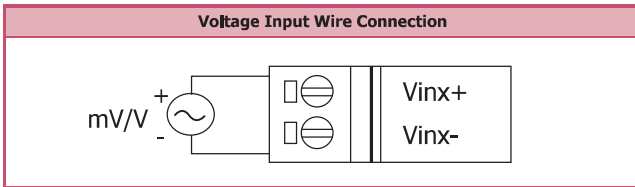
**Internal I/O Structure**



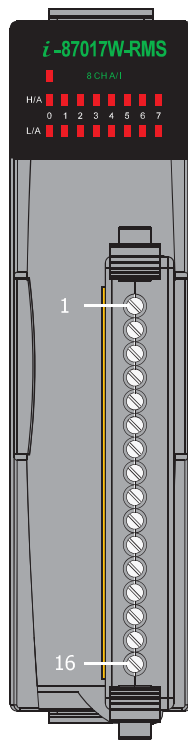
**Dimensions (Units: mm)**



**Wire Connections**



**Pin Assignments**



Terminal No.	Pin Assignment
01	Vin0+
02	Vin0-
03	Vin1+
04	Vin1-
05	Vin2+
06	Vin2-
07	Vin3+
08	Vin3-
09	Vin4+
10	Vin4-
11	Vin5+
12	Vin5-
13	Vin6+
14	Vin6-
15	Vin7+
16	Vin7-

**Ordering Information**

<b>I-87017W-RMS CR</b>	8-channel True RMS Input Module (Gray Cover) (RoHS)
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**Accessories**

	DN-843V-600V CR	3-channel 600 V Voltage Attenuator (RoHS)
	DN-848VI-80V CR	8-channel 80 V Voltage Attenuator (RoHS)
	DN-848VI-150V CR	8-channel 150 V Voltage Attenuator (RoHS)
	DN-843I-CT-1 CR	3-channel 1 A Current Transformer (RoHS)

	DN-843I-CT-50 CR	3-channel 50 A Current Transformer (RoHS)
	SG-770 CR	7-channel Differential or 14-channel Single-ended Surge Protector (RoHS)
	SG-3000 series	Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Input Transformers