



Analog Input

RS-485 Remote I/O Modules



Introduction

The I-87017RCW is an 8-channel current input module that is specifically designed to measure current only. Its user-friendly design saves both time and effort when measuring a current thanks to a built-in resistor, meaning that current can now be measured directly. The I-87017RCW is much more suitable for critically harsh environments since it also has 4 kV ESD protection and ± 200 Vdc common voltage as current input protection, and also features 3000 Vdc intra-module isolation together with open wire detection for $+4$ to $+20$ mA input. The sampling rate for the I-87017RCW is adjustable, meaning that either fast mode or normal mode can be selected.

I-87KW Series

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	1.3 W Max.
Mechanical	
Dimensions (L x W x H)	115 mm x 30 mm x 102 mm
Environment	
Operating Temperature	-25 to $+75^{\circ}\text{C}$
Storage Temperature	-40 to $+85^{\circ}\text{C}$
Humidity	10 to 95% RH, Non-condensing

I-87017RCW

Features

- 8 Current Input Channels
- ± 200 Vdc Common Voltage Protection
- Supports both Fast and Normal Mode Sampling Rates
- Overcurrent Protection
- Built-in Resistor to simplify Current Measurement
- Open Wire Detection for $+4$ to $+20$ mA input
- 3000 Vdc Intra-module Isolation
- 4 kV ESD Protection
- RoHS Compliant
- Wide Operating Temperature Range: -25 to $+75^{\circ}\text{C}$



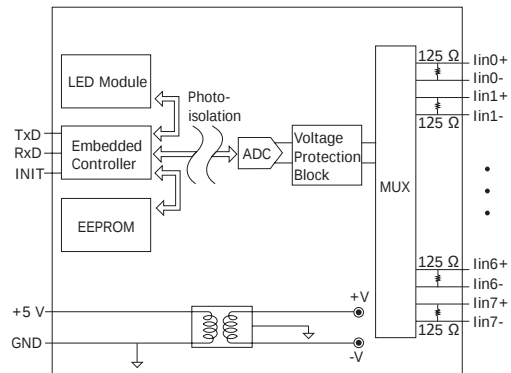
Applications

- Current Measurement
- Voltage Measurement
- Environment Monitoring
- Tunnel Monitoring
- Building Monitoring

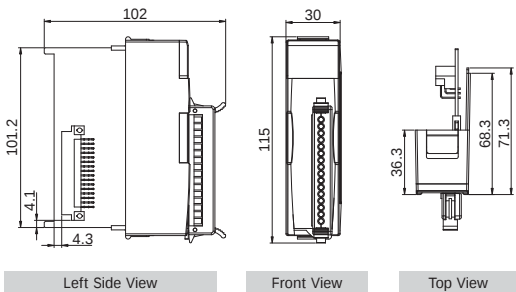
I/O Specifications

Analog Input		
Channels	8	
Wiring	Differential	
Range	$0 \sim +20$ mA, $+4 \sim +20$ mA, -20 mA $\sim +20$ mA (No External Resistor Required)	
Resolution	16-bit	
Accuracy	Normal Mode	$\pm 0.1\%$ of FSR
	Fast Mode	$\pm 0.5\%$ of FSR
Sampling Rate	Normal Mode	10 Hz (Total)
	Fast Mode	60 Hz (Total)
-3dB Bandwidth	15.7 Hz	
Zero Drift	± 20 $\mu\text{V}/^{\circ}\text{C}$	
Span Drift	± 25 ppm/ $^{\circ}\text{C}$	
Common Mode Rejection	86 dB	
Normal Mode Rejection	100 dB	
Input Impedance	125 Ω	
Common Voltage Protection	-200 Vdc $\sim +200$ Vdc	
Open Wire Detection	Yes, for $+4 \sim +20$ mA	
Overvoltage Protection	-	
Overcurrent Protection	Yes, 50 mA at 110 Vdc	

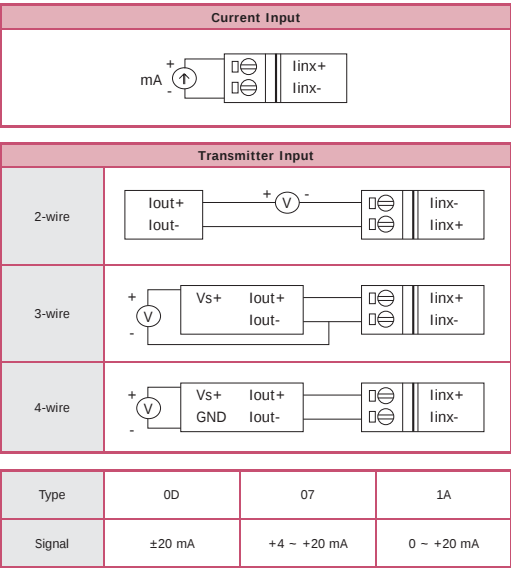
Internal I/O Structure



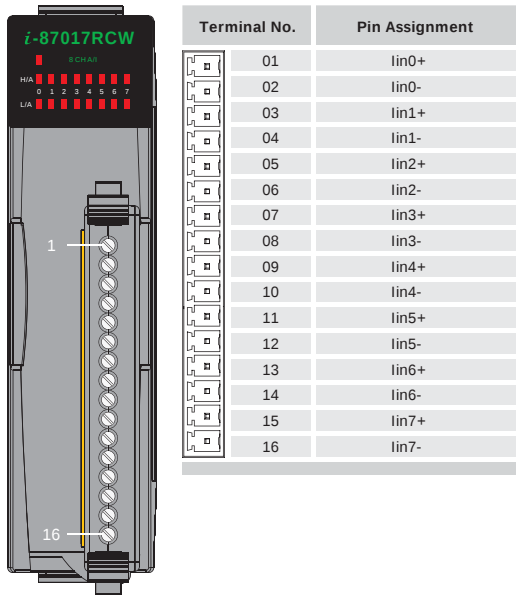
Dimensions (Units: mm)



Wire Connections



Pin Assignments



Ordering Information

I-87017RCW-G CR	8-channel Current Input Module with Overcurrent Protection using the DCON Protocol (Gray Cover) (RoHS)
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Accessories

 DN-843V-600V CR	3-channel 600 V Voltage Attenuator (RoHS)	 DN-843I-CT-50 CR	3-channel 50 A Current Transformer (RoHS)
 DN-848VI-80V CR	8-channel 80 V Voltage Attenuator (RoHS)	 SG-770 CR	7-channel Differential or 14-channel Single-ended Surge Protector (RoHS)
 DN-848VI-150V CR	8-channel 150 V Voltage Attenuator (RoHS)	 SG-3000 series	Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Input Transformers
 DN-843I-CT-1 CR	3-channel 1 A Current Transformer (RoHS)		