



Analog Input

RS-485 Remote I/O Modules



I-87017ZW

10/20-channel Analog Input Module with High Voltage Protection

Introduction

The I-87017ZW is an analog input module that includes 10 differential or 20 single-ended analog input channels. It provides a programmable input range on all analog inputs. (± 150 mV, ± 500 mV, ± 1 V, ± 5 V, ± 10 V, ± 20 mA or $0 \sim +20$ mA) Each analog input can be configured for an individual range that provides 240 Vrms high overvoltage protection and 50mA overcurrent protection at 110 Vdc/Vac. Voltage and current inputs are jumper selectable. The sampling rate of the I-87017ZW is adjustable and is available in either fast or normal mode. The module also features per-channel open wire detection for $+4 \sim +20$ mA inputs that provides 4 kV ESD protection as well as 3000 Vdc intra-module isolation.

System Specifications

Communication	
Interface	RS-485
Format	N, 8, 1
Baud Rate	1200 ~ 115200 bps
Protocol	DCON
Dual Watchdog	Yes, Module (1.6 Seconds), Communication (Programmable)
LED Indicators/Display	
System LED Indicator	1 LED as Power/Communication Indicator
I/O LED Indicator	-
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
EFT (IEC 61000-4-4)	± 4 kV for Power
Power	
Power Consumption	2.0 W
Mechanical	
Dimensions (W x L x H)	30 mm x 102 mm x 115 mm
Environment	
Operating Temperature	$-25 \sim +75^{\circ}\text{C}$
Storage Temperature	$-40 \sim +85^{\circ}\text{C}$
Humidity	10 ~ 95% RH, Non-condensing

Features

- 10-channel Differential or 20-channel Single-ended Inputs
- Jumper Selectable Voltage or Current Input
- 240 Vrms Overvoltage Protection
- High Resolution: 16-bits
- Supports Fast Mode and Normal Mode
- 4 kV ESD Protection
- 3000 Vdc Intra-module Isolation
- Individual Channel Configuration
- Dual Watchdog
- RoHS Compliance
- Wide Operating Temperature Range: $-25 \sim +75^{\circ}\text{C}$



Applications

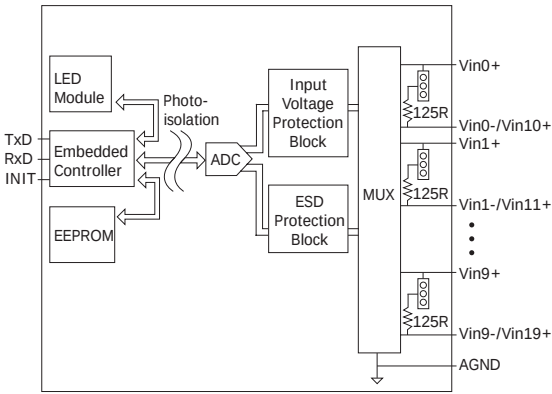
- Industrial Automation
- Industrial Machinery
- Building Automation
- Food and Beverage Systems
- Semiconductor Fabrication
- Control Systems

I/O Specifications

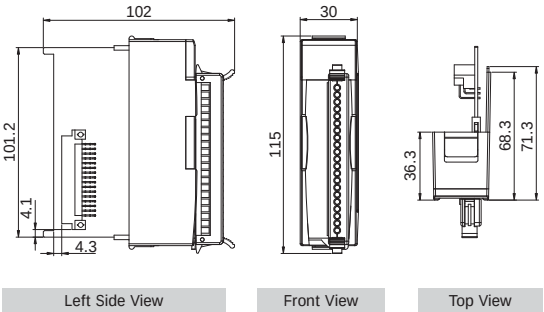
Analog Input			
Channels		10 Differential or 20 Single-ended (See Note 1), Jumper selectable	
Range		± 150 mV, ± 500 mV, ± 1 Vdc, ± 5 Vdc, ± 10 Vdc, ± 20 mA, $0 \sim +20$ mA, $+4 \sim +20$ mA (jumper selectable)	
Resolution	Normal Mode	16-bit	
	Fast Mode	12-bit	
Accuracy	Normal Mode	$\pm 0.1\%$ of FSR	
	Fast Mode	$\pm 0.5\%$ of FSR	
Sampling Rate	Normal Mode	16-bit, 10 Hz (Total)	
	Fast Mode	12-bit, 50 Hz (Total)	
Band Width	Normal Mode	15.7 Hz	
	Fast Mode	78.7 Hz	
Zero Drift		$\pm 20 \mu\text{V}/^{\circ}\text{C}$	
Span Drift		$\pm 25 \text{ ppm}/^{\circ}\text{C}$	
Common Mode Rejection		86 dB	
Normal Mode Rejection		100 dB	
Input Impedance	Voltage	Differential	2 M Ω
		Single-ended	1 M Ω
	Current	125 Ω	
Overvoltage Protection		Differential	240 Vrms
		Single-ended	150 Vrms
Individual Channel Configuration		Yes	
Overcurrent Protection		50 mA Max. at 110 Vdc/Vac Max.	

Note 1: Differential mode can be used for either voltage input or current input.
Single-Ended mode can only be used for voltage input.

Internal I/O Structure

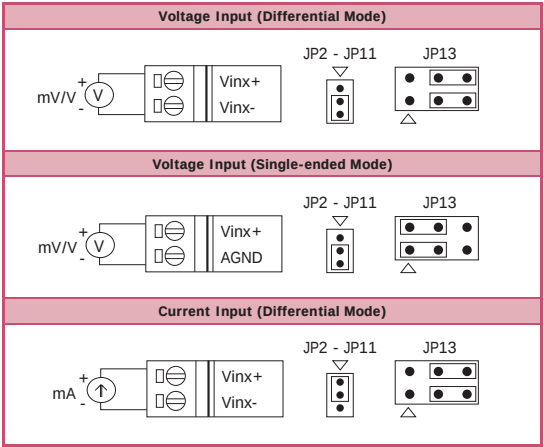


Dimensions (Units: mm)



RS-485 Remote I/O Modules

Wire Connections



Pin Assignments

Terminal No.	Pin Assignment
01	Vin0+
02	Vin0-/Vin10+
03	Vin1+
04	Vin1-/Vin11+
05	Vin2+
06	Vin2-/Vin12+
07	Vin3+
08	Vin3-/Vin13+
09	Vin4+
10	Vin4-/Vin14+
11	Vin5+
12	Vin5-/Vin15+
13	Vin6+
14	Vin6-/Vin16+
15	Vin7+
16	Vin7-/Vin17+
17	Vin8+
18	Vin8-/Vin18+
19	Vin9+
20	Vin9-/Vin19+
21	AGND

I-87KW Series

Ordering Information

I-87017ZW-G CR	10/20-channel Analog Input Module with High Voltage Protection (Gray Cover) (RoHS)
----------------	--

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
DN-843I-CT-1 CR	3-channel 1 A Current Transformer (RoHS)		

I-87017ZW