



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 ~ +20 mA) Each analog input can be configured for an individual range that provides 240 V_{rms} high overvoltage protection and 50mA overcurrent protection at 110 V_{DC}/V_{AC}. 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 ~ +20 mA inputs that provides 4 kV ESD protection as well as 3000 V_{DC} 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 Indicator/Display	
System LED Indicator	1 LED as Power/Communication Indicator
I/O LED Indicator	-
Isolation	
Intra-Module Isolation, Field-to-Logic	3000 V _{DC}
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 ~ +75°C
Storage Temperature	-40 ~ +85°C
Humidity	10 ~ 95% RH, Non-condensing

Features

- 10-channel Differential or 20-channel Single-ended Inputs
- Jumper Selectable Voltage or Current Input
- 240 V_{rms} Overvoltage Protection
- High Resolution: 16-bits
- Supports Fast Mode and Normal Mode
- 4 kV ESD Protection
- 3000 V_{DC} Intra-module Isolation
- Individual Channel Configuration
- Dual Watchdog
- RoHS Compliance
- Wide Operating Temperature Range: -25 ~ +75°C



Applications

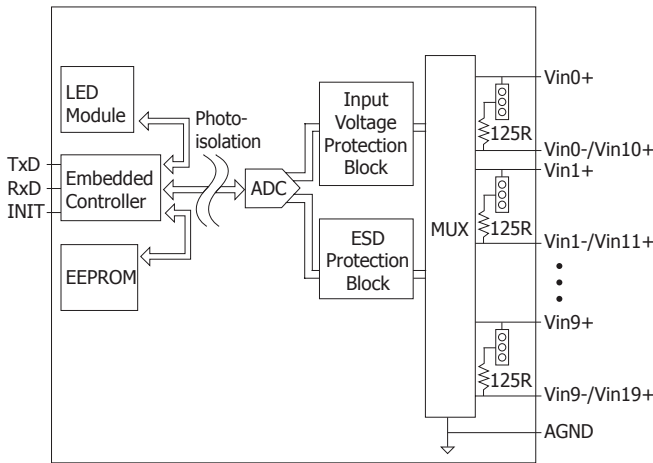
- Industrial Automation
- Industrial Machinery
- Building Automation
- Food and Beverage Systems
- Semiconductor Fabrication
- Control Systems

I/O Specifications

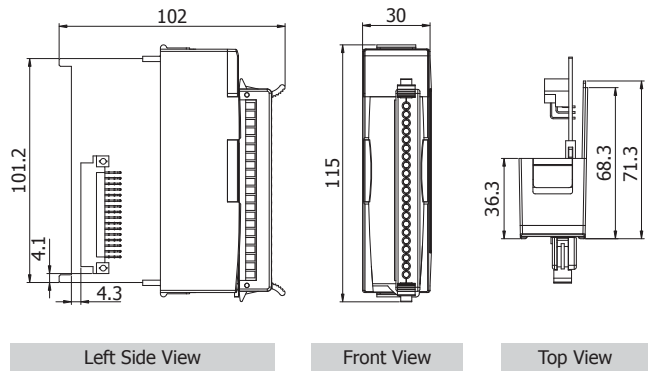
Analog Input			
Channels	10 Differential or 20 Single-ended (See Note 1), Jumper selectable		
Range	+/-150 mV, +/-500 mV, +/-1 V _{DC} , +/-5 V _{DC} , +/-10 V _{DC} , +/-20 mA, 0 ~ +20 mA, +4 ~ +20 mA (jumper selectable)		
Resolution	Normal Mode	16-bit	
	Fast Mode	12-bit	
Accuracy	Normal Mode	+/- 0.1% of FSR	
	Fast Mode	+/- 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	+/- 20 µV/°C		
Span Drift	+/- 25 ppm/°C		
Common Mode Rejection	86 dB		
Normal Mode Rejection	100 dB		
Input Impedance	Voltage	Differential	2 MΩ
		Single-ended	1 MΩ
	Current	125 Ω	
Overvoltage Protection	Differential	240 V _{rms}	
	Single-ended	150 V _{rms}	
Individual Channel Configuration	Yes		
Overcurrent Protection	50 mA Max. at 110 V _{DC} /V _{AC} 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.

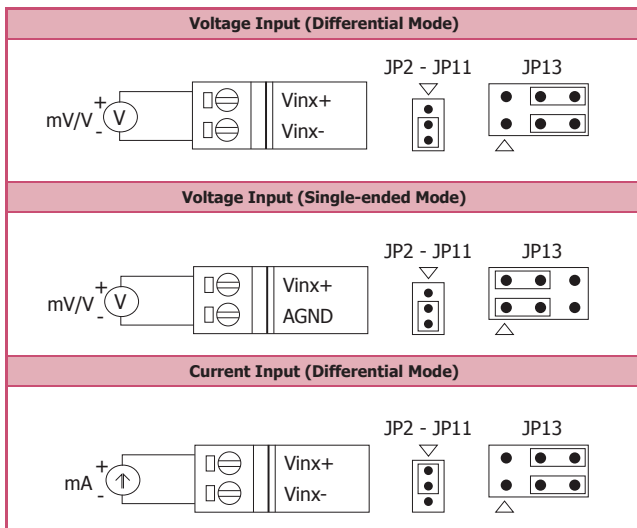
Internal I/O Structure



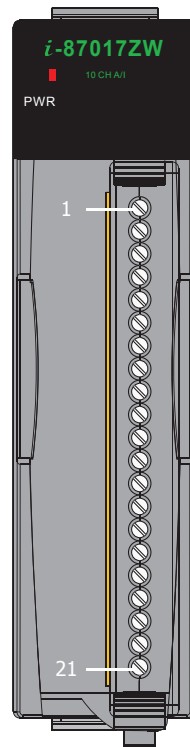
Dimensions (Units: mm)



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

Ordering Information

I-87017ZW-G CR	10/20-channel Analog Input Module with High Voltage Protection (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 Inputs