

▲ I-87019ZW-G/S2

◀ I-87019ZW-G/S

10-ch Universal AI Module

Introduction

The I-87019ZW is a 10-channel universal analog input module with an RS-485 interface that is a specially designed for extremely accurate thermocouple measurement and features automatic cold-junction compensation for each channel to ensure temperature output consistency and stable temperature output in the field. The innovative design of the enhanced model ensures that thermocouple measurement is more accurate than with the earlier design. Besides the thermocouple inputs, the I-87019ZW also supports voltage and current inputs. The voltage input range can be from ± 15 mV to ± 10 V, and the current input range can be either $+4 \sim +20$ mA, $0 \sim +20$ mA, or ± 20 mA. Up to 10 analog inputs of different types can be connected to a single module. Overvoltage protection of up to 240 V_{rms} is provided. The module also features per-channel open wire detection for thermocouple and $+4 \sim +20$ mA inputs.

System Specifications

Communication		
Interface	RS-485	
Format	N, 8, 1; N, 8, 2; E, 8, 1; O, 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	-	
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	1.4 W	
Mechanical		
Dimensions (W x L x H)	I-87019ZW	31 mm x 114 mm x 86 mm
	DB-1820	65 mm x 78 mm x 22 mm
	DN-1822	103 mm x 96 mm x 27 mm
Environment		
Operating Temperature	-25 to +75°C	
Storage Temperature	-40 to +85°C	
Humidity	10 to 95% RH, Non-condensing	

Features

- 10-channel Analog Input
- Individual Channel Configuration
- Open Thermocouple Detection
- Temperature Output Consistency
- Stable Temperature Output in the Field
- 240 V_{rms} Overvoltage Protection
- Jumper Selectable Voltage or Current Input
- 4 kV ESD Protection
- Dual Watchdog
- 3000 Vdc Intra-module Isolation, Field-to-Logic



Applications

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

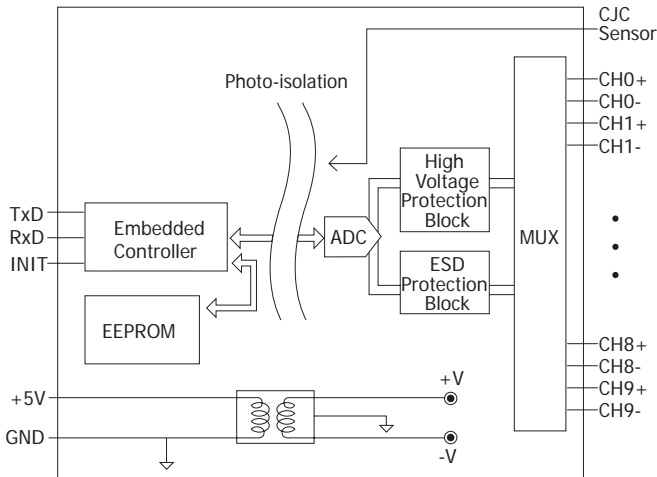
I/O Specifications

Analog Input	
Channels	10
Wiring	Differential
Sensor Type	± 15 mV, ± 50 mV, ± 100 mV, ± 150 mV, ± 500 mV, ± 1 VDC, ± 2.5 VDC, ± 5 VDC, ± 10 VDC -20 mA $\sim +20$ mA, $0 \sim +20$ mA, $+4 \sim +20$ mA (Jumper Selectable) Thermocouple Type: (J, K, T, E, R, S, B, N, C, L, M, and LDIN43710)
Resolution	16-bit
Accuracy	$\pm 0.1\%$ of FSR
Sampling Rate	10 Hz (Total)
Zero Drift	± 20 μ V/°C
Span Drift	± 25 ppm/°C
Common Mode Rejection	86 dB
Normal Mode Rejection	100 dB
Input Impedance	Voltage Input: >400 k Ω , Current Input: 125 Ω
Individual Channel Configuration	Yes
Open Wire Detection	Yes, (Software Selectable)
Overvoltage Protection	240 V _{rms}

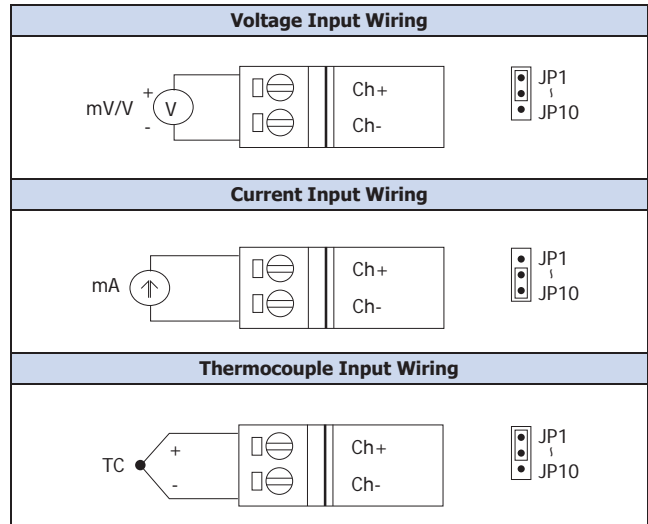
Thermocouple Type

Type Code	Type	Temperature Range
0E	J	-210 to +760°C
0F	K	-270 to +1372°C
10	T	-270 to +400°C
11	E	-270 to +1000°C
12	R	0 to +1768°C
13	S	0 to +1768°C
14	B	0 to +1820°C
15	N	-270 to +1300°C
16	C	0 to +2320°C
17	L	-200 to +800°C
18	M	-200 to +100°C
19	LDIN43710	-200 to +900°C

Internal I/O Structure

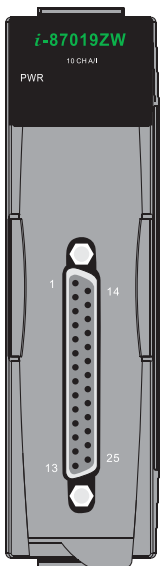


Wire Connections



Pin Assignments

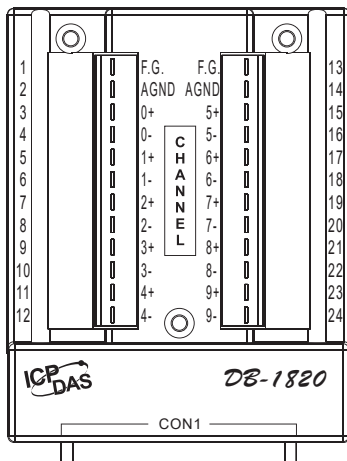
I-87019ZW



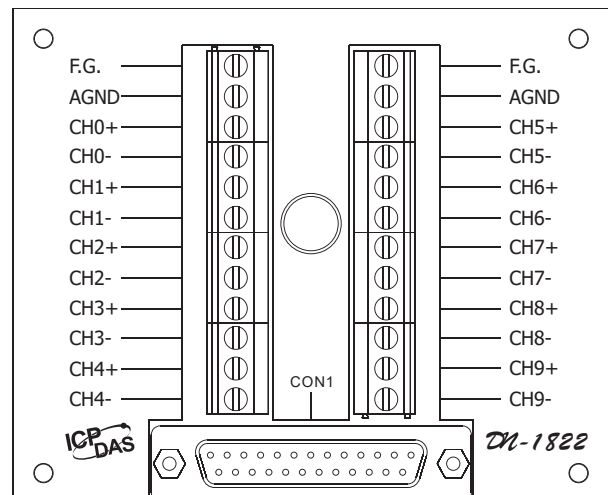
Pin Assignment	Terminal	No.	Pin Assignment
+5V	01	14	AGND
CJC	02	15	CH 0+
CH 0-	03	16	CH 1+
CH 1-	04	17	CH 2+
CH 2-	05	18	CH 3+
CH 3-	06	19	CH 4+
CH 4-	07	20	CH 5+
CH 5-	08	21	CH 6+
CH 6-	09	22	CH 7+
CH 7-	10	23	CH 8+
CH 8-	11	24	CH 9+
CH 9-	12	25	N.C.
N.C.	13	Shield	F.G.

25-pin Female D-Sub Connector

DB-1820

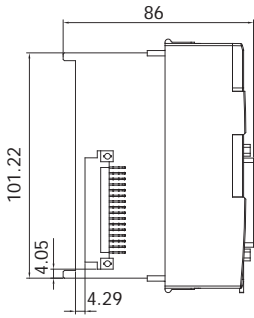


DN-1822

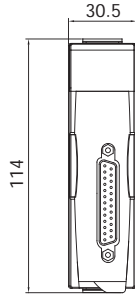


■ Dimensions (Units: mm)

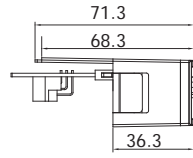
I-87019ZW



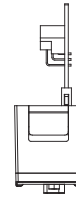
Left View



Front View

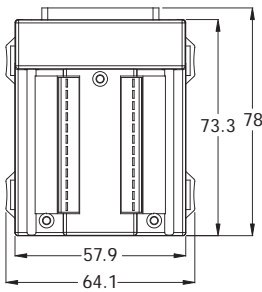


Top View

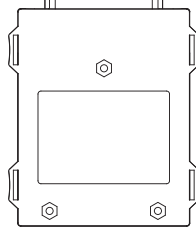


Top View

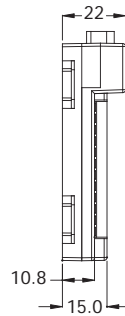
DB-1820



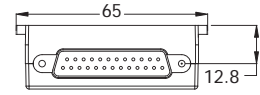
Front View



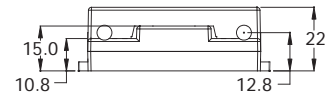
Rear View



Left View

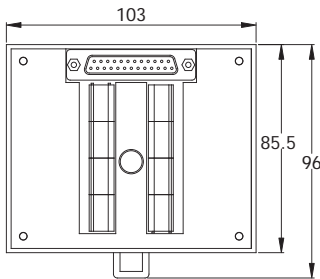


Top View

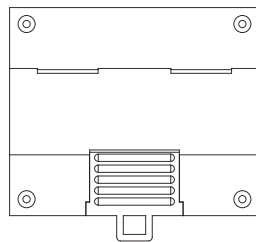


Bottom View

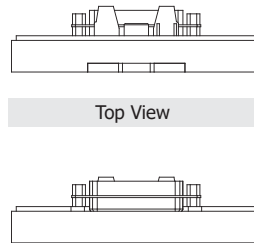
DN-1822



Front View

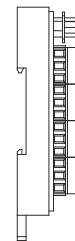


Rear View

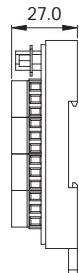


Bottom View

Top View



Left View







Right Side View

Ordering Information

I-87019ZW-G/S CR	10-ch Universal AI Module with High Overvoltage Protection (RoHS) Includes DB-1820 Daughter Board
I-87019ZW-G/S2 CR	10-ch Universal AI Module with High Overvoltage Protection (RoHS) Includes DN-1822 Daughter Board and CA-252518D-1 1.8 m Cable
 <p>I-87019ZW-G/S CR = I-87019ZW Connects DB-1820 Directly</p>	 <p>I-87019ZW-G/S2 CR = I-87019ZW Connect DN-1822 Directly</p>

Accessories

	CD-2518D CR	DB25 Male to Female 1.8 m Cable (180°) and DIN-Rail Mount for the DB-1820 (RoHS)
	CD-25015 CR	DB25 Male to Female 15 cm Cable (90°) and DIN-Rail Mount for the DB-1820 (RoHS)
 <p>I-87018ZW-G/S CR + CD-2518D</p>	 <p>CD-2518D</p>	