



Features

- RTD Input
- Open Wire Detection
- 4 kV ESD Protection
- 3000 V_{dc} Intra-module Isolation
- RoHS Compliant
- Wide Operating Temperature Range: -25 ~ +75°C



Introduction

I-87013W is used for measuring temperature by RTD. It supports 2/3/4 wire RTD and features open wire detection. Besides, I-87013W also has qualification for 4 kV ESD protection and 3000 V_{dc} intra-module isolation.

Applications

Building Automation, Factory Automation, Machine Automation, Remote Maintenance, Remote Diagnosis, Testing Equipment.

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	8 LEDs as High/ Low Alarm Signals
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
Power	
Power Consumption	0.8 W Max.
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

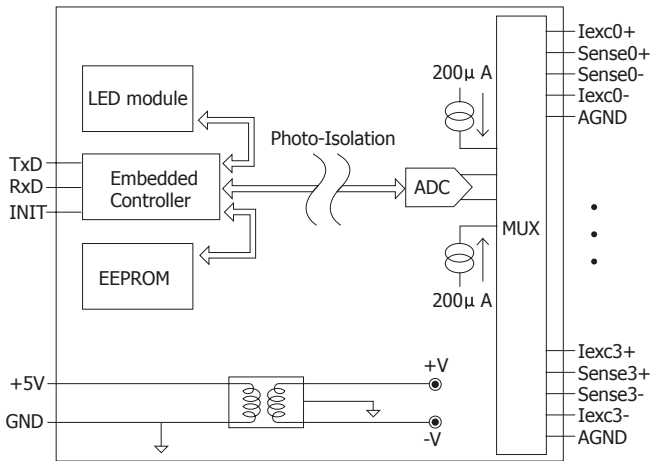
I/O Specifications

Analog Input	
Channels	4
Wiring	2/3/4 Wires
Sensor Type	Pt100, Pt1000, Cu50, Ni120
Resolution	16-bit
Accuracy	+/- 0.1% of FSR
Sampling Rate	10 Hz (Total)
-3dB Bandwidth	15.7 Hz
Zero Drift	+/- 0.5 μ V/°C
Span Drift	+/- 25 ppm/°C
Common Mode Rejection	150 dB min
Normal Mode Rejection	100 dB
Individual Channel Configurable	Yes
3-wire RTD lead resistance elimination	Yes
Resistance Measurement	3.2 k Ω
Open Wire Detection	Yes
Overvoltage Protection	\pm 20 V _{dc}

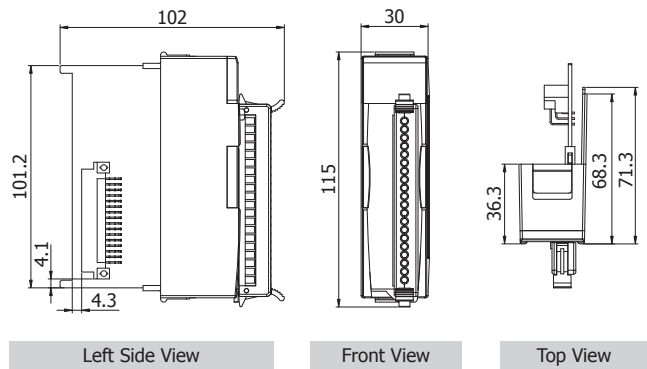
RTD Type Setting (TT)

Type Code	RTD Type	Temperature Range°C
20	Platinum 100, α = 0.00385	-100 ~ 100
21	Platinum 100, α = 0.00385	0 ~ 100
22	Platinum 100, α = 0.00385	0 ~ 200
23	Platinum 100, α = 0.00385	0 ~ 600
24	Platinum 100, α = 0.003916	-100 ~ 100
25	Platinum 100, α = 0.003916	0 ~ 100
26	Platinum 100, α = 0.003916	0 ~ 200
27	Platinum 100, α = 0.003916	0 ~ 600
28	Nickel 120	-80 ~ 100
29	Nickel 120	0 ~ 100
2A	Platinum 1000, α = 0.00385	-200 ~ 600

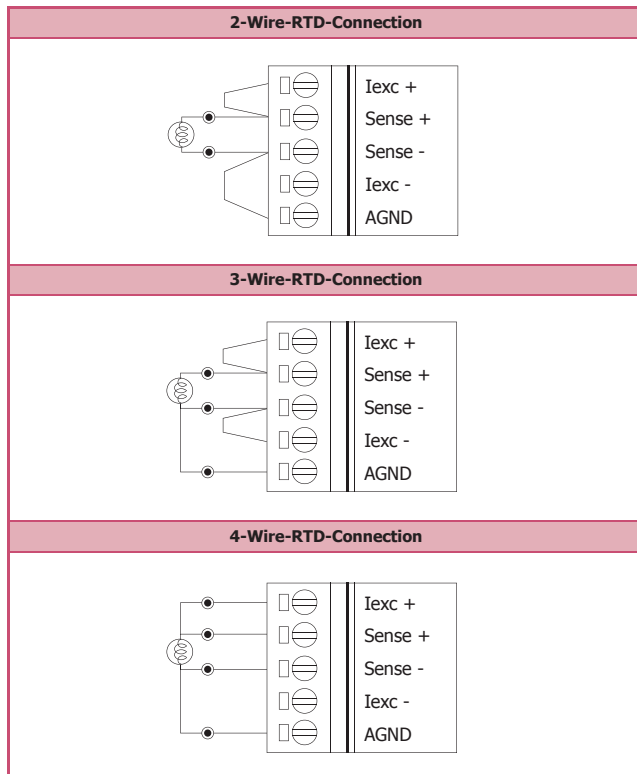
Internal I/O Structure



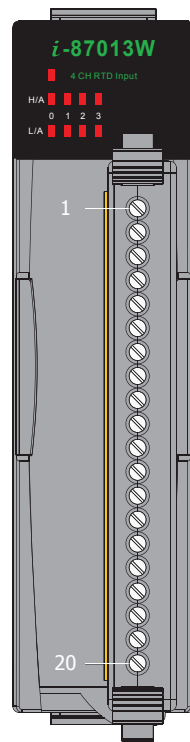
Dimensions (Units: mm)



Wire Connections



Pin Assignments




Terminal No.	Pin Assignment
01	Iexc0+
02	Sense0+
03	Sense0-
04	Iexc0-
05	AGND
06	Iexc1+
07	Sense1+
08	Sense1-
09	Iexc1-
10	AGND
11	Iexc2+
12	Sense2+
13	Sense2-
14	Iexc2-
15	AGND
16	Iexc3+
17	Sense3+
18	Sense3-
19	Iexc3-
20	AGND

Ordering Information

I-87013W-G CR	4-channel RTD Input Module (Gray Cover) (RoHS) Art. NO. 116669
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Accessories

 SG-770 CR	7 channel differential or 14 channel single-ended surge protector (RoHS)
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