I-87013W

4-channel RTD Input Module

Features

- 4-channel RTD Input
- Open Wire Detection
- 4 kV ESD Protection
- 3000 VDC Intra-module Isolation
- RoHS Compliant
- Wide Operating Temperature Range: -25 to +75°C

Introduction

The I-87013W is a 4-channel RTD input module that is used for measuring temperature using RTD. The module supports 2/3/4-wire RTD sensor and features open wire detection. The I-87013W also provides 4 kV ESD protection and 3000 VDC 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 to 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	8 LEDs 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	0.8 W Max.
Mechanical	
Dimensions (W x L x H)	30 mm x 102 mm x 115 mm
Environment	
Operating Temperature	-25 to +75°C
Storage Temperature	-40 to +85°C
Humidity	10 to 95% RH, Non-condensing

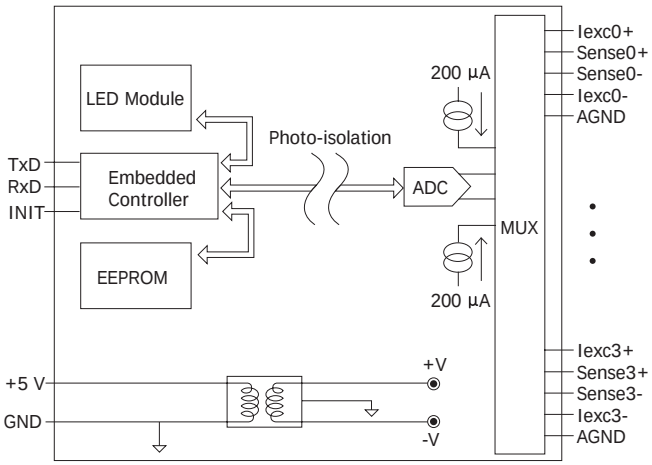
I/O Specifications

Analog Input	
Channels	4
Wiring	2/3/4-Wire
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 μV/°C
Span Drift	±25 ppm/°C
Common Mode Rejection	150 dB min
Normal Mode Rejection	100 dB
Individual Channel Configuration	-
3-wire RTD Lead Resistance Elimination	Yes
Resistance Measurement	3.2 kΩ
Open Wire Detection	Yes
Overvoltage Protection	±25 VDC

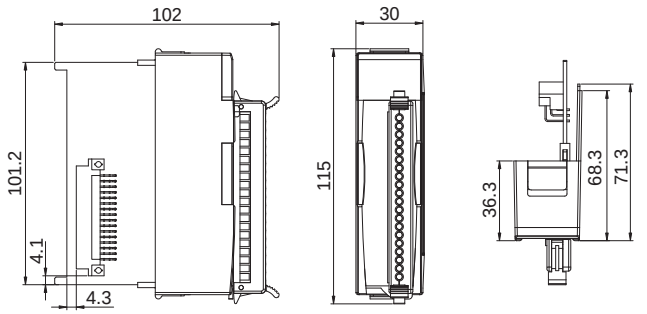
RTD Type Settings (TT)

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

Internal I/O Structure



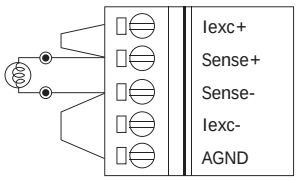
Dimensions (Units: mm)



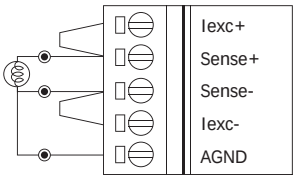
Left Side View | Front View | Top View

Wire Connections

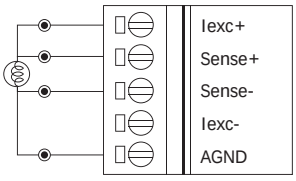
2-wire RTD Connection



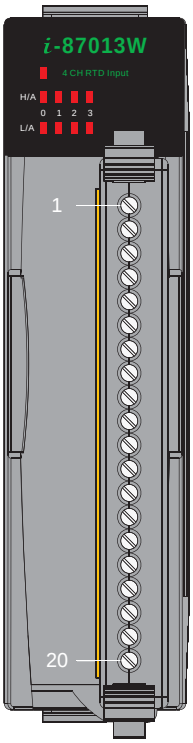
3-wire RTD Connection



4-wire RTD Connection



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)

Accessories

 SG-770 CR	7-channel Differential or 14-channel Single-ended Surge Protector (RoHS)