



I-87015PW

7-channel RTD Input Module with
3-wire Lead Resistance Elimination

Introduction

The "P" version is another milestone in the development of I-87015W and a testament to excellence by ICP DAS R&D team. I-87015PW is specifically designed for long-distance RTD measurement. It features automatic compensation for three-wire RTD so that it can measure accurately regardless of the length of wires. I-87015PW offers 7 channels, each of which could be connected with different kinds of RTD. Also, I-87015PW is fully RoHS-compliant and has qualification for 4 KV ESD protection as well as 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	14 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
EFT (IEC 61000-4-4)	±4 KV for Power
	1 KV for RS-485
Power	
Power Consumption	1.0 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

Features

- 3-wire RTD Input with Lead Resistance Elimination
- High Resolution: 16-bit
- Individual Channel Configuration
- Open Wire Detection
- Overvoltage Protection
- 4 KV ESD Protection
- EFT Protection
- 3000 V_{DC} Intra-module Isolation
- RoHS Compliant
- Wide Operating Temperature Range: -25 ~ +75°C



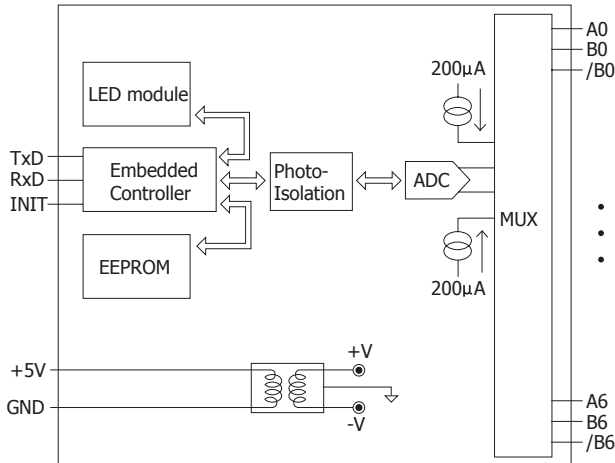
I/O Specifications

Analog Input	
Channels	7
Wiring	2/3 Wire
Sensor Type	Pt100, Pt1000, Ni120, Cu50, Cu100, Cu1000
Resolution	16-bit
Sampling Rate	12 Hz (Total)
Accuracy	+/- 0.05% of FSR
-3dB Bandwidth	15.7 Hz
Zero Drift	+/- 0.5 μV/°C
Span Drift	+/- 20 ppm/°C
Common Mode Rejection	150 dB
Normal Mode Rejection	100 dB
Input Impedance	>1 MΩ
Individual Channel Configurable	Yes
3-wire RTD Lead Resistance Elimination	Yes
Resistance Measurement	3.2 KΩ Max.
Open Wire Detection	Yes
Overvoltage Protection	120 V _{DC}

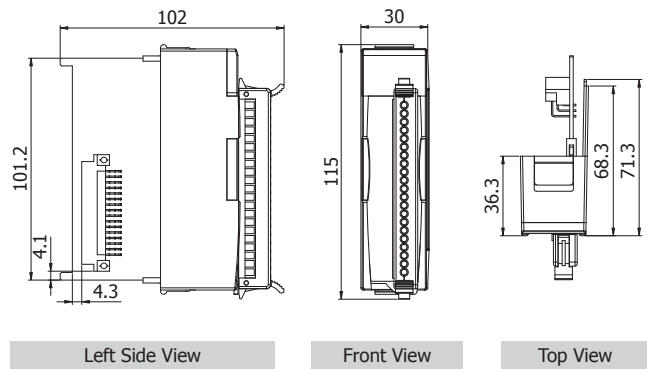
RTD Type Setting (TT)

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
2B	Cu 100 at 0°C, α= 0.00421	-20 ~ 150
2C	Cu 100 at 25°C, α= 0.00427	0 ~ 200
2D	Cu 1000 at 0°C, α= 0.00421	-20 ~ 150
2E	Platinum 100, α= 0.00385	-200 ~ 200
2F	Platinum 100, α= 0.003916	-200 ~ 200
80	Platinum 100, α= 0.00385	-200 ~ 600
81	Platinum 100, α= 0.003916	-200 ~ 600
82	Cu 50 at 0°C	-50 ~ 150
83	Nickel 100	-60 ~ 180

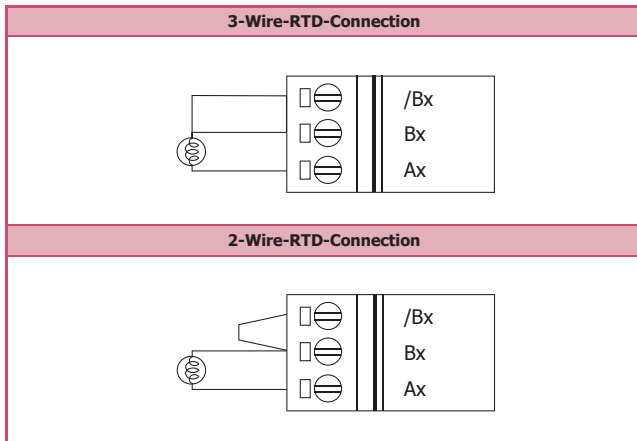
Internal I/O Structure



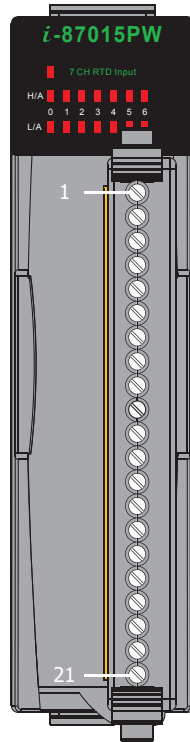
Dimensions (Units: mm)



Wire Connections



Pin Assignments




Terminal No.	Pin Assignment
01	A0
02	B0
03	/B0
04	A1
05	B1
06	/B1
07	A2
08	B2
09	/B2
10	A3
11	B3
12	/B3
13	A4
14	B4
15	/B4
16	A5
17	B5
18	/B5
19	A6
20	B6
21	/B6

Ordering Information

I-87015PW-G CR	7-channel RTD Input Module with 3-wire Lead Resistance Elimination (Gray Cover) (RoHS)
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Accessories

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