I-8015W | I-8015W-12

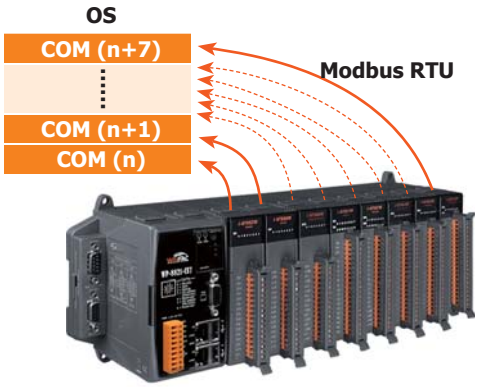
8/12-channel High Speed RTD Input Module

Features

- 8/12-channel RTD Input
- 3-wire RTD lead resistance elimination
- 85 Hz High Speed Sampling Rate for Each Channel
- Modbus RTU Protocol
- 921 k bps UART Communication
- Individual Channel Configuration
- Open Wire Detection
- COM Port Driver Available on PACs with Windows 10 IoT, WES7, WinCE 6.0, WinCE 7.0, and Linux

Introduction

The I-8015W/I-8015W-12 is a 8/12-channel RTD input module that measures temperature through RTD and provides 85Hz high-speed measurement for each channel. Each channel can be connected to different kinds of RTD sensors. It features automatic compensation for three-wire RTD so that it can measure accurately regardless of the length of the wires. Also, the I-8015W/I-8015W-12 are fully RoHS-compliant and feature 4 kV ESD protection as well as 3000 VDC intra-module isolation.



Applications

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

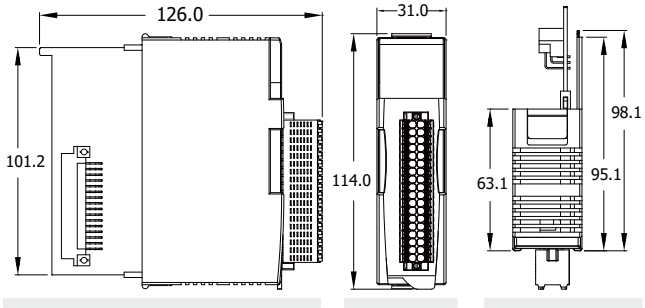
System Specifications

Model	I-8015W	I-8015W-12
COM Port		
Ports	RS-232	
Data Format	N, 8, 1	
Baud Rate	921600 bps	
Protocol	Modbus RTU	
CPU Module		
Dual Watchdog Timer	Module (1.6 Seconds), Communication (Programmable)	
LED Indicators		
System LED Indicator	1 LED as Power Indicator	
I/O LED Indicator	16	24
Isolation		
Intra-module Isolation, Field-to-Logic	3000 VDC	
EMS Protection		
ESD (IEC 61000-4-2)	±4 kV Contact for Each port, ±8 kV Air for Random Point	
Power		
Consumption	0.39 W Max.	0.4 W Max.
Mechanical		
Dimensions (W x L x H)	31 mm x 114 mm x 126 mm	
Environment		
Operating Temperature	-25 ~ +75 °C	
Storage Temperature	-40 ~ +85 °C	
Humidity	10 ~ 95 % RH, Non-condensing	

I/O Specifications

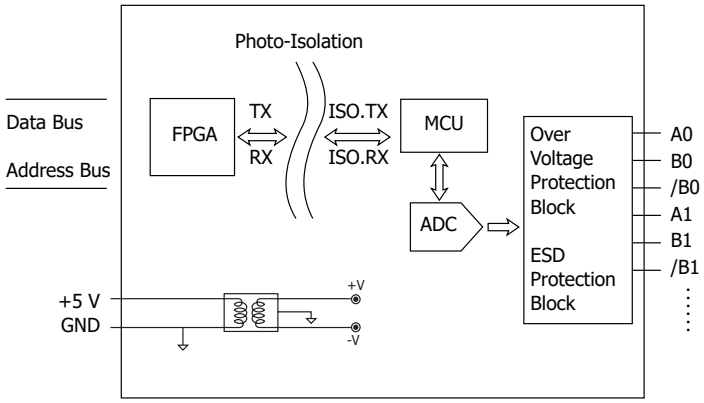
Model		I-8015W	I-8015W-12
Analog Input			
Channels		8	12
Sensor Type		Pt100, Ni120, Cu50, Cu100	
Resolution		16-bit	
Accuracy Rate	Fast Mode	±0.1 % of FSR (25 °C)	
	Normal Mode	±0.05 % of FSR (25 °C)	
Sampling Rate	Fast Mode	85 Hz (per channel)	
	Normal Mode	1.5 Hz (per channel)	
Input Impedance		> 1 MΩ	
Individual Channel Configuration		Yes	
3-wire RTD Lead Resistance Elimination		Yes	
Resistance Measurement		400 Ω	
Open Wire Detection		Yes	

Dimensions (Unit: mm)



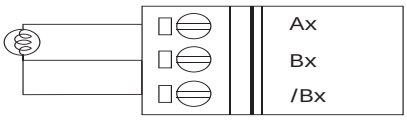
Left View | Front View | Top View

Internal I/O Structure

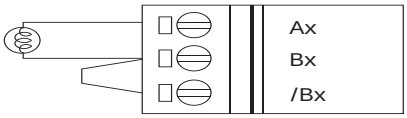


Wire Connections

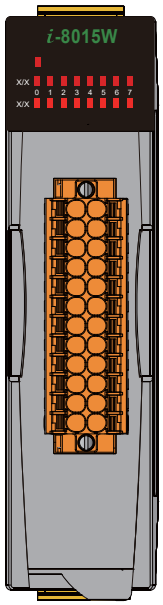
3-Wire RTD Connection



2-Wire RTD Connection

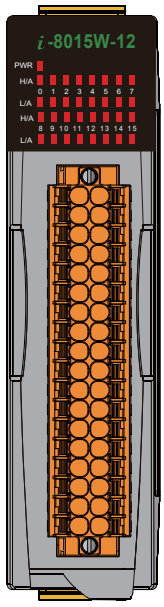


Pin Assignments



I-8015W

Pin Assignment	Terminal No.		Terminal No.	Pin Assignment
A1	01		13	A0
B1	02		14	B0
/B1	03		15	/B0
A3	04		16	A2
B3	05		17	B2
/B3	06		18	/B2
A5	07		19	A4
B5	08		20	B4
/B5	09		21	/B4
A7	10		22	A6
B7	11		23	B6
/B7	12		24	/B6



I-8015W-12

Pin Assignment	Terminal No.		Terminal No.	Pin Assignment
A1	01		19	A0
B1	02		20	B0
/B1	03		21	/B0
A3	04		22	A2
B3	05		23	B2
/B3	06		24	/B2
A5	07		25	A4
B5	08		26	B4
/B5	09		27	/B4
A7	10		28	A6
B7	11		29	B6
/B7	12		30	/B6
A9	13		31	A8
B9	14		32	B8
/B9	15		33	/B8
A11	16		34	A10
B11	17		35	B10
/B11	18		36	/B10

RTD Type Settings (TT)

Type Code	RTD Type	Temperature
0 x 20	Pt 100, α = 0.00385	-100 ~ + 100 °C
0 x 21	Pt 100, α = 0.00385	0 ~ + 100 °C
0 x 22	Pt 100, α = 0.00385	0 ~ + 200 °C
0 x 23	Pt 100, α = 0.00385	0 ~ + 600 °C
0 x 24	Pt 100, α = 0.003916	-100 ~ + 100 °C
0 x 25	Pt 100, α = 0.003916	0 ~ + 100 °C
0 x 26	Pt 100, α = 0.003916	0 ~ + 200 °C
0 x 27	Pt 100, α = 0.003916	0 ~ + 600 °C
0 x 28	Ni 120	-80 ~ + 100 °C
0 x 29	Ni 120	0 ~ + 100 °C
0 x 2B	Cu 100, α = 0.00421	-20 ~ + 150 °C
0 x 2C	Cu 100, α = 0.00427	0 ~ + 200 °C
0 x 2E	Pt 100, α = 0.00385	-200 ~ + 200 °C
0 x 2F	Pt 100, α = 0.003916	-200 ~ + 200 °C
0 x 80	Pt 100, α = 0.00385	-200 ~ + 600 °C
0 x 81	Pt 100, α = 0.003916	-200 ~ + 600 °C
0 x 82	Cu 50	-50 ~ + 150 °C
0 x 83	Ni 100	-60 ~ 180 °C
0 x 84	Ni 120	-80 ~ 150 °C
0 x 85	Cu 100, α = 0.00428	0 ~ 150 °C
0 x 86	Pt 100, α = 0.00385	-100 ~ 300 °C
0 x 87	Pt 100, α = 0.003916	-100 ~ 300 °C

Accessories

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

Ordering Information

I-8015W CR	8-channel High Speed RTD Input Module, 85S/s (RoHS)
I-8015W-12 CR	12-channel High Speed RTD Input Module, 85S/s (RoHS)