WISE-7115

7-channel RTD Input with 3-wire RTD lead resistance elimination PoE Module

Analog Input

Features

- Built-in Web Server for IF-THEN-ELSE rule setting
- Built-in IF-THEN-ELSE rule enigne for logic operation
- No more programming. Just click and get done!
- Support IO, Counter, Timer, Email operations
- Modbus/TCP Protocol for SCADA Software Seamless Integration
- IEEE 802.3af-compliant Power over Ethernet (PoE)
- 10/100 Base-TX Ethernet
- AI Type: 7 RTD (Pt100, Pt1000, Ni120, Cu100, Cu1000)
- Individual Channel Configuration
- 3-wire RTD Input with Lead Resistance Elimination
- 2-way Isolation/ESD Protection

Introduction

WISE (Web Inside, Smart Engine) is a product series developed by ICP DAS that functions as control units for use in remote logic control and monitoring in various industrial applications. WISE offers a user-friendly and intuitive web site interface that allows users to implement IF-THEN-ELSE control logic on controllers just a few clicks away; no programming is required. With its powerful and easy-to-use features, it will minimize the learning curve, shorten time to market and dramatically reduce the effort and cost spent on system development.

WISE-7115 follows IEEE 802.3af-compliant (classification, Class 1) Power over Ethernet (PoE) specification. It allows receiving power from PoE enabled network by Ethernet pairs (Category 5 Ethernet cable). This feature provides greater flexibility and higher efficiency therefore simplifying systems design, saving space, reducing cables and eliminating the requirement for dedicated electrical outlets. Meanwhile, in case under a non-PoE environment, WISE-7115 will still be able to receive power from auxiliary power sources like AC adapters or battery, etc.

This module WISE-7115 supports Modbus/TCP protocol to make seamless integration with SCADA software available. It features 16-bit, 7-channel RTD inputs. Each channel is allowed to configure an individual range that supports 3-wire RTD lead resistance elimination and open wire detection for RTD measurement.

Applications

Building Automation, Factory Automation, Machine Automation, Remote Maintenance, Remote diagnosis and Testing Equipment, etc.

I/O Specifications

Analog Input	
Input Channels	7
Input Type	RTD
Wire Connection	2/3 wire
RTD Type	Pt100, Pt1000, Ni120, Cu100, Cu1000
Resolution	16-bit
Sampling Rate	12 Samples/Sec. (Total)
Accuracy	+/-0.05%
Bandwidth	15.7 Hz
Zero Drift	+/-0.5 μV/°C
Span Drift	+/-20 μV/°C
Common Mode Rejection	150 dB
Normal Mode Rejection	100 dB
Open Wire Detection	Yes
Individual Channel Configurable	Yes
3-wire RTD Lead Resistance Elimination	Yes
ESD Protection	+/-4 kV (Contact for each channel) +/-8 kV air for random point
EFT Protection	+/-4 kV for Power

System Specifications

System	
CPU	16-bit CPU
SRAM	512 KB
Flash Memory	512 KB
EEPROM	16 KB
Dual Watchdog	Yes
Communication	
PoE Ethernet Port	10/100 Base-TX (With Link, Activity LED Indicator) and automatic MDI/MDI-X
2-Way Isolation	
Ethernet	1500 V$_{DC}$
AI	2500 V$_{rms}$
LED Indicators	
PoE	PoE On
L1	Run
L2	Link/Act
L3	10/100 M
Power Requirements	
IEEE 802.3af	Class 1
Required Supply Voltage	Powered by Power over Ethernet (PoE) or auxiliary power +12 V$_{DC}$ ~ +48 V$_{DC}$ (non-regulated)
LED Indicator	Yes
Power Consumption	0.12 A @ 24 V$_{DC}$ Max.
Mechanical	
Dimensions (W x H x D)	72 mm x 123 mm x 35 mm
Installation	DIN-Rail or Wall mounting
Environment	
Operating Temperature	-25 °C ~ +75 °C
Storage Temperature	-30 °C ~ +80 °C
Humidity	5 ~ 90% RH, non-condensing

☑ Software Specifications

| Functions	
Rule Configuration Website	Access Web server on WISE controllers to edit and upload logic rules through web browser.
36 IF-THEN-ELSE Logic Rules	3 IF conditions with AND or OR operators 3 THEN actions and 3 ELSE actions
48 Internal Registers	Hold temporary variables and read/write data via Modbus/TCP address.
12 Timers	Delay / Timing functions.
12 Emails	Send Email messages to pre-set Email receivers.
12 CGI Commands	Send pre-set CGI commands.
12 Recipes	Set up THEN/ELSE action groups.
8 P2P remote modules	Set up the connection information for the remote WISE modules.
Modbus/TCP Protocol	Real time control and monitoring I/O channels and system status of controllers via SCADA software.

IF Conditions	
AI Channel	= 、 > 、 < 、 >= 、 <=(value)
Internal Register	
Timer	Timeout 、 Not Timeout
P2P	DI 、 AI 、 DI counter 、 DO counter 、 IR
Rule Status	Enable 、 Disable

WISE
IF-THEN-ELSE
Rule Engine
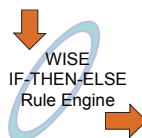
THEN / ELSE Actions	
Internal Register	Change the value
Timer	Start 、 Stop
Email	Send
CGI Commands	
Recipe	Execute
P2P	DO(On/Off) 、 AO 、 IR
Rule Status	Enable 、 Disable

☑ Pin Assignment

Terminal No.	Pin Assignment
E1	RJ-45
01	RTD5+
02	RTD5-
03	AGND
04	RTD6+
05	RTD6-
06	AGND
07	N.C.
08	(R)+Vs
09	(B)GND
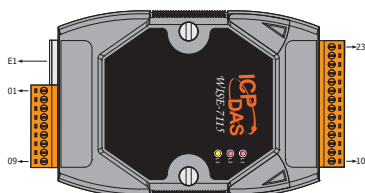
Terminal No.	Pin Assignment
23	RTD4+
22	RTD4-
21	AGND
20	RTD3-
19	RTD3+
18	AGND
17	RTD2-
16	RTD2+
15	AGND
14	RTD1-
13	RTD1+
12	AGND
11	RTD0-
10	RTD0+

☑ Wire Connection

	CH0, 1, 2, 5 and 6	CH3 and CH4
2-Wire of RTD	RTDx+ / RTDx- / AGND	RTD3+ / RTD3- / AGND / RTD4- / RTD4+
3-Wire of RTD	RTDx+ / RTDx- / AGND	RTD3+ / RTD3- / AGND / RTD4- / RTD4+

☑ Dimensions (Unit: mm)

Front View

Right Side View

Bottom View

49, 11, 56, 101,2, 123, 33, 59,2, 72, 11, 35
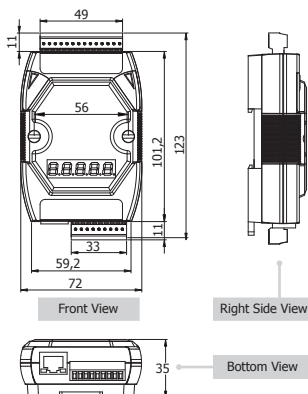
☑ Ordering Information

WISE-7115	7-channel RTD Input with 3-wire RTD lead resistance elimination PoE Module (RoHS)

☑ Accessories

GPSU06U-6	24V/0.25A, 6 W Power Supply
MDR-20-24	24V/1A, 24 W Power Supply with DIN-Rail Mounting
NS-205 CR	Unmanaged 5-Port Industrial Ethernet Switch (RoHS)
NS-205PSE CR	Unmanaged 5-Port Industrial PoE Ethernet Switch (RoHS)