



Features

- Built-in Web Server for IF-THEN-ELSE rule setting
- Built-in IF-THEN-ELSE rule engine 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 labor 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 WISE-7115 module 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, Testing Equipment, etc.

System Specifications

I/O Specifications

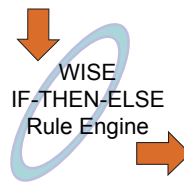
| RTD Input | |
|--|-------------------------------------|
| Input Channels | 7 (Differential) |
| Sensor Type | Pt100, Pt1000, Ni120, Cu100, Cu1000 |
| Wire Connection | 2/3 Wire |
| Resolution | 16-bit |
| Sampling Rate | 12 Sample/Sec. (Total) |
| Accuracy | +/-0.05% |
| Zero Drift | +/-0.5 μ V/ $^{\circ}$ C |
| Span Drift | +/-20 μ V/ $^{\circ}$ C |
| Common Mode Rejection | 150 dB |
| Normal Mode Rejection | 100 dB |
| Input Impedance | >1M Ω |
| Open Wire Detection | Yes |
| Individual Channel Configuration | Yes |
| 3-wire RTD Lead Resistance Elimination | Yes |

| System | |
|-----------------------------|--|
| CPU | 16-bit CPU |
| SRAM | 512KB |
| Flash Memory | 512KB |
| EEPROM | 16KB |
| Watchdog | Yes |
| Communication | |
| PoE Ethernet Port | 10/100 Base-TX and automatic MDI/MDI-X |
| 2-Way Isolation | |
| I/O | 2500 Vdc |
| EMS Protection | |
| ESD (IEC 61000-4-2) | 4 kV Contact for each terminal and 8 kV Air for random point |
| EFT (IEC 61000-4-4) | +/-4 kV for Power |
| LED Indicators | |
| PoE | PoE On |
| L1 | System Running |
| L2 | Ethernet Link/Act |
| L3 | Ethernet 10/100 M Speed |
| Power Requirements | |
| Reverse Polarity Protection | Yes |
| Powered from Terminal Block | Yes, 12 ~ 48 Vdc |
| Powered from PoE | Yes, IEEE 802.3af, Class1 |
| Consumption | 2.6 W |
| Mechanical | |
| Dimensions (W x L x D) | 72 mm x 123 mm x 35 mm |
| Installation | DIN-Rail or Wall mounting |
| Environment | |
| Operating Temperature | -25 $^{\circ}$ C ~ +75 $^{\circ}$ C |
| Storage Temperature | -30 $^{\circ}$ C ~ +80 $^{\circ}$ C |
| Humidity | 10 ~ 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. |

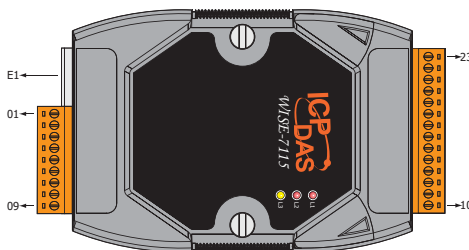
| IF Conditions | |
|-------------------|------------------------------------|
| AI Channel | =, >, <, >=, <= (value) |
| Internal Register | |
| Timer | Timeout, Not Timeout |
| P2P | DI, AI, DI counter, DO counter, IR |
| Rule Status | Enable, Disable |



| THEN / ELSE Actions | |
|---------------------|--------------------|
| Internal Register | Change the value |
| Timer | Start, Reset |
| Email | Send |
| CGI Commands | Execute |
| Recipe | Execute |
| P2P | DO(On/Off), AO, IR |
| Rule Status | Enable, Disable |

Pin Assignments

| 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 |

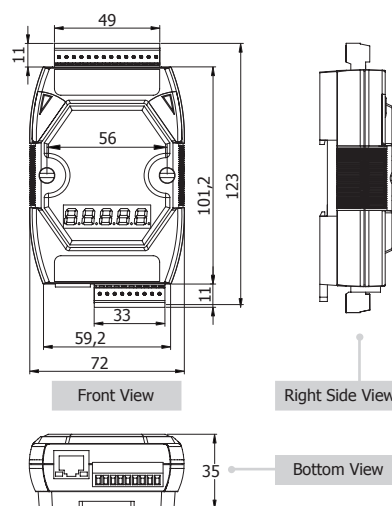


| Terminal No. | Pin Assignment |
|--------------|----------------|
| 23 | RTD4+ |
| 22 | RTD4- |
| 21 | AGND |
| 20 | RTD3- |
| 19 | RTD3+ |
| 18 | AGND |
| 17 | RTD2- |
| 16 | RTD2+ |
| 15 | AGND |
| 14 | RTD1- |
| 13 | RTD1+ |
| 12 | AGND |
| 11 | RTD0- |
| 10 | RTD0+ |

Wire Connections

| | CH0, 1, 2, 5 and 6 | CH3 and CH4 |
|---------------|--------------------|-------------|
| 2-Wire of RTD | | |
| 3-Wire of RTD | | |

Dimensions (Unit:mm)



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) |