Ethernet I/O Modules

WISE-71xx Series (Web based PoE)

WISE-7117

# WISE-7117

8-channel Analog Input with High Voltage Protection and 4-channel Isolated Output PoE Module

## 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: 8 Differential (mV, V, mA)
- DO Type: 4 Open Collector Outputs
- Over Voltage Protection is up to 240 Vrms
- 2-way Isolation/ESD Protection

CE  FC  RoHS  PoE

## 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-7117 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-7117 will still be able to receive power from auxiliary power sources like AC adapters or battery, etc.

This multi-function WISE-7117 module supports Modbus/TCP protocol to make seamless integration with SCADA software available. It features 16-bit, 8-channel differential analog inputs and 4-channel digital ouputs. Each analog channel is allowed to configure an individual range and has 240Vrms high over voltage protection. Jumper selectable for voltage or current input.

## Applications

Building Automation, Factory Automation, Machine Automation, Remote Maintenance, Remote Diagnosis, Testing Equipment, etc.

## I/O Specifications

| Analog Input | | |
|---|---|---|
| Input Channels | 8 (Differential) | |
| Input Type (jumper selectable) | +/-150 mV, +/-500 mV, +/-1V, +/-5V, +/-10V | |
| | +/-20 mA, 0 ~ 20 mA, 4 ~ 20 mA | |
| Resolution | 16-bit | |
| Sampling Rate | 10 Sample/Sec. (Total) | |
| Accuracy | +/-0.1% | |
| Zero Drift | +/-20 μV/°C | |
| Span Drift | +/-25 ppm/°C | |
| Overvoltage Protection | 240 Vrms | |
| Input Impedance | Voltage | 2 MΩ |
| | Current | 125 MΩ |
| Common Mode Rejection | 86 dB Min. | |
| Normal Mode Rejection | 100 dB | |
| Individual Channel Configuration | Yes | |
| Digital Output | | |
| Output Channels | 4 | |
| Output Type | Isolated Open Collector (Sink) | |
| Max. Load Current | 700 mA/Channel | |
| Load Voltage | +5 $V_{DC}$ ~ +50 $V_{DC}$ | |
| Overvoltage Protection | 60 $V_{DC}$ | |
| Overload Protection | 1.4 A | |
| Short-circuit Protection | Yes | |

## System Specifications

| 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 $V_{DC}$ |
| **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 Power | 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 $V_{DC}$ |
| Powered from PoE | Yes, IEEE 802.3af, Class1 |
| Consumption | 3.1 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 °C ~ +75 °C |
| Storage Temperature | -30 °C ~ +80 °C |
| Humidity | 10 ~ 90% RH, non-condensing |

## ▪ Software Specifications

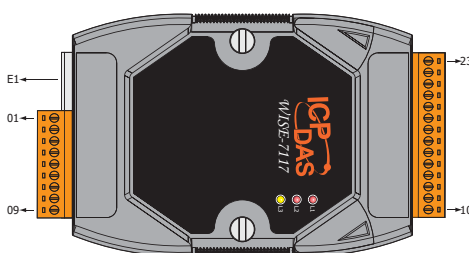| Functions | |
|---|---|
| Rule Configuration Website | Access Web server on WISE controllers to edit and upload logic rules through web browser. |
| 36 IF-THEN-ELSE Logic Rules | 3 IF conditions with AND or OR operators 3 THEN actions and 3 ELSE actions |
| 48 Internal Registers | Hold temporary variables 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 | |
| DO Counter | =, >, <, >=, <= (value), Change |
| Timer | Timeout, Not Timeout |
| P2P | DI, AI, DI counter, DO counter, IR |
| Rule Status | Enable, Disable |

WISE
IF-THEN-ELSE
Rule Engine
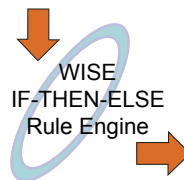
| THEN / ELSE Actions | |
|---|---|
| DO Channel | ON, OFF, Pulse Output |
| Internal Register | Change the value |
| DO Counter | Reset |
| Timer | Start, Reset |
| Email | Send |
| CGI Commands | |
| Recipe | Execute |
| P2P | DO(On/Off), AO, IR |
| Rule Status | Enable, Disable |

## ▪ Pin Assignments

| Terminal No. | Pin Assignment |
|---|---|
| E1 | RJ-45 |
| 01 | Vin7+ |
| 02 | Vin7- |
| 03 | DO0 |
| 04 | DO1 |
| 05 | DO2 |
| 06 | DO3 |
| 07 | ISO.GND |
| 08 | (R)+Vs |
| 09 | (B)GND |

| Terminal No. | Pin Assignment |
|---|---|
| 23 | Vin6- |
| 22 | Vin6+ |
| 21 | Vin5- |
| 20 | Vin5+ |
| 19 | Vin4- |
| 18 | Vin4+ |
| 17 | Vin3- |
| 16 | Vin3+ |
| 15 | Vin2- |
| 14 | Vin2+ |
| 13 | Vin1- |
| 12 | Vin1+ |
| 11 | Vin0- |
| 10 | Vin0+ |

## ▪ Wire Connections

| Voltage Input | | |
|---|---|---|
| mV/V | Vin+ Vin- | JUMPER Default |

| Current Input | | |
|---|---|---|
| mA | Vin+ Vin- | JUMPER |

| Digital Output | | |
|---|---|---|
| ON State Readback as 1 | LOAD DOx ISO.GND 5 ~ 50 VDC | |
| OFF State Readback as 0 | LOAD DOx ISO.GND 5 ~ 50 VDC | |

## ▪ Dimensions (Unit:mm)

49
11
56
101,2
123
11
33
59,2
72
35

Front View

Right Side View

Bottom View
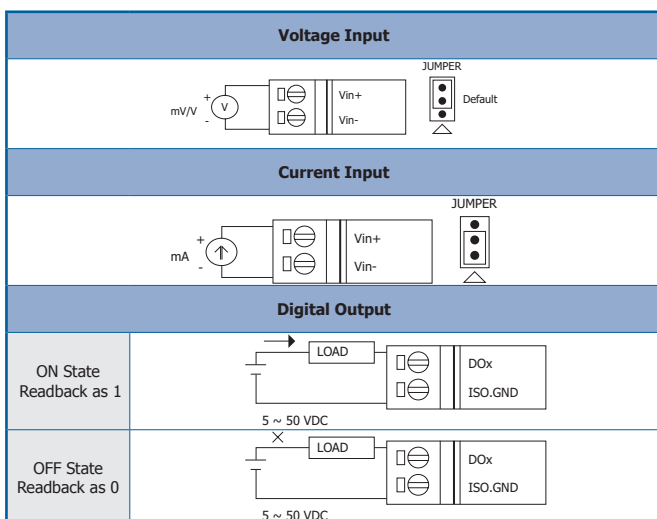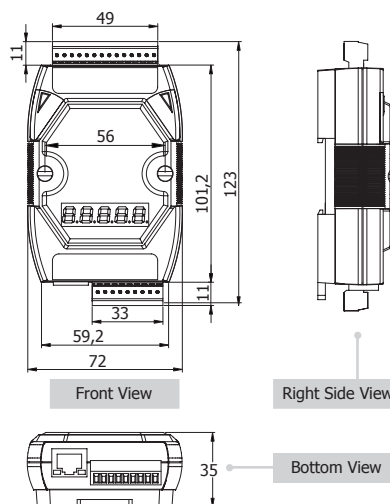
## ▪ Ordering Information

| WISE-7117 | 8-channel Analog Input with High Voltage Protection and 4-channel Isolated Output 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) |