



WISE (Web Inside, Smart Engine)



## Analog Input & Digital Output

### 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: 8 Differential (mV, V, mA)
- DO Type: 4 Open Collector Outputs
- Over Voltage Protection is up to 240 V<sub>max</sub>
- 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-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 module WISE-7117 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 outputs. 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 and Testing Equipment, etc.

### I/O Specifications

Analog Input	
Input Channels 8 (Differential)	
Input Type $\pm 150$ mV, $\pm 500$ mV, $\pm 1$ V, $\pm 5$ V, $\pm 10$ V $\pm 20$ mA, $0 \sim 20$ mA, $4 \sim 20$ mA (jumper selectable)	
Resolution	Normal Mode 16-bit
	Fast Mode 12-bit
Sampling Rate	Normal Mode 10 Samples/Sec. (Total)
	Fast Mode 60 Samples/Sec. (Total)
Accuracy	Normal Mode $\pm 0.1\%$
	Fast Mode $\pm 0.5\%$ or better
Bandwidth	Normal Mode 15.7 Hz
	Fast Mode 78.7 Hz
Zero Drift $\pm 10$ $\mu$ V/ $^{\circ}$ C	
Span Drift $\pm 25$ ppm/ $^{\circ}$ C	
Input Impedance	Voltage 2 M $\Omega$
	Current 125 $\Omega$
Common Mode Rejection 86 dB Min.	
Normal Mode Rejection 100 dB	
Individual Channel Configuration Yes	
Over Voltage Protection 240 V <sub>max</sub>	
ESD Protection $\pm 4$ KV (Contact for each channel) $\pm 8$ KV air for random point	
EFT Protection $\pm 4$ KV for Power	
Digital Output	
Output Channels 4 (Sink)	
Output Type Isolated Open-Collector	
Max. Load Current 700 mA/Channel	
Load Voltage 5 V <sub>oc</sub> $\sim$ 50 V <sub>oc</sub>	

### 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 <sub>oc</sub>
AI and DO	2500 V <sub>max</sub>
LED Indicators	
PoE	PoE On
L1	Run
L2	Link/Act
L3	10/100M
Power Requirements	
IEEE 802.3af	Class 1
Required Supply Voltage	Powered by Power over Ethernet (PoE) or auxiliary power $\pm 12$ V <sub>oc</sub> $\sim$ $\pm 48$ V <sub>oc</sub> (non-regulated)
LED Indicator	Yes
Power Consumption	0.12 A @ 24 V <sub>oc</sub> 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 $^{\circ}$ C $\sim$ +75 $^{\circ}$ C
Storage Temperature	-30 $^{\circ}$ C $\sim$ +80 $^{\circ}$ C
Humidity	5 $\sim$ 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.

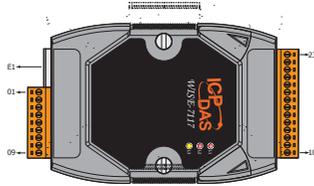
IF Conditions	
AI Channel	= > < > = < (value)
Internal Register	= > < > = < (value)
DO Counter	= > < > = < (value) - Change
Timer	Timeout - Not Timeout
P2P	DI - AI - DI counter - DO counter - IR
Rule Status	Enable - Disable



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

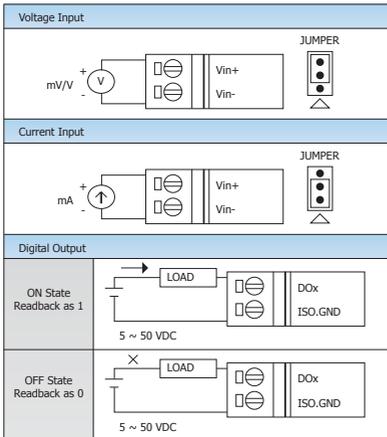
## Pin Assignment

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

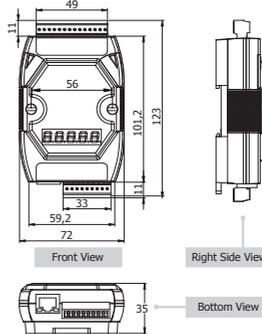


Terminal No.	Pin Assignment
23	Vin6-
22	Vin6+
21	Vin5-
20	Vin5+
19	Vin4-
18	Vin4+
17	Vin3-
16	Vin3+
15	Vin2-
14	Vin2+
13	Vin1-
12	Vin1+
11	Vin0-
10	Vin0+

## Wire Connection



## Dimensions (Unit: mm)



## Ordering Information

WISE-7117	8-channel Analog Input with High Voltage Protection and 4-channel Isolated Output PoE Module (RoHS)
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## 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)