



WISE (Web Inside, Smart Engine)



## WISE-7105

8-channel Thermistor Input and 4-channel Isolated Output PoE Module

### 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
- Support Thermistor Input
- Individual Channel Configuration
- 4-channel Digital Outputs
- 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-7105 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-7105 will still be able to receive power from auxiliary power sources like AC adapters or battery, etc.

This multi-function module WISE-7105 supports Modbus/TCP protocol to make seamless integration with SCADA software available. It features 16-bit, 8-channel Thermistor inputs and 4-channel digital outputs. Each analog channel is allowed to configure an individual range.

#### 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	Precon ST-A3, Fenwell U, YSI L100, YSI L300, YSI L1000, YSI B2252, YSI B3000, YSI B5000, YSI B6000, YSI B10000, YSI H10000, YSI H30000
Resolution	16-bit
Sampling Rate	8 Sample/Sec. (Total)
Accuracy	+/-0.1% or better
Zero Drift	+/-10 $\mu$ V/ $^{\circ}$ C
Span Drift	+/-25 ppm/ $^{\circ}$ C
Over voltage Protection	110 V <sub>DC</sub> /V <sub>AC</sub>
Common Mode Rejection	86 dB min.
Normal Mode Rejection	100 dB
Open Wire Detection	Yes
Individual Channel Configuration	Yes
ESD Protection	+/-4 kV (Contact for each channel)
EFT Protection	+/-8KV air for random point
	+/-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>DC</sub> ~ 50 V <sub>DC</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>DC</sub>
AI and DO	2500 V <sub>DC</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 +12 V <sub>DC</sub> ~ +48 V <sub>DC</sub> (non-regulated)
LED Indicator	Yes
Power Consumption	0.12 A @ 24 V <sub>DC</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 ~ +75 $^{\circ}$ C
Storage Temperature	-30 $^{\circ}$ C ~ +80 $^{\circ}$ 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.

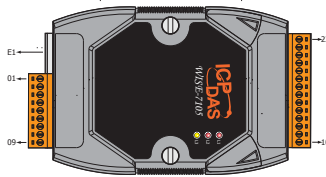
IF Conditions	
AI Channel	$= > < > \leq \geq (=value)$
Internal Register	$= > < > \leq \geq (=value)$
DO Counter	$= > < > \leq \geq (=value)$ - Change
Timer	Timeout - Not Timeout
P2P	DI - AI - DI counter - DO counter - IR
Rule Status	Enable - Disable

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 - Stop
Email	Send
CGI Commands	Execute
Recipe	Execute
P2P	DO(On/Off) - AO - IR
Rule Status	Enable - Disable

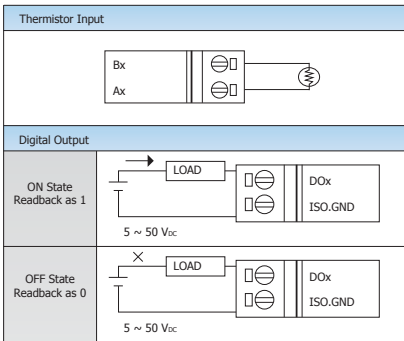
## Pin Assignment

Terminal No.	Pin Assignment
E1	RJ-45
01	A7
02	B7
03	DO0
04	DO1
05	DO2
06	DO3
07	ISO.GND
08	(R)+Vs
09	(B)GND

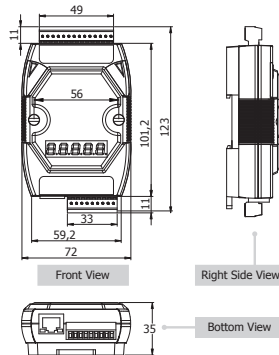


Terminal No.	Pin Assignment
23	B6
22	A6
21	B5
20	A5
19	B4
18	A4
17	B3
16	A3
15	B2
14	A2
13	B1
12	A1
11	B0
10	A0

## Wire Connection



## Dimensions (Unit: mm)



## Ordering Information

WISE-7105	8-channel Thermistor Input 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)