



**WISE-7901/WISE-7901D**  
User-defined I/O Expansion PoE Module

## Features

- Built-in Web Server for IF-THEN-ELSE rule setting
- Built-in IF-THEN-ELSE rule engine for logic operation
- No more programming. Click and get done!
- Support I/O, Counter, Timer, Email, Recipe operations
- Modbus TCP Protocol for SCADA Software Seamless Integration
- IEEE 802.3af-compliant Power over Ethernet (PoE)
- 10/100 Base-TX Ethernet
- I/O Expansion Bus
- Support DI/DO X-Boards: X107, X109, X110, X111
- Support Multi-Function X-Boards: X202, X203, X303, X304, X305, X308, X310, X324



## 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-7901 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-7901 will still be able to receive power from auxiliary power sources like AC adapters or battery, etc.

This module WISE-7901 supports Modbus/TCP protocol to make seamless integration with SCADA software available. It supports an I/O expansion bus to implement various I/O functions such as D/I, D/O, A/D, D/A based on the selected X-Board.

## Applications

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

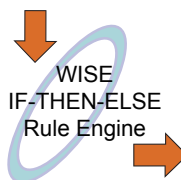
## System Specifications

Models	WISE-7901	WISE-7901D
<b>System</b>		
CPU	16-bit CPU	
SRAM	512KB	
Flash Memory	512KB	
EEPROM	16KB	
NVRAM	31 Bytes	
OS	MiniOS7	
RTC (Real Time Clock)	Provide second, minute, hour, date of week, month and year	
64-bit Hardware Serial Number	Yes	
Watchdog	Yes	
<b>Communication</b>		
Ethernet	RJ-45 x 1, 10/100 Base-TX (Auto-negotiating, Auto MDI/MDI-X, LED indicators)	
COM 1	Reserved	
COM 2	Reserved	
<b>LED Indicators</b>		
System LED	Yes (Red)	
LED Display	-	5-digit 7-segment LED display
Special Indicator	PoE LED (Green)	
<b>Hardware Expansion</b>		
I/O Expansion Bus	Yes	
<b>Power Requirements</b>		
Protection	Power Reverse Polarity Protection	
Frame Ground	Yes (for ESD Protection)	
Input Range	12 ~ 48 VDC	
Power over Ethernet (PoE)	IEEE 802.3af Class 1	
Power Consumption	1.5 W	2.5 W
<b>Mechanical</b>		
Dimensions (W x H x D)	72 mm x 123 mm x 35 mm	
Installation	DIN-Rail or Wall Mounting	
<b>Environmental</b>		
Operating Temperature	-25 °C ~ +75 °C	
Storage Temperature	-40 °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 Schedules	Setup prescheduled routine tasks.
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.

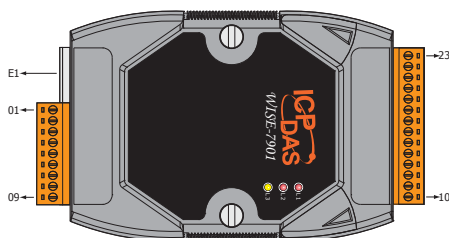
IF Conditions	
DI Channel	ON, OFF, ON to OFF, OFF to ON, Change
AI Channel	=, >, <, >=, <= (value)
Internal Register	=, >, <, >=, <= (value)
DI Counter	=, >, <, >=, <= (value), Change
DO Counter	=, >, <, >=, <= (value), Change
Timer	Timeout, Not Timeout
Schedule	In Range, Out of Range
P2P	DI, AI, DI counter, DO counter, IR
Rule Status	Enable, Disable



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

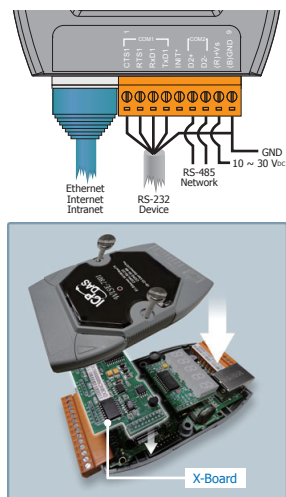
## Pin Assignments

Terminal No.	Pin Assignment
E1	Link/Act 10/100M
COM1	01 CTS1
	02 RTS1
	03 RxD1
	04 TxD1
05	INIT*
COM2	06 D2+
	07 D2-
08	(R)+Vs
09	(B)GND

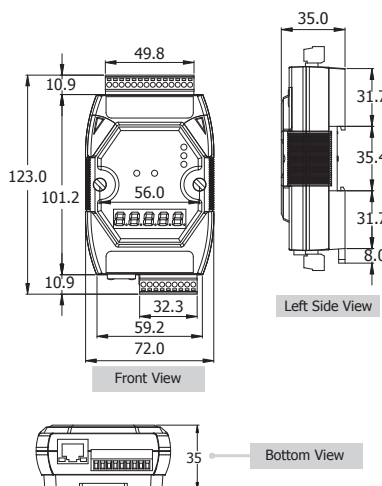


Terminal No.	Pin Assignment
23	-
22	-
21	-
20	-
19	-
18	-
17	-
16	-
15	-
14	-
13	-
12	-
11	-
10	-

## Wiring & Boarding



## Dimensions (Unit:mm)



## Ordering Information

<b>WISE-7901</b>	User-defined I/O Expansion PoE Module (RoHS)
<b>WISE-7901D</b>	User-defined I/O Expansion PoE Module with LED Display (RoHS)

## Accessories

<b>GPSU06U-6</b>	24V/0.25A, 6W Power Supply
<b>MDR-20-24</b>	24V/1A, 24W Power Supply with DIN-Rail Mounting
<b>NS-205 CR</b>	Unmanaged 5-Port Industrial Ethernet Switch (RoHS)
<b>NS-205PSE CR</b>	Unmanaged 5-Port Industrial PoE Ethernet Switch (RoHS)
<b>I/O Expansion Boards</b>	Other add-on expansion boards: X107, X109, X110, X111, X202, X203, X303, X304, X305, X308, X310, X324