



WISE-7901/WISE-7901D

User-defined I/O Expansion PoE Module

I/O Expansion Boards

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
- 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 effort 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 according to the using X-Board.

Applications

Building Automation, Factory Automation, Machine Automation, Remote Maintenance, Remote diagnosis and Testing Equipment, etc.

Specifications

Models	WISE-7901	WISE-7901D
CPU Module		
CPU	80186 or compatible (16-bit and 80 MHz)	
SRAM	512 KB	
Flash	512 KB; Erase unit is one sector (64 K bytes); 100,000 erase/write cycles	
EEPROM	16 KB	
NVRAM	31 Bytes (battery backup, data valid up to 10 year)	
OS	MiniOS7	
RTC (Real Time Clock)	RTC Provide seconds, minutes, hours, date of week/month; month and year, valid from 1980 to 2079	
64-bit Hardware Serial Number	Yes	
Watchdog Timers	Yes (0.8 second)	
Communication Ports		
Ethernet	RJ-45 x 1, 10/100 Base-TX (Auto-negotiating, Auto MDI/MDI-X, LED indicators)	
COM 1	RS-232 (Tx/D, Rx/D, RTS, CTS, GND), non-isolated, Speed: 115200 bps max.	
COM 2	RS-485 (D2+, D2-), self-tuner ASIC inside, non-isolated, Speed: 115200 bps max.	
LED Indicator		
System LED	Yes	
LED Display	-	5-digit 7-segment LED display
Special Indicator	PoE LED	
Hardware Expansion		
I/O Expansion Bus	Yes, 1	
Mechanical		
Dimensions (W x H x D)	72 mm x 123 mm x 35 mm	
Installation	DIN-Rail or Wall Mounting	
Environmental		
Operating Temperature	-25 ~ +75 °C	
Storage Temperature	-30 ~ +80 °C	
Ambient Relative Humidity	10 ~ 90% RH (non-condensing)	
Power		
Protection	Power reverse polarity protection	
Frame Ground	Yes (for ESD Protection)	
Input Range	+12 ~ +48 V _{oc}	
Power over Ethernet (PoE)	IEEE 802.3af Class 1	
Power Consumption	2.0 W	3.0 W

Software Specifications

Functions	
36 IF-THEN-ELSE Logic Rules	3 IF conditions with AND or OR operators 3 THEN actions 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.
Rule Configuration Website	Access Web server on WISE controllers to edit and upload logic rules through web browser.
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	
DI Counter	= · > · < · >= · <= (value) · Change
DO Counter	
Timer	Timeout · Not Timeout
Schedule	In Range · Out Range

WISE

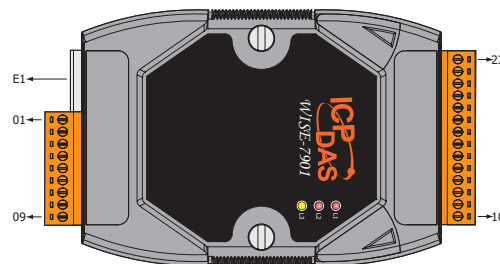
IF-THEN-ELSE

Rule Engine

THEN / ELSE Actions	
DO Channel	ON · OFF · Pulse Output
AO Channel	
Internal Register	Change the value
DI Counter	Reset
DO Counter	
Timer	Start · Stop
Schedule	
Email	Send

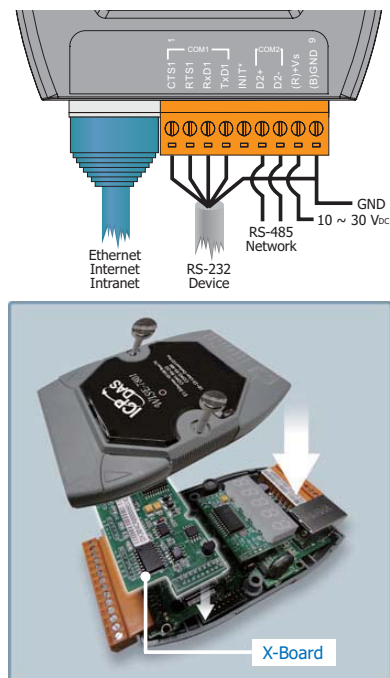
Pin Assignment

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

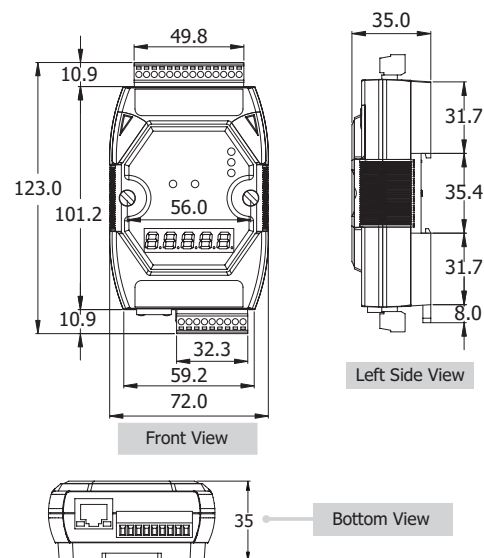


Terminal No.	Pin Assignment
23	-
22	-
21	-
20	-
19	-
18	-
17	-
16	-
15	-
14	-
13	-
12	-
11	-
10	-

Wiring & Boarding



Dimensions (Unit: mm)



Ordering Information

Art. No. 123981	WISE-7901	User-defined I/O Expansion PoE Module (RoHS)
Art. No. 123982	WISE-7901D	User-defined I/O Expansion PoE Module with LED Display (RoHS)

Accessories

Art. No. 119340	GPSU06U-6	24V/0.25A, 6 W Power Supply
Art. No. 119341	MDR-20-24	24V/1A, 24 W Power Supply with DIN-Rail Mounting
Art. No. 117857	NS-205 CR	Unmanaged 5-Port Industrial Ethernet Switch (RoHS)
Art. No. 120923	NS-205PSE CR	Unmanaged 5-Port Industrial PoE Ethernet Switch (RoHS)
I/O Expansion Boards	Other add-on expansion boards: X107, X109, X110, X111, X202, X203, X303, X304, X305, X308, X310, X324	