



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
- 2-way Isolation/ESD Protection
- DO Type: 16 Isolated Open Collectors (Sink Type)



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-7142 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-7142 will still be able to receive power from auxiliary power sources like AC adapters or battery, etc.

This WISE-7142 module supports Modbus/TCP protocol to make seamless integration with SCADA software available. It provides 16 sink-type digital output channels and features optical isolation for 3750 V_{rms} of transient overvoltage protection.

Applications

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

System Specifications

I/O Specifications

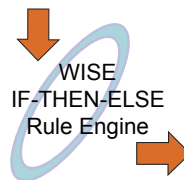
Digital Output	
Output Channels	16
Output Type	Isolated Open Collector (Sink)
Max. Load Current	100 mA/channel at 25 °C Direct drive power relay module
Load Voltage	+5 V _{dc} ~ +30 V _{dc}
Overvoltage Protection	60 V _{dc}
Overload Protection	1.3 A
Short-circuit Protection	Yes

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)	±2 kV for Power Line
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	4.3 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.

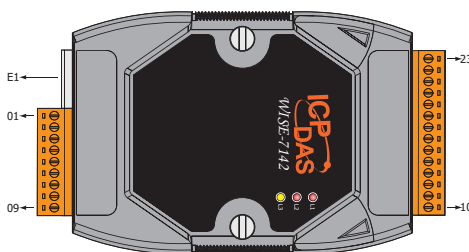
IF Conditions	
Internal Register	=, >, <, >=, <= (value)
DO Counter	=, >, <, >=, <= (value), Change
Timer	Timeout, Not Timeout
P2P	DI, AI, DI counter, DO counter, IR
Rule Status	Enable, Disable



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

Pin Assignments

Terminal No.	Pin Assignment
E1	RJ-45
01	DO12
02	DO13
03	DO14
04	DO15
05	DO.PWR2
06	DO.GND2
07	N/A
08	(R)+Vs
09	(B)GND

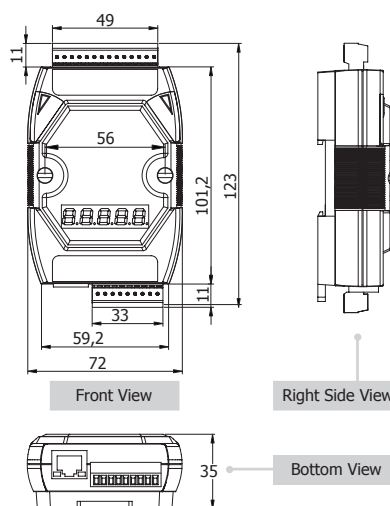


Terminal No.	Pin Assignment
23	DO11
22	DO10
21	DO9
20	DO8
19	DO7
18	DO6
17	DO5
16	DO4
15	DO3
14	DO2
13	DO1
12	DO.GND1
11	DO.PWR1
10	DO.PWR1

Wire Connections

Output Type	ON State Readback as 1	OFF State Readback as 0
Drive Relay	DO.PWR DOx DO.GND	DO.PWR DOx DO.GND
Resistance Load	DO.PWR DOx DO.GND	DO.PWR DOx DO.GND

Dimensions (Unit:mm)



Ordering Information

WISE-7142 CR	16-channel Isolated Digital 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)