Features

- Runs on browsers, no extra software tool is required.
- No more programming, Web pages provided for control logic editing.
- IF-THEN-ELSE logic rules execution ability.
- Built-in I/O
  Relay: 6 Channels; DI: 6 Channels
- Support I/O Monitoring/Control, Counter, Timer, Email sending and CGI Command sending operations.
- Modbus TCP Protocol for SCADA System Integration.
- IEEE 802.3af-compliant Power over Ethernet (PoE).
- 2-port Ethernet Switch for Daisy-Chain Topology.
- Support Schedule operation
- MQTT Protocol for IT & IoT (Internet of Things) System Integration.

WISE-7560M

WISE I/O Module 6-channels Relay, 6-channels DI and 2-port Ethernet Switch

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 controller 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-7560M provides 6 wet contact digital input channels and 6 form A electromechanical relays. It features optical isolation for 3000 VDC of transient overvoltage protection and doesn't have channel-to-channel isolation. Note: When inductive loads are connected to the relays, a large counter electromotive force may occur when the relay actuates because of the energy stored in the load. These flyback voltages can severely damage the relay contacts and greatly shorten the relay life. Limit these flyback voltages at your inductive load by installing a flyback diode for DC loads or a metal oxide varistor for AC loads. WISE-7560M follows IEEE 802.3af-compliant Power over Ethernet (PoE) specification. It allows receiving power from PoE enabled network by Ethernet pairs. In additional to this, WISE-7560M also has a built-in two-port Ethernet switch to implement daisy-chain topology. The cabling is much easier and total costs of cable and switch are significantly reduced.

By integrating with IF-THEN-ELSE rule engine, WISE-7560M provides powerful functions such as I/O Monitoring/Control, Counter, Timer, Schedule, E-mail sending & CGI Command sending for use in various industrial applications. WISE-7560M also supports Modbus TCP and MQTT protocols to make seamless integration with SCADA, IT and IoT (Internet of Things) system.

I/O Specifications

Digital Input		
Channels	6	
Contact	Wet Contact	
Sink/Source (NPN/PNP)	Sink/Source	
On Voltage Level	+10 V_{DC} to +50 V_{DC}	
Off Voltage Level	+4 V_{DC} Max.	
Input Impedance	10 kΩ	
Counters	Channels	6
	Max. Counts	16-bit (65535)
	Max. Input Frequency	50 Hz
	Min. Pulse Width	10 ms
Overvoltage Protection	+70 V_{DC}	
Power Relay		
Channels	6	
Type	Power Relay, Form A (SPST N.O.)	
Contact Rating	5 A @ 250 V_{AC}/24 V_{DC} (Resistive Load)	
Min. Contact Load	10 mA @ 5 V	
Operate Time	10 ms (max.)	
Release Time	5 ms (max.)	
Mechanical Endurance	2×10^7 ops.	
Electrical Endurance	10^5 ops.	

System Specifications

Communication	
Ethernet Port	2 x RJ-45, 10/100 Base-TX, Swtich Ports
PoE	Yes
Protocol	Modbus TCP, MQTT
LED Indicators	
for System Running	Yes
for Ethernet Link/Act	Yes
for I/O Channel Status	Yes
for PoE Power	Yes
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
Surge (IEC 61000-4-5)	±2 kV for Power Line
Power	
Reverse Polarity Protection	Yes
Powered from Terminal Block	12 to 48 V_{DC}
Powered from PoE	Yes, IEEE 802.3af, Class1
Consumption	3.8 W (Max.)
Mechanical	
Dimensions (L x W x H)	120mm x 97mm x 42mm
Installation	Wall mounting
Environment	
Operating Temperature	-25 °C to +75 °C
Storage Temperature	-30 °C to +80 °C
Humidity	10 to 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.
72 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/written via Modbus command.
24 Timers	Delay / Timing functions.
24 Schedules	Setup prescheduled routine tasks.
24 Emails	Send Email messages to pre-set Email receivers.
24 CGI Commands	Send pre-set CGI commands.
24 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.
MQTT Protocol	Real time message publish/subscribe mechanism for I/O channels and system status via IT/IoT software.

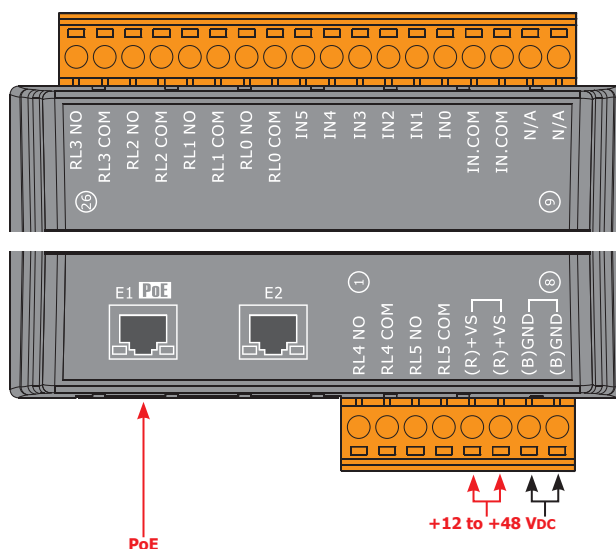| IF Conditions	
DI Channel	ON, OFF, ON to OFF, OFF to ON, Change
Internal Register	=, >, <, >=, <= (value)
DI Counter	=, >, <, >=, <= (value), Change
DO Counter	
Timer	Timeout, Not Timeout
Schedule	In Range, Out of Range
P2P	DI, AI, DI counter, DO counter, IR
Rule Status	Enable, Disable

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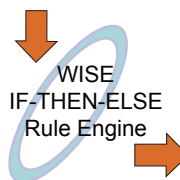
THEN / ELSE Actions	
DO Channel	ON, OFF, Pulse Output
Internal Register	Change the value
DI Counter	Reset
DO Counter	
Timer	Start, Reset
Schedule	Enable, Disable
Email	
MQTT message	Send
CGI Command	
Recipe	Execute
P2P	DO(On/Off), AO, IR
Rule Status	Enable, Disable

◼ Wire Connections

Digital Input/ Counter	Readback as 1	Readback as 0
Sink	+10 ~ +50 V$_{DC}$	OPEN or <4 V$_{DC}$
Source	+10 ~ +50 V$_{DC}$	OPEN or <4 V$_{DC}$

Power Relay	ON State Readback as 1
Relay Output	
	OFF State Readback as 0

◼ Pin Assignments

RL3 NO, RL3 COM, RL2 NO, RL2 COM, RL1 NO, RL1 COM, RL0 NO, RL0 COM, IN5, IN4, IN3, IN2, IN1, IN0, IN.COM, IN.COM, N/A, N/A

E1 PoE, E2, RL4 NO, RL4 COM, RL5 NO, RL5 COM, (R)+VS, (R)+VS, (B)GND, (B)GND

PoE

+12 to +48 V$_{DC}$

◼ Ordering Information

WISE-7560M CR	WISE I/O Module with 6-channels Relay, 6-channels DI and 2-port Ethernet Switch. (RoHS)

◼ 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)