



## 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  
AI: 4 Channels; AO: 4 Channels; DI: 4 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.



## 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-7504M is a multi-function module with 4-channel analog inputs, 4-channel analog outputs and 4-channel digital inputs. It provides various programmable analog inputs, and analog outputs. Each analog input is allowed to configure a proper range with 240 Vrms high voltage protection. WISE-7504M follows IEEE 802.3af-compliant Power over Ethernet (PoE) specification. It allows receiving power from PoE enabled network by Ethernet pairs. In addition to this, WISE-7504M 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-7504M provides more powerful functions such as I/O Monitoring/Control, Counter, Timer, Schedule, E-mail sending & CGI Command sending for use in various industrial applications. WISE-7504M also supports Modbus TCP and MQTT protocol to make seamless integration with SCADA, IT and IoT (Internet of Things) system.

## I/O Specifications

Analog Input	
Channels	4 (Differential)
Type	+/-500 mV, +/-1 V, +/-5 V, +/-10 V, +0 mA to +20 mA, +/-20 mA, 4 to 20 mA (Jumper Selectable)
Resolution	16-bit
Sampling Rate	10 Samples/Second (Total)
Accuracy	+/-0.1%
Zero Drift	+/-20 $\mu$ V/ $^{\circ}$ C
Span Drift	+/-25 ppm/ $^{\circ}$ C
Overvoltage Protection	240 Vrms
Overcurrent Protection	50 mA Max. at 110 VDC/VAC Max.
Common Voltage Protection	$\pm$ 200 VDC
Overcurrent Protection	Yes, 50 mA at 110 VDC
Virtual Channel to Channel Isolation	Yes, 400 VDC
Open Wire Detection for 4 ~ 20 mA	Yes
Input Impedance	Voltage: 2 M $\Omega$ Current: 125 $\Omega$
Common Mode Rejection	86 dB Min.
Normal Mode Rejection	100 dB
Analog Output	
Channels	4
Type	+0 Vdc to +5 Vdc, +/-5 Vdc, +0 Vdc to +10 Vdc, +/-10 Vdc, +0 mA to +20 mA, +4 mA to +20 mA (Jumper Selectable)
Resolution	12-bit
Accuracy	+/-0.1% of FSR
Voltage Output Capability	20 mA @ 10 V
Current Load Resistance	400 $\Omega$
Open Wire Detection	Yes, for 4 to 20 mA only
Digital Input/Counter	
Channels	4
Dry Contact (Source)	On Voltage Level: Close to GND Off Voltage Level: Open Effective Distance for Dry Contact: 500 M Max.
Wet contact (Sink)	On Voltage Level: +1 Vdc Max. Off Voltage Level: +3.5 Vdc to +30 Vdc
Counters	Max. Count: 16-bit (65535) Max. Input Frequency: 50 Hz Min. Pulse Width: 10 ms
Overvoltage Protection	30 Vdc

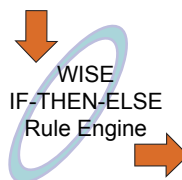
## System Specifications

Communication	
Ethernet Port	2 x RJ-45, 10/100 Base-TX, Switch 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 Vdc
EMS Protection	
ESD (IEC 61000-4-2)	$\pm$ 4 kV Contact for Each Terminal and $\pm$ 8 kV Air for Random Point
EFT (IEC 61000-4-4)	$\pm$ 2 kV for Power Line
Surge (IEC 61000-4-5)	$\pm$ 2 kV for Power Line
Power	
Reverse Polarity Protection	Yes
Powered from Terminal Block	12 to 48 Vdc
Powered from PoE	Yes, IEEE 802.3af, Class1
Consumption	5.1 W (Max.)
Mechanical	
Dimensions (L x W x H)	120mm x 97mm x 42mm
Installation	Wall mounting
Environment	
Operating Temperature	-25 $^{\circ}$ C to +75 $^{\circ}$ C
Storage Temperature	-30 $^{\circ}$ C to +80 $^{\circ}$ 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/write data
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
AI Channel	
Internal Register	=, >, <, >=, <= (value)
DI 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

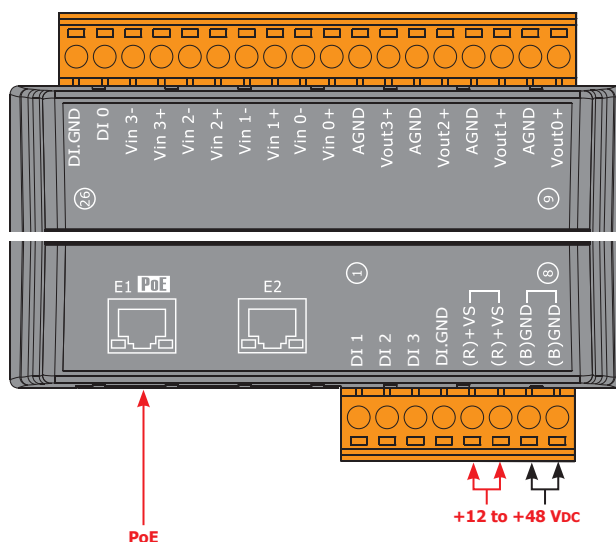


THEN / ELSE Actions	
AO Channel	Change the value
Internal Register	
DI Counter	Reset
Timer	Start, Reset
Schedule	Enable, Disable
Email	
MQTT message	Send
CGI Commands	
Recipe	Execute
P2P	DO(On/Off), AO, IR
Rule Status	Enable, Disable

## Wire Connections

<b>Voltage Input (Default)</b>		
<b>Current Input</b>		
<b>Voltage Output (Default)</b>		
<b>Current Output</b>		
Digital Input/Counter	ON State Readback as 1	OFF State Readback as 0
Dry Contact		

## Pin Assignments



## Ordering Information

<b>WISE-7504M CR</b>	WISE I/O Module with 4-channels AI, 4-channels AO, 4-channels DI and 2-port Ethernet Switch(RoHS)
----------------------	---

## Accessories

<b>GPSU06U-6</b>	24V/0.25A, 6 W Power Supply
<b>MDR-20-24</b>	24V/1A, 24 W 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)