WISE-7526M

WISE I/O Module with 6-channels AI, 2-channels AO, 2-channels DI,
2-channels DO and 2-port Ethernet Switch

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: 6 Channels; AO: 2 Channels; DI: 2 Channels; DO: 2 Channels
- Support I/O Moniitoring/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-7526M is a multi-function module with 6-channel analog inputs, 2-channel analog outputs, 2-channel digital inputs and 2-channel digital outputs. 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-7526M 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-7526M 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-7526M provides more powerful functions such as I/O Moniitoring/Control, Counter, Timer, Schedule, E-mail sending & CGI Command sending for use in various industrial applications. WISE-7526M 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		6 (Differential)
Input Type		+/-500 mV, +/-1 V, +/-5 V, +/-10 V, +/-20 mA, 0 to 20 mA, 4 to 20 mA (jumper selectable)
Resolution		16-bit
Sampling Rate		10 Sample/Sec. (Total)
Accuracy		+/-0.1%
Zero Drift		+/-20 µV/°C
Span Drift		+/-25 ppm/°C
Overvoltage Protection		240 Vrms
Input Impedance	Voltage	2 MΩ
	Current	125 Ω
Common Mode Rejection		86 dB Min.
Normal Mode Rejection		100 dB
Individual Channel Configuration		Yes
Analog Output		
Channels		2
Output Type		0 to 5 V$_{DC}$, +/- 5 V$_{DC}$, 0 to 10 V$_{DC}$, +/- 10 V$_{DC}$, 0 to 20 mA, 4 to 20 mA (jumper selectable)
Individual Channel Configuration		Yes
Resolution		12-bit
Accuracy		+/- 0.1% of FSR
Voltage Output Capability		20 mA @ 10 V
Current Load Resistance		500 Ω
Open Wire Detection		Yes, for 4 to 20mA only
Digital Input		
Channels		2
Dry Contact (Source)	On Voltage Level	Close to GND
	Off Voltage Level	Open
	Effective Distance for Dry Contact	500M Max.
Wet Contact (Sink/Source)	On Voltage Level	+ 1V$_{DC}$ Max.
	Off Voltage Level	+ 3.5 V$_{DC}$ to + 30 V$_{DC}$
Counters	Channels	2
	Max. Counts	16-bit (65535)
	Max. Input Frequency	50 Hz
	Min. Pulse Width	10 ms
Open Wire Detection		30 V$_{DC}$
Digital Output		
Channels		2
Output Type		Isolated Open Collector (Sink)
Max. Load Current		700 mA/Channel
Load Voltage		+5 V$_{DC}$ to +50 V$_{DC}$
Overvoltage Protection		60 V$_{DC}$
Overload Protection		1.4 A
Short-circuit Protection		Yes

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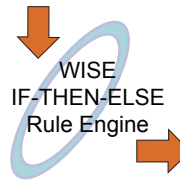
THEN / ELSE Actions	
DO Channel	ON, OFF, Pulse Output
AO Channel	Change the value
Internal Register	
DI Counter	Reset
DO Counter	
Timer	Start, Reset
Schedule	Enable, Disable
Email	Send
MQTT message	
CGI Commands	
Recipe	Execute
P2P	DO(On/Off), AO, IR
Rule Status	Enable, Disable

▪ Wire Connections

Voltage Input (Default)		
mV/V	Vinx+ / Vinx-	JUMPER

Current Input		
mA	Vinx+ / Vinx-	JUMPER

Voltage Output (Default)		
Load	Voutx+ / AGND	JUMPER

Current Output		
Load	Voutx+ / AGND	JUMPER

Digital Input/ Counter	ON State Readback as 1	OFF State Readback as 0
Dry Contact	DIx / ISO.GND	DIx / ISO.GND

Digital Output	ON State Readback as 1	OFF State Readback as 0
Open Collector (Sink)	LOAD DOx / ISO.GND 5 ~ 50 VDC	LOAD DOx / ISO.GND 5 ~ 50 VDC

▪ Pin Assignments

PoE

+12 to +48 VDC
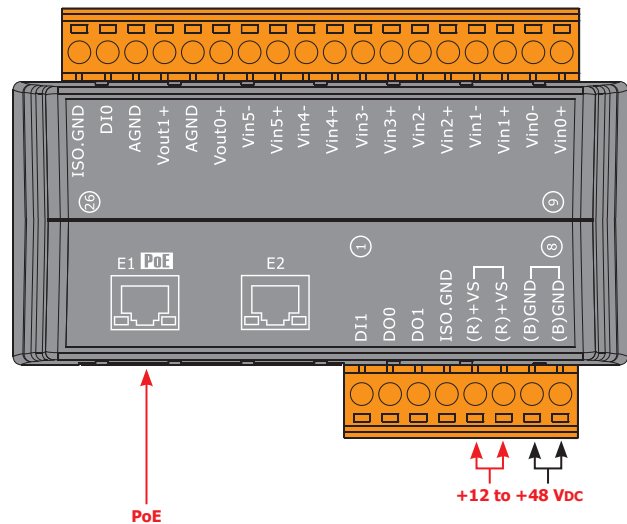
▪ Ordering Information

WISE-7526M CR	WISE I/O Module with 6-channels AI, 2-channels AO, 2-channels DI, 2-channels DO and 2-port Ethernet Switch (RoHS) Art. No. 155732

▪ 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)