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: 10 Channels; DO: 3 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-7519ZM

WISE I/O Module with 10-channels universal AI, 3-channels DO 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 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-7519ZM is specifically designed for extremely accurate thermocouple measurement and features automatic cold-junction compensation for each channel to ensure temperature output consistency and stable temperature output in the field. Current input and voltage input are both supported. Open thermocouple detection and ESD/EFT/Surge protection mechanisms are also included. The three digital output channels can be set as alarm outputs. WISE-7519ZM 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-7519ZM 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-7519ZM 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-7519ZM also supports Modbus TCP and MQTT protocols to make seamless integration with SCADA, IT and IoT (Internet of Things) system.

I/O Specifications

Thermocouple Input	
Channels	10 (Differential)
Sensor Type	+/-15 mV, +/-50 mV, +/-100 mV, +/-150 mV, +/-500 mV, +/-1 V, +/-2.5 V, +/-5 V, +/-10 V,
	+/-20 mA, 0 to 20 mA, 4 to 20 mA (Jumper Selectable)
	Thermocouple (J, K, T, E, R, S, B, N, C, L, M, and L$_{DIN43710}$)
Resolution	16-bit
Sampling Rate	10 Samples/Second (Total)
Accuracy	+/-0.1% of FSR or better
Zero Drift	+/-0.5 µV/°C
Span Drift	+/-25 ppm/°C
Over Voltage Protection	240 V$_{rms}$
Input Impedance	>300 kΩ
Common Mode Rejection	86 dB Min.
Normal Mode Rejection	100 dB
Temperature Output Consistency	Yes
Stable Temperature Output in the Field	Yes
Open Wire Detection	Yes
Virtual Channel to Channel Isolation	+/-400 V$_{DC}$
Digital Output	
Channels	3
Type	Isolated Open Collector
Sink/Source (NPN/PNP)	Sink
Max. Load Current	650 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

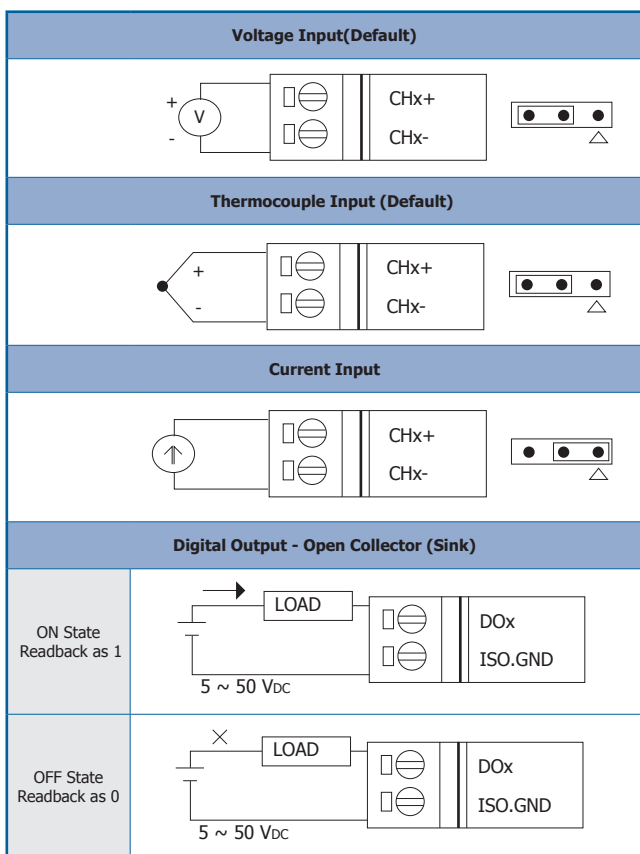| Communication	
Ethernet Port	2 x RJ-45, 10/100 Base-TX, Swtich Ports
PoE	Yes
Protocol	Modbus TCP, MQTT
LED Indicators	
for System Running	Yes
for Ethernet Link/Act	Yes
for I/O Channel Status	Yes
for PoE Power	Yes
2-Way Isolation	
I/O	2500 V$_{DC}$
EMS Protection	
ESD (IEC 61000-4-2)	±4 kV Contact for 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	3.6 W (Max.)
Mechanical	
Dimensions (L x W x H)	114mm x 97mm x 38mm
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.

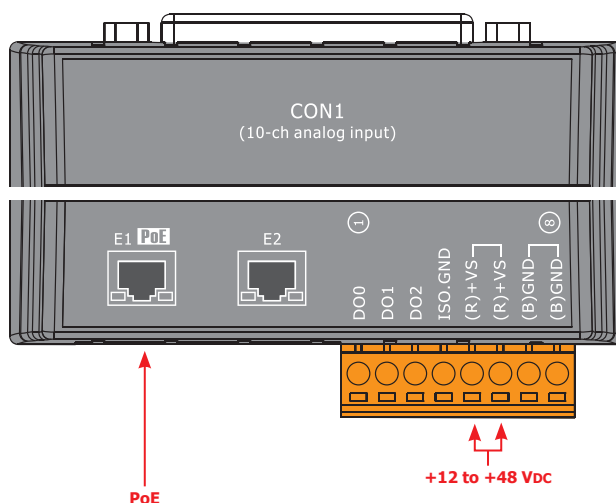| IF Conditions	
AI Channel	=, >, <, >=, <= (value)
Internal Register	
DO Counter	=, >, <, >=, <= (value), Change
Timer	Timeout, Not Timeout
Schedule	In Range, Out of Range
P2P	DI, AI, DI counter, DO counter, IR
Rule Status	Enable, Disable

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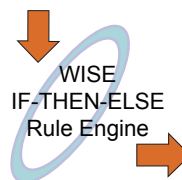
THEN / ELSE Actions	
DO Channel	ON, OFF, Pulse Output
Internal Register	Change the value
DO Counter	Reset
Timer	Start, Reset
Schedule	Enable, Disable
Email	Send
MQTT message	
CGI Command	
Recipe	Execute
P2P	DO(On/Off), AO, IR
Rule Status	Enable, Disable

■ Wire Connections

Voltage Input(Default)

CHx+
CHx-

Thermocouple Input (Default)

CHx+
CHx-

Current Input

CHx+
CHx-

Digital Output - Open Collector (Sink)

ON State Readback as 1	LOAD DOx ISO.GND 5 ~ 50 V_DC
OFF State Readback as 0	LOAD DOx ISO.GND 5 ~ 50 V_DC

■ Pin Assignments

CON1
(10-ch analog input)

E1 PoE   E2   ①   ⑧
DO0 DO1 DO2 ISO.GND (R)+VS (R)+VS (B)GND (B)GND

PoE

+12 to +48 V_DC

■ Ordering Information

WISE-7519ZM/S CR	WISE I/O Module with 10-channels universal AI, 3-channels DO, 2-port Ethernet Switch and DB-1820 Daughter Board (RoHS)
WISE-7519ZM/S2 CR	WISE I/O Module with 10-channels universal AI, 3-channels DO, 2-port Ethernet Switch and DN-1822 Daughter Board and a 1.8 m Cable (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)