



## WISE-7118Z

10-channel Thermocouple Input with High Voltage Protection and 6-channel Isolated Output PoE Module

### 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 effort and cost spent on system development.

WISE-7118Z 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-7118Z will still be able to receive power from auxiliary power sources like AC adapters or battery, etc.

This multi-function module WISE-7118Z supports Modbus/TCP protocol to make seamless integration with SCADA software available. It features 16-bit, 10-channel differential analog inputs and 6-channel digital outputs. Each analog channel is allowed to configure an individual range and has 240 Vrms high over voltage protection.

### Applications

Building Automation, Factory Automation, Machine Automation, Remote Maintenance, Remote diagnosis and Testing Equipment, etc.

### I/O Specifications

Analog Input	
Input Channels	10 (Differential)
Input Type	+/-15 mV, +/-50 mV, +/-100 mV, +/-500 mV, +/-1 V, +/-2.5 V +/-20 mA, 0 ~ 20 mA, 4 ~ 20 mA (Requires Optional External 125 Ω Resistor) Thermocouple (J, K, T, E, R, S, B, N, C, L, M, LDIN43710)
Resolution	16-bit
Sampling Rate	10 Samples/Sec. (Total)
Accuracy	+/-0.1% or better
Bandwidth	15.7 Hz
Zero Drift	+/-0.5 uV/°C
Span Drift	+/-25 ppm/°C
Input Impedance	>300 kΩ
Common Mode Rejection	150 dB Min.
Normal Mode Rejection	100 dB
Overvoltage Protection	240 V <sub>rms</sub>
Open Thermocouple Detection	Yes
Individual Channel Configuration	Yes
ESD Protection	+/-4 kV (Contact for each channel)
EFT Protection	+/-8 kV air for random point
EFT Protection	+/-4 kV for Power
Digital Output	
Output Channels	6 (Sink)
Output Type	Isolated Open Collector
Max. Load Current	700 mA/Channel
Load Voltage	5 V <sub>cc</sub> ~ 50 V <sub>cc</sub>

## Analog Input & Digital Output

### 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
- Support Current Input, Voltage Input and Thermocouple Input
- Over Voltage Protection is up to 240 Vrms
- 6-channel Digital Outputs
- 2-way Isolation/ESD Protection



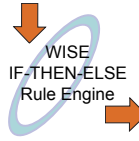
### System Specifications

System	
CPU	16-bit CPU
SRAM	512 KB
Flash Memory	512 KB
EEPROM	16 KB
Dual Watchdog	Yes
Communication	
PoE Ethernet Port	10/100 Base-TX (With Link, Activity LED Indicator) and automatic MDI/MDI-X
2-Way Isolation	
Ethernet	1500 V <sub>cc</sub>
AI and DO	2500 V <sub>rms</sub>
LED Indicators	
PoE	PoE On
L1	Run
L2	Link/Act
L3	10/100M
Power Requirements	
IEEE 802.3af	Class 1
Required Supply Voltage	Powered by Power over Ethernet (PoE) or auxiliary power +12 V <sub>cc</sub> ~ +48 V <sub>cc</sub> (non-regulated)
LED Indicator	Yes
Power Consumption	0.12 A @ 24 V <sub>cc</sub> Max.
Mechanical	
Dimensions (W x H 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	5 ~ 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.

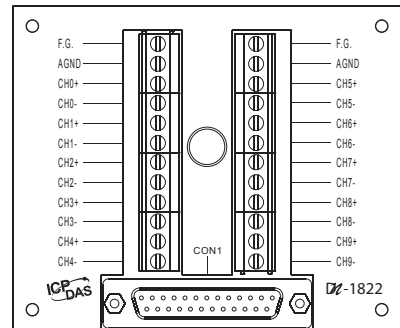
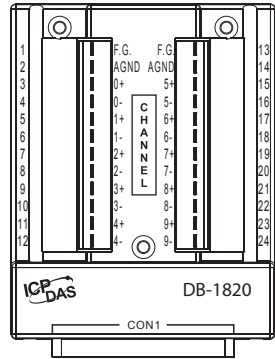
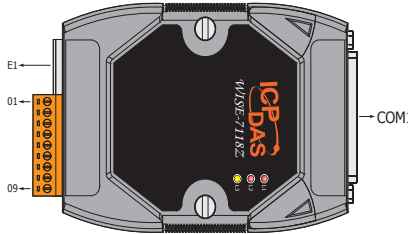
IF Conditions	
AI Channel	= > < >= <= (value)
Internal Register	= > < >= <= (value)
DO Counter	= > < >= <= (value) · Change
Timer	Timeout · Not Timeout
P2P	DI · AI · DI counter · DO counter · IR
Rule Status	Enable · Disable



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

## Pin Assignment

Terminal No.	Pin Assignment	
E1	RJ-45	
	01	DO0
	02	DO1
	03	DO2
	04	DO3
	05	DO4
	06	DO5
	07	ISO_GND
	08	(R)+Vs
	09	(B)GND

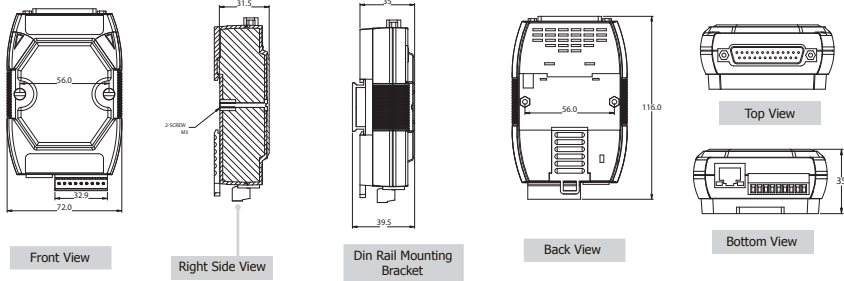


## Wire Connection

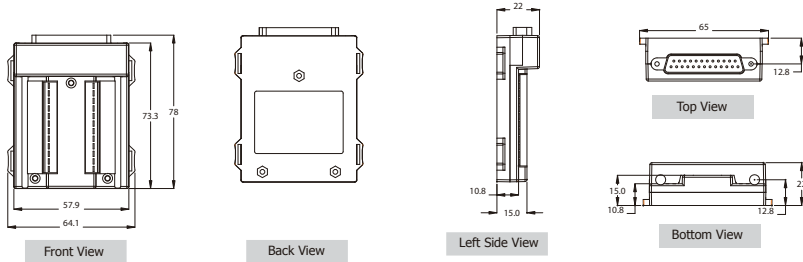
<b>Voltage Input</b> 
<b>Current Input</b> <p>125 Ω Note: When connecting to a current source, an optional external 125 Ω resistor is required.</p>
<b>Thermocouple Input</b> 

<b>Digital Output</b> <b>ON State</b> Readback as 1 <p>5 ~ 50 VDC</p>
<b>OFF State</b> Readback as 0 <p>5 ~ 50 VDC</p>

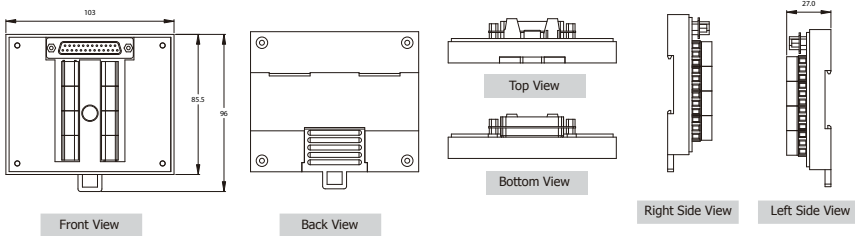
☑ Dimensions (Unit: mm)



DB-1820



DN-1822



☑ Ordering Information

WISE-7118Z/S	10-channel Thermocouple Input with High Voltage Protection and 6-channel Isolated Output PoE Module (RoHS) and DB-1820 daughter board.
WISE-7118Z/S2	10-channel Thermocouple Input with High Voltage Protection and 6-channel Isolated Output PoE Module (RoHS) and DN-1822 daughter board and 1.8m cable.

☑ 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)
CD-2518D	25F-25M 1.8 m Cable with DIN-Rail Mount of DB-1820
CD-25015	25F-25M 15 cm Cable with DIN-Rail Mount of DB-1820
NS-205PSE CR	5-Port Industrial PoE Ethernet Switch (RoHS)

