WISE-7118Z

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

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

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-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 ouputs. 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, 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 Sample/Sec. (Total)
Accuracy	+/-0.1% or better
Zero Drift	+/-0.5 uV/°C
Span Drift	+/-25 ppm/°C
Overvoltage Protection	240 Vrms
Input Impedance	>300 kΩ
Common Mode Rejection	150 dB Min.
Normal Mode Rejection	100 dB
Individual Channel Configuration	Yes
Temperature Outputs Consistency	Yes
Stable temperature output in the field	Yes
Open Wire Detection	Yes
Digital Output	
Output Channels	6
Output Type	Isolated Open Collector (Sink)
Max. Load Current	700 mA/Channel
Load Voltage	+5 V_{DC} ~ +50 V_{DC}
Overvoltage Protection	60 V_{DC}
Overload Protection	1.4 A
Short-circuit Protection	Yes

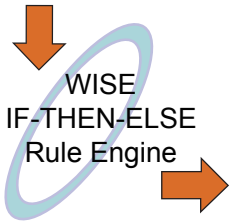
System Specifications

System	
CPU	16-bit CPU
SRAM	512KB
Flash Memory	512KB
EEPROM	16KB
Watchdog	Yes
Communication	
PoE Ethernet Port	10/100 Base-TX and automatic MDI/MDI-X
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)	±4 kV for Power Line
LED Indicators	
PoE Power	PoE On
L1	System Running
L2	Ethernet Link/Act
L3	Ethernet 10/100 M Speed
Power Requirements	
Reverse Polarity Protection	Yes
Powered from Terminal Block	Yes, 12 ~ 48 V_{DC}
Powered from PoE	Yes, IEEE 802.3af, Class1
Consumption	3.0 W
Mechanical	
Dimensions (W x L 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	10 ~ 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.

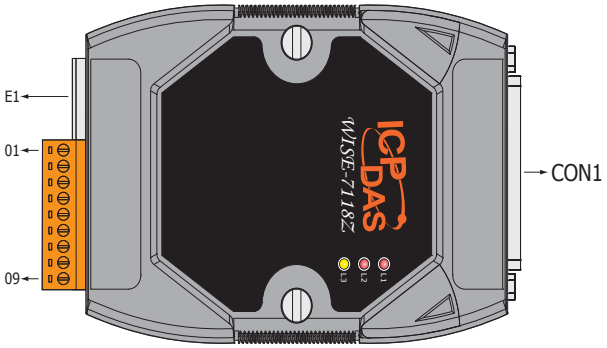
IF Conditions	
AI Channel Internal Register	=, >, <, >=, <= (value)
DO Counter	=, >, <, >=, <= (value), Change
Timer	Timeout, Not Timeout
P2P	DI, AI, DI counter, DO counter, IR
Rule Status	Enable, Disable

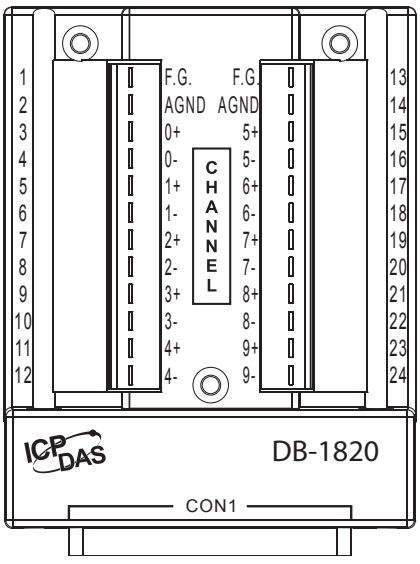


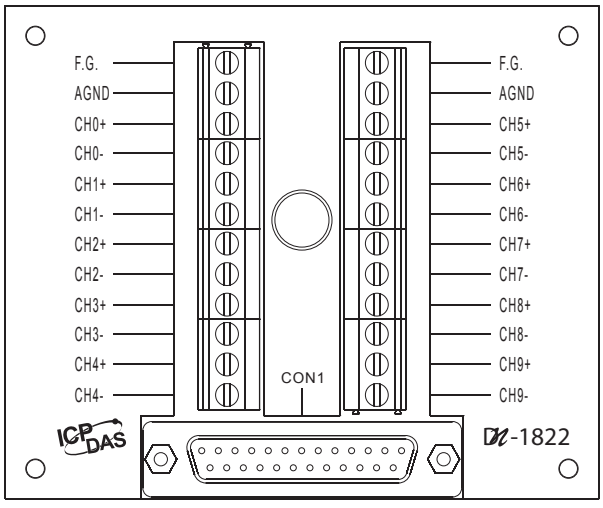
THEN / ELSE Actions	
DO Channel	ON, OFF, Pulse Output
Internal Register	Change the value
DO Counter	Reset
Timer	Start, Reset
Email CGI Commands	Send
Recipe	Execute
P2P	DO(On/Off), AO, IR
Rule Status	Enable, Disable

Pin Assignments

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

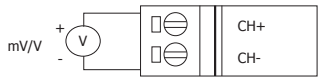




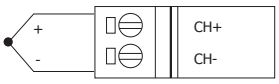


Wire Connections

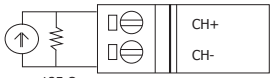
Voltage Input (Default)



Thermocouple Input (Default)

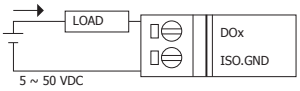
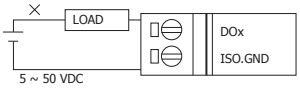


Current Input

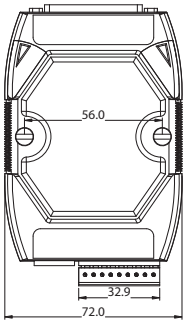


Note: When connecting to a current source, an optional external 125 Ω resistor is required.

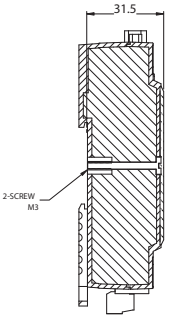
Digital Output

ON State Readback as 1	
OFF State Readback as 0	

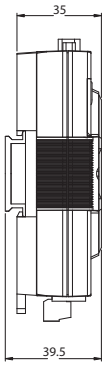
Dimensions (Unit:mm)



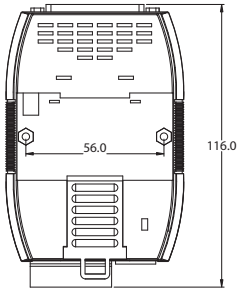
Front View



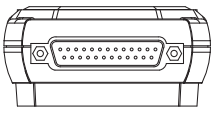
Right Side View



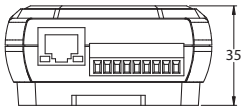
Din Rail Mounting Bracket



Back View

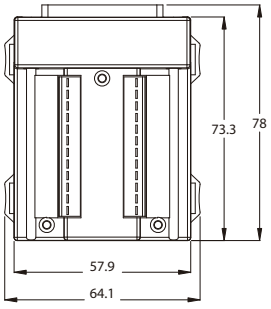


Top View

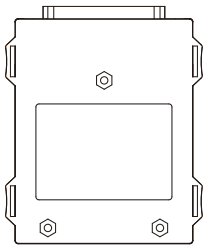


Bottom View

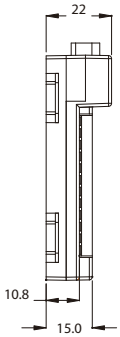
DB-1820



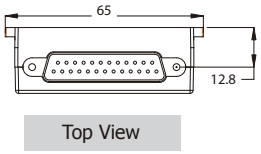
Front View



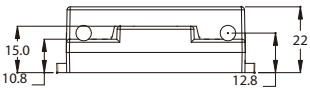
Back View



Left Side View

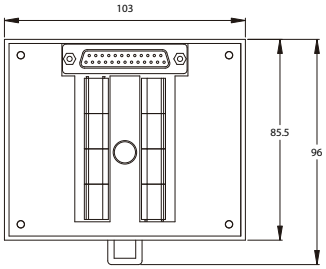


Top View

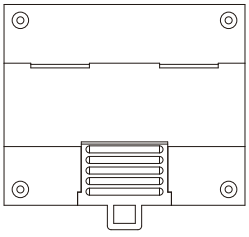


Bottom View

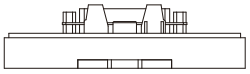
DB-1822



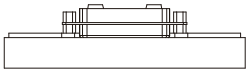
Front View



Back View

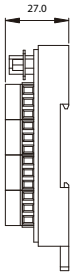


Top View



Bottom View

Right Side View



Left Side View

Ordering Information

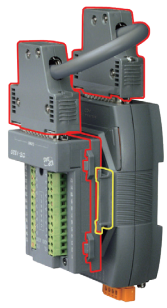
WISE-7118Z/S CR	10-channel Thermocouple Input with High Voltage Protection and 6-channel Isolated Output PoE Module(RoHS) and DB-1820 daughter board.
WISE-7118Z/S2 CR	10-channel Thermocouple Input with High Voltage Protection and 6-channel Isolated Output PoE Module(RoHS) and DN-1822 daughter board and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

WISE-7118Z/S = DB-1820 Connects to the WISE-7118Z Directly

WISE-7118Z/S2 = DN-1822 Connects to the WISE-7118Z Directly

Accessories

NS-205 CR	Unmanaged 5-port Industrial Ethernet Switch; requires a 24 VDC Input (RoHS)
NS-205PSE CR	Unmanaged Ethernet switch with 4-PoE and 1 RJ45 uplink; requires a 48 VDC Input (RoHS)
NS-205PSE-24V CR	Unmanaged Ethernet switch with 4-PoE and 1 RJ45 uplink; requires a 24 VDC Input (RoHS)
MDR-20-24 CR	24V/1A, 24 W Power Supply with DIN-Rail Mounting (RoHS)
DIN-KA52F-48 CR	48V/0.52A, 25 W Power Supply with DIN-Rail Mounting (RoHS)
CD-2518D CR	25F-25M 1.8 m Cable with DIN-Rail Mount for the DB-1820 (RoHS)
CD-25015 CR	25F-25M 15 cm Cable with DIN-Rail Mount for the DB-1820 (RoHS)
4PAPP-006-G CR	Plastic Rack (RoHS)



CD-25015
15 cm Cable + DB-1820

4PAPP-006-G

WISE-7118Z/S + CD-25015 + 4PAPP-006-G

CD-2518D
1.8 m Cable + DB-1820

WISE-7118Z/S + CD-2518D