Fiche technique

WISE (Web Inside, Smart Engine)

WISE-7118Z

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

Analog Input & Digital Output

Features

- Built-in Web Server for IF-THEN-ELSE rule setting
- Built-in IF-THEN-ELSE rule enigne 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 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 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 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_{rms}
Open Thermocouple Detection	Yes
Individual Channel Configuration	Yes
ESD Protection	+/-4 kV (Contact for each channel) +/-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_{DC} ~ 50 V_{DC}

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_{DC}
AI and DO	2500 V_{rms}
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_{DC} ~ +48 V_{DC} (non-regulated)
LED Indicator	Yes
Power Consumption	0.12 A @ 24 V_{DC} 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

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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.

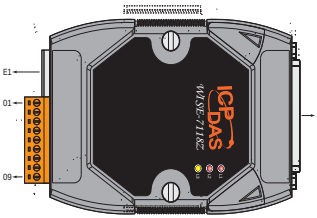
IF Conditions	
AI Channel Internal Register	= 、> 、< 、>= 、<=(value)
DO Counter	= 、> 、< 、>= 、<=(value) 、Change
Timer	Timeout 、Not Timeout
P2P	DI 、AI 、DI counter 、DO counter 、IR
Rule Status	Enable 、Disable

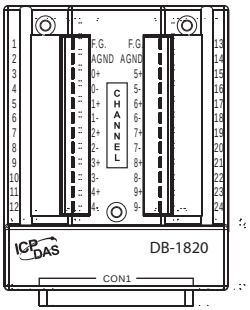
WISE
IF-THEN-ELSE
Rule Engine

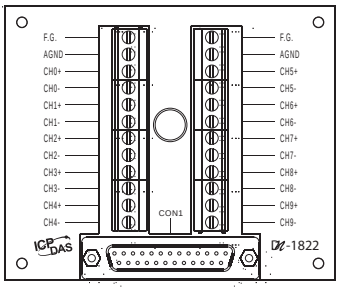
THEN / ELSE Actions	
DO Channel	ON 、OFF 、Pulse Output
Internal Register	Change the value
DO Counter	Reset
Timer	Start 、Stop
Email CGI Commands	Send
Recipe	Execute
P2P	DO(On/Off) 、AO 、IR
Rule Status	Enable 、Disable

Pin Assignment

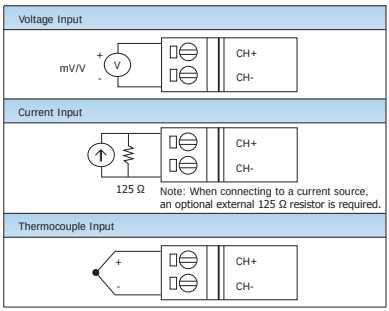
Terminal No.	Pin Assignment
E1	RJ-45
01	DO0
02	DO1
03	DO2
04	DO3
05	DO4
06	DO5
07	ISO.GND
08	(R)+Vs
09	(B)GND

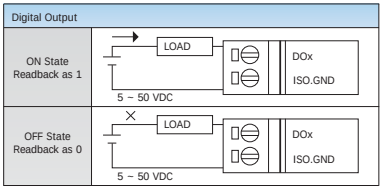




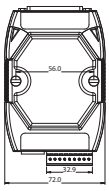


Wire Connection

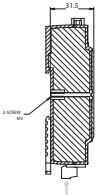




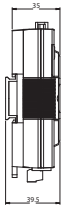
Dimensions (Unit: mm)



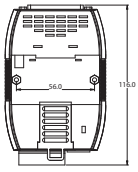
Front View



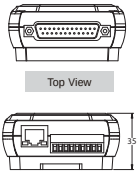
Right Side View



Din Rail Mounting Bracket

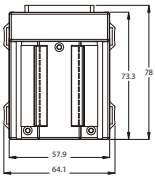


Back View

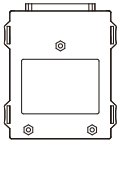


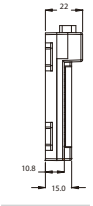
Top View
Bottom View

DB-1820

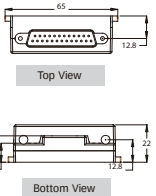


Front View


Back View

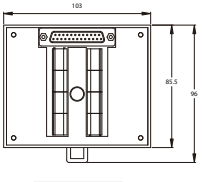


Left Side View

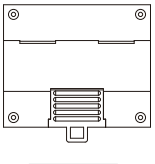


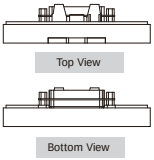
Top View
Bottom View

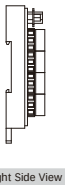
DN-1822

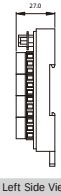


Front View


Back View


Top View
Bottom View


Right Side View



Left Side View

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)

ET-7018Z Connects DB-1820 Directly

ET-7018Z Connect DB-1820 with CD-2518D Kit

ET-7018Z Connect DB-1820 with CD-25015 kit