Multi Function I/O

⚡ 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
- AI: 6 (mV, V, mA)
- AO: 2 (V, mA)
- DO: 2 (Open Collector Output)
- DI: 2 (Dry+Wet)

WISE-7126

6-channel Analog Inputs, 2-channel Analog Outputs, 2-channel Digital Inputs And 2-channel Digital Outputs 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-7126 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-7126 will still be able to receive power from auxiliary power sources like AC adapters or battery, etc.

This multi-function module WISE-7126 supports Modbus/TCP protocol to make seamless integration with SCADA software available. It features 6-channel analog inputs, 2-channel analog outputs , 2-channel digital inputs and 2-channel digital outputs. Each analog input channel provides 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		6 (Differential)
Input Type		+/- 500 mV, +/- 1V, +/- 5 V, +/-10 V + 0 mA ~ + 20 mA, +/- 20 mA, 4-20mA (jumper selectable)
Resolution	Normal Mode	16-bit
	Fast Mode	12-bit
Sampling Rate	Normal Mode	10 Samples/Sec.
	Fast Mode	60 Samples/Sec. (Total)
Accuracy	Normal Mode	+/-0.1%
	Fast Mode	+/-0.5% or better
Bandwidth	Normal Mode	15.7 Hz
	Fast Mode	78.7 Hz
Zero Drift		+/-20 uV/°C
Span Drift		+/-25 ppm/°C
Input Impedance		Voltage Input: 2M Ω, Current Input: 125 Ω
Common Mode Rejection		86 dB Min.
Normal Mode Rejection		100 dB
Open Wire for Current Output		4 ~ 20mA
Overvoltage Protection		240 V$_{rms}$
ESD Protection		+/-4 kV (Contact for each channel) +/-8 kV air for random point
EFT Protection		+/-4 kV for Power

Analog Output

Output Channels	2
Output Type	+ 0 V$_{DC}$ ~ + 5 V$_{DC}$, +/- 5 V$_{DC}$, + 0 V$_{DC}$ ~ + 10 V$_{DC}$, +/- 10 V$_{DC}$,+ 0 mA ~ + 20 mA, + 4 mA ~ + 20 mA (jumper selectable)
Resolution	12-bit
Accuracy	+/- 0.1% of FSR
Voltage Output Capability	10 V@20 mA
Current Load Resistance	500 Ohms
Power-Up and SafeValue	Yes
Open Wire for Current Output	4 ~ 20mA

Digital Output

Output Channels	2 (Sink)
Output Type	Isolated Open Collector
Max Load Current	700 mA/Channel
Load Voltage	+ 5 V$_{DC}$ ~ + 50V$_{DC}$
External Power Reversed Protection and Short Circuit Protection	Yes
Over-Temperature Protection	Yes, 150 °C
Current limited Protection	1.1 A

Digital Input

Input Type		2 (Dry+Wet)	
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$_{DC}$ ~ + 30 V$_{DC}$
Counters	Channels	2
	Max. Counts	16-bit (65535)
	Max. Input Frequency	50 Hz
	Min. Pulse Width	10 ms

📄 System Specifications

System

CPU	80186 CPU (80 MHz)
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, AO, DI 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

☑ Software Specifications

| Functions	
36 IF-THEN-ELSE Logic Rules	3 IF conditions with AND or OR operators 3 THEN actions 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.
Rule Configuration Website	Access Web server on WISE controllers to edit and upload logic rules through web browser.
Modbus/TCP Protocol	Real time control and monitoring I/O channels and system status of controllers via SCADA software.

IF Conditions	
DI Channel	ON、OFF、ON to OFF、OFF to ON、Change
AI Channel	
Internal Register	=、>、<、>=、<=(value)
DI Counter	
DO Counter	=、>、<、>=、<=(value)、Change
Timer	Timeout、Not Timeout

WISE
IF-THEN-ELSE
Rule Engine
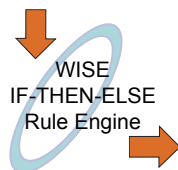
THEN / ELSE Actions	
DO Channel	ON、OFF、Pulse Output
AO Channel	Change the value
Internal Register	
DI Counter	Reset
DO Counter	
Timer	Start、Stop
Email	Send

☑ Pin Assignment

Terminal No.	Pin Assignment
E1	RJ-45
01	Vout1+
02	AGND
03	DO0
04	DO1
05	DI0
06	DI1
07	ISO.GND
08	+VS
09	GND

WISE-7126
ICP DAS
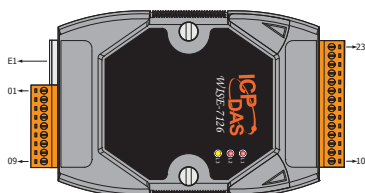
Terminal No.	Pin Assignment
23	AGND
22	Vout0+
21	Vin5-
20	Vin5+
19	Vin4-
18	Vin4+
17	Vin3-
16	Vin3+
15	Vin2-
14	Vin2+
13	Vin1-
12	Vin1+
11	Vin0-
10	Vin0+

☑ Wire Connection

Voltage Input

mV/V + V − Vin+ Vin- JUMPER

Current Input

mA + − Vin+ Vin- JUMPER

Digital Output

LOAD 5~50VDC DOx ISO.GND

Digital Input

DIx ISO.GND

Voltage Output

Load + V − Vout+ AGND

Current Output

Load Vout+ AGND

☑ Dimensions (Unit: mm)

49
11
56
101,2
123
33
11
59,2
72

Front View

Right Side View

35

Bottom View
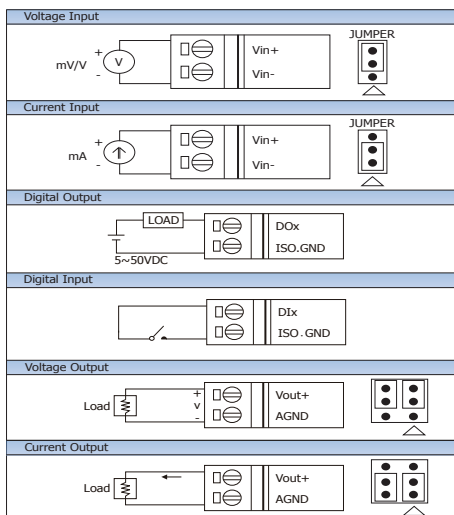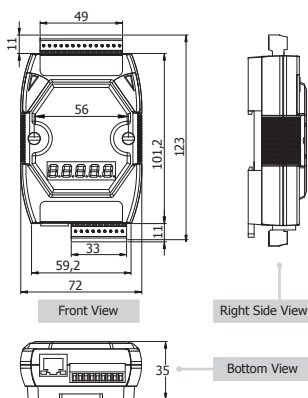
☑ Ordering Information

WISE-7126	6-channel Analog Inputs, 2-channel Analog Outputs, 2-channel Digital Inputs And 2-channel Digital Outputs PoE Module (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)