WISE (Web Inside, Smart Engine)

WISE-7126

6-channel Analog Inputs, 2-channel Analog Outputs, 2-channel Digital Inputs And 2-channel Digital Outputs PoE Module

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)

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	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, 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

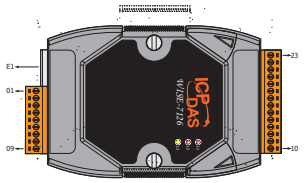
Functions	
Rule Configuration Website	Access Web server on WISE controllers to edit and upload logic rules through web browser.
36 IF-THEN-ELSE Logic Rules	3 IF conditions with AND or OR operators 3 THEN actions and 3 ELSE actions
48 Internal Registers	Hold temporary variables and read/write data via 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	
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
P2P	DI · AI · DI counter · DO counter · IR
Rule Status	Enable · Disable

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

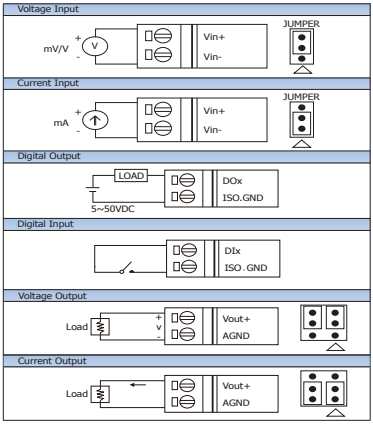
Pin Assignment

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

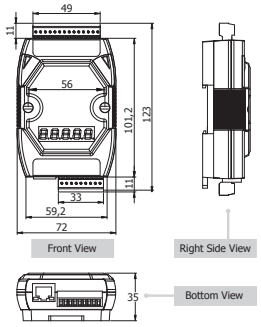


Terminal No.	Pin Assignment
23	AGND
22	Vout0+
21	Vin5-
20	Vin5+
19	Vin4-
18	Vin4+
17	Vin3-
16	Vin3+
15	Vin2-
14	Vin2+
13	Vin1-
12	Vin1+
11	Vin0-
10	Vin0+

Wire Connection



Dimensions (Unit: mm)



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)