



Quad-band Automation Controller

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
- 10/100 Base-TX Ethernet
- Support GSM: Quad-band 850/900/1800/1900 MHz
- I/O: 3 channels DI, 3 channels DO, 8 channels AI
- 128*64 dots LCM display (only for WISE-4000D)



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.

The WISE-4000 is an embedded controller that is perfect for use in real-time industrial equipment monitoring and environment monitoring. It allows updated status information being sent to the backend monitoring system via Ethernet interface. WISE-4000 supports Modbus/TCP protocol that allows seamless integration with SCADA software. It features 3 digital inputs, 3 digital outputs and 8 analog inputs. WISE-4000 also features SMS sending function for alarm report. By integrating with IF-THEN-ELSE rule engine, WISE-4000 even provides more powerful functions such as Schedule · Send SMS · Send e-mail · Timer & I/O operation for use in various industrial applications.

Applications

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

I/O Specifications

Digital Input	
Input Channels	3
Input Type	Source(Dry Type), Common Ground
On Voltage Level	+3.5 V _{OC} ~ +30 V _{OC}
Off Voltage Level	+1 V _{OC} Max.
Isolated Voltage	Non-isolated
Counters	Max. Count
	65535 (16 bits)
	Max. Input Frequency
	50 Hz
	Min. Pulse Width
	10 ms
Digital Output	
Output Channels	3
Output Type	Open Collector (Sink/NPN)
Load Voltage	+30 V _{OC} Max.
Load Current	100 mA Max.
Isolated Voltage	Non-isolated
Counters	Max. Count
	65535 (16 bits)
	Max. Input Frequency
	50 Hz
	Min. Pulse Width
	10 ms
Analog Input	
Input Channels	8
Input Range/Type	0~20 mA
Resolution	12-bit
Sampling Rate	1 KHz max. (Read one channel)

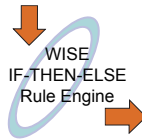
System Specifications

Item	WISE-4000	WISE-4000D
CPU	16-bit CPU	
SRAM/Flash	512K/512K, real time clock, watchdog timer	
EEPROM	16 KB	
NVRAM	31 bytes	
RTC (Real Time Clock)	RTC Provide seconds, minutes, hours, date of week/month; month and year, valid from 1980 to 2079	
Communication Interface		
COM ports	No (Unsupported by WISE firmware)	
Ethernet	10/100 Base-TX Ethernet controller	
SMS Function		
Frequency Band	Quad-band 850/900/1800/1900 MHz	
Mode	Text and Unicode mode	
LCD Interface		
General	Effective display area	- 80.61 mm x 14.37 mm (W x H)
	Module Dimension	- 93 mm x 70 mm x 1.6 mm (W x H x T)
Life Time	-	Expected life is more than 100,000 hours under normal operation
Power		
Protection	Power reverse polarity protection	
Frame Ground Protection	ESD, Surge, EFT, Hi-Pot	
Power Requirement	15W; Unregulated +10 V _{OC} ~ +30 V _{OC}	
Power Consumption	Idle: 75 mA @ 24 V _{OC} ; Data Link: 150 ~ 400 mA (peak) @ 24 V _{OC}	
LED Indicators		
System	Red	
Mechanical		
Dimensions	72 mm x 123 mm x 35 mm (W x H x D)	
Installation	DIN-Rail or Wall mounting	
Environment		
Operating Temperature	-20 °C ~ +70 °C	-15 °C ~ +55 °C
Storage Temperature	-40 °C ~ +80 °C	-20 °C ~ +70 °C
Humidity	5~90% RH, non-condensing	

Software Specifications

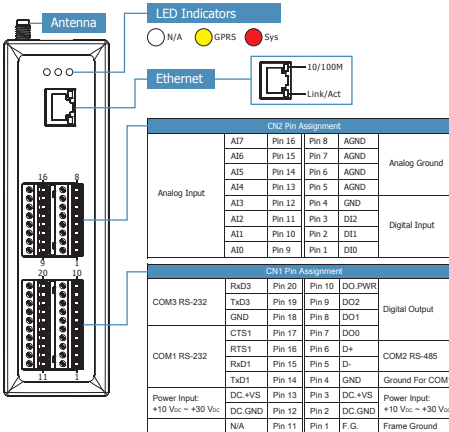
Functions	
Rule Configuration Website	Access Web server on WISE controllers to edit and upload logic rules through web browser.
36 IF-THEN-ELSE Logic Rules	3 IF conditions with AND or OR operators 3 THEN actions and 3 ELSE actions
48 Internal Registers	Hold temporary variables and read/write data via Modbus/TCP address.
12 Timers	Delay / Timing functions.
12 Schedules	Setup prescheduled routine tasks.
12 SMS	Send SMS to pre-set mobile phone numbers.
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	= > < > = < = (value)
Internal Register	
DI Counter	= > < > = < = (value) · Change
DO Counter	
Timer	Timeout · Not Timeout
Schedule	In Range · Out of Range
P2P	DI · AI · DI counter · DO counter · IR
Rule Status	Enable · Disable



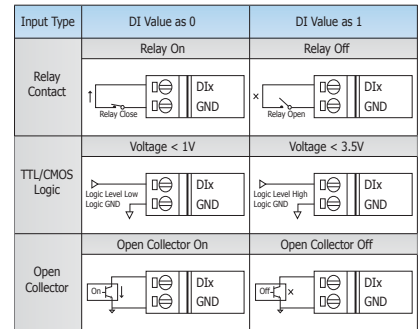
THEN / ELSE Actions	
DO Channel	ON · OFF · Pulse Output
Internal Register	Change the value
DI Counter	Reset
DO Counter	
Timer	
Schedule	Start · Stop
SMS	
Email	Send
CGI Commands	
Recipe	Execute
P2P	DO(On/Off) · AO · IR
Rule Status	Enable · Disable

Pin Assignment

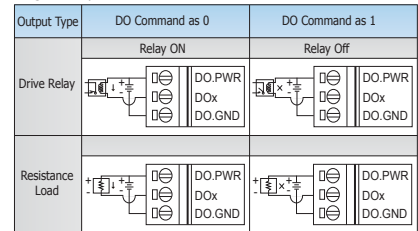


Wire Connection

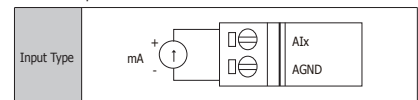
Digital Input Wire Connection



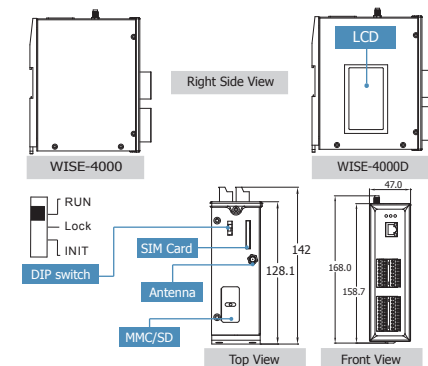
Digital Output Wire Connection



Current Input Wire Connection



Dimensions (Unit: mm)



Ordering Information

WISE-4000	3-channel DI, 3-channel DO, and 8-channel AI WISE Controller with SMS Module (RoHS)
WISE-4000D	3-channel DI, 3-channel DO, and 8-channel AI WISE Controller with SMS Module and LCD Display (RoHS)

Accessories

ANT-421-01	3m external GPRS/GSM antenna
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