



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 SMS (GSM: Quad-band 850/900/1800/1900 MHz)
- I/O: 3 channels DI, 3 channels DO, 8 channels AI
- 128*64 dots LCM display (apply to WISE-4000D only)



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.

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, Testing Equipment, etc.

I/O Specifications

Analog Input		
Input Channels		8
Input Range/Type		0~20 mA
Resolution		12-bit
Sampling Rate		1 KHz max. (Read one channel)
Accuracy		+/- 2 LSB (+/- 0.0097 mA)
Digital Input		
Input Channels		3
Input Type		Source(Dry Type), Common Ground
On Voltage Level		+ 3.5 V _{DC} ~ + 30 V _{DC}
Off Voltage Level		+ 1V _{DC} 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 _{DC} 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

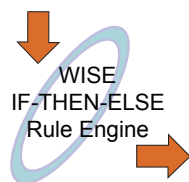
System Specifications

Model	WISE-4000	WISE-4000D	
System			
CPU	16-bit CPU		
SRAM	512KB		
Flash Memory	512KB		
EEPROM	16KB		
NVRAM	31 bytes		
RTC (Real Time Clock)	RTC Provide seconds, minutes, hours, dateof week/month; month and year, validfrom 1980 to 2079		
Communication			
COM ports	Reserved		
Ethernet Port	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
LED Indicators			
System	Red		
Power Requirements			
Reverse Polarity Protection	Yes		
Frame Ground Protection	ESD, Surge, EFT, Hi-Pot		
Input Range	15W; Unregulated +10 V _{DC} ~ +30 V _{DC}		
Consumption	Idle: 75 mA @ 24 V _{DC} Data Link: 150 ~ 400 mA (peak) @ 24 V _{DC}		
Mechanical			
Dimensions (W x L x D)	47 mm x 142 mm x 168 mm		
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

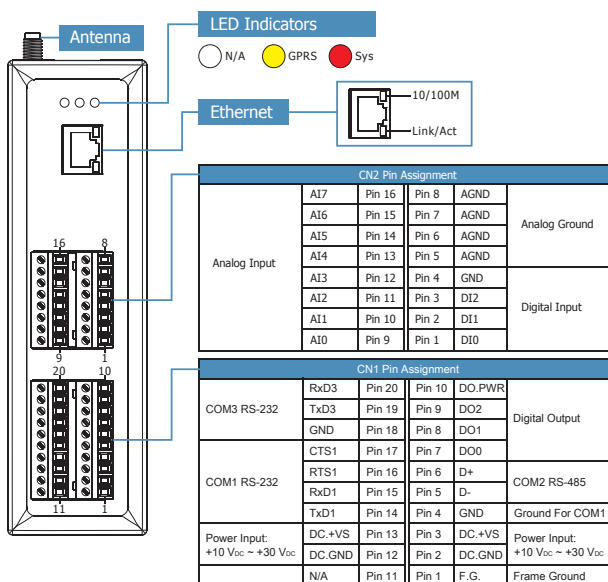
Functions	
Rule Configuration Website	Access Web server on WISE controllers to edit and upload logic rules through web browser.
36 IF-THEN-ELSE Logic Rules	3 IF conditions with AND or OR operators 3 THEN actions and 3 ELSE actions
48 Internal Registers	Hold temporary variables and read/write data via 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	
Internal Register	=, >, <, >=, <= (value)
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



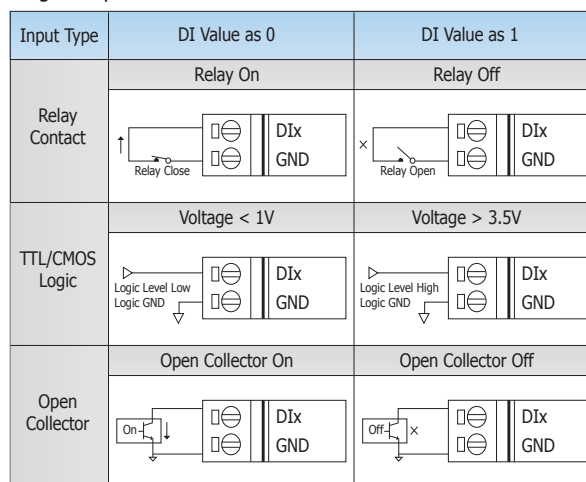
THEN / ELSE Actions	
DO Channel	ON, OFF, Pulse Output
Internal Register	Change the value
DI Counter	Reset
DO Counter	
Timer	
Schedule	Start, Reset
SMS	
Email	Send
CGI Commands	
Recipe	Execute
P2P	DO(On/Off), AO, IR
Rule Status	Enable, Disable

Pin Assignments

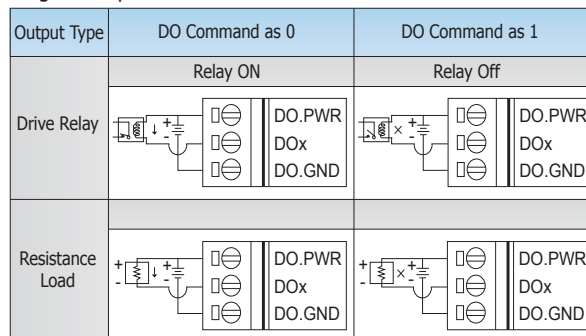


Wire Connections

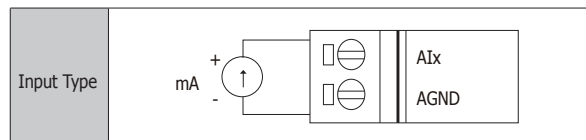
Digital Input Wire Connection



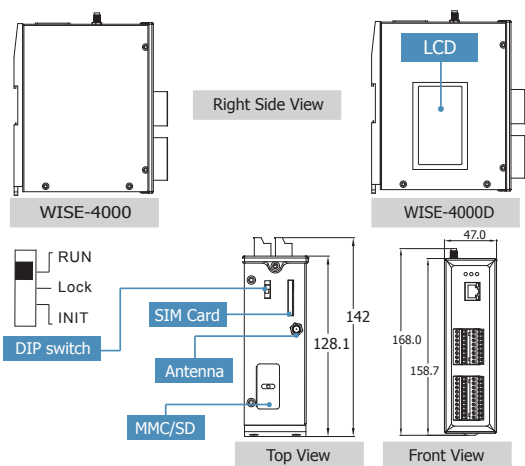
Digital Output Wire Connection



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
-------------------	------------------------------