

WISE Web Inside, Smart Engine

A Web-based Intelligent Industrial Controller

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WISE Introduction

WISE (**W**eb **I**nside, **S**mart **E**ngine) 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 System Architecture

Through Web browser, users can access Web Server on WISE controllers to perform tasks such as logic rule edition and upload. A Rule Engine will be set up to manage and deploy logic rules for controllers. The Rule Engine will check whether the rules are valid or not and determine the execution of actions under specific conditions, for examples: setting up I/O channel values, perform scheduled tasks, sending Email or sending SMS message under a specific condition. In addition, through the Modbus TCP Protocol, SCADA package enables to control and monitor I/O channel or system status on controllers in real time.

Applications

- Building Automation
- Factory Automation
- Machine Automation
- Remote Maintenance
- Remote diagnosis
- Equipment Monitoring

Features

IF-THEN-ELSE logic rules execution ability

WISE controller equips with an IF-THEN-ELSE logic Rule Engine, it offers up to 36 IF-THEN-ELSE rules for users to set up the logic content. After completing rule edition and uploading rules to the WISE controller, the Rule Engine will loop execute the rules in accordance with the execute order under specific conditions.

No extra software tool is required

WISE HMI interface runs on regular Web browsers. To edit control logic, it only requires a browser to connect to the Web server on WISE controller. No extra software tool installation is needed on the target PC.



▲ WISE HMI Website

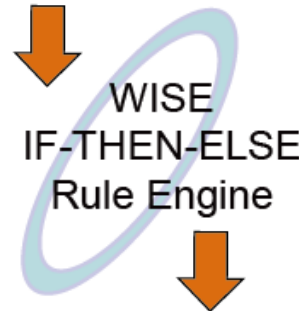
No more programming

WISE provides user-friendly Web UI pages for editing control logic on the controllers. It enables to implement logic edition by a few clicks on the mouse to set up and deploy logic rules without writing a single line of code.



▲ Just click and get done!

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 Range



THEN / ELSE Actions	
DO Channel	ON \ OFF \ Pulse Output
AO Channel	Change the value
Internal Register	
DI Counter	Reset
DO Counter	
Timer	Start \ Stop
Schedule	
Email	Send
SMS	

▲ IF-THEN-ELSE Rule Engine

Provide Timer and Schedule operation

WISE features Timer and Schedule functions: It allows user to schedule specific date or time for control logic execution, or perform specific tasks such as time delay.

Seamless integration with SCADA

WISE supports Modbus TCP Protocol for users to perform real-time monitoring and control of the controllers. Through Modbus TCP, it allows SCADA package seamlessly integrate with WISE and enables total solutions for remote monitoring and control.

Remote monitoring and alarm via SMS or Email

WISE supports SMS and Email functions for real-time message communication. The sending action can be added to the logic edition as part of logic control to provide real-time message transmission function.

Specification

ICP DAS provides various WISE controllers for users to choose from to meet their demands for use in various industrial applications. Each WISE controller's specification is as below:

Hardware

● WISE-71xx Intelligent AIO & DIO Controller

Model		WISE-7115	WISE-7117	WISE-7118Z	WISE-7119	WISE-7126
OS		MiniOS7				
Built-in Software		WISE Firmware				
CPU / SRAM		80186 CPU(80 MHz) / 512KB				
Ethernet Port		10/100 Base-TX with PoE (Power over Ethernet)				
I/O Channel	DI	-	-	-	-	2
	DO	-	4	6	4	2
	AI	7	8	10	8	6
	AO	-	-	-	-	2
Over Voltage Protection		-	240 Vrms	240 Vrms	240 Vrms	240 Vrms
Note		* Support RTD	-	* Also Support Thermocouple Input		-




● WISE-71xx Intelligent DIO Controller

Model		WISE-7144	WISE-7151	WISE-7160	WISE-7167
OS		MiniOS7			
Built-in Software		WISE Firmware			
CPU / SRAM		80186 CPU(80 MHz) / 512KB			
Ethernet Port		10/100 Base-TX With PoE (Power over Ethernet)			
I/O Channel	DI	8	16	6	-
	DO	8 (Sink Type)	-	6 (Power Relay)	8 (Power Relay)
Note		* DI for Sink & Source Type			-

- WISE-7901 Extensible IO Intelligent Controller
- WISE-4000 GPRS/GSM Intelligent Controller

Model	WISE-7901(D)	WISE-4000(D)
OS	MiniOS7	
Built-in Software	WISE Firmware	
CPU / SRAM	80186 CPU(80 MHz) / 512KB	
Ethernet Port	10/100 Base-TX with PoE (Power over Ethernet)	10/100 Base-TX
GPRS/GSM	-	GPRS/GSM Tri-band 900/1800/1900 MHz
I/O Function	Support ICP DAS IO expansion board (X-Board) : X107 · X109 · X110 · X111 · X202 · X203 · X303 · X304 · X305 · X308 · X310 · X324	3 Digital inputs · 3 Digital outputs & 8 Analog inputs
Note	* WISE-7901D is WISE-7901 with LED Display	* WISE-4000D is WISE-4000 with LCD Display

Software

Model			
	WISE-71xx	WISE-7901(D)	WISE-4000(D)
Rule Configuration Website	Yes	Yes	Yes
36 IF-THEN-ELSE Logic Rule Support	Yes	Yes	Yes
IO Function Support	Yes(Built-in)	Yes(With X-Board)	Yes(Built-in)
48 Internal Register Support	Yes	Yes	Yes
12 Timer Support	Yes	Yes	Yes
12 Email Support	Yes	Yes	Yes
Modbus/TCP Protocol	Yes	Yes	Yes
12 Schedule Support	-	Yes	Yes
12 SMS Support	-	-	Yes

Application Story

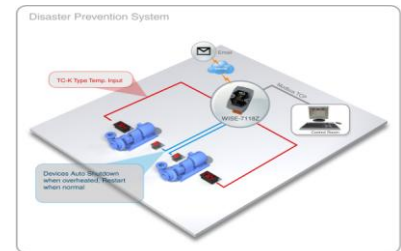
● Greenhouse Automation Solution

Greenhouse cultivation plays a very important role in modern agriculture. As the greenhouse usually equips with various high-tech equipments, management tend to be very complex. A automated greenhouse control system powered by WISE brings obvious benefit such as labor saving, but far more importantly, it enables improved quality of produce and information gathering that will make significant differences in profit earning.



● Disaster Prevention System

In factories, most facilities and devices involved are all subject to all kinds of damages. From improper site wiring, lightning strikes, to overrun equipments, a wide variety of damages threaten systems and peripherals constantly. WISE system is perfect to build an automated system that enables real-time monitoring and disaster prevention that will ensure the safety of personals/devices, reduce machine downtime and potential hazards.



● Product Line Management System

Eliminating unnecessary machine downtime, ensuring maximum productivity and maintaining appropriate stocks are keys to successful product line management. A variety of WISE controllers and I/O modules provided by ICP DAS will make it easy for you to take full control of your product line management. WISE is easy-to-learn and easy-to-use tool for creating cutting edge applications and enable flexible logic editing that will meet your project needs.



● Why WISE ?

- ✓ Features IF-THEN-ELSE logic Rule Engine that enables implementing logic configuration via Web Page. No programming is required.
- ✓ Support Modbus TCP Protocol that enables seamless integration with SCADA software.
- ✓ Provide a variety of WISE controllers for use in various industrial applications.
- ✓ Enable SMS or e-mail for immediate response, Schedule & Timer for Rule timing control
- ✓ PoE(Power over Ethernet) for simplifying system design, reducing cable and saving space.

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