Yottacontrol A Series Distributed Control System

A-118X
A-118x User Quick Manual

1. Hardware Vision

Item	Description
1	Inputs
2	Memory Card Slot
3	Indicator, Red: initial mode, Green: normal (run) mode, Spark: no program in controller
4	Inputs
5	Communication Port
6	Incoming Power
7	Buttons
8	LCD display
9	Outputs

2. Overview and Facility

Overview	Facility	
Function Block Diagram + Ladder Diagram system	Function Blocks	1024
Redundant function	Digital Inputs	256
Support Start-up Screen (108*64)	Digital Outputs	128
Multiple communication port	Flag	512
Password protection, copy protection	Analog Inputs	64
36 integrated functions, pre-tested functions	Text Box	16
Linking of 1024 function block is possible	Analog outputs	32
Display of message texts	Block names	256
Integrated data latch	Analog flags	512
Flexibly expandable up to 10000 points	Shift register	1
Support full Modbus protocol	Shift register bits	16
Free PC software"Yotta Edit"+"Yotta Utility"	Open connectors	128
Available adjust program parameter on the controller without a PC.	Timer/Counter	1024 / 1024

3. Accessories

ATP	DSCAB	AMB64	Remote Modules

For further information, please visit : www.yottacontrol.com

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4. Technical Specifications

Type	A-1188S A-1188S-T	A-1188 A-1188-T	A-1188D A-1188D-T	A-1189S A-1189S-T	A-1189 A-1189-T	A-1189D A-1189D-T
Digital Inputs	8			8		
Analog Inputs	--			4 (able to use in digital specification)		
Digital Outputs	4			4		
Input voltage range	Digital ON: 4~30VDC OFF:2VDC(max)			Digital ON: 4~30VDC OFF:2VDC(max) Analog: 0~10VDC		
Continuous Current	Relay: 5 A for resistive load, 2 A for inductive load Transistor: NPN open collector, max. 100mA at 30 VDC					
Incoming Power	10~30 VDC					
Integrated time switches/reserve power	Yes / > 2 years					
Operation temperature	-20°C to +75 °C					
Storage temperature	-25 °C to +80 °C					
Linking of functions	1024(Max)					
Real time clock	Yes					
Protocols	Modbus RTU/Modbus ASCII					
Incorporate operator interface	Yes- with Modbus interface					
Expansion maximum I/O	More than 10000					
Input Operating frequency	15000HZ(DI0~DI3)					
Message text/ display	4 lines of 12 characters					
Communication Port	RS232*1	RS485*2 +RS232*1	RS485*2 +RS232*1	RS232*1	RS485*2 +RS232*1	RS485*2 +RS232*1
Type Instruction	A-118XS: Without LED indicator and LCD monitor, Relay output A-118XS-T：Without LED indicator and LCD monitor, Transistor output A-118X: LED indicator, Relay output A-118X-T：LED indicator, Transistor output A-118XD：LCD monitor, Relay output A-118XD-T：LCD monitor, Transistor output					

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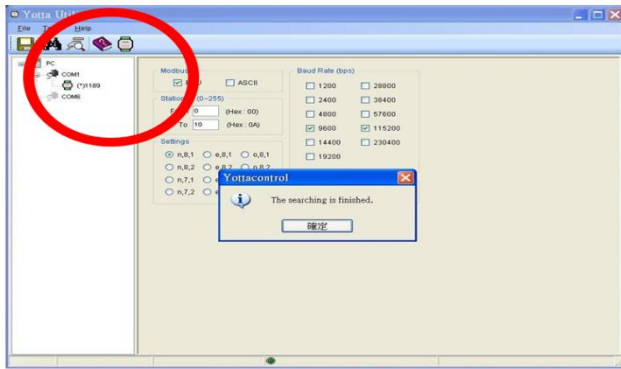
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### 5. Communicate with PC via Yottacontrol Converter or DSCAB

Step1. Prepare controller and Converter or DSCAB	Step2. Turn the controller's status to 'init
Step3. Link controller to converter via twisted pair cable	**Step4. Or linked DSCAB**
Step5. Turn on the controller's power	**Step6. Click Yottacontrol Utility and search the device**

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5. Communicate with PC via Yottacontrol Converter or DSCAB

Step7. Searching is finished	Step8. Click YottaEditor to confirm controller's com port
Step9. Now you can compile program via YottaEditor	
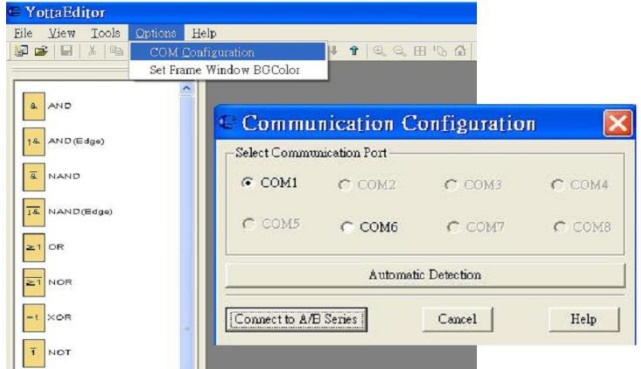
6. Display menu structure and application wiring
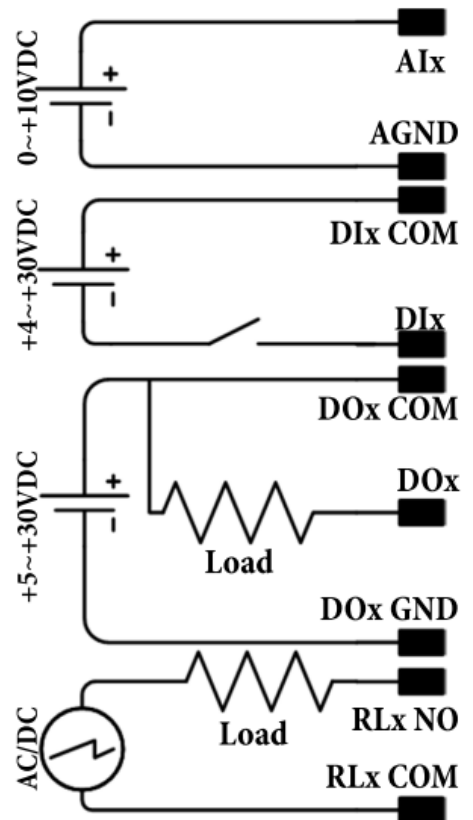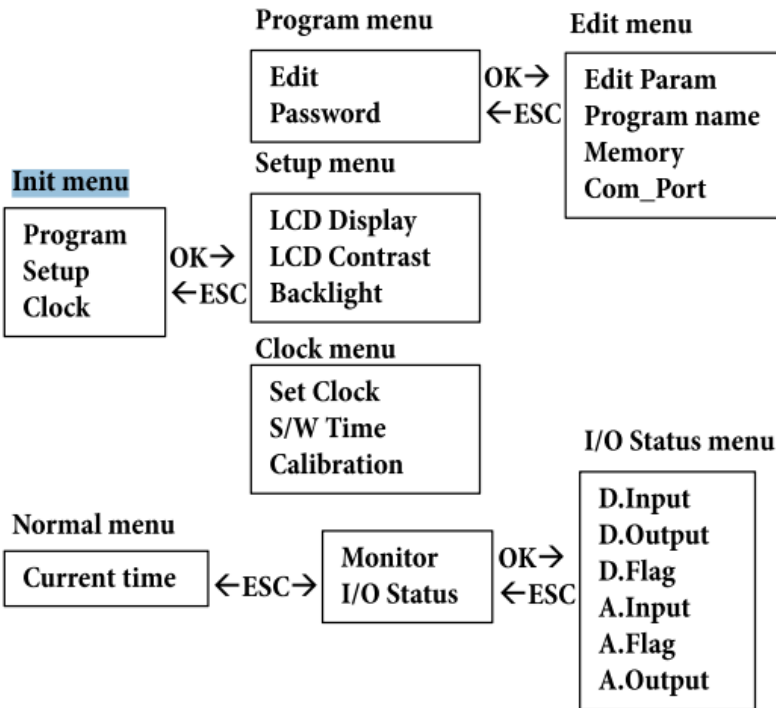
Warning:
Hazardous voltage can cause electrical shock and burns.
Disconnect power before proceeding with any work on this equipment.

Limitations:
When this product is used for the equipment with special safety requirements or on the important occasions, please pay attention especially to the safety of whole system and devices. If it is necessary, please install the safety device to do extra check and timing test and other safety precautions.

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Yottacontrol A Series Distributed Control System

7. YottaEditor

Item	Description	**Main screen**
1	Menu bar	
2	Standard toolbar	
3	Programming interface	
4	Information window	
5	Status bar	
6	Constants and connectors Basic functions Special functions	

In this tab, you can enter detailed information of a circuit program.

Properties-General

7. YottaEditor

All parameters are transferred between PC and controller, and then saved there after the circuit program is downloaded.

Properties-Parameter

Program Name
A program name with up to 16 characters can be entered for the circuit program.

Program Password
A program password with up to 8 alphabetical characters can be assigned to protect the circuit program on controller.
Enter 2 identical passwords in New Password and Repeat New Password text boxes separately to assign a new password for your circuit program. You can delete the assigned password by leaving New Password and Repeat New Password text boxes empty.
You can open or edit the circuit program from YottaEditor at any time no matter if the program is password-protected or not. For password-protected circuit programs, you have to enter the password to view or modify the program on controller, or to load the circuit program from controller to YottaEditor.

Redundancy
Controller provides redundancy to help you build a robust system. In case the server is going down there is a backup server that can take over the job.

There are 3 types for you to choose.
None: Redundancy is not available for this type.
Master: Connected controller is the main controller of the whole system. It communicates with Slave continuously.
Slave: Connected controller becomes Master automatically, if it doesn't receive signals from the Master after a period of time which is defined in the Synchronizing time text box in millisecond.
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7. YottaEditor

You can set the following parameters.
Model: Master, Slave, ATP (A series text panel)
Device address: From 1 to 255 (for slave only)
Protocol: Modbus-RTU, Modbus-ASCII
Baud rate: 1200, 2400, 4800, 9600, 14.4K, 19.2K, 28.8K, 38.4K, 57.6K, 115.2K, 230.4K (bps)
Parity/Data bit/ Stop bit: None, 8, 1/None, 8, 2/Odd, 8, 1/Odd, 8, 2/Even, 8, 1/Even , 8, 2
Timeout: In millisecond
Delay between polls: In millisecond
Data register index: High Low, Low High

Properties-COM

7. YottaEditor

You can place any image into the controller in *.bmp format (108*64)

Properties-Startup Bmp
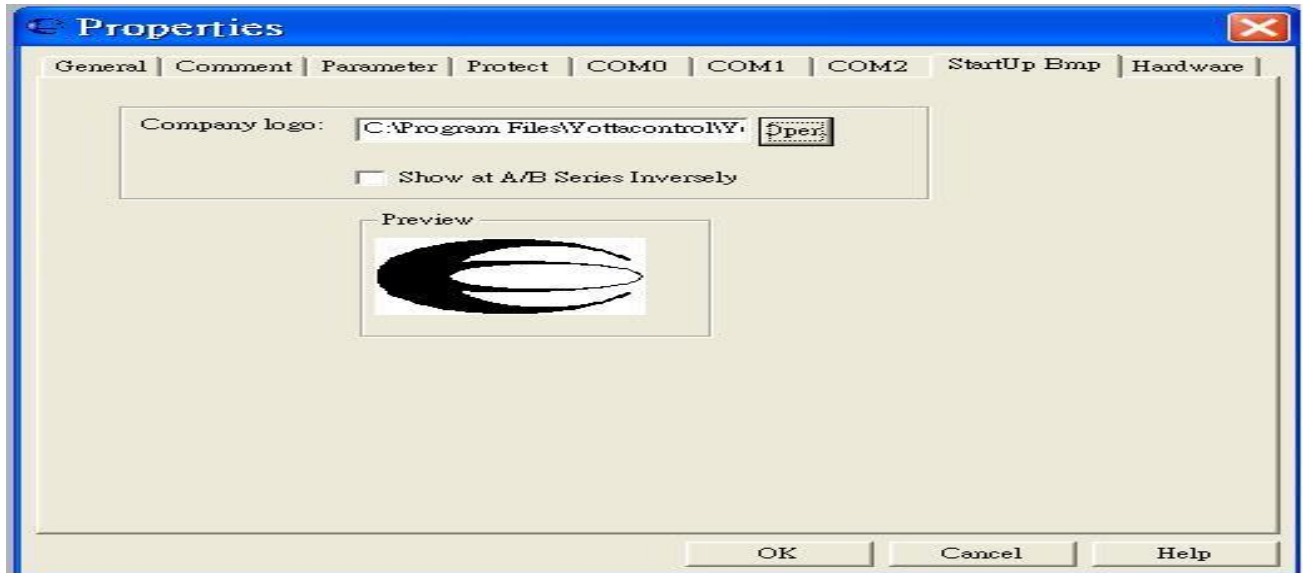
The device selection dialog shows you which blocks and memory resources are available to you. If you have already created a circuit program or are using some blocks, the hardware selection dialog offers you only the A/B-Series devices you can operate with the currently used blocks.

Properties-Hardware
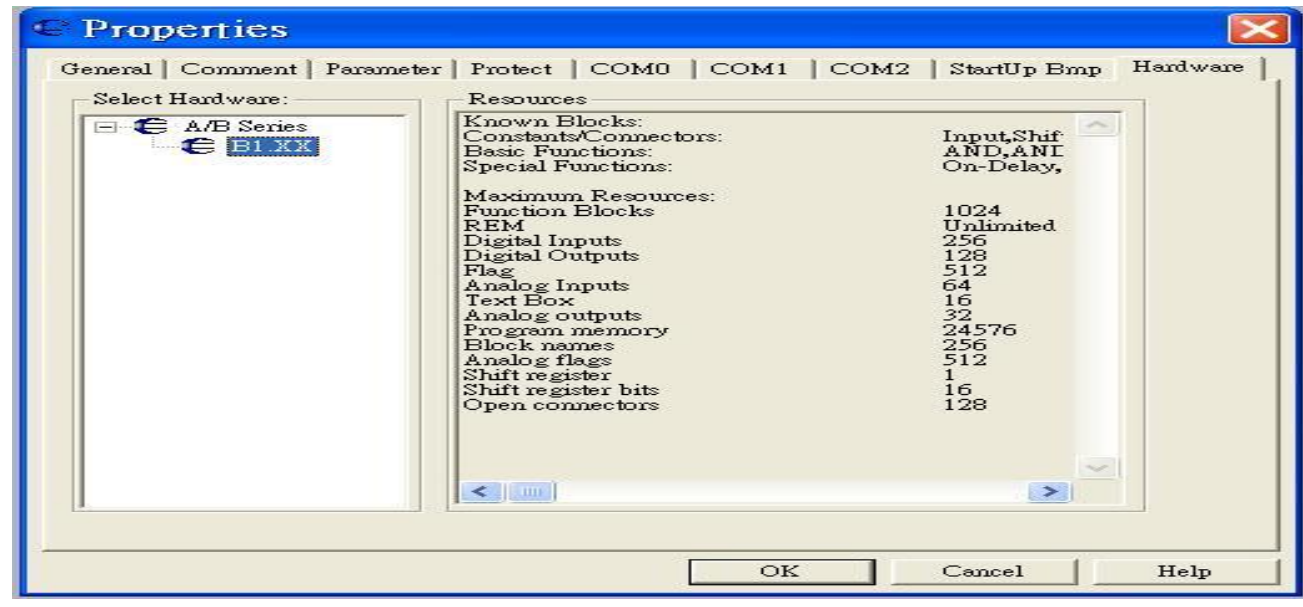
7. YottaEditor

Choose a COM port from the list, if you know exactly which one connects to the controller. If you are not sure which COM port connects to the controller, you can let YottaEditor automatically detect the COM port.

Options-Communication Configuration
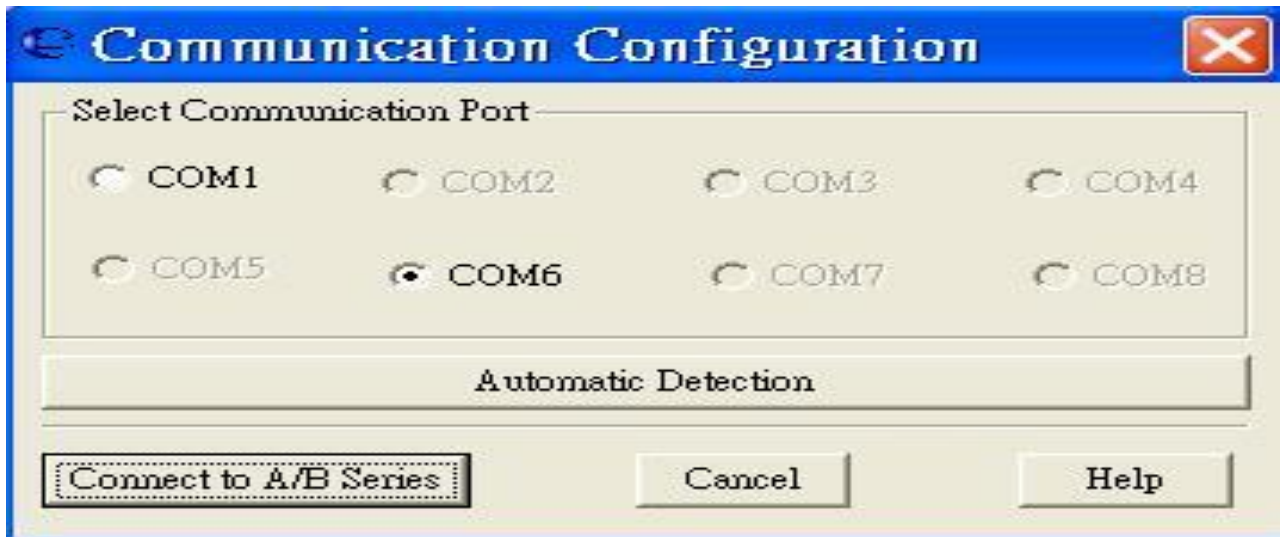
This command can be used to read and set the date and time of connected controller. Click on the Current Time button to apply the system time of PC in YottaEditor.

Tools-Transfer-Clock Setting/Calibration
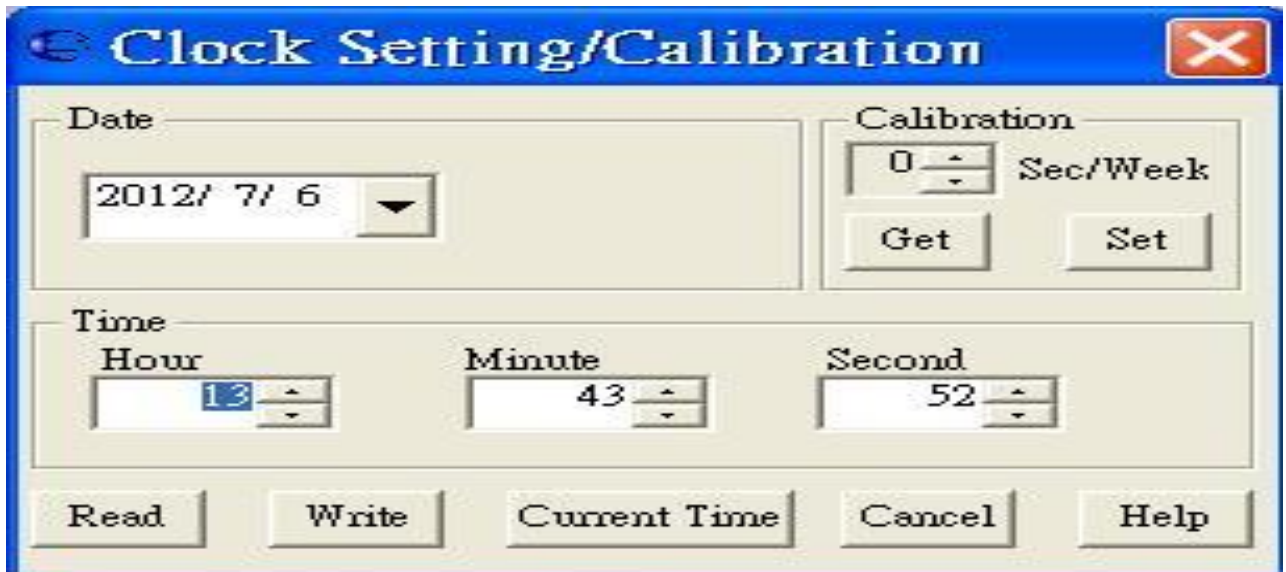
For further information, please visit : www.yottacontrol.com

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7. YottaEditor

This menu command lets you set an automatic conversion of the summer and winter time for the controller's clock.

Tools-Transfer-SummerTime/WinterTime
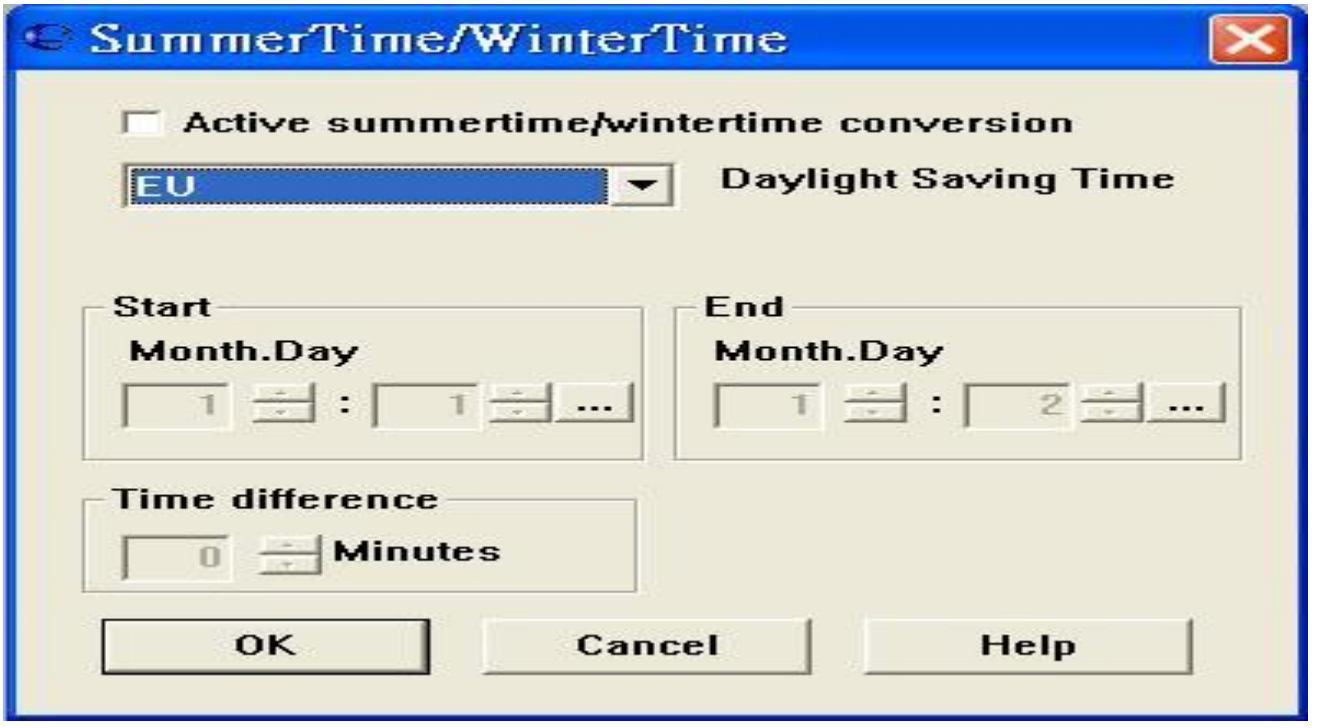
When you enable summer/winter time conversion, you can specify a country-specific time conversion:

*EU: European Union
*UK: United Kingdom of Great Britain and Northern Ireland
*US: United States of America
*Australia
*Tasmania
*New Zealand
*Freely adjustable: customized switchover dates and times

For the "Freely adjustable" selection, you specify the month and day of the switchover. The start time of summer time is 02:00 + the entered time difference; the end time is 03:00 – the entered time difference.

Note: The United States of America redefined the daylight saving time (summer time) / standard time (winter time) switchover dates in 2007. Controller, however, uses the switchover dates as they were prior to 2007. To use the new U.S. switchover times, you must configure a "Freely adjustable" setting that corresponds to the new rule where Daylight Saving Time is in effect from 2:00 a.m. on the second Sunday in March until 2:00 a.m. on the first Sunday in November according to the local time zone.

7. YottaEditor

Simulation
Click on the Tools -> Simulation menu command or the simulation icon in the standard toolbar to start simulation.

Simulation Toolbar
The simulation toolbar, which is shown as follows, is active when the program is in simulation mode. Use this tool to perform the simulation
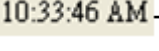
Simulation Control Icons

	Simulate a power failure.
	Start simulation.
	Stop simulation
	Suspend simulation. The Circuit program switches into suspend mode. Resume simulation
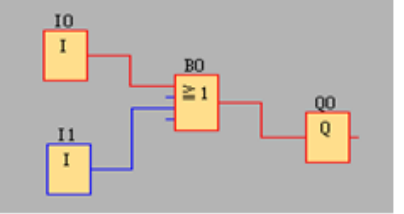
Time Control
For a time-sensitive circuit program, you can use the time control to observe the processes of the circuit program. This is a simple but effective way to predict the result of the program operation.

	Start/stop the simulation in stepping mode. It's available in suspend mode.
01:00	Set a specific period of time or set a specific number of cycles. Depends on the below control.
s	Choose one of the four modes: cycle, second, minute and hour.
10:33:46 AM	Display the current time in YottaEditor.
	Modify the current time in YottaEditor.

Status Display
The value of signal and corresponding connecting line is as follows:

The value of signal	The color of corresponding connecting line	
1	Red	
0	Blue	

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7. YottaEditor

Connect ATP to Controller and select the COM model to ATP.

Yottacontrol A Series Text Panel (ATP)
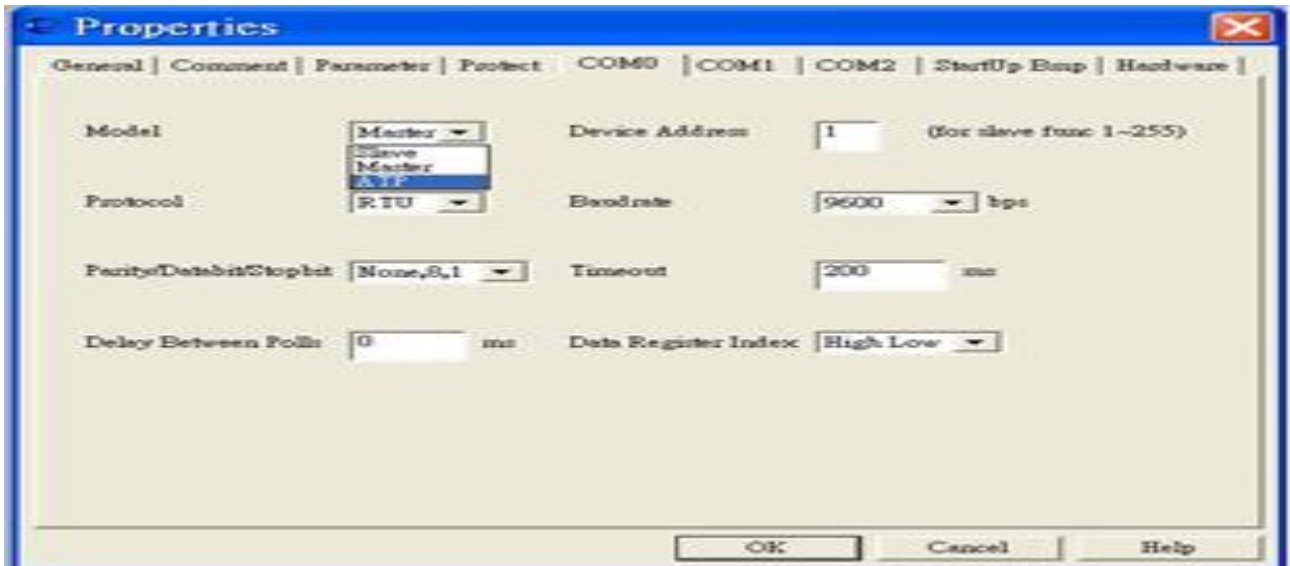
Now available adjust program parameter in the ATP without a PC.
And controller will show 'ATP Connect'.

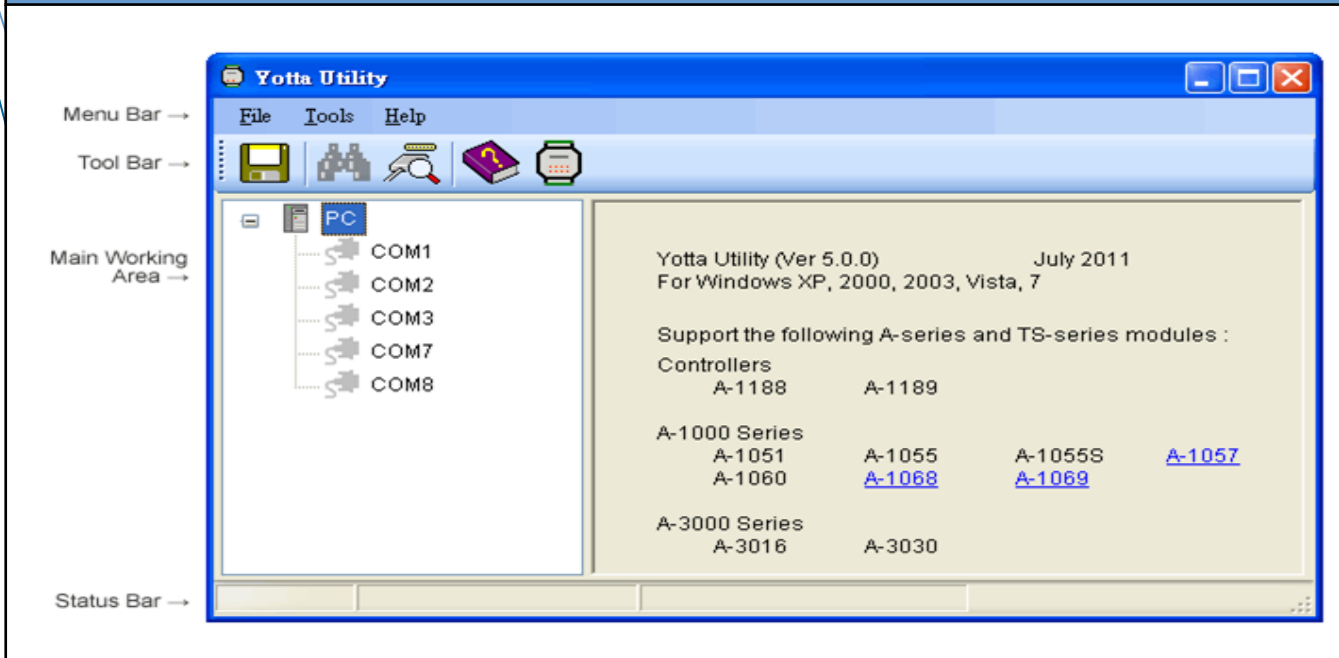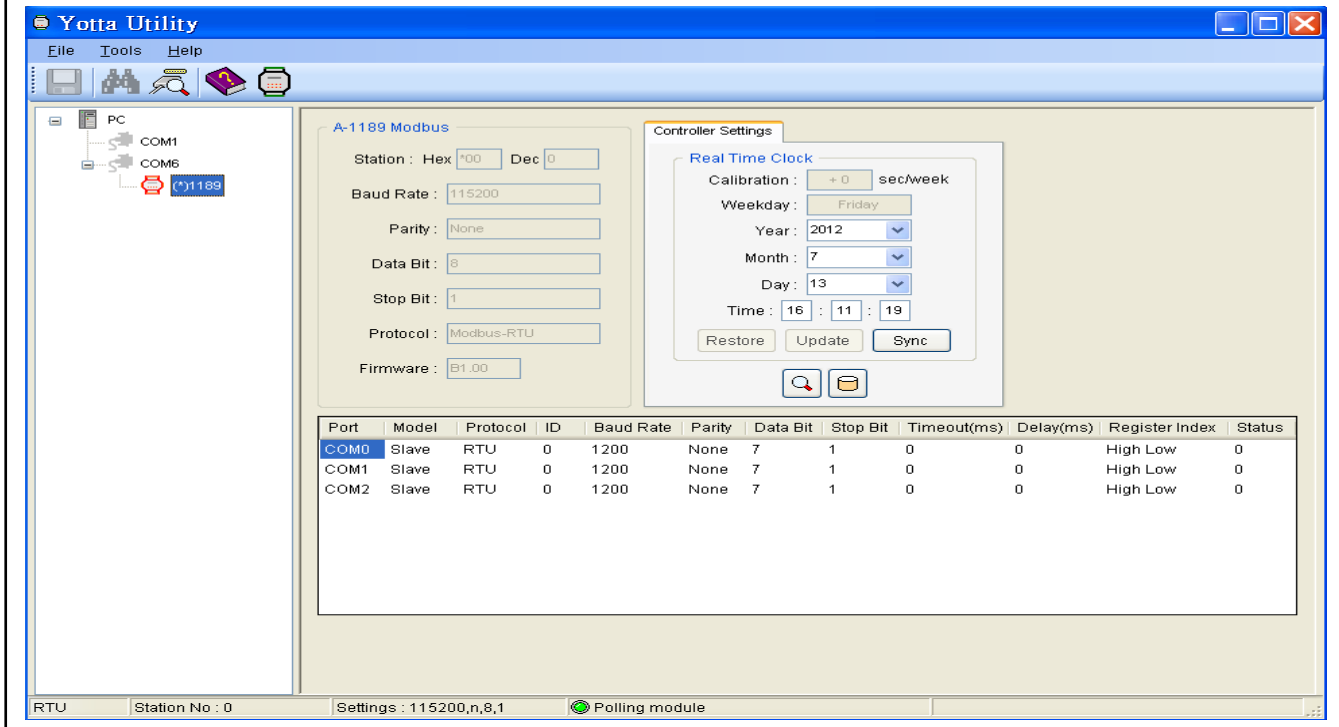For further information, please visit : www.yottacontrol.com

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8. YottaUtility

Main screen

When the controller is in initial mode, you can see the following figure.

Initial mode

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8. YottaUtility

The general settings are read only.	The function of each button is as follows

General setting

A-1189 Modbus

Station : Hex `*00` Dec `0`

Baud Rate : `115200`

Parity : `None`

Data Bit : `8`

Stop Bit : `1`

Protocol : `Modbus-RTU`

Firmware : `B1.00`

	You can find more information about the controller.
🔍	
🗄	The database window shows up.

Calibration and Weekday are read only.

You can set Year, Month, Day and Time.
Press the Update button to store the changed values.
Press the Restore button to restore the RTC value from the controller's memory.
The Update and Restore buttons are available when the Weekday or Time values are changed.
Press the Sync button to synchronize the RTC time with PC.

Real Time Clock

Calibration : `+0` sec/week

Weekday : `Friday`

Year : `2012`

Month : `7`

Day : `13`

Time : `16` : `11` : `19`

Restore Update Sync

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8. YottaUtility

When the button **is pressed, you can see the following figure**

This page lets you get a deep view of the information and status of the controller. The data read from the controller provide the information and status. The label on the left side of each data indicates the meaning of each data.

Controller Information-System Info

This page provides the detailed information of digital signals, such as inputs, outputs, flags and shift registers

Controller Information-Digital

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8. YottaUtility

This page provides the detailed information of analog signals, such as inputs, outputs and flags

Controller Information-Analog

This page provides the detailed information of function block. Please refer YottaUtility following table

Controller Information-Function Block

For further information, please visit : www.yottacontrol.com

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8. YottaUtility

When the button 🗄 **is pressed, you can see the following figure**

Database Contents
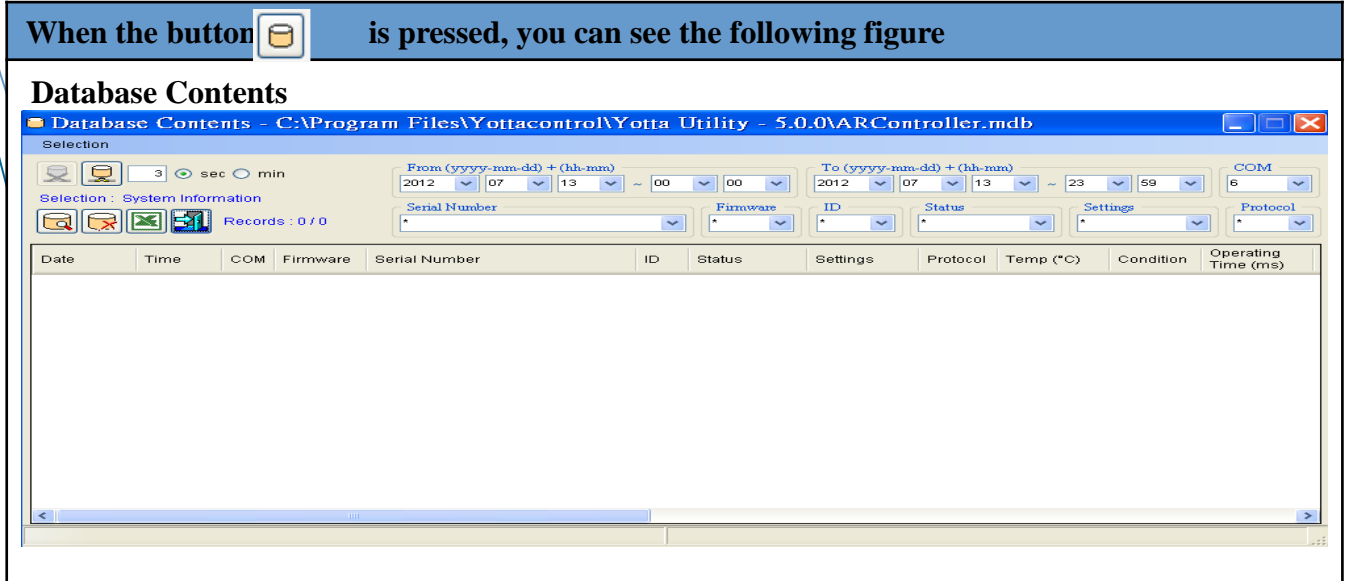
We provide users with database functions. Users can store the values of selected modules into the database. These data can be retrieved from the database for further analysis in the future.

Note: The database is a Microsoft Access file. The file name is app_path\ARController.mdb.
Note: The file backups automatically when its size exceeds 500 MB. The backup file name is ARControllerYYYYMMDD.mdb.
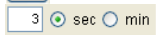Note: The file app_path\ARControllerTemplate.mdb should not be modified and deleted.

The below instructions show you how to manipulate the database.
　🖳　Stop inserting data into the database.
　🖳　Inserting data into the database.
　⏱　Specify the time interval for inserting data into the database.

How to Use the Database
In the previous figure, users can retrieve and delete data from the database. The combination of all drop-down boxes is the criteria for retrieving and deleting data.

Note: The star sign (*) in drop-down boxes means all.
Note: If the number of retrieving data is more than 3000. You have to reset the selection criteria.
The below instructions show you more information about data manipulation.
🔍 Retrieve data from the database.
🗑 Delete data from the database.
📊 Export data to Excel.
🚪 Close the form.

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