FATEK®

The Brand You Can Rely on

Since 1992

SPEED CONTROL

13/01/30 23:59

Manual Mode

ON OFF ON OFF ON OFF

Auto Mode

OFF ON

600 800 400 1000 200

280 300 240 360 200 160 40 120 80

12345 bps 12345 rpm

START STOP WAIT

FATEK

P5 Series
Human Machine Interface

- High Standards of Noise Immunity and Quality
- Optional Integrated Rear Mount PLC
- Intuitive Software Environment and Aesthetic GUI
- Powerful Programming Features

The **FATEK P5** series provides a high quality and high performance human machine interface with the option of an integrated PLC.

With its aesthetically pleasing high-gloss piano black finish, the P5 series represents the high quality and reliability expected in the industrial automation market today. The P5 series also allows the rear mounting of an integrated programmable controller saving space and installation costs. With its intuitive software programming environment and outstanding graphical representation, the P5 series helps create functional and elegant user interfaces.

High Noise Immunity

HMIs at industrial sites are often adversely affected by electrical noise from the surrounding installations. This can cause malfunction and lead to injury to persons or property. FATEK has focused on the P5's stability and robustness to provide end users with a reliable HMI product that can operate in harsh conditions.

Optional Integrated PLC*1

The P5 series provides cable free communications to the FATEK B1 PLC by offering a version that can be mounted onto the back of the P5 HMI. This provides more reliability and improves communication speeds with the added benefit of saving valuable space and installation costs.

*1 : Not supported by 4.3" models

In-built Termination Resistor for RS485/422 ports

With RS-422/RS-485 communication networks, termination resistors are often required to improve the reliability of communications. External terminating resistors can make communication wiring onsite complex. To solve this problem, the P5 provides built-in termination resistor switches. Terminating can be achieved by turning on the switch to connect to termination resistors, or turn off the switch to disconnect the resistors.

Isolated Communication Ports

HMIs are used to communicate with various devices, such as PLCs, Motion Controllers and Inverters. If the connected devices grounds are at different voltage, a ground potential difference would occur and could cause communication errors or damage to the devices. The P5 HMI provides isolated serial communication ports to protect the internal circuit from any voltage difference of the ground.
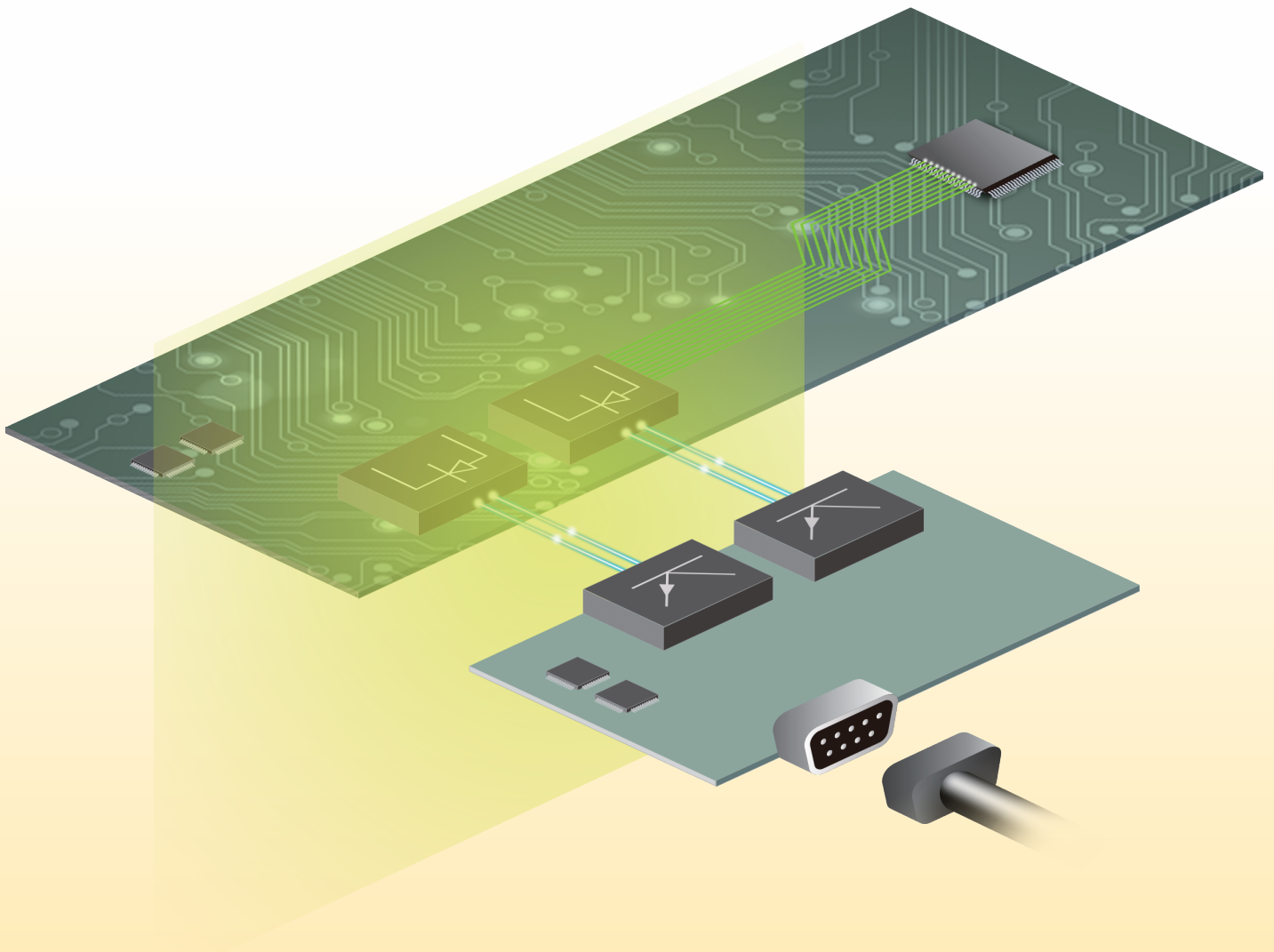
Intuitive Programming Software Environment

1. Toolbar & Shortcut:
Icon-based organized design, enable user to operate what they want efficiently

2. Project Explorer:
Divide functions into 3 categories, collapsible, space-saving

3. Screen List:
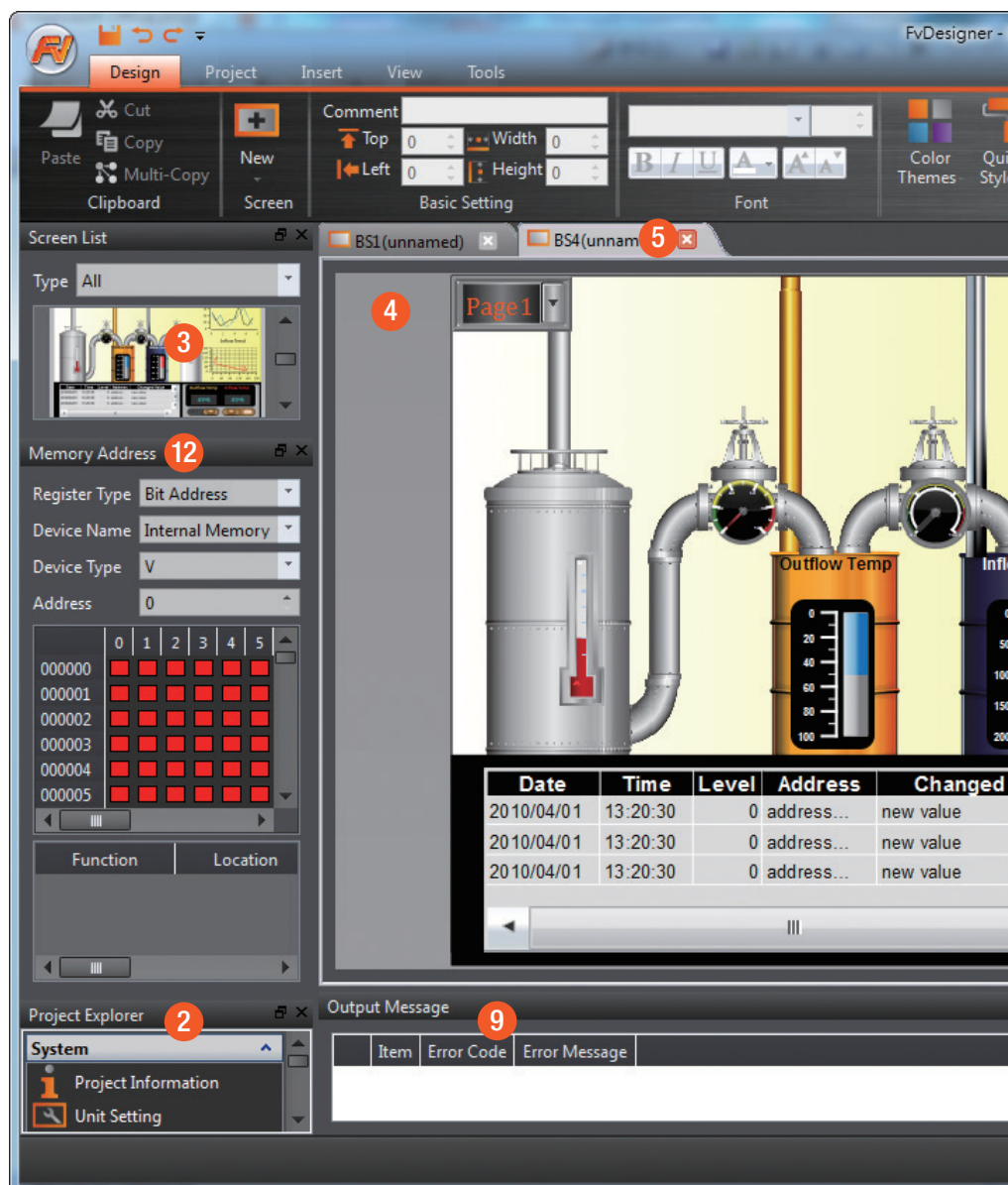Screen preview allows user to access specific screen quickly

4. Screen Workspace:
What You See Is What You Get

5. Tab Page:
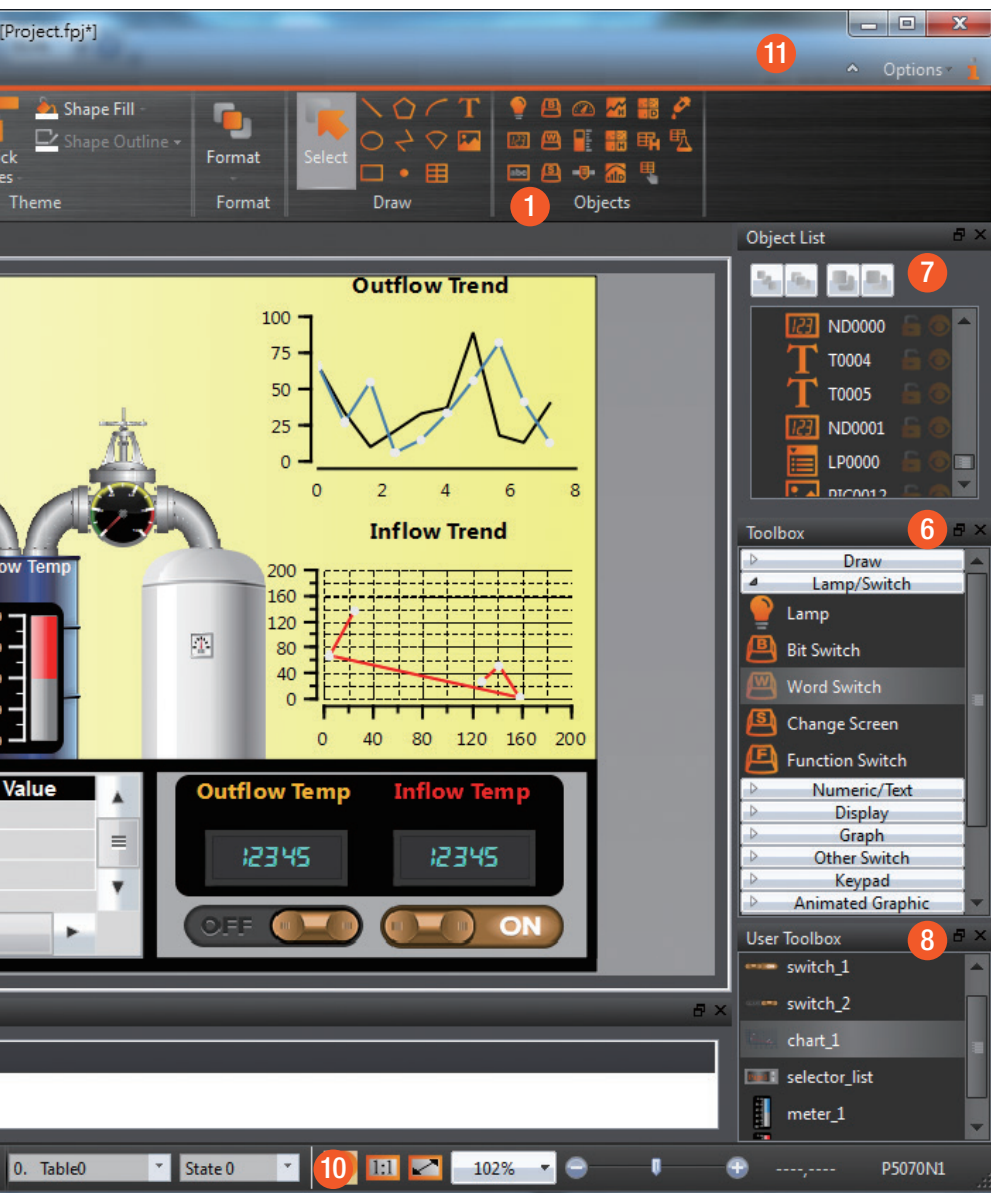Switch view effortlessly

6. Toolbox:
Wide variety of useful, elegant objects to utilize

Topic 1
Different Ribbon Style, Different Arrangement of Workspace

Office 2010 Silver

Office 2007 Blue

Windows 7 Scenic

FATEK Style

7. Object List:
Trace every object that the user creates currently

8. User Toolbox:
Drag the customized object into this area, and then you can use it anytime, everywhere

9. Output Message:
Compiling result will display here, double clicking the error message leads user to review the setting directly

10. Screen Toolbar:
Adjust the screen freely

11. Ribbon Style:
Change the default color scheme from several Ribbon styles

12. Memory Address:
View the status of memory usage

Topic 2
Use Wizard to Complete Project Setting in Three Steps

Step 1: Choose HMI Model

Step 2: Choose Controller
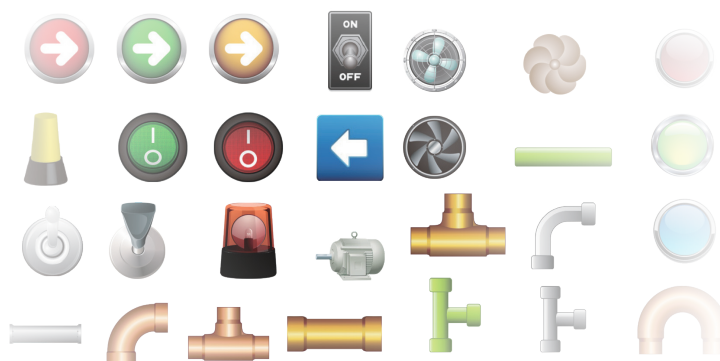
Step 3: Select Location

Usability

Toolbox

- Provide many useful objects like shapes, meters, charts, buttons etc.
- Utilize them from the Toolbox section to speed up the design time

Image Library

Thousands of industrial images to choose from, or import your own images.

Audio Library

Use audio library to play the sound you like when alarm happens or button is clicked.

PLC0 register R1
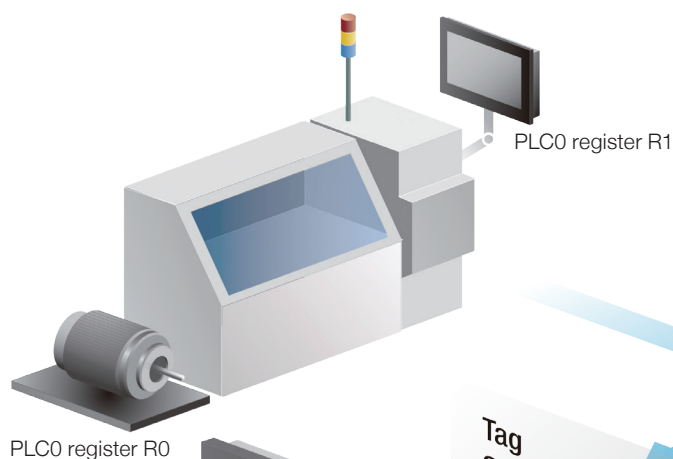
Tag Library

Use Tag Library to make the addresses easy to understand and therefore reduce the user's confusion. The contents can be imported and exported as CSV files.

PLC0 register R0

Tag
Speed
Temperature

Address
= PLC0 R0
= PLC0 R1

if $T:Temperature >= 30
$T:Speed = $T:Speed + 5
endif

Keypad

You can customize your own style of keypad.

Font

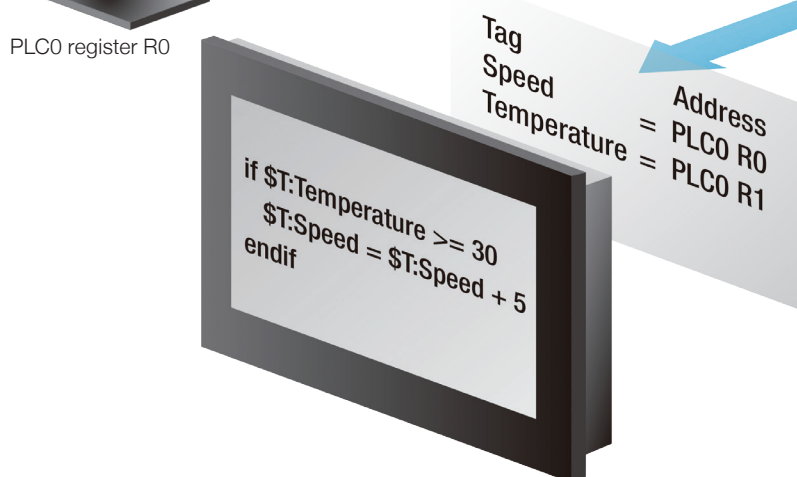- TrueType font is supported, the font can be scalable and anti-aliasing
- The capacity of font files is minimized, minimizing memory usage

Text Library

Multi-language support satisfies your requirement of localization, you can even change the language setting dynamically at run time.

Auto-alignment

Auto-alignment helps users to organize the screen layout easily. Furthermore, the gridlines can be shown or hidden to make the screen workspace clear to see.
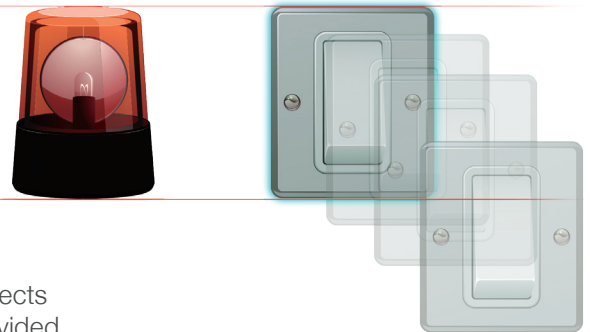
User Toolbox

Drag user-defined objects into User Toolbox section, and these objects would become reusable. Export and import functions are also provided, which would save user a large amount of editing time.

Project 1
Drag

Project 2
Drop

Project 3
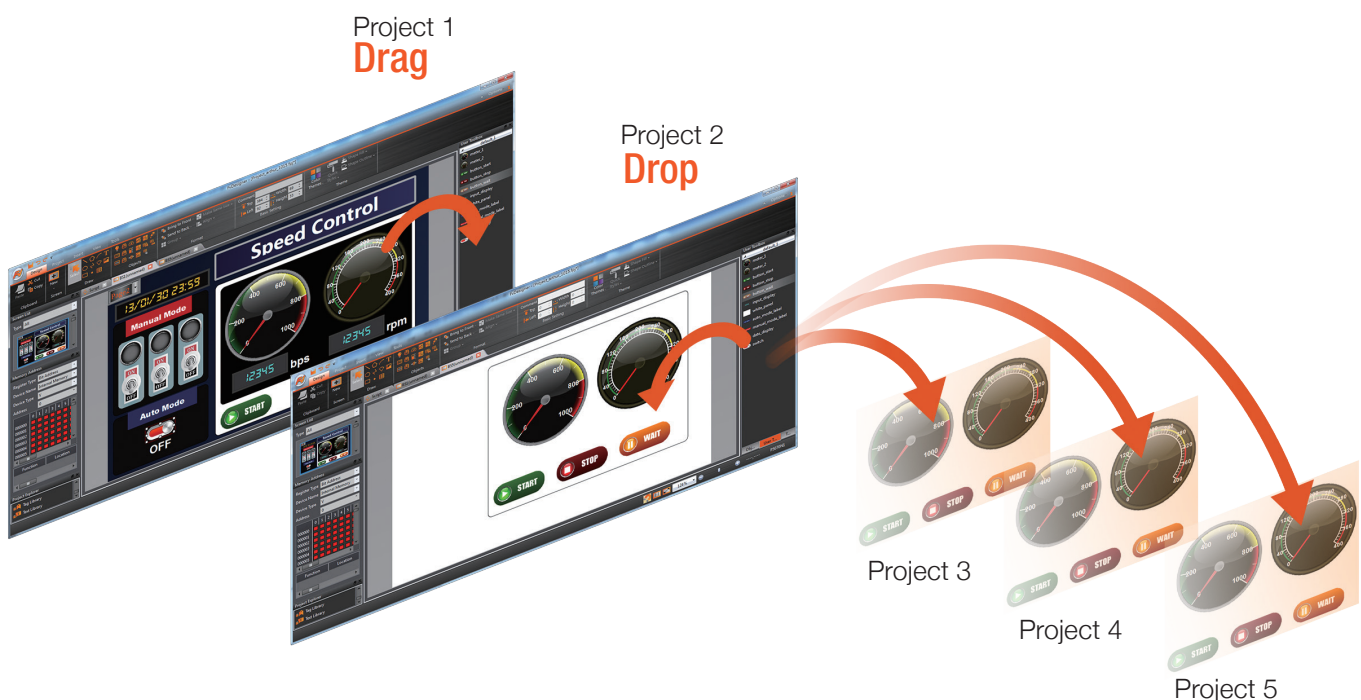
Project 4

Project 5

Security and Safety Control

Proprietary Rights Protection

- You can set password for project protection; you need to enter project password to open the project

- Project downloading, uploading and system configuration and prohibited unless users input system password

Upload Manager

Enter Password

Please enter the HMI system password to proceed

OK   Cancel

50115.cfrp

FATEK

Security

Security function provides 16 access levels and 100 user accounts, each level and user can have different passwords; import and export functions are provided, increasing flexibility and convenience.

For security control, operations for switches, buttons and input are banned if operators input incorrect password; objects on HMI screen can even be hidden if operators have no privilege to see the objects.

100 %

68 %

27 %

Full Authority   **Minor Authority**
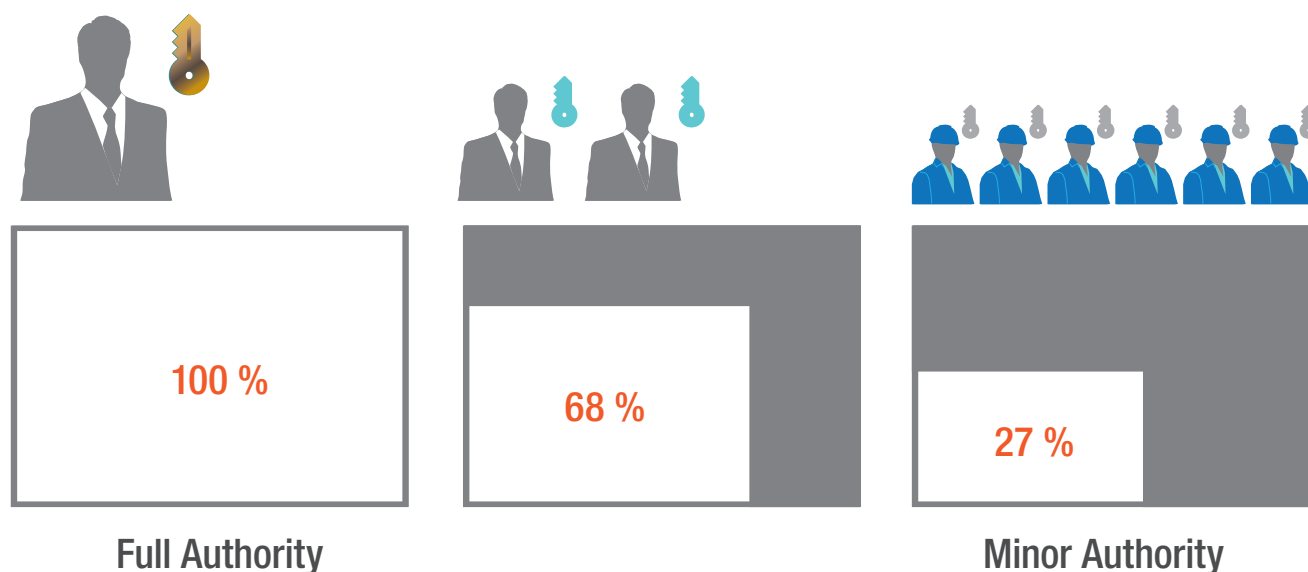
On-Off Delay

For preventing mistakes in operations, you can set minimum hold time for buttons and switches or operator has to double press the objects to execute the operation.

Update User Accounts / Passwords Via External Storage

To add or edit user accounts on a HMI can cause headaches for production managers. By Function Switch, the P5 series allows users to change user accounts and passwords via external storage.

New user accounts/ passwords list

Alarm, Trend and Data Log

Alarm

Step1:

Use the Alarm function to set the threshold value for monitoring system status.

Step2:

When alarm is triggered, operators can see the scrolling text displaying the predefined message on the assigned position, or use the alarm display to see the detailed message; audio can be played to remind the unaware operators.

Step3:

Pop up the child window to get a further message or for post-processing.

Step4:

Review the history records of Data Log and Operation Log for root cause investigation.

Play Sound

Alarm Display

Scrolling Text

Worring !

Window Dialog

DANGER

Temperature too High!!

S.O.P
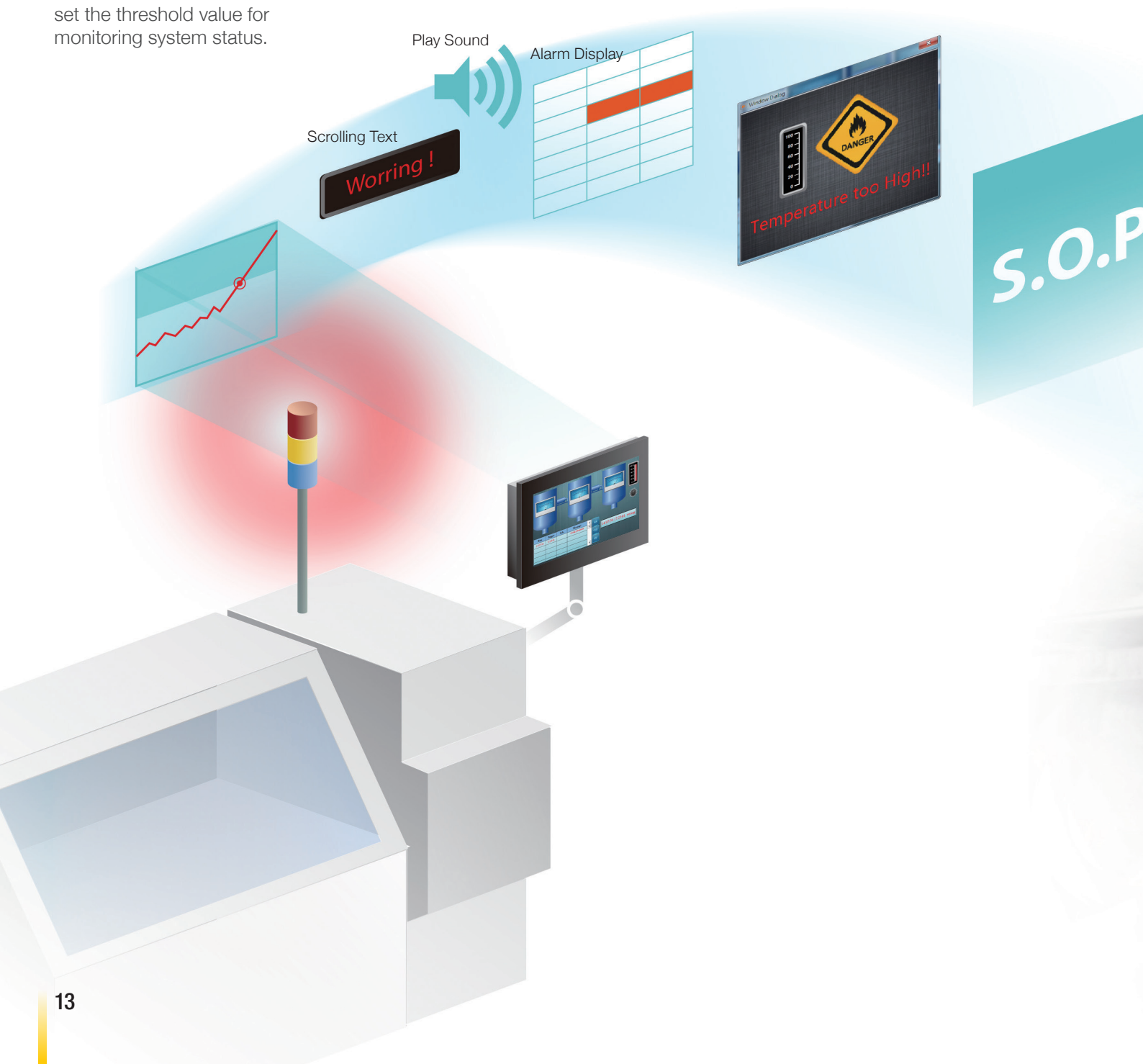
Data Backup

The data from Data Log, Alarm and Operation Log can be exported to the assigned location automatically(HMI, microSD card, usb)

Or enable the ability of data retention in the Data Log, Alarm, Recipe and Operation Log function, there's no need to worry about the data loss even when power failure happens.
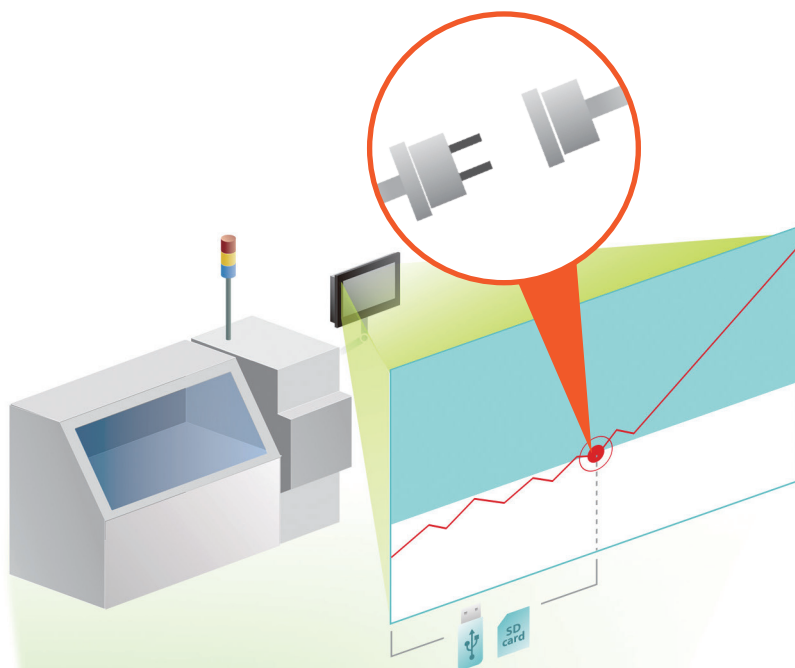
By combining with the Schedule and Script function, the backup timing can be triggered whenever user wants.
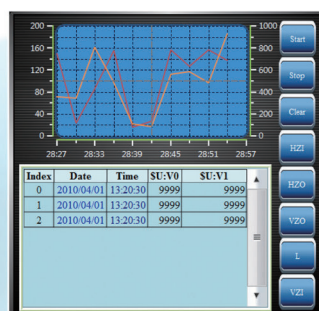
Operation Log

Use Operation Log to pinpoint the root cause if a breakdown happens in factory.

Enable Operation Log in your project, and then the messages of object operation, communication error, project starting and ending will be displayed on Operation Viewer. The records can be exported to a csv file automatically.

Number	Date	Time	User	Message
1	2014/10/29	16:32:18	Tom	Press Bit Switch
2	2014/10/29	16:32:19	Tom	Press Word Switch
3	2014/10/29	16:32:22	Tom	Numerical Display Value Changed
4	2014/10/29	16:33:26		Project Starts
5	2014/10/29	16:33:56	Tom	Slider Value Changed
6	2014/10/29	16:33:58	Tom	Press Step Switch
7	2014/10/29	16:34:00	Tom	Text Display Text Changed
8	2014/10/29	16:37:08		Project Starts

Operation Viewer

Data Log

Index	Date	Time	$U:V0	$U:V1
0	2010/04/01	13:20:30	9999	9999
1	2010/04/01	13:20:30	9999	9999
2	2010/04/01	13:20:30	9999	9999

- A maximum of 64 Data Log groups and each group can monitor a maximum of 512 addresses
- You can use the trend chart to observe the variance of data; user is capable of clearing, zooming in/out, moving left/right/top/down the chart on screen, creating a chart with two Y-axes chart on screen. Or use historic data table to see the overall information in real-time
- You can decide the occasion for triggering the data logging and the time interval for every occurrence. Export and import data log as you need
- The source of data set can come from different PLCs

Remote Monitor and Control

FTP Server

By enabling FTP server on P5 series, you can send and retrieve files between a P5 and personal PC. You don't have to enter the factory to access the storage device for file processing.

FTP Server

PC

HMI
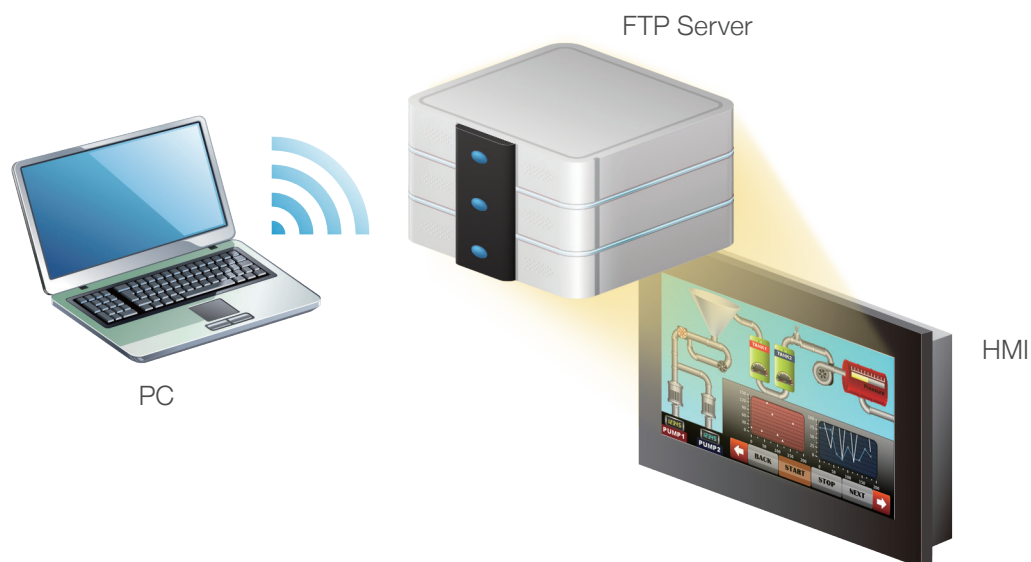
VNC Server

P5 series support VNC Server function. Therefore, tablets, personal computers or smart phones can connect to P5 and be used to operate remotely.

VNC

Phone

HMI

This will improve engineers' mobility and flexibility and hence promote the efficiency and productivity.

Pad

Pass Through

By using Pass Through function, personal PC can connect to PLC device indirectly, and then make adjustment for the device (Ex: WinProladder).

PC

HMI

No Need

PLC
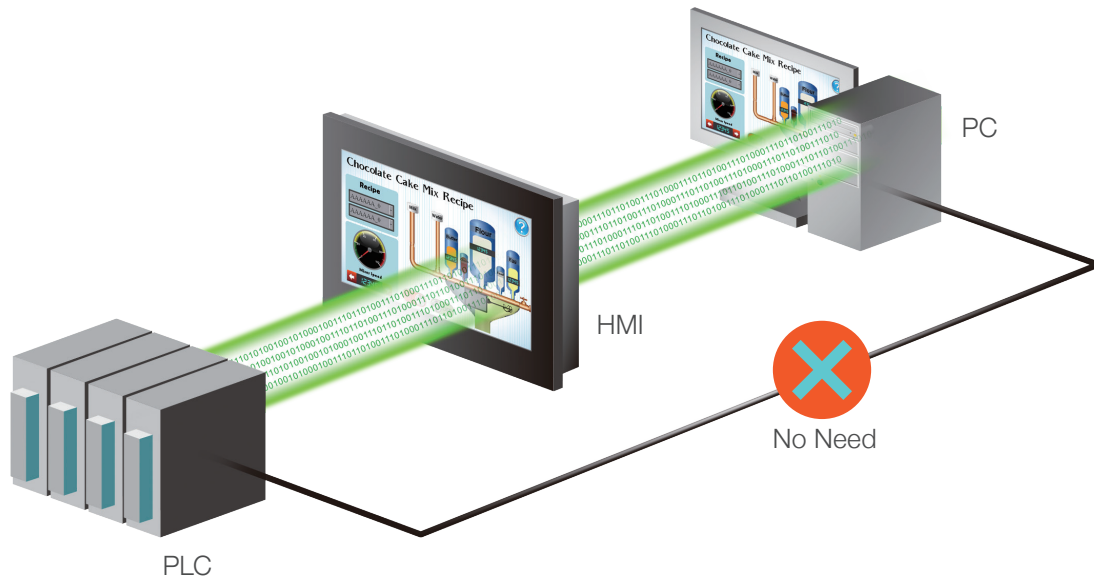
Remote Configuration

It will be convenient that employees in the office can use Remote Configuration to change the setting of HMI.

HMI

Ethernet

Office

FATEK

Powerful Programming Features

Script

- User can flexibly use Script to complete a complex task that cannot easily be accomplished with general objects, including logical judgments, numerical computations, loop executions, string manipulation, communication between devices etc.
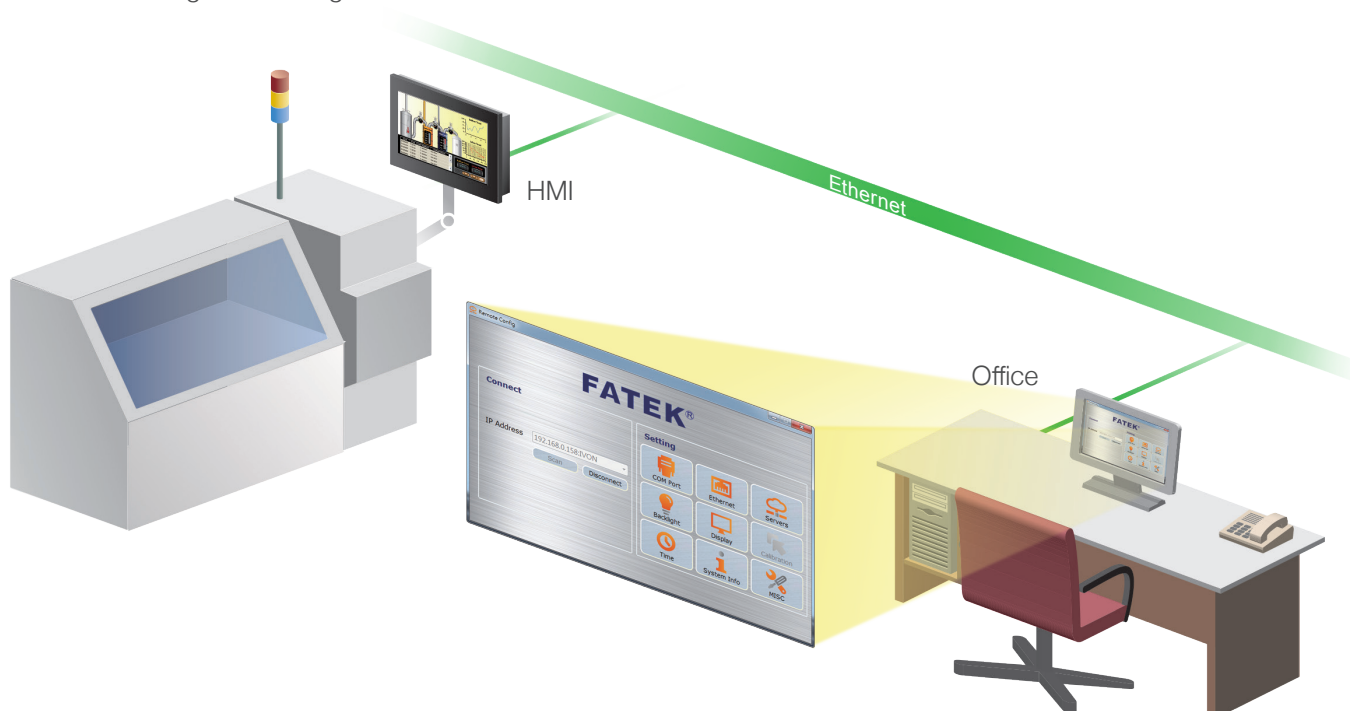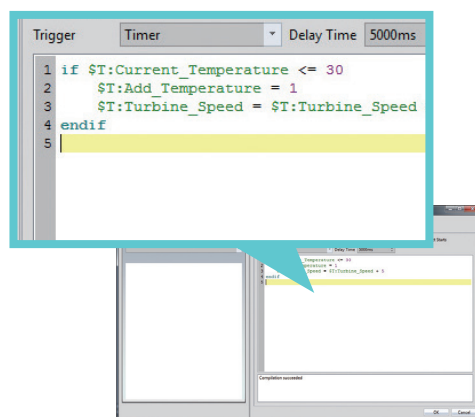- Support user-defined functions, can be imported and exported for the usage of future project designs, make it time-saving and add flexibility
- Real-time display compiling result, user can correct contents immediately

Recipe

- With Recipe function, you can store a set of verified data in HMI, and perform changeover to PLC whenever necessary
- The recipe data can be from a csv file, operators don't need to enter parameters manually
- A built-in recipe editor for users to edit the contents
- Useful Recipe objects for users to choose from
- Add/Edit recipe at runtime

	Milk	Water	Butter	Chocolate	Flour	Yeast	Egg
Cake1	50	75	1.3	2	100	0.1	2.4
Cake2	40	100	0.7	1	200	0.05	1.2
Cake3	50	60	0.6	2	120	0.13	0.8

Simulation

Support on-line/off-line simulation. You can simulate the behavior of your project on a PC connecting to PLC or without PLC before downloading it to P5.

PC

PLC

PLC
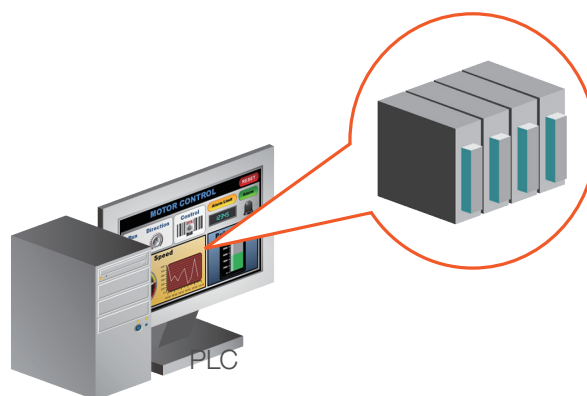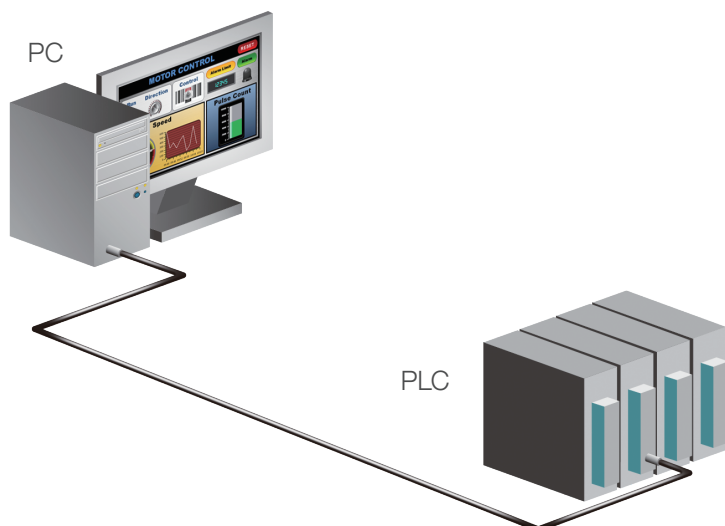
Schedule

Up to 64 schedules could be set. This function allows users to trigger event at a specific predefined time, or change schedule date at runtime. The event includes setting/resetting a bit, writing a word and executing script.
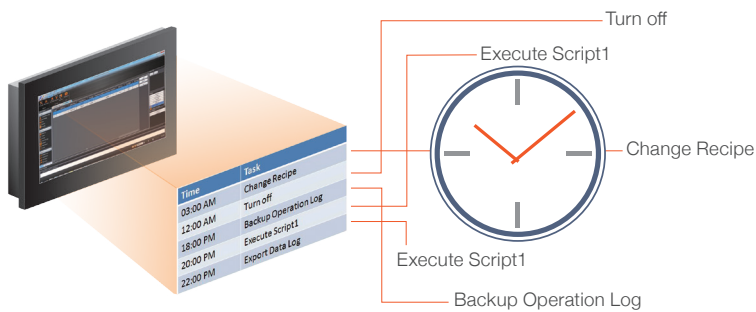
Data Transfer

This function enables the ability of communication between different devices (HMI, PLC). Users can move data from a predefined address to a target address under a user-defined condition.
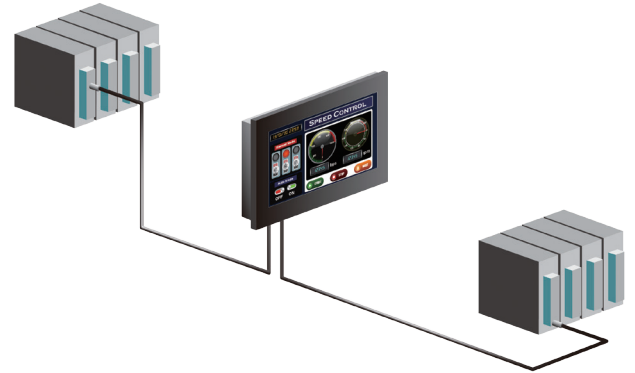
Import Tags from WinProladder Poject*1

Engineers can import tags from the WinProladder projects when they develop HMI projects. This avoids repetitive typing of tags information, thus greatly saving engineering time and improving work efficiency.
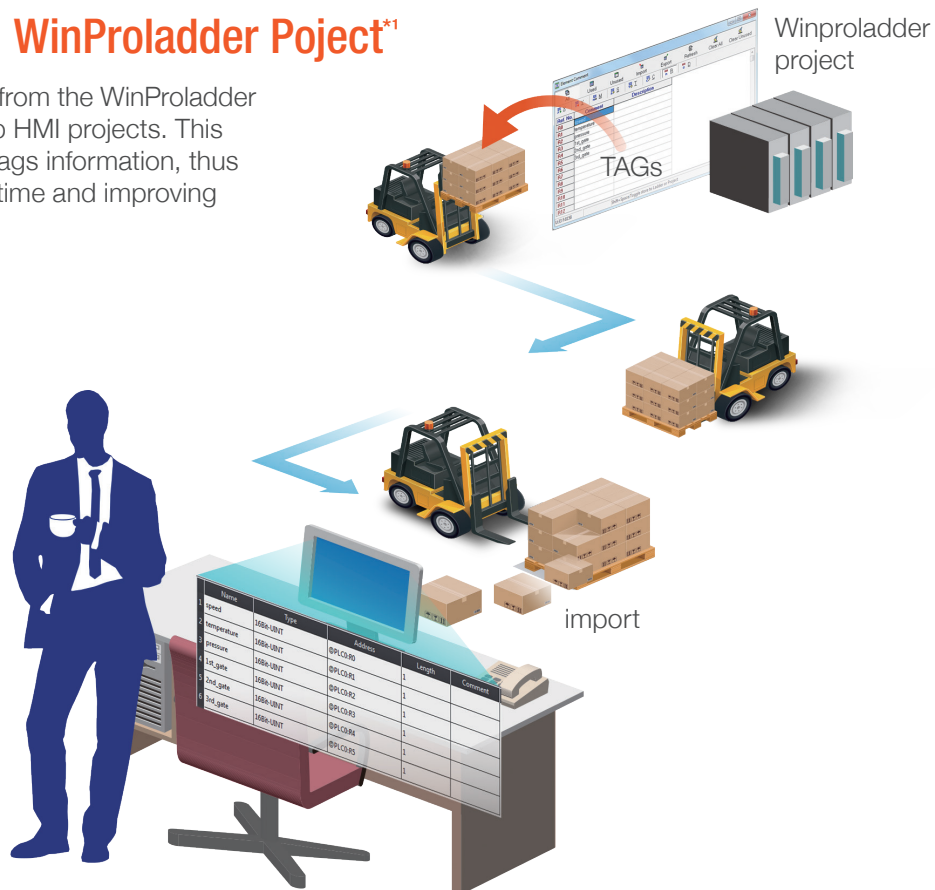
On-line Monitoring PLC Ladder Program*2

The PLC ladder program is displayed on the screen. Engineers can check machine status and find errors quickly.

*1 : Scheduled in July 2015
*2 : Scheduled in December 2015

Specification

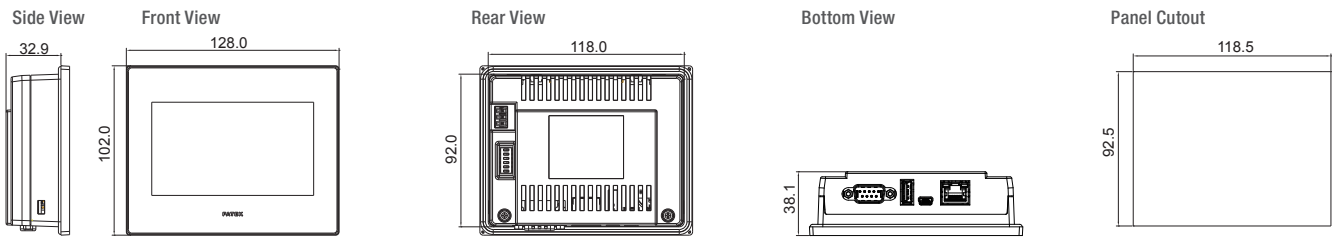| Model		P5043S	P5043N
Display	**Display Type**	TFT LCD, 16.7M Colors	
	Display Size	4.3" (16:9)	
	Resolution	480 X 272	
	Backlight	LED, 500nits	
	Backlight Life	30,000 Hrs.	
Touch	**Type**	4-wire Resistive Film	
Backup Memory	**Non-volatile Memory**	120KB	
	Non-real time NV Memory	12MB	
Internal User Storage		64MB	
Project Memory		32MB	
Real-time Clock		Built-in	
I/O Port	**Serial 1**	Connector: D-Sub 9-Pin COM1: RS-232 (2W) COM2: RS-422/485 COM3: RS-485	
	Serial 2	---	
	LAN	---	10M/100M
	USB	USB2.0 Type-A (Host)x1 USB2.0 Type mini-B (Device)x1	
	microSD	---	---
	Audio	---	---
	PLC Extension	---	
	Termination Switch	Yes (For RS-422/485)	
Power	**Power Input**	24Vdc±20% (Isolated Power)	
	Consumption		
	Insulation	50MΩ at 500VDC	
Environment	**Protection Structure**	Front Panel: IP65 / Rear Case: IP20	
	Operating Temp.	0 ~ 50℃	
	Storage Temp.	-20 ~ 60℃	
	Relative Humidity	10%~90%@ 40°C (non-condensing)	
	Withstand Voltage	AC500V/20mA/1 Min. (between charger & FG terminals)	
	Vibration	5 to 9Hz Half-amplitude: 3.5mm 9 to 150 Hz Constant Acceleration: 19.6m/s^2 (2G) 3 directions of X, Y, Z: 10times (IEC61131-2 complaints)	
	Noise Suppression	1000Vp-p, width 1us, rising time 1ns	
	Grounding Resistance	Below 100Ω	
Dimension / Weight	**Cut-out**	118.5 x 92.5 (mm)	
	W x H x D	128.0 x 102.0 x 38.1 (mm)	
	Weight		
Certification		CE, UL	

P5070S	P5070N	P5070N1	P5102S	P5102N	P5102N1
TFT LCD, 16.7M Colors					
7.0" (16:9)			10.2" (16:9)		
800 X 480			800 X 480		
LED, 400nits			LED, 350nits		
30,000 Hrs.					
4-wire Resistive Film					
120KB					
12MB					
64MB					
32MB					
Built-in					
Connector: D-Sub 9-Pin COM1: RS-232 (4W)					
Connector: Pluggable Terminal Block COM3: RS-422/485 (Isolation) COM4: RS-485 (Isolation)					
---	10M/100M	10M/100M	---	10M/100M	10M/100M
USB2.0 Type-A (Host)x1 USB2.0 Type mini-B (Device)x1					
---	---	Yes	---	---	Yes
---	---	Yes	---	---	Yes
HB1 main units + B1 extension modules					
Yes (For RS-422/485)					
24Vdc±20% (Isolated Power)					
0.4A@24V			0.42A@24V		
50MΩ at 500VDC					
Front Panel: IP65 / Rear Case: IP20					
0 ~ 50℃					
-20 ~ 60℃					
10%~90%@ 40°C (non-condensing)					
AC500V/20mA/1 Min. (between charger & FG terminals)					
5 to 9Hz Half-amplitude: 3.5mm 9 to 150 Hz Constant Acceleration: 19.6m/s^2 (2G) 3 directions of X, Y, Z: 10times (IEC61131-2 complaints)					
1000Vp-p, width 1us, rising time 1ns					
Below 100Ω					
191.5 x 137.5 (mm)			259.5 x 201.5 (mm)		
201.0 x 147.0 x 38.1 (mm)			271.5 x 213.5 x 44.6 (mm)		
610 (g)	630 (g)	650 (g)			
CE, UL					

Dimensions

P5043

Side View	Front View	Rear View	Bottom View	Panel Cutout

P5043
- Side View: 32.9, 102.0
- Front View: 128.0
- Rear View: 118.0, 92.0
- Bottom View: 38.1
- Panel Cutout: 118.5, 92.5

P5070

Side View	Front View	Rear View	Bottom View	Panel Cutout

P5070
- Side View: 32.9, 147.0
- Front View: 201.0
- Rear View: 190.5, 136.5
- Bottom View: 38.1
- Panel Cutout: 191.5, 137.5

P5102

Side View	Front View	Rear View	Bottom View	Panel Cutout

P5102
- Side View: 39.4, 213.5
- Front View: 271.5
- Rear View: 258.0, 200.0
- Bottom View: 44.6
- Panel Cutout: 259.5, 201.5
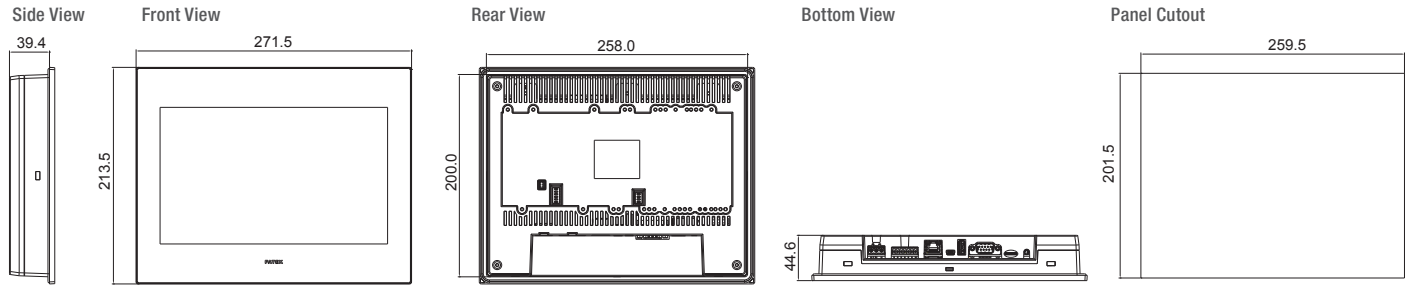
P5 Accessory

Screen protector: HMSP070   USB 1.8m download cable: USBA-MINB-180   7-pin spring terminal block: P5PC070

Item Name	Model	Description
Screen protector	HMSP043	Screen protector for P5043S/N
	HMSP070	Screen protector for P5070S/N/N1
	HMSP102	Screen protector for P5102S/N/N1
USB 1.8m download cable	USBA-MINB-180	1.8m USB mini B type to USB A type download cable
Connector	P5CC070	7-pin screw terminal block
	P5PC070	7-pin spring terminal block
	HMPC070	Power Connector for P5070S/N/N1, P5102S/N/N1
	HMPC043	Power Connector for P5043S/N

HB1 & B1 Options

Item Name		Model	Specifications
Main Units	HB1 main units	HB1-10M ◇ 25-D24S	6 points 24VDC digital input (4 points 50KHz, 2 points total 5KHz), 4 points relay output or transistor output (2 points 50KHz), built-in 1-2 communication ports, left side is expandable 0-2 modules, right side is expandable up to 80 I/O points
		HB1-14M ◇ 25-D24S	8 points 24VDC digital input (4 points 50KHz, 4 points total 5KHz), 6 points relay output or transistor output (2 points 50KHz), built-in 1-2 communication ports, left side is expandable 0-2 modules, right side is expandable up to 80 I/O points
		HB1-20M ◇ 25-D24S	12 points 24VDC digital input (6 points 50KHz, 6 points total 5KHz), 8 points relay output or transistor output (4 points 50KHz), built-in 1-2 communication ports, left side is expandable 0-2 modules, right side is expandable up to 80 I/O points
		HB1-24M ◇ 25-D24S	14 points 24VDC digital input (8 points 50KHz, 6 points total 5KHz), 10 points relay output or transistor output (4 points 50KHz), built-in 1-2 communication ports, left side is expandable 0-2 modules, right side is expandable up to 80 I/O points
		HB1-32M ◇ 25-D24S	20 points 24VDC digital input (8 points 50KHz, 8 points total 5KHz), 12 points relay output or transistor output (6 points 50KHz), built-in 1-2 communication ports, left side is expandable 0-2 modules, right side is expandable up to 80 I/O points
		HB1-40M ◇ 25-D24S	24 points 24VDC digital input (8 points 50KHz, 8 points total 5KHz), 16 points relay output or transistor output (6 points 50KHz), built-in 1-2 communication ports, left side is expandable 0-2 modules, right side is expandable up to 80 I/O points
Right Side Expansion Modules	DIO Expansion Modules	B1-8XS	8 points 24VDC digital input
		B1-8Y ◇ S	8 points relay or transistor output
		B1-8XY ◇ S	4 points 24VDC digital input, 4 points relay or transistor output
		B1-16XS	16 points 24VDC digital input
		B1-16Y ◇ S	16 points relay or transistor output
		B1-16XY ◇ S	8 points 24VDC digital input, 8 points relay or transistor output
		B1-24XY ◇ S	14 points 24VDC digital input, 10 points relay or transistor output
		B1-40XY ◇ S	24 points 24VDC digital input, 16 points relay or transistor output
Left Side Expansion Modules	AIO Modules	B1-L2DAS	2 channels, 12-bit analog output module (0~10V or 0~20mA)
		B1-L4ADS	4 channels, 12-bit analog input module (0~10V or 0~20mA)
		B1-L2A2DS	2 channels, 12-bit analog input + 1 channel, 12-bit analog output combo analog module (0~10V or 0~20mA)
		B1-L4NTCS	4 channels, NTC temperature input module, 12-bit resolution , measuring range 100Ω~100KΩ
	Communication Modules	B1-CM2S	1 port RS232(Port2) communication module
		B1-CM5S	1 port RS485(Port2) communication module
		B1-CM22S	2 ports RS232 communication module
		B1-CM55S	2 ports RS485 communication module
		B1-CM25S	1 port RS232(Port1)+1 port RS485(Port2) communication module
HB1 and B1 Peripheral and Accessory	Memory Pack	FBs-PACK	B1/B1z/FBs-PLC program memory pack with 20K Words program, 20K Words register, write protection switch
	PWMDA Module	PWMDA	10-bit single channel pulse width modulation (PWM) 0~10V analog output (AO) module
	Programming Devices	FP-08	B1/B1z/FBs-Series PLC handheld programmer
		Winproladder	FATEK-PLC Winproladder Programming software
	Simple HMI	FBs-PEP/PEPR	Multi characters with graphics-based Parameter Entry Panel, built-in RFID Read/Write module with PEPR
		FBs-DAP-B/BR	16 x 2 LCD character display, 20 keys keyboard, 24VDC power supply, RS485 comm. port, built-in RFID Read/Write module with BR
		FBs-DAP-C/CR	16 x 2 LCD character display, 20 keys keyboard, 5VDC power supply, RS232 comm. port, built-in RFID Read/Write module with CR
	RFID Card	CARD-H	Read/Write wireless card (for FBs-DAP-BR/CR and FBs-PEPR)
	General Purpose Communication Converter	FBs-CM25C	General purpose RS232 to RS485/RS422 communication interface converter with photocouple isolation
		FBs-CM5R	General purpose RS485 repeater with photocouple isolation
		FBs-CM5H	General purpose 4 ports RS485 HUB with photocouple isolation, RS485 can be connected as star connection
		FBs-U2C-MD-180	Communication converter cable with standard USB AM connector to RS232 MD4M connector (used in standard PC USB to FBs main unit Port0 RS232), length 180cm
	Communication Cable	FBs-232P0-9F-150	MD4M to DB9F communication cable (FBs main unit Port 0 RS232 connect to standard DB9M), length 150cm
		FBs-232P0-9M-400	MD4M to DB9M communication cable (FBs main unit Port 0 RS232 connect to standard DB9F), length 400cm
		FBs-232P0-MD-200	MD4M to MD4M communication cable (FBs main unit Port 0 RS232 connect to FBs-PEP/PEPR), length 200cm
		FBs-232P0-MDR-200	MD4M to 90˚ MD4M communication cable(FBs main unit Port0 RS232 connect to FBs-PEP/PEPR), length 200cm

◇ : R - Relay output, T - Transistor Sink(NPN) output, J - Source (PNP) output

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