

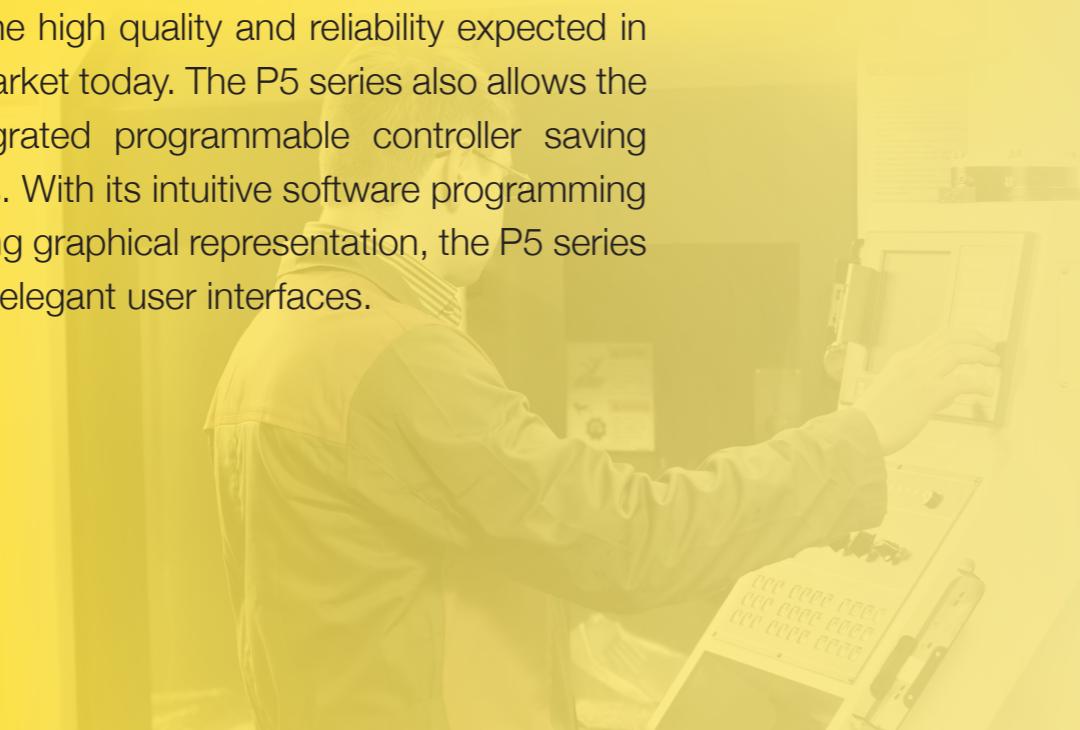


P5 Series Human Machine Interface

- 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.

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.



3 **High Noise Immunity**
Optional Integrated PLC

4 **In-built Termination Resistors for**
RS485/422 Ports
Isolated Communication Ports

5 **Intuitive Programming Software**
Environment

7 **Usability**
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High Noise Immunity



HMs 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.

In-built Termination Resistors for RS485/422 Ports



With RS-422/RS-485 communication networks, termination resistors are often required to improve the reliability of communications. External termination 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.

Optional Integrated PLC^{*1}

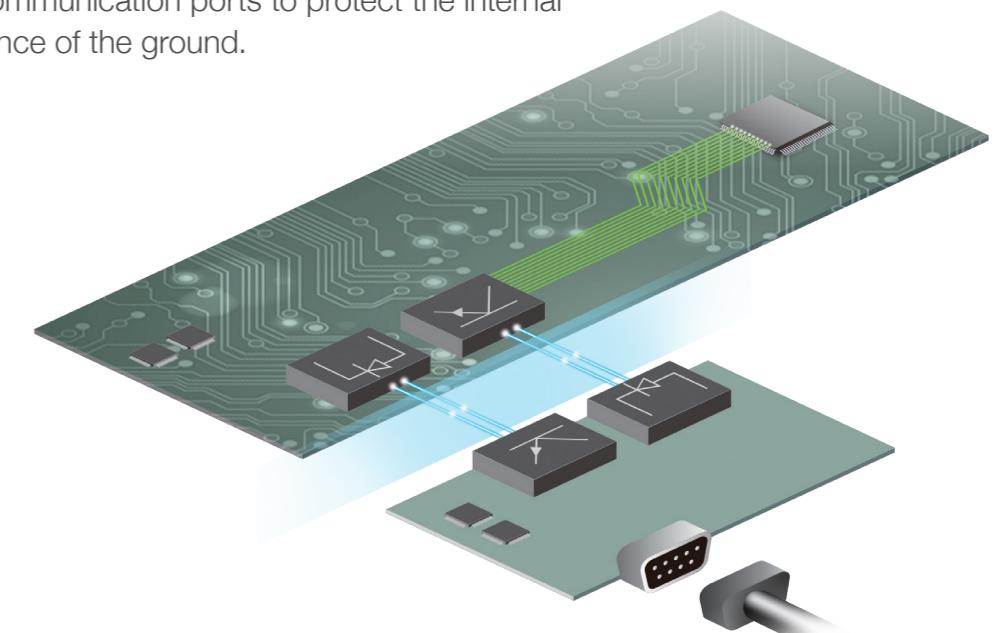
The P5 series provides cableless communications to the FATEK B1 PLC by offering a version that can be mounted onto the back of the P5 HMI. This provides more reliability and improves communication speeds with the added benefit of saving valuable space and installation costs.



^{*1}: Not supported by 4.3" models

Isolated Communication Ports^{*2}

HMs are used to communicate with various devices, such as PLCs, Motion Controllers and Inverters. If the connected devices locate at the different voltage levels, 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.



^{*2}: Not supported by 4.3" models

Intuitive Programming Software Environment

1. Toolbar & Shortcut:

Icon-based organized design, enables users to operate what they want efficiently

2. Project Explorer:

Divide functions into 3 categories, collapsible, space-saving

3. Screen List:

Screen preview allows users to access a specific screen quickly

4. Screen Workspace:

What You See Is What You Get

5. Tab Page:

Switch view effortlessly

6. Memory Address:

View the status of memory usage



Topic 1

Different Ribbon Style, Different Arrangement of Workspace



Office 2010
Silver

Office 2007
Blue



FATEK Style

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

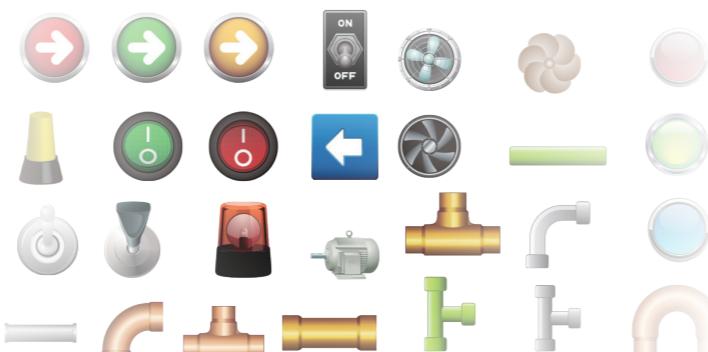
Toolbox

- Provides 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.



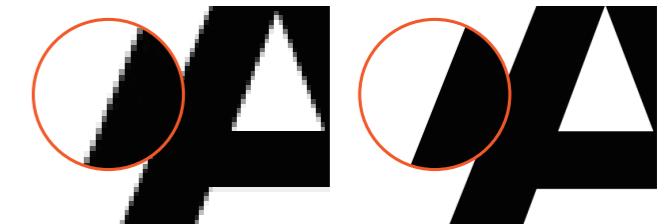
Keypad

You can customize your own style of keypad.



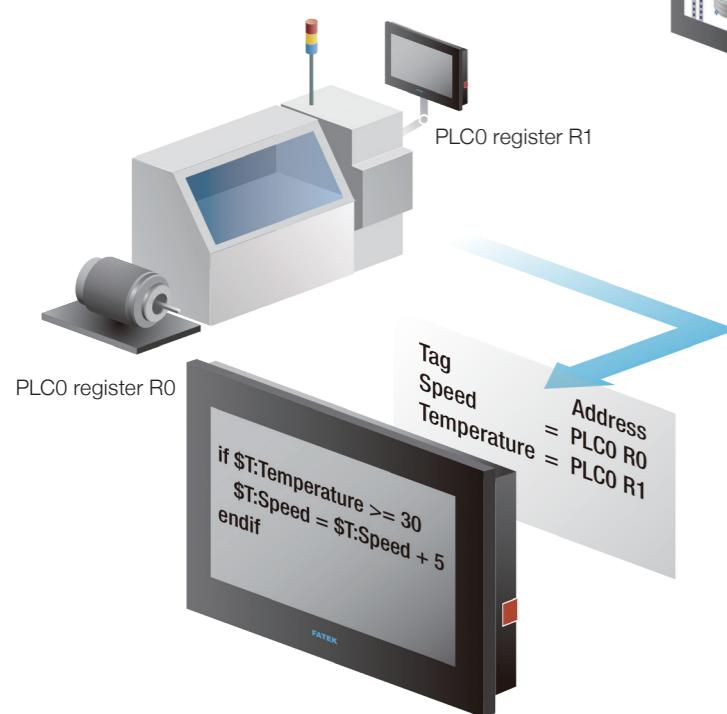
Font

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



Tag Library

Use the Tag Library to make controller addressing function easy to identify in the objects created. Tag libraries can be imported and exported as CSV files.



Audio Library

Use the Audio Library to play the sound you like when an alarm happens or a button is clicked.



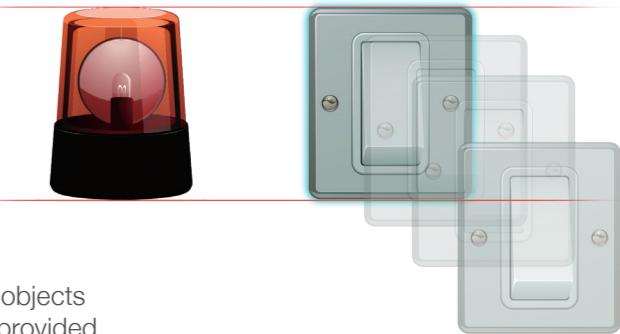
Text Library

Multi-language support satisfies your requirement of localization. You can even change the language setting dynamically at runtime.



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 saves valuable time during program development.



Security and Safety Control

Proprietary Rights Protection

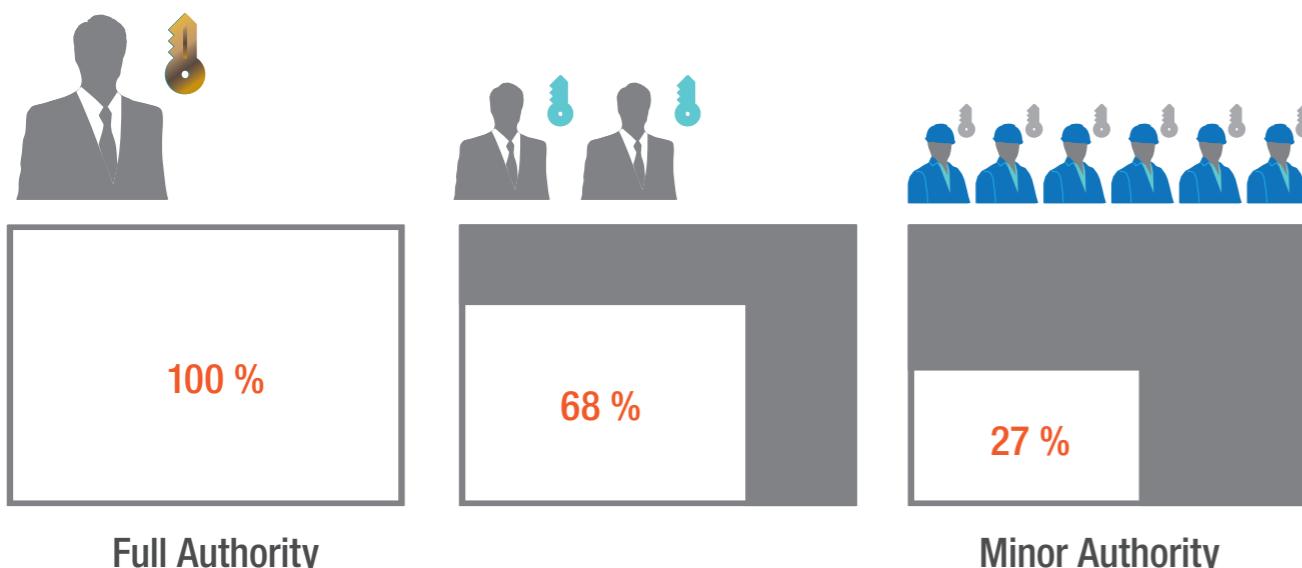
- You can set password for project protection; you need to enter project password to open the project
- Project downloading, uploading and system configuration are prohibited unless users input system password
- The script allows you to design custom functions for your customers. You can also set passwords to these custom functions, so that your customers will be requested to enter passwords when they want to use them or see the source code



Security

Security function provides 16 access levels and 100 user accounts, and 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 inputs are banned if operators input incorrect password; objects on HMI screen can even be hidden if operators have no privilege to see the objects.



On-Off Delay

For preventing mistakes in operations, you can set minimum hold time for buttons and switches or operators have 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.



Alarm, Trend and Data Log

Step1:

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:

Step4:

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

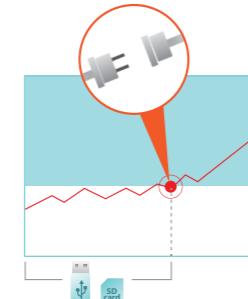
Step4:

User can also receive the email that attached the alarm information and the captured camera image on site. Then review the history records of Data Log and Operation Log for root cause investigation.



Data Log

- A maximum of 64 Data Log groups
- Each group can monitor a maximum of 512 addresses
- You can use the trend chart to observe the variance of data; a user is capable of clearing, zooming in/out, moving left/right/top/down the chart on screen, creating a chart with two Y-axes on screen. Or use historic data table to see the overall information in real-time
- You can decide the event 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 controllers



Data Backup

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

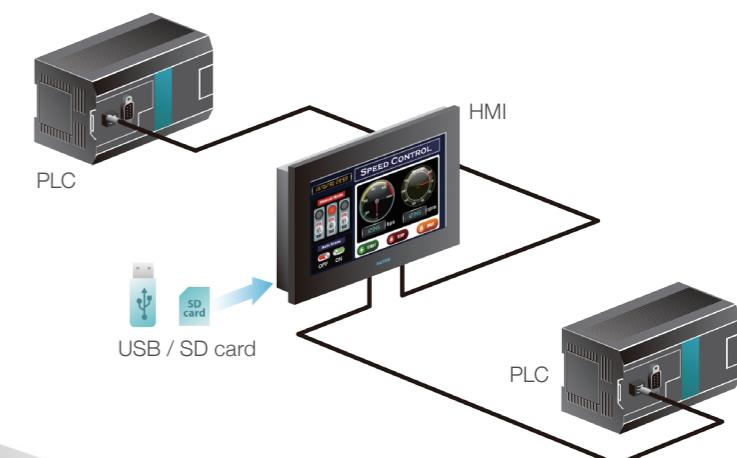
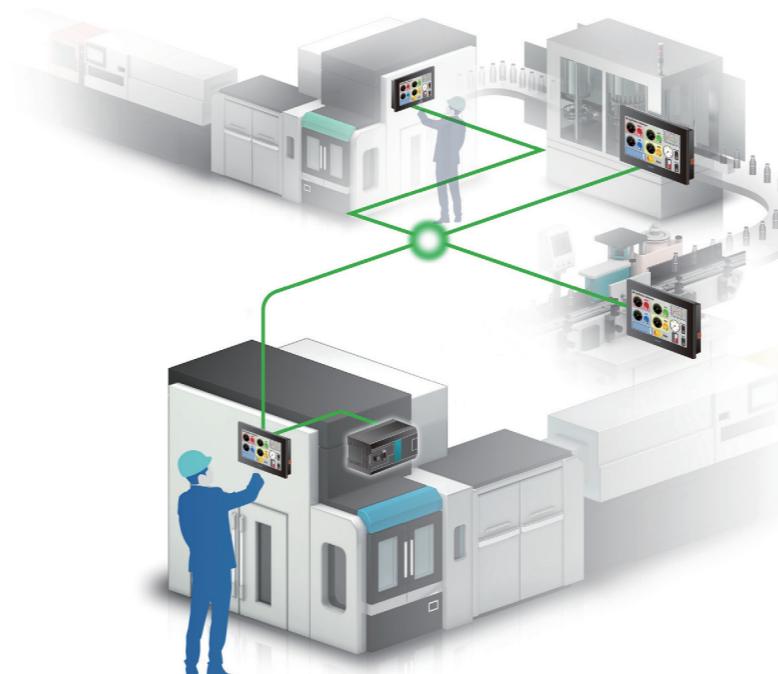
Or enable the ability of data retention in the Data Log, Alarm, Recipe and Operation Log function, and there is no need to worry about the data loss even when power failure happens.

By combining with the Schedule and Script function, the backup timing can be triggered whenever the user wants.

Data Connectivity

Data Transfer

This function enables the ability of communication between HMI and PLC. Users can move data from a predefined source (HMI, PLC, file) to a target address under a user-defined condition.

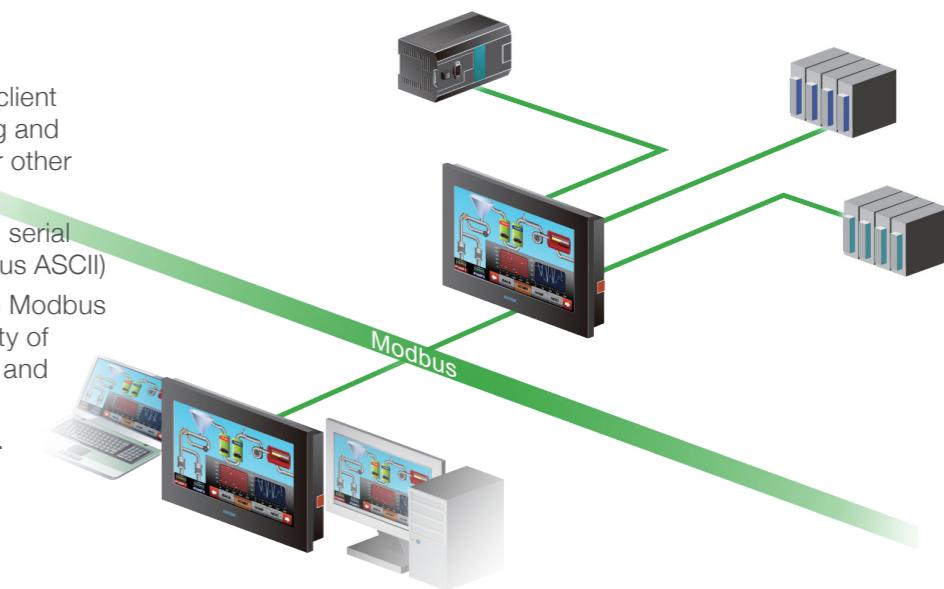


Multi-Link

- PLC connected to Master HMI can be accessed by Slave HMI, Cost Reduced!
- Easy setup, speed up development.

Modbus gateway

- Through Modbus gateway function, client can easily achieve remote monitoring and data collections with SCADA, HMI or other Modbus devices.
- Support Ethernet (Modbus TCP) and serial communication (Modbus RTU/Modbus ASCII)
- Support the data exchange between Modbus protocol and other protocols (a variety of PLCs, server, temperature controller and converter...)
- User-friendly address mapping table.



Remote Monitor and Control

FTP Server

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



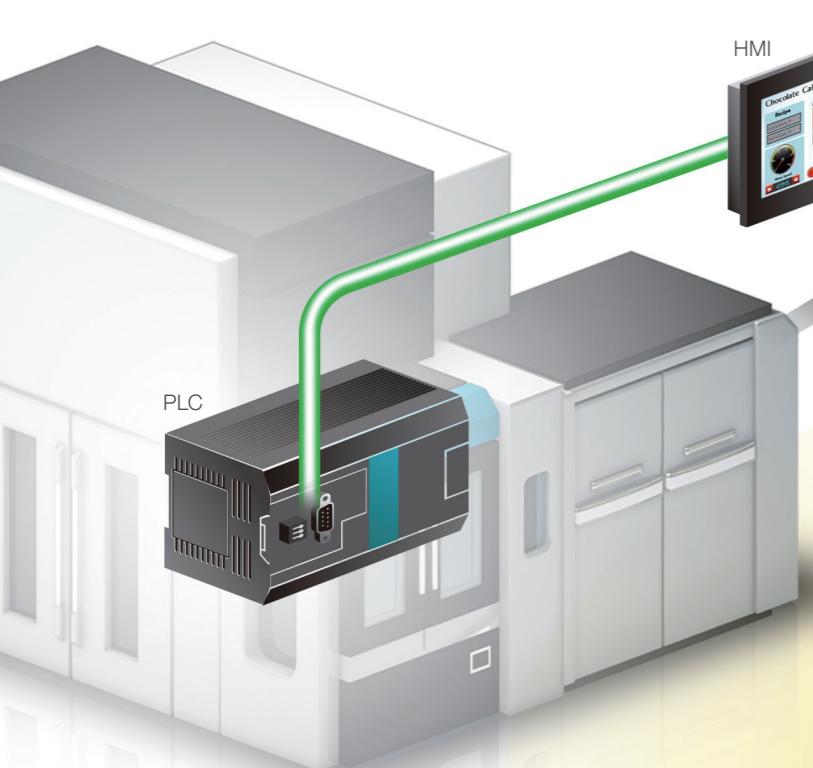
VNC

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



VNC Server

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



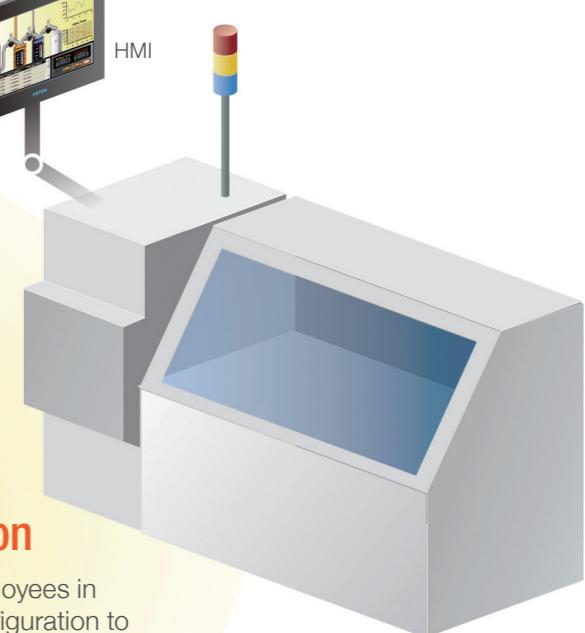
Pass Through

By using Pass Through function, PC can connect to PLC device indirectly, and then you can make adjustments for the device (Eg: WinProladder).



Remote Configuration

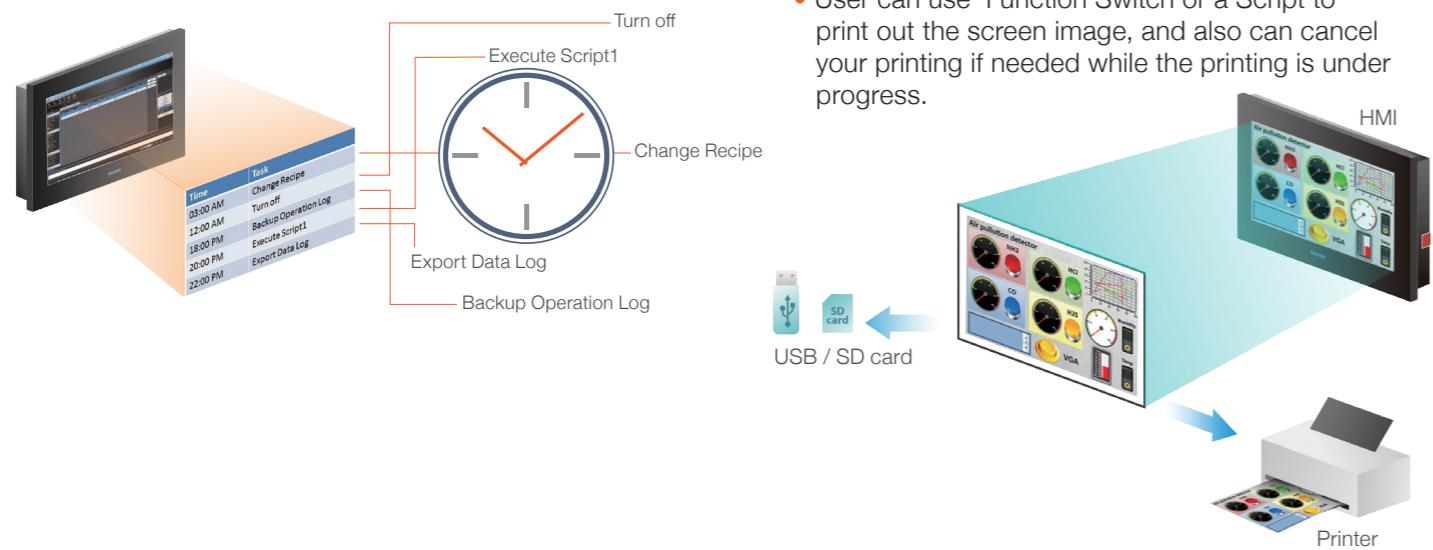
As an added convenience employees in the office can use Remote Configuration to change the setting of HMI.



Powerful Programming Features

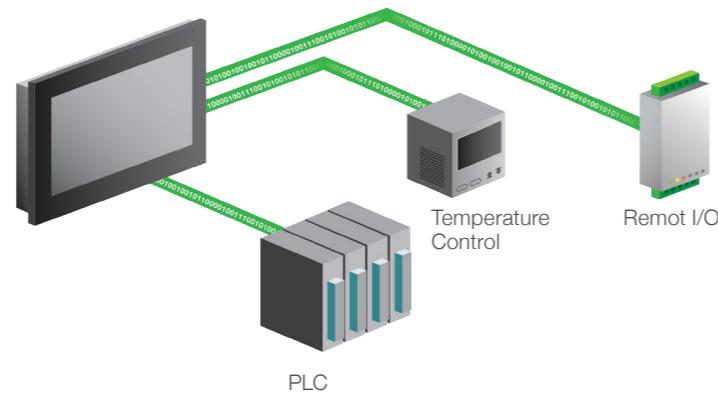
Schedule

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



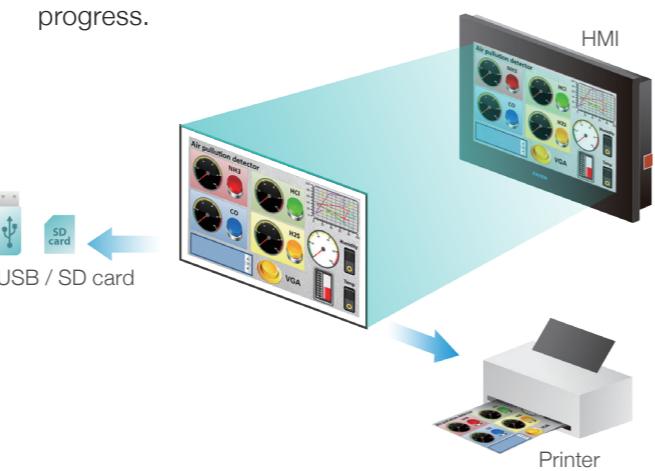
User-defined Protocol

- When the device driver is not supported, users can communicate and access device data through user-defined protocol.
- This function is also supported in script.



Print function

- The project image can be printed and stored in to HMI, SD cards, and USB storage devices.
- The image range is selectable, and the image can also be rotated and reversed.
- User can use Function Switch or a Script to print out the screen image, and also can cancel your printing if needed while the printing is under progress.

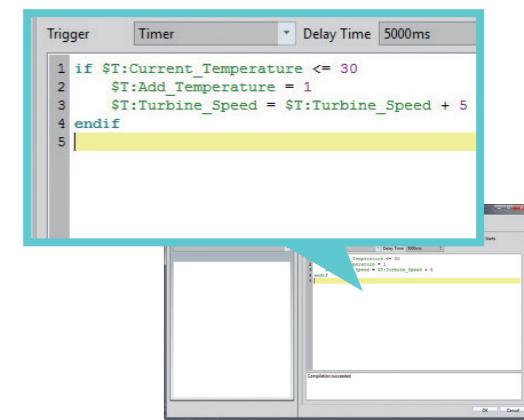


Pay by Installments

- Static mode provides up to 48 periods, and each deadline can be different intervals between each one.
- Provides runtime modify function for set up machine without re-downloading project.
- Dynamic mode does not need to decide expired date in advance.
- Just use the key and the password generator to generate a password that contains the next expiration date.

Script

- User can flexibly use Script to complete a complex task that cannot easily be accomplished with general objects. The Script functions include logical judgments, numerical computations, loop executions, string manipulation, communications between devices etc.
- Support user-defined functions, which can be imported and exported for the usage of future project designs, making it time-saving and adding flexibility
- Real-time display compiling result by which the user can correct contents immediately
- Provide password protection for engineers to protect their intellectual property



Recipe

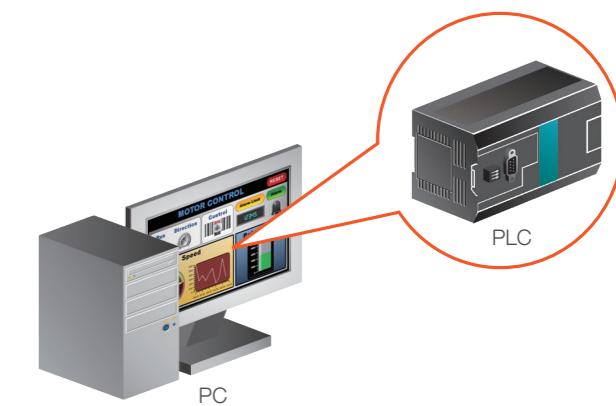
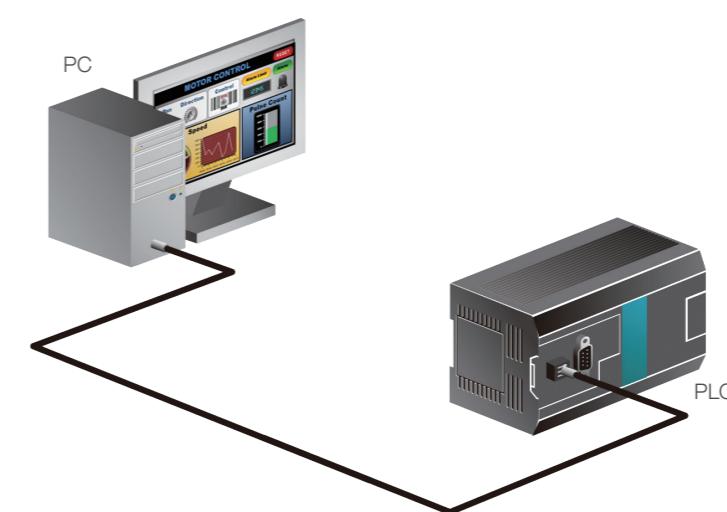
- With Recipe function, you can store a set of verified data in HMI, and download to PLC whenever necessary
- The recipe data can be from a csv file, so operators do not need to enter parameters manually
- A built-in recipe editor for users to edit the contents
- Useful Recipe objects for users to choose 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



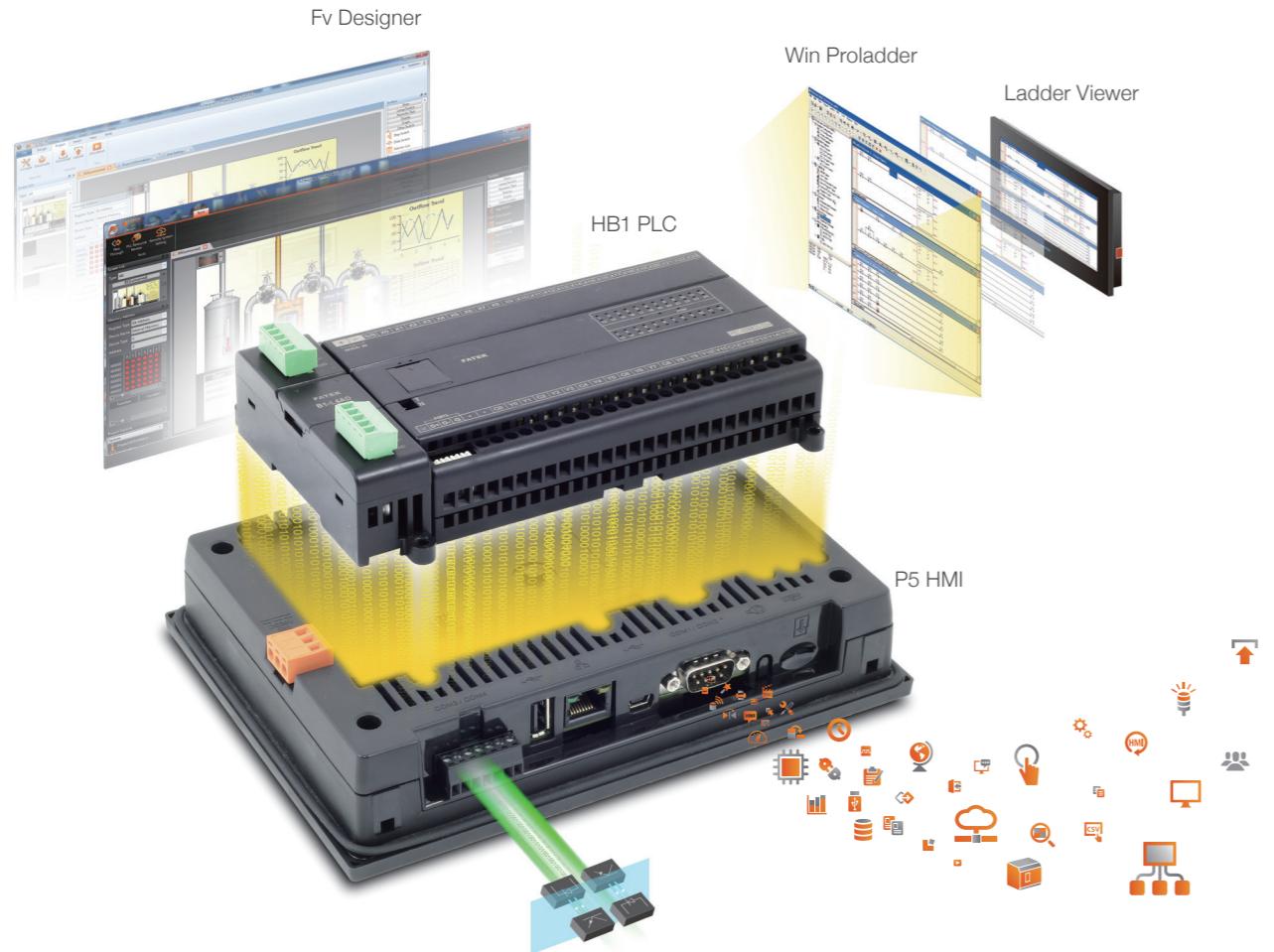
Simulation

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 HMI.



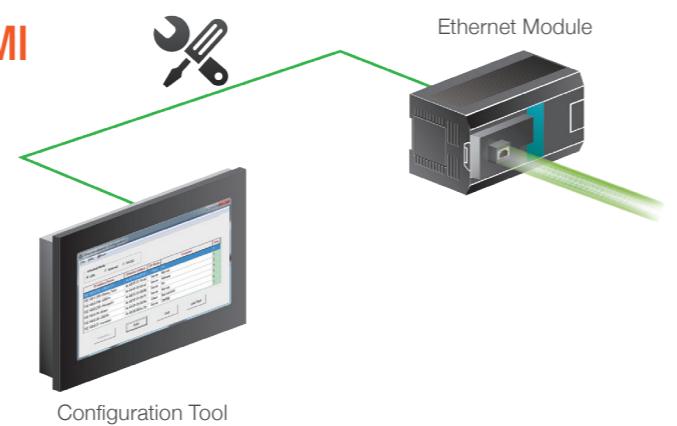
Integrated HMI + PLC

FATEK HMI and PLC solution is highly integrated system. The hardware has high noise immunity. The internal communication is optimized and use highest speed baudrate. There are many useful and powerful PLC software features built-in HMI. It helps user to maintain the system conveniently and quickly.



Configure the PLC Ethernet Module on HMI

P5 HMI provides build-in Ethernet Module Configuration Tool. User can configure the ethernet module on HMI directly.



On-line Monitoring PLC Ladder Program

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



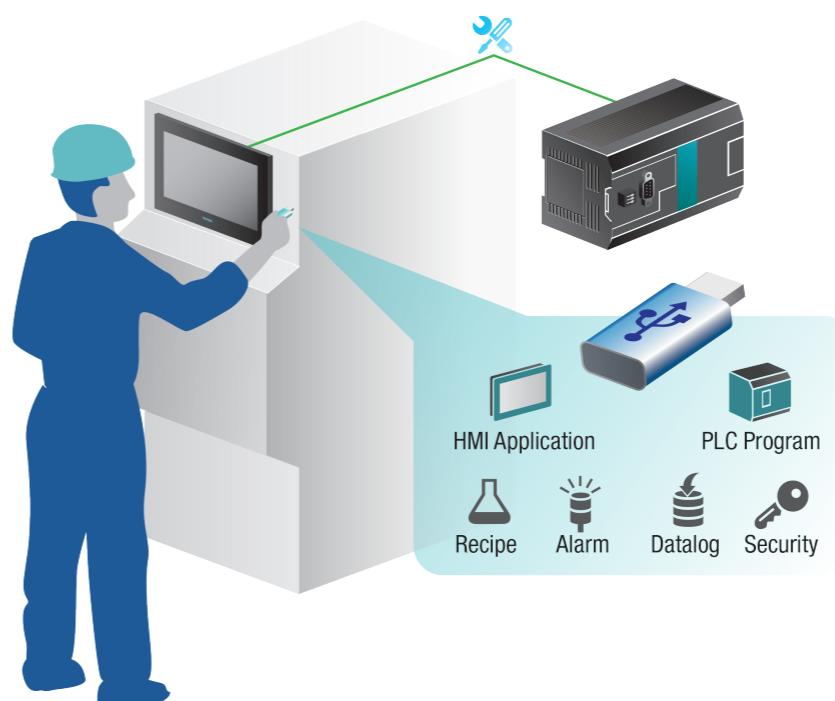
Import Tags from WinProladder Project

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.



USB Flash Drive Maintenance

- Site personnel need not use PC to maintain the equipment. He can just use usb flash drive to upgrade PLC ladder program and HMI application.
- In addition to this, user also can access datalog and alarm data, modify recipe parameters, and change security password by using usb flash drive.



Specification

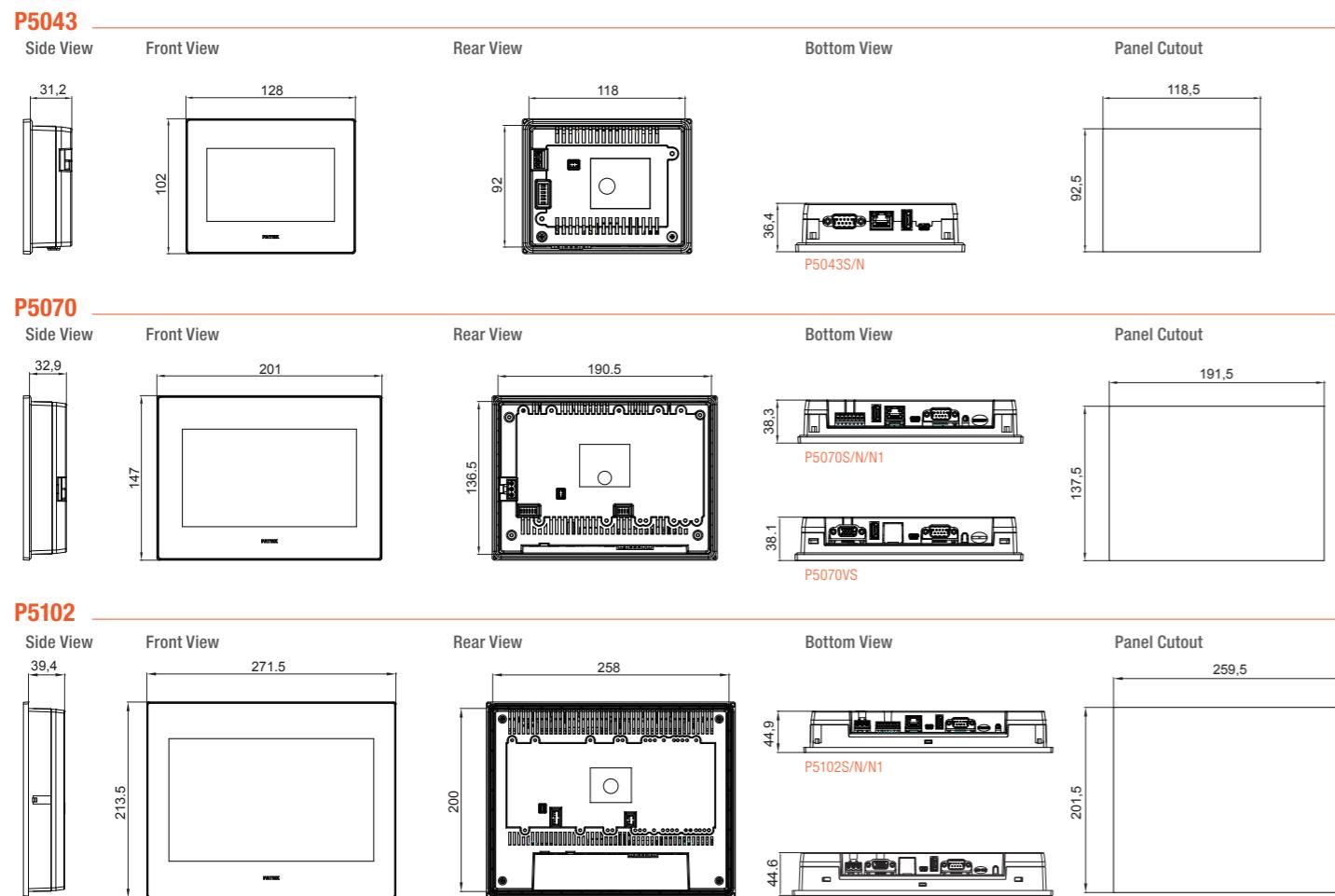


Model	P5043S	P5043N	P5070S	P5070N
Display	Display Type	TFT LCD, 16.7M Colors		
	Display Size	4.3" (16:9)	7.0" (16:9)	
	Resolution	480 X 272	800 X 480	
	Backlight	LED, 500nits	LED, 400nits	
	Backlight Life	30,000 Hrs.		
Touch	Type	4-wire Resistive Film		
Memory	Flash	256MB	256MB	
	RAM	128MB	128MB	
Internal User Storage		64MB		
Project Memory		32MB		
Real-time Clock		Built-in		
I/O Port	Serial 1	Connector: D-Sub 9-Pin COM1: RS-232 (TXD, RXD) COM2: RS-422/485 COM3: RS-485	Connector: D-Sub 9-Pin COM1: RS-232 (TXD, RXD, RTS, CTS)	
	Serial 2	---	Connector: Pluggable Terminal Block COM3: RS-422/485(Isolation) COM4: RS-485(Isolation) Support MPI	
	Video	---	---	
	LAN	---	10M/100M	---
	USB	USB2.0 Type-A (Host)x1 USB2.0 Type mini-B (Device)x1		
	microSD	---	---	---
	Audio	---	---	---
	PLC Extension	HB1 main units	HB1 main units + B1 extension modules	
	Termination Switch	Yes (For RS-422/485)		
	Power Input	24Vdc±20% (Isolated Power)		
Power	Consumption	0.35A@24VDC	0.4A@24VDC	
	Insulation	50MΩ at 500VDC		
	Protection Structure	Front Panel: IP65 / Rear Case: IP20		
Environment	Operating Temp.	0 ~ 50°C		
	Storage Temp.	-20 ~ 60°C		
	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		
	Cut-out	118.5 x 92.5 (mm)	191.5 x 137.5 (mm)	
	W x H x D	128.0 x 102.0 x 36.4 (mm)	201.0 x 147.0 x 38.3 (mm)	
	Weight	215 (g)	235 (g)	610 (g) 630 (g)
Certification		CE, UL		



P5070N1	P5070VS	P5102S	P5102N	P5102N1	P5102VS
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.					30,000 Hrs.
					4-wire Resistive Film
256MB					256MB
128MB					128MB
					64MB
					32MB
					Built-in
Connector: D-Sub 9-Pin COM1: RS-232 (TXD, RXD) COM2: RS-422/485 COM3: RS-485	Connector: D-Sub 9-Pin COM1: RS-232 (TXD, RXD, RTS, CTS)	Connector: D-Sub 9-Pin COM1: RS-232 (TXD, RXD, RTS, CTS)	Connector: D-Sub 9-Pin COM1: RS-232 (TXD, RXD, RTS, CTS)	Connector: D-Sub 9-Pin COM1: RS-232 (TXD, RXD) COM2: RS-422/485 COM3: RS-485	Connector: D-Sub 9-Pin COM1: RS-232 (TXD, RXD) COM2: RS-422/485 COM3: RS-485
Connector: Pluggable Terminal Block COM3: RS-422/485 (Isolation) COM4: RS-485 (Isolation) Support MPI	---	---	Connector: Pluggable Terminal Block COM3: RS-422/485 (Isolation) COM4: RS-485 (Isolation) Support MPI	---	---
---	Connector: D-Sub 15-Pin VGA Input (Resolution fix in 800x600)	---	---	---	Connector: D-Sub 15-Pin VGA Input (Resolution fix in 800X600)
10M/100M	---	---	10M/100M	10M/100M	---
USB2.0 Type-A (Host)x1 USB2.0 Type mini-B (Device)x1			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@24VDC	0.46A@24VDC	0.42A@24VDC	0.42A@24VDC	0.48A@24VDC	
50MΩ at 500VDC			50MΩ at 500VDC		
					Front Panel: IP65 / Rear Case: IP20
					0 ~ 50°C
					-20 ~ 60°C
					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 38.3 (mm)					271.5 x 213.5 x 44.9 (mm)
650 (g)	630 (g)	1340 (g)	1360 (g)	1380 (g)	1360 (g)
CE, UL	CE	CE, UL			CE

Dimensions



P5 Accessories

Item Name	Model	Description
Nameplate	P5NP043	Nameplate for P5043S/N
	P5NP070	Nameplate for P5070S/N/N1/VS
	P5NP102	Nameplate for P5102S/N/N1/VS
USB 1.8m download cable	USBA-MINIB-180	1.8m USB mini B type to USB A type download cable
Communication Cable	FBS-232P0-9FR-200	Mini-DIN 4M to DB9F 90° communication cable, (FBS main unit Port 0 RS232 connect to DB9M), Length 200cm
Connector	P5CC070	7-pin screw terminal block
	P5PC070	7-pin spring terminal block
	HMPC043	Power Connector for P5043S/N
	HMPC070	Power Connector for P5070S/N/N1/VS, P5102S/N/N1/VS
Optional	HMPC043H	Power Connector for P5043S/N (horizontal wire entry)
	HMPC070H	Power Connector for P5070S/N/N1/VS, P5102S/N/N1/VS (horizontal wire entry)

Fv RunTime

Model	I/O Tags	Links
IGU-FvRT-0150-L002	150	2
IGU-FvRT-0300-L004	300	4
IGU-FvRT-0600-L006	600	6
IGU-FvRT-0900-L009	900	9

Model	I/O Tags	Links
IGU-FvRT-1200-L012	1200	12
IGU-FvRT-1500-L016	1500	16
IGU-FvRT-3000-L016	3000	16
IGU-FvRT-5000-L016	5000	16
IGU-FvRT-9999-L016	9999	16

HB1 & B1 Options

Item Name	Model	Specifications
Main Units	HB1-10MB ◇ 25-D24S	6 point 24VDC digital input(4 points 50KHz, 2 points total 5KHz), 4 point relay output or transistor output(2 points 50KHz), build-in HMI port(back)+RS232+RS485 communication ports, left side is expandable 1-2 modules, right side is expandable up to 128 I/O points, built-in RTC and with detachable terminal block
	HB1-14MB ◇ 25-D24S	8 point 24VDC digital input(4 points 50KHz, 4 points total 5KHz), 6 point relay output or transistor output(2 points 50KHz), build-in HMI port(back)+RS232+RS485 communication ports, left side is expandable 1-2 modules, right side is expandable up to 128 I/O points, built-in RTC and with detachable terminal block
	HB1-20MB ◇ 25-D24S	12 point 24VDC digital input(6 points 50KHz, 6 points total 5KHz), 8 point relay output or transistor output(4points 50KHZ), build-in HMI port(back)+RS232+RS485 communication ports, left side is expandable 1-2 modules, right side is expandable up to 128 I/O points, built-in RTC and with detachable terminal block
	HB1-24MB ◇ 25-D24S	14 point 24VDC digital input(8 points 50KHz, 6 points total 5KHz), 10 point relay output or transistor output(4points 50KHZ), build-in HMI port(back)+RS232+RS485 communication ports, left side is expandable 1-2 modules, right side is expandable up to 128 I/O points, built-in RTC and with detachable terminal block
	HB1-32MB ◇ 25-D24S	20 point 24VDC digital input(8 points 50KHz, 8 points total 5KHz), 12 point relay output or transistor output(6 points 50KHZ), build-in HMI port(back)+RS232+RS485 communication ports, left side is expandable 1-2 modules, right side is expandable up to 128 I/O points, built-in RTC and with detachable terminal block
	HB1-40MB ◇ 25-D24S	24 point 24VDC digital input(8 points 50KHz, 8 points total 5KHz), 16 point relay output or transistor output(6 points 50KHZ), build-in HMI port(back)+RS232+RS485 communication ports, left side is expandable 1-2 modules, right side is expandable up to 128 I/O points, built-in RTC and with detachable terminal block
	HB1-48MB ◇ 25-D24S	28 point 24VDC digital input(8 points 50KHz, 8 points total 5KHz), 20 point relay output or transistor output(8 points 50KHZ), build-in HMI port(back)+RS232+RS485 communication ports, left side is expandable 1-2 modules, right side is expandable up to 128 I/O points, built-in RTC and with detachable terminal block
	HB1-60MB ◇ 25-D24S	36 point 24VDC digital input(8 points 50KHz, 8 points total 5KHz), 24 point relay output or transistor output(8 points 50KHZ), build-in HMI port(back)+RS232+RS485 communication ports, left side is expandable 1-2 modules, right side is expandable up to 128 I/O points, built-in RTC and with detachable terminal block
Right Side Expansion Modules	B1-4Y ◇ S	4 points relay or transistor output
	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
AIO Modules	B1-40XY ◇ S	24 points 24VDC digital input, 16 points relay or transistor output
	B1-2ADS	Non-Isolated 2 channels, 12-bit analog output module(-10~10V, 0~10V or -20~20mA, 0~20mA)
	B1-6ADS	Non-Isolated 6 channels, 12-bit analog input module (-10~10V, 0~10V or -20~20mA, 0~20mA)
	B1-L2DAS	2 channels, 12-bit analog output module (0~10V or 0~20mA)
Left Side Expansion Modules	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
	B1-CM2S	1 port RS232(Port4) communication module
Communication Modules	B1-CM5S	1 port RS485(Port4) 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
	FBS-CM25C	General purpose RS232 to RS485/RS422 communication interface converter with photocouple isolation
General Purpose Communication Converter	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 Mini-DIN 4M connector (used in standard PC USB to FBS main unit Port0 RS232), length 180cm
	FBS-232P0-9F-150	Mini-DIN 4M to DB9F communication cable (FBS main unit Port 0 RS232 connect to standard DB9M), length 150cm
Communication Cable	FBS-232P0-9M-400	Mini-DIN 4M to DB9M communication cable (FBS main unit Port 0 RS232 connect to standard DB9F), length 400cm
	FBS-232P0-MD-200	Mini-DIN 4M to Mini-DIN 4M communication cable (FBS main unit Port 0 RS232 connect to FBS-PEP/PEPR), length 200cm
	FBS-232P0-MDR-200	Mini-DIN 4M to 90° Mini-DIN 4MM 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

△ : 5-built-in 1 communication port (RS485) and with 1 programming port to communicate with P5 HMI

25- built-in 2 communication ports (RS232 + RS485) and with 1 programming port to communicate with P5 HMI

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