				Version	1.5
Item number	FvRT	Date	7/13/2021	Total	
	Manual		, -, -	number	60
				of pages	

# **FvRT Manual**

FATEK

The manual's contents will change when the software updates. To find the newest version of the manual, go to <u>http://www.fatek.com/tw/</u>. The download is located under the support section.



### FATEK CORPORATION

### Version change instruction

Version	Change Date	Change Content	
V1.4.15	2017/8/21	Version 1	
V1.4.16	2017/9/21	Distinguish between for 1 PC only and for	
		multiple PCs, and provide 10 minutes of buffer	
		time for users to try	
V1.5.5	2018/5/9	1. With the modification of FvDesigner V1.5.X	
		2. Unable to detect an appropriate level of	
		IGU-FvRT, providing 30 minutes of buffer	
		time	
		3. FvRT level changed from 9 levels to 7 levels	
		of For 1 PC Only and For Multiple PCs.	
V1.5.33	2019/4/18	1. Cancel For 1 PC only and For Multiple PCs	
		2. Add IGU-FvRT-0075-L002-B	
	2021/7/13	Cancel for supporting windows XP	

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## **FvRT Manual**

## **FvRT Introduction**

### Preface

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FATEK FvRT software mainly to let the project that FvDesigner software developed can run on the computer or industrial computer, combined with the computer's powerful computing power, memory capacity, storage space and open system architecture, easy to integrate with other peripherals or apps to meet the needs of customer project applications, such as the need for a larger screen display and so on.

Through FvDesigner provides a variety of beautIGUI objects, powerful communication capabilities, multiple data monitoring, and with the FBs PLC a high degree of integration with the perfect match to meet the needs of various industries, moreover, the original use of HMI designers can be easy to get started, and the conversion of the project are more convenient, such as the original HMI project can be converted into a project that can be run by computer.



Figure 1 FvRT illustration

### **FvRT Features**

- Easy to design screen, and provides varity of beautIGUI objects, image library and customized keypad function.
- No need to install WinProLadder, can show FBs PLC program directly on the application to facilitate debugging.
- Support the function of data log, alarm, recipe, operation log, schedule, data transfer and script, etc.
- Powerful communication ability, support the function of communication protocol of each brand PLC, multi-link, user-defined protocol and Modbus Gatewa, etc.
- Provide multi-language and custom system messages, easy to plan cross-country product applications.
- Only need to install the IGU-FvRT USB dongle on a running computer, FvRT can work properly.

#### System Requirement

Support OS: Windows7 (32&64 bits) Windows8 (32&64 bits) Windows10 (32&64 bits)

#### **Software Installation**

The installation boot step is displayed after the installation package is executed. Please confirm the installation steps in sequence.





Figure 2 Installation welcome page

岁 FvRT Ver1.5 - InstallShield Wizard	l.		X
Customer Information			E.
Please enter your information.			
User Name:			
user			
Organization:			
J.			
InstallShield			
	< <u>B</u> ack	<u>N</u> ext >	Cancel

Figure 3 Customer Information

闄 FvRT Ve	er1.5 - InstallShield Wizard	x
	tion Folder ext to install to this folder, or click Change to install to a different folder.	5
Ø	Install FvRT Ver1.5 to: C:\Program Files\FATEK\FvRT\Ver1.5\	
InstallShield -	< <u>B</u> ack Next > Cancel	

Figure 4 Choose Destination Folder

<b>Leady to Install the Progra</b> The wizard is ready to begin in	
If you want to review or chang exit the wizard. Current Settings:	ge any of your installation settings, click Back. Click Cancel to
Setup Type:	
Typical	
Destination Folder:	
C:\Program Files\FATEK\F	vRT\Ver1.5\
User Information:	
Name: user	
Company:	
l allShield	

Figure 5 Confirm before install



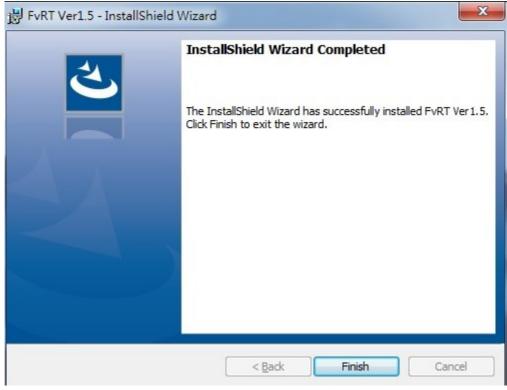


Figure 6 Installation Complete



# **1. Hardware Description and Product**

# **Specifications and Types**

This section describes the product specifications and types of FATEK FvRT and the hardware description of the FvRT product IGU-FvRT (USB Dongle).

## **1.1 Product Specifications and Types**

FvRT product categories are as follows, divided into 8 levels to support the use of external number of registers and support the number of links. The product name is as follows: IGU-FvRT-0075-L002-B, where 0075 indicates that the number of external registers is supported, the upper limit is 75; L002 indicates the number of support links, and the upper limit is 2 links.

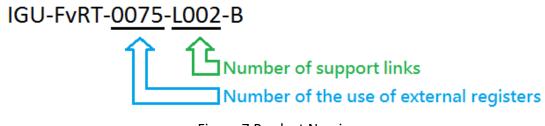


Figure 7 Product Naming

Product Category	Used External Registers Quantity (I/O Tags)	Support Links
IGU-FvRT-0075-L002-B	75	2
IGU-FvRT-0150-L002-B	150	2
IGU-FvRT-0600-L006-B	600	6

#### Table 1 FvRT Product Category



IGU-FvRT-1200-L012-B	1200	12
IGU-FvRT-1500-L016-B	1500	16
IGU-FvRT-3000-L016-B	3000	16
IGU-FvRT-5000-L016-B	5000	16
IGU-FvRT-9999-L016-B	9999	16

## **1.2 Hardware Description**

This section describes IGU-FvRT (USB Dongle) hardware part, mainly including the appearance and specifications dexcription, and so on.

### 1.2.1 Appearance

The figure below shows the appearance of IGU-FvRT (USB Dongle), IGU-FvRT (USB Dongle) insert into the computer or industrial computer USB port, the power light will keep blue, when the data start to access, the status light flashes blue.



Front view





Figure 8 The appearance of IGU-FvRT (USB Dongle)

## 1.2.2 Specifications

The following table shows the hardware specifications for IGU-FvRT (USB Dongle).

Item	Specifications
Transfer Interface	USB 2.0
Status LightPower light: the blue LED will be bright after plugging in the host Status light: This blue LED flashes when the a starts	
Supply Power and Current Consumption	5V, 40mA, 0.2W
Operating Temperature	0~60 °C

Table 2 hardware specifications of IGU-FvRT (USB Do	ngle)
---	-------



Storage Temperature	-20 ~ 70  ℃
Dimensions	55(length)x17(width)x8(height) mm
Weight	9g
Certification	CE



# 2. FvRT Software Interface Description

After the software installation is complete, you can find the FvRT implementation

icon on the program set (Fatek / HMI) or on the desktop ( ), click on the FvRT will start the screen.

# 2.1 FvRT Precautions before use

Please note the following before starting FvRT:

- 1. FvRT can only excute the projrct that FvDesigner compiled complete.
- 2. Before the FvRT execute the project, IGU-FvRT (USB Dongle) of the appropriate level must be inserted into the USB port of the executive computer or industrial computer. If the IGU-FvRT (USB Dongle) is not inserted into the USB port of the executive computer or industrial computer, it will appear the following figure to remind the user that FvRT cannot connect to IGU-FvRT (USB Dongle)



Figure 9 Error message for IGU-FvRT (USB Dongle) was not detected

3. To provide users with more convenient use and test FvRT, the system provides 30 minutes of buffer time, after the FvRT reminds the user that they cannot connect to the IGU-FvRT (USB Dongle) message, the following figure will appear, informing the user that if the IGU-FvRT (USB Dongle) of the appropriate level cannot be detected for more than 30 minutes, FvRT will be automatically be closed, please insert the appropriate level of IGU-FvRT (USB Dongle) into the USB port of the computer or industrial computer.



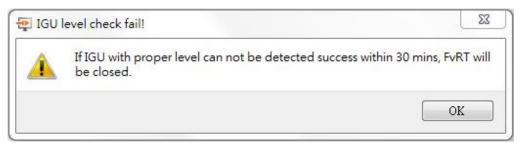


Figure 10 If IGU with proper level can not be detected success 30 minutes checking message

4. If an IGU-FvRT (USB Dongle) of a proper level is not detected within 30 minutes, the following figure will appear, and then FvRT will automatically be closed.

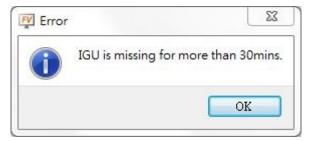


Figure 11 IGU still can not detected over 30 minutes

5. If it is already running, remove IGU-FvRT (USB Dongle), the system will automatically detect, and appear the following figure, if in 30 minutes still undetectable, FvRT will automatically be closed.

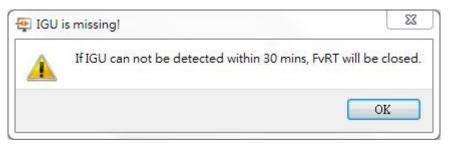


Figure 12 IGU is missing

 IGU-FvRT (USB Dongle) no need to install USB driver, when IGU-FvRT (USB Dongle) insert into computer or industrial computer USB port, USB driver will automatic installation, and as a disk, figure as shown below.



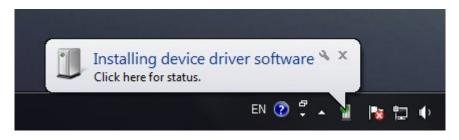


Figure 13 USB driver automatic installation

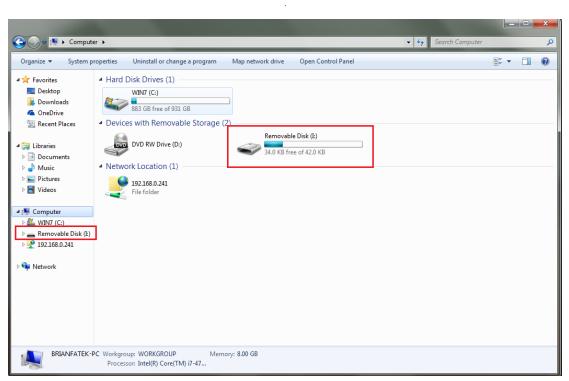


Figure 14 IGU-FvRT (USB Dongle) as a disk

## 2.2 FvRT Startup Screen Description

This section explains the settings of the FvRT startup screen.

FvRT will record the settings that were previously executed, contains settings for storage location and port, for user easy to use, until opening another project, the old record will be cleared, change to record the setting information of the new project, if the project has been modified and compiled by FvDesigner, need to reopen the project.



## 2.2.1 FvRT Startup screen [General] Paging

FvRT startup screen [General] paging, figure as shown below, the setting attributes

FvRT				
▲ ↓ Host ▲ ↓ Link0	General Lin	kO		
in co	Project	D:/Project.cfrp		
	HMI Model	PC		
	Version	257		Open
	Creator	unnamed		Delete Data
	Note			
	-Save Location			
	Internal	D:/Project/run/storage/internal	🖒	
	USB Storage	E: •		Setting
	microSD Card	F: •		About
				Exit
IGU-FyRT-9999-L016-B(U	nlimited)	9	English 🔻	Version 1.5.33

are described in the following table.

Figure 15 FvRT Startup screen [General] paging

### Table 3 FvRT Item and Setting of Startup screen [General] paging

Item	Description
【Host】	Will display the linked device.
【 General 】	【 Project 】 Currently open the path to the project storage.
	【HMI Model 】 Open the model that project used.





	【 Version 】 Open the project using which version of the FvDesigner program. 【 Creator 】 Creator of opening project.
	【 Note 】 Note of opening project.
[Save Location]	The location of the default storage will be with the project, before it start, can also modify this location. 【Internal】
	<pre>If in project setting let the file export to [Internal], then the file will store to this specify location. If this field is empty, the system will store to the default path. If use the default storage location, the system will create a project with the same name as the project name under the same path. For example: The project store in: C:\Files\Project11.fpj The system defaults to the [Internal] storage location: C:\Files\Project11\run\storage\ internal [USB Storage] If in project setting let the file export to [USB Storage], then the file will store to this specify location.</pre>



	【 microSD Card 】
	If in project setting let the file export to 【microSD Card】,
	then the file will store to this specify location.
IGU-FvRT-xxxx- Lxxx-B	Indicates the level of IGU-FvRT (USB Dongle) currently detected.
	The parentheses indicate whether the current IGU-FvRT is
	activated and differentiated by color. Red means not
	activated and green means activated.
	Excute the opening project.
	Open the project that already exist(the project that
【 Open 】	FvDesigner compiled complete). If the project have been
	modified and compiled by FvDesigner, need to reopen the
	project.
【 Delete Data 】	It will show the figure below after clicked, after check the
	item you want to delete, press [OK] button, will delete
	the selected destination file and folder from the selected
	internal path.
	P Delete Data
	Delete Data
	Select All Backup Memory Alarm Recipe Data Log Print
	Link Security Password Operation Log Data Transfer
	Himt:FvRT will delete files and folders on current setting internal path.
	OK Cancel
	Set up FvRT to operate the system and display behavior.
[Setting]	For details, refer to chapter 2.2.3-FvRT Startup screen
	[Setting] Property
[About]	Display version information, figure as shown below.



	About FvRT  FATEK AUTOMATION CORP.  FVRT Version 1.5.33 5e32f804  Copyright (C) 2014-2019 FATEK AUTOMATION CORP. All Rights Reserved.  OK
[Exit]	Close FATEK FvRT software.
<b>9</b>	Select the language to switch the FvRT software interface, including English, Traditional Chinese, Simplified Chinese and Türk.





## 2.2.2 FvRT Startup screen [Link] Paging

FvRT startup screen [Link] paging, figure as shown below, each of the description are as follows.

FvRT				
✓ Unost ✓ General Host ✓ G	Port	Link0 COM3 FATEK Automation Corp. FATEK FBs/B1/B12/HB1 Serial	▼	Open Delete Data
	Driver	[10] VerV1.40 (fatek_ascii)		Setting About Exit
IGU-FyRT-9999-L016-B(Unlimit	ted)		🔮 English 🛛 👻	Version 1.5.33

Figure 16 FvRT Startup screen [Link] Paging

### Table 4 FvRT Item Startup screen [Link] Paging

Item	Description
[ Port ]	This refers to the serial port running FvRT computer or industrial computer
[ Manufactory ]	Project uses the manufactory of driver.
[ Device ]	Project uses the type of driver.
【Link Type】	Project uses the type of link, such as serial or ethernet, etc.
23	·

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# 2.2.3 FvRT Startup screen [Setting] Property

FvRT startup screen [Serring], figure as shown below, each of the description are

as follows.

✓ Beep while pres ■ Disable Right-C			
🔲 Disable Right-C	1.10.1.11		
	uck Context Menu		
System			
🔲 Run application	automatically when Win	dows is started	
🔲 Disable Alt+F4,	Alt+Esc,Alt+Tab, Ctrl+Es	x, Ex	
📃 Disable Task M	anager		
After stopping the	project		
O Return to star	tup screen 🔘 Close the	e program 🛛 🔘 Shutdown	the machine
Display			
🔲 Full screen alwa	100		
Start project wit			
Show caption b			
🔲 Always on the t			
Project			
-	D:/pc_1.5.6.cfrp		
	ectly when program is star	rted	
Password Protec			
ſ			
New password			
Verify Password			

Figure 17 FvRT startup screen [Setting] dialog



## Table 5 FvRT startup screen [Setting] item and description

Item	Description
【General】	【Beep while pressing】 Presses the object on the screen during the FvRT runtime, the computer or industrial computer will beeps.
	【 Disable Right-Click Context Menu 】
	Press the right mouse button while FvRT is running, no quick menu will appear.
【 System 】	Run application automatically when Windows is
	started 】
	Check this option, will automatically excute FvRT when the computer or industrial computer is open.
	【 Disable Alt+F4, Alt+Esc, Alt+Tab, Ctrl+Esc, Esc 】
	Check this option, when the computer or industrial computer is excuting FvRT, Alt+F4, Alt+Esc, Alt+Tab, Ctrl+Esc, Esc and other hotkeys will be banned.
	【 Disable Task Manager 】
	Check this option, when the computer or industrial computer is excuting FvRT, task manager will be banned.
	【After stopping the project】
	【Return to startup screen】
	After project is stopped, FvRT will return to startup screen.



	【Close the program】
	After the project is stopped, FvRT is closed at the same time.
	【Shutdown the machine】
	After the project is stopped, the computer or industrial computer will also shut down
【 Display 】	【Full Screen Always】
	Check this option to show the entire screen.
	【Start project with full screen 】
	Check this option to show the entire screen at the beginning of the project, follw-up you can press the right mouse button to appears a quick menu on anywhere of
	the screen, press 【Restore 】 can return to normal screen
	display.
	Show caption bar
	Check this option, if the project is not displayed on a full screen, the caption bar will be displayed.
	【Always on the top 】
	Check this option, the project is displayed in front of other Windows software
【 Project 】	【File name】
	Display the current project path and project name, this can not be modified.
	【Run project directly when program is started 】



	Check this option, when FvRT is executed, the project will
	be started directly.
[ Password	[Password Protection]
Protection ]	If check this option, when FvRT excute the following function, will show enter password dialog, figure shown as below, enter the password for the user to continue. Include the following function :
	- Change the setting of FvRT.
	- Stop project.
	<ul> <li>Close project and FvRT software program.</li> </ul>
	Please Enter Current Password 2 2 Current Password: OK Cancel
	【New Password】
	If use the 【Password Protection 】 function, need to
	enter new password here for the first time, if want to modify password, can enter the modify password here, if do not want to modify password, this field can be empty.
	【Verify Password】
	If use the 【Verify Password 】 function, need to enter
	verified password here for the first time, if want to modify password, can enter the verify password here, if do not want to modify password, this field can be empty.
	【Verify Password 】 and 【 New Password 】 need to be



tha same to normal use 【Password Protection】
function.

# 2.3 FvRT Runtime Options

This section describes the additional options available during FvRT runtime, including options on the title bar and options on the quick menu, etc.

## 2.3.1 Caption Bar Option

FvRT show caption bar during the run time, figure shown as below, the following options appear on the right side of the caption bar, the options are described in the following table.

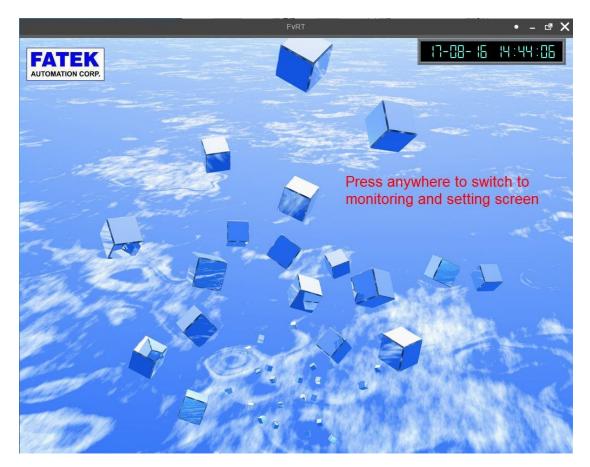


Figure 18 FvRT window with a caption bar at run time



### Table 6 Item and description of the caption bar during FvRT run time

Item	Description
•	The FvRT in the run time will be scaled to the notification area in the lower right corner of the computer after clicked.
-	The FvRT in the run time will be scaled into the computer's work column after clicked.
ß	The FvRT in the run time will display as full screen after clicked.
×	Will stop the project in and back to FvRT startup screen.

In addition, if an IGU-FvRT (USB Dongle) of a proper level cannot be detected during FvRT operation, a message of FvRT (IGU-FvRT Missing!!!) will be displayed in the title bar and will appear red, as shown below.

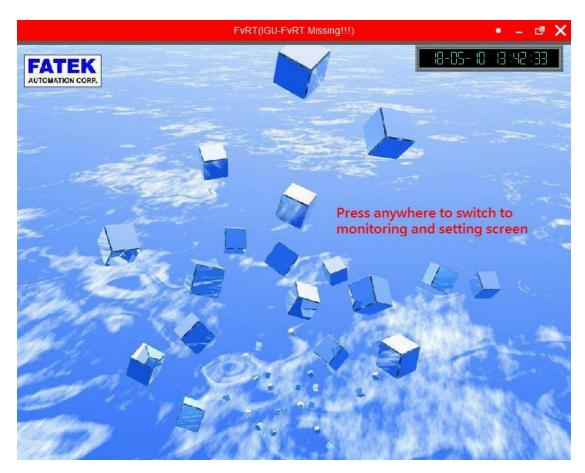


Figure 19 The title bar prompt that IGU-FvRT messages that are proper for the level cannot be detected



### 2.3.2 Quick Menu

Click the right mouse button during FvRT run time will show quick menu, figure as shown below, each option description as follows.



Figure 20 Quick menu during FvRT run time

#### Table 7 Item and description of quick menu during FvRT run time

Item	Description
【Full Screen】/	Able to switch to full screen or normal screen display, if
	check 【Setting】【Full Screen Always 】 and will not
[ Restore ]	show this option.
[Setting]	Display <b>Setting</b> dialog after checked, for user setting.
[ Stop ]	Stop project after checked, FvRT will return to startup
	screen.
【 Close 】	Close project after checked, FvRT will close at the same
I CIOSE I	time.



# 3. Usage Step Instructions

This section will describes the usage step instructions of FvRT, will use FvDesigner to design a project to how to perform FvRT on a computer or industrial computer and run a project, and will description by example.

As for the FvDesigner detailed use or function, please refer FvDesigner manual.

The project requirements for this example are as follows :

- The project will use FvRT on a computer.
- The computer screen resolution is 1024x768.
- The project will use the computer Com3 and FATEK PLC FBs Port0 connection, baud rate and format are 9600, 7, Even,1, station no. is 1.
- The project has the alarm function as follows:
  - When R10 is bigger than 80, display "Motor temperature is too high" alarm message.
  - When R11 is bigger than 60, display "Cylinder pressure is too high" alarm message.
- The project has 2 screens.
  - Screen 1 is startup screen, with backgroung image, image(FATEK Logo)
     object, date/time display(display the current date and time), text object, change screen object, etc.
  - Screen 2 is monitor and setting screen, with 2 bit switch objects, 2 numeric input/display objects, 2 meter objects, 1 alarm display object, change screen object, text object, background image.





Figure 21 example screen 1

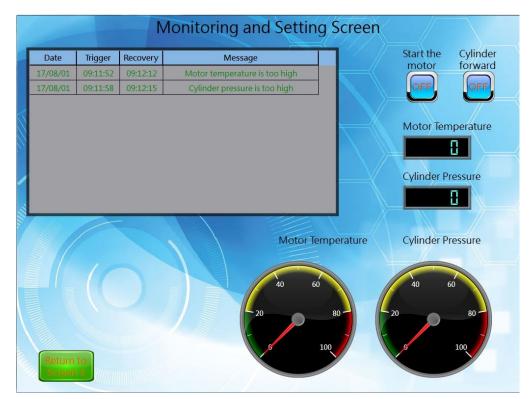


Figure 22 example screen 2



## **3.1 Use FvDesigner to plan a project**

First excute FvDesigner software, and follow the steps below to build the project. FvDesigner detailed use or function, please refer to FvDesigner manual.

Step 1: excute FvDesigner software, add a new project, model choose as PC, the screen resolution is 1024x768, figure as shown below.



Figure 23 Select PC and choose the resolution



Step 2: click [next], then click [Add] to add a new controller, interface type select direct link(serial), product series select FATEK FBs/B1/B1z/HB1, baud rate and format set 9600, 7, Even, 1, and station number set as 1, figure as shown below.

Name	Link0				
interface Type	Direct Link(Serial)				
Manufacturer	FATEK Automation Corp.				✓ Help
Product Series	FATEK FBs/B1/B1z/HB1				p
nterface Setting		_			
Basic Comn	n. Error Handling Advance	±			
Port	COM 3 ‡		Timeout(ms)	1000	÷
Baud Rate	9600		Command Delay(ms)	0	*
Parity	Even		Retry Count	2	÷
Data Bits	7				
Stop Bits	1				
Device Specific Set	ting				
Sub-links					
Device Name	0				
Station Number	1				Set in Register
Link Status					
Enable/Disab	le Link in Register				

Figure 24 Select the controller and set the communication format



Step 3: click [next], select the storage path and file name, figure as shown below.



Figure 25 Select the storage path and file name

Step 4: press [Finish], will appear screen planning window, click left side [Project

Explorer ]  $\rightarrow$  [Functions]  $\rightarrow$  [Alarm], figure as shown below.

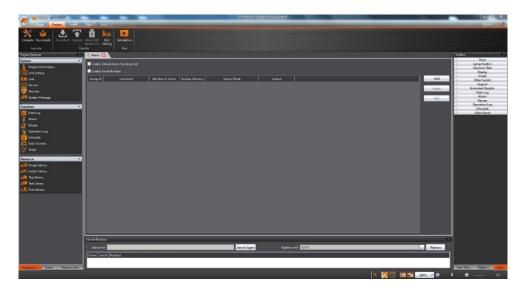


Figure 26 open the alarm setting window



Step 5: click [Add] to add a new alarm group 1, will appear alarm planning window,

set [Polling Frequency] as 1 sec, set [Records] as 300, check [Backup

Memory ], click to add a new alarm, and add when R10 is bigger than 80, show "Motor temperature is too high" alarm message, when R11 is bigger than 60, show "Cylinder pressure is too high" alarm message, figure as shown below.

Polling Frequency	1 sec				VIII	
				ing Frequency is 0, system v address as soon as possible.		
Records	300		🗘 🗹 Ba	ckup Memory		
Trigger a bit	\$U:V0.0		when	Buffer is 90% Full		
Enable Buffer Clear Bit	\$U:V0.0					
Turn on Backlight and tu	rn off Screen S	Saver				
Data Type A	ddress	Condition	Value	Message	Level	Advanced Setting
16Bit-UINT @	0:R10	>	80	Motor temperature is too high	1	
16Bit-UINT @	0:R11	>	60	Cylinder pressure is too high	1	
12						50

Figure 27 Add new alarm



Step 6: press [OK], Click the lower left [Screen List] to switch to the screen display, figure as shown below.

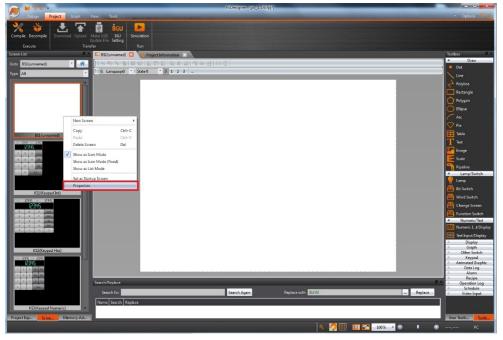


Figure 28 click screen properties

Step 7: Click the [Property] of screen 1, click to select image as the background

image of screen 1, figure as below and press [OK].

etting			Background	
D	BS	÷	Background Color	
ïtle	unn	amed	Display Mode	Stretch
creen Size	Width	1024 🗘	Background Image	Clear
	Height	768 🗘		
ecurity Level	Level0	*		
Change Screen	Auto Logout		Underlay Screen	
Execute Scripts			Print Screen	
)pen	None	•	Whole Screen	
Close	None	•		
Cycle	None	¥	Show Screen Image	
Cycle Delay Time	1000ms	÷	Left-up Corner	X1: 0
				Y1: 0
			Lower-right Corner	X2: 1023
				Y2: 767

Figure 29 select background image



Step 8: Drag a picture object in the toolbox to screen 1, click to select image and



move to the top left of screen 1, figure as below, and press [OK]

Figure 30 Add image object

Step 9: Drag a date/time display object in the toolbox to screen 1 and move to the top right of screen 1, figure as below, and press [OK].

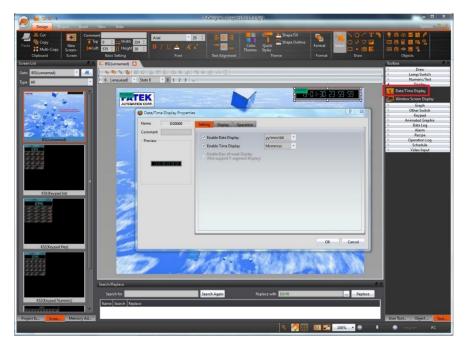
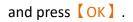


Figure 31 Add date/time display object



Step 10: Drag a text object in the toolbox to screen 1, and fill in the content field "Please press any screen, switch to monitoring and setting screen", figure as below,



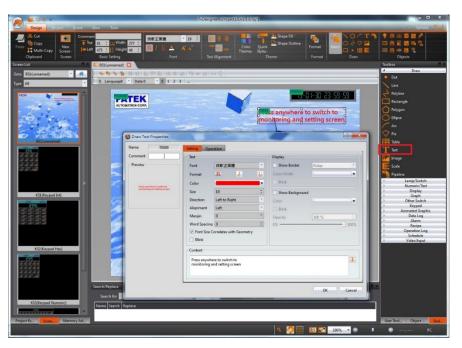


Figure 32 Text object

Step 11: Add [Basic Screen] screen 2, switch to screen 1.

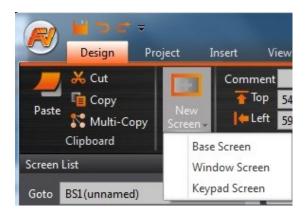


Figure 33 Add basic screen



Step 12: Drag a change screen object in the toolbox to screen 1, [Type] choose as

[Change Screen], [Screen] choose 2, figure as below, switch to [Display]

paging, cancle [Background] display, and press [OK], then adjust the size and location of the change screen object.

ame SB0001	Setting Display Opera	ation External Label		
omment	Execute while Releasing Play Audio while Pressing Enable Multi-function			
	Type Screen	Screen Change BS2(unnamed)	*	
	Change User Level	0	\$	

#### Figure 34 Add change screen object

Comment					
Тор	-44	++	👥 Width	1024	÷
i keft	15	*	📑 Height	768	÷
Basic Setting					

Figure 35 Adjust the size and location of the change screen object

www.PLC1.ir

Step 13: switch to screen 2, drag 3 text objects in the toolbox to screen 2, fill in the contents of each field, "monitoring and setting screen", "motor start" and "cylinder forward", drag 2 bit switch objects in the toolbox to screen 2, one of the switch

[Write Address] and [Monitor Address] set to PLC Y0, another one [Write

Address ] and [ Monitor Address ] set to PLC Y1, action set [ Bit Invert ], and select the appropriate image, figure as shown below.



Figure 36 Add text and bit switch objects



Step 14: drag 1 alarm display object in the toolbox to screen 2, set [ Alarm Group ] as the first group, and select the appropriate column width, figure as shown below.

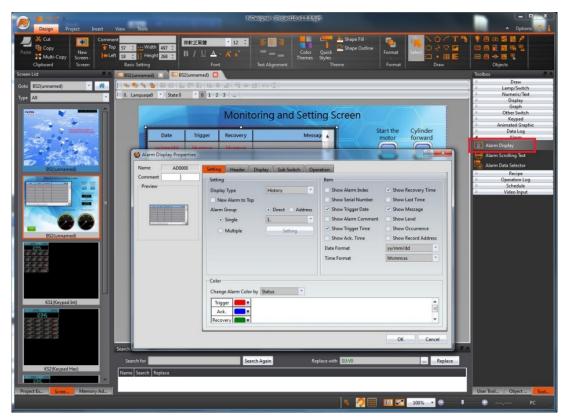


Figure 37 Add alarm display object



Step 15: drag 2 text objects in the toolbox to screen 2, fill in the contents of the field, "motor temperature" and "cylinder pressure" and so on, drag 2 numeric/input

display objects in the toolbox to screen 2, one of the object [Monitor Address] set

to PLC R10, another one [Monitor Address] set to PLC R10, figure as shown below.

Design Project Insert View Tools	FiDesinger (BiogetL6,0=36509)	×
X. Cut         Comment           Paste         Mexic           Cipboard         Screen		●         ●         2         2         2         2           □         ●         1         1         1         1         1           □         ●         1         1         1         1         1         1           □         ●         ●         1
Screen List	Airm       Operation       External label	Toolbox     Ø       Draw     Draw       Dot     Line       Polyline     Rectangle       Polyline     Rectangle       Polyline     Rectangle       Pipe     Tools       Pipe     Tools       Pipeline     Carpor/Switch       Polyline     Polyline       Polyline     Polyline       Polyline     Polyline       Polyline     Carpor/Switch       Polyline     Carpor/Switch       Polyline     Other Switch       Polyline     Other Switch       Polyline     Carpor       Polyline     Other Switch       Polyline     Other Switch       Polyline     Carpor       Polyline     Other Switch       Polyline     Carpor       Polyline     Polyline       Polyline     Polyline       Polyline     Polyline       Polyline     Polyline       Polyline     Polyline
Project Ex Scree Memory Ad	9. 🌅 🎹 🛄 🔀 💷 🖡	User Tool Object Tool Tool PC

Figure 38 Add text and numeric/input display objects



Step 16: drag 2 text objects in the toolbox to screen 2, fill in the contents of the field, "motor temperature" and "cylinder pressure" and so on, drag 2 meter objects in the

toolbox to screen 2, one of the object [ Address ] set to PLC R10, another one

[Address] set to PLC R10, figure as shown below.

RuDesigner (Brojectilo v1.3.6.fp)*	×
Cut       Comment         Parte       Copy         New       Top 1977         Interface       9 Copy         Screen       Interface         Cut       Top 1977         Interface       9 Copy         Screen       Interface         Cut       Top 1977         Interface       9 Copy         Screen       Interface         Basic Setting       Font         Copy       Theme         Format       Draw         Object       Draw	18 時, <u>13</u> 西 単
Screen list 🖉 × 🔤 BS1(unnamed) 🗵 🔚 BS2(unnamed) 🖸	Toolbox 🕫 🗙
Goto BS2(unnamed)	Draw Draw
Type All 🗸 1 0. Language0 * State 0 * 0 1 2 3	Line
Manitoring and Catting Corport	Polyline
Monitoring and Setting Screen	Rectangle
Date Trigger Recovery Messag Start the Cylinder	Polygon
motor forward	C Ellipse
Meter Properties and the Array Corp.	Arc
Name M0000 General Display Scale Range Operation	Pie Pie
BSI(unnamed) Comment Monitor Address Motor Temperature	Table
Update Normal Address (0.811	T Text
Data Type 168it-UINT •	Scale
Source Range Cylinder Pressure	Pipeline
Dynamic Range 2345	Lamp/Switch
	Display
BS2(unnamed)	Graph
Post Processing Cylinder Pressure	Meter
None Gain/Offset Max/Min.	Data Block Graph
	Data Block XY Scatter
	Dither Switch
	Keypad     Animated Graphic
KSL(keypad int)	Data Log
	Recipe     Operation Log
OK Cancel	Schedule
	Video Input
Search/Replace	5 ×
Search for Search Again Replace with \$U5/0 Replace	
KS2(Ktyp2dHes) Name   Search   Replace	
Project EzScree Memory Ad	User Tool Object Tool
9. 🌅 🏢 🔝 🔽 🔤 👘	♥ 💮, PC

Figure 39 Add text and meter objects



Step 17: drag 1 change screen object in the toolbox to screen 2, screen set as screen 1, and add a background image, figure as shown below.

Project Insert	View Tools	FvDesigner -	(Project16_v1.5.6.fp)#)		×
Paste K Multi-Copy Clipboard	Top 539 C Width 88 C Left 38 C 1: Height 50 C Basic Setting	A A A' Font Text Align	Color Quick Shape Fill - Color Quick Shape Outline - Themes Styles - Theme	Format Format Draw	● 円 ○ 図 器 ○ 円 頁 話 時 吗 回 円 話 話 時 型 のbjects
Screen List 97 Geto ES2(unnamed) Type All SS3(unnamed) SS3	BS (or Conge Screen Properties				Toolbox     B       Draw     Lamp/Switch       Lamp/Switch     Bit Switch       Bit Switch     Bit Switch       Word Switch     Bit Switch       Draw     Graph       Draw
KSI(Keypad Int)	Search/Replace Search Replace Name Search Replace	Search Agan	Replace with SUM	OK Cancel	Uter Tool ChjectTool

Figure 40 Add change screen object

Step 18: After the project is finished editing, please save the file and press the

[Compile] button, a success message appear when compiled success.



Figure 41 Press compile option



Information	Content
Project	Project.fpj
Date	2019/04/17 16:27:00
Project Location	D:/Project.cfrp
Memory Usage(Bytes)	Objects       : 423,686         Image File : 69,178         Audio File : 12         Tag       : 2,130         Text       : 1,472         Script       : 16         Recipe       : 0         Font       : 0
Project Capacity(Bytes)	Total Used : 496,494 Remain : 33,057,938
Compile Output	Errors : 0 Warnings : 0
Recommended Model	IGU-FvRT-0075-L002-B
	Success

Figure 42 Compile Complete

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#### 3.2 Use FvRT to Run

After the project is finished editing, insert the IGU-FvRT (USB Dongle) into the computer, then follow the steps below to execute the project on your computer. FvDesigner detailed use or function, please refer to FvDesigner manual.

Step 1: Insert IGU-FvRT (USB Dongle) into the execution computer, and link the serial port of the computer and FATEK PLC FBs Port0.

Step 2: Execute FvRT software, choose the language for the interface, press

[Open] in startup screen, choose a project that has just been compiled, and set

the internal storage path or use the default path, figure shonw as below.

FV FVRT			
Host	General Link	Ω	
0	Project	D:/Project.cfrp	
	HMI Model	PC	]
	Version	257	Open
	Creator	unnamed	Delete Data
	Note		
	-Save Location -		
	Internal	D:/Project/run/storage/internal	
	USB Storage	E: •	Setting
	microSD Card	<b>F</b> : <b>•</b>	About
			Exit
IGU-FyR I-9999-L016-B(Unlimit	ted)	See English	• <sup>f</sup> ersion 1.5.33

Figure 43 Open

Note: when the project has been modified, after the completion of the compiler need to re-open the project



Step 2: switch to [Link] pagong, confirm the correctness of the port, figure as shown below.

FVRT			
	General I Port	COM3	
	Manufactory Device	FA TEK Automation Corp. FA TEK FBs/B1/B12/HB1	Open
	Link Type	Serial	Delete Data
	Driver	[10] VerV1.40 (fatek_ascii)	
			Setting
			About
IGU-FvRT-9999-L016-B(Unlimit	æd)	Section Sectio	Version 1.5.33

Figure 44 [Link] paging





Step 3: press, will enter screen 1 of the design project , as shown below

Figure 45 Screen 1 of the project

Step 4: Point anywhere on the screen, will enter screen 2 to the project that just designed, as shown below, can verify when press "Motor start" button, will Y0 of PLC be ON or not, and when R10 is bigger than 80, display "Motor temperature is too high" alarm message, and other actions.



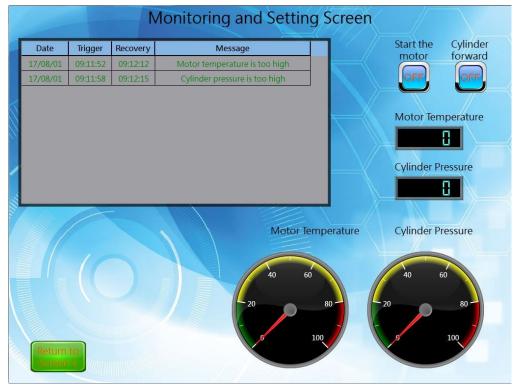


Figure 46 Screen 2 of the project

Step 5: If want to leave the project or FvRT, press the right mouse button, then click

[Stop] or [Close].

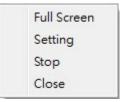


Figure 47 FvRT leaves the project



# 4. FvRT and HMI Function Differences

This section explains the functional differences between FvRT (FvDesigner model selection PC) and HMI (FvDesigner model selection HMI), such as FTP and installment functions are supported on HMI, but these two features are not supported in FvRT, So when using FvRT (FvDesigner model to select PC) some features are not available, or options are not displayed, etc. As shown below, refer to the following table for details on the difference between the two functions, in this form, the HMI uses the P5070N as an example. For other models, please refer to the model function table.

BS	1(unnamed) 📧 🏾	Servers 🛛	
F			
	Override FTP Config		)
	Port	21 🗘	Mask Passwords
	Read-Only Account User Name Password		]
	Read-Write Account User Name Password		]

Figure 48 Model selection HMI can select FTP function



BS1(unnamed)	📿 Servers 🛛	
FTP VNC SM		]
Port	ver	Mask Passwords
Read-Only Accou User Name Password	unt	
Read-Write Accor User Name Password	unt 🗌	

Figure 49 Model selection PC can not choose FTP function

Security Installment		
Basic Advanced		
Enable Installment		
Туре	Static Opynamic	
Keypad Screen	Default	
Expiring Notification		
Setting		
Total Period	0	
Super User Password	fatek	
Date	Password Comment	

Figure 50 Model selection HMI can select installment function



ype • Static • Dynamic ieypad Screen • • • • • • • • • • • • • • • • • •	
Expiring Notification	
Setting	
Total Period	
Super User Password fatek	
Date Password Com	ment

Figure 51 Model selection PC can not choose installment function

Functions	FvRT	HMI(P5070N)	Addition Remarks
NV Register	0 КВ	120 KB	
XNV Register	12 MB	12 MB	
Project Size Limit	32 MB	32 MB	
Screen Resolution Adjustment	support	Does not support	FvDesigner model after selecting PC, you can adjust the screen resolution for PC
Backlight setting function	Does not support	support	
Multi-Link(Serial)	Does not support	support, Up to 8 stops	
Multi-Link(Ethernet)	support, Up to 32 stops	support, Up to 32 stops	
PLC Port	Does not support	support	

Table 8 FvRT and HMI function differences



		Does not	support
L		support	
VNC Fi	unction	Does not	support,
		support	Up to 2 stops
Installr	ment Function	Does not	support
		support	
Font Li	ibrary	Does not	support
		support	
S	System: Increase	Does not	support
E	Brightness	support	
S	System: Decrease	Does not	support
E	Brightness	support	
S	System: Turn	Does not	support
E	Backlight OFF	support	
S	Safe Removal:	Does not	support
	Remove USB	support	
s jtc	Storage		
NS L	Safe Removal:	Does not	support
F ig	Remove microSD	support	
Function Switch	Card		
	nstallment:	Does not	support
E	Enter Installment	support	
F	Password		
ľ	nstallment:	Does not	support
r	Modify Static	support	
L I	nstallment		
ι ι	Update: Project	Does not	support
ι	Update	support	
C	OP_VGA	Does not	support
		support	
C	OP_	Does not	support
E tag	BACKLIGHT_EN	support	
System tag	OP_BATTERY	Does not	support
Syst	LEVEL	support	
	OP_BACKLIGHT	Does not	support
	LEVEL	support	
0	OP_BACKLIGHT	Does not	support



	_TIME	support	
	SS_HMI_	Does not	support
	WARNING	support	
	SS_SD_STATUS	Does not	support
		support	
	SS_USB_	Does not	support
	STATUS	support	
	SS_HMI_	Does not	support
	FREE_SPACE	support	
	SS_SD_	Does not	support
	FREE_SPACE	support	
	SS_USB_	Does not	support
	FREE_SPACE	support	
	NET_IP	Does not	support
		support	
	NET_GATEWAY	Does not	support
		support	
	NET_MASK	Does not	support
		support	
	NET_MAC	Does not	support
		support	
	LINK_PLC_	Does not	support
	PORT	support	
Uplo	ad	Does not	support
		support	
Dow	nload	Does not	support
		support	
Mak	e USB Update File	Does not	support
		support	
USB	Dongle Setting	support	Does not
			support
File	Fransfer	Does not	support
		support	
Pass	Through	Does not	support
		support	
Rem	ote System Setting	Does not	support
		support	



Data Log_Group	Up to 64	Up to 64 groups	
	groups		
Data Log_Number of Addresses	Up to 512	Up to 512	
Data Log_Occurrences	Up to 65535	Up to 65535	
Alarm_Group	Up to 64 groups	Up to 64 groups	
Alarm_Records	Up to 10000	Up to 10000	
Alarm_Number of Alarm	Up to 2000	Up to 2000	
Recipe_Group	Up to 6 groups	Up to 6 groups	
Recipe_No. of Recipe Parameters	Up to 3000	Up to 3000	
Recipe_No. of Recipe	Up to 2000	Up to 2000	
Operation Log_ Number of Records	Up to 1000	Up to 1000	
Schedule_Group	Up to 64 groups	Up to 64 groups	
Data Transfer_Group	Up to 64 groups	Up to 64 groups	
Data Transfer_No. of Words	Up to 65535	Up to 65535	The number of words in each group
Data Transfer_No. of Bits	Up to 65535	Up to 65535	The number of bits in each group
Script_Quantity	Up to 256	Up to 256	Use the number of scripts
Script_Number of Columns	Up to 1024	Up to 1024	Number of columns in each script



## 5. Use of FvRT Customer ID

To protect the designer's intellectual property, FATEK offers this feature specifically for FvRT products, this section explains how to use FvRT's customer ID function, including settings on the project and IGU-FvRT (USB Dongle) settings, both must have the same password to run, that is, FvRT opens the project that has customer ID, IGU-FvRT (USB Dongle) also need to have the same ID in order to run the project

### **5.1 Settings on the project**

Set the customer ID on the project, please follow the following steps.

Step 1: Execute FvDesigner Software, open default project, click on [System] in

[Project Explorer], and select [Project Information] to set the window, figure as shown below.

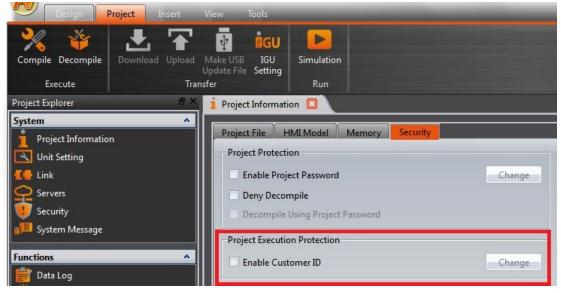


Figure 52 Enable the project's customer ID function.



Step 2: Select the **[**Enable Customer ID **]**, the window will display Set Password dialog box as shown in the following figure. Press the **[**OK **]** button after setting

[ New Password ] and [ Confirm New Password ] .

Change Password.		8
Show Password		
New password		
Confirm New Password		
	ОК	Cancel

Figure 53 [ Change Password ] dialog of project

Step 3 : Save and Compile Project.

If the project has a customer ID, but IGU-FvRT (USB Dongle) is not set or password is set differently, the following warning message will appear and FvRT can not execute this project.



Figure 54 IGU-FvRT (USB Dongle) Customer ID and project different message



## 5.2 Setting on IGU-FvRT (USB Dongle)

The following illustration shows how to set Customer ID on IGU-FvRT (USB Dongle). Step 1 : Insert IGU-FvRT (USB Dongle) in a USB port on your computer, execute



FvDesigner software  $\cdot$  and click on [Project], as shown below.

Figure 55 Switch to [Project] paging

Step 2: Click the IGU setting option. The [Dongle Setting] dialog box will appear.

Click the **Connect to Dongle** button, the system will link to the IGU-FvRT (USB Dongle) which is inserted to the computer.

Customer ID		
	Modify Customer ID	
onnect Success		

Figure 56 [ Dongle Setting ] dialog

Step 3 : Click on [Modify customer ID], the window will display [Change

Password ] dialog box as shown in the following figure. Press the [OK] button

after setting [New Password ] and [Confirm New Password ].



		8	23
OK		Cano	el
	OK	OK	

Figure 57 IGU-FvRT (USB Dongle) - [Change the Password] dialog

The customer ID of the project and the customer ID of the IGU-FvRT (USB Dongle) need to be the samea so the FvRT can be executed properly.

If the IDU-FvRT (USB Dongle) has a customer ID, but the project does not set a customer ID, this means the project does not use the customer ID, the FvRT can also be normal implementation.

