

TH series HMI

User's manual

Xinje Electric Co., Ltd.

Thank you for buying TH series touch screen made by Xinje Electronic Co., Ltd, this manual should be read and understood before doing relative operation.

Purpose

Preface

- This manual will guide readers in the correct operating and maintaining TH series touch screen. Also, this manual refers to the application situations, operations, transportation, storage, set up, installation, maintaining and so on.
- This manual mainly contains three parts: hardware, software, application.
 - Hardware Part: contain the characteristics, specifications, dimensions, installations and communication connecting of TH series.
 - Software Part: introduce how to use the edit software.
 - > Application Part: illustrate the examples; make users to know TH better.

Personnel

This manual is fit for following personnel:

- End Users
- ➢ Engineers
- Technicians

Please read the safety notes carefully before using the products.

Contact us

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Safety caution

Please read the manual carefully before using. Make sure your operation is correct and safety. The following contents are only aimed at TH series products.

Please keep the manual properly, put in the location easy to get and read, hand the manual to the end users.



- Please do not bundle power line with communication cable or let them too close, keep at least 10cm.
- Please do not install module or change the wire. Otherwise it may cause malfunction, error action, damage or fire.
- Please shut off the power when there is abnormal smell or voice in TH products. (The short sound made by buzzer after power on is normal)
- Do not strike the touch panel with a hard or sharp object, or press on the touch panel with too much force or with pen, screw, since it may damage the touch panel and cause damage.
- Please tighten the screws when install the products to prevent from falling off.
- Please transport, store, set up, install and maintain the products correctly, otherwise the touch panel may be damaged.



- Confirm the rated voltage of TH and connect correct before power on.
- Please do not touch the terminals after power on to avoid electric shock.
- Please do not open the cover board.
- Please cut off all the power when installing or disassembling the products, or it may cause error action and malfunction.
- Please use TH touch screen in suitable environment conditions according to instructions, otherwise it may cause accident.
- Please do not use the products where there is high frequency radiate, high magnetic field or other interferences.

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1. Summarize

Xinje new touch screen TH series are based on TP series products. It not only has the language, characters editing, data display, monitor and alarm functions but also has 65536 true color LCD which can bring you brand-new vision enjoyment. It has the advantage of large capability for data duplication and friendly user interface. It provides perfect humanized solution for industrial system, make it easy to control the system.

	Function compare								
Series	Colors	Font setting	3D picture library	Adjust the touch area	Animation	Password	Two ports communication independently	USB data download	USB data duplication
ТР	256	\checkmark	Ο	Ο	\checkmark	\checkmark	\checkmark	Ο	Ο
ТН	65536	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark

The function compare between TP and TH:

1.1 Performance characteristics

Display

- LCD size: 4.7", 7", 8", 10.1", 10.4".
- Rich colors: 65536 TFT true color, support BMP, JPG format, display more lively.
- Adjust function for touch screen.
- Support multinational language: Chinese, English, Japanese, Korean. Define the font as you like, support underline, italic, bold, shadow and other art words.
- Large picture library, with preloading mode, no delay for screen motion.

Control

- Switch control, dynamic monitor and display data, bar map, real time trend map, time trend map, XY trend map, discrete/continue column map, real time alarm, history alarm record...
- User-defined data collection and saving function
- Set user's authority, 9 levels password protection
- Simulate online/offline, upload/download data, configuration function
- USB port inside, connect flash disk to realize data duplication function, speed 480Mbps
- Special USB-B port for data download, make the data transfer faster
- User-defined animation track design

Communication

- Two ports communication independently, can connect two different devices at the same time
- Drive the panel printer directly, economical and flexible
- Support free format communication, user edits the driver program

1.2 Work flow

The work flow of using TH:





Please use Touchwin V2.C and later version to edit your TH project.

2. General specification

This chapter will introduce the specification of TH series touch screen. TH series touch screen contains TH465, TH765, TH865, THA62 and THA65.

Series	TH465	TH765-M	TH765-N	TH865	THA65	THA62
	TH465-MT	TH765-MT	TH765-NT	TH865-MT	THA65-MT	THA62-MT
Туре	TH465-UT	TH765-UT	TH765-NU	TH865-UT	THA65-UT	THA62-UT
	TH465-ET	TH765-ET	TH765-NE	TH865-ET	THA65-ET	THA62-ET

2.1 TH465

	Item	TH465
	Input voltage	DC20-DC28V
	Consumption current	130mA
Electrical	Momentary power off	Less than 10ms
Electrical	allowance	
	Withstand voltage	AC1000V-10mA 1 minute (signal and time)
	Insulated impedance	DC500V- about $10M\Omega$ (signal and time)
	COM2	Support RS-232/RS422/RS485
Interface	USB1	USB-A (accord with USB2.0)
interface	USB2	USB-B (accord with USB2.0)
	Ethernet port	RJ-45
	Environment	20-85% (no condensation)
	temperature	
	Operation temperature	0-50°C
Environment	Reserve temperature	-20-60°C
Environment	Withstand oscillation	10-25Hz (X, Y, Z each direction 30 minutes 2G)
	Anti-jamming	Voltage noise: 1000Vp-p, pulse 1us, 1 minute
	Surrounding air	No corrosive gas
	Protection construction	IP65
	Use life	More than 50000 hours, 24 hours running when surrounding
		temperature is 25 °C
	Туре	65536 true colors
Screen	Screen size	4.3 inch
specification	Resolution	480*272
specification	Contrast	Non-adjustable
	Character	Chinese, English, Korean, Japanese
	Character size	Any size and font
	Touch panel	4-wire resistance mode
Memory	Screen	8MB
	Mounting dimension	144.0*94.0mm
Construction	Exterior dimension	152.0*102.0*41.8mm
	Cooling method	Natural air cooling



2.2 TH765

Item		TH765
	Input voltage	DC20-DC28V
Electrical	Consumption current	250mA
	Momentary power off allowance	Less than 10ms
	Withstand voltage	AC1000V-10mA 1 minute (signal and time)
	Insulated impedance	DC500V- about $10M\Omega$ (signal and time)
	COM1	Support RS-232/RS-485
	COM2	Support RS-232/RS422/RS485
Interface	USB1	USB-A (accord with USB2.0)
	USB2	USB-B (accord with USB2.0)
	Ethernet port	RJ-45
	Operation temperature	0-50°C
	Reserve temperature	-20-60°C
	Environment	20-85% (no condensation)
Environment	temperature	
Environment	Withstand oscillation	10-25Hz (X, Y, Z each direction 30 minutes 2G)
	Anti-jamming	Voltage noise: 1000Vp-p, pulse 1us, 1 minute
	Surrounding air	No corrosive gas
	Protection construction	IP65
	Туре	65536 true colors
	Screen size	7 inch
	Use life	More than 50000 hours, 24 hours running when surrounding
Screen		temperature is 25 °C
specification	Resolution	800*480
specification	Contrast	Non-adjustable
	Character	Chinese, English, Korean, Japanese
	Character size	Any size and font
	Touch panel	4-wire resistance mode
Memory	Screen	128MB
	Cooling method	Natural air cooling
Construction	Exterior dimension	204.0*150.5*43.9mm
Construction	Mounting dimension	192.0*138.5mm

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2.3 TH865

	Item	TH865
	Input voltage	DC20-DC28V
Electrical	Consumption current	260mA
	Momentary power off allowance	Less than 10ms
	Withstand voltage	AC1000V-10mA 1 minute (signal and time)
	Insulated impedance	DC500V- about $10M\Omega$ (signal and time)
	COM1	Support RS-232/RS-485
	COM2	Support RS-232/RS422/RS485
Ter to refer a a	USB1	USB-A (accord with USB2.0)
Interface	USB2	USB-A (accord with USB2.0)
	USB3	USB-B (accord with USB2.0)
	Ethernet port	RJ-45
	Operation temperature	0-50°C
	Reserve temperature	-20-60°C
	Environment	20-85% (no condensation)
F	temperature	
Environment	Withstand oscillation	10-25Hz (X, Y, Z each direction 30 minutes 2G)
	Anti-jamming	Voltage noise: 1000Vp-p, pulse 1us, 1 minute
	Surrounding air	No corrosive gas
	Protection construction	IP65
	Туре	65536 true colors
	Screen size	8 inch
	Use life	More than 50000 hours, 24 hours running when surrounding
Samaan		temperature is 25 $^{\circ}$ C
Screen	Resolution	800*600
specification	Contrast	Non-adjustable
	Character	Chinese, English, Korean, Japanese
	Character size	Any size and font
	Touch panel	4-wire resistance mode
Memory	Screen	128MB
	Cooling method	Natural air cooling
Construction	Exterior dimension	224.4*170.8*45.5mm
Construction	Mounting dimension	211.4*157.8mm



2.4 THA62

Item		THA62
	Input voltage	DC20-DC28V
	Consumption current	230mA
Electrical	Momentary power off allowance	Less than 10ms
	Withstand voltage	AC1000V-10mA 1 minute (signal and time)
	Insulated impedance	DC500V- about $10M\Omega$ (signal and time)
	COM1	Support RS-232/RS-485
	COM2	Support RS-232/RS422/RS485
Tru 4 a mfra a a	USB1	USB-A (accord with USB2.0)
Interface	USB2	USB-A (accord with USB2.0)
	USB3	USB-B (accord with USB2.0)
	Ethernet port	RJ-45
	Operation temperature	0-50°C
	Reserve temperature	-20-60°C
	Environment	20-85% (no condensation)
F	temperature	
Environment	Withstand oscillation	10-25Hz (X, Y, Z each direction 30 minutes 2G)
	Anti-jamming	Voltage noise: 1000Vp-p, pulse 1us, 1 minute
	Surrounding air	No corrosive gas
	Protection construction	IP65
	Туре	65536 true colors
	Screen size	10.1 inch
	Use life	More than 50000 hours, 24 hours running when surrounding
C		temperature is 25 $^{\circ}$ C
Screen	Resolution	800*480
specification	Contrast	Non-adjustable
	Character	Chinese, English, Korean, Japanese
	Character size	Any size and font
	Touch panel	4-wire resistance mode
Memory	Screen	128MB
	Cooling method	Natural air cooling
Construction	Exterior dimension	272.2*191.7*51.2mm
Construction	Mounting dimension	260.2*179.7mm



2.5 THA65

	Item	THA65
	Input voltage	DC20-DC28V
Electrical	Consumption current	630mA
	Momentary power off allowance	Less than 10ms
	Withstand voltage	AC1000V-10mA 1 minute (signal and time)
	Insulated impedance	DC500V- about $10M\Omega$ (signal and time)
	COM1	Support RS-232/RS-485
	COM2	Support RS-232/RS422/RS485
Ter to refer a a	USB1	USB-A (accord with USB2.0)
Interface	USB2	USB-A (accord with USB2.0)
	USB3	USB-B (accord with USB2.0)
	Ethernet port	RJ-45
	Operation temperature	0-50°C
	Reserve temperature	-20-60°C
	Environment	20-85% (no condensation)
F	temperature	
Environment	Withstand oscillation	10-25Hz (X, Y, Z each direction 30 minutes 2G)
	Anti-jamming	Voltage noise: 1000Vp-p, pulse 1us, 1 minute
	Surrounding air	No corrosive gas
	Protection construction	IP65
	Туре	65536 true colors
	Screen size	10.4 inch
	Use life	More than 50000 hours, 24 hours running when surrounding
Samaan		temperature is 25 °C
Screen	Resolution	800*600
specification	Contrast	Non-adjustable
	Character	Chinese, English, Korean, Japanese
	Character size	Any size and font
	Touch panel	4-wire resistance mode
Memory	Screen	128MB
	Cooling method	Natural air cooling
Construction	Exterior dimension	311.0*234.0*48.0mm
Construction	Mounting dimension	302.0*225.0mm



3. Hardware

3.1 Hardware structure

The hardware structure of TH series touch screen includes front and back side. Take TH765-ET as an example to explain the structure.



3.2 Dimension

TH465 (unit: mm)





TH765-M/TH765-N (unit: mm)



■ TH865 (unit: mm)



■ THA65 (unit: mm)



3.3 Installation and using environment

1. Install requirements:

TH has four ferric mounting racks when out of factory, there are two square holes on the up, down side of TH, use mounting rack to fix the TH with control cabinet.

In order to avoid TH temperature too high after long time working, please keep 10cm space on the up/down and 5cm on the left/right side of the TH when installing.



2. Install steps

Step1 Refer to the dimension in the former chapter to open a rectangle mounting hole in the control cabinet

Step2 Add airproof circles in the airproof slot when installing

Step3 Insert the bottom of TH into the mounting hole of control cabinet

Step4 Insert the install rack into the fix hole of TH then tighten the screw

Step5 Connect TH and PLC with communication cable

NOTICE:

The communication cable can be offered by the supplier or made by user according to the connection diagram, input +24V DC power to start working

3. Environment

Please use TH series touch screen indoor.

Do not use TH in below environment:

Inflammable gases, steam, dust, fast vary temperature, high humidity (it may cause moisture inside TH).

4. Power supply requirements:

TH series touch screen use DC +24V power supply only. The permitted voltage range is $20V \sim 28V$. The connection is as below:



Besides, if connect high voltage or AC power supply with TH, the TH may be damaged and cause electric shock to human body.

NOTE: if use the DC +24V output of PLC to drive the TH, make sure the PLC has enough current to drive the TH.

5. Maintenance and cleaning

Maintenance

Caution

- Please do not open the back cover by yourself.
- Please do not analyze or change TH by yourself
- Please cut off all the power supply while observing the TH.

- Please do not touch terminals after power on, otherwise it may cause electric shock.
- Do not hot plug the cable or pull the cable when communicating, it may destroy the cable.
- Please periodic check installation and screws to avoid falling off.
- Please use TH series touch screen in the certain conditions according to instructions.
- Keep the cleanness of touch area, in order to keep touch sensitivity.



- Please use clean cloths with little detergent or alcohol to clean the screen.
- Neutral detergent, without acid, alkali is recommended.
- Keep the TH away from thrill or strong corrosive gas
- Never use spray detergent.
- Avoid damage to the screen, please do not touch the screen too hard while wiping.





• Please dispose the TH as industry waste.

4. Interface and switch

4.1 Introduction

Outline	Name	Function
	DIP switch	Force-download, touch area adjustment
	COM1	RS232/RS485 communication
PLC	COM2	RS232/RS485/RS422 communication
	USB-A	Connect to U disk
	USB-B	Connect USB cable to download/upload program
	RJ-45	HMI remote assistance, make network between HMI and controller, data exchange between HMIs

4.2 DIP switch

TH series has 4-bit DIP switch at the back side; they can set the function of COM1 port.

Switch	Switch1	Switch2	Switch3	Switch4	Function
	ON	OFF	OFF	OFF	Undefined
State	OFF	ON	OFF	OFF	Force-download mode of USB-B port
State	OFF	OFF	ON	OFF	Adjust mode of touch area
	OFF	OFF	OFF	ON	Interior check mode (not recommended to users)

Force-download: if the screen cannot show normally after downloading the program, please use force-download to update the system.

Force-download method:

Notes:

- (1) Cut off the power of TH, turn ON DIP switch 2.
- (2) Power on TH, connect the download cable to PC to download the program.
- (3) Turn OFF DIP switch 2 after finishing the download, repower on the TH.

4.3 COM1/COM2 port

TH series HMI COM1/COM2 port has these functions:



Pin	Name	Meaning
1	NC	Unused terminal
2	RXD	RS232 receive
3	TXD	RS232 send
4	А	RS485 + signal
5	GND	Signal ground
6	NC	Unused terminal
7	В	RS485 – signal
8	NC	Unused terminal
9	NC	Unused terminal

COM2 pins definition:



pins	Name	Meaning
1	TD+	RS422 send +
2	RXD	RS232 receive
3	TXD	RS232 send
4	А	RS485 +
5	GND	Signal ground
6	TD-	RS422 send -
7	В	RS485 -
8	RDD-	RS422 receive -
9	RDD+	RS422 receive +

Communication function: connect to PLC, printer, inverter, meter...



(1) Communicate with PLC

TH series HMI can communicate with most of popular PLCs



Please select correct PLC port (COM2) device and communication parameters:

Please select port PLC device:	Communication Parameter 🛛 🔀
Thinget XC Series Thinget FC Series Thinget V5 Series Inverter Mitsubishi FX Series Omron CPM/CQM Series Omron CP/CJ/CS Series Siemens S7-200 Series Siemens S7-300/400 Koyo S Series Schneider (Micro/Neza/Twido)	Baudrate 0 0 38400 0 0 7Bits 6 8Bits 0 9600 0 115200 0 187500 5top Bit 0 1Bit 0 2Bits Parity check 0 <td< th=""></td<>
Matsushita (FPO/FP1) LS Master-K CPU Direct	
Com Para: 19200, 8, Even, 1	Communication Time 0 MSEL
Setting	I Send Data □ Vir Station Retry times 3
COM2 device selection	COM2 communication parameters

Select the correct download port (COM1) device and communication parameters:





Please refer to "TP series basic manual" for the details of TH communicate with PLC.

(2) Communicate with inverter

TH can communicate with various brands of frequency inverters. For the brands which are not in the

list, user can select Modbus protocol or user-defined protocol.



Ø

inverter.

Please refer to "TP series basic manual" for the details of TH communicating with frequency

(3) Communicate with meters

About the communication between TH and meters, users can select user-defined protocol or Modbus protocol.



Please refer to "TP series basic manual" for the details of TH communicating with meters.

4.4 USB-A port

TH series USB-A port has below functions: (accord with USB2.0) Realize backup management, data export/import, the speed can up to 480 Mbps.

USB-A port definition



Pins	Name	Meaning
1	+5V	+5V voltage signal
2	DATA+	Data signal +
3	DATA-	Data signal -
4	-5V	-5V voltage signal

Connect to U-disk





4.5 USB-B port

TH has one USB-B port (accord with USB2.0), located at the back side of TH, the functions are shown as below:

To download the data, the speed can up to 480Mbps.

USB-B port definition:



Pins	Name	Meaning
1	+5V	+5V voltage signal
2	DATA-	Data signal -
3	DATA+	Data signal +
4	GND	Ground signal

Notes:

1. Please use shielded USB cables.

TH back side



- 2. Please install USB driver before using. Download the driver from <u>www.xinje.com</u>.
- 3. Connect TH with PC, open Touchwin software, click to download the program.

5. Touchwin software

5.1 Preparation

- 1. Software version: V2.C and later versions.
- 2. Software source: visit Xinje website <u>www.xinje.com</u> to obtain the software or get from the products CD.
- 3. OS requirements: Windows98/2000/XP/ME/7
- 4. Install steps:



5.2 The construction of Touchwin

Project bar S TouchWin Edit Tool - P File Edit Yiew Part Iool Window Project Screen Screen Screen Print Print	Project - Screenl	Status bar
	Align 区 Uperate 定止调算量量 配 图 量 2 0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Image: Image
	TP760/5-T PLC Port:Thinget XC Series	Download Port:Unuse Downlad Port X: 18,Y: 36 /

Double click the Touchwin software, build a new project, then you can see the following screen:

a. Project bar: build, delete, copy, cut operation of the screen and window

b. Screen edit area: make the project in this area

- c. Menu: it includes file, edit, view, tool, part, window and help.
- d. Element bar: it includes standard, part, panel, operate, status, zoom, draw and align.
- e. Status bar: it includes HMI type, PLC port device and download port device.

5.3 Project bar

5.3.1 Screen

1. build a new screen

Method 1: click in the element bar. Method 2: right click the screen in the project bar, then click insert.

🖃 🚮 Pr	oject	
- T. RI	Screen	
	Insert	
<u></u>	Window	
- 🖪	Alarm	
<u>a</u>	Print	

It shows the following window:

Screen		
ĪD	2	
<u>N</u> ame	Screen2	
Back Color		•
<u>M</u> essage		
	1	
<u>о</u> к	7	<u>C</u> ancel

ID: the number of the screen Name: the name of the screen Message: the description of the screen



to modify the screen property.

2. screen cut, copy and delete

Select the screen in the project bar, right click and choose cut, copy or delete.

5.3.2 Window

1. build a window

Right click the window/insert in the project bar. Input the window ID, name and message.



2. window cut, copy, delete

Select the window in the project bar, right click to select cut, copy or delete window.



5.4 Menu

5.4.1 File

<u>F</u> ile	<u>E</u> dit	<u>V</u> iew	<u>P</u> art	<u>T</u>	
<u>N</u> ew			Ctrl+N		
<u>O</u> pen			Ctrl+O		
<u>C</u> lose			Ctrl+Q		
<u>S</u> av	re	(Ctrl+S		
Sav	re <u>A</u> s	. (Ctrl+A		
Dow	mload	(Ctrl+D		
Rur	OnLine	$(\underline{B}) = 0$	Ctrl+B		
RunOffLine(<u>M</u>)			Ctrl+M		
PFW	PF₩ Set(<u>P</u>)				
Se <u>t</u>	ting	. (Ctrl+T		
Build SCADA					
Las	t				
Evi	+				

The file menu is shown as the following:

E<u>x</u>it

1. New: Build a new file

2. Open: Open a file

3. Close: Close a file

4. Save: Save a file

5. Save as: Save a file as another name and path

6. Download: to download project into TH

7. Run-online: connect PLC and TH, Simulate online in TH software.

8. Run-offline: simulate offline **(19)**, simulate the touch screen action in the software.

9. PFW set:

Initialize the PFW registers when downloading the program.

Step1: set the PFW register range, click "Add" to add the register in the list.

Start	300	End	400
PFW[300]	- PFW[400]		
200 - 200 - 200 200			

Change the range then click "Modify", it will show below message, click 'Yes" to confirm.

TWin

The pre-setting data beyond the range will be lost , while the data in the same range will be held , continue?

Step2: set the value in the range

Double click the PFW range, it will show data setting window:

	+0	+1	+2	+3	+4	+5	+6	+7
PFW[000000400]	0	0	0	0	0	0	0	(
PFW[000000410]	0	0	0	0	0	0	0	(
PFW[000000420]	0	0	0	0	0	0	0	(
PFW[000000430]	0	0	0	0	0	0	0	C
PFW[000000440]	0	0	0	0	0	0	0	(
PFW[000000450]	0	0	0	0	0	0	0	(
PFW[000000460]	0	0	0	0	0	0	0	(
DDW[000000470]		0	0	0	0	0	0	>

Display number can select decimal or hex.

Set FF: set all the data to FFFF. Reset 0: set all the data to 0.

Step3: download the project into TH.

Please note PFW0~PFW256 are occupied by the TH system, please select register start from PFW257.

10. Setting:

(1) Para tab:
	Device Font Project
	Para Alternation Clock Panel
	Screen
	Start Screen 1
	Passowrd
	Level Leveli Password 0
	Screen Save
	Latency <u>T</u> ime After 3 Minute 💌
	⊙ Close LCD ○ Show Screen □

■ Screen: select the start screen number when TH is power on.

Password: there are 9 levels passwords; the level 9 password has the highest priority. The higher level password can be used to all the elements of lower level password. The password is used to protect the element or screen, when input the correct password, the button or screen can be used.

Screen save: to protect the LCD. After certain time, the background light will be off or jump to certain screen. Please note "close LCD" and "show screen" only can be selected one of them.

(2) Alternation tab:

Device	Font	Project
Para	Alternation Clock	Panel
Station Device VirStaN0	Screen Control	1
Object Object	D V D	
- Report	Current Screen ID	
Device		
VirStaN0	PLC Port 0 Station	1
Object Object	D V D	

(3)Clock tab:

Device	Font	1	Project
Para	Alternation	Clock	Panel
Vise RTC Station Device VirStaND Object Object	PLC Port 💌	ation	1

(4) Panel tab:

()			
Device	Font		Project
Para	Alternation	Clock	Panel
Model	TH465-M	•	
Description	480*272, 65536 c	olors	
	<u>S</u> et pa	rameter	

<u>P</u> FW Num	4096
PS <u>B</u> Num	1024
⊻isPSW Num	4096
P <u>r</u> iPSW Num	4096
C <u>a</u> che Num	1
<u>0</u> K	<u>C</u> ancel

(5) Device tab:

Change screen control:

Change the screen ID according to the value of the register.

Report current screen ID: The current screen ID will show in the register.

For example, change screen control D0=1, TH displays No.1 screen, report current screen ID D1=1.

Export the current time to the register. For example, object D0, so the real time will save in D0~D5. D0=year, D1=month, D2=day, D3=hour, D4=minute, D5=second. Please note the export time is hex number.

The TH type you are using now. Set parameter: Modify the quantity of PFW and PSW registers.

Set the PFW register quantity

Set the PSB register quantity

VisPSW Num: the PSW quantity in data input, data display area. PriPSW Num: the PSW quantity in history trend map, real time trend map area.

Cache num: PFW register quantity

Para	Alternation	Clock	Panel
Device	Font	1	Project
• Single	C Host Net	C Slav	e Net
_PLC Port			
Model	Thinget XC Ser	ries	•
Param	19200, 8, Even,	, 1	
-Download Po			
Dowidioad 10			
Mo <u>d</u> el	Unuse Downlad	Port	•

(6) Font: Para Alternation Clock Panel Device Font Project Demo String Single, host net, slave net: TH communication mode.

PLC port: TH PLC port connects device type, change the communication parameters by

Download port: TH download port connects device type, change the communication parameters by

Set the font of the letter in the screen.

(7) Pro	oject tab:		
Para	Alternation	Clock	Panel
Device	Font		Project
<u>N</u> ame Proj	ect		
Author			
<u>R</u> emark		_	

Record the project name, author and remark.

11. Build SCADA

It realizes the SCADA function in windows. Build the SCADA file, and double click it to simulate online.



Please refer to the chapter "make a project/simulate online ".

12. Last The latest files operated by the user.

13. Exit Quit the Touchwin software.

5.4.2 Edit



1. cut, copy, paste, undo

These operations are used to the elements in the screen.

2. replace

Object	Bit 💌	
Find what	MO	<u>R</u> eplace
Re <u>p</u> lace with	MO	<u>C</u> ancel
Object Num	1	
	Replace In C Current Screen	
	Whole Screen	

Replace register or coil Find what: the object you want to replace Replace with: the new object Object num: the quantity you want to replace Replace in: replace the object in current screen or all the screens.

3. public unit

Select one element in the screen, click public unit, this element will be added in all the screens.

4. private unit 😰

After select one element as public unit, click private unit to delete this element in other screens.

5.4.3 View



Display all the tool bars. Advance and advance2 is gray color. Only when open the advance function of software, these items can be used.

All the items with tick are displayed in the software menu.

5.4.4 Part

rt <u>T</u> ool <u>W</u> indow <u>H</u> elp	
<u>I</u> ext	
<u>O</u> perate	The "part" is used to edit the TH project, it is
Display	same as the tool bar in the software.
<u>I</u> nput	
<u>K</u> eyboard	A 🔏 👫 🌝 🌏 🏴 🎫 🎫 🔽 🖂 AB
Bar	
Dynamic <u>M</u> ap	🔤 🎬 I 📱 🖀 🗗 🗖 🗞 🗞 🗆 🕮 🌆
<u>₩</u> indow	
Sc <u>h</u> eme	🕅 🕝 🚸 💥 🚢 🖾 👅 🚍 🖉 🖳 🗌
<u>F</u> unction	
<u>T</u> ool	🕺 🞰 🗠 🗟 🖾 🗠 🔤 🖽 🗰 🏢 🐴
De <u>v</u> ice	
I <u>n</u> verter Alram Information	
Picture Disp <u>l</u> ay	
Sample <u>S</u> ave	

5.4.5 Tool



Option:

ption		
Grid Size Move Grid	Zoom Ratio(%)	100
TAuto Save 1 💌 (M)	Grid Radio	10
Download Com Port COM1 💌	└ Down Load A └ Secute Code	11
TW Display Mouse Cursor	Hit Key Errors	10
Other 「Undo 「Voption	nistic	Vser Mode
OK		Cancel

Grid size:

Move Grid: set the min pixel when moving the element.

Grid radio: the grid density, the smaller the value is, the denser the grid is.

Auto save: auto save the project at the time you set.

Download: select the project download com port.

Download all: when you want to upload the data, please select this item before you download the data into TH.

Display mouse cursor: display the mouse connected to TH USB port.

5.4.6 Window

<u>₩</u> indow <u>H</u> elp	New: build a new window
New	Cascade: show all the window in cascade mode.
<u>C</u> ascade	Tile: show all the window in tiled mode.
<u>T</u> ile	Arrange icon: arrange all the icons again.
<u>A</u> rrange Icon	

5.4.7 Help

AboutTouch ₩in	for	TH	Edit		×
TouchWin for TH Edit Tool V2.C.3			[(OK	
Copyright (C) 2004 -					
TouchWin Company CANADA	\				

Show the Touchwin software version and copyright.

5.5 Screen editing area

Edit the project in the screen.	
□ Screen1	Zoom in, zoom out the screen:
	⊖ 100% ▼ ⊕ 👬
· · · · · · · · · · · · · · · · · · ·	\ominus zoom out, \oplus zoom in
	:::
	show the grid in the screen.
L	

5.6 Tool bar

Icon	Name	Function
	New	Build a new project
2	Open	Open the file
	Save	Save the file
×	Cut	Cut the element
	Сору	Copy the element
<pre>Control</pre>	Paste	Paste the element
2	Undo	Undo the operation

Tool bars functions are shown as the following:

0	TT 1		
<u> </u>	Help	Check the software version information	
Α	Text	Input static text Display the text according to the value of register,	
ÂÂ	Dynamic text	support 16 texts, set register value as 0~15	
ÅÅ	Variational text	Display the text according to the value of register, set register value as user need	
(Lamp	Display the ON/OFF state of switch	
	Button	ON/OFF the bit element	
0	Lamp button	Combine the function of lamp and button	
P	Screen jump	Jump to object screen	
EEE	Digital display	Display the register value	
	Alarm display	Set the upper/lower limit of register value, when exceeding the range, twinkle display	
REC.	Text display	Display characters in multi-registers	
23	Digital input	Input the data in the register	
AB	Text input	Input characters in the register	
123	Set data	Set data and used in arithmetic	
	Digital keyboard	Digital input keyboard	
 ###	ASCII keyboard	Character input keyboard	
1	User input	One input button of keyboard	
1	Bar	Display the register value in bar picture	
@	Dynamic map	Display the map according to the register value, support 16 maps, the register value is $0~15$	
F	Call window	Call window according to the value in the coil or register	
	Window button	Control the open, close of the window	
٠	Download recipe	Download the recipe into object device	
2	Upload recipe	Upload the recipe into TH register	
	Function button	Realize multi-functions with this button	
£23	Function field	Similar to function button, but the trigger condition is different.	
htta,	Discrete column map	Display the data in discrete column map	
htta,	Continue column map	Display the data in continue column map	
\sim	Line	Draw lines	
	Arc	Draw arc	
	Rectangle	Draw rectangle	
0	Ellipse	Draw ellipse	
\bigcirc	Fold/polygon	Draw fold and polygon	
	Polygon block	Similar to container	
	Frame	Draw 3D rectangle	
	Map	Add jpg or bmp format pictures	
	Move animation	make the movement animation of object	
۰	Rotate animation	Switch the picture	
- *		S ton the picture	
Image: Material libraryThe picture libraryPrincipateDateDisplay the dateConckDisplay the timeControl the buzzerControl the buzzer by the coilControl the buzzer by the coilScaleScaleDisplay the value in scaleImage: Control the buzzer by the coilScaleScaleDisplay the value in the meterScaleDisplay the value in the meterScaleSimulate the state of valveSimulate the state of valveSimulate the pump runningPipeSimulate the pump runningScaleMotorSimulate the motor runningMotorSimulate the retort runningInverter alarm informationImage: Construct the state of valveSimulate the autow windScaleAuto windSimulate the retort runningInverter alarm informationImage: Construct the state of valveSimulate the retort runningImage: Construct the state of valveSimulate the retort runningImage: Construct the state of valveSimulate the retort runningImage: Construct the state of valveSimulate the auto windImage: Construct the state of valveSimulate the state of valveImage: Construct the state of valveSimulate the state of valveImage: Construct the state of valveSimulate the state of valveImage: Construct the state of valveSimulate the state of valveImage: Construct the state of valveSimulate the retort runningImage: Construct the state of valveDisplay the value in the pretore <th></th> <th></th> <th></th>			
--	---	-------------------------	--
Image: Clock Display the time Image: Clock Display the time Image: Clock Display the value in the coil Image: Clock Display the value in scale Image: Clock Display the value in scale Image: Clock Display the value in the meter Image: Clock Simulate the state of valve Image: Clock Motor Simulate the atow wind Image: Clock Motor Simulate the state of valve Image: Clock Real time map Display the inverter alarm information Image: Clock Real time map Display the value in line, point and line-point. Image: Clock Time trend control Display value in certain time space Image: Clock Time trend control Dis	1	Material library	The picture library
Image: Second	- International Action of the	Date	Display the date
KLCD light controlControl the background light by the coilScaleDisplay the value in scaleImage: ScaleDisplay the value in the meterImage: ScaleDisplay the value in the meterImage: ScaleSimulate the state of valveImage: ScaleSimulate the liquid state in the pipeImage: ScalePumpImage: ScaleSimulate the pump runningImage: ScaleAuto windImage: ScaleSimulate the auto windImage: ScaleSimulate the motor runningImage: ScaleDisplay the inverter alarm informationImage: ScaleDisplay the ext in scroll modeImage: ScaleReal time mapImage: ScaleDisplay the current value in curveImage: ScaleNY curveImage: ScaleDisplay the value in line, point and line-point.Image: ScaleTime trend controlImage: Scale ScaleDisplay the value in line, point and line-point.Image: Scale Scale ScaleDisplay the value in line, point and line-point.Image: Scale Sc	0	Clock	Display the time
ScaleDisplay the value in scaleImage: ScaleDisplay the value in the meterImage: ScaleDisplay the value in the meterImage: ScaleSimulate the state of valveImage: ScalePupeImage: ScalePumpImage: ScaleAuto windImage: ScaleAuto windImage: ScaleMotorImage: ScaleMotorImage: ScaleMotorImage: ScaleMotorImage: ScaleSimulate the auto windImage: ScaleMotorImage: ScaleSimulate the retort runningImage: ScaleDisplay the inverter alarm informationImage: ScaleScroll textImage: ScaleDisplay the current value in curveImage: ScaleReal time mapImage: ScaleDisplay the current value in curveImage: ScaleMistory data mapImage: ScaleDisplay the current and line-point.Image: ScaleTime trend controlImage: Display real time alarm information in the listImage: Display real time eventDisplay real time alarm information in the listImage: Display history eventDisplay a group of register in the table.Image: Display history eventDisplay a group of register in the table.Image: Display history eventDisplay a group of register and export to objectImage: Display lieftAlign leftAlign leftAlign centerAlign leftAlign centerAlign leftAlign centerAlign topAlign rightAlign	₩ E	Buzzer	Control the buzzer by the coil
Image: Second	*	LCD light control	Control the background light by the coil
ValveSimulate the state of valvePipeSimulate the liquid state in the pipePumpSimulate the pump runningPumpSimulate the auto windAuto windSimulate the notor runningPumpRetortImverterSimulate the notor runningPumpSimulate the notor runningPumpSimulate the retort runningPumpSimulate the state of valvePumpSimulate the auto windPumpSimulate the state of valvePumpRetortPumpSimulate the notor runningPumpRetortPumpSimulate the state of valvePumpSimulate the auto windPumpRetortPumpSimulate the state of valvePumpRetortPumpSimulate the retor runningPumpRetortPumpSimulate the state of valvePumpRetortPumpStatePumpStatePumpStatePumpStatePumpStatePumpStatePumpStatePumpStatePumpState <th< th=""><th>512</th><th>Scale</th><th>Display the value in scale</th></th<>	512	Scale	Display the value in scale
PipeSimulate the liquid state in the pipePumpSimulate the pump runningAuto windSimulate the pump runningAuto windSimulate the auto windMotorSimulate the motor runningPumpRetortSimulate the retort runningInverter alarmImore Scroll textDisplay the inverter alarm informationPumeScroll textAttory data mapDisplay the current value in curveImore Scroll textDisplay the current and history value in curveImore Scroll textDisplay the value in line, point and line-point.Imore Scroll textDisplay the value in line, point and line-point.Imore Scroll textDisplay the value in line, point and line-point.Imore Scroll textDisplay the value in line, point and line-point.Imore Scroll textDisplay the value in curve, alarm event, realize flip, confirm and clear operationImore Scroll textDisplay value in certer alarm information, when the alarm is free, the event will be deleted automaticallyImage Scroll textDisplay real time eventImage Scroll textDisplay a group of register in the table.Image Scroll textSample saveImage Scroll textSave the data in TH registersImage Scroll textAlign centerImage Scroll textAlign centerImage Scroll textSave the data in TH registersImage Scroll textSample saveImage Scroll textSave the data in TH registersImage Scroll textAlign centerImage Scroll textAlign center <th></th> <th>Instrument</th> <th>Display the value in the meter</th>		Instrument	Display the value in the meter
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Image: Second		Pipe	Simulate the liquid state in the pipe
Image: Second	R	Pump	Simulate the pump running
Image: Second		Auto wind	Simulate the auto wind
Inverter informationInverter alarm informationDisplay the inverter alarm informationImage: Scroll textDisplay the text in scroll modeImage: Scroll textDisplay the current value in curveImage: Scroll textDisplay the current value in curveImage: Scroll textDisplay the current and history value in curveImage: Scroll textDisplay the current and history value in curveImage: Scroll textDisplay two curve in X, Y directionImage: Scroll textDisplay two curve in X, Y directionImage: Scroll textDisplay the value in line, point and line-point.Image: Scroll textDisplay value in certain time spaceImage: Scroll textDisplay real time eventImage: Scroll textDisplay real time eventImage: Scroll textDisplay real time eventImage: Scroll textDisplay agroup of register in the tableImage: Scroll textDisplay a group of register in the table, support time information tableImage: Scroll textSample saveImage: Scroll textSample saveImage: Scroll textAlign leftAlign text <t< th=""><th></th><th>Motor</th><th>Simulate the motor running</th></t<>		Motor	Simulate the motor running
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XY curveDisplay two curve in X, Y directionXY curve ExDisplay the value in line, point and line-point.MainTime trend controlDisplay value in certain time spaceData moving buttonUse with event, curve, alarm event, realize flip, confirm and clear operationImage: Confirm and clear operationShow the inverter alarm information in the listDisplay real time eventShow the inverter alarm information, when the alarm is free, the event will be deleted automaticallyDisplay history eventDisplay a group of register in the tableImage: Common grid controlDisplay a group of register in the tableImage: Common grid controlDisplay a group of register in the table, support time information tableImage: Common grid controlDisplay a group of register in the table, support time information tableImage: Common grid controlDisplay a group of register in the table, support time information tableImage: Common grid controlDisplay a group of register in the table, support time information tableImage: Common grid controlDisplay a group of register in the table, support to object device as CSV format fileImage: Common grid controlAlign leftAlign centerAlign center the objectsImage: Common grid controlAlign rightImage: Common grid controlAlign center the object data, no limit for the sample quantity and time, save the data in TH registersImage: Common grid controlAlign centerImage: Common grid controlAlign center the objectsImage: Common grid controlAlign center the objectsImage: Common grid	<u>1</u>	Real time map	Display the current value in curve
XY curve ExDisplay the value in line, point and line-point.Image: State of the	노	History data map	Display the current and history value in curve
Image: Note: N		XY curve	Display two curve in X, Y direction
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Data grid controlDisplay a group of register in the table, support time information tableSample saveTo collect the object data, no limit for the sample quantity and time, save the data in TH registersSample exportSave the data in TH register and export to object device as CSV format fileAlign leftAlign leftAlign centerAlign center the objectsAlign rightAlign rightAlign topAlign top the objectsAlign middleAlign middle the objectsAlign bottomAlign bottom the objectsAlign bottomAlign bottom the objects		Display history event	time
Data grid controlinformation tableImage: Image: Im		Common grid control	
Sample savequantity and time, save the data in TH registersSample exportSave the data in TH register and export to object device as CSV format fileAlign leftAlign leftAlign centerAlign center the objectsAlign rightAlign rightAlign topAlign top the objectsAlign middleAlign middle the objectsAlign bottomAlign bottom the objectsAlign outZoom out the screen		Data grid control	information table
Sample export device as CSV format file Image: Align left Align left Align center Align center the objects Image: Align right Align right Align top Align top the objects Image: Align middle Align middle the objects Image: Align bottom Align bottom the objects Image: Align bottom Align bottom the objects	4	Sample save	quantity and time, save the data in TH registers
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Hign right Align right Align right the objects Hign top Align top the objects Align middle Align middle the objects Align bottom Align bottom the objects Output Zoom out	0	Align left	Align left the objects
Image: Second system Align top Align top the objects Image: Align middle Align middle Align middle the objects Image: Align bottom Align bottom the screen	+0+	Align center	Align center the objects
Image: Align middle Align middle Align middle the objects Image: Align bottom Align bottom the objects Align bottom the objects Image: Align bottom Zoom out Zoom out the screen		Align right	Align right the objects
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Image: Align bottom Align bottom Align bottom the objects Image: Optimized constraints Zoom out Zoom out the screen	¢	Align middle	Align middle the objects
O Zoom out Zoom out the screen		Align bottom	Align bottom the objects
100% Zoom percent Zoom percent	Θ	Zoom out	Zoom out the screen
	100% 🔻	Zoom percent	Zoom percent

\oplus	Zoom in	Zoom in the screen
:::	Grid	Display grid in the screen
< hr >	State change	Switch button state display
0 -	Dynamic picture state selection	Switch dynamic picture state display
1	Public unit	Use the unit in all the screens
.	Private unit	Use the unit in appointed screen
* a	New	Build a new screen
1	Property	Screen name, author, remark
×	delete	Delete the current screen
* 8 *	Simulate offline	Simulate the project in the TH
** *	Simulate online	Connect PLC and TH, simulate the project in TH online
	Download	Download the project in the TH
â	Upload	Upload the project from TH to PC
dia 🕯	Debug download	Debug download

6. Make a simple project

In this chapter, make a switch to control the PLC output, in order to explain how to make TH project.

- *3* NOTE:

Please make sure the TH type and communication device type; it is important for the project download and device communication.

6.1 Build a new project

(1) Open the Touchwin software.

(2) Click File/New or to build a new project.

(3) Select the correct TH type and com port device type

<u>S</u> elect Panel	Please select port PLC device:
TH60 Series Touch Panel TH465-M TH765-M TH865-M THA61-M THA65-M THA65-M THA65-M PC HMI Software	Thinget XC Series Thinget FC Series Thinget V5 Series Inverter Mitsubishi FX Series Omron CPM/CQM Series Omron CP/CJ/CS Series Siemens ST-200 Series Siemens ST-300/400 Koyo S Series Schneider (Micro/Nera/Twido) Matsushita (FP0/FP1) LS Master-K CPU Direct Com Para: 19200, 8, Even, 1
Attr: 480*272, 65536 colors	Setting

TH type

com port device type

(4) Set the com port device communication parameters according to PLC port device

Baudrate C 38400	Data Bit C 7Bits @ 8Bits
	Y ABIKS (* OBIKS
€ 9600 € 115200	Stop Bit
	IBit C 2Bits
Parity check C <u>N</u> one C	<u>O</u> dd 🤄 Even
Wait	
Communication Time	0 MSEL

(5) When download port (COM1) is not used as communication port, please select unuse download port. When use COM1 as com port, please select communication device.

Please select port Download Device:

Unuse Downlad Port Thinget XC Series Thinget FC Series

(6) Finish the building process.

<u>N</u> ame	Project		S	C1	ce	eı	1																	
<u>A</u> uthor				-		•	•						•	•			• •				· · ·	 •	•	
									:	•	•	· ·		•	•			:	:	:	· ·	 :	:	· ·
<u>R</u> emark			:									· ·						:	:	:	· ·	 :	:	· · · ·
						•	:	· ·		:	•		•	:	•	• •	• •							· ·
	, 	ŀ	 •	•		•	•			•				•	•			•	•			 •	•	
(7) Clicl	k 📕 to save the project in the	PC.																						

6.2 Make a simple project

Make a button on the screen, to control the Y0 output of Xinje XC series PLC.



Make button	
(1) click , put the butto	on on the screen. Change the object to Y0.
Screen1	
ini	Button Object Operate Button Color Position Station Device PLC Port Station 1 Object Object Indirect

(2) select operate tab, change the button operate to reverse.

B	utton				
ſ	Object	Operate	Button	Color	Position
	Butt	on			
	0 s	Set O <u>N</u> 🔿	Set O <u>F</u> F	• Rev	erse) 🔿 On <u>I</u> nstant

(3) select button tab, change the text to reverse

object operate baccon [Cor	or [resition]	
Key Type		P <u>a</u> ssword vel Leveli 💌
C Enter Code		
Normal Change Aspect User Defined Saye Aspect	✓ Use Text Content Font	erse
reverse	⊂ Align <u>L</u> eft ⊙ Align <u>C</u> enter ⊂ Align <u>R</u> ight	⊂ Align <u>T</u> op ⊙ Align <u>M</u> iddle ⊂ Align <u>B</u> ottom

(4) select the color tab, change the button colors Object Operate Button Color Position



make the lamp
(1) click , put it on the screen, change the object to Y0.

Lanp
Object Lamp Twinkle Color Position Station Device PLC Port VirStaND 0 Station 1
Object Object Indirect

(2) select the lamp tab, change the aspect of the lamp.



(2) select the twinkle tab, change the lamp state to stop twinkle.

Object Lamp	Twinkle	Color	Position
- <u>S</u> tatus			
• Stop	С 0 <u>и</u>		⊂ 0 <u>F</u> F

(3) color and position tab are similar to the button.

6.3 Simulate offline

Do not have to download the project into the TH, you can simulate the project in the Touchwin software. It can save debug time and easy to edit.



to enter simulate offline screen.



 $(2)\$ click the reverse button to see the ON/OFF switching of the lamp.





Turn off the reverse button

turn on the reverse button

Thus, the simulate operation is finished.

6.4 Simulate online

By connecting the PLC and PC, it can read the data from PLC, simulate the operate of TH in touchwin software. Do not have to download the project into TH, you can control the PLC in your PC. Make sure the connection is correct between PLC and PC, the com port setting is right.



It means the simulate online is not registered, you only can use it for 2 hours. If you want to use it longer, please contact Xinje company to get register number.

(3) click ok to enter simulate online screen. Right click the screen to show below menu:



- Log: log on time and history record
- About: the version information of autowin
- Com port: the serial port number of your PC which is connected with PLC.
- Register: register to get user right.
- Exit: exit the autowin.

If showing the following message, it means the connection between PLC and PC is not good, or the serial port number is wrong.

communicating	
PLC Port StaNO	1

In this example, we use TH PLC port and PC serial com port3, so select PLC port com 3.

Com Port		×
PLC Port	C0M3	•
Download Port		•

(4) click the button to see the lamp ON/OFF.



Turn off the reverse button

turn on the reverse button

When click the reverse button, the PLC output Y0 will switch ON/OFF at the same time.

6.5 Download the project

1. Install the USB driver, users can get it on <u>www.xinje.com</u>.

2. Connect TH USB-B port and PC with USB cable, power on the TH, click to download the project.



7. Application

7.1 Adjust the touch area

The touch area adjustment function can make the component touch more precise.

The adjustment steps:

Step 1: turn on the DIP switch 3, then power on the TH again, it will show the following screen:



Step2: After clicking the cross center, the adjust cross will jump to the second position. Keep on click the cross until the cross jump to the last position 5.



Step 3: Please see the detailed motion:









Adjustment process is failed. Please do again.

Adjustment process is end.

If the adjustment process is end, please turn off the power of TH, then turn off the DIP switch 3, then turn on the power again. Now you can use TH normally.

7.2 Picture application

TH series LCD are 65536 true colors, it can make your picture display more vividly. This example will make the picture moving in parallel.



Select the picture you want, then click "open" button



Step2: design the motion track

Click the *button* in the tool bar, drag your mouse to draw the motion track, double click the mouse to finish the drawing. Please see the drawing:

	 -	-	-		-	-	-			-	-																																							
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			1						• •				1.1			11	10		2.3	• •				• •		1								• •			1.1								1	11		- 5		2
	• •								• •				1.1			1.1	٠-	••••									•••	• • •	••••						 • • •	• • •	• • •							 		1	• •			1
									• •				1.1			1.1								• •										• •			1.1										•			۰.
	1.10											 											-																				÷.							

Step3: combine the picture with the motion track

Drag your mouse to select the picture and the motion track, then right click the mouse, select "group".



Step4: Simulate offline

Click ***** to simulate offline your project. You can see the picture motion track.

Step5: Change the animation property

Right click the picture, then select "animal prop".

			3				20 10	•	•	8	2	•	•	8. 31	20	•	•	8. 31	
ны ны	ның			•				• •				•					•		
CALLY H	Property	1:		•	:			•	•			• • •	•			• • •	•	•	1
CHM	Animal Prop			•	•		•	•	•	8. 8	-	•	•	6. 37	-	•	•	•	1.1.1
Home Har	UnGroup			• •	• •			• • •	•			• • •	•			• • •	•		
	Lock	:		:	:	;	•	:	:	į		:	:	i,		•	:	:	
HVI - HPIY	Public Unit	-									1								•
	System			:	•			•	•			• • •	•		10000	• • •	•		
	Cut	8		•	•		•	•	•	8. 8	-	•	•	6. 31	-	•	•	8. 31	
	Copy Delete			• •	•			• • •	•			• • •	•		10.10		•		
12232 122	Save		1	:		Ċ.		:	:	Ċ.		:	:	ŝ		:	:	ŝ	
	Template			•	:	2	•	•	:			•	:	2		• •	:	2	
	Advance			•	•			•	•			• • •	•		10.00	• • •	•		
	Optimistic Unlock All	100		•			•	•	•			•	:	8. 	-	•	•	8. 	
	OUTOCK ALL			•	•		•	•	•	5		•	•	۶.		•	•		

The animation property includes coordinate and control. (1) Coordinate

love	Animal		
Coord	Control		
х	325	Key Point: X=325;Y=110	
		Escape Time:00.1Second Key Point: X=325:Y=230	
Y	110	Escape Time:00.1Second	
		Key Point: X=685;Y=230 Escape Time:00.1Second	
		Key Point : X=685; Y=100	
		Escape Time:00.1Second	
		Key Point: X=325;Y=100 Escape Time:00.1Second	
		Key Point: X=325; Y=125	

- a. X: the position on X axis
- b. Y: the position on Y axis
- c. Escape time: the time that the photo moves from (X1,Y1) to (X2,Y2) d. Key point X,Y: the coordinate of every motion position

You can click the X, Y position and the escape time in the list and modify them.

(2) Control		
Move A	nimal	
Coord Co	ontrol	
Enable	Ctrl	МО
Reset	🗌 Ctrl	MO
🔽 Repes	at .	

- Enable: control the animation by bit signal. When the rising edge of the signal is coming, the • animation will be activated.
- Reset: control the end of the animation by bit signal. When the rising edge of the signal is coming, the • animation will end.
- Repeat: repeat the motion of the animation. •

7.3 Debug download

TH series touch screen support debug download function. This function can be used when you are debugging your project in order to save your time.

Compared with normal download function, this function has the following advantages:

- (1) This function only can be used when debugging the project.
- (2) The data transfer speed is faster than normal download, save time and cost.

Click button in the tool bar to debug download the project into your TH.

7.4 Data backup (Touchwin version≥2.C.3)

Data backup includes the following contents:

- (1) Data collection and export, store the data of TH series HMI into U disk, produce CSV data base file.
- (2) Import CSV data, transfer the data of U disk to TH series HMI.

• About CSV file:

The CSV file is based on Excel, the format is as the following:

Temperature	Pressure	Hydraulic	Date	Time	}	Title
		pressure				
30	35	40	2009-8-10	12:10:10		
40	45	50	2009-8-12	12:10:45	}	Data
50	55	60	2009-8-14	12:10:23		
				$\underline{\qquad}$		
	Data		Date	Time		

• To build CSV file

Open Excel, input the data as the up format, then save as CSV file.

7.4.1 Data export

Export the data from TH to other device. Step1: click function button or function field , select "export CSV data" and add it.

Function Button	1	
Function Button Limit	Color Positi	on
Function Pressing		A11
Export CSV Data	Add Modify	Set Coil Reset Coil Reverse Coil Copy Coil Screen Jump Set Data
	<u>D</u> elete Move D <u>o</u> wn	Copy Register User Input Open Window Close Window Down Scheme Up Scheme
	Move <u>Up</u> Password	Data Block Transmit Arithmetic Process Code Import CSV Data Export CSV Data

When using function button, please select "pressing" or "releasing" as the trigger condition.



When using function field, please select the trigger condition as you need.

<u>A</u> ct Mode
● Start Screen
C Coil <u>S</u> pring
🔘 Ti <u>m</u> e(Sec.)
C Co <u>n</u> tinue
🔿 First Scan After <u>D</u> own
🔿 First Scan After <u>P</u> ower

Step 2: Double click "export CSV data", it shows the following window: This window includes destination, import, save and date time tab. (1) Destination tab

() = = = = = = = = = = = = = = = = = =	
Destination Data Save Control Date Time	1
Device ID	
Dynamic set DO	
Path/File TW.csv	
💽 Fix Name 🔚 Re-export title	
C Name add automatic	
🔘 add number after name	
0	
Dynamic set DO	
C named by date	

Length	Width		Height	Qty	
20)	30	Z	10	12
32	2	41	3	37	13

Fix name file

Length	Width		Height		Qty			
20)	30		40		12		
Length	Width		Height		Qty			
32	2	41		37		13		
Fix name and re-export title file								

Device ID: set the object device number which you want to export data, "dynamic set" can connect the D register with the device ID.

Path/File: the name of the CSV file

Fix name: the data collected each time will be saved in the same file.

Re-export title: export the title when collect the data each time Please see the following examples.

Name add automatic: it exports a new file when collect the data each time. The new file name will increase automatically. For example, file 1 is TH001.csv, file 2 will be TH002.csv. Please see the following picture:



Add number after name: add the number after the file name. For example, input 001, 001, the file name is TH001.csv.

Dynamic set: set the number in D register. For example, If D0=20, the file name is TH020, D0=23, the file name is TH023.

When "add number after name" and "dynamic set" are both selected, "dynamic set" has priority.

Named by date: the file name is added the date. When exporting the data several times at the same day, it will add the data title in the file automatically. For example:

Length



• Export the data the first time on 8/18/2009

20090818. csv Microsoft Office	
-----------------------------------	--

• Export the data the second time on 8/18/2009

			4.07
20	30	40	12

Height

0tv

Width

Length	Width		Height	Qty	
20		30	40		12
Length	Width		Height	Qty	
32		41	37		13

(2) Data tab

Destination	Data Save	Control Date Time
Register cap Register mod	de	100
	(• Lo	op C Line
Temperature	Add	Title Temperature
		Format
		• Dec (D) C Hex (U)
	Delete	C Float (F) C Unsigned (X)
	Move up	Data type Word 💌
		Bit length(G) 4
	Move down	Float length(C) 0

Register capacity: import register quantity

Register mode:

Loop: use with "real trend map", "history data map", "time trend control", "sample save"... Line: export the data in the registers to CSV file. It is used to the recipe and data arrays.

Add, delete, move up, move down: Add the data titles, select the export data format and type.

(3) S	ave tab					
Des	tination	Data	Save	Control	Date	Time
	Object Object	PSW	•	256		
	Control tab		Save	Control	Date	Time
~	Execute	status	M	0		
~	Execute	result	D	0		
	Execute ;	process	D	0		

Save the data in touch screen internal registers.

This tab is used to control the export.

Execute status: to show if it is in exporting state via bit state. If the bit is ON, TH is exporting data. Execute result: show the export result state via the register state.

- 0- export failed
- 1- export target device does not exist
- 2- the memory is not enough
- 3- file path error
- 4- reading / writing file failed

Execute process: show the exporting process via register, 100 means the exporting process is succeed.

(5) Date time						
Destination	Data	Save	Cont	rol	Date	Time
🔽 Date Tim	e					
Date format	YYYY-M	-D	•			
Example	20	09-10-8				
Time format	H:MM:S	S	•			
Example	9	:43:31				

To add the date in the CSV file. Please select the data format and time format in the pull down menu.

EXAMPLE:

This chapter will introduce the data export examples in loop and line mode.

<A> Data export in loop mode

Purpose: collect the data via history data map, export the data to moveable device and save as CSV file. Please see the whole process:





Please see the TP touch screen manual for this content.

(2) data collect: use history data map to collect the data every 1 second, use PSB300 to control if it is need to collect.

Click ,add it in the screen, change the "trend source" tab.

istr	oy dat	a map	X	
Irend S	ource Disp	lay Save C	color Font Position	Histroy Trend Source
		Add	Modify Delete	Register Trend Data Color
0	Object PSW300	Min Value O	Max Value	Station Device PLC Port VirStaND Object Object Station Object Station Object
				Data Data Type Word 💌

Next, change the display tab: page data is 5, control is PSB300.

Histroy data 1	nap		
Trend Source Display	Save C	olor Font	Position
Data		Time	
<u>P</u> age Data <u>T</u> otal Data	5	C Top (* Botto	n
Pic <u>k</u> Period	1 Sec	C None	
♥ Control PSB300 This Re	egist was n	used to contro	ol Pick!
Current Data			

Page data:5, show 5 numbers each screen

Total data:10, it can collect 2 screens data

Pick period: 1 second, collect the data every 1 second.

Control:PSB300, control the ON/OFF of the data collection by PSB300

Change the save tab: save the data in the registers start from PSW400.

Hist	roy	data	map				
Trend	Source	Display	Save	Color	Font	Posi	tion
	bject bject	PSW	•	400			
	Auto Loc	ate					

Add a button, to control the stop and start of the collection process. The button is related to PSB300.



Data tab	
Destination Data Save Control Date Time	
Register capacity 5 Register mode C Line	Register capacity: 10 Register mode: loop, to correspond to the
	history trend map
data value Add Title data value	Format: decimal
Delete Format © Dec (<u>D</u>) C Hex (<u>U</u>) C Float (<u>F</u>) C Unsigned (<u>X</u>)	
Move up Data type Word v Bit length(G) 4	
Move down Float length(C) 0	
Save tab Destination Data Save Control Date Time	
	re the data in PSW400
Date time tab Destination Data Save Control Date Time	
🔽 Date Time	
Date format YYYY-M-D T	the time: export the date and time to the .csv
Example 2009-10-8	
Time format H:MM:SS	
Example 13:28:32	

Now the data export has been done.

Via the simulate offline, you can monitor the data change and operate the button.





The operation steps:

Step 1: make sure the TH is connected to object device.

Step 2: click ON/OFF button to start the data collection in history data map

Step 3: click the data export button, the U disk device LED starts to flickering, it means the CSV file is being produced, if the LED ends flicker, the export process has been finished.

The CSV data is shown as below:



1	data value	date	time
2	60	2009-9-14	10:12:12
3	70	2009-9-14	10:12:13
4	80	2009-9-14	10:12:14
5	90	2009-9-14	10:12:15
6	100	2009-9-14	10:12:16

 Data export in line mode

In industry system, HMI is seemed as control and monitor terminal. It can be used to set all kinds of parameters directly. In order to check the history data, use data export function to complete the data management.

In this example, using data export function to complete the parameters recording.

Purpose: realize parameters setting by data input button, and data export by data export button. The process is shown as below:



Next, we will introduce how to make the project in two parts: Part 1: input the parameters

Put the data input button 0 on the screen, change the address as the following:

Data export example





About the data input button, please refer to TP series HMI manual.

Part 2: about data export button

Click 📕 function l	button, then	set as the following:
Function Button		
Function Button Limit Function Releasing Export CSV Data	Color Positio	n All Set Coil Reset Coil Reverse Coil Copy Coil Screen Jump Set Data Copy Register User Input Open Window Close Window Down Scheme Up Scheme Up Scheme Data Block Transmit Arithmetic Process Code Import CSV Data Export CSV Data

Double click the export CSV data to change the parameters: Destination tab:

Move up

Move down

Data type

Bit length(G)

Float length(C)

Word

•

4

0



Save tab				
Destination	Data	Save	Control Date	e Time
Object Object	PSW	•	500	

Set the export object to PSW500, make it the same as the data input button address.

In this example, it has not referred to date and time, so do not have to set them. The screen has been done, please see the following picture:

Data export example Para1 Para2 Para5 Para3 Para4 Data input 0 0 n n Data export Data export Run the project, and you will see the following result: Data export example Para1 Para2 Para3 Para4 Para5 10 20 30 40 50 Data export Excel file: SJDX.csv 1 Paral Para2 Para3 Para4 Para5 2 10 20 30 40 50 3 Paral Para2 Para3 Para4 Para5 SJDX. csv 26 4 25 35 45 55 66 Microsoft Office. Para2 Para3 5 Paral Para4 Para5 KB 6 34 56 33 76 89

7.4.2 Import the CSV data

The purpose is to import the data from the SD card or U disk to TH register.

Step1: use function button or function field, select import CSV data function.

ode Function Position	1	
<u>function</u> Import CSV data	Al Set Coil Reverse Coil Copy Coil Screen Junp Set Data Copy Register User Input Opn Window Close Window Close Window Down Scheme Up Scheme Data Block Transmit Arithmetic Process Code Import CSV Data	Func Function Fiel

Step2: double click import CSV data, change the parameters as the following:

(1) Source path tab

Source Path	Data	Save	Control	Date	Tin
Device ID		1			
	🗌 Dynar	nic set	DO		
	🗌 Impor	rt Ctrl	MO		
Path/File	CE. csv	-		_	
⊙ Fix Nam ⊂ Add ID	-	ne			
		0			
	🔲 Dynar	nic set	DO		
start ID		0			
	🔲 Dynar	nic set	DO		

Device ID: the device number of import device

. . .

Dynamic set: set the device ID in D register. Import control: control the import process by M coil, when M is ON, the import process starts.

Path/File: the CSV file name

Fix name: the import data are from the same source file

Add ID after name: set the import file name by the input value or the value in D register.

Start ID: the import data head number. Dynamic set: can set the head address in D register.

Please see the following picture: the import data when select start ID to 5 and 10.

	A	В	C	D	E	F	G	
1	40	8	10	15	2009-8-10	12:10:12		
2	40	10	10	18	2009-8-10	13:10:12		
3	40	15	10	30	2009-8-10	14:10:12		
4	45	8	6	25	2009-8-10	15:10:12	_	Wilson start ID is 5 interact these data
5	45	10	8	20	2009-8-10	16:10:12		When start ID is 5, import these data.
6	50	10	8	20	2009-8-10	17:10:12		
7	55	12	10	15	2009-8-10	18:10:12		
8	55	14	10	30	2009-8-10	19:10:12		
9	55	20	8	20	2009-8-10	20:10:12	_	
10	60	12	10	25	2009-8-10	21:10:12		 When start ID is 10, import these data.
11	60	20	8	35	2009-8-10	22:10:12		
12	65	10	10	20	2009-8-10	23:10:12		
13	65	12	5	15	2009-8-11	8:10:12		
14	65	18	15	15	2009-8-11	9:10:12		
15	65	20	8	30	2009-8-11	10:10:12		
16	70	8	8	18	2009-8-11	11:10:12		
17	70	16	10	18	2009-8-11	12:10:12		
18								
19								

When the start ID is 0 or 1, the import data is the first group.

(2) Data tab			
Source Path Data	Save	Control Date Ti	me
Register capacit; Register mode		100 p ⓒ Line	
Data	Add	Title Data	
	Delete	Format © Dec (D) C C Float (F) C	-
	Move up	Data type	Word 💌
		Bit length(G)	4
	love down	Float length(C)	0

Register capacity: the import data group quantity

Register mode:

Loop: the data will be stored in the object registers in loop mode, so the original data will be covered.

Line: the data import to the object register one after another.

Add, delete, move up, move down, title....: Add the data title in the list, and select the data format, type, bit length,etc.

Please note the title list items must be the same as the CSV file items.



There are 4 items in the title list.

There are four items in the CSV file.

	\sim			
	A	В	С	D
1	40	8	10	15
2	40	10	10	18
2 3	40	15	10	18 30 25 20
	45	8	6	25
4 5	45	10	8	20
6	50	10	8	20
7	55	12	10	15
8	55	14	10	30
9	55	20	8	30 20 25
10	60	12	10	25

.

The import registers address.

(4) Control tab

Object Object

(3) Save tab

Source Path Data

Source Path | Data | Save Control | Date Time Execute status MO Execute result DO Execute process DO

Save

•

PSW

Control Date Time

256

Execute status: to show if it is in importing state via bit state. If the bit is ON, TH is importing data. Execute result: show the import result state via the register state.

- 0- import failed
- 1- import target device does not exist
- 2- the memory is not enough
- 3- file path error

4- reading / writing file failed

Execute process: show the importing process via register, 100 means the importing process is succeed.

(5) Date time tab	
Source Path Data Save Control Date Time	
✓ Date Time	
Date format YYYY-M-D	Add the date and time in the CSV file.
Example 2009-10-8	Select the date and time format via the pull
Time format H:MM:SS	down menu.
Example 13:57:04	

Example:

Purpose: import the data from object device to TH touch screen, select the import data group by input the start ID.

The CSV file in the SD card is SJDR.csv.

<mark>⊠</mark> a,	SJDR.csv Microsoft Office 1 KB	

1	40	8	10	15	2009-8-10	12:10:10
2	40	10	10	18	2009-8-10	13:10:10
3	40	15	10	30	2009-8-10	14:10:10
4	45	8	6	25	2009-8-10	15:10:10
5	45	10	8	20	2009-8-10	16:10:10
6	50	10	8	20	2009-8-10	17:10:10
7	55	12	10	15	2009-8-10	18:10:10
8	55	14	10	30	2009-8-10	19:10:10
9	55	20	8	20	2009-8-10	20:10:10
10	60	12	10	25	2009-8-10	21:10:10
11	60	20	8	35	2009-8-10	22:10:10
12	65	10	10	20	2009-8-10	23:10:10
13	65	12	5	15	2009-8-10	0:10:10
14	65	18	15	15	2009-8-10	10:10:10
15	65	20	8	30	2009-8-10	2:10:10
16	70	8	8	18	2009-8-10	3:10:10
17	70	16	10	18	2009-8-10	4:10:10
18						

In TH touch screen, the data store address starts from PSW400. The realize steps:

Step1: use function button or function field . Set as the following:

Function Button	L	
Function Button Limit	Color Positi	on
Function Releasing		All
Import CSV data	<u>Add</u> <u>M</u> odify <u>D</u> elete Move D <u>o</u> wn Move <u>Up</u>	Set Coil Reset Coil Copy Coil Screen Jump Set Data Copy Register User Input Open Window Close Window Down Scheme Data Block Transmit Arithmetic Frocess Code
	Password	Import CSV Data Export CSV Data

	•	•	:	:	:	•	•	:	•	•	:	:	:	•	•	•	•	•
:	:	:	:				_	•	np				:	:	:	:	:	:
:	:	:	÷		U	at	a	11) ·	nţ.	>0	iΠ.		÷	÷	:	÷	÷	:
:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:

Step2: build the import data group selection button.

Put a data input button on the screen ^[23] , change the	parameters:
Digital Input	
Object Display Input Font Color Position	
Operate Object	
C Station	
Device PLC Port	
VirStaNO 0 Station 0	Ch be
_ Object	im
Object PSW 💌 500	ad
Indirect	
Data	
Data Type Word	

Change the object to PSW500 and be constant with the following import data dynamic appoint address.

Step3: double click "import CSV data". Source Path Data Save Control Date Time

paca pare	0000000	Date	
1			
🔲 Dynamic set	DO		
🗍 Import Ctrl	MO		
SJDR. csv			
ne			
After Name			
0			
🗖 Dynamic set	DO		
0		_	
🔽 Dynamic set	PSW500	0	
	I Dynamic set Import Ctrl SJDR. csv After Name Dynamic set	1 Dynamic set DO Import Ctrl MO SJDR. csv Ne After Name Dynamic set DO Dynamic set DO	1 Dynamic set DO Import Ctrl MO SJDR. csv After Name Dynamic set DO Dynamic set DO

Device ID: 1

Path/File: SJDR.csv, must be the same as the object import file.

Fix name means importing from the same file.

Start ID: dynamic appoint PSW500.

Import tab:	
Source Path Data Save Control Date Time	
Register capacity	
Register mode C Loop 📀 Line	Register capacity: 10, it means 10 groups
Add Title 1	of data
2 3 Format	Register mode: line
Delete Image: Delete </td <td>-</td>	-
	Add the title: there are 4 rows of data.
Move up Data type Word 💌	
Bit length (G) 4	
Float length(C) 0	
Save tab:	
Source Path Data Save Control Date Time	
Cobject-	Object: save the data of mobile device into TH register starts from PSW400.
Object PSW V 400	
·]	
Control tab:	
Source Path Data Save Control Date Time	
Execute status	Execute status: PSB300 to show the importing
V Execute status PSB300	state Execute result: PSW256 to show the importing
Execute result PSW256	result
	Execute process: PSW257 to show the importing
V Execute process	process
Date/time tab: Source Path Data Save Control Date Time	
	Decourse the imment data has time and data
	Because the import data has time and date, select this item.
Date format YYYY-M-D	
Example 2009-10-8	
Time format H:MM:SS	
Example 15:05:53	
	lata table"
Step4: show the import data start from PSW400 in "d	
NO Name Length Width Height Qty Date t: 000 group1 000 000 000 000 16:18	
000 group2 000 000 000 000 16:18	
000 group3 000 000 000 000 16:18	
000 group4 000 000 000 000 16:18	3:35
000 group5 000 000 000 000 16:18	
000 group6 000 000 000 000 16:18	3:35

group6

group7

group8

group9

group10

16:18:35

16:18:35

16:18:35

16:18:35

Change the parameters: Object tab:

Dai	ta Gri	d	
ОЪј	iect Comm	on Column Position	
	Station Device VirStaNO	PLC Port 💌	Γ
	Object Object	PSW 💌	400

The object is PSW400, the same to the data import address.

Common tab:

Object	Common	Column	Positio	n	
Page Title Cell	ecords Records Height Height		10 20 20	▼ Sta Title Width	Name 80 group1
Title Title	e Title e Font Auto Add tle NO	Cell	iorder 1 Font 30	group) group group group group group group group	2

Set the all records, page records as the left window.

Column tab:

Object Common Column Position									
🥅 Circle Buffer	Add	Modify	Delete						
Title	Width	Data Type	Format						
Length	50	WORD	UINT						
Width	50	WORD	UINT						
Height	50	WORD	UINT						
Qty	50	WORD	UINT						
Date time	80	TIME	H:M:S						

Add the text as the left window.

Set the date time item to time format.

The data table is finished, please see the following screen:

	D	ata imp	ort ex	ample			
100	000 E	xecute sta	tus 🤇	E	xecute	result 00000	Execute process
NO	Name	Length	₩idth	Height	Qty	Date time	FIME HIME HIM
000	group1	000	000	000	000	16:16:16	Data import
000	group2	000	000	000	000	16:16:16	
000	group3	000	000	000	000	16:16:16	
000	group4	000	000	000	000	16:16:16	
000	group5	000	000	000	000	16:16:16	
000	group6	000	000	000	000	16:16:16	
000	group7	000	000	000	000	16:16:16	
000	group8	000	000	000	000	16:16:16	
000	group9	000	000	000	000	16:16:16	
000	group10	000	000	000	000	16:16:16	

Step5: connect the mobile device and TH, click the import data button, monitor the data in "data table".

NO	Name	Length	Width	Height	Qty	Date time
0	Group 1	40	8	10	15	2009-08-10 12: 10: 10
1	Group 2	40	10	10	18	2009-08-10 13: 10: 10
2	Group 3	40	15	10	30	2009-08-10 14: 10: 10
3	Group 4	45	8	6	25	2009-08-10 15: 10: 10
4	Group 5	45	10	8	20	2009-08-10 16: 10: 10
5	Group 6	50	10	8	20	2009-08-10 17: 10: 10
6	Group 7	55	12	10	15	2009-08-10 18: 10: 10
7	Group 8	55	14	10	30	2009-08-10 19: 10: 10
8	Group 9	55	20	8	20	2009-08-10 20: 10: 10
9	Group 10	60	12	10	25	2009-08-10 21: 10: 10

• When the import data No = 0 or 1, the data table is shown as up.

NO	Name	Length	Width	Height	Qty	Date time
0	Group 1	60	12	10	25	2009-08-10 21: 10: 10
1	Group 2	60	20	8	35	2009-08-10 22: 10: 10
2	Group 3	65	10	10	20	2009-08-10 23: 10: 10
3	Group 4	65	12	5	15	2009-08-10 00: 10: 10
4	Group 5	65	18	15	15	2009-08-10 10: 10: 10
5	Group 6	65	20	8	30	2009-08-10 00: 10: 10
6	Group 7	70	8	8	18	2009-08-10 03: 10: 10
7	Group 8	70	16	10	18	2009-08-10 04: 10: 10
8	Group 9	55	20	8	20	2009-08-10 20: 10: 10
9	Group 10	60	12	10	25	2009-08-10 21: 10: 10

• When the import data No = 10, the data table is shown as up.

8. TH series touch screen interior objects

This chapter will introduce the interior objects of the TH.

The interior objects contain PSB(bit register), PSW(word register), PFW(word register).

NOTICE

1. Only when the advanced function is opened, the special interior objects can be used.

2. PSB0~PSB255, PSW0~PSW255, PFW0~PFW255 are occupied by system.

Bit register PSB

Register	Function	Remark
PSB0	Normally closed coil	
PSB1	Normally open coil	
PSB2	Turn on during the first scan period	
PSB3	100ms pulse signal	ON OFF
PSB4	1s pulse signal	ON OFF 500ms
PSB5	1 minute pulse signal	ON OFF
PSB6	300ms pulse signal	ON OFF
PSB15	Communication failure	0: successful 1: failed
PSB16	Succeed to scan the screen once	
PSB30	First scan after download	
PSB31	First scan after power on	
PSB39	Turn off the touch screen	
PSB60	Level 1 password flag	(1: password is opened, 0: password is closed)
PSB61	Level 2 password flag	(1: password is opened, 0: password is closed)
PSB62	Level 3 password flag	(1: password is opened, 0: password is closed)
PSB63	Level 4 password flag	(1: password is opened, 0: password is closed)
PSB64	Level 5 password flag	(1: password is opened, 0: password is closed)
PSB65	Level 6 password flag	(1: password is opened, 0: password is closed)
PSB66	Level 7 password flag	(1: password is opened, 0: password is closed)
PSB67	Level 8 password flag	(1: password is opened, 0: password is closed)
PSB68	Level 9 password flag	(1: password is opened, 0: password is closed)

Register	Function	Remark
PSW0	Start screen No.	
PSW1	Current screen No.	
PSW20	Screen width	(read only)
PSW21	Screen height	(read only)
PSW26	PSB amounts	(read only)
PSW27	PSW amounts	(read only)
PSW28	PFW amounts	Occupy PSW28、PSW29 (read only)
PSW30	Year	(Hex) (read only)
PSW31	Month	(Hex) (read only)
PSW32	Day	(Hex) (read only)
PSW33	Hour	(Hex) (read only)
PSW34	Minute	(Hex) (read only)
PSW35	Second	(Hex) (read only)
PSW36	Week	(Hex) (read only)
PSW40	Recipe index	
PSW54	The device quantity	
PSW60	COM1 communicate successful time	
PSW61	COM1 communicate failure time	
PSW62	COM1 communicate overtime time	
PSW63	COM1 communicate data error time	
PSW64	COM1 device version	
PSW65	COM1 device type	
PSW70	COM2 communicate successful time	
PSW71	COM2 communicate failure time	
PSW72	COM2 communicate overtime time	
PSW73	COM2 communicate data error time	
PSW74	COM2 device version	
PSW75	COM2 device type	

Word registers PFW

Register	Function	Remark
PFW1	The screen No. after power on	
PFW2	Background color setting	
PFW10	Screen saver start time	
PFW11	the screen number of screen saver	
PFW20	COM1 baud rate	4800、9600、19200、38400、115200、187500
PFW21	COM1 data bit	7、8
PFW22	COM1 stop bit	0-1 bit, 1-1.5 bits, 2-2 bits
PFW23	COM1 CRC	0-None, 1-Odd, 2-Even
PFW24	COM1 station NO.	
PFW25	COM2 send delay	Unit : ms
PFW30	COM2 baud rate	4800,9600,19200,38400,115200,187500
PFW31	COM2 data bit	7、8
PFW32	COM2 stop bit	0-1 bit, 1-1.5 bits, 2-2 bits
PFW33	COM2 CRC	0-None, 1-Odd, 2-Even
PFW34	COM2 station NO.	
PFW35	COM2 send delay	Unit: ms
PFW60	Level 1 password	PFW60、PFW61
PFW62	Level 2 password	PFW62、PFW63
PFW64	Level 3 password	PFW64、PFW65
PFW66	Level 4 password	PFW66、PFW67

PFW68	Level 5 password	PFW68、PFW69
PFW70	Level 6 password	PFW70、PFW71
PFW72	Level 7 password	PFW72、PFW73
PFW74	Level 8 password	PFW74、PFW75
PFW76	Level 9 password	PFW76、PFW77

Appendix 1 TH series HMI configuration table

Series	Туре	LCD size	Resolution	Screen capacity	COM1	COM2	RJ-45	USB-A	Download mode
TH465	TH465- MT	4.3'	480*272	8MB	-	485/42 2/232	-	-	USB
	TH465- UT	4.3'	480*272	8MB	-	485/42 2/232	-	One	USB
	TH465- ET	4.3'	480*272	8MB	-	485/42 2/232	One	One	USB
TH765- M	TH765- MT	7'	800*480	128MB	232/48 5	485/42 2/232	-	-	USB
	TH765- UT	7'	800*480	128MB	232/48 5	485/42 2/232	-	One	USB
	TH765- ET	7'	800*480	128MB	232/48 5	485/42 2/232	One	One	USB
TH765- N	TH765- NT	7'	800*480	128MB	232/48 5	485/42 2/232	-	-	USB
	TH765- NU	7'	800*480	128MB	232/48 5	485/42 2/232	-	One	USB
	TH765- NE	7'	800*480	128MB	232/48 5	485/42 2/232	One	One	USB
TH865	TH865- MT	8'	800*600	128MB	232/48 5	485/42 2/232	-	-	USB
	TH865- UT	8'	800*600	128MB	232/48 5	485/42 2/232	-	Two	USB
	TH865- ET	8'	800*600	128MB	232/48 5	485/42 2/232	One	Two	USB
THA62	THA62- MT	10.1'	800*480	128MB	232/48 5	485/42 2/232	-	-	USB
	THA62- UT	10.1'	800*480	128MB	232/48 5	485/42 2/232	-	Two	USB
	THA62- ET	10.1'	800*480	128MB	232/48 5	485/42 2/232	One	Two	USB
THA65	THA65- MT	10.4'	800*600	128MB	232/48 5	485/42 2/232	-	-	USB
	THA65- UT	10.4'	800*600	128MB	232/48 5	485/42 2/232	-	Two	USB
	THA65- ET	10.4'	800*600	128MB	232/48 5	485/42 2/232	One	Two	USB



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