XINJE

TP/TH/TG/TE series HMI

manual【Hardware】

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Data No. : HC 01 20140409 2.D

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1 TP series HMI

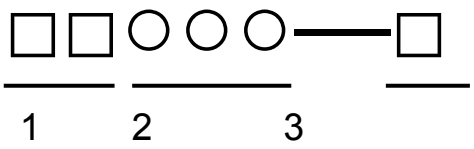
1-1 Features

Xinje TP series HMI have strong functions. It supports multi-language, any font and size of characters. The basic functions include data display and monitoring, alarm, recipe. It can communicate with most brands of PLC, two ports can communicate individually. The programming software Touchwin has friendly interface and easy to operate. The software can simulate online and offline (SCADA function).

1-1-1 Product features

- **Display**
- Monochrome or 256 colors LCD, support BMP, JPG pictures display
- Support multi-language: Chinese, English, Japanese, Korean, German, French, Arabic, etc. The fonts support any size, artistic effect, bold, italic, etc.
- Large program capacity support more program screens and data.
- **Control**
- Dynamic data displaying and monitoring, bar map, real-time/historical trend map, discrete/continuous histogram, switching control;
- Real-time/historical alarm records;
- Sample and save the data at certain time or conditions;
- Nine levels password protection;
- On/off line simulation, SCADA function
- **Communication**
- Two ports can communicate independently, enable to connect many devices at the same time;
- Support micro-printer
- Support free format communication, user can make the communication protocol freely.

1-1-2 Model naming rule



1: Series name	TP
2: LCD size	460: 4.7’’
	760: 7.0’’
3: LCD display	L: Monochrome LCD
	T: 256 colors TFT LCD

1-1-3 Product models

TP series HMI can connect to PLC, inverter, meters and other devices. As the interface of machine and user, it can monitor data, control the machine operation. It is fit for small and medium control systems.

Model	LCD size	LCD type
TP460-L (stop production)	4.7 inch	Monochrome LCD
TP760-T	7.0 inch	256 colors TFT

1-2 General specifications

HMI specifications

Item		TP460-L	TP760-T
Screen	Size	4.7″	7.0″
	Type	Monochrome	256 colors
	Resolution	240*128	480*234
	Brightness	Adjust by potentiometer	/
	Touch panel	Matrix digital touch panel	
	Using life	More than 50000 hours, temperature 25℃，running for 24 hours	
	Language	Chinese, English, Japanese, Korean, German, French, Arabic…	
	Character	Any font and size	
Memory	Capacity	2MB	4MB

Electric specifications

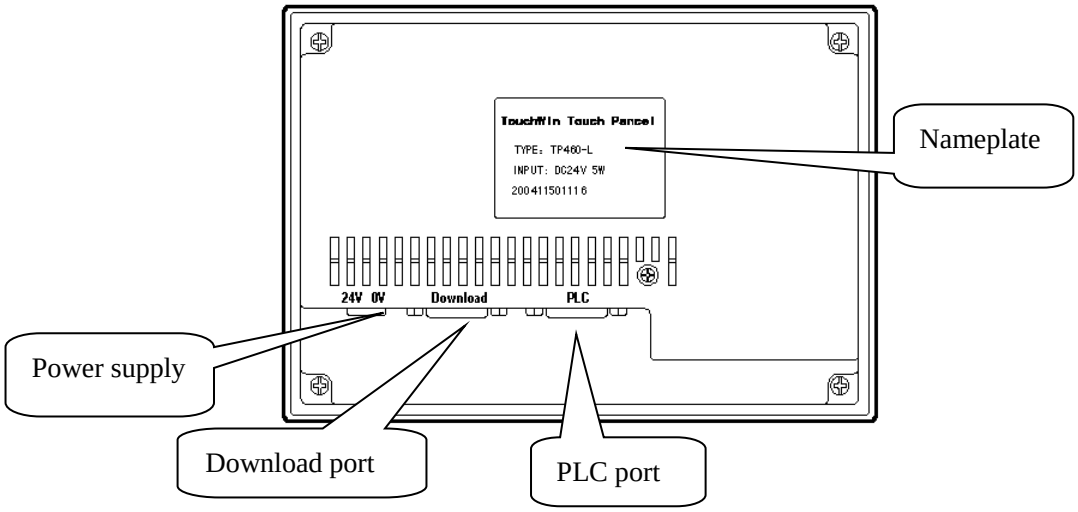
Item		TP460-L	TP760-T
Electric	Input voltage	DC24V (voltage range: DC22V-DC26V)	
	Consumption current	200mA	280mA
	Allowable momentary power failure	Below 10ms (Actual power failure<1s）	
	Withstand voltage	AC1000V,10mA,less than 1 minute (signal and ground)	
	Insulated impedance	DC500V, above 10MΩ (signal and ground)	
Environment	Operation temperature	0-50℃	
	Reserve temperature	-20-60℃	

	Environment humidity	10%RH-90%RH (no condensation)	
	Withstand oscillation	10-25HZ（X,Y,Z each direction 30 minutes 2G）	
	Anti-jamming	Voltage noise:1500Vp-p,pulse 1us，1 minute	
	Surrounding air	No corrosive gas	
	Protection construction	IP65	
Construction	Cooling method	Natural air cooling	
	Exterior dimension (mm)	173.2*121.4*45.1	200.0*148.0*45.0
	Mounting dimension (mm)	165.2*113.4	182.4*134.4
Ports	PLC port	Support RS232/RS485/RS422	
	Download port	Support RS232/RS485	

1-3 Hardware

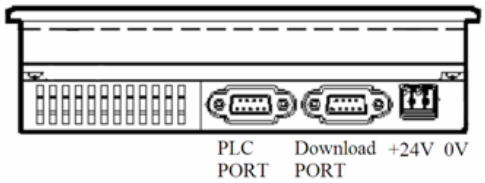
1-3-1 Hardware structure

The hardware structure of TP series touch screen includes front and back side. Take TP460-L as an example to explain the structure.



1-3-2 Port introduction

Xinje TP series HMI have two communication ports: Download port and PLC port, below is the feature and function of TP series, take the ports of TP460-L as an example:

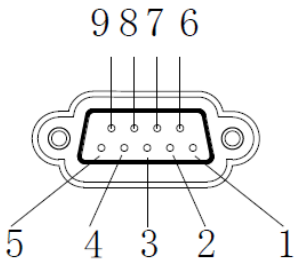


1. Download communication port

The main functions of the port：

- Download: Connect with PC to download program;
- Communication: Connect with PLC, printer, frequency converter etc, as a communication port.

Pins of download port：



Pin	Name	Meaning
1	NC	Unused terminal
2	RXD	RS232 receive
3	TXD	RS232 send
4	A	RS485 communication “+” signal
5	GND	Signal ground
6	BUSY	Busy signal
7	B	RS485 communication “-” signal
8	NC	Unused terminal
9	NC	Unused terminal

(1) Download function

When you use download function of TP series, please use Xinje special download cable:



Before user download a program, please make sure your PC has installed multiport serial card or USB-RS232 convertor, and connect cable correctly, click “” button in Touchwin software, then you could download data successfully, below are the pin definitions:

PC serial Port (COM)

Pin	Name
1	
2	RXD
3	TXD
4	
5	GND
6	
7	RTS
8	
9	

Download Port (TP series)

Pin	Name
1	NC
2	RXD
3	TXD
4	A
5	GND
6	BUSY
7	B
8	NC
9	NC

Connection diagram (Normal download)

If the connection between PC and HMI is correct, but still can't download, user can try "Forced Download" function. The connection diagram of this function as below shows:

Download Port (TP series)
pin5&8 shorted forced download mode

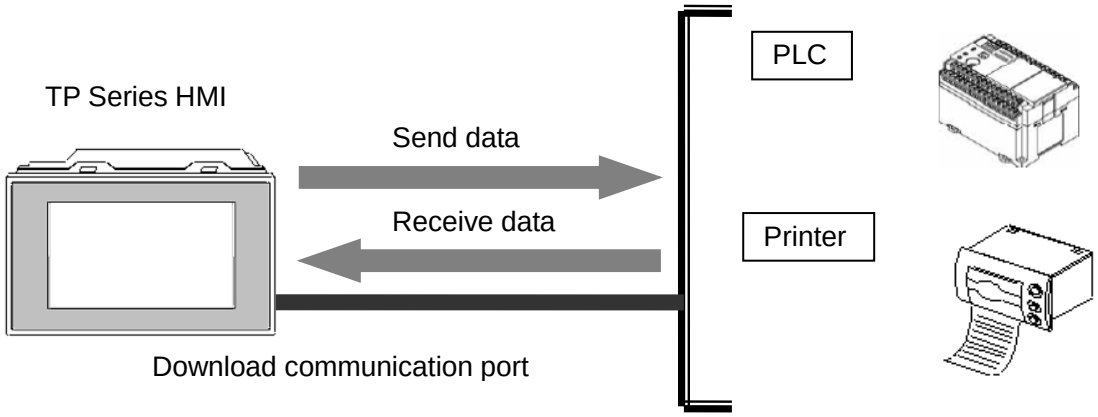
Steps:

a. Cut the power of TP, shorted the Pin 5 and 8;
b. Power on, move away the shorted line;
c. Start to download the program with special download cable.

Pin	Name
1	NC
2	RXD
3	TXD
4	A
5	GND
6	BUSY
7	B
8	NC
9	NC

(2) Communication function

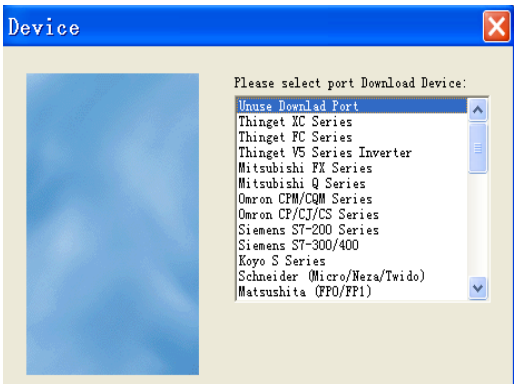
The download port of TP series not only has the download function, but also has the powerful communication function.



When use the communication function of download port, please shorted the pin 5 and pin 6, select the corresponding communication equipment in software settings.

PIN	Name
1	NC
2	RXD
3	TXD
4	A
5	GND
6	BUSY
7	B
8	NC
9	NC

Download port communication mode transformation



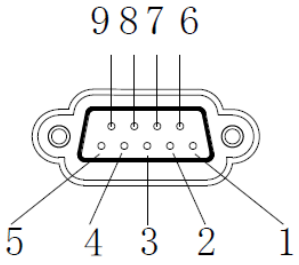
Select communication device of download port

2. Communication interface of PLC

The PLC communication port of TP series has below function:

- Connect and communication with industrial control equipments: PLC, inverter, meter etc.

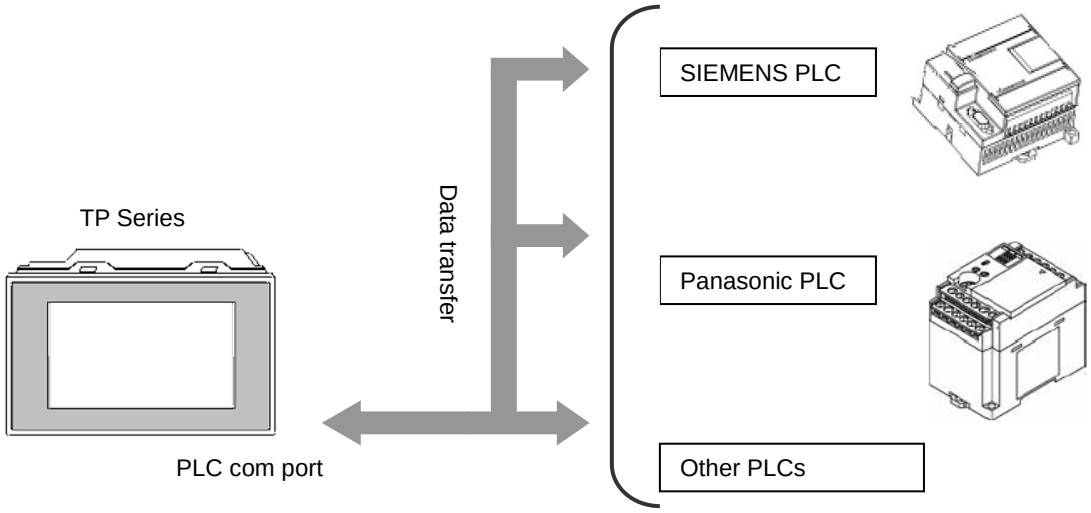
The pins definition of PLC communication port:



Pin	Definition	Description
1	TD+	RS422 send “+”
2	RXD	RS232 receive
3	TXD	RS232 send
4	A	RS485 “+”
5	GND	Signal ground
6	TD-	RS422 send “—”
7	B	RS485 “—”
8	RDD-	RS422 receive “—”
9	RDD+	RS422 receive “+”

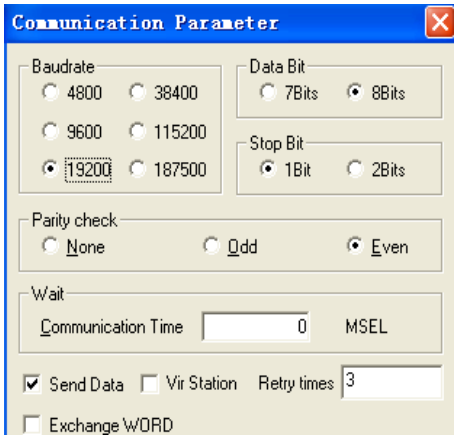
(1) Communicate with PLC

TP series HMI can communicate with most of popular PLCs



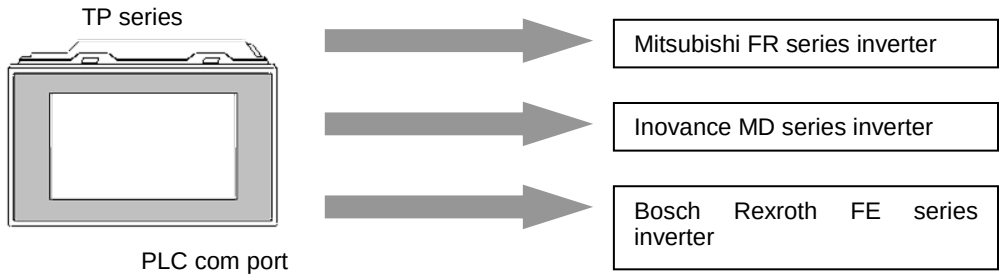
Please select correct PLC port device and communication parameters:





(2) Communicate with inverter

TP 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.



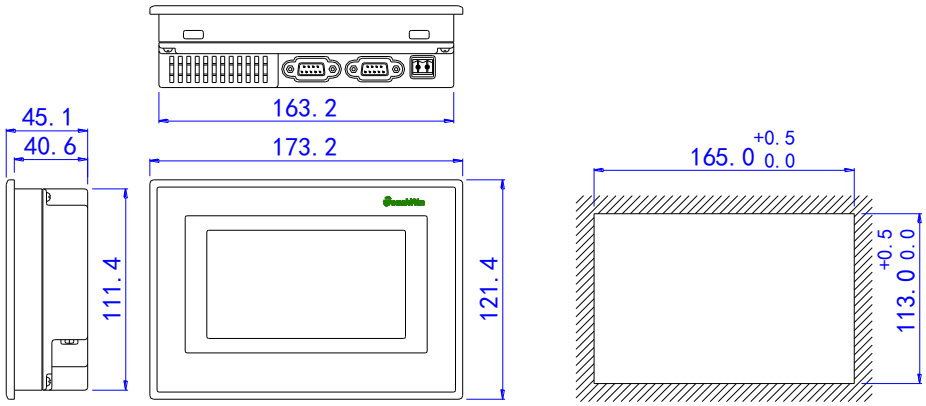
(3) Communicate with meters

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

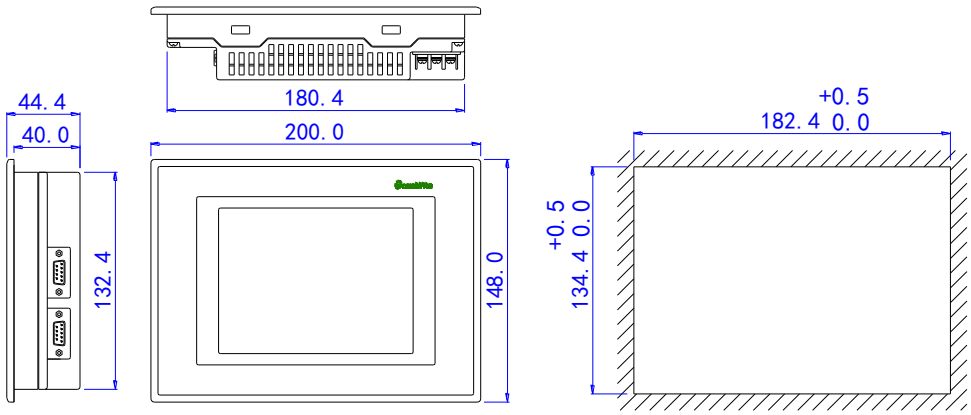
1-4 Dimension and installation

1-4-1 Product dimensions

TP460-L (Unit: mm)



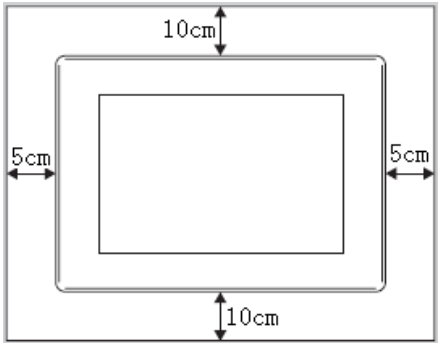
TP760-T (Unit: mm)

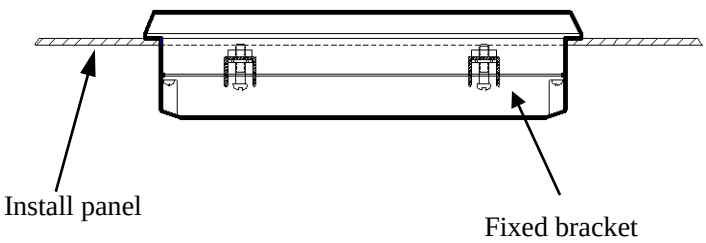


1-4-2 Installation and using environment

Install requirements:

TP has four ferric mounting racks when out of factory, there are two square holes on the top, bottom side of TP, use mounting rack to fix the TP with control cabinet.
In order to avoid TP temperature too high after long time working, please keep 10cm space on the up/down and 5cm on the left/right side of the TP when installing.





Install steps:

1. Refer to the dimension in the former chapter to open a rectangle mounting hole in

the control cabinet
2. Add airproof circles in the airproof slot when installing
3. Insert the bottom of TP into the mounting hole of control cabinet
4. Insert the install rack into the fix hole of TP then tighten the screw
5. Connect TP 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.

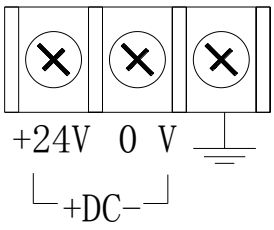
Environment:

Please use TP series touch screen indoor.

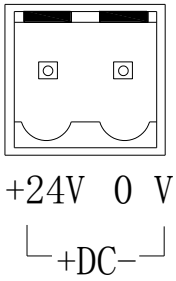
Do not use TP in below environment:
Inflammable gas, steam, dust, fast vary temperature, high humidity (it may cause moisture inside TP).

Power supply requirements:

TP series touch screen use DC +24V power supply only. The permitted voltage range is 20V~26V. The connection is as below:



Terminal type



Pin type

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

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

2 TH series HMI

2-1 Features

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.

The function compare between TP and TH:

×: Nonsupport √: Support

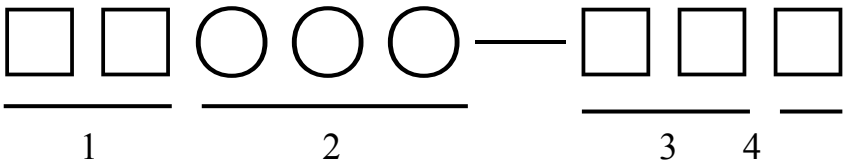
Series	Function comparison								
	Color	Font setting	3D picture library	Adjust the touch area	Animation	Password	Two ports communication independently	USB data download	USB data duplication
TP	256	√	×	×	√	√	√	×	×
TH	65536	√	√	√	√	√	√	√	√

2-1-1 Product features

- **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
  - Powerful C language function block
  - 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

2-1-2 Model naming rule



1: Series name	TH
2: LCD size	465: 4.3”
	765: 7.0”
	865: 8.0”
	A62: 10.1”
	A65: 10.4”
3: Port type	MT/NT: USB-B download port
	UT/NU: USB-B download port, USB-A flash disk port
4: Type	Empty: normal type
	(P): oil resistant

Special model:

TH465-MT2/ UT2：Increase a com port(RS232) base on the TH465-MT/UT.
TH765-NT3/NU3：Increase a com port(RS485) base on TH765-NT/ NU.

2-1-3 Model form

TH series include TH465, TH765, TH865, THA62 and THA65.

Series	TH465	TH765-M	TH765-N	TH865	THA62	THA65
Model	TH465-MT	TH765-MT	TH765-NT	TH865-MT	THA62-MT	THA65-MT
	TH465-MT(P)	-	TH765-NT(P)	TH865-MT(P)	-	-
	TH465-UT	TH765-UT	TH765-NU	TH865-UT	THA62-UT	THA65-UT
	TH465-UT(P)	TH765-UT(P)	-	TH865-UT(P)	-	-
	TH465-MT2	-	TH765-NT3	-	-	-
	TH465-UT2	-	TH765-NU3	-	-	-

(1) About the hardware configuration of each model, please refer to below “TH series HMI configuration form”;

(2) The difference between TH765-N and TH765-M: Use different LCD module, but the function, parameters and specifications are the same;

(3) TH765-NT/UT(P) are oil resistant model. The difference is the front cover designing.

TH series HMI configuration form

Series	Model	LCD	Resolution	Memory	Port1 Download port	Port2 PLC port	Port3 EXT port	USB-A	Download mode
TH465	TH465-MT	4.3″	480*272	8MB	-	232/485/422	-	-	USB-B
	TH465-MT(P)								
	TH465-UT							1	
	TH465-UT(P)								
	TH465-MT2				232			-	
	TH465-UT2							1	
TH765-M	TH765-MT	7.0″	800*480	128MB	232/485	232/485/422	-	-	
	TH765-UT							1	
	TH765-UT(P)								
TH765-N	TH765-NT	7.0″	800*480	128MB	232/485	232/485/422	-	-	
	TH765-NT(P)								
	TH765-NU							1	
	TH765-NT3						485 (1A6B)	-	
	TH765-NU3							1	
TH865	TH865-MT	8.0″	800*600	128MB	232/485	232/485/422	-	-	
	TH865-MT(P)								
	TH865-UT							1	
	TH865-UT(P)								
THA62	THA62-MT	10.1″	800*480	128MB	232/485	232/485/422	-	-	
	THA62-UT							2	
THA65	THA65-MT	10.4″	800*600	128MB	232/485	232/485/422	-	-	
	THA65-UT							2	

1. **TH series add two kind of power-off retentive registers: PHW (520 thousand registers) and PRW (1 thousand registers), so if user need the PHW register, user should mark it, and TH465 doesn't have PHW, it only has PRW.**
2. **THA62 has one USB-A in the front and one at the back. These two ports are the same port, cannot use them at the same time.**
3. **THA65 has two USB-A ports at the back. These two ports are the same port, cannot use them at the same time.**

2-2 General specifications

HMI specifications

Item		TH465	TH765	TH865	THA62	THA65
Screen Specification	Size	4.3″	7.0″	8.0″	10.1″	10.4″
	Type	65536 true colors				
	Resolution	480*272	800*480	800*600	800*480	800*600
	Brightness	Cannot be adjusted	Can be adjusted (except MT, UT)	Cannot be adjusted	Cannot be adjusted	Cannot be adjusted
	Touch panel	4-wire resistance mode				
	Use life	More than 50000 hours**,** 24 hours running when surrounding temperature is 25 ℃				
	Character	Chinese, English, Korean, Japanese…				
	Character size	Any size and font				
Memory	Screen	8MB	128MB			

Note: adjust the brightness through register PFW100, the range is 0 to 100.

Electrical specifications

Item		TH465	TH765	TH865	THA62	THA65
Electrical	Input voltage	DC24V(Range:DC22V-DC26V)				
	Consumption current	130mA	250mA	260mA	230mA	630mA
	Momentary power off allowance	Less than 10ms (Actual power off less than 1s)				
	Withstand voltage	AC1000V, 10mA, less than 1 minute(signal and ground)				
	Insulated impedance	DC500V, above 10MΩ(signal and ground)				
Environment	Operation temperature	0-50℃				
	Reserve temperature	-20-60℃				
	Humidity	10%RH-90%RH (no condensation)				
	Withstand oscillation	10-25Hz (X, Y, Z each direction 30 minutes 2G)				
	Anti-jammin	Voltage noise: 1500Vp-p, pulse 1us, 1 minute				

	g					
	Surrounding air	No corrosive gas				
	Protection construction	IP65				
Construction	Cooling method	Natural air cooling				
	Exterior dimension (mm)	152.0*102.0* 41.8	204.0*150.5* 43.9	224.4*170.8* 45.5	272.2*191.7* 51.2	311.0*234.0* 48.0
	Mounting dimension (mm)	144.0*94.0	192.0*138.5	211.4*157.8	260.2*179.7	302.0*225.0
Interface	COM1	RS232/RS485/RS422				
	COM2	RS232	RS232/RS485			
	Expand port	-	RS485(NT3/ NU3 support)	-		
	USB 1	USB-A (accord with USB2.0), flash disk port				
	USB 2	USB-B (accord with USB2.0), USB download port				

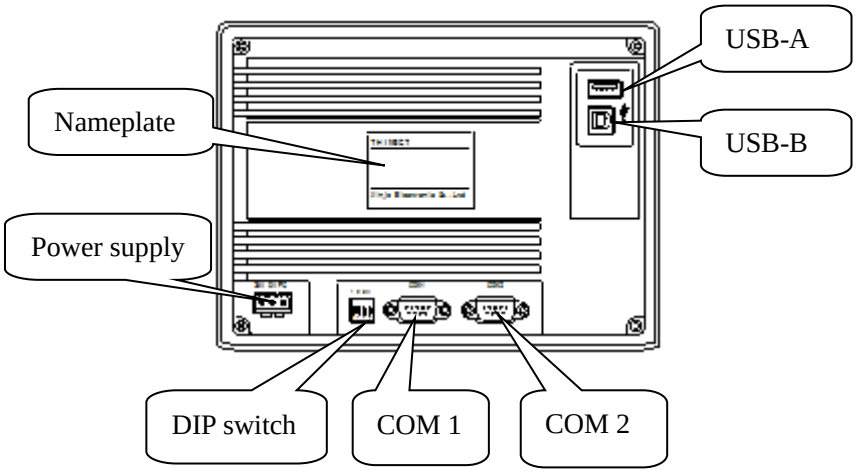
TH series HMI display area dimension:

Series	Display area dimension (mm)
TH465	95.04*53.86
TH765	154.08*85.92
TH865	162.0*121.5
THA62	219.6*131.76
THA65	211.2*158.4

2-3 Hardware

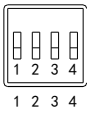
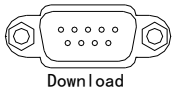
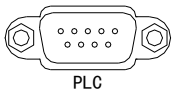
2-3-1 Hardware structure

Below is the back side of TH series HMI:



2-3-2 Port introduction

TH series HMI port:

Outline	Name	Function
	DIP switch	Force-download, touch area adjustment
	COM 1	RS232/RS485 communication Extension port: 1A6B (only NT3 and NU3 support)
	COM 2	RS232/RS485/RS422 communication
	USB-A	Connect to U disk
	USB-B	Connect USB cable to download/upload program

1. DIP switch

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

Switch	DIP1	DIP2	DIP3	DIP4	Function
State	OFF	OFF	OFF	ON	Interior check mode (not recommended to users)
	OFF	ON	OFF	OFF	Force-download mode
	OFF	OFF	ON	OFF	System menu：Adjust clock and touch panel, Import program of U disk
	ON	OFF	OFF	OFF	Undefined

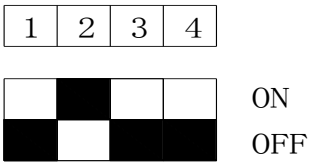
If the screen cannot show normally after downloading the program, please use force-download to update the system.

Steps:

(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.

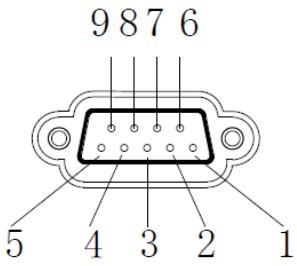


2. Communication interface

The COM1 and COM2 port of TH series has below function:

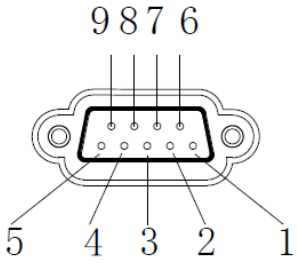
- Communication function: Connect to PLC, printer, inverter, meter, etc, used as communication port.

The pins definition of COM1:



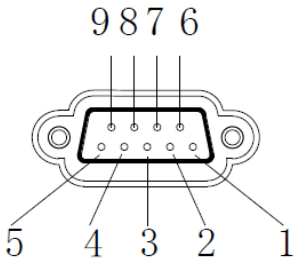
Pin	Name	Description
1	NC	Unused terminal
2	RXD	RS232 receive
3	TXD	RS232 send
4	A	RS485 + signal
5	GND	Signal ground
6	NC	Unused terminal
7	B	RS485 — signal
8	NC	Unused signal
9	NC	Unused signal

The pins definition of COM2:



Pin	Name	Description
1	TD+	RS422 send +
2	RXD	RS232 receive
3	TXD	RS232 send
4	A	RS485 + signal
5	GND	Signal ground
6	TD-	RS422 send -
7	B	RS485 -
8	RDD-	RS422 receive -
9	RDD+	RS422 receive +

The COM1 pins definition of TH765-NT3/NU3 series:



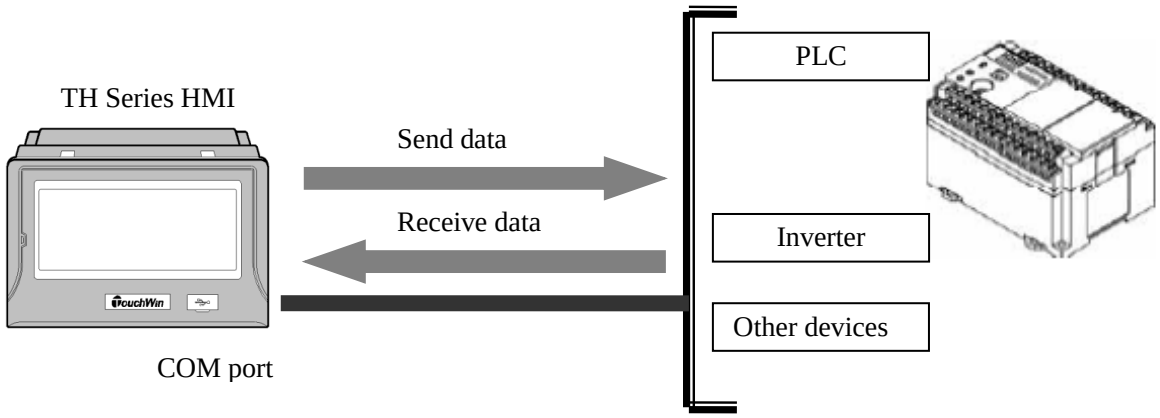
Pin	Name	Description
1	A	RS485 + signal
2	RXD	RS232 receive
3	TXD	RS232 send
4	A	RS485 + signal
5	GND	Signal ground
6	B	RS485 -
7	B	RS485 -
8	NC	Unused terminal
9	NC	Unused terminal

TH765-NT3/NU3 download port contains two communication ports, it can connect two devices at the same time.

Extension port: RS485 (1A6B)

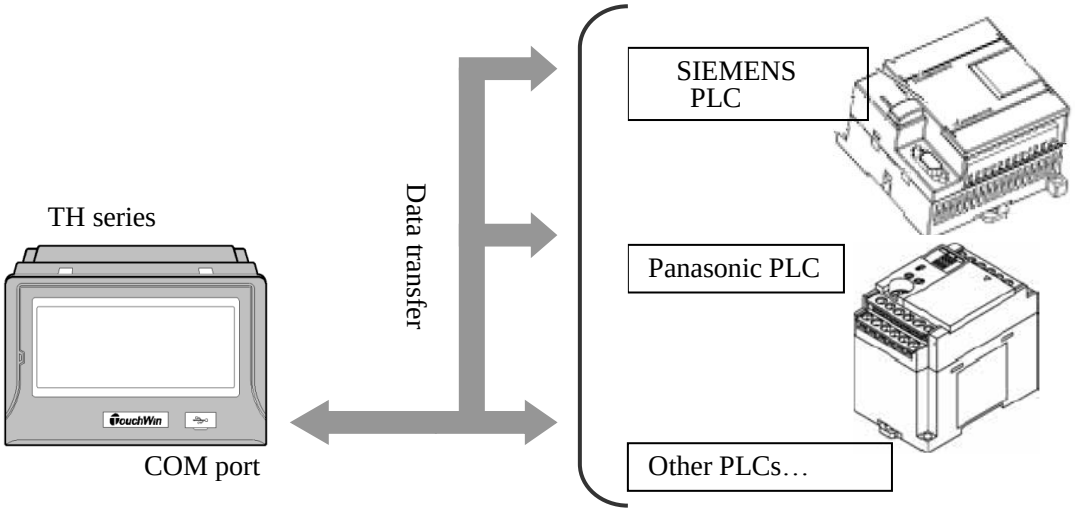
Download port: RS232 (2RXD, 3TXD, 5GND) or RS485 (4A7B)

The communication interface of TH series HMI has powerful communication function.



(1) Communication with PLC

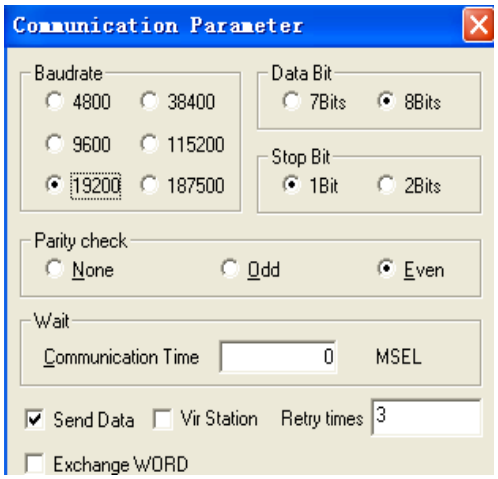
TH series HMI can communicate with most of popular PLCs:



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

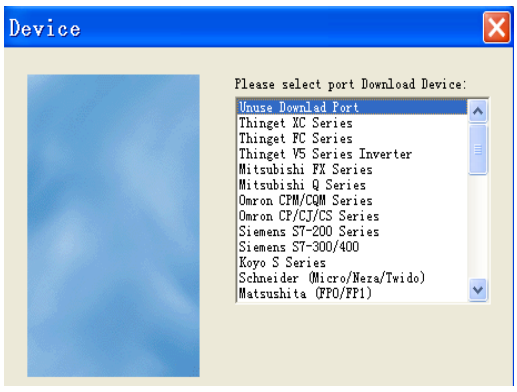


COM2 device selection

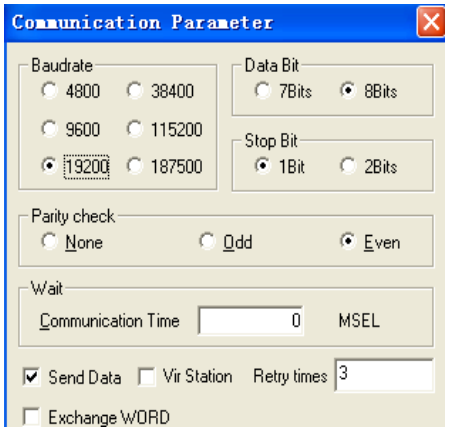


COM2 communication parameter setting

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



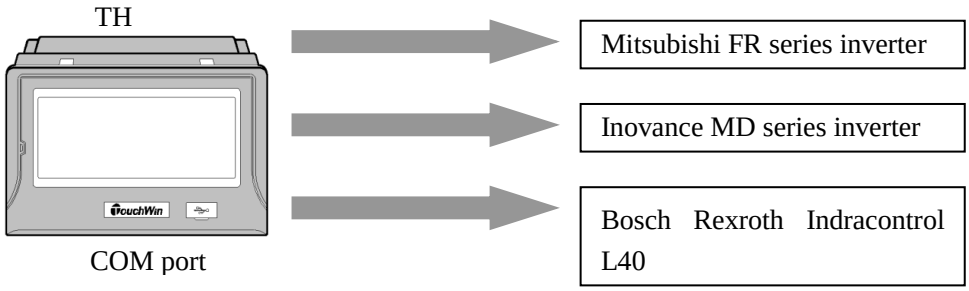
COM1 device selection



COM1 communication parameter setting

(2) Communication 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.



(3) Communicate with meters

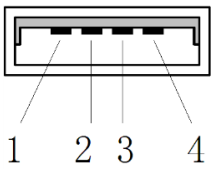
About the communication between TH and meters, users can select user-defined protocol or Modbus protocol.

3. USB-A port

TH series USB-A port has below functions: (accord with USB2.0)

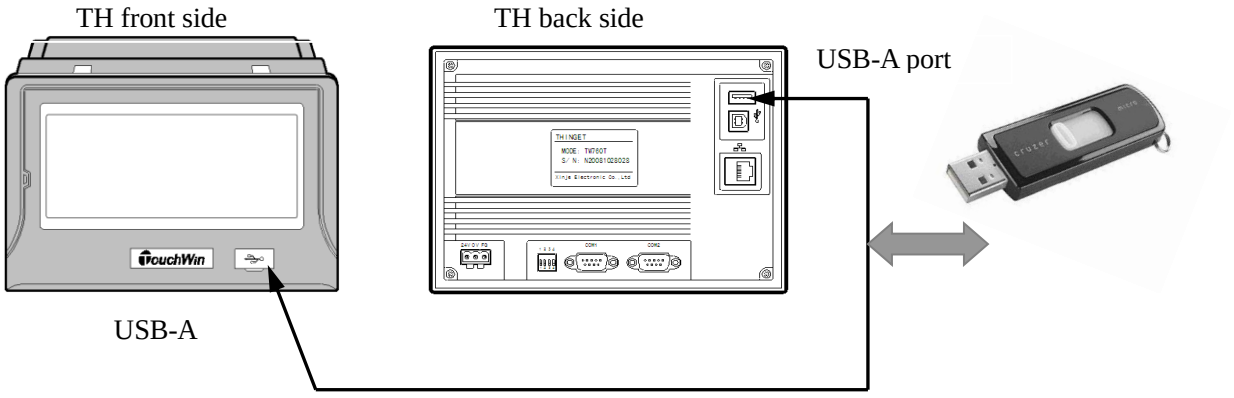
- Backup management, data export/import, the speed can up to 480 Mbps.

USB-A port definition



Pin	Name	Description
1	+5V	+5V voltage signal
2	DATA+	Data signal +
3	DATA-	Data signal -
4	-5V	-5V voltage signal

Connect to USB flash disk



Note:

1. Only THA62-UT has USB-A port in the front, other TH series USB-A ports are at the back.
2. The USB-A port only support flash disk(FAT32), but not support mobile hard disk.

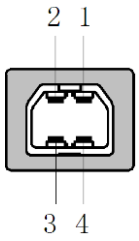
4. USB-B port

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

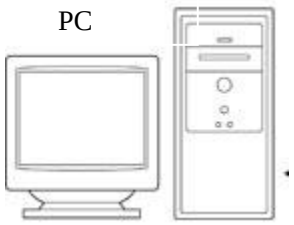
- To download the data, the speed can up to 480Mbps.

Pin	Name	Description
1	+5V	+5V voltage signal
2	DATA-	Data signal -
3	DATA+	Data signal +
4	GND	Ground signal

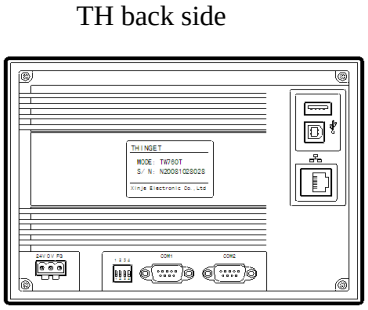
USB-B port definition



(1) Please use shielded USB cables.







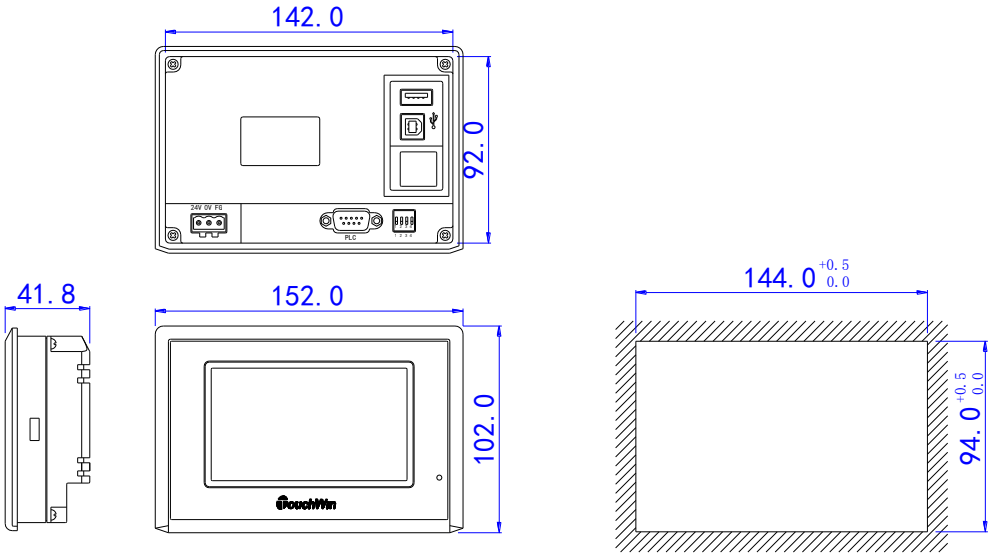
(2) Please install USB driver before using. Download the driver from www.xinje.com.

(3) Connect TH with PC, open Touchwin software, click " or " to download the program.

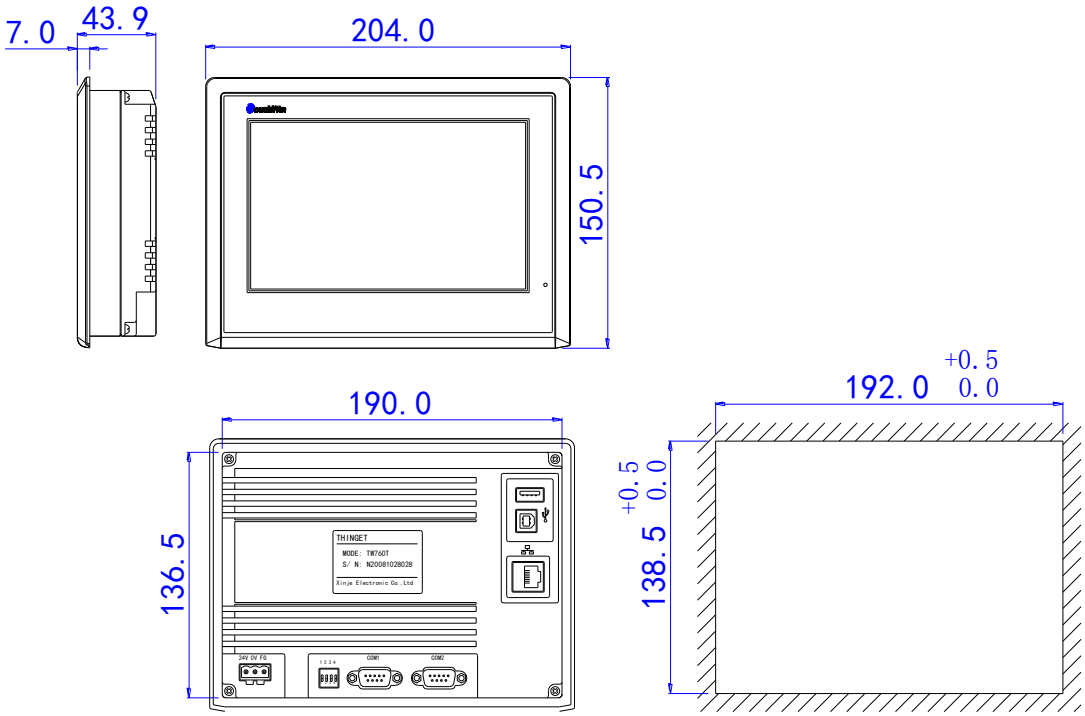
2-4 Dimensions and installation

2-4-1 Product dimensions

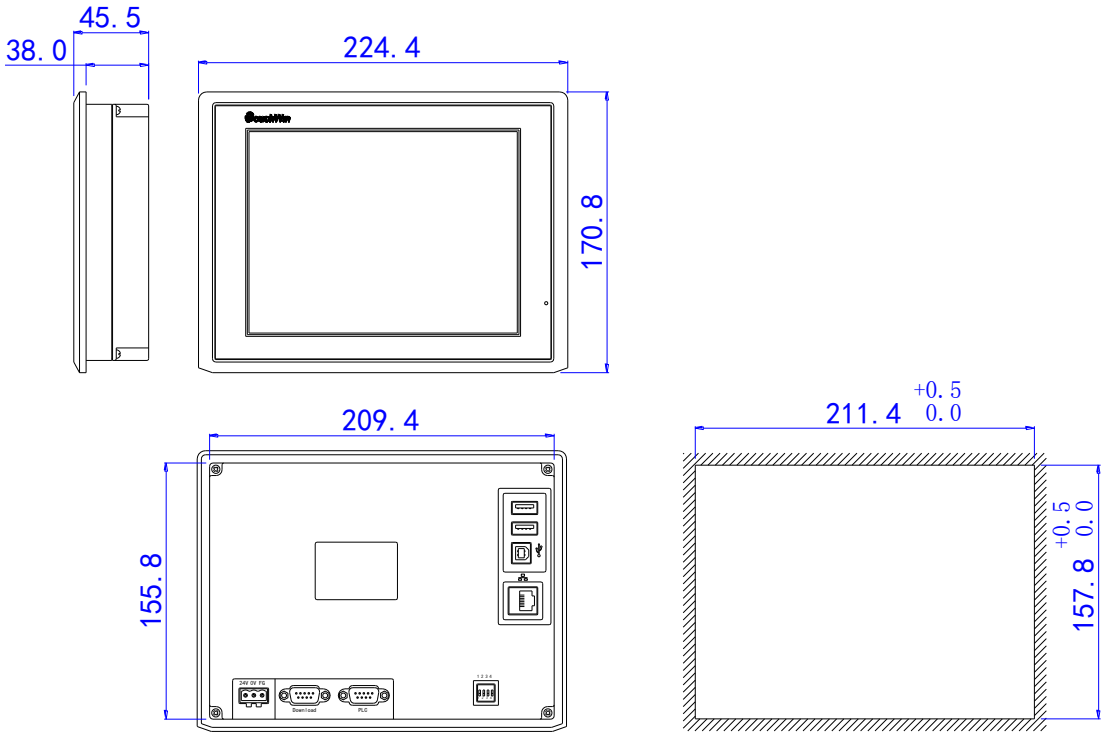
TH465 (Unit: mm)



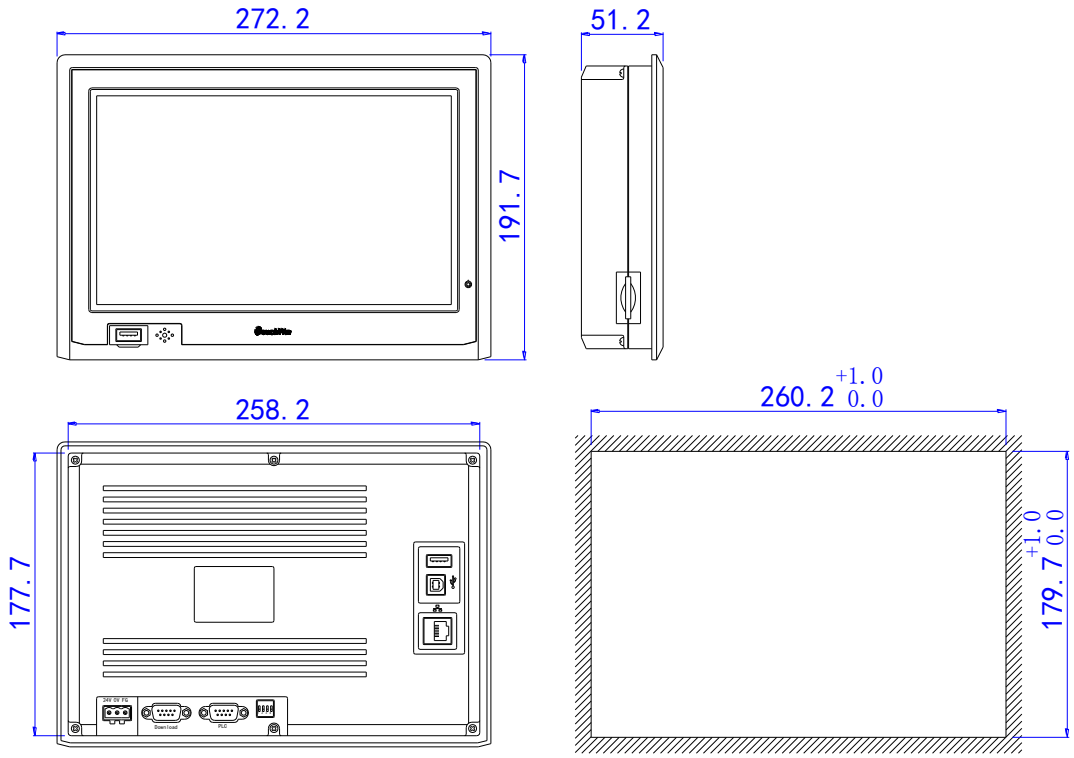
TH765-M/TH765-N (Unit: mm)



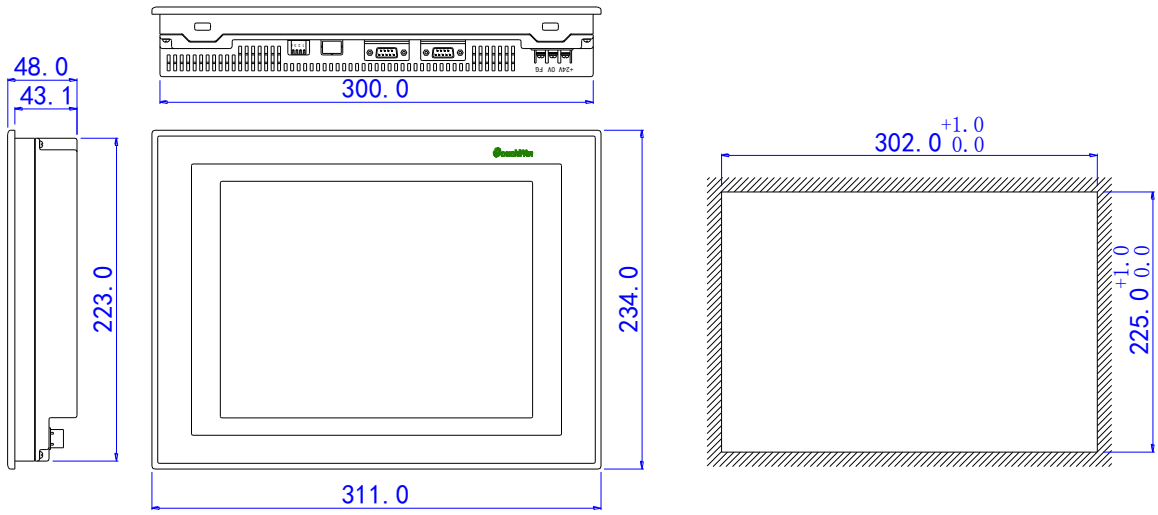
TH865 (Unit: mm)



THA62 (Unit: mm)



THA65 (Unit: mm)

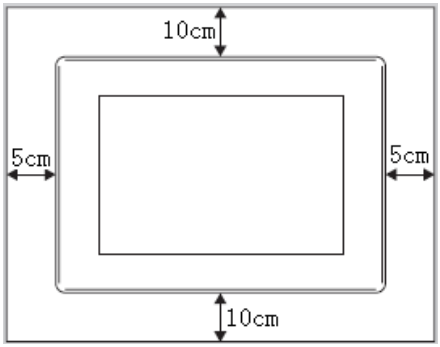


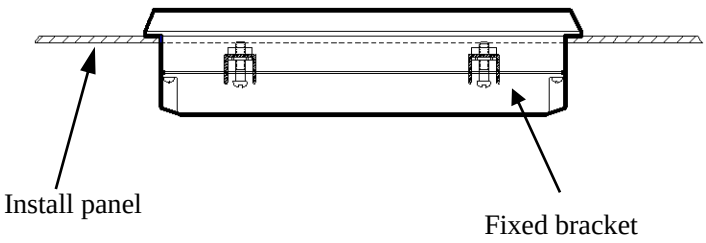
2-4-2 Installation and using environment

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.





Install steps:

1. Refer to the dimension in the former chapter to open a rectangle mounting hole in the control cabinet;
2. Add airproof circles in the airproof slot when installing;
3. Insert the bottom of TH into the mounting hole of control cabinet;
4. Insert the install rack into the fix hole of TH then tighten the screw;
5. 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

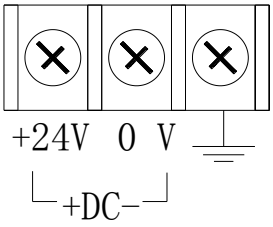
Environment:

Please use TH series touch screen indoor.

Do not use TH in below environment:
Inflammable gas, steam, dust, fast vary temperature, high humidity (it may cause moisture inside TH).

Power supply requirements:

TH series touch screen use DC +24V power supply only. The permitted voltage range is 20V~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.

If use the DC +24V output of PLC, makes sure the PLC has enough current to drive the TH.

3 TG series HMI

3-1 Features

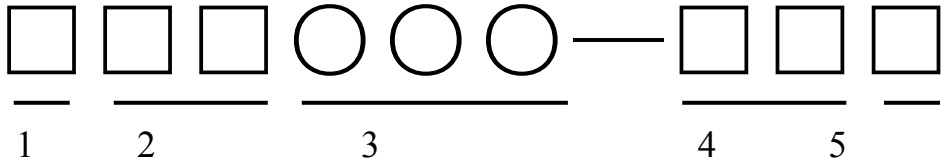
Xinje TG series HMI have high quality display: 16 million true color TFT-LCD, support BMP and JPG format, have rich 3D photo gallery, has the flexible components choice space, user-defined animation, convenient mode setting switch, precise touch calibration function, data acquisition save function, curve shows, and other forms of data management ways, offers two USB interfaces, perform high speed data download, high speed loading and high-speed operation, can communication with several PLC simultaneously, support Ethernet communication.

3-1-1 Product features

- **Display**
  - 16 million true colors TFT-LCD, support BMP and JPG format, better color and display;
  - Precise touch calibration function;
  - 128MB memory, perform high speed data download, high speed loading and high-speed operation
  - Memory capacity increase substantially;
  - Support multi-language: Chinese, English, Japanese, Korean, German, French, Arabic, etc. The fonts support any size, artistic effect, bold, italic, etc.
  - Rich images of material, screen operation
- **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 authority, 9 levels password protection
  - Simulate online/offline, upload/download data, configuration function
  - Powerful C function block
  - USB-A port inside, connect flash disk to copy data, speed up to 480Mbps
  - Special USB-B port for data download, make the data transfer faster
  - User-defined animation design
  - Contain all function of TH series
- **Communication**
  - Two ports communication independently, can connect two different devices at the same time
  - Add Ethernet interface communication, can communicate with TBOX, Siemens S7-1200 and other Modbus-TCP devices
  - Drive the panel printer directly, economical and flexible

- Support free format communication, user edits the driver program

3-1-2 Module naming rule



1: Special type	C: for CAD function S: for vision function Empty: normal type
2: Series name	TG
3: Display size	465: 4.3” 765: 7.0” 865: 8.0” A62: 10.1” C65: 15.6”
4: Interface type	ET: USB-B download port, USB-A flash disk port , Ethernet port UT: USB-B download port, USB-A flash disk port MT: USB-B download port
5: Type	Empty: Normal type (P): oil resistant

Special models

TG765-XT: compact type of TG765-MT, it has USB-B port, one RS232 port, without clock.

TG765-XT-C: compact type of TG765-MT, it has USB-B port, one RS232 port, with clock.

3-1-3 Product models

Model	LCD size	LCD type	Notes
TG465-MT/UT TG465-MT/UT(P)	4.3”	TFT-LCD	TG series: normal model CTG series: for CAD function STG series: for vision function MT: USB-B download port UT: USB-B download port, USB-A U-disk port ET: USB-B download port, USB-A U-disk port, Ethernet port
TG765-MT/UT/ET TG765-MT/UT/ET(P) CTG765-ET/UT STG765-ET TG765-XT TG765-XT-C	7”		

TG865-MT/UT/ET TG865-MT/ET(P) CTG865-ET STG865-ET	8’’		XT: compact type of TG765-MT, it has USB-B port, one RS232 port, without clock. XT-C: compact type of TG765-MT, it has USB-B port, one RS232 port, with clock. (P): oil resistant
TGA62-MT/ET TGA62-MT/ET(P) CTGA62-ET	10.1’’		
TGC65-MT/UT/ET	15.6’’		

3-2 General specifications

HMI specifications

Item		TG465	TG765	TG865	TGA62	TGC65
Screen	Size	4.3’’	7.0’’	8.0″	10.1″	15.6’’
	Type	16 million colors				
	Resolution	480*272	800*480	800*600	800*480	1366*768
	Brightness	Non-adjus table	Adjustable (through register PFW100)			Non-adjustable
	Touch panel	4-wire resistance mode				
	Using life	More than 50000 hours, temperature 25℃, running for 24 hours				
	Language	Chinese, English, Japanese, Korean, German, French, Arabic…				
	Character	Any font and size				
Memory	Capacity	64MB	128MB (TG765-XT is 64MB)			

Electric specifications

Item		TG465	TG765	TG865	TGA62	TGC65
Electric	Input voltage	DC24V (Range: DC22V-DC26V)				
	Consumption current	140mA	200mA	250mA	270mA	730mA
	Allowable momentary power failure	Below 10ms (Actual power failure<1s)				
	Withstand voltage	AC1000V,10mA,less than 1 minute (signal and ground)				
	Insulated impedance	DC500V, above 10MΩ (signal and ground)				
Environ	Operation	0-50℃				

ment	temperature					
	Reserve temperature	-20-60℃				
	Environment humidity	10%RH-90%RH（no condensation）				
	Withstand oscillation	10-25HZ（X,Y,Z each direction 30 minutes 2G）				
	Anti-jamming	Voltage noise:1500Vp-p, pulse 1us, 1 minute				
	Surrounding air	No corrosive gas				
	Protection construction	IP65				
Construction	Cooling method	Natural air cooling				
	Exterior dimension (mm)	152.0*102.0*41.8	200.4*146.9*43.4	224.4*170.8*45.5	272.2*191.7*51.2	410.0*270.0*65.0
	Mounting dimension (mm)	144.0*94.0	192.0*138.5	211.4*157.8	260.2*179.7	399.0*259.0
Interface	PLC port	RS232/RS485	RS232/RS485/RS422 (TG765-XT, TG765-XT-C only support RS232)			
	Download port	-	RS232/RS485 (TG765-XT and TG765-XT-C don’t have this port)			
	Ethernet port	-	RJ45 (Only for ET series)			
	USB1	-	USB-A (accord with USB2.0), flash disk port (UT/ET support)			
	USB2	USB-B (accord with USB2.0), USB download port				

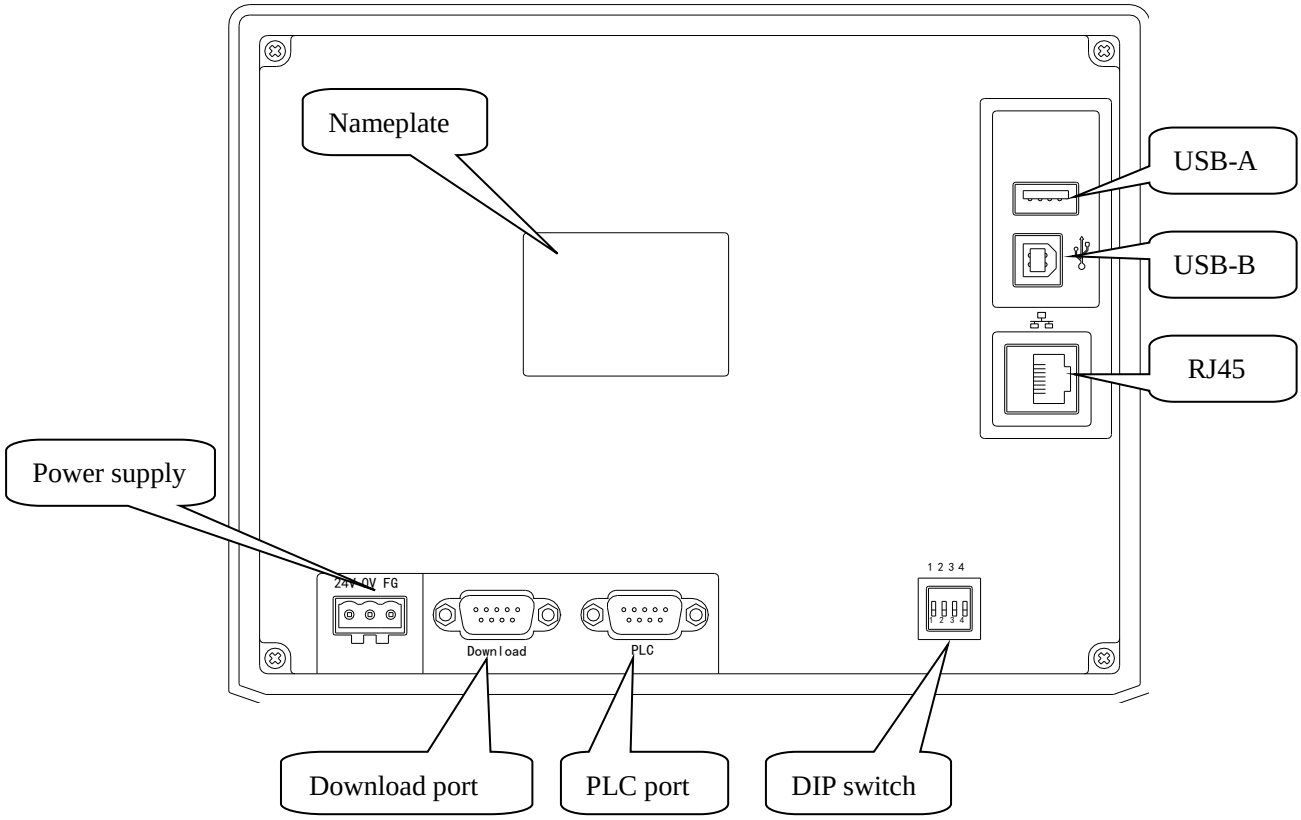
TG series HMI display area dimension:

Series	Display area dimension (mm)
TG465	95.04*53.86
TG765	154.08*85.92
TG865	162.0*121.5
TGA62	219.6*131.76
TGC65	344.23*193.54

3-3 Hardware

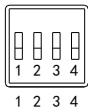
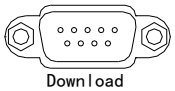
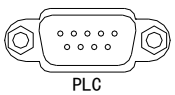
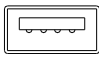
3-3-1 Hardware structure

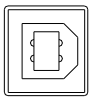
The back side of TG series HMI:



3-3-2 Ports introduction

TG series HMI port:

Outline	Name	Function
	DIP switch	Force-download, touch area adjustment
	Download port	RS232/RS485
	PLC port	RS232/RS485/RS422
	USB-A	Connect to flash disk to store data

	USB-B	Connect USB cable to download/upload program
	Ethernet port	Support TBOX, Siemens S7-1200 and other devices which support Modbus-TCP protocol

1. DIP switch

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

Switch	DIP1	DIP2	DIP3	DIP4	Function
State	OFF	OFF	OFF	ON	Undefined
	OFF	ON	OFF	OFF	Force-download mode
	OFF	OFF	ON	OFF	System menu: Adjust clock and touch panel, Import program of flash disk
	ON	OFF	OFF	OFF	Undefined

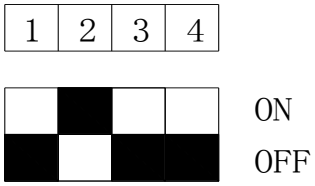
If the screen cannot show normally after downloading the program, please use force-download.

Step:

(1) Cut off the power of TG, turn ON DIP switch 2;

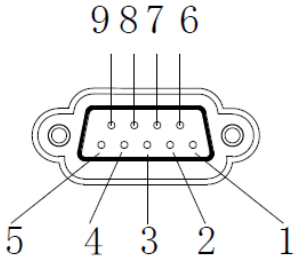
(2) Power on TG, connect the download cable to PC to download the program;

(3) Turn OFF DIP switch 2 after finishing the download, repower on the TG.



2. Communication interface

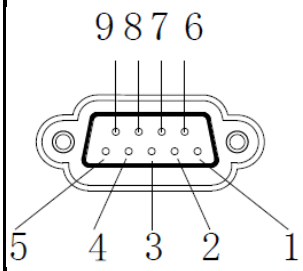
The Pins definition of download port:



Pin	Name	Description
1	NC	Unused terminal
2	RXD	RS232 receive
3	TXD	RS232 send
4	A	RS485 + signal
5	GND	Signal ground
6	NC	Unused terminal
7	B	RS485 - signal
8	NC	Unused terminal
9	NC	Unused terminal

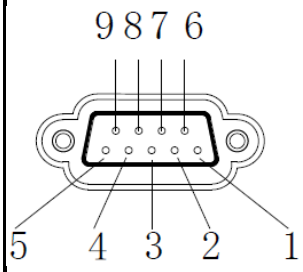
Note: TG465, TG765-XT and TG765-XT-C don't have this port.

The Pins definition of PLC port:



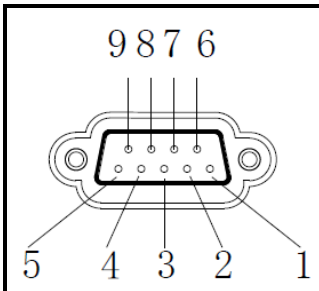
Pin	Name	Description
1	TD+	RS422 send +
2	RXD	RS232 receive
3	TXD	RS232 send
4	A	RS485 + signal
5	GND	Signal ground
6	TD-	RS422 send -
7	B	RS485 - signal
8	RDD-	RS422 receive -
9	RDD+	RS422 receive +

TG765-XT, TG765-XT-C PLC port:



Pin	Name	Description
1	NC	Unused terminal
2	RXD	RS232 receive
3	TXD	RS232 send
4	NC	Unused terminal
5	GND	Signal ground
6	NC	Unused terminal
7	NC	Unused terminal
8	NC	Unused terminal
9	NC	Unused terminal

TG465 COM2 (PLC port):



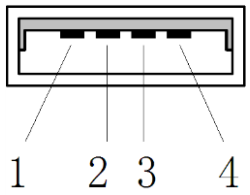
Pin	Name	Description
1	NC	Unused terminal
2	RXD	RS232 receive
3	TXD	RS232 send
4	A	RS485+ signal
5	GND	Signal ground
6	NC	Unused terminal
7	B	RS485- signal
8	NC	Unused terminal
9	NC	Unused terminal

3. USB-A port

USB-A (accord with USB2.0) of TG series HMI has below function:

- Backup management, data export/import, the speed can up to 480 Mbps.

USB-A port definition



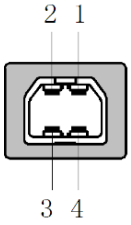
Pin	Name	Description
1	+5V	+5V voltage signal
2	DATA+	Data signal +
3	DATA-	Data signal -
4	—5V	-5V voltage signal

4. USB-B port

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

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

USB-B port definition



Pin	Name	Description
1	+5V	+5V voltage signal
2	DATA-	Data signal -
3	DATA+	Data signal +
4	GND	Ground signal

(1) Please use shielded USB cables.

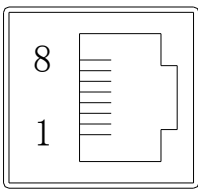


(2) Please install USB driver before using. Download the driver from www.xinje.com.

(3) Connect TG with PC, open Touchwin software, click " or " to download the program.

5. RJ45 port

The pins definition of RJ45 port

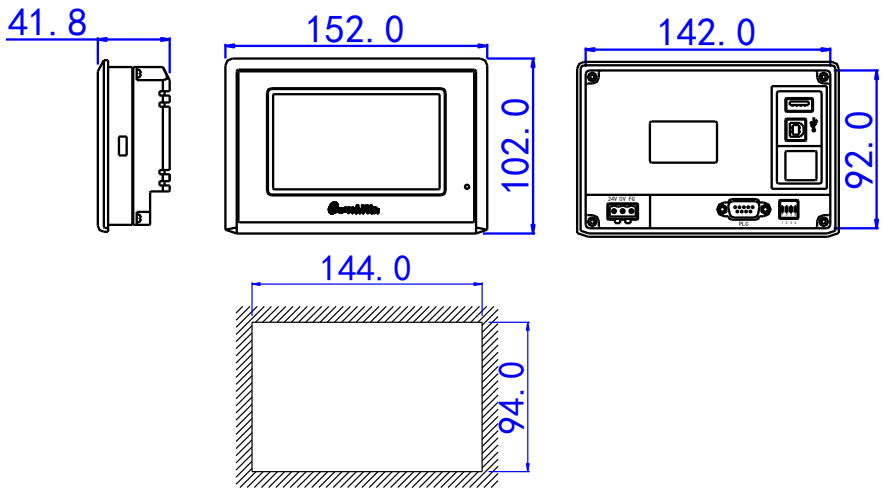


Pin	Color	Name	Explanation
1	Orange white	TXD+	Send +
2	Orange	TXD-	Send -
3	Green white	RXD+	Receive +
4	Blue	-	-
5	Blue white	-	-
6	Green	RXD-	Receive -
7	Brown white	-	-
8	Brown	-	-

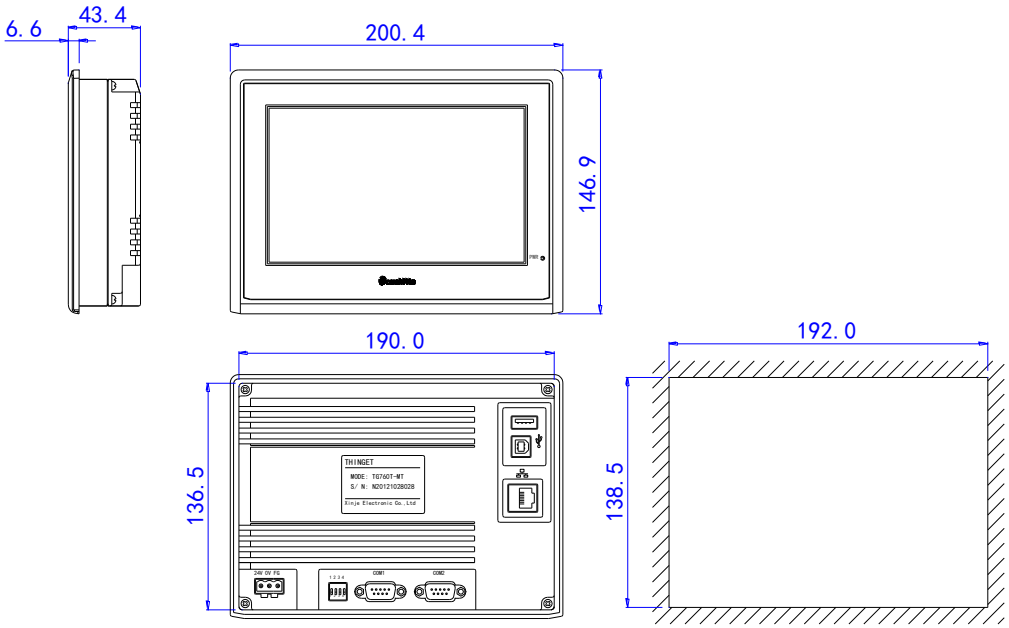
3-4 Dimensions and installation

3-4-1 Product dimensions

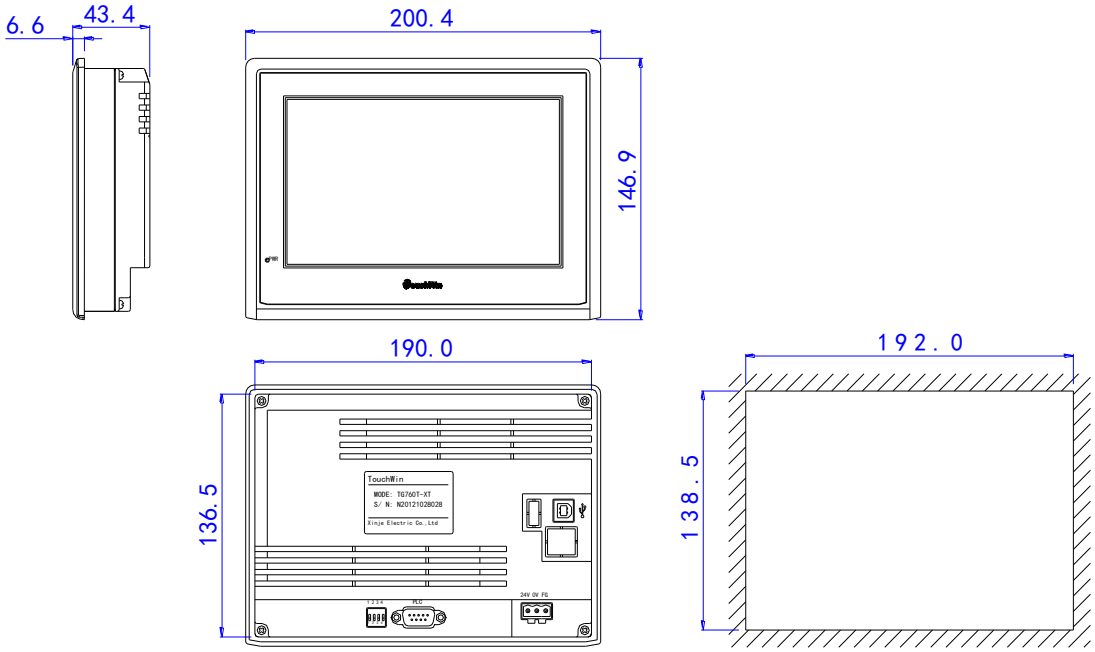
TG465 **(Unit: mm)**



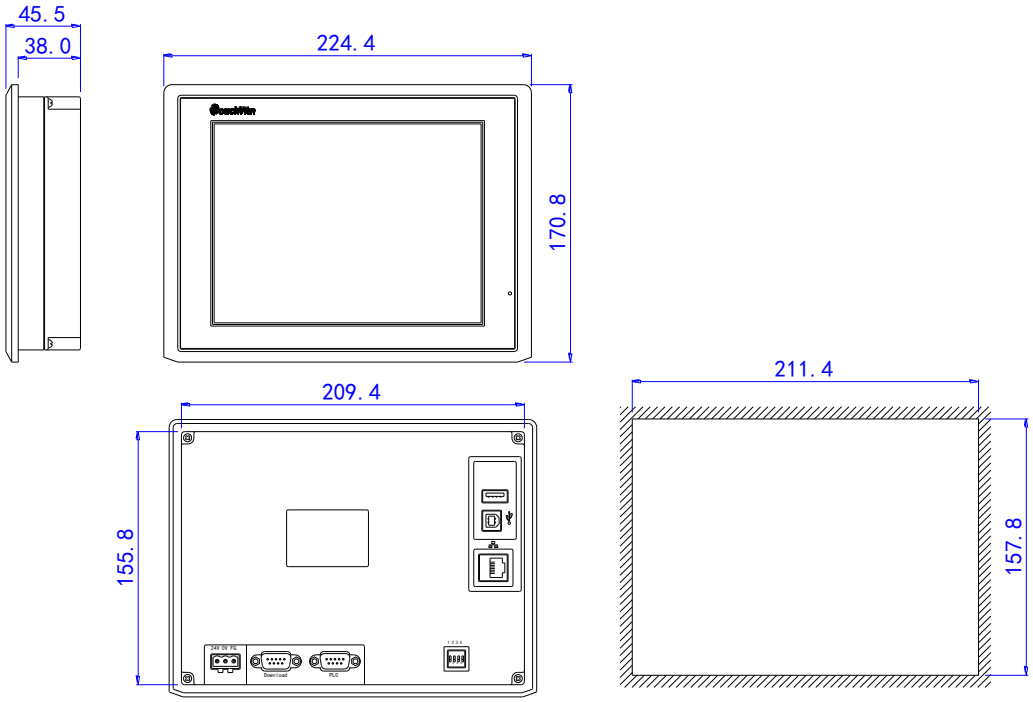
TG765-MT/UT/ET, CTG765, STG765 **(Unit: mm)**



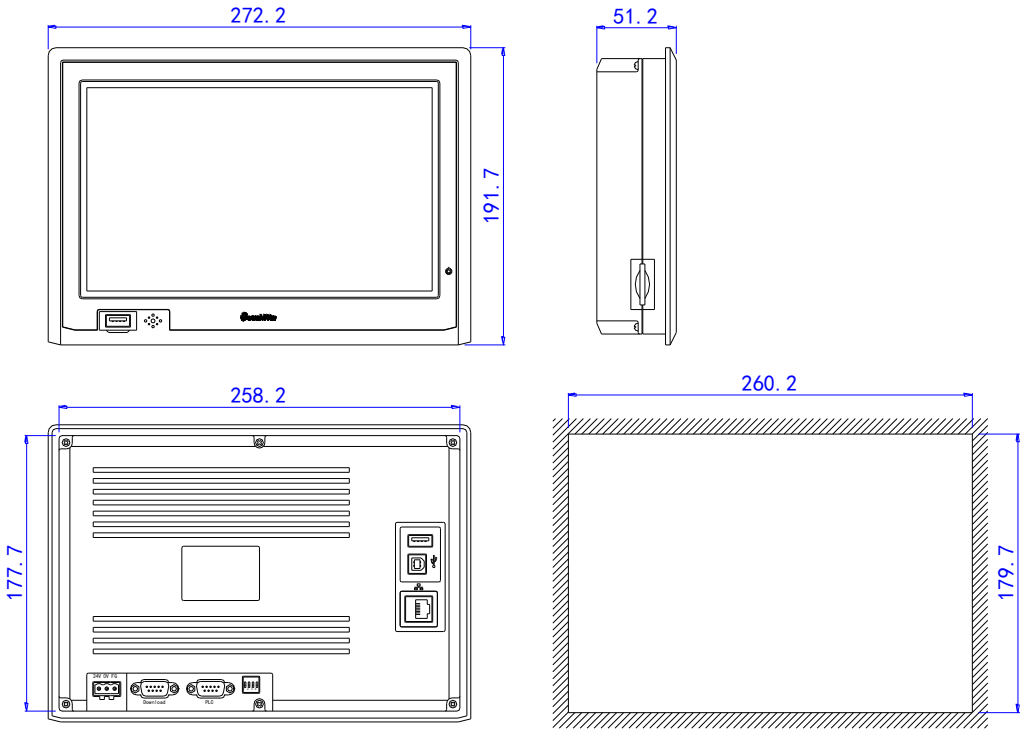
TG765-XT, TG765-XT-C **(Unit: mm)**



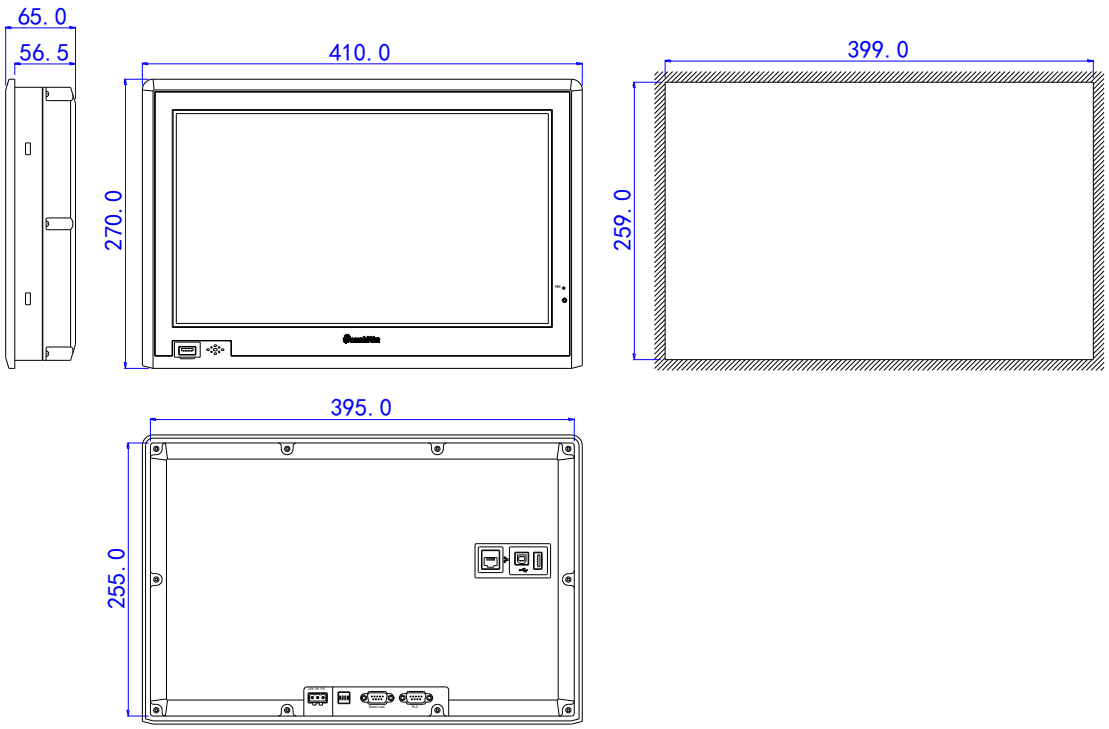
TG865-MT/UT/ET, CTG865, STG865 **(Unit: mm)**



TGA62-MT/ET, CTGA62 **(Unit: mm)**



TGC65-MT/UT/ET **(Unit: mm)**

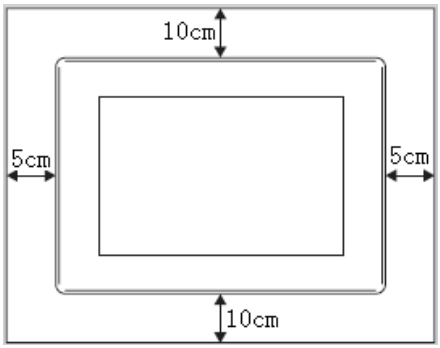


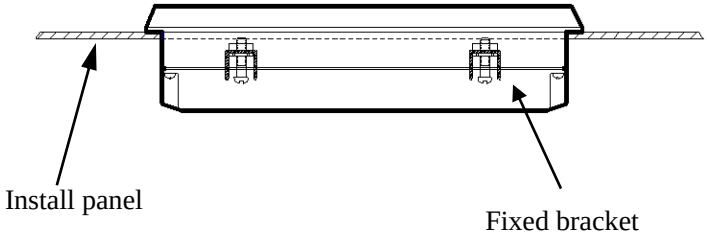
3-4-2 Installation and using environment

Install requirements:

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

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





Install steps:

1. Refer to the dimension in the former chapter to open a rectangle mounting hole in the control cabinet;
2. Add airproof circles in the airproof slot when installing;
3. Insert the bottom of TH into the mounting hole of control cabinet;
4. Insert the install rack into the fix hole of TG then tighten the screw;
5. Connect TG 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

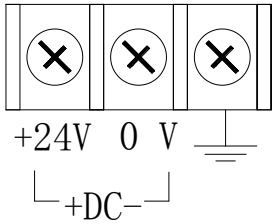
Environment:

Please use TG series touch screen indoor.

Do not use TG in below environment:
Inflammable gas, steam, dust, fast vary temperature, high humidity (it may cause moisture inside TG).

Power supply requirements:

TG series touch screen use DC +24V power supply only. The permitted voltage range is 20V~26V. The connection is as below:



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

If use the DC +24V output of PLC, make sure the PLC has enough current to drive the TG.

4 TE series HMI

4-1 Features

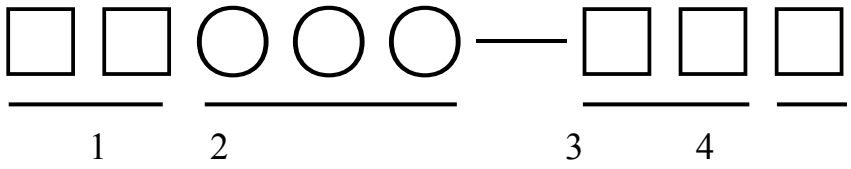
- New cover design, silver color, more refined appearance
- 7 inch normal dimension, the models include TE765-MT/UT/ET
- Use long life LED backlight to extend the using life, industry LCD can withstand high vibration
- Fit for serious environment, resistant to corrosive liquids and gases, running temperature -10℃-60℃
- 400MHz CPU, 128M internal memory, perfect data processing ability, fast download and running speed, better animation effect

4-1-1 Product features

- **Display**
  - 16 million true colors TFT-LCD, support BMP and JPG format, better color and display;
  - 128MB memory, perform high speed data download, high speed loading and high-speed operation
  - Memory capacity increase substantially;
  - Support multi-language: Chinese, English, Japanese, Korean, German, French, Arabic, etc. The fonts support any size, artistic effect, bold, italic, etc.
  - Rich images of material, screen operation
- **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 authority, 9 levels password protection
  - Simulate online/offline, upload/download data, configuration function
  - Powerful C function block
  - USB-A port inside, connect flash disk to copy data, speed up to 480Mbps
  - Special USB-B port for data download, make the data transfer faster
  - User-defined animation design
  - Contain all function of TH series
- **Communication**
  - Two ports communication independently, can connect two different devices at the same time
  - Add Ethernet interface communication, can communicate with TBOX, Siemens S7-1200 and other Modbus-TCP devices
  - Drive the panel printer directly, economical and flexible

- Support free format communication, user edits the driver program

4-1-2 Module naming rule



1: Series name TE
2: Display size 765: 7.0''
3: Interface type ET: USB-B download port, USB-A flash disk port , Ethernet port
UT: USB-B download port, USB-A flash disk port
MT: USB-B download port
4: Type Empty: Normal type
(P): oil resistant

4-1-3 Product models

Model	Display	LCD type	Notes
TE765-MT TE765-MT(P)	7''	TFT-LCD	USB-B download port
TE765-UT TE765-UT(P)	7''	TFT-LCD	USB-B download port, USB-A flash disk port
TE765-ET TE765-ET(P)	7''	TFT-LCD	USB-B download port, USB-A flash disk port, Ethernet port

4-2 General specifications

HMI specifications

Item		TE765-MT TE765-MT(P)	TE765-UT TE765-UT(P)	TE765-ET TE765-ET(P)
Screen	Size	7.0''		
	Type	16 million colors		
	Resolution	800*480		
	Brightness	Adjustable (through register PFW100)		
	Touch panel	4-wire resistance mode		
	Using life	More than 50000 hours, temperature 25℃, running for 24 hours		
	Language	Chinese, English, Japanese, Korean, German, French, Arabic…		

	Character	Any font and size
Memory	Capacity	128MB

Electric specifications

Item		**TE765-MT TE765-MT(P)**	**TE765-UT TE765-UT(P)**	**TE765-ET TE765-ET(P)**
Electric	Input voltage	DC24V (Range: DC22V-DC26V)		
	Consumption current	200mA		
	Allowable momentary power failure	Below 10ms (Actual power failure<1s)		
	Withstand voltage	AC1000V,10mA,less than 1 minute (signal and ground)		
	Insulated impedance	DC500V, above 10MΩ (signal and ground)		
Environment	Operation temperature	-10-60℃		
	Reserve temperature	-20-65℃		
	Environment humidity	10%RH-90%RH (no condensation)		
	Withstand oscillation	10-25Hz (X,Y,Z each direction 30 minutes 2G)		
	Anti-jamming	Voltage noise:1500Vp-p, pulse 1us, 1 minute		
	Surrounding air	No corrosive gas		
	Protection construction	IP65		
Construction	Cooling method	Natural air cooling		
	Exterior dimension (mm)	200.4*146.9*43.4		
	Mounting dimension (mm)	192.0*138.5		
Interface	PLC port	RS232/RS485/RS422		
	Download	RS232/RS485		

	port			
	Ethernet port	-	-	RJ45
	USB1	USB-A (accord with USB2.0), flash disk port (UT/ET support)		
	USB2	USB-B (accord with USB2.0), USB download port		

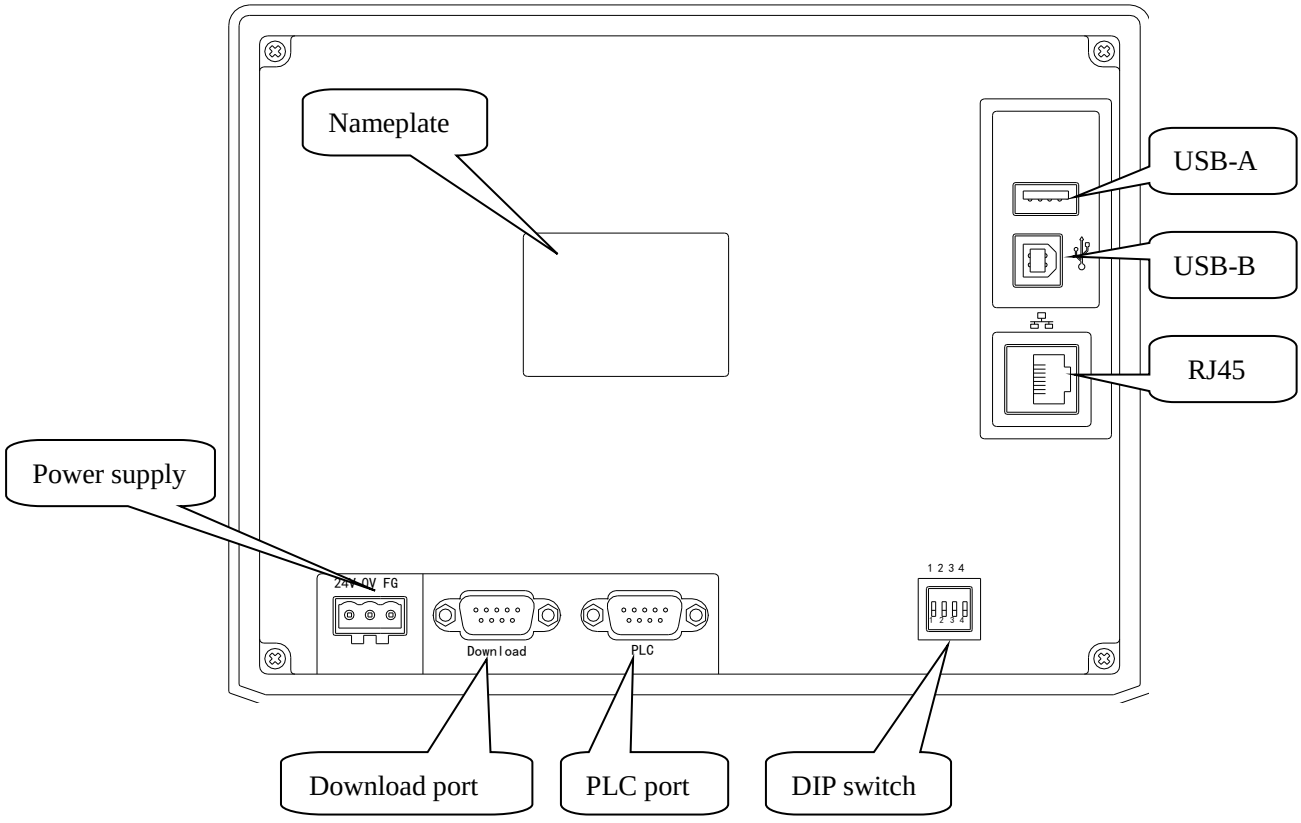
TE series HMI display area dimension:

Series	Display area dimension (mm)
TG465	154.08*85.92

4-3 Hardware

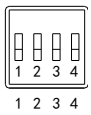
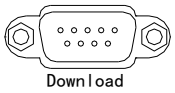
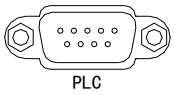
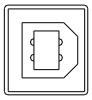
4-3-1 Hardware structure

The back side of TE series HMI:



4-3-2 Ports introduction

TE series HMI port:

Outline	Name	Function
	DIP switch	Force-download, touch area adjustment
	Download port	RS232/RS485
	PLC port	RS232/RS485/RS422
	USB-A	Connect to flash disk to store data
	USB-B	Connect USB cable to download/upload program
	Ethernet port	Support TBOX, Siemens S7-1200 and other devices which support Modbus-TCP protocol

1. DIP switch

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

Switch	DIP1	DIP2	DIP3	DIP4	Function
State	OFF	OFF	OFF	ON	Undefined
	OFF	ON	OFF	OFF	Force-download mode
	OFF	OFF	ON	OFF	System menu: Adjust clock and touch panel, Import program of flash disk
	ON	OFF	OFF	OFF	Undefined

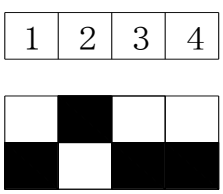
If the screen cannot show normally after downloading the program, please use force-download.

Step:

(1) Cut off the power of TE, turn ON DIP switch 2;

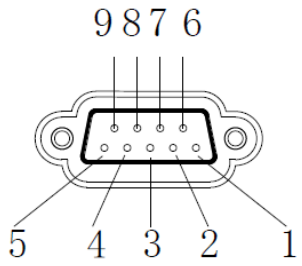
(2) Power on TE, connect the download cable to PC to download the program;

(3) Turn OFF DIP switch 2 after finishing the download, repower on the TE.



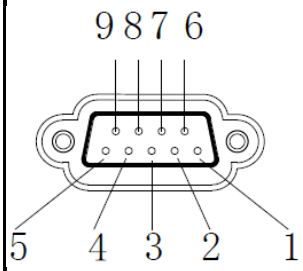
2. Communication interface

The Pins definition of download port:



Pin	Name	Description
1	NC	Unused terminal
2	RXD	RS232 receive
3	TXD	RS232 send
4	A	RS485 + signal
5	GND	Signal ground
6	NC	Unused terminal
7	B	RS485 - signal
8	NC	Unused terminal
9	NC	Unused terminal

The Pins definition of PLC port:



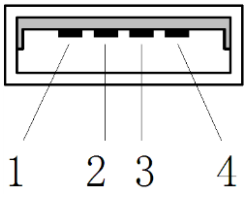
Pin	Name	Description
1	TD+	RS422 send +
2	RXD	RS232 receive
3	TXD	RS232 send
4	A	RS485 + signal
5	GND	Signal ground
6	TD-	RS422 send -
7	B	RS485 - signal
8	RDD-	RS422 receive -
9	RDD+	RS422 receive +

3. USB-A port

USB-A (accord with USB2.0) of TE series HMI has below function:

- Backup management, data export/import, the speed can up to 480 Mbps.

USB-A port definition



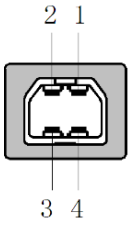
Pin	Name	Description
1	+5V	+5V voltage signal
2	DATA+	Data signal +
3	DATA-	Data signal -
4	—5V	-5V voltage signal

4. USB-B port

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

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

USB-B port definition



Pin	Name	Description
1	+5V	+5V voltage signal
2	DATA-	Data signal -
3	DATA+	Data signal +
4	GND	Ground signal

(2) Please use shielded USB cables.

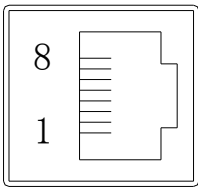


(2) Please install USB driver before using. Download the driver from www.xinje.com.

(3) Connect TE with PC, open Touchwin software, click " or " to download the program.

5. RJ45 port

The pins definition of RJ45 port

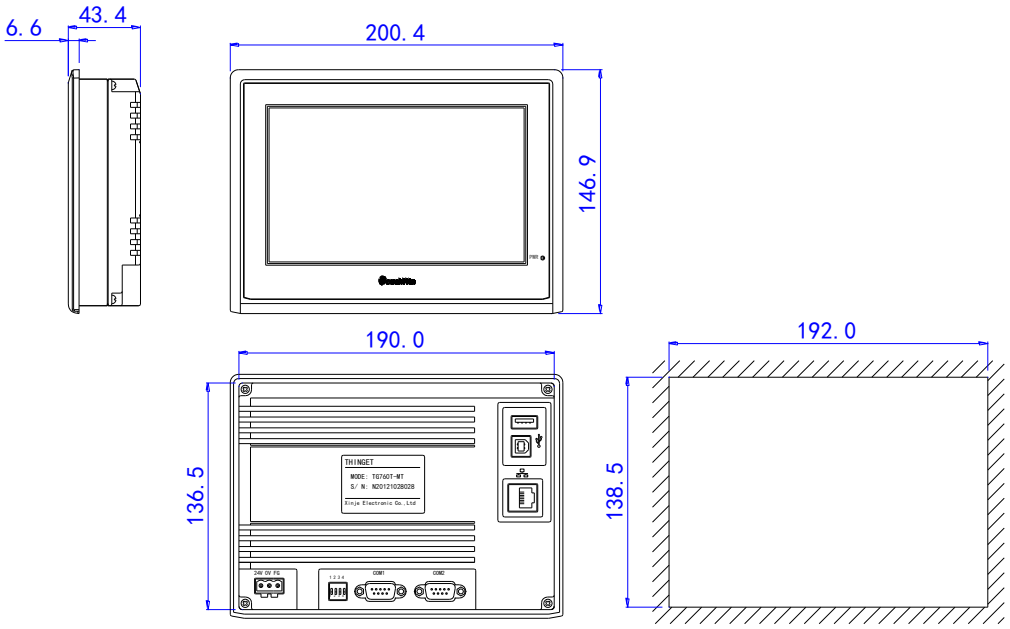


Pin	Color	Name	Explanation
1	Orange white	TXD+	Send +
2	Orange	TXD-	Send -
3	Green white	RXD+	Receive +
4	Blue	-	-
5	Blue white	-	-
6	Green	RXD-	Receive -
7	Brown white	-	-
8	Brown	-	-

4-4 Dimensions and installation

4-4-1 Product dimensions

TE765 **(Unit: mm)**

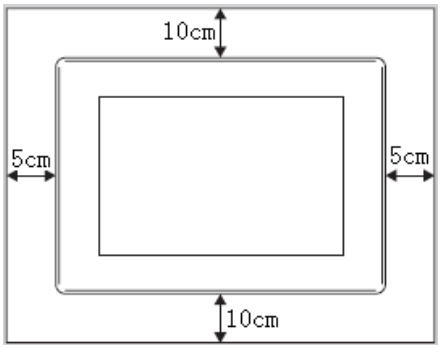


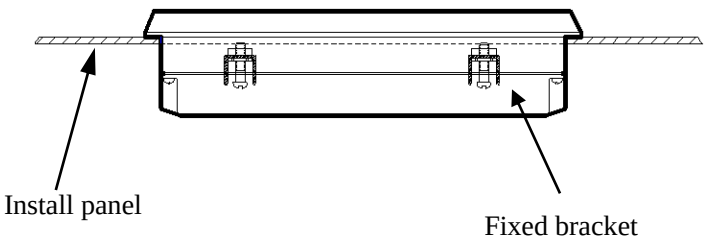
4-4-2 Installation and using environment

Install requirements:

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

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





Install steps:

1. Refer to the dimension in the former chapter to open a rectangle mounting hole in

the control cabinet;

2. Add airproof circles in the airproof slot when installing;
3. Insert the bottom of TH into the mounting hole of control cabinet;
4. Insert the install rack into the fix hole of TH then tighten the screw;
5. Connect TE 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

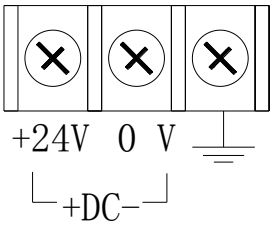
Environment:

Please use TE series touch screen indoor.

Do not use TE in below environment:
Inflammable gas, steam, dust, fast vary temperature, high humidity (it may cause moisture inside TG).

Power supply requirements:

TE series touch screen use DC +24V power supply only. The permitted voltage range is 20V~26V. The connection is as below:



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

If use the DC +24V output of PLC, make sure the PLC has enough current to drive the TE.

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www.xinje.com
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