

Human Machine Interface

HMI Display Panel

Product Datasheet



General

HT Series HMI is a high-quality human machine interface product, integrating entirely CPU unit, input and output unit, display, memory and other module units. It can be widely applied in industrial control systems of all sectors of industry.

With the optimal design via hardware and software, it accords with requirements of machine control for touch precision and accuracy, as well as for screen colors.

On the basis of the previous version, HT8001CN makes great improvements with a faster boot time, higher page switching speed, higher communication speed, and higher sensitivity than before.

The following is an introduction to the HT HMI:

CPU unit

Adopt ARM Cortex_A8 processor ensuring faster operation speed, less power dissipation as well as more stable operating.

Touch tablet display unit

Employ a four-wire resistive touch tablet responsible for a better touch precision and a long life of touch. The display is TFT LCD with 2,6 million color TFT.

Communication module

Design of anti-jamming, anti-hypertension and anti-lightning enhances the accuracy and reliability of communication. Support for RS232, 485, 422 communication modes.

Storage cell

Employ the Flash memory of preservation of digital as ROM; Available for a fast access speed; Capacity of all models reaches to 128M.

Power module

Inclusion of high-precision switching and regulated power supply; Low power consumption.

Chip

Employ TI AM3352 chip based on the core of ARM Cortex-A8. This chip has the following advantages: Firstly, the chip has the biggest open data in history; Secondly, it has the most clear product positioning: industrial control MCU; Thirdly, it is the only one MCU that integrates 2 MAC.

Models of HMI of HT series:

Model	Size (Inch)	Resolution	Color	Memory	Length-width ratio	Number of COM	RJ45	USB-A	USB-B
HT8421T	4.3	480×272	262144	12M	16:9	1	0	1	1
HT8701TE	7.0	800×480	262144	12M	16:9	2	1	1	1
HT8701T	7.0	800×480	262144	12M	16:9	2	0	1	1
HT8721T	7.0	800×480	262144	12M	16:9	1	0	1	1
HT8A01TE	10.2	1024×600	262144	12M	16:9	2	1	1	1
HT8A01T	10.2	1024×600	262144	12M	16:9	2	0	1	1
HT8C21T	12.1	800×600	262144	12M	4:3	2	1	1	1

E.g. HT8701TE :

HT : HMI product, It represents the HT series , 8 : 8001 series,

70 : It represents size; 42:4.3 Inch, 70:7 Inch, 72:7 Inch, A0:10.2 Inch, C2 : 12.1 Inch

T: Without RJ45,

T E: With RJ45,

RJ45 apply for all HMI that above 12 inch.

As an open HMI products, it provides a standard serial interface that can be connected to other devices. Mainly supporting serial communication, it can communicate with today's major PLC on the market, such as MIT SUBISHI, SIEMENS, OMRON, MODICON, etc.. Meantime we can also develop communication drivers according to customer's demand.

The configuration software of the HT is HT8001CN providing users with functions of screen configuration, driver settings, and control and so on.

Mounting dimensions

The following is detailed introduction to mounting dimensions of HT HMI. Please install HMI in accordance with fixed mounting dimensions to avoid damaging products.

The table below lists mounting dimensions of all HT series products:

Model	HT8421T
	HT8701/HT8721T
	HT8A01
	HT8C21T

HT8421T mounting dimension

Figure 1-3 shows the product dimensions (mm) of HT8421T the outline dimension is 173×95×39
The mounting hole size is 163×85

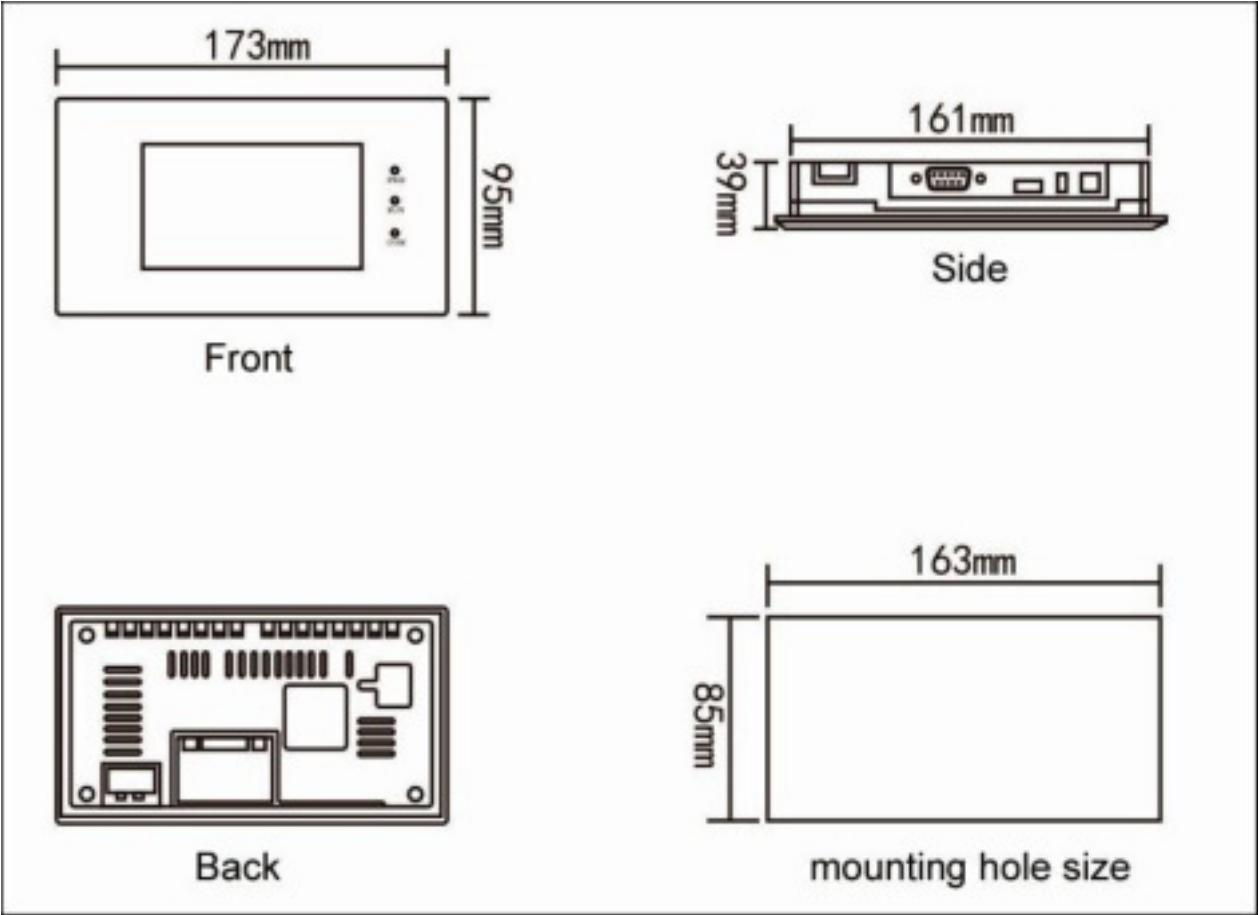


Figure 1-3 HT8421T mounting dimension

HT8701/HT8721T mounting dimension

Figure 1-5 shows the product dimensions (mm) of HT8701 the outline dimension is 227×153×40
The mounting hole size is 210×144

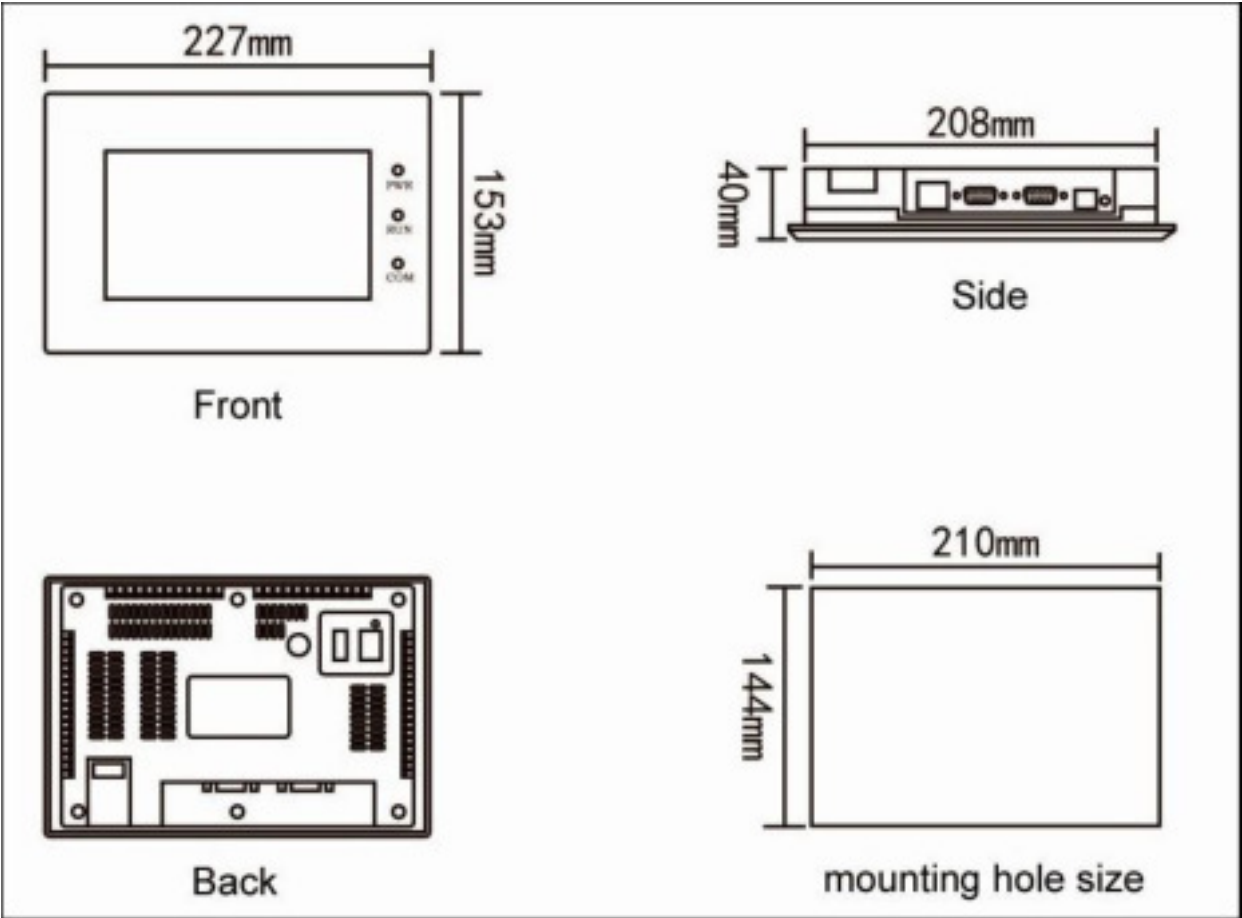


Figure 1-5 HT8701 mounting dimension

Figure 1-6 shows the product dimensions (mm) of HT8721T the outline dimension is 203×145×40
The mounting hole size is 192×138

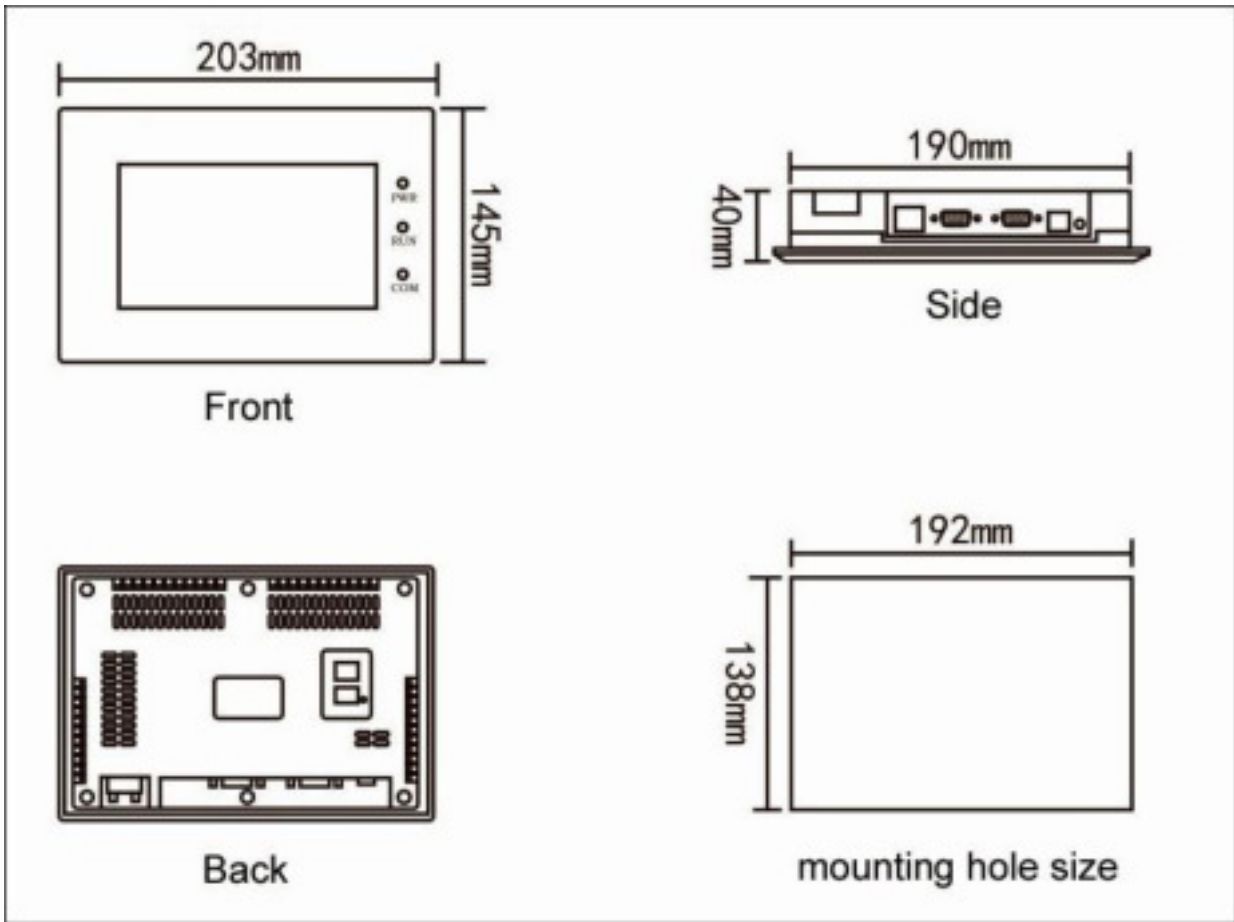


Figure 1-6 HT8721T mounting dimension

HT8A01 mounting dimension

Figure 1-7 shows the product dimensions (mm) of HT8A01T / HT8A01TE the outline dimension is 275×211×44
The mounting hole size is 259×201

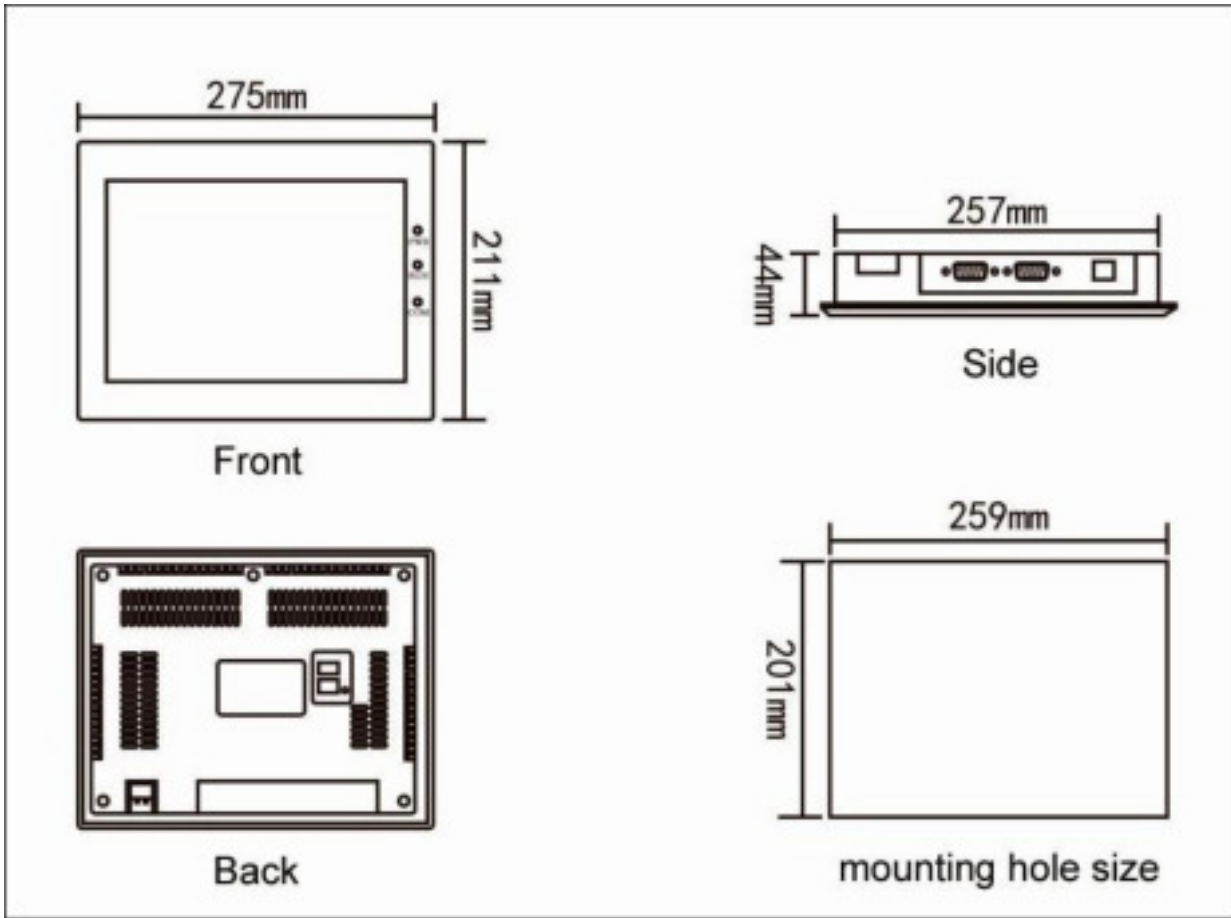


Figure 1-7 HT8A01T / HT8A01TE mounting dimension

HT8C21T mounting dimension

Figure 1-8 shows the product dimensions (mm) of HT8C21T the outline dimension is 340x256x54
The mounting hole size is 330x246

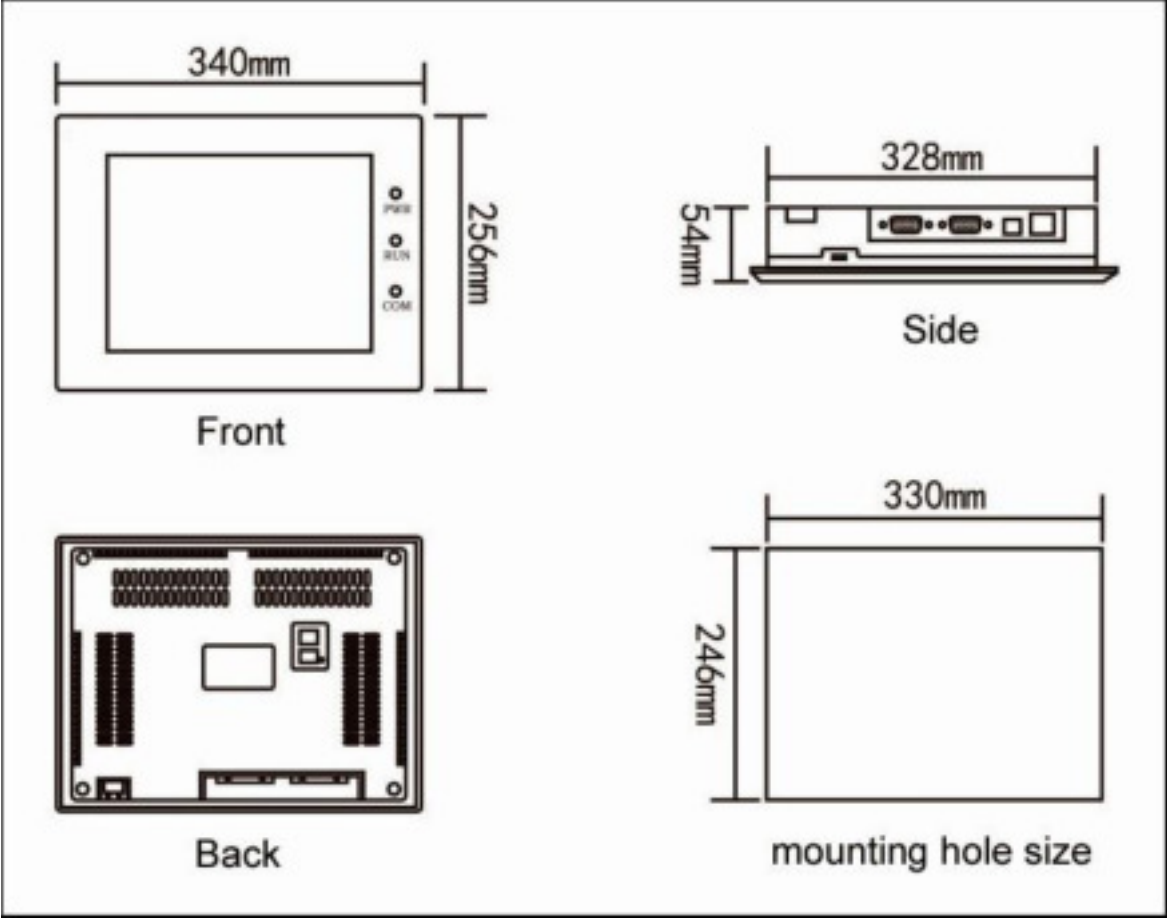


Figure 1-8 HT8C21T mounting dimension

HMI Structure

The entire structure of HT series HMI consists of display area, indicator light, power interface and communication ports. Color of all models accords to the industrial design standard, with the feature of soiling resistance so as to work in harsh factory environment, and indicator lights on the front panel meant to check the equipment status. Power interface and communication ports are located at the bottom of the HMI, which meets the design criteria.

Figure 1-9 shows the structure of HMI.

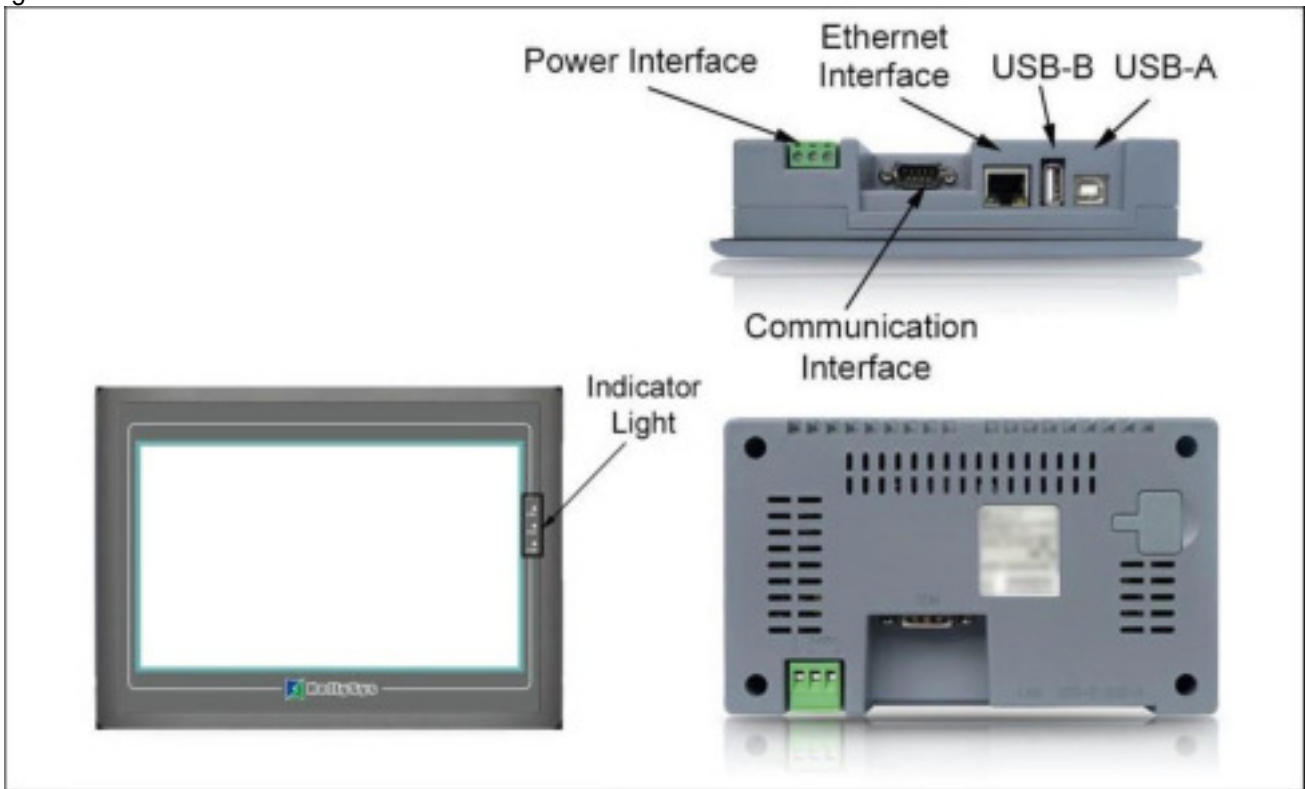


Figure 1-9 Structure

- Ethernet port: Connection of Ethernet cable
- USB-B: Insert the U disk
- USB-A: Connect with PC; download the configuration file from PC to HMI
- Communication Interface: Communicate with PLC

Power Interface

The power interface of the HT series HMI locates in the back panel. With DC24V power supply ($\pm 15\%$), it shields effectively against interference, enhancing the anti-disturbance performance of the entire system. Figure 1-10 is a view of power interface:



Figure 1-10 power interface

Front panel

Figure 1-11 is a view of front panel, including display screen and indicator lights:

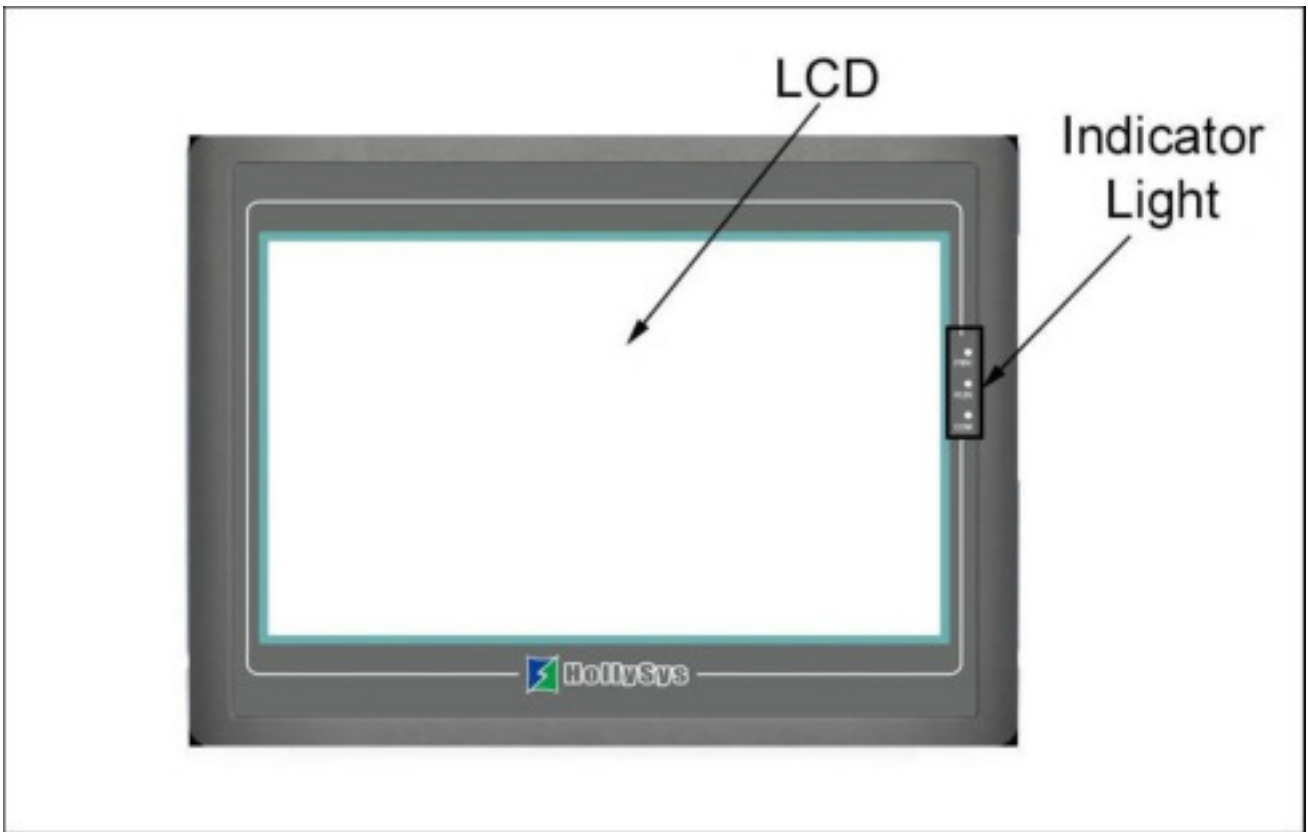


Figure 1-11 HT series front panel

Communication port

Communication ports of HMI are located in the bottom panel. Models of HT8701TE, HT8701T, HT8721T, HT8A01TE, HT8A01T, HT8C21T provide two standard serial communication ports while those HT8421T adopting a 9-core D-type interface for connection to a PLC or other controller and also for communication, provide one standard serial communication port.

When using a shielded cable, RS232 communication distance shall not go over 15 meters. For connection to the computer, it has a USB communication interface used for downloading configuration (data transmission). The transmission rate can be up to 10Mbps. Definition of communication interface differs if it is connected to different P LC (Please inform us the type of P LC to be connected when ordering for facilitating the distribution of communication cables).

The model in Figure 1-12 is equipped with double serial and USB-A port, the model in Figure 1-13 is equipped with single serial and USB-A port:

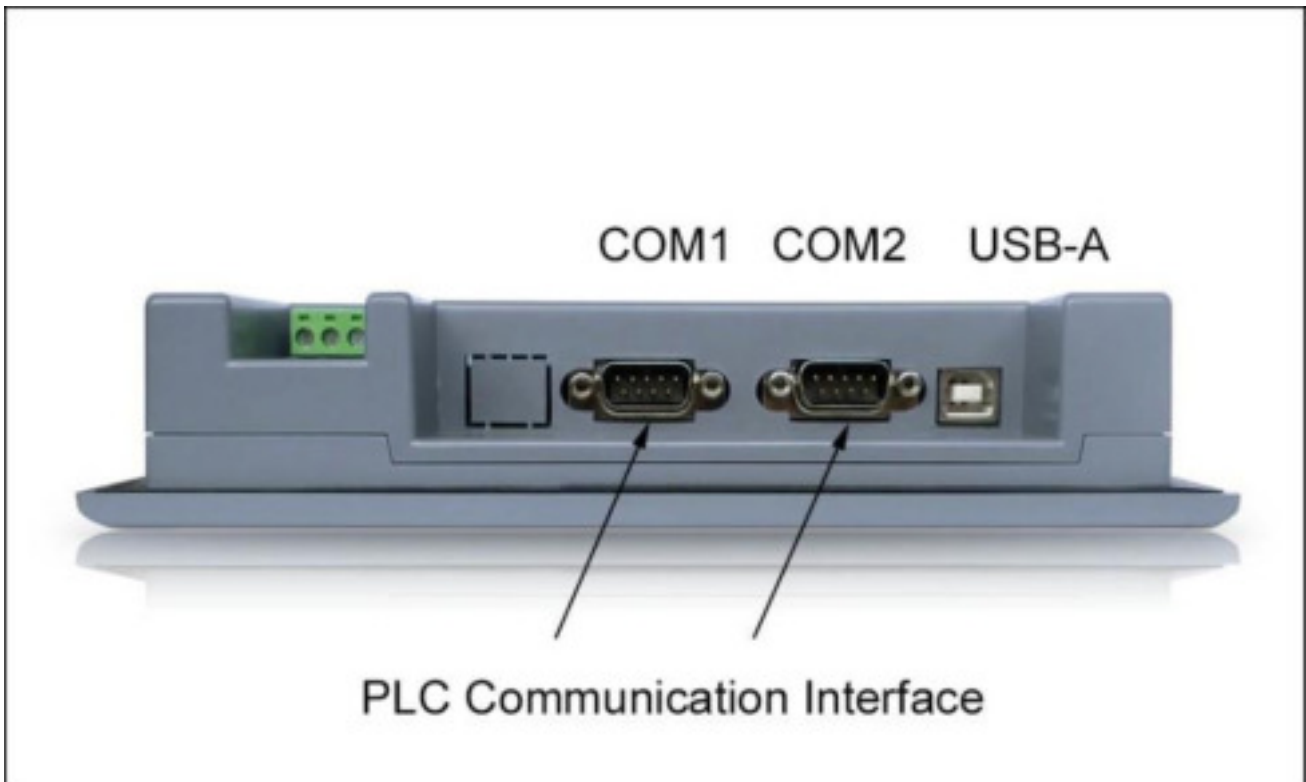


Figure 1-12 Side panels of HT (double serial)



Figure 1-13 Side panels of HT (single serial)

Running Indicator Lights

Indicator lights of the touch screen consist of three LEDs, including Power (PWR), Run (RUN) and communications (COM), just as shown in Figure 1-15.

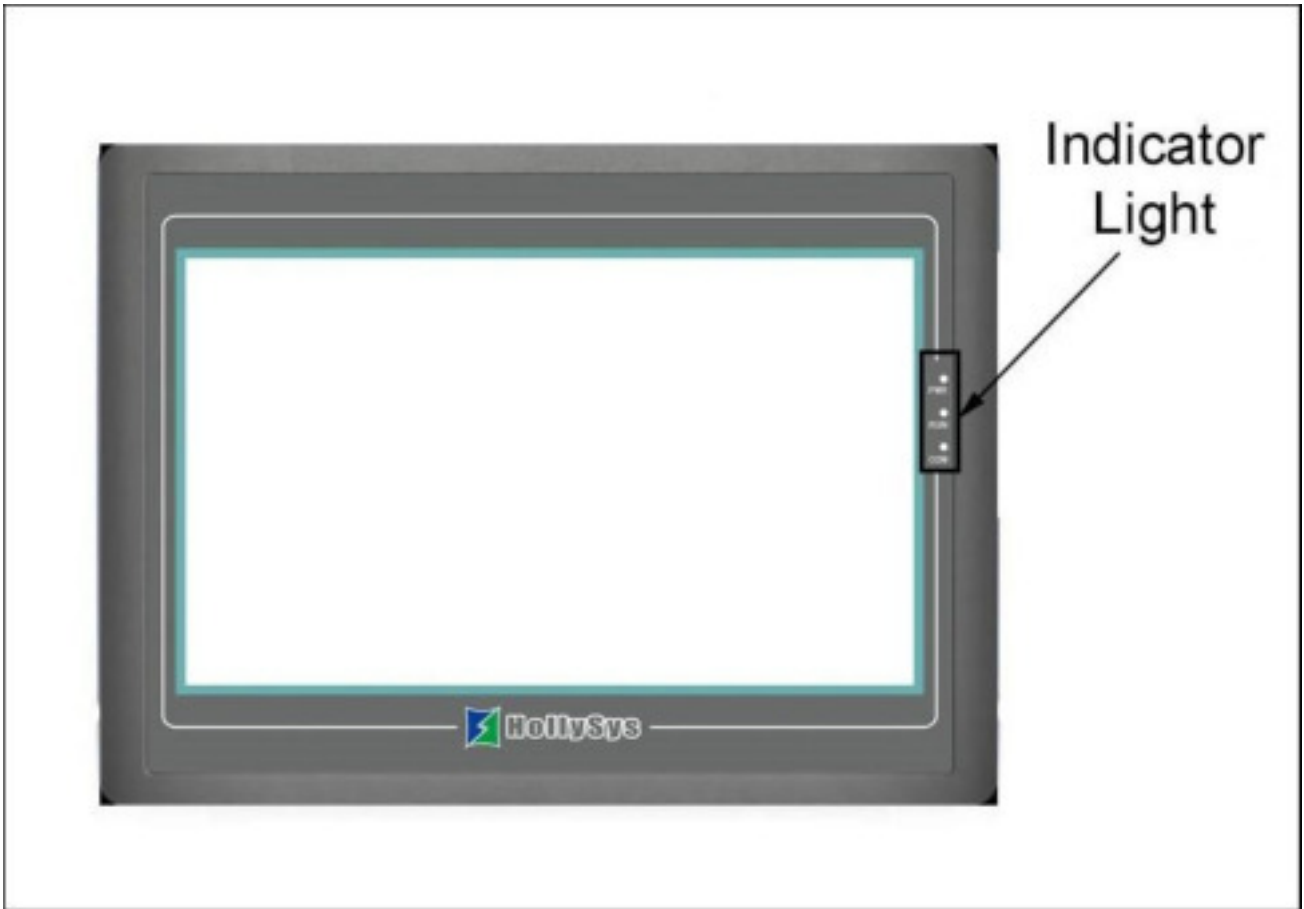


Figure 1-15 HT series Running Indicator Lights

PWR turns green when it is powered;
 RUN turns yellow if CPU works normally while it lights out if CPU fails; COM turns yellow when the touch screen is connected to PLC.

Table 1-1 shows the display states of the 3 LED indicator lights on different working state.

Device state	Green LED (PWR)	Yellow LED (RUN)	Yellow LED (COM)
No power supply	○	○	○
Power on	●		
CPU running	●	●	
Communication with connected device	●	●	※
○ : LED is OFF; ● : LED is ON; ※ : LED is flashing			

Table 1-1

Technical Parameters

This table lists major technical parameters of HT series products:

Model	HT8421T
	HT8701/HT8721T
	HT8A01
	HT8C21T

- Support up to ten recipes;
- Support up to 512 items of data transmission;
- Support up to 4 sets of historical data collectors;
- Support up to ten sets of digital alarm;
- Support up to ten sets of analog alarm;
- Maximum number of screens and controls depends on the memory they occupy.

HT8421T detailed parameters

	Main technical parameters
Model	HT8421T
Network interfaces	0
SD cards	0
USB-A	1
USB-B	1
COM interfaces	COM1:RS232,RS422,RS485
Display specifications	4.3"(length: width = 16:9)
Resolution	480×272
Brightness	400cd/m ²
Color	262,144 pigments
Contrast	400 : 1
Life of back light	50,000 hours
Touch screen plate	4-wire high precision touch plate
User memory	12M
Power supply	DC24V(±15%)
Power consumption	3W
CE certification	Meeting EN50022 and EN50024
FCC compatibility	Meeting FCC, Class A
Dielectric strength test	1000V AC,1 minute
Protection grade	IP65 (front panel)
Ambient temperature for running	-20 ~ 65°C
Ambient humidity for running	10 ~ 90%RH
Shell plastic	Engineering plastic ABS+PC
Outline dimension	173×95×39(mm)

Mounting hole size	163×85(mm)
Weight	About 0.2kg

HT8701/HT8721T detailed parameters

	Main technical parameters		
Model	HT8701TE	HT8701T	HT8721T
Network interfaces	1	0	0
SD cards	0	0	0
USB-A	1		
USB-B	1		
COM interfaces	COM1/COM2:RS232,RS422,RS485		
Display specifications	7"(length: width = 16:9)		
Resolution	800×480		
Brightness	450cd/m ²		
Color	262,144 pigments		
Contrast	450 : 1		
Life of back light	50,000 hours		
Touch screen plate	4-wire high precision touch plate		
User memory	12 M		
Power supply	DC24 V (±15%)		
Power consumption	6 W		
CE certification	Meeting EN50022 and EN50024		
FCC compatibility	Meeting FCC, Class A		
Dielectric strength test	1000V AC,1 minute		
Protection grade	IP65 (front panel)		
Ambient temperature for running	-20 ~ 65°C		
Ambient humidity for	10 ~ 90%RH (non condensable)		

running		
Shell plastic	Engineering plastic ABS+PC	
Outline dimension	227×153×40 mm	203×145×40 mm
Mounting hole size	210×144 mm	192×138 mm
Weight	About 1.5 kg	

HT8A01 detailed parameters

	Main technical parameters	
Model	HT8A01TE	HT8A01T
Network interfaces	1	0
SD cards	0	0
USB-A	1	
USB-B	1	
COM interfaces	COM1/COM2:RS232,RS422,RS485	
Display specifications	10.2" (length: width = 16:9)	
Resolution	1024×600	
Brightness	500cd/m ²	
Color	262,144 pigments	
Contrast	450 : 1	
Life of back light	50,000 hours	
Touch screen plate	4-wire high precision touch plate	
User memory	12 M	
Power supply	DC24V (±15%)	
Power consumption	7 W	
CE certification	Meeting EN50022 and EN50024	
FCC compatibility	Meeting FCC, Class A	
Dielectric strength test	1000V AC,1 minute	
Protection grade	IP65 (front panel)	
Ambient temperature for running	-20 ~ 65°C	
Ambient humidity for running	10 ~ 90%RH (non condensable)	
Shell plastic	Engineering plastic ABS+PC	

Outline dimension	275×211×44 (mm)
Mounting hole size	259×201 (mm)
Weight	About 2.2 kg

HT8C21T detailed parameters

	Main technical parameters
Model	HT8C21T
Network interfaces	1
SD cards	0
USB-A	1
USB-B	1
COM interfaces	COM1/COM2:RS232,RS422,RS485
Display specifications	12.1" (length: width = 4:3)
Resolution	800×600
Brightness	450cd/m ²
Color	262,144 pigments
Contrast	450 : 1
Life of back light	50,000 hours
Touch screen plate	4-wire high precision touch plate
User memory	12 M
Power supply	DC24V (±15%)
Power consumption	8 W
CE certification	Meeting EN50022 and EN50024
FCC compatibility	Meeting FCC, Class A
Dielectric strength test	1000V AC,1 minute
Protection grade	IP65 (front panel)
Ambient temperature for running	-20 ~ 65°C
Ambient humidity for running	10 ~ 90%RH (non condensable)
Shell plastic	Engineering plastic ABS+PC

Outline dimension	340×256×54(mm)
Mounting hole size	330×246(mm)
Weight	About 1.8 kg

Wiring

HT series HMI requires DC 24V power supply. Figure 1-16 shows the connection of the touch screen with PLC and PC:

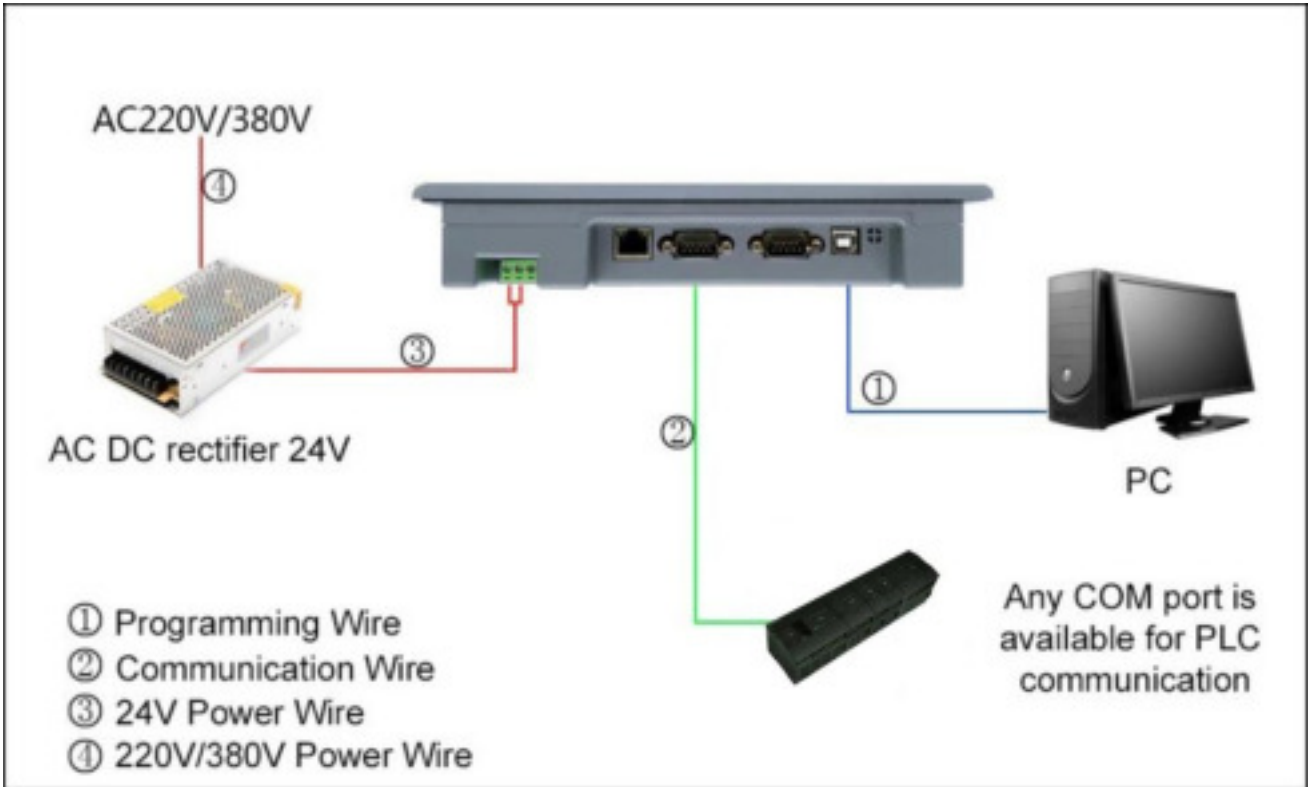


Figure 1-16 Connection diagram of HT series HMI

USB cables for connection with PC are supplied along with the machine.