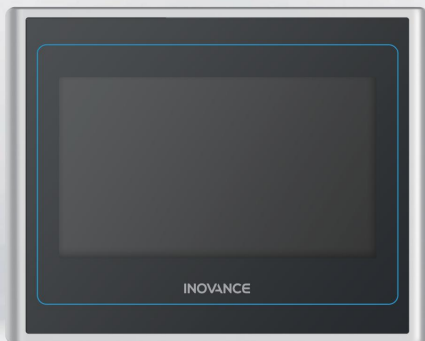


INOVANCE
汇川技术

FORWARD, ALWAYS PROGRESSING

进取·永不止步



IT7043 人机界面

用户手册

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foreword

Introduction

Thank you for purchasing the InoTouch series touch screen human-machine interface (HMI, hereinafter referred to as HMI) independently developed and produced by Inovance Control Technology Co., Ltd. This product is based on Linux, adopts Android style, provides users with a friendly interactive experience, supports custom styles, VNC remote desktop, vector format icons, script programming and other functions; supports USB connection to PC; supports Modbus protocol, can realize automatic Efficient PLC communication; support inserting U disk to update HMI firmware, screen program, recipe data, etc. In addition, the product programming has the functions of offline simulation and online simulation, which is convenient for HMI program debugging and system debugging.

This manual mainly describes the specifications, characteristics and usage of the product. Please read it carefully before use so that you can use the product more clearly and safely. For the use of the user program development environment of this product and the user program design method, please refer to the help document of the background software "InoTouch PAD" issued by our company. For the software version, please refer to the website of Inovance Technology Co., Ltd. (www.inovance.com) The latest announcement shall prevail.

Target audience

Users who use or understand Inovance's HMI product series include: electrical engineers, software engineers, and system engineers.

First time use

For users who use this product for the first time, please read this manual carefully. If you have doubts about some functions and performance, please consult our company's technical support personnel for help, which is conducive to the correct use of this product.

Version change record

revision date	release version	change content
2021-8	A00	first edition release

Safety Precautions

Security statement

- When installing, operating and maintaining the product, please read and follow the safety precautions first. 2.

To ensure personal and equipment safety, please follow the instructions on the product label and manual when installing, operating and maintaining the product all safety precautions.

- The "Caution", "Warning" and "Danger" items in the manual do not represent all the safety items that should be observed, but only

As a supplement to all safety precautions.

- This product should be used in an environment that meets the requirements of the design specifications, otherwise it may cause malfunctions and cause failures due to failure to comply with relevant regulations.

Abnormal functions or damaged parts are not within the scope of product quality assurance.

- Our company will not bear any legal responsibility for personal safety accidents and property losses caused by illegal operation of products.

Security level definition

-  **危险** : "Danger" means that death or serious bodily injury will result if the instructions are not followed.
-  **警告** : "Warning" indicates that death or serious bodily injury may result if the instructions are not followed.
-  **注意** : "Caution" If you do not operate according to the regulations, it may cause minor bodily injury or equipment damage.
Please keep this guide in a safe place for reading when needed, and be sure to hand this manual to the end user.

control system design



警告

- Interlock circuits and other circuits such as emergency stop, conventional protection, forward and reverse, etc. should be set outside the product; used to prevent equipment damage
Bad devices (such as up, down and reciprocating movement limits) should be set outside the product;
- Set a "fail-safe circuit" outside this product to prevent unsafe accidental mechanical movement (such as
In case of errors in input/output control areas, unintended movement may occur in these areas);
- Please be sure to design a user program to ensure that the user's system
Safety;
- Ensure that the communication failure between this product and its main controller will not cause abnormal function of the equipment to avoid personal injury or equipment damage.
- Do not touch the metal shell of the product with charged objects during use.

**注意**

- Do not design switches on the touch panel that may cause personal injury to the operator or equipment damage, please design switches that perform important operations separately, otherwise wrong output or failure may cause accidents; Do not create touch controls for safe operation of equipment Panel switches, such as emergency stop switches. Please set the hardware switch separately to execute
- Otherwise, serious personal injury or equipment damage may be caused;
- Do not use this product as a warning device that may cause major alarms such as serious personal injury, equipment damage, or system shutdown. please make Design critical alarm indications and their control/triggering devices with separate hardware and/or mechanical interlocks.

during installation**警告**

- Please install this product correctly, this product is limited to indoor use, please ensure that the use environment meets the requirements stated in the manual; Do not install in places with strong magnetic field, direct sunlight, high temperature, flammable gas, steam or dust Explosion hazard; Do not use this product in an environment where there may be drastic temperature changes or high humidity, otherwise condensation may be generated inside the device, resulting in damage to the device; Please ensure that all cable connectors are firmly connected to the product . If the connections are loose, erroneous input or output signals may
- Number.

**注意**

- Please install this product within the storage temperature range suggested in this manual, otherwise it may cause LCD display failure.

When wiring**危险**

- Installation, wiring and other operations must be carried out after all power is cut off; avoid wiring, plugging and unplugging cables in a live state
- Otherwise, it is easy to cause electric shock or damage the circuit;
- Please connect the wiring of the DC power supply to the dedicated terminal according to the instructions in this manual; When processing screw holes and wiring, do not let metal scraps or wire ends fall into the HMI to avoid failure and damage to electronic components or fire
- After the wiring is completed, check carefully to ensure that the working voltage and the position of the wiring terminals are correct. Otherwise it may cause a fire or accident.

**注意**

- To avoid electric shock, please cut off the power supply before connecting the power supply of this product; The input power of this product is DC24V, if the supplied power is not within the range of DC24V $\pm$ 20%, the product will be seriously damaged,
- Therefore, please regularly check whether the DC power provided by the switching power supply is stable.

During operation and maintenance



注意

- During use, pay attention to the protection of the HMI panel. Only use hands or professional tools such as a stylus to touch the display panel. Our company will not be responsible for damage to the panel caused by excessive external force ; and components that pollute the environment, when discarding batteries, they should be disposed of separately according to the laws and regulations established by each region.

reason.

Safety Recommendations

- In locations where operators have direct contact with mechanical parts, such as loading and unloading machine tools, or where machinery operates automatically, the function of on-site manual devices or other backup means must be carefully considered, which needs to be independent of programmable controls In addition to the controller, the automatic operation of the system can be started or interrupted.
- If you need to modify the program while the system is running, you must consider using a dongle program or other protective measures to ensure that only authorized personnel to make the necessary modifications.

When scrapped

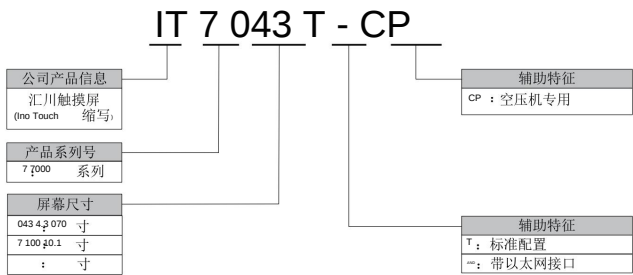


注意

- When disposing of the product, please treat it as industrial waste.

1 Product information

1.1 Naming rules



1.2 Basic parameters

model	IT7043T-CP
hardware specification	
Display Size 4.3"	
resolution	480*272
Brightness (cd/y) 400	
Display color 24-bit true color	
Backlight	LED
Backlight life 30000hrs	
CPU	Cortex A8 600Mhz
Flash	128MB
DRAM	128MB DDR3
Recipe memory 256KB	
USB Type B port y	
serial port	COM1(RS485)
RTC	y
Electrical Specifications	
Input voltage 24Vdc±10%	
Rated current 200mA	

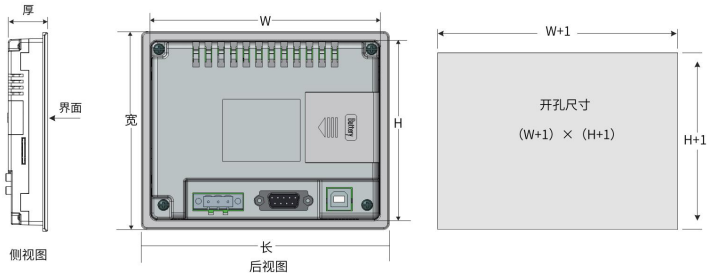
model	IT7043T-CP
Structural specification	
Housing color	metallic gray
Shell material	ABS+PC engineering plastics
Hole size (mm)	119*93
General Specifications	
Working temperature	0~50
Working humidity	10%~90%RH (no condensation)
Storage temperature	-20~70
Cooling method	natural air cooling
Panel protection grade	IP65

2 Mechanical design reference

2.1 Installation environment

1. This product works stably within the temperature range of 0°C to 50°C (32°F~122°F). If it exceeds this range, it may cause damage to the HMI device.
damage, abnormal operation or reduced performance. If you need to use it on a special occasion, please consult the product supplier.
2. Please avoid installing this product in an environment with strong mechanical vibration.
3. This product should be installed in a cabinet with a depth of more than 105 mm, with a space distance of at least 25 mm around it. 4. Please ensure that
the product is installed away from strong interference cables and equipment, such as: AC power lines, PLC output modules, inverters, relays, etc., the input and output
cables of the equipment must use shielded cables, and the shielded cables Properly ground. 5. The front panel of this product complies with the protection regulations
of IP65. When the product is correctly installed on the panel that meets the IP65 protection regulations, the panel still meets the requirements of IP65, that is, when the
surface of the panel is sprayed with liquid, the liquid will not seep into the interior of the panel.

2.2 Installation dimensions



Model	Display Size	Product specification (in mm)			Suggested hole size (in mm)	
		Dimensions Length × Width × Thickness	Embedded installation size W×H	VESA mounting size D×D	W+1	H+1
IT7043T CP	4.3"	128×102×35	118×92	119 is not supported		93

2.3 Installation method

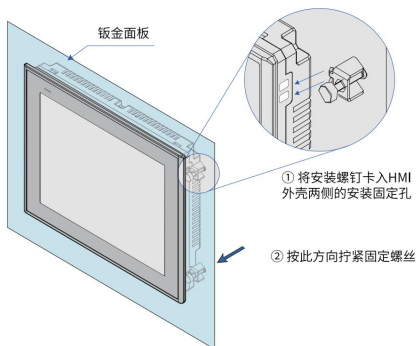
When using embedded installation, please refer to the following requirements to complete the fixed installation of this product:

Operation steps

1. Put the product into the mounting hole opened on the panel. 2.

From the back of the panel, snap the 4 mounting screws (supplied) into the 4 mounting and fixing holes on the left and right sides of the product shell respectively

(Figure y).



3. Tighten the mounting screws one by one (as shown in the picture above y) until the product is firmly fixed on the panel. Recommended torque value: 6.0

+/-0.5kgfcm (to achieve waterproof effect and avoid deformation of the face shell).



注意

In order to ensure compliance with the IP65 sealing specification, please ensure that the mounting screws in the product package are fully used, and the bending of the mounting panel cannot exceed 0.010°.

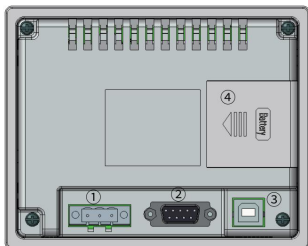


警告

Do not tighten the mounting screws with excessive force. When in doubt, consult your provider.

3 Electrical design reference

3.1 Terminal description



后视图



前视图

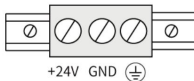
serial number	name	Terminal function description	Remark
1	Power interface	HMI's 24Vdc working power input port	(One is attached to connect with the power interface connected to the power terminal)
2	Communication port	between DB9 female HMI and PLC	Built-in COM1 serial communication port COM1
3	USB B-type port	USB communication slave port, used for PC downloading and debugging user programs	
4	Battery cover	Contains battery for power backup of perpetual calendar	3V lithium battery CR2032 × 1 (battery life: about 5 years at room temperature 25°C)

3.2 Wiring instructions for each terminal

1 Power connection

This product is powered by 24V DC power supply. Connect the positive pole of the external power supply to the "+24V" terminal and the negative pole of the power supply to the

"GND" terminal; the marked terminal is the ground terminal, which is used for the connection of the ground wire of this product, as shown in the figure below.

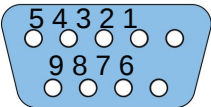


- Power supply requirements: This product can only be powered by DC power supply (range 24V±10%), and the capacity provided by the power supply is not less than the specification requirements of this model.
- The DC power supply must be properly isolated from the AC main power supply; do not share the power supply with the product and inductive load circuits (such as solenoid valves) to avoid electromagnetic interference.
- 24V power supply lines and communication cables should avoid running parallel with strong interference cables such as AC power lines or motor drive lines line, and keep a distance of at least 30cm;
- It is recommended to use an independent #14AWG conductor for the conductor of the grounding wire, which is directly connected to the system grounding point, and not grounded after passing through the shell or terminal of other electrical equipment. This can ensure that the grounding conductor will not bear the current of other branches. Make sure that the conductor length to ground is as short as possible.

γ Communication port connection

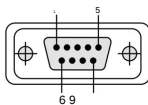
This product provides a DB9 communication port (DB9 female socket), and provides an independent serial communication port inside, which can be used to connect PLC, frequency converter, printer or other intelligent devices. This product has a variety of built-in communication protocols and is often used as a communication master to access data from external devices. **γ Connection between DB9 socket and external equipment**

DB9 has a built-in COM1 serial communication port, and the pin arrangement is shown in the following table:

pin number	Signal	Pin arrangement diagram of DB9 female socket
	COM1[RS485] 2 Wires	
1	RS485	 COM1 [RS485 2W] DB9母座 (针孔型信号座)
2	RS485+	
3		
4		
5	GND (signal ground)	
6		
7		
8		
9		

γ DB9 female supporting communication cable and usage settings

Our company provides communication prefabricated cable options (model: ITS-H2U-CAB*, order number: 15041140) for use with the DB9 female socket of this product:



(DB9 male)



(8-pin Din circular plug) cable length 3 meters

Cable connectors and pins	DB9 male		8-pin Din round plug	
signal interface	RS485		RS485	
-	pin number	Signal	pin number	Signal
Cable internal connections	1	RS485-	4	
	2	RS485+	7	
	3		1	RS485
	4		2	RS485+
	5	GND	3	GND
Cable Applicable Models and Ports	IT7*** HMI COM1[RS485]2w		Inovance H1U/H2U/H3U RS485 communication port Mitsubishi FX1N/2N/3U/3G RS485 communication port	
When using this cable HMI user program settings	Both HMI and PLC should choose the same communication protocol and data format should be consistent			

Precautions for communication connection

- Cable requirements: Different communication cables are required to connect with different external devices. Do not run the communication cables in parallel with the AC power cables, or place the communication cables near the source of electrical noise. Plug and unplug the communication cable during communication.
- To avoid communication problems, please note that the length of the communication cable should not exceed 150 meters when connecting RS485 devices.
- If there is a problem in the communication, there will be a fault prompt of "communication timeout" on the display until the communication is established normally.
- When the communication cable is long or the communication cable needs to pass through the environment with electrical noise, the shielded cable must be used to make the communication cable communication cable.

USB interface

USB B-type interface: used to connect with PC, upload/download user configuration program and set HMI system parameters, and can be connected with PC through a common USB communication cable.

4 Programming Reference

This product supports user programming. Before programming this product, you need to prepare:

A computer (the InoTouchPAD software developed by Inovance Control Technology Co., Ltd. must be installed on the computer), a programming cable, and an InoTouch 7043HMI.

Software source

InoTouchPAD programming software is independently developed by Inovance Technology Co., Ltd. If you need the latest version, please obtain it from your HMI supplier, or on the website of Inovance Technology Co., Ltd. (<http://www.inovance.com>) and the subject of Inovance Download and get the latest version of InoTouch Editor software.

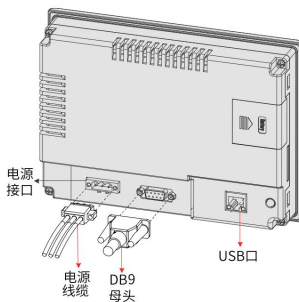
Computer configuration requirements (recommended configuration)

1. CPU: Intel or AMD products with main frequency above 2G
2. Memory: 1GB or above
3. Hard disk: at least 1GB of free disk space
4. Display: color display with a resolution above 1024 x 768
5. USB port: used for uploading and downloading screen programs
6. Operating system: Linux

Programming cable (take Inovance PLC wiring as an example)

The conventional programming cable of this product is a USB programming cable, Inovance provides this cable (optional accessory), order model: IT5 USB-CAB, order number: 15041123. Wiring reference (take Inovance PLC wiring as an example)

As shown in the figure below, connect Inovance PLC to the port of this product.



5 Product Touch Calibration

During the use of this product, if the touch is insensitive or abnormal, please use the touch calibration program to calibrate. **Enter the touch calibration program**

Enter through the system setting menu: After the HMI is powered on, when the screen prompts "Long press to enter the setting panel", press and hold the screen with your finger until "Release to enter the setting interface" is displayed, enter the system setting password, and the system setting menu will pop up, click

"Calibration" option.

Touch Calibration Specific Operation

- After entering the calibration mode, a "+" will appear in the upper left corner of the screen (as shown in the figure below)
- Use a stylus or your finger to touch the middle of "+", after successful touch, "+" will move in the direction of the arrow shown in the figure (lightly and accurately click the center of the "+" cursor, when the target moves on the screen, repeat the action).
- After completing the touch calibration of the above five points, the "+" cursor will disappear. At this time, touch the blank area of the screen to exit; if the calibration fails, the cursor will return to the upper left corner of the screen, and repeat the above five points of calibration.

