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IT7043 HMI

User Guide

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Due to continuous updates and improvements of products and technologies, the content of this documentation may not fully match the actual products. In the event of any discrepancies, the actual products shall prevail.

The contents are subject to change without notice due to product upgrade.

■ Waste Disposal

The storage, use, and disposal of this product (including optional accessories) must comply with local laws and regulations.

■ Qualified Personnel

The product/system described in this documentation may be operated only by personnel qualified for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel can identify the risks of the product/system and prevent possible dangers.

■ Proper Use of the Product

Proper transportation, storage, assembly, installation, commissioning, operation, and maintenance are required to ensure the safe operation of the product without any problems. The required ambient conditions must be met. All operations must follow the guidelines provided in this documentation.

Preface

■ Introduction

Thank you for purchasing an InoTouch series human machine interface (HMI), independently developed and produced by Inovance. Built on Linux, this product features an Android-style interface, providing a user-friendly interactive experience. It supports customizable styles, VNC remote desktop, vector icons, scripting, and more. It can be connected to a PC via USB, supports the Modbus protocol for automatic and efficient PLC communication, and allows HMI firmware, screen programs, and recipe data to be updated by inserting a USB flash drive. In addition, the HMI supports online and offline simulation for programming, facilitating program and system commissioning.

This guide describes the specifications, characteristics and using methods of the product. Please read this guide carefully before using to ensure more safe usage. For information on using the user program development environment for this product and on user program design methods, see the help documentation for the InoTouchPad programming software provided by Inovance. Visit our website (www.inovance.com) for the latest version of the guide.

■ Revision history

Date	Version	Description
July 2026	A06	Made minor corrections.
April 2026	A05	Made minor corrections.
October 2025	A04	Made minor corrections.
July 2025	A03	*"3.1 Installation Environment" on page 20*: Added instructions for the product waterproof label.
September, 2024	A02	Made minor corrections.

Date	Version	Description
July 2024	A01	• *"2.1 Model Number" on page 17*: Added the "F01" auxiliary feature. • *"2.2 General Specifications" on page 17*: Added parameter description of models IT7043T-F01 and IT7043E-F01. • *"3.2 Installation Dimensions" on page 21*: Added dimension description of models IT7043T-F01 and IT7043E-F01. • *"4.1 Terminal Description" on page 24*: Added terminal description of models IT7043T-F01 and IT7043E-F01. • *"4.2 Terminal Wiring" on page 25*: Added models IT7043T-F01 and IT7043E-F01 under "Connecting the communication port" and "Connecting the DB9 female connector to external devices". • *" Programming Reference" on page 30*: Added the wiring diagram of the Ethernet port. • Updated the cover with the Suzhou address and added My Inovance QR code to the cover.
August 2021	A00	Initial release.

■ Access to the guide

This guide is not delivered with the product. You can download the PDF version in the following ways:

- Visit **https://www.inovance.com/global**, and choose Service&Support > Support > Documentation Download.
- Scan the **QR code** on the product for more information.
- Scan the QR code below to install the **My Inovance** app, where you can search for and download user guides.

■ Warranty

Inovance provides warranty service within the warranty period (as specified in your order) for any fault or damage that is not caused by improper operation of the user. Maintenance fees will be charged after the warranty period expires.

Within the warranty period, maintenance fee will be charged for the following damage:

- Damage caused by operations not following the instructions in the user guide
- Damage caused by fire, flood, or abnormal voltage
- Damage caused by using the product for unintended functions
- Damage caused by using the product outside the specified scope
- Damage or secondary damage caused by force majeure (natural disaster, earthquake, and lightning strike)

The maintenance fee will be charged according to the latest Price List of Inovance. If otherwise agreed upon, the terms and conditions in the agreement shall prevail.

For details, see the Warranty Card.

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1 Fundamental Safety Instructions

1.1 General Safety Instructions

■ Safety disclaimer

1. Read and comply with the safety instructions during installation, operation, and maintenance of the product.
2. To ensure personal and equipment safety, observe all safety precautions marked on the product and described in this guide during installation, operation, and maintenance.
3. The "CAUTION", "WARNING", and "DANGER" are only supplements to the safety instructions.
4. Use this product according to the designated environment requirements. Damage caused by improper use is not covered by warranty.
5. Inovance shall take no responsibility for any personal injury or property damage caused by improper use.

■ Safety levels and definitions



The "DANGER" sign indicates that failure to comply with the notice will result in death or serious injury.



The "WARNING" sign indicates that failure to comply with the notice could result in death or serious injury.



The "CAUTION" sign indicates that failure to comply with the notice could result in minor or moderate injury, or equipment damage.

Unpacking

WARNING

- Do not install the product in the case of any damage, rust, or signs of use on the product or accessories upon unpacking.
- Do not install the product in the case of water seepage into the product or missing or damaged components upon unpacking.
- Do not install the product in the case of any discrepancy between the product you received and the product name on the packing list.

CAUTION

- Check whether the packing is intact and whether there is damage, water seepage, dampness, and deformation before unpacking.
- Unpack the package by following the unpacking sequence. Do not strike the package violently.
- Check for damage, rust, or dents on the surfaces of the product and accessories upon unpacking.
- After unpacking, check the contents against the packing list to ensure that the equipment and accessories are in the correct quantities, and that all documentation is complete.

Storage and transportation

WARNING

- Large or heavy equipment must be handled by qualified professionals using specialized hoisting equipment. Failure to comply could result in personal injury or equipment damage.
- Before hoisting the equipment, ensure that components such as the front cover and terminal blocks are secured firmly with screws. Loosely connected components may fall off and result in personal injury or equipment damage.
- Do not stand or stay below the product which is being hoisted.
- When hoisting the equipment with a steel rope, ensure the equipment is hoisted at a constant speed without suffering from vibration or shock. Do not turn the equipment over or let the equipment stay hanging in the air. Failure to comply could result in personal injury or equipment damage.

Storage and transportation

CAUTION

- Handle the equipment with care and mind your step during transportation to prevent personal injury or equipment damage.
- When carrying the equipment with bare hands, hold the equipment casing firmly with care to prevent parts from falling. Failure to comply could result in personal injury.
- Store and transport the equipment based on the storage and transportation requirements. Failure to comply could result in equipment damage.
- Do not store or transport the equipment in locations where the equipment may be exposed to splashing water or rain, direct sunlight, strong electric field, strong magnetic field, or strong vibration.
- Store the equipment for up to three months. Take stricter protective measures and carry out the necessary inspections for a longer storage time.
- Pack the equipment securely and properly before transportation. Use a fully enclosed container for long-distance transportation.
- Never transport the equipment with other devices or items that could impact or cause harm to the equipment.

Design

DANGER

- Design a safety circuit and add an error handling program in the software to ensure the product remains in a safe state upon external power failure or product faults.
- If a sustained overcurrent occurs due to overload or load short circuit, the product may smoke or catch fire. An external safety device (such as a fuse or circuit breaker) must be installed.

WARNING

Design

- If an output component (such as a relay or transistor) in this product is damaged, the corresponding output may become uncontrolled and remain permanently ON or OFF.
- The product design must comply with the overvoltage category requirements specified in the environmental specifications. A system-level lightning protection device must be installed on the power supply to ensure that lightning-induced overvoltages do not reach the product’ s power input, signal input, or control output terminals, thereby preventing damage to the product.
- Ensure that appropriate actions have been taken to prevent product malfunction caused by a communication fault between the product and related devices. Failure to comply could cause personal injury or equipment damage.



Switches that could cause personal injury or equipment damage must not be configured on the touch screen. Use independent switches for performing critical operations. Failure to comply could result in accidents caused by wrong outputs or faults.

Installation



This equipment must be operated only by trained and qualified electrical personnel. Non-professionals must not operate this equipment.



Installation

- Read through the guide and safety instructions before installation.
- Do not install this equipment in places with strong electric or magnetic field.
- Before installation, check that the mechanical strength of the installation site can bear the weight of the equipment. Failure to comply will result in mechanical hazards.
- Before installation, ensure that the installation site meets the required environmental conditions. Failure to comply could result in equipment damage.
- Do not wear loose clothes or accessories during installation. Failure to comply could result in electric shock.
- When installing the equipment in an enclosed environment (such as a cabinet or case), use cooling devices (such as fans or air conditioners) to cool the space and meet the installation environment requirements. Failure to do so can result in equipment overtemperature or fire accidents.
- Do not retrofit the equipment.
- Never loosen or turn the fixing bolts on product components, or any bolts marked in red.
- This equipment must be installed inside an indoor cabinet or terminal equipment. The cabinet or terminal equipment itself must be provided with the necessary protective enclosures, such as a fireproof enclosure, an electrical protective enclosure, and a mechanical protective enclosure. The IP rating of these enclosures must comply with the relevant IEC standards, and applicable local laws and regulations.
- Before installing devices with strong electromagnetic interference, such as a transformer, install a shielding device for the equipment to prevent malfunction.
- Install the equipment onto a non-combustible object such as metal. Keep the equipment away from combustible objects. Failure to comply could result in fire.
- For products not supporting hot swapping, disconnect all external power supplies of the system before installing/removing the product. Failure to comply could result in electric shock, product failure, or malfunction.

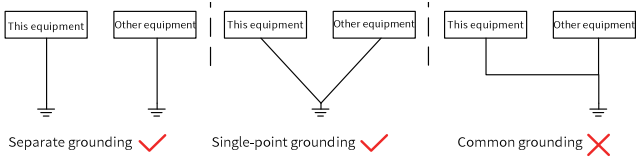


- Cover the top of the equipment with a piece of cloth or paper during installation. This is to prevent unwanted objects such as metal chippings, oil, and water from falling into the product and causing faults. After installation, remove the cloth or paper on the top of the equipment to prevent the ventilation holes from being blocked, which could cause overheating due to poor heat dissipation.
- During installation, ensure the equipment is connected to the respective connector securely and hook the equipment firmly. Improper installation may result in malfunction, failure, or detachment.

Wiring

DANGER

- This equipment must be operated only by trained and qualified electrical personnel. Non-professionals must not operate this equipment.
- Before wiring, disconnect all the power supplies of the equipment. Wait for at least the time designated on the warning label before further operations because residual voltage still exists after power-off. After waiting for the designated time, measure the DC voltage in the main circuit to ensure the DC voltage is within the safe voltage range. Failure to comply can result in electric shock.
- Do not perform wiring, remove the equipment cover, or touch the circuit board with power ON. Failure to comply could result in electric shock.
- Ensure that the equipment is grounded properly. Failure to comply could result in electric shock. Separate grounding or single-point grounding, other than common grounding, is recommended.



- Insulate the cable terminals properly to ensure the insulation distance between cables will not be shortened after cables are connected to the terminal block. Failure to comply could result in electric shock or equipment damage.
- Install the terminal cover attached to the equipment before power-on or operation after wiring is completed. Failure to comply could result in electric shock.

WARNING

Wiring

- Never connect the power cable to output terminals of the equipment. Failure to comply could cause equipment damage or even fire.
- Cables used for wiring must comply with the requirements for the cross-sectional area and shielding. The shielding layer of the shielded cable must be reliably grounded at one end.
- Tighten the terminal screws with the torque specified in the user guide. Insufficient or excessive torque may cause overheating and damage to the joint, which could result in fire.
- After wiring is done, ensure that all cables are connected properly and no screws, washers or exposed cables are left inside the equipment. Failure to comply could result in electric shock or equipment damage.



- Follow the proper electrostatic discharge (ESD) procedure, and wear an anti-static wrist strap to perform wiring. Failure to comply could damage the equipment or its internal circuits.
- Use shielded twisted pair cables for the control circuit. Connect the shield to the grounding terminal of the equipment. Failure to comply may result in equipment malfunction.

Power-on



- This equipment must be operated only by trained and qualified electrical personnel. Non-professionals must not operate this equipment.
- Before power-on, ensure that the equipment is installed and wired properly.
- Ensure that the power supply meets equipment requirements before power-on to prevent equipment damage or fire accident.
- Do not open the cabinet door or protective cover of the product, touch any wiring terminal of the product, or remove any components or parts while the product is powered on. Failure to comply could result in personal injury or even death.



Perform a trial run after wiring to ensure the equipment operates safely. Failure to comply could result in personal injury or equipment damage.

Operation



- The equipment must be operated only by professionals. Failure to comply can result in injury or death.
- Do not touch any connecting terminals or disassemble any unit or component of the equipment during operation. Failure to comply could result in electric shock.



- Do not touch the enclosure, fan, or resistor with bare hands. Failure to comply could result in burns.
- Prevent metal or other objects from falling into the equipment during operation. Failure to comply could result in fire or equipment damage.
- During operation, do not bring live parts into contact with the metal enclosure of the product. Failure to comply could result in fire or product damage.



- Operate the equipment within the specified environmental conditions. Failure to comply could result in equipment failure or damage.
- Touch the HMI panel with hands only. Failure to comply could cause panel damage, which is out of the warranty range.

Safety recommendations

- In positions where the operator directly touches the mechanical parts, for example, where a mechanical device is loaded/unloaded, or where a machine runs automatically, manually-operated devices or other alternative means must be carefully designed so that they are independent of the equipment to start or stop the automatic operation of the system.
- If you need to modify the program while the system is running, use the lock function or other protective measures. Ensure that only authorized personnel can make the necessary modifications.

Battery usage

WARNING

- Do not use batteries that do not meet the product requirements. Failure to comply could result in death, personal injury, explosion, or fire.
- Do not throw batteries into fire or hot ovens. Do not crush or cut the battery. Failure to comply could result in death, personal injury, explosion, or fire.
- Do not expose the battery to extremely high temperatures. Failure to comply could result in death, personal injury, explosion, or fire.
- Do not swallow batteries. Failure to comply could result in chemical burns.
- Seek for medical treatment immediately if a button battery is swallowed by accident, because this may cause severe internal burns within two hours and even death.

CAUTION

- Keep batteries out of reach of children.
- If the battery compartment is not securely closed, stop using the product immediately and keep it out of reach of children.

Maintenance

DANGER

- Maintenance must be performed only by trained and qualified electrical personnel.
- Do not maintain the equipment with power ON. Failure to comply could result in electric shock.
- Before maintenance, disconnect all the power supplies of the equipment and wait for at least the time specified on the warning label.
- Disconnect all external power supplies of the system before cleaning the equipment or re-tightening screws on the terminal block or screws for connector installation. Failure to comply could result in electric shock.
- Disconnect all external power supplies of the system before removing or installing the product, or connecting or disconnecting cables. Failure to comply may result in electric shock or malfunctions.

WARNING

Perform routine and periodic inspection and maintenance on the equipment according to maintenance requirements and keep a maintenance record.

Repair

DANGER

- Repair must be performed only by trained and qualified electrical personnel.
- Do not repair the equipment with power ON. Failure to comply could result in electric shock.
- Before inspection or repair, disconnect all the power supplies of the equipment and wait for at least the time specified on the warning label.

WARNING

- Submit a request for repair based on the warranty agreement.
- When the fuse is blown or the circuit breaker or earth leakage circuit breaker (ELCB) trips, wait for at least the time designated on the equipment warning label before power-on or further operations. Failure to comply could result in equipment damage, personal injury, or death.
- Troubleshooting and repair of a faulty or damaged equipment must be performed by professionals based on the repair instructions, with the repair records kept properly.
- Replace quick-wear parts of the equipment according to the replacement instructions.
- Do not use damaged equipment. Failure to comply could result in death, personal injury, or severe equipment damage.
- Recheck the wiring and reset the parameters after equipment replacement.

Disposal

WARNING

- Dispose of the retired equipment in accordance with applicable national regulations and standards. Failure to comply could result in property damage, personal injury, or death.
- Recycle retired equipment in accordance with industry waste disposal standards to avoid environmental pollution.
- Treat the scrapped equipment as industrial waste. Dispose of the batteries according to local laws and regulations.

■ Safety labels

To ensure safe operation, comply with safety labels on the equipment and do not damage or remove the labels. The following table describes the meanings of the safety labels.

Safety labels	Description
	• Before using the equipment, read the guide and safety precautions carefully. Failure to comply may result in personal injury, death, or equipment damage. • Do not touch the terminals or remove the cover with power-on or within 10 min after power-off. Failure to comply could result in electric shock. • The surface of the product may become very hot during operation. Do not touch these hot areas, as this may cause burns!

1.2 Industrial Information Security

The product provides interfaces for network connection and data transmission. To protect factories, systems, machines, and networks from cyberattacks, it is essential to implement proper protection mechanism for industrial security.

Customers are responsible for providing and maintaining a secure connection between the product and their network or any other network to protect their factories, systems, machines, and networks from unauthorized access. Such systems or machines can be connected to an enterprise network or the Internet only when a secure connection is established and appropriate security measures (such as using antivirus software or installing firewalls) are in place.

Inovance continuously develops and improves its products and solutions to enhance safety. It is strongly recommended that you update the product promptly and always use the latest version.



Tampering with software (such as viruses, Trojans, and Worms) can lead to unsafe drive state, which can put the device in an unsafe operation state. This may result in death, serious injury, and property damage. Observe the following strictly.

- Always use the latest software version. If the product version is no longer supported or the latest version of the program is not applied, customers are at increased risk of cyber-attacks.
- Take proper protection measures (including but not limited to deploying antivirus software, firewall, WAF, IPS/IDS, situational awareness system, ID verification, and data encryption) to prevent files in the mobile storage device from being damaged by malware and protect products, networks, systems, and interfaces from unauthorized access, disturbance, intrusion, data disclosure, or information theft.
- Check all safety-related interfaces and settings after commissioning.

2 Product Information

2.1 Model Number

IT 7 043 T - CP

① ② ③ ④ ⑤

①	**Product type** IT: General-purpose Inovance HMI	②	**Product series** 7: 7000 series	③	**Screen size** 043: 4.3"
④	**Performance type** • T: Standard • E: Enhanced performance	⑤	**Auxiliary feature** • CP: Designed for air compressors • F01: Conformal coating protection model	-	-

2.2 General Specifications

Model	IT7043T-CP	IT7043T-F01	IT7043E-F01
Hardware specifications			
Display size	4.3"		
Resolution	480 x 272		
Brightness (cd/㎡)	400		
Display color	16.7 million colors		
Backlight	LED		
Backlight service life	30,000 h		
CPU	Cortex-A8 600 MHz		
Storage	128 MB		
Memory	128 MB DDR3		
Recipe storage	256 KB		

Model	IT7043T-CP	IT7043T-F01	IT7043E-F01
USB Type-B port	1		N/A
Ethernet port	N/A		10M/100Mbit/s*1, auto-negotiation RJ45 Ethernet port, cable length up to 100 m, Cat5e or higher
Serial port	COM1(RS485)	COM1 (RS422/RS485) COM2(RS232) COM3 (RS485)	COM1 (RS422/RS485) COM2(RS232) COM3 (RS485)
RTC	✓		
Electrical specifications			
Input voltage	24 VDC ± 20%		
Rated current	200 mA		
Structural specifications			
Housing color	Metal grey		
Housing material	ABS+PC engineering plastics		
Cutout dimensions (mm)	119x93		
Environmental specifications			
Operating temperature	0°C to 50°C		
Operating humidity	10% to 90% RH (non-condensing)		
Storage temperature	-20°C to +70°C		
Cooling method	Natural air cooling		
Panel IP rating	IP65 for the front panel, IP20 for the rear cover		



- Do not operate the device in harsh environments with corrosive gases, heavy dust, high humidity, or airborne conductive particles (e.g., carbon fibers).
- Do not transport, store, and operate the device in strong ultraviolet environments (e.g., outdoors with direct sunlight) for a long time.
- Transport at the extreme temperatures (-40°C/+70°C) may result in a slight bulge of the membrane. The bulge disappears automatically at room temperatures, which does not affect its function.
- The theoretical service life of the built-in button battery is 3 to 5 years at room temperature. The actual service life may vary depending on the on-site operating conditions, such as temperature and humidity.

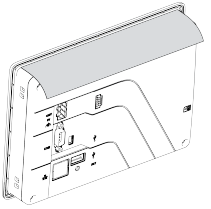
3 Mechanical Design Reference

3.1 Installation Environment

■ Installation precautions

Before installation, ensure that the equipment is powered off.

- To avoid damage to the product, do not drop or strike on the module enclosure, terminal block, or connector.
- Do not dismantle the equipment. Failure to comply may result in equipment damage.
- Do not fasten the equipment with a large torque to avoid damage to the terminals.
- To prevent internal component failure caused by water dripping from the top of equipment or a cabinet in the operating environment, centrally attach the waterproof label (provided in the package) along the edge of the seal ring on the top of the product before installing the product, as shown in the figure below.



■ Installation environment requirements

This product is designed to operate in a temperature range between 0°C and 50°C (32° F to 122°F), exceeding of which may result in damage to the HMI components, malfunction, or performance degradation. For use in special environments, contact Inovance.

- Install the equipment in an environment free from strong mechanical vibration.
- Install this product in a cabinet deeper than 105 mm, and maintain a clearance of at least 25 mm on all sides.
- Install this product away from cables and devices with strong interference, including AC power cables, PLC output modules, AC drives, and relays. Use shielded input and output cables and ground the cables properly.

- The front panel of the HMI complies with the requirements of IP65. When the equipment is installed in a IP65-rated cabinet, the cabinet must retain its IP rating, which means liquid sprayed on the cabinet cannot get into it.

3.2 Installation Dimensions

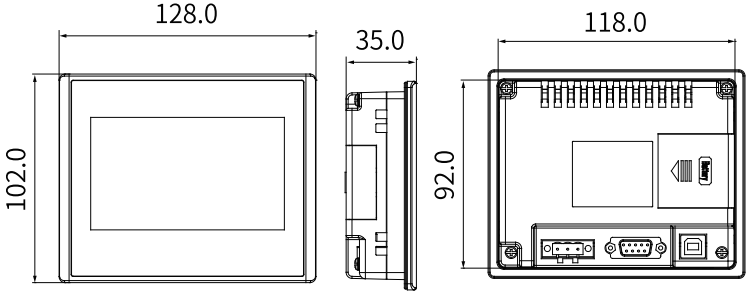


Figure 3-1 IT7043T-CP/IT7043T-F01

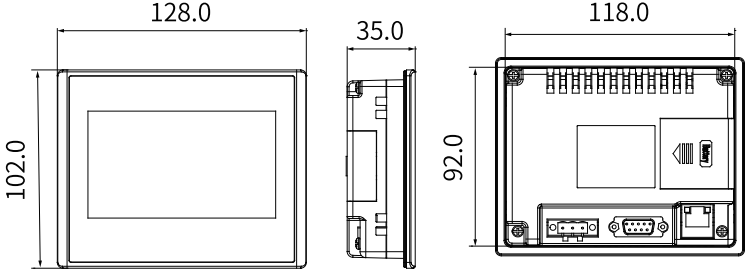


Figure 3-2 IT7043E-F01

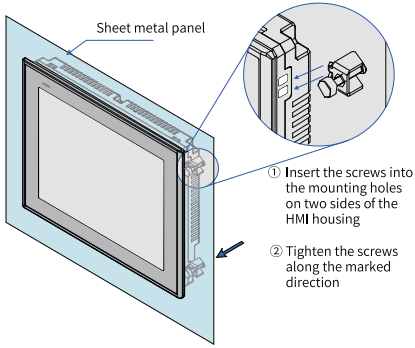
Model	Display size	Product specifications (mm)			Recommended cutout dimensions (mm)	
		Outline dimensions Length x Width x Depth	Panel cutout dimensions W x H	VESA installation dimensions D x D	W+1	H+1
IT7043T-CP	4.3"	128×102×35	118 × 92	Not supported	119	93
IT7043T-F01						
IT7043E-F01						

3.3 Installation Procedure

For flush mounting, see the requirements below to securely mount the product:

Procedure

1. Seat the HMI into the pre-drilled mounting holes in the panel.
2. Snap the four mounting screws (delivered by default) from the back of the panel into the four mounting holes on both sides of the enclosure (step ① in the figure).



3. Tighten the mounting screws one by one until the HMI is secured to the panel (step ② in the figure). Recommended torque: 6.0±0.5 kgf·cm (to ensure water resistance and prevent deformation).

Caution

To comply with IP65 sealing specifications, ensure all the mounting screws delivered are used and the curvature of the panel is no greater than 0.010°.

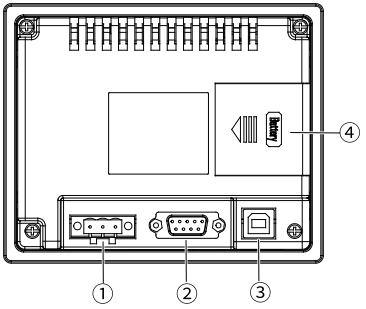
Warning

The mounting screw must be tightened with a proper tightening torque. If you have any question, contact the supplier.

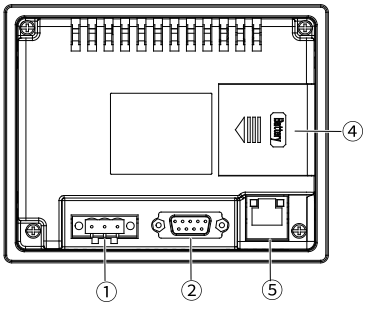
4 Electrical Design Reference

4.1 Terminal Description

IT7043T-CP/IT7043T-F01



IT7043E-F01



No.	Name	Terminal function	Note
①	Power supply interface	24 VDC power input port for the HMI	A power terminal plug for connection to the power port is delivered with the product.
②	DB9 female connector	Communication port between HMI and PLC	IT7043T-CP includes built-in COM1 serial communication port. COM1: RS485 IT7043E-F01 and IT7043T-F01 include built-in COM1, COM2 and COM3 serial communication ports. • COM1: RS485/RS422 port • COM2: RS232 port • COM3: RS485 port
③	USB Type-B port	USB slave port, used for downloading and debugging user programs through a PC.	IT7043T-CP and IT7043T-F01 are equipped with a USB Type-B port.

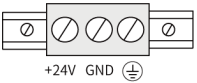
No.	Name	Terminal function	Note
④	Battery cover	A battery is included for power backup of permanent calendar.	1x CR2032 3 V lithium battery (battery life: Approx. 5 years at 25°C)
⑤	Ethernet port	Ethernet communication port (RJ45), used for accessing LAN-equipped PLCs and for PC access.	IT7043E-F01 is equipped with an Ethernet port.

4.2 Terminal Wiring

■ Connecting the power supply

The product is powered by a 24 VDC power supply. Connect the positive terminal of the external power supply to the "+24V" terminal, and the negative terminal to "GND".

The terminal marked with ⏚ is the ground terminal, used to connect the product's ground wire, as shown in the figure below:



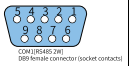
- Requirement: The HMI must be powered exclusively by a DC power supply, with a rated voltage of 24 V±20%. The power supply must have a capacity not less than that specified for this model.
- Isolate the DC power supply from the main AC power supply properly. Do not use the same power supply for the HMI and inductive load circuit (such as solenoid valve). Failure to comply may result in electromagnetic interference.
- Do not route the 24 V power supply cable or the communication cable in parallel with disturbing cables such as AC power supply cables and motor drive cables. Leave a clearance of at least 30 cm between them.
- It is recommended to use independent AWG14 lead wires (as short as possible) as the conductor of the grounding cable. Connect the grounding conductor to the system grounding point directly without passing through the enclosures of other electrical devices or grounding terminals. This is to prevent the grounding conductor from bearing the current of other branch circuits.

■ Connecting the communication port

- IT7043T-CP provides one DB9 communication port (DB9 female connector) and one built-in independent serial communication port for connecting the PLC, AC drive, printer or other intelligent devices. The HMI is built-in with multiple communication protocols and usually acts as the communication master to access the data in external devices.
- IT7043T-F01 and IT7043E-F01 provide one DB9 communication port (DB9 female connector) that internally carries three independent serial communication ports, which can be used to connect to PLCs, AC drives, printers, or other intelligent devices. The HMI is built-in with multiple communication protocols and usually acts as the communication master to access the data in external devices.

■ Connecting the DB9 female connector to external devices

The DB9 connector of IT7043T-CP includes a built-in serial communication port COM1. The connector pins are described in the following table:

Pin No.	Signal	Pinout diagram for DB9 female connector
	COM1[RS485] 2 Wires	
1	RS485-	
2	RS485+	
3	-	
4	-	
5	GND	
6	-	
7	-	
8	-	
9	-	

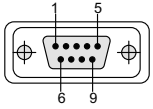
The DB9 connector of IT7043T-F01/IT7043E-F01 includes three built-in serial communication ports COM1, COM2 and COM3. The connector pins are described in the following table:

Pin No.	Signal				Pinout diagram for DB9 female connector
	COM1[RS485] 2 Wires	COM1 [RS422]	COM2[RS232]	COM3[RS485]	
1	RS485-	RX- (Receive Negative)	-	-	
2	RS485+	RX+ (Receive Positive)	-	-	
3	-	TX- (Transmit Negative)	-	-	
4	-	TX+ (Transmit Positive)	-	-	
5	GND				
6	-	-	-	RS485-	
7	-	-	TXD (Transmit Data)	-	
8	-	-	RXD (Receive Data)	-	
9	-	-	-	RS485+	



■ Communication cables and settings for the DB9 female connector

Inovance offers a pre-terminated communication cable option designed for use with the DB9 female connector of this product (Model: IT5-H2U-CAB*, Order No.: 15041140):



(DB9 male connector)





(8-pin DIN circular plug) 3 m cable

Cable connector and pin	DB9 male connector		8-pin DIN circular plug	
Signal interface	RS485		RS485	
—	Pin No.	Signal	Pin No.	Signal
Wiring plug connection	1	RS485-	4	-
	2	RS485+	7	-
	3	-	1	RS485-
	4	-	2	RS485+
	5	GND	3	GND
Applicable model and port	IT7*** HMI COM1[RS485]2W		Inovance H1U/H2U/H3U RS485 communication port Mitsubishi FX1N/2N/3U/3G RS485 communication port	
HMI user program setting for use of the cable	Select the same communication protocol and data format for the HMI and PLC.			

■ Precautions for communication connections

- Requirement: Use different communication cables to connect different external devices. Do not route communication cables in parallel with AC power supply cables or route communication cables near electrical noise source. Do not connect/disconnect communication cables during communication.
- To avoid communication problems, ensure that the communication cable does not exceed 150 m when connecting RS485 devices.
- If a communication error occurs, "Communication timeout" will be displayed until the communication is back to normal.
- Use shielded cables as communication cables in case of long communication cables or where communication cables need to pass through environments suffering from electrical noise.

■ USB port

USB Type-B port: Used to connect to a PC via a standard USB cable for uploading/downloading user configuration programs and setting HMI system parameters.

■ Ethernet communication

The 10M/100M auto-negotiation Ethernet port is located on the rear panel of the product. It can be used for:

- Uploading/downloading HMI configurations, setting system parameters, and online simulation of configurations;
- Connecting multiple HMIs via Ethernet for multi-HMI communication;
- Communicating with PLCs via Ethernet;
- Connecting to a LAN by linking to a hub or Ethernet switch with a standard Ethernet cable, or directly to an Ethernet port on a PC using a crossover cable. To ensure communication stability, use shielded cables for Ethernet.

5 Programming Reference

The product supports user programming. Before programming the product, you need to prepare:

A PC installed with InoTouchPad, a programming cable, and an InoTouch 7043HMI.

■ Software source

The InoTouchPad programming software is independently developed by Inovance. To obtain the latest version, contact your HMI supplier, or download it from the Inovance website (http://www.inovance.com) or from the Inovance page on www.gongkong.com.

■ Recommended PC configurations

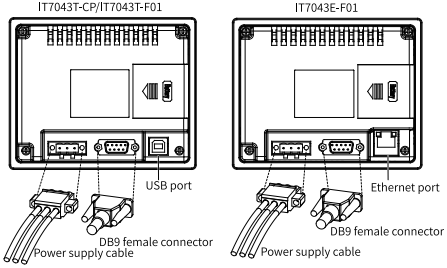
1. CPU: Intel or AMD processor, 2 GHz or higher
2. Memory: 1 GB or above
3. Hard disk: at least 1 GB of free space required
4. Display: color monitor, minimum resolution 1024 x 768
5. USB port: Used for uploading and downloading page programs
6. Ethernet port: Used for data transmission
7. Operating system: Linux

■ Programming cable (Inovance PLC wiring as an example)

The USB communication cable (optional) is used as the programming cable, which is available from Inovance (model: IT5-USB-CAB, ordering number: 15041123).

■ Wiring reference (Inovance PLC wiring as an example)

Connect an Inovance PLC to the port on this product as shown in the figure below.


IT7043T-CP/IT7043T-F01
IT7043E-F01
USB port
Ethernet port
DB9 female connector
DB9 female connector
Power supply cable
Power supply cable

6 Touchscreen Calibration

■ Troubleshooting

In case of unresponsive or abnormal touch faults, check and address the following:

- Check if the protective film on the surface of the touchscreen is not removed. If so, remove the protective film before use.
- Check if the fixing screws are over-tightened during product installation, resulting in unresponsive or abnormal touch faults. If so, loosen the screws to the recommended tightening torque (6.0±0.5 kgf·cm) before use.

■ Calibration

After troubleshooting, the touch calibration program can be used for calibration. The procedure is as follows.

1. Calibration program entry

   Power on the HMI. When the screen prompts for entering the configuration interface long-pressing, press and hold the screen until the release prompt appears. Enter the system password and click "Calibration" in the pop-up system configuration menu.

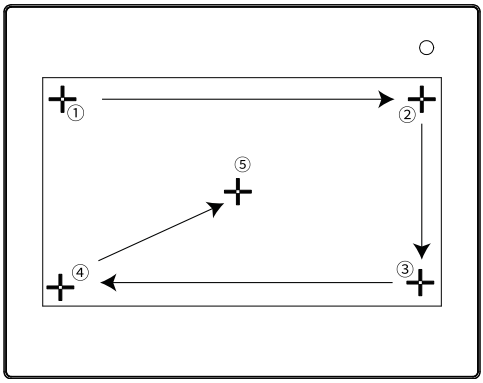
2. Detailed steps for calibration

   a. After entering the calibration mode, "" is shown in the upper left corner of the screen (as shown below).

   b. Use the stylus or your finger to tap the center of "". After tapping, "" moves in the direction indicated by the arrows below. Tap each point where "" moves.

   c. After the 5-point calibration is completed, "" will disappear. Tap the blank space of the screen to exit; if the calibration fails, "" will return to the upper left corner of the screen and you must repeat the calibration.

The calibration process is shown below.


①
②
③
④
⑤

Service and Support

Should you encounter a safety accident during the use or operation of the product, or face challenges in operating and maintaining the equipment, which remain unresolved after the relevant documentation is consulted, we provide multiple channels to ensure prompt resolution:

- Channel #1: Contact service@inovance.com.
- Channel #2: Visit https://www.inovance.com/global to access document downloads, after-sales support, spare parts ordering, repair applications, and authenticity verification services.
- Channel #3: Download My Inovance app (https://zshc-eu.inovance.com/download-pc/) where you can access products info and documentation, and query product parameters.

We are committed to providing you with quick and professional technical support, and we look forward to your satisfaction and trust.