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IT7000 Series HMI

User Guide

Suzhou Inovance Technology Co., Ltd.

Add.: No. 52, Tian E Dang Road, Wuzhong District, 215104,
Suzhou City, Jiangsu Province, P.R. China
Tel: (0512) 6637 6666 Fax: (0512) 6285 6720
www.inovance.com

Legal Information

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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

The IT7000 series HMI adopts a high-performance processor, enabling faster data processing and response. 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 or Ethernet, 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. Additionally, the programming software of this product offers both offline and online simulation, facilitating HMI program debugging and system commissioning.

This guide describes the specifications, installation dimensions, and terminal assignment of the IT7000 series products.

Note

- The illustrations in this user guide are for illustrative purposes only and may differ from the actual product you have ordered. Refer to the actual product for specific structure and configuration.
- The contents of this guide are subject to change at any time due to product upgrades, specification modifications, or improvement to the usability and accuracy of the guide.

■ More documents

Document	Code	Description
IT7150E HMI User Guide	19011415	Describes the technical specifications, installation dimensions, installation method, and startup and commissioning procedures for the IT7000 series 15-inch products.
IT7043 HMI User Guide	PS00003449	Describes the technical specifications, installation dimensions, installation method, and startup and commissioning procedures for the IT7000 series 4.3-inch products.

Document	Code	Description
IT7000 Series HMI Selection	PS00002787	Describes technical specifications and dimensions of the product, as well as the detailed specifications and selection of optional accessories (such as mounting brackets and cables).
IT7100 HMI User Guide	19011193	Introduces the technical specifications, installation dimensions, installation method, and commissioning of IT7000 series 10-inch products.
IT7070 HMI User Guide	19011194	Describes the technical specifications, installation dimensions, installation method, and startup and commissioning procedures for the IT7000 series 7-inch products.
IT7000 Series HMI Application Cases	PS00003206	Describes application examples for InoTouchPad, including project management, controls, alarms, communication, variables, reports, script functions, and recipes, and guides users to customize project configurations.
IT7000 Series HMI Quick Start	PS00002905	Describes the quick commissioning and quick start for the product.
InoTouchPad Help Guide	PS00002706	Provides detailed information on the InoTouchPad configuration software, including installation, quick start, controls, project configuration, and functional applications.
IT7000 Series HMI User Guide (This guide)	PS00005849	Describes the specifications, installation dimensions, and terminal assignment of the IT7000 series products.

■ Revision history

Date	Version	Revision
July 2026	A08	Made minor corrections.
April 2026	A07	Made minor corrections.

Date	Version	Revision
September 2025	A06	*"2.2 General Specifications" on page 20*: Added capacity specifications for SD cards and USB Type-A ports.
September 2025	A05	Made minor corrections.
July 2025	A04	• *"3.1 Installation Requirements" on page 25*: Added instructions for the product waterproof labels of models IT7043T-F01, IT7043E-F01 and IT7070S-F03. • Made minor corrections.
March 2025	A03	• Updated *"2.1 Appearance and Model Number" on page 18*. • Updated *"2.2 General Specifications" on page 20*. • Made minor corrections.
October 2024	A02	• Updated *"2.2 General Specifications" on page 20*. • Updated *"4.2 Terminal Wiring" on page 32*"Connecting the DB9 male connector to external devices" in . • Updated the cover with the Suzhou address and added My Inovance QR code to the cover.
December 2023	A01	Added information for the IT7043T-F01 and IT7043E-F01 models.
May 2022	A00	First 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 with your smartphone.
- Scan the QR code below to install **My Inovance** app, where you can search for and download the guide.

■ Warranty disclaimer

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 will be charged after the warranty expires.

Even within the warranty period, maintenance can be charged for the following product damage:

- Damage caused by operations not following the instructions in the 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)

When applicable, relevant maintenance fee will be charged according to the latest Price List of Inovance. If otherwise agreed upon, the agreed terms and conditions 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



- 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



- 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.



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.

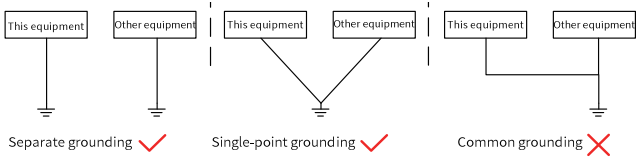


- Cover the top of the equipment with a piece of cloth or paper during installation. This is to prevent unwanted objects such as metal chippings, oil, and water from falling into the product and causing faults. After installation, remove the cloth or paper on the top of the equipment to prevent the ventilation 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

DANGER

- 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.

WARNING

- 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.

CAUTION

- 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 Appearance and Model Number

■ Appearance



Figure 2-1 IT7043T-F01/IT7043E-F01



Figure 2-2 IT7070S/IT7070S-F03



Figure 2-3 IT7070T/IT7070E/IT7070E-F03/IT7100S/IT7100E



Figure 2-4 IT7150E/IT7150P

■ **Model number**

IT	7	070	T	-	F01
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'' 070: 7'' 100: 10'' 150: 15''
④	**Performance type** S: Standard T: Template E: Enhanced P: Professional	⑤	**Function configuration** Blank: None F01: Conformal coating protection model F03: High-protection dedicated model	-	

2.2 General Specifications

Type	IT7043T-F01	IT7043E-F01	IT7070E	IT7070T	IT7070S
Display specifications					
Dimension	4.3"		7''		
Resolution	480 x 272		800 x 480		
Brightness (cd/m^2)	400		350		
Display color	16.7 million colors				
Backlight	LED				
Backlight service life	30,000 h		35000 h		
System specifications					
Processor	Single-core Cortex A8 600 MHz				
RTC	Supported				
RAM	128 MB DDR3				
Storage	128 MB				
Electrical specifications					
Input voltage	24 VDC ± 20%				

Type	IT7043T-F01	IT7043E-F01	IT7070E	IT7070T	IT7070S
Rated input current	200 mA		250 mA		
Interface specifications					
SD card slot	Not supported		Micro SD card interface Supports FAT32 and exFAT file systems. The FAT32 file system supports up to 32 GB (max. 4 GB per file).	Not supported	
Serial port	COM1 (RS422/RS485) COM2 (RS232) COM3 (RS485)		COM1 (RS485/ RS422) COM2 (RS232) COM3 (RS485)	COM1 (RS485/ RS422) COM2 (RS232)	COM1 (RS485/ RS422)
Ethernet	None	10M/100Mbit/s*1, auto-negotiation RJ45 Ethernet port, cable length up to 100 m, CAT5e or higher		None	
USB Type-B port	1	None			
Mini USB port	None		1		
USB Type-A port	None		1 Speed standard: USB 2.0 Supports FAT32 and exFAT file systems. The FAT32 file system supports up to 32 GB (max. 4 GB per file).		
Structural specifications					

Type	IT7043T-F01	IT7043E-F01	IT7070E	IT7070T	IT7070S
Housing color	Metal grey		Silver		Black
Housing material	Engineering plastics				
Cutout dimensions	119 mm x 93 mm		193 mm x 139 mm		
Environmental specifications					
Ambient temperature	0°C to 50°C		-10°C to +55°C		0°C to 50°C
Storage temperature	-20°C to +70°C				
Operating humidity	10% RH to 90% RH, without condensation				
Cooling method	Natural cooling				
Panel IP rating	Front panel IP65, rear cover IP20				
Model code	01450127	01450126	01450039	01450030	01450038

Type	IT7100E	IT7100S	IT7150E	IT7150P
Display specifications				
Dimension	10"		15"	
Resolution	1024 x 600		1024 x 768	
Brightness (cd/m^2)	250		350	
Display color	16.7 million colors			
Backlight	LED			
Backlight service life	30,000 h		50,000 h	
System specifications				
Processor	Single-core Cortex A8 1GHz			Quad-core Cortex A7 1.2 GHz
RTC	Supported			
RAM	256 MB DDR3	128 MB DDR3	256 MB DDR3	512 MB DDR3
Storage	256 MB	128 MB	256 MB	512 MB

Type	IT7100E	IT7100S	IT7150E	IT7150P
Electrical specifications				
Input voltage	24 VDC ± 20%			
Rated input current	300 mA		800 mA	
Interface specifications				
SD card slot	Micro SD card interface Supports FAT32 and exFAT file systems. The FAT32 file system supports up to 32 GB (max. 4 GB per file).	Not supported	Micro SD card interface Supports FAT32 and exFAT file systems. The FAT32 file system supports up to 32 GB (max. 4 GB per file).	
Serial port	COM1 (RS485/RS422) COM2 (RS232) COM3 (RS485)	COM1 (RS485/RS422)	COM1 (RS485/RS422) COM2 (RS232) COM3 (RS485)	
Ethernet	10M/100Mbit/s*1, auto-negotiation RJ45 Ethernet port, cable length up to 100 m, Cat5e or higher			
Mini USB port	1			
USB Type-A port	1 Speed standard: USB 2.0 Supports FAT32 and exFAT file systems. The FAT32 file system supports up to 32 GB (max. 4 GB per file).			
Structural specifications				
Housing color	Silver			
Housing material	Engineering plastics		Front housing: aluminum alloy; rear cover: sheet metal	
Cutout dimensions	260 mm x 202 mm		352 mm x 279 mm	
Environmental specifications				
Ambient temperature	-10°C to +55°C		0 °C to +50 °C	-10°C to +55°C

Type	IT7100E	IT7100S	IT7150E	IT7150P
Storage temperature	-20°C to +70°C			
Operating humidity	10% RH to 90% RH, without condensation			
Cooling method	Natural cooling			
Panel IP rating	Front panel IP65, rear cover IP20			
Model code	01450036	01450037	01450028	01450247

Note

*1: IT7070S-F03, high-protection dedicated model with the same processor configuration as the IT7070S; selection code: 01450081.

*2: IT7070E-F03, high-protection dedicated model with the same processor configuration as the IT7070E; selection code: 01450079.



- 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.

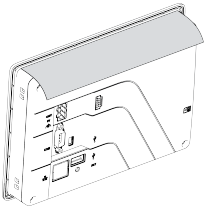
3 Mechanical Design Reference

3.1 Installation Requirements

■ Installation precautions

Before installation, ensure that the product has been powered off.

- To avoid damage to the product, do not drop the module enclosure, terminal block, or connector, and do not subject them to impact.
- Do not disassemble the product. Failure to do so may result in product damage.
- Do not fasten the product with a large torque to avoid damage to the terminals.
- After installation and commissioning, remove the dust-proof label from the top of the product to ensure the ventilation holes are unobstructed, thereby ensuring the module reliability during high-temperature operation.
- For some 4.3-inch models with waterproof label in packaging (IT7043T-F01 and IT7043E-F01), note the following: To prevent internal component failure caused by water dripping from equipment or cabinet tops in the operating environment, before installing the product, centrally attach the waterproof label along the edge of the top seal ring for the product, as shown in the figure below.



■ Installation environment

This product operates reliably within a temperature range of -10°C to 55°C (0°C to 50°C for models IT7043T-F01, IT7043E-F01, IT7070S, and IT7150E). Operating outside this range may result in damage to the HMI device, operational abnormalities, or reduced performance. For use in special environments, contact Inovance.

- Do not install the product in environments suffering from strong mechanical vibration.
- Install the product in a cabinet deeper than 100 mm, and maintain a clearance of at least 25 mm on all sides.

- Install the product away from cables and devices that produce strong interference, such as AC power supply cables, PLC output modules, AC drives, and relays. Use shielded cables for I/O cables and ground the shielded cable properly.
- The front panel of the HMI complies with the requirements of IP65. When the product is correctly installed in an IP54-rated cabinet, the complete cabinet must comply with the requirements of IP65, which means liquid sprayed on the cabinet cannot get into it.

3.2 Installation Dimensions

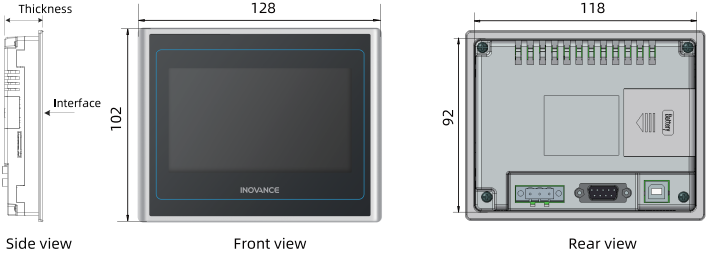


Figure 3-1 4.3-inch product dimensions

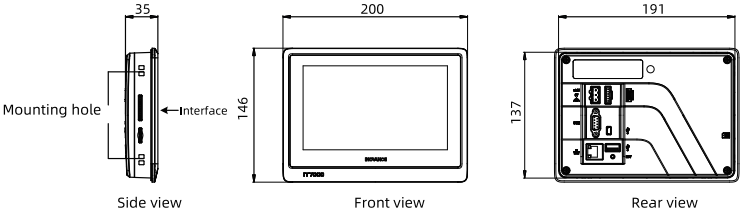


Figure 3-2 7-inch product dimensions

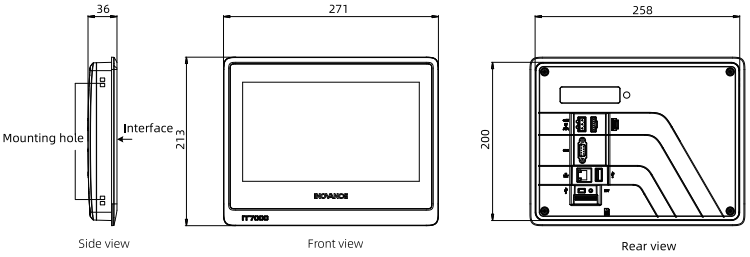


Figure 3-3 10-inch product dimensions

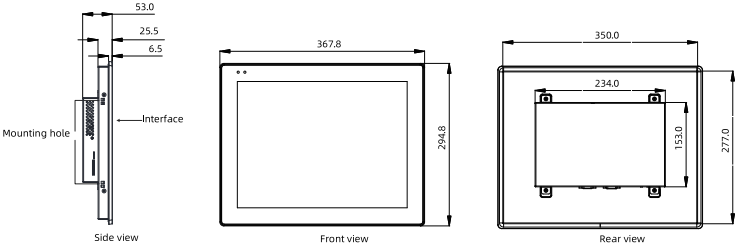


Figure 3-4 15-inch product dimensions

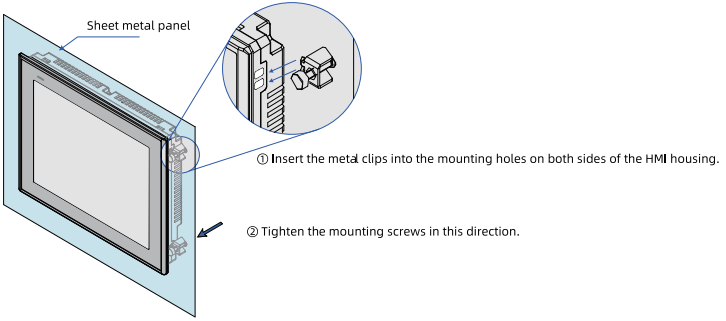
Model	Display size (inch)	Outline dimensions Length x Width x Depth (mm)	Panel cutout dimensions W x H (mm)	Cutout dimension (W +2) (mm)	Cutout dimension (H+2) (mm)
IT7043T-F01	4.3	128 x 102 x 35	118 x 92	119 Cutout dimension: W + 1	93 Cutout dimension: H + 1
IT7043E-F01					
IT7070S	7	200 x 146 x 35	191 x 137	193	139
IT7070T					
IT7070E					
IT7100E	10	271 x 213 x 36	258 x 200	260	202
IT7100S					

Model	Display size (inch)	Outline dimensions Length x Width x Depth (mm)	Panel cutout dimensions W x H (mm)	Cutout dimension (W +2) (mm)	Cutout dimension (H+2) (mm)
IT7150P	15	367.8 x 294.8 x 53	350 x 277	352	279
IT7150E					

3.3 Installation Method

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

1. Put the product into the prepared mounting cutout in the panel.
2. From the back of the panel, insert the included metal clips into the mounting holes on the left and right sides of the product housing, as shown by ① in the figure.



3. Tighten the mounting screws one by one (as shown by ② in the figure), until the product is secured to the panel. Recommended torque: 6.0±0.5 kgf·cm (to ensure waterproofing and prevent housing deformation).

Note

The accessories of the 4.3-inch, 7-inch, and 10-inch IT series screens include four metal snap-fit joints with screws (ordering number: 98050285).

The accessory kit of the 15-inch IT series screen includes eight metal clips with screws (order no.: 80240085).



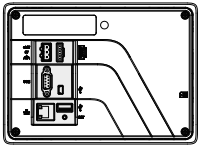
To comply with IP65 sealing specifications, ensure all the mounting screws delivered are used and the curvature of the panel is no greater than 0.010°.



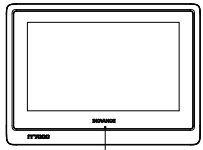
The fixing screw must be tightened with a proper tightening torque. If you have any question, contact the supplier.

4 Electrical Installation

4.1 Terminal Description

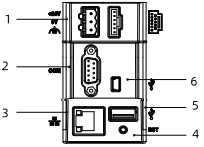


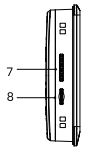
Rear view



Front view

(Enlarged detail of rear view)





Side view

No.	Name	Function	No.	Name	Function
1	Power supply interface	24 VDC power input port for the HMI. This product comes with a power supply terminal used to connect to this power supply interface.	6	Mini USB port	Slave USB communication port, used for user program downloading and commissioning through PC.
2	DB9 male connector	Communication port between the HMI and external devices. Built-in COM1, COM2 and COM3 serial communication ports. COM1: RS422 or RS485 COM2: RS232 port COM3: RS485 port Note: 1. IT7070T is equipped with only COM1 and COM2. 2. IT7070S is equipped with only COM1. 3. IT7043T-F01 and IT7043E-F01 are equipped with a DB9 female connector.	7	Firmware upgrade port	For firmware upgrade.
3	Ethernet port	Ethernet communication port (RJ45), used for accessing LAN-equipped PLCs and for PC access. Note: IT7043T-F01/ IT7070S/IT7070T are not equipped with an Ethernet port.	8	Micro SD card slot	Supports a Micro SD card for data read/write and project file download. Note: No Micro SD card slot is available for IT7070S/IT7070T.

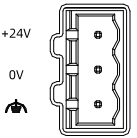
No.	Name	Function	No.	Name	Function
4	Reset button	Used to restore factory settings with a single click.	9	Power supply indicator	Steady ON: Normal power supply. Flashing: Unstable power supply. OFF: No power. Note: IT7070S is not equipped with a power supply indicator.
5	USB Type-A port	Used as the main port of USB communication to read and write data in the USB flash drives, or connect to devices such as mice and printers.	-	-	-

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: This product 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 high-interference cables such as AC power supply cables and motor drive cables. Maintain a minimum distance of 30 cm from the cables.

- It is recommended to use a separate #14 AWG conductor for the grounding cable and connect it directly to the system grounding point. Do not route this grounding conductor through the enclosures or terminals of other electrical equipment. This ensures the grounding conductor does not carry current from other circuits. Keep the grounding conductor as short as possible.

Inovance provides a complete accessory kit designed for the power port and installation of the product. The types and quantities of accessories included are listed in the table below.

Type	Quantity
Power supply terminal	1
Metal clips (with screws)	4 or 8
Packing bag	1

Note

The accessories of the 4.3-inch, 7-inch, and 10-inch IT series screens include four metal snap-fit joints with screws (ordering number: 98050285).

The accessory kit of the 15-inch IT series screen includes eight metal clips with screws (order no.: 80240085).

■ Connecting the communication port

This product provides one DB9 communication port that internally carries one to three independent serial communication ports, which can be used to connect to PLCs, AC drives, printers, or other intelligent devices. The product is built-in with multiple communication protocols and usually acts as the communication master to access the data in external devices.

■ Connecting the DB9 male connector to external devices

The DB9 male connector includes three built-in serial communication ports COM1, COM2 and COM3. The pins are described in the following table.

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

Note

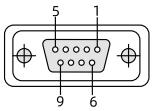
This document uses the IT7070E model as an example to explain the serial port. If you need to view the serial port information for the IT7043, IT7100, and IT7150E models, see the corresponding documentation.

- "IT7043 HMI User Guide", data code PS00003449.
- "IT7100 HMI User Guide", data code 19011193.
- "IT7150E HMI User Guide", data code 19011415.

■ Communication cables and settings for the DB9 male connector

Inovance offers three pre-terminated communication cable options designed for use with the DB9 male connector of this product.

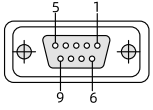
1. Cable 1: Model IT7-H3U-CAB, order no.: 1504AX53






Cable connector and pin	DB9 female connector		8-pin DIN round connector	
Signal level	RS422		RS422	
-	Pin No.	Signal	Pin No.	Signal
Internal cable connection	7	RX-	4	TX-
	8	RX+	7	TX+
	9	TX-	1	RX-
	4	TX+	2	RX+
	5	GND	3	GND
Applicable model and port	IT7070/IT7100 HMI COM1 [RS422] Note: This cable is not applicable to IT7150E.		Inovance H1U/H2U/H3U RS422 communication port Mitsubishi FX1N/2N/3U/3G RS422 communication port	
HMI user program settings when using this cable	In the HMI user project, set the COM1 port to "RS422/RS485". Select the same communication protocol and data format for the HMI and PLC.			

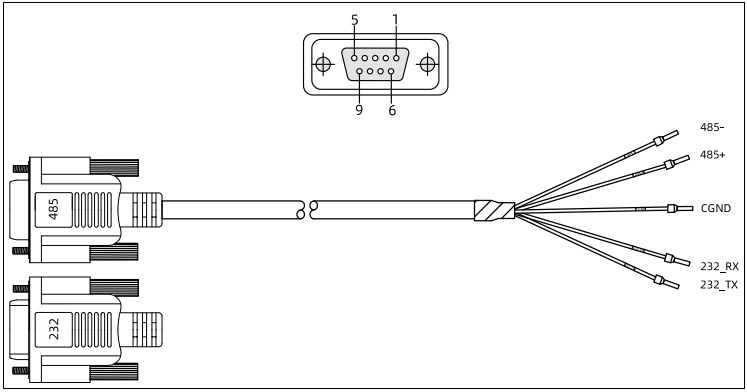
2. Cable 2 : Model H2U-232-CAB, ordering No.: 15042148






Cable connector and pin	DB9 female connector		8-pin DIN round connector	
Signal level	RS232, built-in RS232-RS422 conversion circuit		RS422	
-	Pin No.	Signal	Pin No.	Signal
Internal cable connection	1	-	4	TX-
	2	RXD	7	TX+
	3	TXD	1	RX-
	4	-	2	RX+
	5	GND	3	GND
Applicable model and port	IT5xxx HMI COM2 [RS232] IT6xxxE HMI COM2 [RS232] IT7xxxT/E HMI COM2 [RS232]		Inovance H1U/H2U/H3U RS422 communication port Mitsubishi FX1N/2N/3U/3G RS422 communication port	
HMI user program settings when using this cable	In the HMI user project, set the COM2 port to "RS232". Select the same communication protocol and data format for the HMI and PLC.			

3. Cable 3: Model IT7-Easy-CAB, order no.: 15310234



<table>
<tr><td rowspan="2">Cable connector and pin</td><td rowspan="2">Wiring method</td><td>DB9 female connector</td><td colspan="2">Tubular terminal</td></tr>
<tr><td>Pin No.</td><td>Conductor color</td><td>Tubular terminal (end label)</td></tr>
<tr><td rowspan="6">Internal cable connection</td><td rowspan="2">Twisted pair</td><td>7</td><td>Green</td><td>485-</td></tr>
<tr><td>8</td><td>Yellow</td><td>485+</td></tr>
<tr><td rowspan="2">Twisted pair</td><td>2</td><td>Red</td><td>232_RX</td></tr>
<tr><td>3</td><td>Orange</td><td>232_TX</td></tr>
<tr><td rowspan="2">Shorted</td><td>5</td><td>Black</td><td>CGND</td></tr>
<tr><td>Housing</td><td>Grounding cable</td><td>-</td></tr>
<tr><td>Applicable model and port</td><td rowspan="2">-</td><td>IT5xxx HMI COM2 [RS232]
IT6xxxE HMI COM2 [RS232]
IT7xxxT/E HMI COM2 [RS232]
IT7070T/IT7070S/ IT7070E/IT7100S/ IT7100E HMI COM1 [RS485]</td><td colspan="2">Inovance Easy300/Easy500 RS232/RS485 communication port</td></tr>
<tr><td>HMI user program settings when using this cable</td><td colspan="3">In the HMI user project, set the COM2 port to "RS232" or COM1 port to "RS485".
Select the same communication protocol and data format for the HMI and PLC.</td></tr>
</table>

Note

This document uses the IT7070 model as an example to illustrate HMI port wiring. If you need to view port wiring instructions for the IT7043, IT7100, or IT7150E models, see the corresponding documentation.

- "IT7043 HMI User Guide", data code PS00003449.
- "IT7100 HMI User Guide", data code 19011193.
- "IT7150E HMI User Guide", data code 19011415.

■ Precautions for communication connections

1. Cable requirements: Use the appropriate communication cable for each external device. Do not route communication cables alongside AC power cables or near sources of electrical noise. Do not plug/remove the communication cables during communication.
2. To avoid communication problems, ensure that the communication cable length does not exceed 150 m when connecting to RS-485/422 devices, and does not exceed 15 m when connecting to RS-232 devices.
3. If there is a communication problem, the screen displays the error message "Connection failed: connection_1, station 1. err:10001", until normal communication is established.
4. If the communication cable is long or needs to pass through the environment with electrical noise, use the shielded cable.

■ USB port

Name	Specification
Interface type	USB Type-A, used for external USB drives
Interface standard	USB 2.0
Communication rate	Complying with the USB 2.0 protocol

Name	Specification
Load capacity	⩽ 300 mA
Short-circuit protection	Supported
Functions	USB mini port or 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. USB Type-A port: Used to connect devices such as USB flash drives, mice, and keyboards; supports plug-and-play. The FAT32 file system supports up to 32 GB (with a maximum file size of 4 GB). The exFAT file system supports up to 128 GB.

Name	Function
USB mini port or 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.
USB Type-A port	Used to connect devices such as USB flash drives, mice, and keyboards; supports plug-and-play.

■ Ethernet communication

Name	Specification
Number of output channels	1
Output connection mode	Standard Ethernet interface (with indicator RJ45)
Output type	Ethernet
Output speed	100 M
Functions	Supports downloading HMI program, setting system parameters, online simulation of configurations.

5 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.

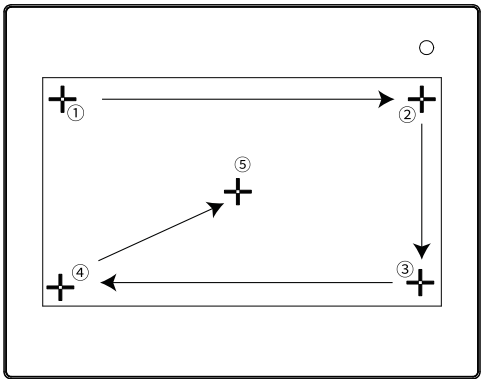
2. Detailed steps for calibration

   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.