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IT7100 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 the IT7000 Series HMI developed and manufactured by Inovance. The product 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 product specifications, features and operating instructions. Read it carefully before use to ensure safe and proper operation. 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 (https://www.inovance.com/global) for the latest version of the software.

■ 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.
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.
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 Guide	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).
IT7000 Series HMI User Guide	PS00005849	Describes the specifications, installation dimensions, and terminal assignment of the IT7000 series 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.
IT7100 HMI User Guide (This guide)	19011193	Introduces the technical specifications, installation dimensions, installation method, and commissioning of IT7000 series 10-inch products.

■ Revision history

Date	Version	Revision
July 2026	A08	Made minor corrections.
March 2026	A07	Made minor corrections.
September 2025	A06	*"2.2 General Specifications" on page 19*: Added capacity specifications for SD cards and USB Type-A ports.
April 2025	A05	Updated "Model Number" in *"2.1 Appearance and Model" on page 18*.

Date	Version	Revision
December 2024	A04	Made minor corrections to the previous version.
December 2023	A03	Updated *"4.2 Terminal Wiring" on page 26*, and added the matching communication cable IT7-Easy-CAB.
November 2020	A02	Made minor corrections.
May 2020	A01	Added the matching communication cable IT7-H3U-CAB.
October 2019	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 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

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.

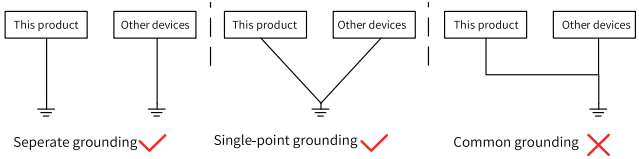


- Cover the top of the equipment with a piece of cloth or paper during installation. This is to prevent unwanted objects such as metal chippings, oil, and water from falling into the product and causing faults. After installation, remove the cloth or paper on the top of the equipment to prevent the ventilation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

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



Malware (such as viruses, Trojans, and worms) can bring the device into an unsafe operating state, resulting in death, serious injury, and property damage. Observe the following precautions:

- Always use the latest software version. If the product version is no longer supported or the latest version is not used, you will be exposed to increased risk of cyber attacks.
- Develop and maintain appropriate protective measures (including but not limited to antivirus software, firewalls, WAF, IPS/IDS, situational awareness system, identity authentication, and data encryption) to prevent the files in mobile storage devices from being damaged by malware, and to protect the products, networks, systems, and interfaces from unauthorized access, tampering, hacking, data leakage, or information theft.
- Check all safety-related interfaces and settings after commissioning.

2 Product Information

2.1 Appearance and Model

■ Appearance



■ Model

IT 7 100 E
① ② ③ ④

① **Product type** IT: General-purpose Inovance HMI	③ **Screen size** 043: 4.3'' 070: 7'' 100: 10'' 150: 15''
② **Product series** 7: 7000 series	④ **Performance type** S: Standard E: Enhanced

2.2 General Specifications

Item	Product model	
	IT7100E	IT7100S
CPU	Cortex A8 1 GHz	
RTC	Supported	
RAM	256 MB DDR3	128 MB DDR3
Storage	256 MB	128 MB
SD card interface	1 Micro SD slot (Supports Micro SD cards, push-push type SD card slot.) Supports the FAT32 file system. FAT32 supports up to 32 GB (max. 4 GB per file).	No SD card slot
Serial port	• COM1 (RS422/RS485) • COM2 (RS232) • COM3 (RS485)	COM1 (RS422/RS485)
Ethernet port	10M/100Mbit/s*1, auto-negotiation RJ45 Ethernet port, cable length up to 100 m, Cat5e or higher	
Mini USB port	1 port	
USB Type-A port	1 port (Note: The USB Type-A port provides a maximum current of 200 mA to external devices.) Speed standard: USB 2.0 Supports the FAT32 file system. FAT32 supports up to 32 GB (max. 4 GB per file).	
Input voltage	24 VDC ± 20%	
Rated input current	300 mA	
Display size	10"	
Resolution	1024 x 600	
Brightness (cd/m²)	350	
Display color	16.7 million colors	
Backlight	LED	

Item	Product model	
	IT7100E	IT7100S
Backlight service life	30000 h	
Cutout dimensions (mm)	260 x 202	
Panel IP rating	Front panel IP65, rear cover IP20	
Housing color	Silver	
Operating temperature	-10°C to +55°C	
Storage temperature	-20°C to +70°C	
Operating humidity	10% RH to 90% RH, without condensation	
Cooling method	Natural cooling	



- 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.

■ Installation environment requirements

This product is designed to operate in a temperature range between -10°C to 55°C, exceeding of which could result in damage to the HMI components, malfunction, or performance degradation. 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 IP65-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

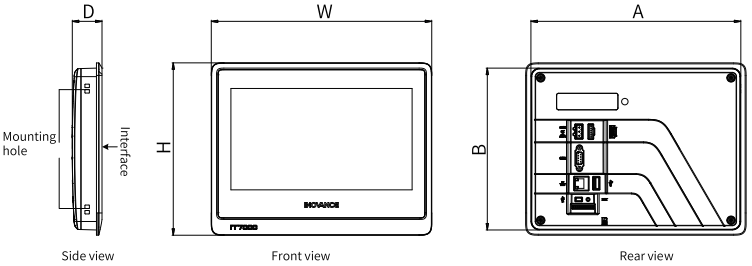


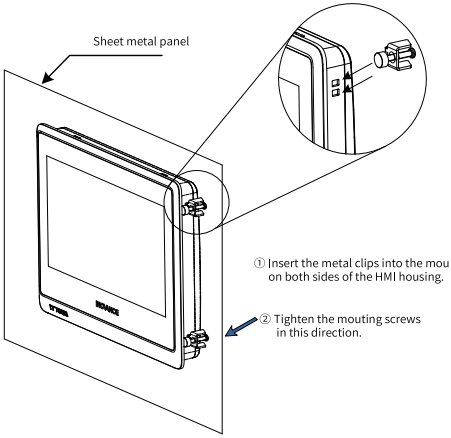
Figure 3-1 Product dimensions

Model	Display size (inch)	Outline dimensions W x H x D (mm)	Installation dimensions (A x B) (mm)	Recommended cutout dimensions (mm)	
				A + 2	B + 2
IT7100E	10	271 x 213 x 36	258 x 200	260	202
IT7100S	10	271 x 213 x 36	258 x 200	260	202

3.3 Installation Procedure

Procedure

1. Put the product into the prepared mounting cutout in the panel.
2. From the back of the panel, insert the four metal clips (delivered with the product) into the four corresponding mounting holes on both sides of the product housing (as shown by ① in the figure).



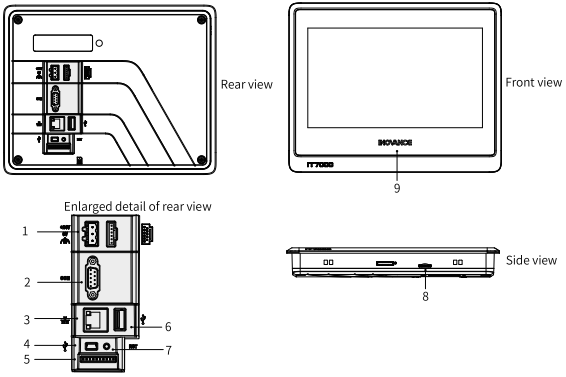
3. Tighten the mounting screws one by one (as shown by ② in the figure), until the product is secured to the panel. Recommended torque: 6.0±0.5 kgf·cm (to ensure waterproofing and prevent housing deformation).

Caution

- Warning Do not overtighten the fixing screws. If any questions, consult your supplier.
- To comply with the IP65 sealing specifications, ensure that all metal clips included in the product packaging are used (Inovance accessories, order no.: 98050285). In addition, ensure that the curvature of the mounting panel does not exceed 0.010°.

4 Electrical Design Reference

4.1 Terminal



No.	Name	Terminal function	No.	Name	Terminal function
1	Power supply interface	24 VDC power input port for the HMI (One power terminal plug for connection to this connector is delivered with the product.)	6	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.
2	DB9 male connector	Communication port between the HMI and external devices, providing three built-in serial communication interfaces (COM1, COM2, COM3). (IT7100S is equipped with only COM1.) COM1: RS422/ RS485 port (selectable) COM2: RS232 port COM3: RS485 port	7	Reset button	Used to restore factory settings with a single click.
3	Ethernet port	Ethernet communication port (RJ45), used for accessing LAN-equipped PLCs and for PC access.	8	Micro SD card slot	Supports a Micro SD card for data read/write and project file download. Note: IT7100S is not equipped with a Micro SD card slot.

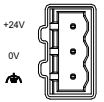
No.	Name	Terminal function	No.	Name	Terminal function
4	Mini USB port	USB slave port, used for downloading and debugging user programs through a PC.	9	Power supply indicator	Steady ON: Normal power supply. Flashing: Unstable power supply. OFF: No power. (Note: IT7100S is not equipped with a power indicator.)
5	Firmware upgrade port	Used for firmware upgrade	—	—	—

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 "0V".

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.

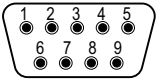
- It is recommended to use a separate #14 AWG conductor for the grounding cable and connect it directly to the system grounding point. Do not route this grounding conductor through the enclosures or terminals of other electrical equipment. This ensures the grounding conductor does not carry current from 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 specific accessories are shown in the table below.

Type	Quantity	Ordering No.
Power supply terminal	1	98050285
Metal snap-fit joint (with screws)	4	
Packing bag	1	

■ Connecting the communication port

This product provides one DB9 communication port (DB9 male connector) that internally carries one to three serial communication ports, which can be used to connect to PLCs, AC drives, printers, or other intelligent devices. The product supports multiple built-in communication protocols and is typically used as the communication master to access data from external devices. The following figure shows the DB9 male connector:



COM1 [RS485 2/4 W]
COM2 [RS232]
COM3 [RS485]
DB9 male socket (ejector pin signal base)

■ Connecting the DB9 male connector to external devices

The DB9 male connector has three built-in serial communication ports COM1, COM2 and COM3. The pin assignment is described in the following table:

Pin No.	Signal			
	COM1 [RS485] 2 Wires	COM1 [RS485] 4 Wires	COM2 [RS232]	COM3 [RS485]
1	-	-	-	RS485-
2	-	-	RS232 RXD (Receive Data)	-

Pin No.	Signal			
	COM1 [RS485] 2 Wires	COM1 [RS485] 4 Wires	COM2 [RS232]	COM3 [RS485]
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 -)	-	-

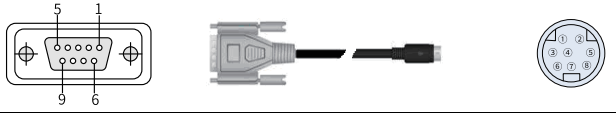
Note

COM1 [RS485] 4-wire port is COM1 [RS422].

■ Communication cables and settings for the DB9 male connector

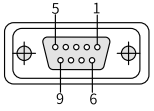
Inovance offers three pre-terminated communication cable options designed for use with the DB9 male connector of this product.

1. Model of cable 1: 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 HMI user project, set the COM1 port to "RS422/RS485". Select the same communication protocol and data format for the HMI and PLC.			

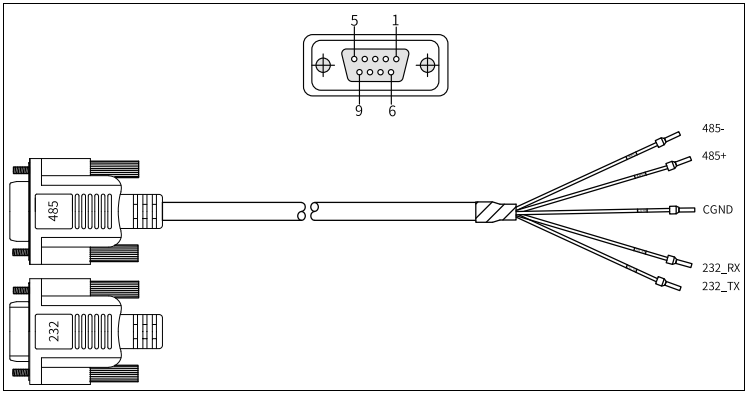
2. Model of cable 2: H2U-232-CAB, ordering No.: 15042148






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 HMI user project, set the COM2 port to "RS232". Select the same communication protocol and data format for the HMI and PLC.			

3. Model of cable 3: 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 HMI user project, set the COM2 port to "RS232" or COM1 to "RS485".
Select the same communication protocol and data format for the HMI and PLC.</td></tr>
</table>

■ 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

USB mini 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. Supports the FAT32 file system. FAT32 supports up to 32 GB (max. 4 GB per file).

■ EtherNet connection

The 10M/100M adaptive Ethernet port is on the back of the product:

1. Upload/download HMI configuration, set system parameters, and configure simulation online.
2. Connected to multiple HMIs via Ethernet for multi-HMI communication.
3. Communicate with PLCs via Ethernet.
4. Connected 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.
   Note: To ensure communication stability, use shielded cables for Ethernet.

Programming Reference

Before programming this product, you will need: a computer (with InoTouchPad software developed by Inovance installed), a programming cable, and an IT7000 series HMI.

■ 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).

■ Programming cable (Inovance PLC wiring as an example)

The standard programming cable for this product is a Mini USB communication cable, available as an optional accessory from Inovance (Order No.: 15041200).

Touchscreen Calibration

■ Troubleshooting

If the touchscreen is unresponsive or behaves abnormally, check and address the following:

- If the protective film on the touchscreen surface has not been removed, remove the film before use.
- If the fixing screws are over-tightened during installation, the touchscreen panel may deform, resulting in an unresponsive touchscreen or abnormal touch behavior. The recommended tightening torque for the fixing screws is 6.0±0.5 kgf·cm. If over-tightening has occurred, slightly loosen the screws before use.

■ Calibration procedure

After troubleshooting and resolving the issues above, you can use the touchscreen calibration program to calibrate the screen. The procedure is as follows:

1. Entering the touchscreen calibration program

   Access via the system setup menu: After the HMI is powered on and the screen displays "Press and hold to enter the setup panel", press and hold the screen until "Release to enter the setup panel" appears. Enter the system setup password. When the system setup menu opens, tap "Calibration".

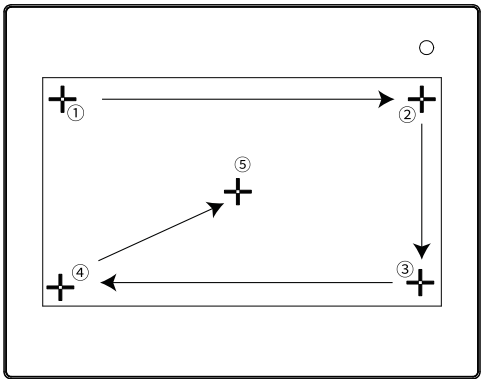
2. Procedure

   a. After entering the calibration mode, you will see a "⊞" cursor in the upper left corner of the screen, as shown in the figure below.

   b. Use a stylus or your finger to lightly and accurately tap the center of the "⊞" cursor. When tapped, the "⊞" will move in the direction of the arrow shown in the figure (Lightly and accurately tap the center of the "⊞" cursor. When the cursor moves to a new position on the screen, repeat the tapping action).

   c. After completing the five-point calibration (as shown below), the "⊞" cursor will disappear. Tap any empty area of the screen to exit. If the calibration fails, the cursor will return to the upper left corner of the screen. Simply repeat the five-point calibration process.

The calibration process is shown below.


①
②
③
④
⑤

Warranty Agreement and Card

■ Warranty agreement

Inovance provides an 18-month free warranty (subject to information indicated by the barcode on the product or the contract terms) to the equipment itself from the date of manufacturing for the failure or damage under normal use conditions.

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

- Damage caused by improper use and unauthorized disassembly, repair, or retrofit;
- Damage caused by fire, flood, abnormal voltage, other disasters, and secondary disasters;
- Hardware damage caused by equipment fall-off or that caused during transportation;
- Damage caused by failure to operate the product according to the user guide provided by Inovance;
- Faults and damage caused by external factors, such as peripheral devices;

If the equipment is faulty or damaged, fill in the Warranty Card correctly.

The maintenance fee is charged based on the latest Maintenance Price List of Inovance.

The Product Warranty Card is not re-issued. Keep the card properly and present it to the maintenance personnel during maintenance.

For any question during maintenance, contact Inovance agent or Inovance.

You are assumed to agree to terms and conditions of this warranty agreement by purchase of the product. This agreement shall be interpreted by Inovance.

■ Warranty card

<table>
<tr><td rowspan="3">Customer information</td><td colspan="2">Company address:</td></tr>
<tr><td>Company name:</td><td>Contact:</td></tr>
<tr><td>Postal code:</td><td>Tel.:</td></tr>
<tr><td rowspan="3">Product information</td><td colspan="2">Model:</td></tr>
<tr><td colspan="2">Barcode (attached here):</td></tr>
<tr><td colspan="2">Agent name:</td></tr>
<tr><td>Fault information</td><td colspan="2">(Service date and description):

Serviced by:</td></tr>
</table>

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.