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IT7150P HMI

User Guide

Industrial Automation | New Energy Vehicle | Intelligent Elevator | Intelligent Robot | Digital Energy | Rail Transit

Data code PS00017578A03

Legal Information

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Disclaimer of Liability

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 human machine interface (hereinafter referred to as HMI), independently developed and manufactured by Inovance. The IT7150P HMI adopts a high-performance processor, enabling faster data processing and response. Based on Linux, this product features an Android-style HD display, providing a user-friendly interactive experience.

- Supports customizable styles, VNC remote desktop, vector-format icons, scripting, and other functions.
- Supports connecting to a PC via USB or Ethernet for uploading, downloading, and monitoring PLC programs, simplifying commissioning tasks.
- Supports the Modbus protocol for efficient, automatic communication with PLCs.
- Supports updating HMI firmware, screen programs, and recipe data via USB flash drive. When used with Inovance PLCs, it can also update PLC programs, simplifying on-site program downloads for numerous production devices.
- Features both offline and online simulation capabilities, facilitating HMI program debugging and system commissioning.

This guide mainly covers product information, mechanical design references, electrical design references, programming references, and touchscreen calibration procedures for the IT7150P model.

More documents

Document	Code	Description
InoTouchPad Help Guide	PS00002706	Provides detailed information on the InoTouchPad configuration software, including installation, quick start, controls, project configuration, and functional applications.
IT7150P HMI User Guide (This guide)	PS00017578	Describes product information, mechanical design references, electrical design references, programming references, and touchscreen calibration procedures for the IT7150P model.

Revision history

Date	Version	Revision
July 2026	A03	Made minor corrections.
April 2026	A02	Made minor corrections.

Date	Version	Revision
September 2025	A01	*"2.2 General Specifications" on page 14*: Added capacity specifications for SD cards and USB type-A ports.
October 2024	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 for more information.
- 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

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

- 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.

CAUTION

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

DANGER

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

WARNING

- 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.

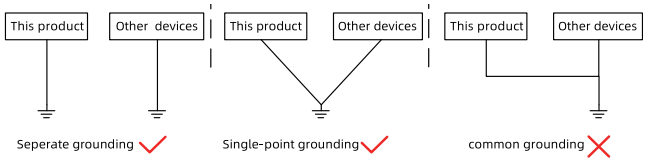
CAUTION

- 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

- 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.

CAUTION

- 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

DANGER

- 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.

WARNING

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.

Repair
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 工业信息安全

本产品提供接口连接到网络并通过网络接口传输数据。为了防止工厂、系统、机器和网络受到网络攻击，需要实施相应的工业信息安全保护机制，以确保工厂、系统、机器和网络的安全运行。

客户负责在产品和客户网络或任何其他网络之间提供并持续确保安全连接，防止其工厂、系统、机器和网络受到未经授权的访问。只有在安全连接并采取适当安全措施（例如，使用杀毒软件、安装防火墙）的情况下，才能将该系统、机器连接到企业网络或互联网。

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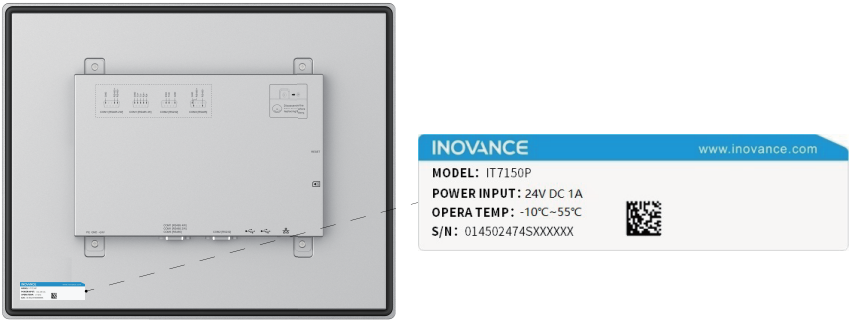
Malware (such as viruses, Trojans, and worms) can bring the device into an unsafe operating state, resulting in death, serious injury, and property damage. Observe the following precautions:

- 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, 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 Nameplate and Model Number

Nameplate



Model number

IT 7 150 P

① ② ③ ④

① **Product category** IT: Inovance InoTouch HMI (abbreviation of InoTouch)	③ **Screen size** 150: 15-inch
② **Product series** 7: 7000 series	④ **Auxiliary feature** P: Professional configuration

Based on the above model and nameplate information, relevant ordering information of the product is provided in the following table.

Model	Description	Product code
IT7150P	IT7000 series 15-inch touchscreen	01450247

2.2 General Specifications

Item	Product model
	IT7150P
Display size	15"
Resolution	1024 x 768
Brightness (cd/m²)	350
Display color	16.7 million colors
Backlight	LED

Item	Product model
	IT7150P
Backlight lifetime	50,000 h
Cutout dimensions (mm)	352 x 279
Housing color	Silver
Housing material	Aluminum alloy front housing and sheet metal rear cover
Operating temperature	-10℃ to +55℃
Storage temperature	-20℃ to +70℃
Operating humidity	10% RH to 90% RH, without condensation
Cooling method	Natural air cooling
CPU	Quad-core Cortex A7 1.2 GHz
RAM	512 MB
Storage	512 MB
RTC	Supported
Serial port	COM1 (RS422/RS485) COM2 (RS232) COM3 (RS485)
Ethernet port	10M/100Mbit/s*1, auto-negotiation RJ45 Ethernet port with LED indicator Cable length ≤ 100 m, Cat5e or higher
Mini USB port	1 port
USB type-A port	The USB Type-A port provides a maximum current of 500 mA to external devices. 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).
SD card slot	One Micro SD interface Supports Micro SD cards, push-push type SD card slot. Supports FAT32 and exFAT file systems. The FAT32 file system supports up to 32 GB (max. 4 GB per file).
Input voltage	24 VDC ± 20%
Rated current	800 mA
Panel IP rating	Front panel IP65, rear cover IP20



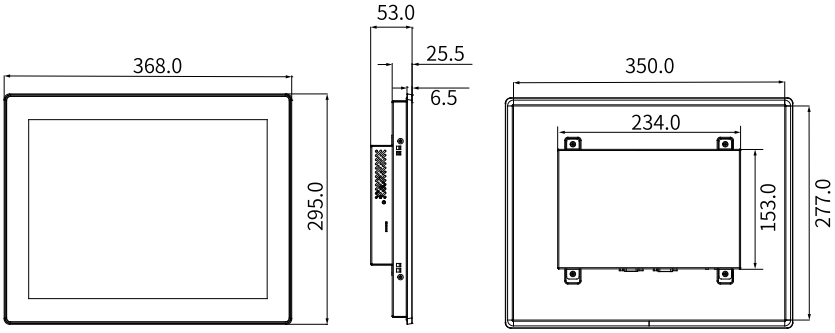
- Do not operate the device in harsh environments with corrosive gases, heavy dust, high humidity, or airborne conductive particles (e.g., carbon fibers).
- Do not transport, store, and operate the device in strong ultraviolet environments (e.g., outdoors with direct sunlight) for a long time.
- Transport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

3 Mechanical Design Reference

3.1 Installation Environment

1. The HMI is designed to operate in a temperature range between -10℃ to +55℃ (14℉ to 131℉), exceeding of which may cause damage to the HMI components, malfunction, or function deterioration. For use in special environments, contact Inovance.
2. Do not install the HMI in environments suffering from strong mechanical vibration.
3. Install the HMI in the panel with a depth of over 105 mm and reserve a surrounding clearance of at least 25 mm.
4. Install the HMI away from cables and devices that generate 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.
5. The front panel of the HMI complies with the requirements of IP65. When the equipment is installed in an IP65-rated cabinet, the cabinet must retain its IP rating, which means liquid sprayed on the cabinet cannot get into it.

3.2 Mounting Dimensions



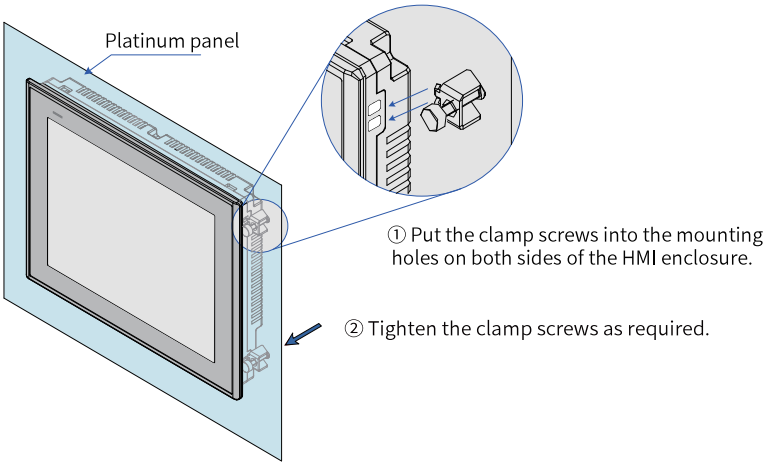
Model	Display size	Outline dimensions W x H x D (mm)	Through-hole mounting dimensions (W x H) (mm)	Recommended cut-out dimensions (mm)	
				W+2	H+2
IT7150P	15"	368.0 x 295.0 x 53.0	350.0 x 277.0	352.0	279.0

3.3 Installation Procedure

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

Procedure

1. Put the product into the prepared mounting cutout in the panel.
2. Insert the eight metal clips (delivered with the product) from the back of the panel into the eight mounting holes on both sides of the product housing (as shown in the figure ①).



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

CAUTION

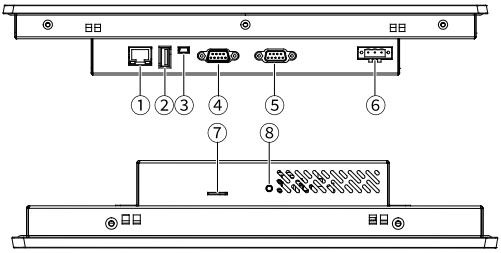
To comply with IP65 sealing specifications, ensure all the mounting screws delivered are used and the curvature of the panel is no greater than 0.010°.

WARNING

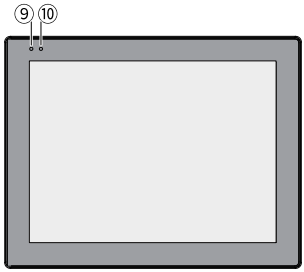
The mounting screw must be tightened with a proper tightening torque. If you have any question, contact the supplier.

4 Electrical Design Reference

4.1 Terminal Description



Side view



Front view

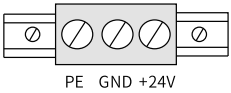
No.	Name	Function	No.	Name	Function
①	Ethernet port	Ethernet communication port (RJ45), used for accessing LAN-equipped PLCs and for PC access.	⑥	Power supply interface	24 VDC power input port for the HMI, with +24V and GND terminals. (delivered together with a power terminal used to connect to this power port)
②	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, keyboards and printers.	⑦	SD card slot	Connected to Micro SD, used for programming of the firmware core
③	Mini USB port	USB slave port, used for downloading and debugging user programs through a PC.	⑧	RESET key	Used to restore factory settings with a single click.

No.	Name	Function	No.	Name	Function
④	DB9 male connector	Communication port between HMI and PLC Equipped with COM2 serial communication port (RS232 interface)	⑨	Power supply indicator	Steady ON: Normal power supply. Flashing: Unstable power supply. OFF: No power.
⑤	DB9 female connector	Communication port between HMI and PLC Built-in COM1 and COM3 serial communication port COM1: RS485/ RS422 port (selectable) COM3: RS485 port	⑩	Network status indicator	Flashing: Communication in progress OFF: No communication

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 PE 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 VDC±20%. The power supply must have a capacity not less than that specified for this model.
- Isolate the DC power supply from the main AC power supply properly. Do not use the same power supply for the HMI and inductive load circuit (such as solenoid valve). Failure to comply may result in electromagnetic interference.
- Do not route the 24 V power supply cable or the communication cable in parallel with disturbing cables such as AC power supply cables and motor drive cables. Leave a clearance of at least 30 cm between them.
- It is recommended to use 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

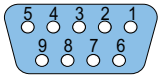
ensures the grounding conductor does not carry current from other circuits. Keep the grounding conductor as short as possible.

Connecting the communication port

This product provides two DB9 communication ports (DB9 female connector and DB9 male connector) that internally carry two to three independent 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.

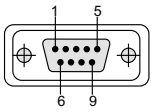
Connecting the DB9 female connector to external devices

The DB9 female connector includes two built-in serial communication ports COM1 and COM3. The pin assignment is as follows:

Pin No.	Signal			Pinout diagram for DB9 female connector
	COM1 [RS485] 2 Wires	COM1 [RS422]	COM3 [RS485]	
1	RS485-	RX- (Receive Negative)	-	 COM1 [RS485 2/4W] COM3 [RS485] DB9 female connector (Pin-type signal slot)
2	RS485+	RX+ (Receive Positive)	-	
3	-	TX- (Transmit -)	-	
4	-	TX+ (Transmit +)	-	
5	GND (Signal ground)			
6	-	-	RS485-	
7/8	-	-	-	
9	-	-	RS485+	

Communication cables and settings for the DB9 female connector

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



(DB9 male connector)

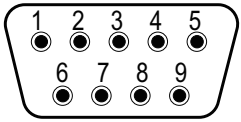



(8-pin DIN circular plug) 3 m cable

Cable connector and pin	DB9 male connector		8-Pin DIN Circular Plug	
Signal interface	RS422		RS422	
-	Pin No.	Signal	Pin No.	Signal
Wiring plug connection	1	RX-	4	TX-
	2	RX+	7	TX+
	3	TX-	1	RX-
	4	TX+	2	RX+
	5	GND	3	GND
Applicable model and port	IT7150P		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 as "RS422". Select the same communication protocol and data format for the HMI and PLC.			

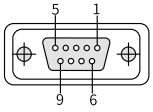
Connecting the DB9 male connector to external devices

The DB9 male connector features a built-in COM2 communication port, RS232 signal interface, for connecting to controllers with RS232 communication ports. The pin assignment is as follows:

Pin No.	Signal	Pinout diagram for DB9 male connector
	COM2 [RS-232]	
1	/	 COM2 RS232 DB9 male connector (Ejector-type signal slot)
2	RXD (Receive Data)	
3	TXD (Transmit Data)	
4	/	
5	GND (Signal ground)	
6 to 9	/	

Communication cables and settings for the DB9 male connector

Inovance offers a pre-terminated communication cable option designed for use with the DB9 male connector of this product (Model: H2U-232-CAB, Order No.: 15042148):



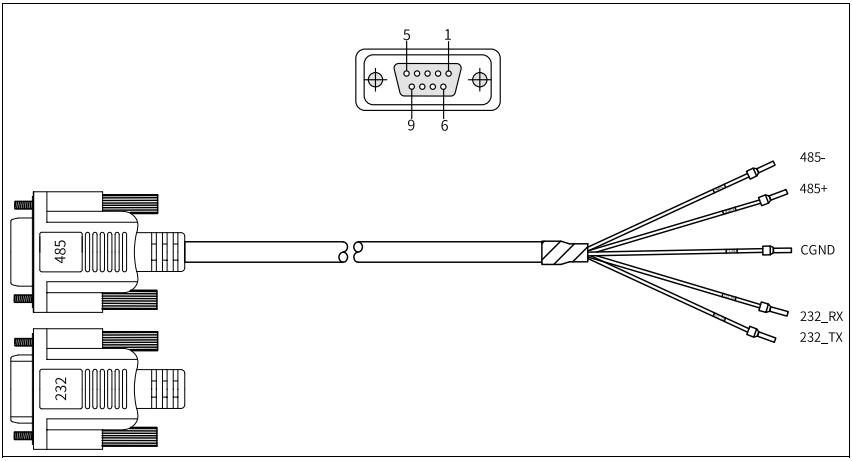
(DB9 female connector)




(8-pin DIN circular plug) 3 m cable

Cable connector and pin	DB9 female connector		8-Pin DIN Circular Plug	
Signal interface	RS232, built-in RS232-RS422 conversion circuit		RS422	
–	Pin No.	Signal	Pin No.	Signal
Wiring plug connection	1	-	4	TX-
	2	RXD	7	TX+
	3	TXD	1	RX-
	4	-	2	RX+
	5	GND	3	GND
Applicable model and port	IT7150P		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 as "RS232". Select the same communication protocol and data format for the HMI and PLC.			

Inovance offers a pre-terminated communication cable option designed for use with the DB9 male connector of this product (Model: IT7-Easy-CAB, Order No.: 15310234):



Cable connector and pin	Wiring mode	DB9 female connector	Tubular terminal	
		Pin No.	Conductor color	Tubular terminals (end labels)
Wiring plug connection	Twisted pair	7	Green	485-
		8	Yellow	485+
	Twisted pair	2	Red	232_RX
		3	Orange	232_TX
	Shorted	5	Black	CGND
		Housing	Grounding cable	-
Applicable model and port	-	IT7150P	Inovance Easy300/Easy500 RS232/RS485 communication port	
HMI user program settings when using this cable		In the HMI user project, set the COM2 port as "RS232". Select the same communication protocol and data format for the HMI and PLC.		

Precautions for communication connections

- Requirement: Use different communication cables to connect to different external devices. Do not route communication cables in parallel with AC power supply cables or route communication cables near electrical noise source. Do not connect/ disconnect communication cables during communication.
- To avoid communication problems, ensure that the communication cable 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.
- If a communication error occurs, the screen displays "Communication timeout" until normal communication is established.
- 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 FAT32 and exFAT file systems. The FAT32 file system supports up to 32 GB (max. 4 GB per file).

Connection to Ethernet

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

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

5 Programming Reference

Tools needed before programming the HMI: a PC installed with InoTouchPAD, a programming cable, and an IT7000 series HMI

Software source

For the latest version of the programming software InoTouchPAD independently developed by Inovance, contact your HMI supplier or visit http://en.inovance.cn/ to download the software.

Recommended PC configurations

1. CPU: Intel or AMD, 2.0 GHz or higher
2. Memory: 1 GB or above
3. Hard disk: At least 1 GB free space
4. Display: Color display with resolution of 1024 x 768 or above
5. Ethernet port or USB port: uploading/downloading programs
6. Operating system: Windows 7 or Windows 10

Programming cable (connecting to Inovance PLC)

The mini USB communication cable (optional) is used as the programming cable, which is available from Inovance with an ordering No. of 15041200.

6 Touchscreen Calibration

Troubleshooting

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

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

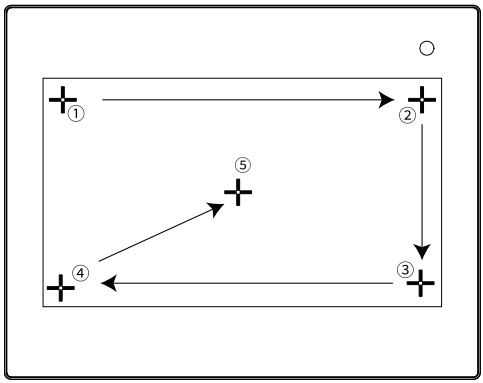
Calibration

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

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

2. Detailed steps for calibration
   a. After entering the calibration mode, "⊹" is shown in the upper left corner of the screen (as shown below).
   b. Use the stylus or your finger to tap the center of "⊹". After tapping, "⊹" moves in the direction indicated by the arrows below. Tap each point where "⊹" moves.
   c. After the 5-point calibration is completed, "⊹" will disappear. Tap the blank space of the screen to exit; if the calibration fails, "⊹" will return to the upper left corner of the screen and you must repeat the calibration.

The calibration process is shown below.



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.

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