



Color LCD Graphic Panel

iTP Series

PRODUCT MANUAL

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.

The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

Safety Considerations

- Observe all 'Safety Considerations' for safe and proper operation to avoid hazards.
- ⚠ symbol indicates caution due to special circumstances in which hazards may occur.

⚠ Warning Failure to follow instructions may result in serious injury or death.

- 01. Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss.** (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)
Failure to follow this instruction may result in personal injury, economic loss or fire.
- 02. Do not use or store the unit in the place where flammable/explosive/corrosive gas, high humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.**
Failure to follow this instruction may result in explosion or fire.
- 03. The equipment shall not be exposed from UV light when installed.**
- 04. Use the unit within the rated specifications.**
Failure to follow this instruction may result in fire or shortening the life cycle of the product.
- 05. Qualified personnel shall carry out installation, configuration and combination with the machine control system.**
If an unqualified person carry out installation, configuration and combination with the machine control system, it may cause malfunction or result in accidents.
- 06. Do not connect, repair, or inspect the unit while connected to a power source.**
Failure to follow this instruction may result in fire.
- 07. Check the power wiring and serial interface before wiring.**
Failure to follow this instruction may result in fire.
- 08. In preparation for product damage, communication error, or malfunction, install external limit switch, emergency stop switch, or other protection circuit.**
Failure to follow this instruction may result in personal injury, economic loss or fire.
- 09. Since Lithium battery is embedded in the product, do not disassemble or burn the unit.**
Failure to follow this instruction may result in fire.
- 10. Do not disassemble or modify the unit.**
Failure to follow this instruction may result in fire.
- 11. Please contact customer service center for battery replacement.**
Using an unauthentic battery may result in fire or product damage.

⚠ Caution Failure to follow instructions may result in injury or product damage.

- 01. Use dry cloth to clean the unit, and do not use water or organic solvent.**
Failure to follow this instruction may result in electric shock or fire.
- 02. When connecting the power input, use within AWG 20 to 12 cable and tighten the terminal screw with a tightening torque of 0.4 N m.**
Failure to follow this instruction may result in fire or malfunction due to contact failure.
- 03. Keep the product away from metal chip, dust, and wire residue which flow into the unit.**
Failure to follow this instruction may result in fire or product damage.
- 04. Do not touch the front LCD screen over 2 points at the same time.**
Failure to follow this instruction may result in malfunction.
- 05. Do not put any heavy object on the front screen.**
Failure to follow this instruction may result in malfunction due to deformation of LCD and touch panel.
- 06. For using a wireless device, keep a distance of more than 30 cm from the iTP.**
Failure to follow this instruction may result in malfunction.

Cautions during Use

- Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
- Power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
- Install a power switch or circuit breaker in the easily accessible place for supplying or disconnecting the power.
- Operate the product after supplying power to the product, input/output equipment, and load. If operate product before supplying power, it may result in output error or malfunction.
- Use a USB cable within 2 m.
- Keep away from high voltage lines or power lines to prevent inductive noise. Do not use near the equipment which generates strong magnetic force or high frequency noise.
- Make a required space around the unit for radiation of heat, and do not block ventilation openings.
- Do not push the touch panel with a hard and sharp object or push the panel with excessive force. It may result in fire or malfunction.
- When skin is smeared with liquid crystal from the broken LCD, rinse with running water for over 15 minutes. If it gets into the eyes, rinse eyes with running water for over 15 minutes and contact a doctor.
- When changing the battery, contact Autonics service center to change it. Using unauthentic battery may result in fire or product damage.
- Do not apply excessive pressure to the WiFi antenna. It may cause product damage.
- For explosion-proof support models, use verified explosion-proof cable gland or sealing fitting.
- Provisions shall be made to prevent the rated voltage from being exceeded by transient disturbances of more than 140%.
- The equipment shall only be installed in locations where there is a low risk of mechanical damage.
- This unit shall be used in the following environments.
 - Indoors (in the environment condition rated in 'Specifications')
 - Altitude max. 2,000 m
 - Pollution degree 2
 - Installation Overvoltage category II

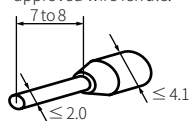
Cautions during Wiring

⚠ WARNING – Do NOT connect or disconnect when energized.
AVERTISSEMENT – RISQUE D'EXPLOSION. NE PAS BRANCHER NI DÉBRANCHER SOUS TENSION.

- Do not apply power before power line connection.
- Check power polarity. Check the permissible voltage range of the specification.
- When connecting power, supply power with the power supply which has inner protection circuit. If the power supply which does not have inner protection circuit is used, protection circuits such as fuse must be installed before using this.
- For power supply, use the wire of which is within AWG 20 to 12, and use the wire of which is over AWG 16 (1.2 mm²) for grounding.
- Tighten the terminal screw with 0.4 N m torque.
- Ground resistance should be less than 100 Ω and ground it separately.
- Use the cable of copper conductor in 60 °C temperature class.
- Diameter of cable for ground wiring connection should be over than 2 mm².

■ Wire Ferrule Spec.

- Unit: mm, Use the UL approved wire ferrule.



Ordering Information

This is only for reference, the actual product does not support all combinations.
For selecting the specified model, follow the Autonics website.

iTP - ①

① Screen size

084: 8.4 inch
104: 10.4 inch
121: 12.1 inch
150: 15.0 inch
GW: Gateway

Product Components

- Main unit
(+ built in battery + power connector)
- Instruction manual
- WiFi antenna
- Panel bracket (varied by models)
[8.4 inch model] × 4
[10.4 inch model] × 8
[12.1 / 15 inch model] × 10
- [Gateway model] DIN rail bracket × 2,
Bolt (M3×8) for DIN rail bracket × 4,
Bolt (M4×45) for wall mount × 4

Manuals and Software

For the detailed information and instructions, please refer to the manuals, and be sure to follow cautions written in the technical descriptions. Visit Autonics website to download manuals and software.

■ iTP Series User manual

It describes general information about system of iTP Series.

■ SCADAMaster

SCADAMaster is the software that monitors and controls the operation of processes, facilities, and equipment consisting of various PLCs and control devices, and acquires data. The acquired data is converted into a form such as trends and charts so that users can understand it, or is accumulated in a connected database and used for trend analysis, etc. SCADAMaster manual describes how to design user screen and how to use HMI function and connect with external devices such as PLC.

Specifications

Model	iTP-084-□	iTP-104-□	iTP-121-□	iTP-150-□
Screen size	8.4 inch	10.4 inch	12.1 inch	15.0 inch
LCD type	TFT Color LCD			
Resolution	800×600 pixel	1024×768 pixel		
Pixel pitch (W×H)	0.213 × 0.213 mm	0.206 × 0.206 mm	0.240 × 0.240 mm	0.297 × 0.297 mm
Display area	170.4 × 127.8 mm	211.2 × 158.4 mm	245.7 × 184.3 mm	304.1 × 228.1 mm
Display color	16,777,216 colors			
LCD view angle (top/bottom/left/right)	Within 80°/60°/80°/80° of each	Within 85°/85°/85°/85° of each	Within 89°/89°/89°/89° of each	Within 88°/88°/88°/88° of each
Back light	White LED			
Back light life cycle	≥ 50,000 hours ⁽³⁾			
Luminance adjustment	0 to 100 level (set via iTP system setting menu / SCADAMaster DS)			
Touch	Analog resistive film method			
Touch panel resolution	800 × 600 cell	1024 × 768 cell		
Touch panel life cycle	≥ 1 million times			
Buzzer	Magnetic buzzer (≥ 85 dB)			
Certification	CE   			
Protection structure	IP66 (front panel, IEC standard)			
Material	Case: Aluminum (die casting)			
Unit weight (packaged)	≈ 2.58 kg (≈ 3.065 kg)	≈ 3.18 kg (≈ 3.81 kg)	≈ 3.86 kg (≈ 4.6 kg)	≈ 5.24 kg (≈ 6.1 kg)

01) Based on 25 °C, time until brightness reaches 50% when continuously ON

Model	iTP-GW-□
Screen size	Not supported
Buzzer	Magnetic buzzer (≥ 85 dB)
Certification	CE UK RoHS REACH
Protection structure	IP20 (IEC standard)
Material	Case: Aluminum (die casting)
Unit weight (packaged)	≈ 1.22 kg (≈ 1.68 kg)

Serial interface (COM1/2)	RS-232C / RS-422 / RS-485 (set via SCADAMaster DS) D-sub 9-pin (Female) × 2 (bottom)
Comm. distance	RS-232C: < 15 m, RS-422/485: < 500 m
USB interface	Host: USB 2.0 (Type A) × 1 (front ⁰¹⁾), USB 3.0 (Type A) × 2 (side) Device: USB 2.0 (mini B) × 2 (front 1 ⁰¹⁾ + rear 1, NOT be used simultaneously)
USB HOST power supply	5VDC± 5%
USB HOST output current	500 mA
Comm. distance	Host: < 2 m, Device: < 2 m
Ethernet interface	IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T, RJ45 × 2 (bottom)
Comm. distance	< 100 m
Audio out	Line output, rated load: > 10 kΩ, 3.5 mm audio jack (side)
WiFi	IEEE 802.11 b/g/n, 2.4GHz, SMA Female × 1 (side)
Antenna	External Dipole Antenna (SMA Male), 2.308 dBi (Max Gain)
External memory	SD Card × 1 (rear), max. 256 GB (SDXC, SDHC) Supported file system: exFAT
Printer	HP Printer (USB Host, Ethernet)
Processor	Cortex-A53, Quad Core, 1.6GHz
Memory	System: DDR4 4GB, Storage: eMMC 16GB
Backup memory	eMMC (internal storage)
Backup type	Date/Time data, non-volatile device
Battery life cycle	5 years at 25°C
System menu language	Korean, English
Clock	RTC embedded (lithium battery (1/2 AA))

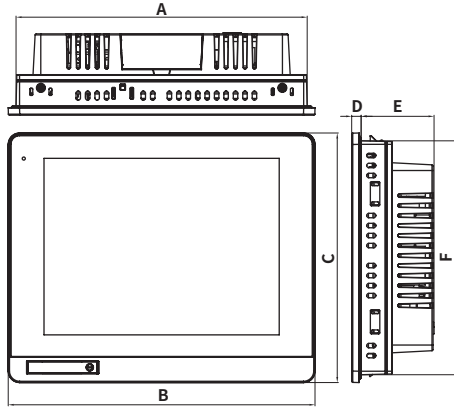
01) Gateway model does not have front interface.

Power supply	24 VDC≡				
Permissible voltage range	90 to 110% of power supply				
Allowable momentary outage time	≤ 10 ms				
Power consumption		iTP-084	iTP-104	iTP-121/ 150	iTP-GW
	Power consumption	≤ 20 W	≤ 25 W	≤ 30 W	≤ 15 W
	Excluding external supply power	≤ 15 W	≤ 20 W	≤ 25 W	≤ 10 W
	Back light OFF (standby mode)	≤ 10 W	≤ 12 W	≤ 15 W	-
	Back light ON (based on 20% brightness)	≤ 13 W	≤ 16 W	≤ 20 W	-
Inrush current	≤ 20 A				
Insulated resistance	Between the charging part and the case: ≥ 100 MΩ (500 VDC≡ megger)				
Surge voltage	Power line: ± 0.5 kV, Power - ground / Signal - ground line: ± 1 kV				
Ground	3rd grounding (≤ 100 Ω)				
Cooling method	Natural air cooling				
Noise immunity	The square wave noise (pulse width: 1μs) by the noise simulator ± 0.5 kV				
Static discharge endurance	Contact discharge ± 5 kV				
Dielectric strength	Between the charging part and the case: 500 VAC~ 50/60 Hz for 1 minute				
Vibration	0.75 double amplitude at frequency of 10 to 55 Hz in each X, Y, Z direction for 1 hour				
Vibration (malfunction)	0.5 double amplitude at frequency of 10 to 55 Hz in each X, Y, Z direction for 10 minutes				
Shock	147 m/s ² (approx. 15 G) in each X, Y, Z direction for 3 times				
Shock (malfunction)	100 m/s ² (approx. 10 G) in each X, Y, Z direction for 3 times				
Ambient temperature	-10 < Tamb < 50°C, Storage: -20 < Tamb < 60°C (a non freezing or condensation environment)				
Ambient humidity	35 to 85%RH, storage: 35 to 85%RH (a non freezing or condensation environment)				

Dimensions

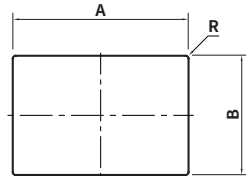
- Unit: mm, For the detailed dimensions of the product, follow the Autonics web site.

■ Display models



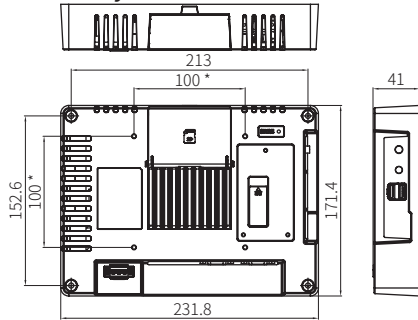
	A	B	C	D	E	F
8.4 inch	234.3	245.8	186.8	8.5	64.1	173.9
10.4 inch	262	275.5	224	8.5	64.7	210.5
12.1 inch	306	319.5	259.5	8.5	64.7	246
15.0 inch	357.4	369	300	8.5	64.7	288.4

- Panel cut-out



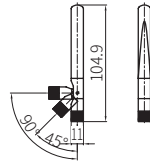
	A	B	R
8.4 inch	235.5 ^{+1.0} ₀	175 ^{+1.0} ₀	4-R6 ~ R9
10.4 inch	263 ^{+1.0} ₀	211.5 ^{+1.0} ₀	≤ 4-R3
12.1 inch	307 ^{+1.0} ₀	247 ^{+1.0} ₀	≤ 4-R3
15.0 inch	358.5 ^{+1.0} ₀	289.5 ^{+1.0} ₀	≤ 4-R3

■ Gateway model

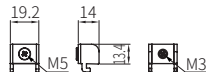


* VESA mount hole size

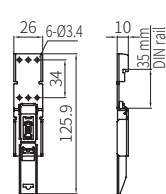
■ WiFi antenna



- Panel bracket

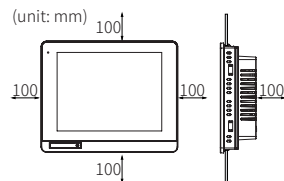


- DIN rail bracket



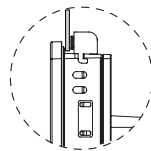
Installation

- When installing ITP on panel, make 100 mm of space from upper, lower, right, left side of the product on the panel and back side of panel. It is for preventing effect of electromagnetic waves and heat from other controllers.



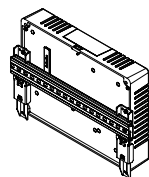
■ [Display model] Panel mount

- Set the product in panel. (panel thickness: ≤ 4 mm)
- Set panel brackets in the bracket mounting slots.
- Tighten the panel bracket with M3 Screw driver and tightening torque is 0.5 to 0.6 N m.



■ [Gateway model] DIN rail / Wall mount

- DIN rail mounting is available with the DIN rail bracket and the dedicated bolts.
- Gateway model provides VESA mount holes (100 × 100 mm). Wall mount is available with the dedicated bolts.



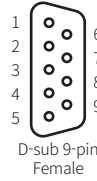
[DIN rail mounting]

Interface

- Refer to the part description for the each interface position.

■ Serial (COM1/2) connector

- Set communication method: RS-232C / RS-422 / RS-485 via SCADAMaster software. (screw tightening torque: 0.5 N m)

Port	Pin	Name	I/O	Function
 D-sub 9-pin Female	1	RDA (RD+)	Input	RS-422/485 data receive (+)
	2	RD (RXD)	Input	RS-232C data receive
	3	SD (TXD)	Output	RS-232C data transmission
	4	RDB (RD-)	Input	RS-422/485 data receive (-)
	5	SG	-	Signal Ground
	6	SDA (SD+)	Output	RS-422/485 data transmission (+)
	7	COM1 RTS	Output	RS-232C transmission request signal
	8	COM1 CTS	Input	RS-232C transmission available signal
	9	SDB (SD-)	Output	RS-422/485 data send (-)
		COM2 +5VDC	-	External supply power (200 mA)
		COM2 GND	-	External supply power ground

■ Communication specification

Max. connections	RS-232C: 1, RS-422/485: 32
Comm. distance	RS-232C: < 15 m, RS-422/485: < 500 m
Baud rate	2,400 / 4,800 / 9,600 / 19,200 / 38,400 / 57,600 / 115,200 bps
Data bit	7 / 8 bit
Parity bit	None / Odd / Even
Stop bit	1 bit / 2 bit

■ USB (HOST) port

- Connects ITP and the storage devices for move/copy data, update firmware, and connect external devices (barcode readers, printers, etc.).
- USB 1/2: USB3.0 (TYPE A), USB3: USB 2.0 (TYPE A)

Port	Pin	Function	Port	Pin	Function
 USB 3.0 (Type A)	1	5 VDC≡	 USB 2.0 (Type A)	1	5 VDC≡
	2	D-		2	D-
	3	D+		3	D+
	4	GND		4	GND
	5	StdA_SSRX-			
	6	StdA_SSRX+			
	7	GND_DRAIN			
	8	StdA_SSTX-			
	9	StdA_SSTX+			

■ USB (Device) port

- Connects ITP and PC to upload / download the project which is designed projects.
- Front / Rear ports cannot be used at the same time.

Port	Pin	Function
 USB 2.0 (Mini-B)	1	5 VDC≡
	2	D-
	3	D+
	4	-
	5	GND

■ Ethernet connector

- Connects ITP and PC to upload / download the project which is designed projects.
- Communicates with the PLC which is applied to Ethernet protocol.
- For more information about PLC connection, refer to the SCADAMaster user manual.

Status indicator

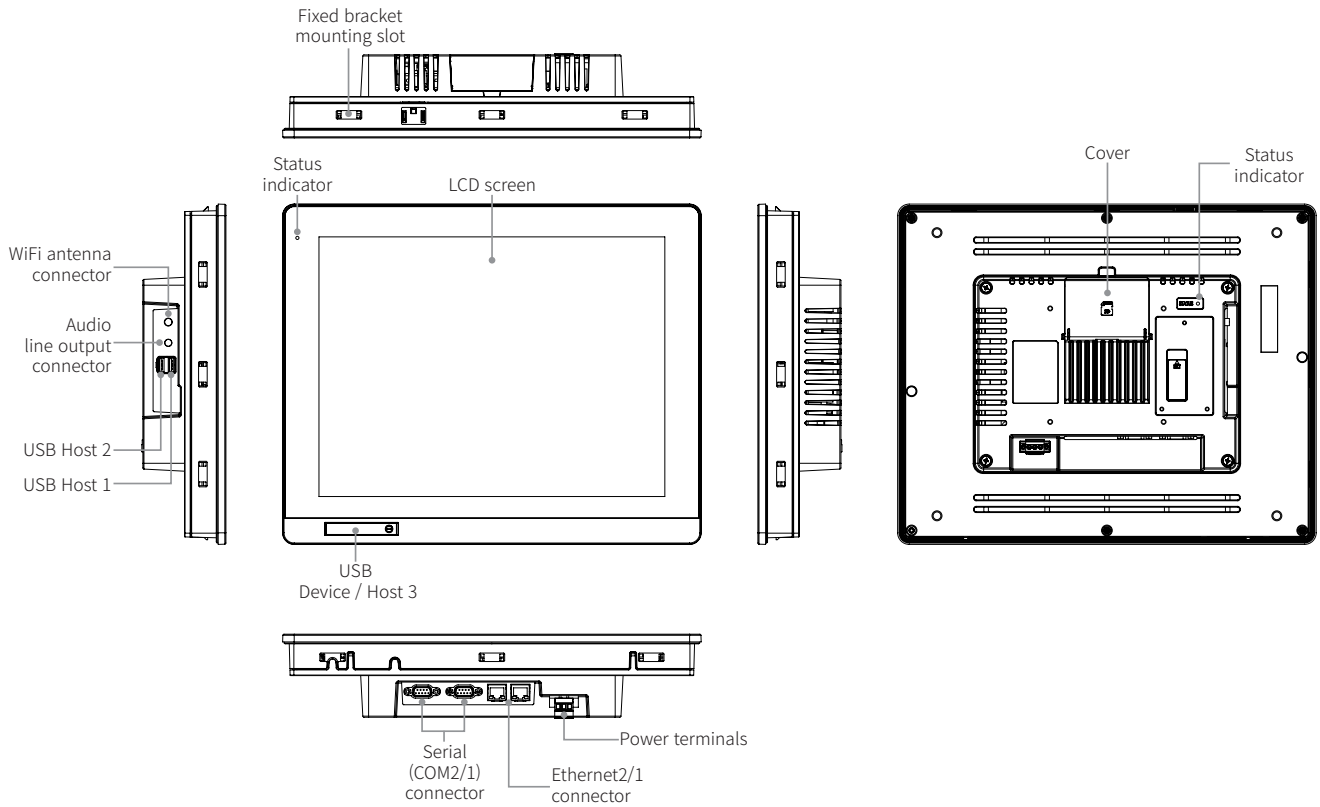
- Front / Rear status indicators operate as same.

Status	Status indicator
Power ON	Green turns ON
Normal booting	Green turns ON
Failure to booting	Red turns ON
Firmware update	Yellow flashes
Factory reset in progress	Green - Yellow flash alternately
Failure to firmware update / factory reset	Red flashes

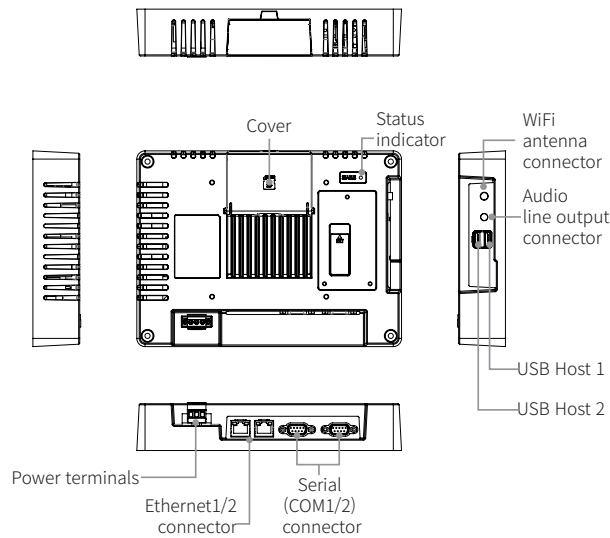
Part Description

■ Display models

- Based on iTP-150 model.



■ Gateway model



■ Inside cover

