

PANEL-PC, Fanless
Atom™ x6425E, 7" WVGA, 12 - 24VDC input
PT-M07WA-310 Series
PANEL-PC, Fanless
Atom™ x6425E, 10.4" XGA, 12 - 24VDC input
PT-F10SA-320 Series
PANEL-PC, Fanless
Atom™ x6425E, 12.1" XGA, 12 - 24VDC input
PT-F12SA-320 Series



* The photo is PT-F10SA-120.

Features

Contributing to running cost reduction and energy efficiency

Adopting the low-power platform of Intel® Atom™ Processor x6425E achieves lower power consumption while still ensuring sufficient performance.

Fanless design that reduces maintenance and inspection work

This product employs a CFast card for storage and the spindle-less design eliminates CPU fan. It relieves the concern about dust or foreign matter to get into the product. Furthermore, using the parts that degrade over time is minimized to reduce maintenance load.

Remote power management function to reduce operation tasks

It supports system start-up externally via network (Wake On LAN) and modem (Power On by Ring). It encourages significant labor saving in operation.

Major types of peripherals are supported with rich interfaces

It has a variety of extended interface such as DisplayPort x 1, LAN x 2, USB3.2 Gen1 x 4, USB2.0 x 2, serial x 2*.

It has two slot-in type of CFast card slots, providing the ability to separate data from the operating system, as well as the convenience of being able to use one slot for system startup and the other for maintenance or for taking home system logs or collected data.

* The 7-inch model has one serial port.

"Power failure protection system" features power-off without OS shutdown

Equipped with the "Power failure protection system" function that protects data and prohibits writing to storage in the event of power failure. Along with the lockdown (disk writing suppression) function of Windows IoT Enterprise, power can be safely turned off without a shutdown process. Moreover, file system damage or data damage caused by sudden power failure can be avoided.

**Power failure protection system" function is supported only by CFast mounted on the OS pre-installed type.

CONTEC-customized BIOS provides useful utility

Useful utility of BIOS *1 customized by CONTEC is provided. The "CONTEC Fast Boot" achieves Windows startup in less than half the normal time.*2

The "Disk Copy" function provides secure disk backup at the BIOS level, and also supports backup in file format or compressed file format. We also offer the CONTEC tools "BIOS update tool" for updating BIOS.*3

*1 For details, see each setting in the [BIOS Setup] section.

This product is a fan-less PANEL computer that is equipped with an Intel® Atom™ processor x6425E 2GHz. Along with the compact 7-inch LCD model, the 10.4-inch and the 12.1-inch LCD models are also offered to suit the user's needs.

Various extendable interfaces such as DisplayPort, LAN, USB3.2 Gen1, USB2.0, and Serial are provided. It employs a CFast card for storage and is fan-less to ensure a totally spindle-less design that simplifies maintenance.

This product's safety has been certified to meet the UL standard for Europe and the U.S.

Embedded-type CPU has been adopted. The use of readily available parts ensures the product to be applied easily. In addition, CONTEC-customized BIOS allows support to be provided at the BIOS level.

It is exchangeable in the series of PT-MxxWA-120/PT-FxxSA-120 to run with the existing system.

* Specifications, color and design of the products are subject to change without notice.

* The contents in this document are subject to change without notice.

* Visit the CONTEC website to check the latest details in the document.

* The information in the data sheets is as of May, 2023.

*2 It is the actual measured value when Windows 10 and HORM function are enabled at the factory. Time may vary depending on configuration. Note that TXE, TPM, Network Stack, and SMART Self Test are not supported when the CONTEC Fast Boot is enabled.

*3 Contact your retailer for more information.

High-security design contributes to a highly reliable system

The latest security functions such as TPM2.0 and Secure Boot, as well as CONTEC's original functions including the USB Boot Protect are provided. This product is designed with the high security required for industrial applications in mind.

Supported OS

- Windows 10 IoT Enterprise 2021 LTSC 64bit (Japanese / English / Chinese / Korean)

Included Items

Product...1
The Attachment Fittings...4 *1
Power Connector...1
CFast Card Removal Prevention Fitting...1*2
Product Guide...1

*1 Only packed with the PT-M07WA.

All necessary materials to install the PT-F10SA [10.4inch model] and PT-F12SA [12.1inch model] need to be provided yourself. For details, refer to Hardware Setup (page 33).

*2 Preset upon shipment.

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Specifications

Function specification

Item	Description
Frame type	PT-M07WA : Bezel PT-F10SA, PT-F12SA : Open frame
Assembly type	Panel mounted
CPU	Intel Atom® Processor x6425E 2GHz
BIOS	BIOS (mfd. by AMI)
Memory	8GB (260-pin SO-DIMM x 1), PC4-25600 DDR4 3200
Graphics Controller	Intel® Core™ UHD Graphics (CPU integrated)
LCD type	LCD PT-M07WA : 7-inch TFT color LCD, WVGA (800 x 480) PT-F10SA : 10.4-inch TFT color LCD, XGA (1,024 x 768) PT-F12SA : 12.1-inch TFT color LCD, XGA (1,024 x 768)
	Backlight LED method, The ON/OFF can be controlled by software command.
Touch-screen *1	Resolution PT-M07WA : 4,096 x 4,096 (emulated in 800 x 480 mode) PT-F10SA, PT-F12SA : 4,096 x 4,096 (emulated in 1,024 x 768 mode)
	Detection method Four-wire resistive film analog method
	Connection Internal serial port
System resolution	DisplayPort 1.4 1 port 800 x 600, 1,024 x 768, 1,920 x 1,080, 3,840 x 2,160 (16,770,000 colors)
Audio	HD Audio compliant, LINE OUT x 1 LINE OUT : 3.5p stereo minijack Full-scale output level 1.2Vrms (Typ.)
CFast Card slot	2 slots, CFast CARD Type I, bootable -J2000 : - -J2320 : CFast Card built-in. (TCL, 128GB, 1 partition) *2
LAN	RJ-45 connector x 2 Intel I210 controller 1000BASE-T/100BASE-TX/10BASE-T, supports Wake On LAN
USB	USB 3.2 Gen1-compliant x 4 port (Type-A connector) USB 2.0-compliant x 2 ports (Type-A connector)
Serial	PT-M07WA : RS-232C 1 port (9-pin D-SUB connector [male]) PT-F10SA, PT-F12SA : RS-232C 2 ports (9-pin D-SUB connector [male]) Baud rate: 50 - 115,200bps
Security (TPM)	TCG TPM2.0
Hardware monitoring	Monitoring CPU temperature, board temperature, power voltage
Watchdog timer (WDT)	Software programmable, 255 level (1sec - 255sec) Time up allows reset shutdown.
Real Time Clock	Lithium backup battery life: 10 years or longer The real-time clock is accurate within ±3 minutes (at 25°C) per month (CPU built-in RTC).
Power Management	Power management setup via BIOS Power On by Ring/Wake On LAN Supports ACPI Power management
Power supply	Rated input voltage 12 - 24VDC *3
	Input voltage range 10.8 - 31.2VDC
	Current consumption PT-M07WA : 12V 4.7A, 24V 2.5A(Max) PT-F10SA : 12V 5.2A, 24V 2.7A(Max) PT-F12SA : 12V 5.6A, 24V 2.8A(Max)
	External device power supply capacity CFast card slot: +3.3V 1.0A (500mA x 2 per slot) USB3.2 Gen1 I/F: +5V 3.6A (900mA x 4 per port) USB2.0 I/F: +5V 1.0A (500mA x 2 per port)
Drip-proofing and dust-proofing	PT-M07WA : IP65 standard (Front panel) PT-F10SA/PT-F12SA : -
Cutting dimensions of the screen (mm)	PT-M07WA : 197(W) x 141(H) PT-F10SA : 225.2(W) x 176.5(H) PT-F12SA : 265.5(W) x 206(H)
Physical dimensions (mm)	PT-M07WA : 214(W) x 55(D) x 158(H) PT-F10SA : 233.5(W) x 48.4(D) x 220(H) PT-F12SA : 302(W) x 48.4(D) x 260(H) (Not including the attachment fittings or protrusions)
Weight	PT-M07WA : 1.7kg (approx.) PT-F10SA : 2.0kg (approx.) PT-F12SA : 2.5kg (approx.) (Not including the attachment fittings)

*1 Linearity: ±2.0% max. The operating life is 10 million continuous keying (with touch screen inputs).

*2 The capacity of CFast is a value when 1GB is calculated by 1 billion bytes. The capacity that can be recognized from OS might be displayed fewer than an actual value.

*3 Use a power cable shorter than 3m.

Environment Requirements

Item	Description
Operating Temperature	0 - 55°C
Storage Temperature	-10 - +60°C
Humidity	5 - 85%RH (No condensation)
Floating dust particles	Not to be excessive
Corrosive gases	None
Line-noise resistance	Line noise AC Line /±2kV *4, Signal line /±1kV (IEC61000-4-4 Level 3, EN61000-4-4 Level 3)
	Static electricity resistance Contact discharge /±4kV (IEC61000-4-2 Level 2, EN61000-4-2 Level 2) Air discharge /±8kV (IEC61000-4-2 Level 3, EN61000-4-2 Level 3)
Vibration resistance (The product alone)	Sweep resistance 10 - 57Hz /semi-amplitude vibration 0.075mm, 57 - 150Hz/1.0G 40minutes each in X, Y, and Z directions (IIS C60068-2-6-compliant, IEC60068-2-6-compliant)
Impact resistance	10G half-sine shock for 11ms in X, Y, and Z directions (IIS C 60068-2-27-compliant, IEC 60068-2-27-compliant)
Grounding	Class D grounding, SG-FG / continuity
Standard	VCCI Class A, CE Marking (EMC Directive Class A, RoHS Directive), UKCA, FCC Class A, UL/C-UL (UL61010-1)

*4 It is when the product is used with AC adapter PWA-65AWD1.

Display Optical Specifications

PT-M07WA-310

Parameter	Condition	Min.	Typ.
Visual angle (vertical)	Φ = 180°	80deg	89deg
	Φ = 0°	80deg	89deg
Visual angle (horizontal)	Φ = +90°	80deg	89deg
	Φ = -90°	80deg	89deg
Surface brightness (at center)	Display in white	400cd/m ²	500cd/m ²

PT-F10SA-320

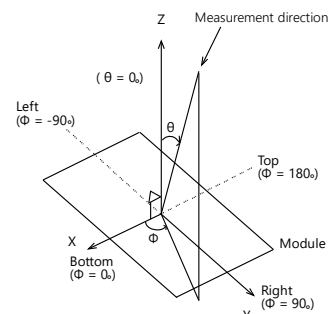
Parameter	Condition	Min.	Typ.
Visual angle (vertical)	Φ = 180°	80deg	88deg
	Φ = 0°	80deg	88deg
Visual angle (horizontal)	Φ = +90°	80deg	88deg
	Φ = -90°	80deg	88deg
Surface brightness (at center)	Display in white	400cd/m ²	500cd/m ²

PT-F12SA-320

Parameter	Condition	Min.	Typ.
Visual angle (vertical)	Φ = 180°	85deg	89deg
	Φ = 0°	85deg	89deg
Visual angle (horizontal)	Φ = +90°	85deg	89deg
	Φ = -90°	85deg	89deg
Surface brightness (at center)	Display in white	480cd/m ²	600cd/m ²

* "Surface brightness" represents a numerical value per display. The expected brightness through a touch screen is about 80% lower than the above value.

$$\text{Contrast ratio (CR)} = \frac{\text{Brightness at screen center with white displayed}}{\text{Brightness at screen center with black displayed}}$$



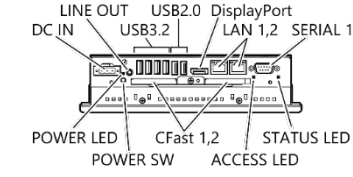
Component Name

PT-M07WA-310 [7inch model]

Front

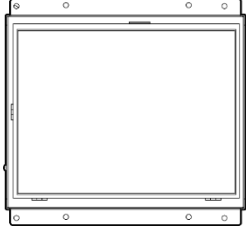


Bottom of the display

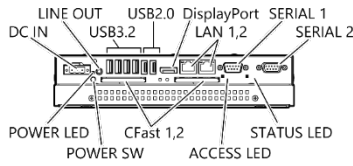


PT-F10SA-320 [10.4inch model]

Front

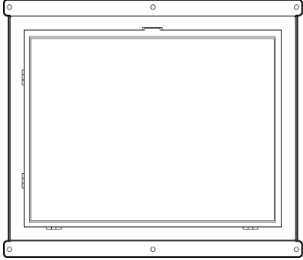


Bottom of the display

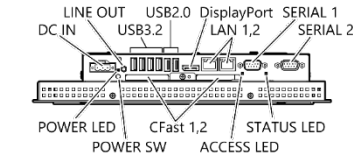


PT-F12SA-320 [12.1inch model]

Front



Bottom of the display

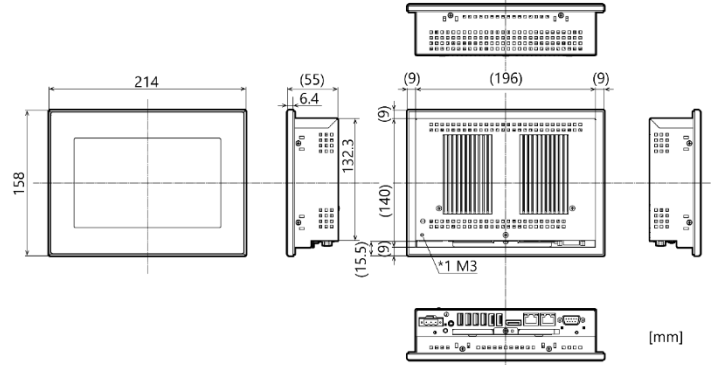


Name	Function
Bottom of the display	
POWER SW	PC Power switch
POWER LED	Power ON display LED
ACCESS LED	SATA access display LED
STATUS LED	Status LED
DC-IN	DC power input
LINE OUT	LINE OUT (3.5Φ PHONE JACK)
LAN 1	Ethernet 1000BASE-T/100BASE-TX/10BASE-T RJ-45 connector
LAN 2	Ethernet 1000BASE-T/100BASE-TX/10BASE-T RJ-45 connector
USB3.2 Gen1	USB 3.2 Gen1 port connector x 4
USB2.0	USB 2.0 port connector x 2
SERIAL 1	Serial port A connector (9-pin D-SUB, male)
SERIAL 2	Serial port B connector (9-pin D-SUB, male) *1
DisplayPort	Display (20-pin, female)
CFast 1	CFast card slot (SATA connection)
CFast 2	CFast card slot (SATA connection)

*1 10.4-inch and 12.1-inch models only.

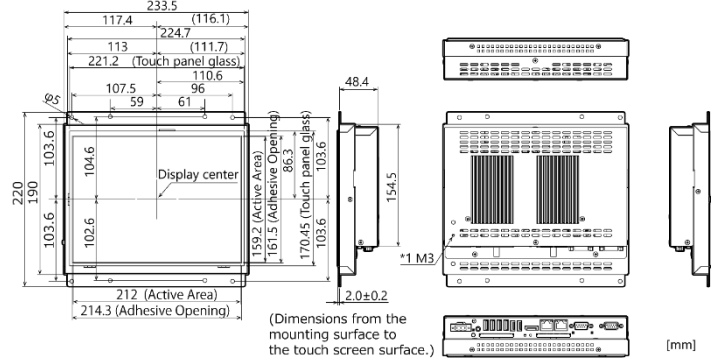
Physical Dimensions

PT-M07WA-310 [7inch model]



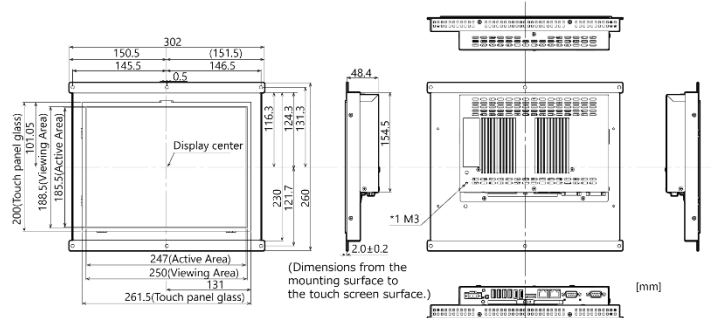
*1 Keep the penetration length from the housing surface to the end of the M3 screw 9mm or less. Using longer screws can damage the internal components.

PT-F10SA-320 [10.4inch model]



*1 Keep the penetration length from the housing surface to the end of the M3 screw 9mm or less. Using longer screws can damage the internal components.

PT-F12SA-320 [12.1inch model]



*1 Keep the penetration length from the housing surface to the end of the M3 screw 9mm or less. Using longer screws can damage the internal components.

Product Lineup

Model	LCD size / Resolution	Memory	Storage	OS
PT-M07WA-310-J2000	7-inch WVGA (800 x 480)	8GB	None	None
PT-M07WA-310-J2320			128GB	Windows 10 IoT Enterprise 2021 LTSC 64bit (Japanese / English / Chinese / Korean)
PT-F10SA-320-J2000	10.4-inch XGA (1,024 x 768)	8GB	None	None
PT-F10SA-320-J2320			128GB	Windows 10 IoT Enterprise 2021 LTSC 64bit (Japanese / English / Chinese / Korean)
PT-F12SA-320-J2000	12.1-inch XGA (1,024 x 768)	8GB	None	None
PT-F12SA-320-J2320			128GB	Windows 10 IoT Enterprise 2021 LTSC 64bit (Japanese / English / Chinese / Korean)