

PANEL-PC, Fanless
Atom E3940, 12.1" XGA, 12 - 24VDC input
PT-M12SA-210 Series
Atom E3940, 15" XGA, 12 - 24VDC input
PT-M15SA-210 Series



* The photos show the PT-M12SA-210 Series.

Features

- Contributing to reduction of running cost and promotion of energy efficiency
With the low power consumption platform Intel Atom® processor E3940, this product achieves low power consumption while ensuring adequate performance.
- "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 10 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.
- 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.
- CONTEC-customized BIOS provides useful utility
Useful utility of BIOS*1 customized by CONTEC is provided. The "CONTEC Fast Boot" achieves Windows startup in 10 seconds.*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
- Fan-less design reduces maintenance work
The product is fan-less to ensure a totally spindle-less design that simplifies maintenance, relieving the concern about dust or foreign matter to get into the product. Moreover, along with minimized use of degrading parts greatly reduce maintenance work.
- VESA standard support
Conforming to the VESA standard (100×100), the product can be set on the various types of arms or stands.
- Adopting a 5-wire resistive film touch-screen holds high durability
It has a 5-wire resistive film touch-screen that maintains high durability. The operating life is long-lasting
of 36 million times.*4

*1 For details, see each setting in the [BIOS Setup] section.
*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.
*4 With Load 250g, Speed twice/second, by machine keying

This product is a fan-less PANEL computer with an Intel Atom processor E3940 (1.6GHz). Addition to DisplayPort, a wide variety of interfaces including USB3.2 Gen1 (USB3.0) x 4, LAN x 2 are provided.

It employs a M.2 card for storage and is fan-less to ensure a totally spindleless design that simplifies maintenance.

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.

- * 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.
- * Visit the CONTEC website to check the latest OS.
- * The information in the data sheets is as of September 2023.

Specification

Functional Specifications

Item	Description	
	PT-M12SA-210	PT-M15SA-210
Assembly type	Panel mounted	
CPU	Intel Atom® x5-E3940 Processor 1.6GHz	
BIOS	BIOS (mfd. by AMI)	
Memory	8GB (204-pin SO-DIMM), PC3L-12800 (DDR3L-1600)	
Graphic controller	Intel® HD Graphics 500 (CPU integrated)	
LCD type	LCD type	12.1-inch TFT color LCD, XGA (1024 x 768) 15-inch TFT color LCD, XGA (1024 x 768)
	Backlight	LED method, The ON/OFF software can control.
Touch screen	Resolution	4096 x 4096 (emulated in 1024 x 768 mode)
	Detection method	Five-wire resistive film analog method
	Connection	Internal serial port
External display output	DisplayPort	800x600, 1,024x768, 1,152x864, 1,280x600, 1,280x720, 1,280x768, 1,280x800, 1,280x960, 1,280x1,024, 1,360x768, 1,366x768, 1,400x1,050, 1,440x900, 1,600x900, 1,600x1,200, 1,680x1,050, 1,792x1,344, 1,856x1,392, 1,920x1,080, 1,920x1,200, 1,920x1,440, 1,920x2,160, 2,048x1,152, 2,048x1,536, 2,560x1,080, 2,560x1,440, 2,560x1,600, 2,560x1,920, 2,560x2,048, 3,840x2,160 (16,770,000 colors)
	Analog RGB	800x600, 1,024x768, 1,152x864, 1,280x600, 1,280x720, 1,280x768, 1,280x800, 1,280x960, 1,280x1,024, 1,360x768, 1,366x768, 1,400x1,050, 1,440x900, 1,600x900, 1,600x1,200, 1,680x1,050, 1,920x1,080, 1,920x1,200 (16,770,000 colors)
External display output	DisplayPort x 1, Analog RGB x1	
Audio	HD Audio compliant, LINE OUT x 1, MIC IN x 1 3.5p stereo minijack, Full-scale output level 1.1Vrms (Typ.)	
LAN	Intel I210IT controller 1000BASE-T/100BASE-TX/10BASE-T RJ-45 connector x 2 (supports Wake On LAN)	
USB	Type-A controller USB 3.2 Gen1(USB3.0) compliant x 4ports USB 2.0 compliant x 2ports	
Serial	9pin D-SUB connector [Male] RS-232C/422/485 x 1port, RS-232C x 1port Baud rate: 50 - 115,200bps	
Storage	1 slot, M.2 2242, SATAIII, M.2 card 64GB(MLC) on-board *1 1 slot, CFast CARD Type I	
Security (TPM)	TCG TPM2.0	
Hardware monitoring	Monitoring CPU temperature, board temperature, power voltage	
Watchdog timer	Software programmable, 255 level (1sec - 255sec) Time up allows reset	
RTC/CMOS	Lithium backup battery life: 10 years or more*2 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 Supports ACPI Power management	
Rated input voltage	12 - 24VDC	
Range of input voltage	10.8 - 31.2V	
Power consumption (Max)	12V 4.8A	12V 4.3A

Item	Description	
	PT-M12SA-210	PT-M15SA-210
	24V 2.5A	24V 2.2A
External device power supply capacity	CFast Card slot : +3.3V 0.5A (500mA x 1) USB3.2 Gen1 I/F : +5V : 3.6A(900mA per port x 4) USB 2.0 I/F : +5V 1.0A(500mA per port x 2)	
Waterproofing and dust-proofing	Front panel IP65 standard	
Panel cut dimensions (mm)	303(W) x 243(H)	358(W) x 289(H)
Physical dimensions (mm)	316(W) x 256(H) x 43.8(D) (Not including protrusions)	373(W) x 304(H) x 47.4(D) (Not including protrusions)
Weight	3.9kg approx.	5.0kg approx.

- *1 It is already built into the product. The capacity that can be recognized from OS might be displayed fewer than an actual value.
- *2 It is when the power is disconnected for 16 hours a day.

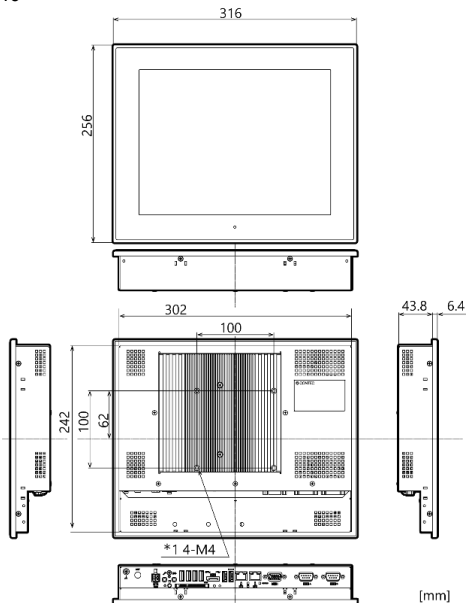
Environment Requirements

Item	Description
Operating ambient temperature *1	At maximum load: -20 - 55°C (no airflow) -20 - 65°C (airflow 0.7m/s) During load derating *2: -20 - 60°C (no airflow) -20 - 70°C (airflow 0.7m/s)
Non-operating ambient temperature	-20 - +70°C
Humidity	10 - 90%RH (No condensation, Maximum wet-bulb temperature at 39°C or less)
Floating dust particles	Not to be excessive
Corrosive gases	None
Line-noise resistance	Line noise AC line / ±2kV, Signal line / ±1kV *3 (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) Atmospheric discharge : ±8kV (IEC61000-4-2 Level 3, EN61000-4-2 Level 3)
Vibration resistance	Sweep resistance 10 - 57Hz/semi-amplitude vibration 0.075mm, 57 - 150Hz /1.0G, 40minutes each in X, Y, and Z directions (JIS C60068-2-6-compliant, IEC60068-2-6-compliant)
Shock resistance	10G half-sine shock for 11ms in X, Y, and Z directions (JIS C 60068-2-27-compliant, IEC 60068-2-27-compliant)
Grounding	Class D grounding
Standard	VCCI Class A, FCC Class A CE Marking (EMC Directive Class A, RoHS Directive), UKCA

- *1 When using audio, use and store in an environment of 0°C or higher.
- *2 CPU load: 50%, USB current load: 50%.
- *3 It is when the product is used with AC adapter PWA-65AWD1 or PWA-90AWD1.

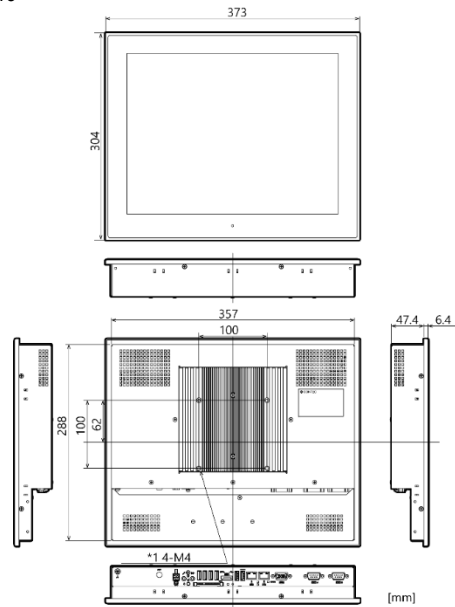
Physical Dimensions

PT-M12SA-210



*1 The maximum length that a screw can penetrate from the surface of the enclosure is 8 mm.

PT-M15SA-210



*1 The maximum length that a screw can penetrate from the surface of the enclosure is 8 mm.

Supported OS

- Windows 10 IoT Enterprise 2019 LTSC 64bit (Japanese, English, Chinese, Korean)

Included Items

Name	PT-M12SA-210-J104xxx	PT-M12SA-210-J104xxxxxx	PT-M15SA-210-J104xxx	PT-M15SA-210-J104xxxxxx
	[Base Model]	[OS Pre-install Model]	[Base Model]	[OS Pre-install Model]
	Pcs.	Pcs.	Pcs.	Pcs.
The Main Body	1	1	1	1
Waterproof packing	1	1	1	1
The attachment fittings	8	8	10	10
CFast Removal Prevention Fitting	1	1	1	1
Power Supply Connector Complete Set	Power Connector	1	1	1
	Contact	4	4	4
Product Guide	1	1	1	1

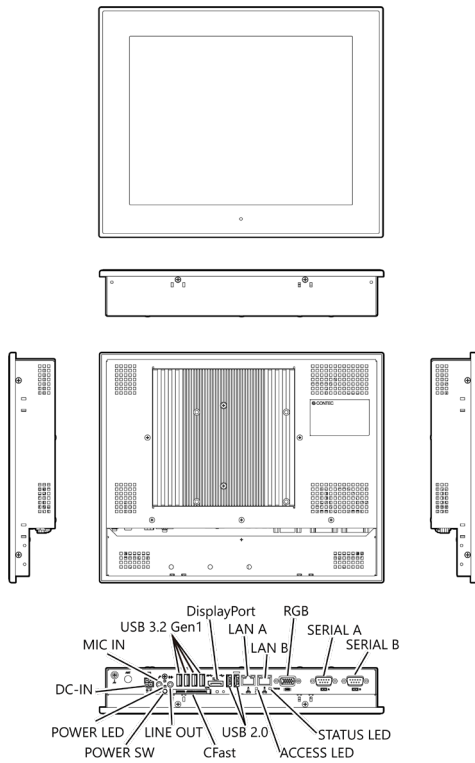
Optional Products

Item	Model	Description
AC adapter	PWA-90AWD1	Switching AC adapter 12VDC 7.5A
	PWA-65AWD1	Switching AC adapter 12V 5.417A
Storage	CFS-4GB-A	4GB SATA CFast card (SLC)
	CFS-8GB-A	8GB SATA CFast card (SLC)
	CFS-16GB-A	16GB SATA CFast card (SLC)
	CFS-32GBM2-A	32GB SATA CFast card (MLC)
	CFS-16GBQ-A	16GB SATA CFast card (Q-MLC)
	CFS-32GBQ-B	32GB SATA CFast card (Q-MLC) (Wide temperature range specification)
Screen protective sheets	IPC-CV12S-AV	12.1-inch Anti-bacterial/Anti-viral Screen Protective Sheet (3 Piece Set)
	IPC-CV15S-AV	15-inch Anti-bacterial/Anti-viral Screen Protective Sheet (3 Piece Set)

Caution

- If a product other than our option is used, the normal operation may be impaired or the functions may be limited.
- Always check the visibility and operability of the protective sheet before using it.
- * Check the CONTEC's Web site for the latest information on these options.

Component Name



Product Lineup

Model	LCD Size	Memory	Storage	OS
PT-M12SA-210-J104M05	12.1"	8GB	64GB	None
PT-M12SA-210-J104M05W19				Windows 10 IoT Enterprise 2019 LTSC 64bit (Japanese / English / Chinese / Korean)
PT-M15SA-210-J104M05	15"	8GB	64GB	None
PT-M15SA-210-J104M05W19				Windows 10 IoT Enterprise 2019 LTSC 64bit (Japanese / English / Chinese / Korean)

Component Function

Name	Function
DC-IN	DC power connector
POWER LED	Power ON display LED
ACCESS LED	SATA device access display LED
STATUS LED	Status LED
POWER SW	Power switch
MIC IN	Mike in (3.5Φ PHONE JACK)
LINE OUT	Line out (3.5Φ PHONE JACK)
USB 3.2 Gen1	USB 3.2 Gen1 port connector x4
USB 2.0	USB 2.0 port connector x2
CFast	CFast card slot (SATA connection)
DisplayPort	Display (20-pin female)
LAN A	Ethernet 1000BASE-T/100BASE-TX/10BASE-T, RJ-45 connector
LAN B	Ethernet 1000BASE-T/100BASE-TX/10BASE-T, RJ-45 connector
RGB	Display (15-pin D-SUB, female)
SERIAL A	Serial port A connector (9-pin D-SUB, male) (RS-232C/422/485)
SERIAL B	Serial port B connector (9-pin D-SUB, male) (RS-232C)

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