

DATENBLATT

PT-956S-Serie

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PANEL-PC
Atom E3845, CFast, 12.1/15 inch
PT-956S Series



- * 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.
- * Visit the CONTEC website to check the latest OS.
- * The information in the data sheets is as of February, 2018.

Model

- Base model with Intel Atom Processor E3845 1.91GHz, Panel Mount type
PT-956SLX-DC700000 (12.1 inch touchpanel, LCD (XGA), Memory 4GB, without OS, without CFast)
- OS-installed model with Intel Atom Processor E3845 1.91GHz, Panel Mount type
PT-956SHX-DC700000 (15 inch touchpanel, LCD (XGA), Memory 4GB, without OS, without CFast)
- OS-installed model with Intel Atom Processor E3845 1.91GHz, Panel Mount type
PT-956SLX-DC731314 (12.1 inch touchpanel, LCD (XGA), Memory 4GB, Windows Embedded Standard 7 RUNTIME P 32bit (Japanese, English, Chinese, Korean), CFast card (SLC) 16GB)
- OS-installed model with Intel Atom Processor E3845 1.91GHz, Panel Mount type
PT-956SLX-DC781724 (12.1 inch touchpanel, LCD (XGA), Memory 4GB, Windows 10 IoT Enterprise LTSB 2016 64bit (Japanese, English, Chinese, Korean), CFast card (Q-MLC) 32GB)
- OS-installed model with Intel Atom Processor E3845 1.91GHz, Panel Mount type
PT-956SHX-DC731314 (15 inch touchpanel, LCD (XGA), Memory 4GB, Windows Embedded Standard 7 RUNTIME P 32bit (Japanese, English, Chinese, Korean), CFast card (SLC) 16GB)
- OS-installed model with Intel Atom Processor E3845 1.91GHz, Panel Mount type
PT-956SHX-DC781724 (15 inch touchpanel, LCD (XGA), Memory 4GB, Windows 10 IoT Enterprise LTSB 2016 64bit (Japanese, English, Chinese, Korean), CFast card (Q-MLC) 32GB)

Features

- Multilingual OS is adopted for globalization support
Windows Embedded Standard 7 RUNTIME P and Windows 10 IoT Enterprise LTSB that support multiple languages of Japanese/English/Chinese/Korean are adopted as the OS installation model. As the language on the screen can be switched, this feature is ideal for such as manufacturing sites where multilingualization is inevitable.
- Contributing to reduction of running cost and promotion of energy efficiency
With the low power consumption platform Intel® Atom™ processor E3845, this product achieves low power consumption while ensuring adequate performance.

This product is a fanless computer for embedded applications. It features an Intel Atom processor E3845 1.91GHz chipset. Thanks to a quad-core CPU, simultaneous stable high-speed processing for four applications is possible with four cores. This CPU also allows for computing power almost four times that of conventional products in addition to three times the graphics performance, a significant improvement. Moreover, power consumption has been significantly reduced, resulting in nearly double the power efficiency compared with the previous generation's architecture. In addition, adopting a 5-wire resistive film touch-screen holds high durability.

The product can be used as an operational controller for various purposes in such as product line of a factory, and delivery system.

It is equipped with extended interfaces such as DVI-I, 1000BASE-T, USB 3.0, USB 2.0, and serial interfaces. It adopts CFast card for the storage and is fanless, which demonstrate the totally spindleless design that simplifies the maintenance.

It is exchangeable in the series of PT-955S to run with the existing system.

- Fanless design that reduces maintenance work
This product's spindleless design eliminates the heat dissipating slit and CPU fan and adopts CFast card for the storage. It is free from dusts and foreign objects, and the use of the parts that degrades over the years is avoided in most cases, resulting in drastic alleviation of the maintenance burden.
- 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.
- 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.
*1 with Load 300g, Speed twice/second, by machine keying
- High definition supported DVI external display output
This product has the up to 1920 x 1080 pixels DVI external display output as standard feature. A stand-alone two-display application which, for example, displays the screen on a big LCD TV separately from the main LCD, can be built. Also, with the accompanying analog RGB (15 pin HD-SUB) conversion adapter, connecting to an analog RGB display is supported.

- Major types of peripherals are supported with rich interfaces including the two CFast card slots
It has a variety of extended interface such as DVI-I x1, 1000BASE-T x 2, USB3.0 x 1, USB2.0 x 3, serial (RS-232C) x 2. It has 2 CFast card slots that can use for OS and data. They are very useful because you can use one slot for system start-up and the other for maintenance, system log, or taking away the collected data.
- CFast retention fitting and cable tie provided to avoid trouble caused by disconnected cable
This product stays trouble-free, being equipped with CFast card retention metal and USB removal prevention fitting and cable tie for connectors with no locking mechanism, such as USB cable, and with hardware to properly mount and avoid falling out of CFast card.

- Safety design required for embedded applications
Retention of CMOS data by EEPROM allows the system to start up even when the battery has run out. For Windows Embedded Standard installed model or Windows 10 IoT Enterprise LTSB 2016 installed model, it is possible to use the Write Filter*2 function of OS. It is designed for safety required for embedding purpose, for example, prohibiting unwanted writing to the CFast card with Write Filter function will relieve the concern about the writing limits to the CFast card and prevent an unintentional system alteration.

*2 Windows® Embedded Standard contains EWF(Enhanced Write Filter) function, and Windows 10 IoT Enterprise LTSB 2016 contains UWF(Unified Write Filter) function. They redirect writing data into such as RAM, which stops writing in the actual disk and data can be protected.

- A wide range of power supplies (10.8 - 31.2VDC) supported
As the product supports a wide range of power (10.8 - 31.2VDC), it can be used in a variety of power environments. The separately available AC adapter adds support for 100VAC power.

Specifications

Functional Specifications

Model	PT-956SLX-DC7xxxxx	PT-956SHX-DC7xxxxx
Assembly type	12.1-inch Panel mounted	15-inch Panel mounted
CPU	Intel® Atom™ Processor E3845 1.91GHz	
BIOS	BIOS (mfd. by AMI)	
Memory	4GB (204pin SO-DIMM x 1), PC3-10600 DDR3L 1333 ECC	
Graphic Controller	Intel® HD Graphics (Built-in CPU)	
LCD type	LCD type	12.1-inch TFT color LCD, XGA(1024 x 768), 260,000 colors
	Backlight	LED method, The ON/OFF software can control.
Touch panel *1*2	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	DVI *3	640 x 480, 800 x 600, 1,024 x 768, 1,152 x 864, 1,280 x 600, 1,280 x 720, 1,280 x 768, 1,280 x 800, 1,280 x 960, 1,280 x 1,024, 1,360 x 768, 1,366 x 768, 1,400 x 1,050, 1,440 x 900, 1,600 x 900, 1,680 x 1,050, 1,92 x 1,080 (16,770,000 colors)
	Analog RGB	640 x 480, 800 x 600, 1,024 x 768, 1,152 x 864, 1,280 x 600, 1,280 x 720, 1,280 x 768, 1,280 x 800, 1,280 x 960, 1,280 x 1,024, 1,360 x 768, 1,366 x 768, 1,400 x 1,050, 1,440 x 900, 1,600 x 900, 1,680 x 1,050, 1,920 x 1,080, 1,920 x 1,200 (16,770,000 colors)
Audio	HD Audio compliant, LINE OUT x 1, MIC IN x 1	
LAN *4	Intel I210IT Controller 1000BASE-T/100BASE-TX/10BASE-T x 2 (Wake On LAN support)	
USB	USB3.0-compliant 1port (TYPE-A connector x 1) USB2.0-compliant 3 port (TYPE-A connector x 3)	
Serial	RS-232C 3 port (one of the ports is used for touch panel), Baud rate: 50 - 115,200bps	
Hardware monitoring	Monitoring CPU temperature, board temperature, power voltage	
Watch dog timer	Software programmable, 255 level (1sec - 255 sec), Causes a reset upon time-out.	
Real-time clock	Lithium backup battery life: 10 years or more The real-time clock is accurate within ±3 minutes (at 25°C) per month (Built-in CPU)	
Power Management	Power management setup via BIOS, Power On by Ring / Wake On LAN, Supports PC98/PC99 ACPI Power management	
Interface	External display	1 port (29 pin DVI-I connector), DVI-analog RGB conversion adapter attachment
	Audio	LINE OUT: φ3.5 Stereo mini jack, Full-scale output level 1.4Vrms (Typ), MIC IN: φ3.5 Stereo mini jack, Full-scale input level 1.4Vrms (Typ)
	CFast card slot	2 slots, CFast CARD Type I x 2, bootable -DC700000: --- -DC730000: with CFast card (SLC) within (16GB, 1 partition) *5 -DC780000: with CFast card (Q-MLC) within(32GB, 1 partition) *5
	LAN *4	2 port (RJ-45 connector)
	USB	USB3.0 compliant 1 port (A-TYPE connector x 1) USB2.0 compliant 3 port (A-TYPE connector x 3)
Power supply	RS-232C	2 port (9pin D-SUB connector (male))
	Power supply connector	12 - 24VDC *6
	Input power supply voltage	10.8 - 31.2VDC
	Current consumption	12VDC: 1.7A (Typ.) 3.6A (Max) 24VDC: 1.0A (Typ.) 1.9A (Max)
Waterproofing and dust-proofing	External device power supply capacity	CFast card slot: +3.3VDC 1A (500mA per slot), USB3.0 I/F: +5V: 0.9A (900mA per port) USB2.0 I/F: +5V: 1.5A (500mA per port)
	Panel cut dimensions (mm)	303 (W) x 243(H)
	Physical dimensions (mm)	316(W) x 43.8(D) x 256(H) (internal-panel depth) (Storage device isn't included)
Weight	About 3.4kg (without mounting bracket) About 3.5kg (with mounting bracket)	About 4.4kg (without mounting bracket) About 4.5kg (with mounting bracket)

*1 : Accuracy is within the error of 1.5% for the periphery of the touchable area, and the other areas are within 1%.

*2 : When using Windows 10, the mouse cursor is not displayed if the mouse device is not connected. The virtual mouse driver is required to display the cursor. Please download it from the Contec website.

*3 : Display of the DVI-connected screen becomes active after the Windows starts up.

*4 : Care about ambient temperature when using 1000BASE-T. Refer to "Installation Requirements" in chapter 3 for details.

*5 : 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.

*6 : Use a power cable shorter than 3m.

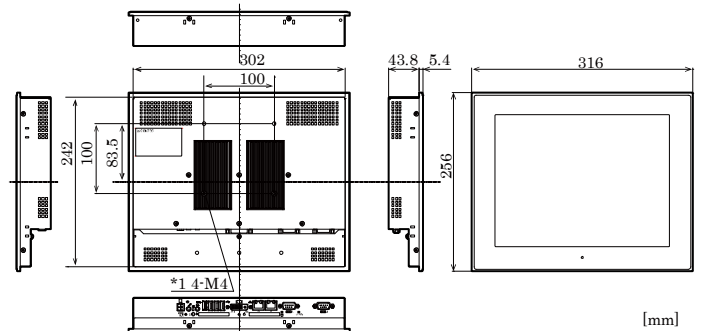
Installation Environment Requirements

Model	PT-956SLX-DC7xxxxx	PT-956SHX-DC7xxxxx
Operating temperature	0 - 50°C (When using 1000BASE-T: 0 - 45°C)	
Storage temperature	-10 - 60°C	
Operating humidity	10 - 90%RH (No condensation)	
Floating dust particles	Not to be excessive	
Corrosive gas	None	
Noise resistance	Line noise	AC line /±2kV *7, 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), Atmospheric discharge /±8kV (IEC61000-4-2 Level 3, EN61000-4-2 Level 3)
Vibration resistance	Sweep	10 - 57Hz / semi-amplitude 0.075 mm 57 - 150Hz / 1.0G, 40 min. each in x, y, and z directions (JIS C60028-2-6-compliant, IEC68-2-6-compliant)
	Resistance	10G, half-sine shock for 11 ms in x, y, and z directions (JIS C60068-2-27-compliant, IEC60068-2-27-compliant)
Impact resistance	Class D grounding, SG-FG / continuity	
Standard	VCCI Class A, FCC Class A, CE Marking (EMC Directive Class A, RoHS Directive)	

*7 : When AC adapter "PWA-65AWD1" is used.

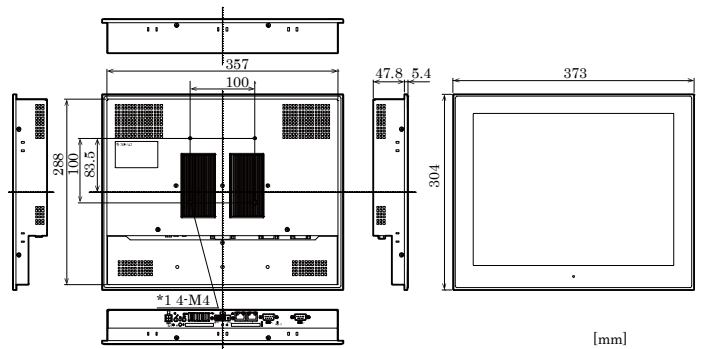
Physical Dimensions

PT-956SLX-DC7xxxxx



*1 The length that screws can be inserted from the housing surface is 5 mm or less.

PT-956SHX-DC7xxxxx



*1 The length that screws can be inserted from the housing surface is 5 mm or less.

Supported OS

- Windows Embedded Standard 7 RUNTIME P (Japanese, English, Chinese, Korean), 32bit
- Windows 10 IoT Enterprise LTSB 2016 (Japanese, English, Chinese, Korean), 64bit

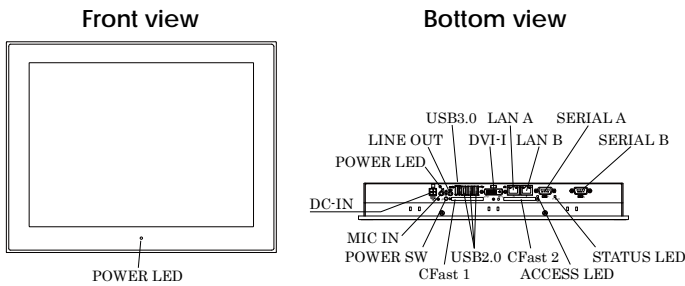
Packing List

Name	PT-956SLX		PT-956SHX	
	-DC700000	-DC7xxxx *1	-DC700000	-DC7xxxx *1
	12.1-inch model		15-inch model	
	[Base Model]	[OS-installed model]	[Base Model]	[OS-installed model]
	Pcs.			
Panel-PC	1	1	1	1
Waterproof packing	1	1	1	1
The attachment fittings	8	8	10	10
CFast card removal prevention fitting	1	1*2	1	1*2
Power supply connector complete set				
Power connector	1	1	1	1
Contact	4	4	4	4
Cable Tie	3	3	3	3
DVI-analog RGB conversion adapter	1	1	1	1
Product guide	1	1	1	1
IPC Precaution List	1	1	1	1
Warranty Certificate	1	1	1	1
Serial number label	1	1	1	1
Royalty consent contract	- *3	1	- *3	1
Setup Procedure Document	- *3	1	- *3	1
Recovery Media	- *3	1	- *3	1
CFast User's Guide	- *3	1	- *3	1

- *1 Except for base model.
- *2 It is attached to the main body.
- *3 Not included in models without OS.

* The User's Guide of this product is offered as the PDF file in our web page. With it, certain information such as a setup of hardware, each component function and BIOS setup is indicated, please refer to it if needed.

Component Name



Component Function

Name	Function
POWER-SW	Power switch
POWER LED	Power ON display LED
ACCESS LED	CFast disk access display LED
STATUS LED	Status LED
DC-IN	DC power input connector
LINE OUT	Line out (ø3.5 PHONE JACK)
MIC IN	Mic in (ø3.5 PHONE JACK)
LANA	Ethernet 1000BASE-T/100BASE-TX/10BASE-T RJ-45 connector
LANB	Ethernet 1000BASE-T/100BASE-TX/10BASE-T RJ-45 connector
USB 3.0	USB 3.0 port connector x 1
USB 2.0	USB 2.0 port connector x 3
SERIALA	Serial port A connector (9pin D-SUB/male)
SERIALB	Serial port B connector (9pin D-SUB/male)
DVI-I	Display (29pin female)
CFast1	CFast card slot (SATA connection)
CFast2	CFast card slot (SATA connection)

List of Options

- AC adapter
PWA-65AWD1 AC adapter (Input: 100-240VAC, Output: 12VDC 5.417A)
- Screen protective sheets
IPC-CV12 12.1-inch screen protective sheets (10 sheets)
IPC-CV15 15-inch screen protective sheets (10 sheets)

Caution
Note that the sheets may not protect the screen because it is a few millimeters smaller than the screen size.

Protective sheets		PT-956SxX Series	
Model	Sheet size (mm)	Model	Sheet size (mm)
IPC-CV12	250.0 x 188.0	PT-956SLX-DC7xxxx	250.0 x 188.0
IPC-CV15	308.0 x 232.0	IPC-CV12	250.0 x 188.0

- CFast Card (SLC)
CFS-4GB-A 4GB CompactFlash for Fix Disk
CFS-8GB-A 8GB CompactFlash for Fix Disk
CFS-16GB-A 16GB CompactFlash for Fix Disk
- CFast Card (Q-MLC)
CFS-16GBQ-A 16GB CompactFlash for Fix Disk
CFS-32GBQ-B 32GB CompactFlash for Fix Disk (Higher environmental resistance type)

Caution
If a product other than our option is used, the normal operation may be impaired or the functions may be limited.

* Check the CONTEC's Web site for the latest information on these options.

Differences between the PT-956SLXP1 Series and the PT-955LXP1 Series

Model	PT-956SLX	PT-956SHX	PT-955SLX	PT-955SHX
CPU	Intel® Atom™ Processor E3845 1.91GHz		Intel® Atom™ Processor N2600 1.6GHz	
Chipset	None		Intel® NM10	
Memory	4GB (204pin SO-DIMM x 1), PC3-10600 DDR3L 1333 ECC		2GB (204pin SO-DIMM x 1), PC3-8500 DDR3 SDRAM	
Graphic Controller	Intel® HD Graphics (Built inCPU)		Intel® GMA3650 (Built inCPU), Multi-monitor function supported *1	
External display output	DVI	640 x 480, 800 x 600, 1,024 x 768, 1,152 x 864, 1,280 x 600, 1,280 x 720, 1,280 x 768, 1,280 x 800, 1,280 x 960, 1,280 x 1,024, 1,360 x 768, 1,366 x 768, 1,400 x 1,050, 1,440 x 900, 1,600 x 900, 1,680 x 1,050, 1,920 x 1,080 (1,677,000 colors)	640 x 480, 800 x 600, 1,024 x 768, 1,280 x 768, 1,280 x 1,024, 1,360 x 768, 1,400 x 1,050, 1,600 x 900, 1,600 x 1,200, 1,920 x 1,080, 1,920 x 1,200 (16,770,000 colors)	
	Analog RGB	640 x 480, 800 x 600, 1,024 x 768, 1,152 x 864, 1,280 x 600, 1,280 x 720, 1,280 x 768, 1,280 x 800, 1,280 x 960, 1,280 x 1,024, 1,360 x 768, 1,366 x 768, 1,400 x 1,050, 1,440 x 900, 1,600 x 900, 1,680 x 1,050, 1,920 x 1,080, 1,920 x 1,200 (1,677,000 colors)	640 x 480, 800 x 600, 1,024 x 768, 1,280 x 768, 1,280 x 1,024, 1,360 x 768, 1,400 x 1,050, 1,600 x 900, 1,600 x 1,200, 1,920 x 1,080, 1,920 x 1,200 (16,770,000 colors)	
LAN	Intel I210IT Controller 1000BASE-T/100BASE-TX/10BASE-T 2 port (Wake On LAN support)		Intel 82573L Controller 1000BASE-T/100BASE-TX/10BASE-T 2 port (Wake On LAN support)	
USB	USB3.0 compliant 1port (TYPE-A connector x 1), USB2.0 compliant 3port (TYPE-A connector x 3)		USB 2.0 compliant 4 port (TYPE-A connector x 4)	
Real time clock	Lithium backup battery life: 10 years or more, The real-time clock is accurate within □ 3 minutes (at 25°C) per month (CPU built-in RTC)		Lithium backup battery life: 10 years or more, The real-time clock is accurate within □ 3 minutes (at 25°C) per month	
Power Management	Power management setup via BIOS, Power On by Ring / Wake On LAN, Supports PC98/PC99 ACPI Power management		Power management setup via BIOS, Power On by Ring / Wake On LAN, Supports ACPI Power management	
Interface	Audio		Audio	
	LINE OUT: 3.5pStereo mini jack, Full-scale output level 1.4Vrms(Typ), MIC IN: 3.5pStereo mini jack, Full-scale input level 1.4Vrms(Typ).		LINE OUT: ø3.5 Stereo mini jack, Full-scale output level 1.2Vrms(Typ), MIC IN: ø3.5 Stereo mini jack, Full-scale input level 1.5Vrms(Typ)	
Power supply	Power supply connector	12VDC: 1.7A(Typ) 3.6A(Max), 24VDC: 1.0A(Typ) 1.9A(Max)	12VDC: 1.7A(Typ) 3.5A(Max), 24VDC: 1.0A(Typ) 1.9A(Max)	12VDC: 2.3A(Typ) 3.2A(Max), 24VDC: 1.2A(Typ) 2.0A(Max)
	External device power supply capacity	CFast card slot: +3.3VDC 1A(500mA per slot), USB3.0 I/F: +5V: 0.9A(900mA per port) USB2.0 I/F: +5V: 1.5A(500mA per port)		CFast card slot: +3.3VDC 1A(500mA per slot), USB port: +5VDC 2A(500mA per slot)
Weight	About 3.4kg (without mounting bracket)	About 4.4kg (without mounting bracket)	About 3.5kg (without mounting bracket)	About 4.7kg (without mounting bracket)
	About 3.5kg (with mounting bracket)	About 4.5kg (with mounting bracket)	About 3.6kg (with mounting bracket)	About 4.8kg (with mounting bracket)

PANEL-PC
Atom E3845, CFast, 1PCI slot, 12.1 inch
PT-956SLXP1 Series



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Model

- Base model with Intel Atom Processor E3845 1.91GHz, Panel Mount type
PT-956SLXP1-DC700000 (12.1 inch touchpanel, LCD (XGA), Memory 4GB, without OS, without CFast, 1 x PCI slot)
- OS-installed model with Intel Atom Processor E3845 1.91GHz, Panel Mount type
PT-956SLXP1-DC731314 (12.1 inch touchpanel, LCD (XGA), Memory 4GB, Windows Embedded Standard 7 RUNTIME P 32bit (Japanese, English, Chinese, Korean), CFast card (SLC) 16GB, 1 x PCI slot)
- PT-956SLXP1-DC781724** (12.1 inch touchpanel, LCD (XGA), Memory 4GB, Windows 10 IoT Enterprise LTSB 2016 64bit (Japanese, English, Chinese, Korean), CFast card (Q-MLC) 32GB, 1 x PCI slot)

Features

- Multilingual OS is adopted for globalization support
Windows Embedded Standard 7 RUNTIME P and Windows 10 IoT Enterprise LTSB that support multiple languages of Japanese/English/Chinese/Korean are adopted as the OS installation model. As the language on the screen can be switched, this feature is ideal for such as manufacturing sites where multilingualization is inevitable.
- Contributing to reduction of running cost and promotion of energy efficiency
With the low power consumption platform Intel® Atom™ processor E3845, this product achieves low power consumption while ensuring adequate performance.
- Fanless design that reduces maintenance work
This product's spindleless design eliminates the heat dissipating slit and CPU fan and adopts CFast card for the storage. It is free from dusts and foreign objects, and the use of the parts that degrades over the years is avoided in most cases, resulting in drastic alleviation of the maintenance burden.
- High definition supported DVI external display output
This product has the up to 1920 x 1080 pixels DVI external display output as standard feature. A stand-alone two-displays application which, for example, displays the screen on a big LCD TV separately from the main LCD, can be built. Also, with the accompanying analog RGB (15 pin HD-SUB) conversion adapter, connecting to an analog RGB display is supported.

This product is a fanless computer for embedded applications. It features an Intel Atom processor E3845 1.91GHz chipset. Thanks to a quad-core CPU, simultaneous stable high-speed processing for four applications is possible with four cores. This CPU also allows for computing power almost four times that of conventional products in addition to three times the graphics performance, a significant improvement. Moreover, power consumption has been significantly reduced, resulting in nearly double the power efficiency compared with the previous generation's architecture. This "resource-saving PC" helps you design more compact, energy efficient equipment to reduce running costs and promote energy efficiency.

It is equipped with extended interfaces such as DVI-I, 1000BASE-T, USB 3.0, USB 2.0, and serial interfaces, and it is also equipped with a single PCI bus slot. It adopts CFast card for the storage and is fanless, which demonstrates the totally spindleless design that simplifies the maintenance.

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

- 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 including the two CFast card slots

It has a variety of extended interface such as DVI-I x1, 1000BASE-T x 2, USB3.0 x 1, USB2.0 x 3, serial (RS-232C) x 2.

It has 2 CFast card slots that can use for OS and data. They are very useful because you can use one slot for system start-up and the other for maintenance, system log, or taking away the collected data.

- Expansion slots to hold PCI bus boards.

This product has one PCI slot. Board size that can be attached is 177(L) x 107(H) [mm].

- CFast retention fitting and cable tie provided to avoid trouble caused by disconnected cable

This product stays trouble-free, being equipped with CFast card retention metal and USB removal prevention fitting and cable tie for connectors with no locking mechanism, such as USB cable, and with hardware to properly mount and avoid falling out of CFast card.

- Safety design required for embedded applications

Retention of CMOS data by EEPROM allows the system to start up even when the battery has run out.

For Windows Embedded Standard installed model or Windows 10 IoT Enterprise LTSB 2016 installed model, it is possible to use the Write Filter*1 function of OS. It is designed for safety required for embedding purpose, for example, prohibiting unwanted writing to the CFast card with Write Filter function will relieve the concern about the writing limits to the CFast card and prevent an unintentional system alteration..

*1 Windows® Embedded Standard contains EWF (Enhanced Write Filter) function, and Windows 10 IoT Enterprise LTSB 2016 contains UWF (Unified Write Filter) function. They redirect writing data into such as RAM, which stops writing in the actual disk and data can be protected.

- A wide range of power supplies (10.8 - 31.2VDC) supported
As the product supports a wide range of power (10.8 - 31.2VDC), it can be used in a variety of power environments. The separately available AC adapter adds support for 100VAC power.*2

*2 When using the AC adapter, limits are placed on the expansion board power supply capacity and the external device power supply capacity.

- Touch panel enables keyboard-less operation.

These products have analog touch panel enabling mouse emulation using driver software.

Specification

Functional Specifications

Model	PT-956SLXP1-DC7xxxx	
Assembly type	Panel mounted	
CPU	Intel® Atom™ Processor E3845 1.91GHz	
BIOS	BIOS (mfd. by AMI)	
Memory	4GB (204pin SO-DIMM x 1), PC3-10600 DDR3L 1333 ECC	
Graphic Controller	Intel® HD Graphics (Built-in CPU)	
LCD type	LCD type	12.1-inch TFT color LCD, XGA(1024 x 768), 260,000 colors
	Backlight	LED method, The ON/OFF software can control.
Touch panel *1*2	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	DVI *3	640 x 480, 800 x 600, 1,024 x 768, 1,152 x 864, 1,280 x 600, 1,280 x 720, 1,280 x 768, 1,280 x 800, 1,280 x 960, 1,280 x 1,024, 1,360 x 768, 1,366 x 768, 1,400 x 1,050, 1,440 x 900, 1,600 x 900, 1,680 x 1,050, 1,92 x 1,080 (16,770,000 colors)
	Analog RGB	640 x 480, 800 x 600, 1,024 x 768, 1,152 x 864, 1,280 x 600, 1,280 x 720, 1,280 x 768, 1,280 x 800, 1,280 x 960, 1,280 x 1,024, 1,360 x 768, 1,366 x 768, 1,400 x 1,050, 1,440 x 900, 1,600 x 900, 1,680 x 1,050, 1,920 x 1,080, 1,920 x 1,200 (16,770,000 colors)
Audio	HD Audio compliant, LINE OUT x 1, MIC IN x 1	
LAN *4	Intel I210IT Controller 1000BASE-T/100BASE-TX/10BASE-T x 2 (Wake On LAN support)	
USB	USB3.0-compliant 1port (TYPE-A connector x 1) USB2.0-compliant 3 port (TYPE-A connector x 3)	
Serial	RS-232C 3 port (one of the ports is used for touch panel), Baud rate: 50 - 115,200bps	
Hardware monitoring	Monitoring CPU temperature, board temperature, power voltage	
Watch dog timer	Software programmable, 255 level (1sec - 255 sec), Causes a reset upon time-out.	
Real-time clock	Lithium backup battery life : 10 years or more The real-time clock is accurate within ±3 minutes (at 25°C) per month (Built-in CPU)	
Power Management	Power management setup via BIOS, Power On by Ring / Wake On LAN, Supports PC98/PC99 ACPI Power management	
Interface	External display	1 port (29 pin DVI-I connector), DVI-analog RGB conversion adapter attachment
	Audio	LINE OUT : φ3.5 Stereo mini jack, Full-scale output level 1.4Vrms (Typ.), MIC IN : φ3.5 Stereo mini jack, Full-scale input level 1.4Vrms (Typ.)
	Cfast card slot	2 slots, Cfast CARD Type I x 2, bootable PT-956SLXP1-DC7000000 : --- PT-956SLXP1-DC73xxxx : with Cfast card (SLC) within (16GB, 1 partition) *5 PT-956SLXP1-DC78xxxx : with Cfast card (Q-MLC) within(32GB, 1 partition) *5
	LAN *4	2 port (RJ-45 connector)
	USB	USB3.0 compliant 1 port (A-TYPE connector x 1) USB2.0 compliant 3 port (A-TYPE connector x 3)
	RS-232C	2 port (9pin D-SUB connector [male])
	Expansion board slot	PCI slot x 1, Usable board dimension: 177mm (L) x 107mm (H)
	Power supply	12 - 24VDC *6
Power supply connector	Input power supply voltage	10.8 - 31.2VDC
	Current consumption	12VDC: 3.2A (Typ.) 5.0A (Max.) 24VDC: 1.8A (Typ.) 2.6A (Max.)
	External device power supply capacity	Cfast card slot : +3.3VDC 1A (500mA per slot), USB3.0 I/F : +5V : 0.9A (900mA per port) USB2.0 I/F : +5V : 1.5A (500mA per port)
	External board power supply capacity *8	+12VDC 0.5A +5VDC 1A *7 +3.3VDC 0.5A *7 -12V 80mA
	Waterproofing and dust-proofing	Front panel IP65 standard
Panel cut dimensions (mm)	303.0(W) x 243.0(H)	
Physical dimensions (mm)	316(W) x 102.8(D) x 256(H) (internal-panel depth) (Storage device isn't included)	
Weight	About 4.5kg (without mounting bracket) About 4.6kg (with mounting bracket)	

- *1 : Accuracy is within the error of 1.5% for the periphery of the touchable area, and the other areas are within 1%.
- *2 : When using Windows 10, the mouse cursor is not displayed if the mouse device is not connected. The virtual mouse driver is required to display the cursor. Please download it from the Contec website.
- *3 : Display of the DVI-connected screen becomes active after the Windows starts up.
- *4 : Care about ambient temperature when using 1000BASE-T. Refer to "Installation Requirements" in chapter 3 for details.
- *5 : 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.
- *6 : Use a power cable shorter than 3m.

*7 : Ensure that the total current for the USB port power supply capacity and the expansion board power supply capacity (+5 V) is 2.4 A or lower. When using a total current 1.9 A or higher, be careful of the ambient temperature.

*8 : The maximum power for an expansion board that can be equipped is 7.5 W or lower.

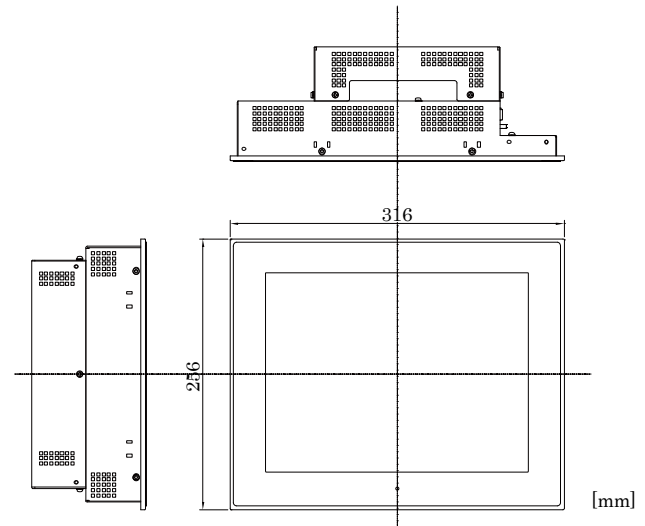
Installation Environment Requirements

Model	PT-956SLXP1-DC7xxxx	
Operating temperature	< When using 100BASE-TX/10BASE-T > 0 - 50°C (When the total current for the USB port power supply capacity and the expansion board power supply capacity (+5 V) is 1.9 A or higher: 0 - 45°C) < When using 1000BASE-T > 0 - 45°C	
	Storage temperature -10 - 60°C	
Operating humidity	10 - 90%RH (No condensation)	
Floating dust particles	Not to be excessive	
Corrosive gas	None	
Noise resistance	Line noise	AC line /±2kV *9, 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), Atmospheric discharge /±8kV (IEC61000-4-2 Level 3, EN61000-4-2 Level 3)
Vibration resistance	Sweep resistance	10 - 57Hz / semi-amplitude 0.075 mm 57 - 150Hz / 1.0G, 40 min. each in x, y, and z directions (JIS C60028-2-6-compliant, IEC68-2-6-compliant)
	Impact resistance	10G, half-sine shock for 11 ms in x, y, and z directions (JIS C60068-2-27-compliant, IEC60068-2-27-compliant)
Grounding	Class D grounding, SG-FG / continuity	
Standard	VCCI Class A, FCC Class A, CE Marking (EMC Directive Class A, RoHS Directive)	

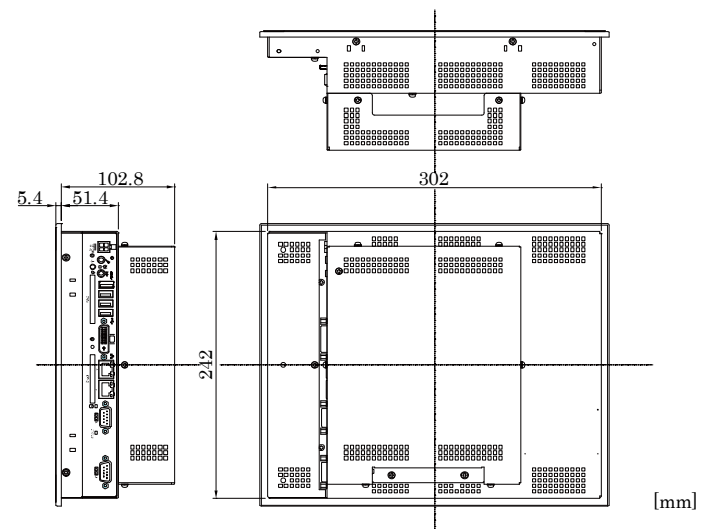
*9 : When AC adapter "ACAP19-01" is used.

Physical Dimensions

[Front]



[Back face]



Supported OS

- Windows Embedded Standard 7 RUNTIME P (Japanese, English, Chinese, Korean), 32bit
- Windows 10 IoT Enterprise LTSB 2016 (Japanese, English, Chinese, Korean), 64bit

Packing List

Name	PT-956SLXP1-DC700000		PT-956SLXP1-DC7xxxxx*1	
	[Base Model]		[OS-installed model]	
Name	Pcs.	Pcs.	Pcs.	Pcs.
Panel-PC	1	1	1	1
Waterproof packing	1	1	1	1
The attachment fittings	8	8	8	8
CFast card removal prevention fitting	1 *2	1 *2	1 *2	1 *2
Washer assembled screw (M3x6)	1	1	1	1
Slot cover	1	1	1	1
Power supply connector complete set				
Power connector	1	1	1	1
Contact	4	4	4	4
Cable Tie	1	1	1	1
DVI-analog RGB conversion adapter	1	1	1	1
Product guide (this sheet)	1	1	1	1
IPC Precaution List	1	1	1	1
Warranty Certificate	1	1	1	1
Serial number label	1	1	1	1
Royalty consent contract	- *3	1	1	1
Setup Procedure Document	- *3	1	1	1
Recovery Media	- *3	1	1	1
CFast User's Guide	- *3	1	1	1

*1 Except for base model.

*2 It is attached to the main body.

*3 Not included in models without OS.

※ The User's Guide of this product is offered as the PDF file in our web page. With it, since information such as a setup of hardware, each component function and BIOS setup is indicated, please refer to it if needed.

List of Options

AC adapter

ACAP12-06A

AC adapter (Input: 90-264VAC, Output: 12VDC 7A)

ACAP19-01

AC adapter (Input: 100-240VAC, Output: 19VDC 3.42A)

Caution

When the product is used with this AC adapter (ACAP19-01), ensure that the total consumption current for the four USB ports and the total consumption current for the expansion board power supply +5 V is 1.0 A or lower.

Screen protective sheets

IPC-CV12

12.1-inch screen protective sheets (10 sheets)

Caution

Note that the sheets may not protect the screen because it is a few millimeters smaller than the screen size.

Protective sheets		PT-956SLXP1 Series	
Model	Sheet size (mm)	Model	Sheet size (mm)
IPC-CV12	250.0 x 188.0	IPC-CV12	250.0 x 188.0

CFast Card (SLC)

CFS-4GB-A

4GB CompactFlash for Fix Disk

CFS-8GB-A

8GB CompactFlash for Fix Disk

CFS-16GB-A

16GB CompactFlash for Fix Disk

CFast Card (Q-MLC)

CFS-16GBQ-A

16GB CompactFlash for Fix Disk

CFS-32GBQ-B

32GB CompactFlash for Fix Disk (Higher environmental resistance type)

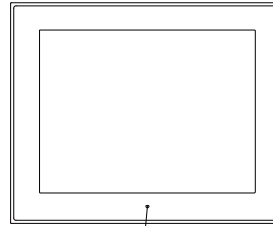
Caution

If a product other than our option is used, the normal operation may be impaired or the functions may be limited.

* Check the CONTEC's Web site for the latest information on these options.

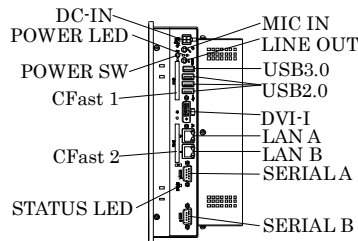
Component Name

Front view

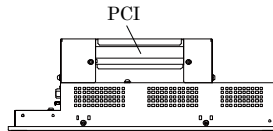


POWER LED

Side view



Bottom view



Component Function

Name	Function
POWER-SW	Power switch
POWER LED	Power ON display LED
ACCESS LED	CFast disk access display LED
STATUS LED	Status LED
DC-IN	DC power input connector
LINE OUT	Line out (φ3.5 PHONE JACK)
MIC IN	Mic in (φ3.5 PHONE JACK)
LANA	Ethernet 1000BASE-T/100BASE-TX/10BASE-T RJ-45 connector
LANB	Ethernet 1000BASE-T/100BASE-TX/10BASE-T RJ-45 connector
USB 3.0	USB 3.0 port connector x 1
USB 2.0	USB 2.0 port connector x 3
SERIALA	Serial port A connector (9pin D-SUB/male)
SERIALB	Serial port B connector (9pin D-SUB/male)
DVI-I	Display (29pin female)
CFast1	CFast card slot (SATA connection)
CFast2	CFast card slot (SATA connection)
PCI	Expansion Slot

Differences between the PT-956SLXP1 Series and PT-955LXP1 Series

Model		PT-956SLXP1 Series	PT-955LXP1 Series
CPU		Intel® Atom™ Processor E3845 1.91GHz	Intel® Atom™ Processor N270 (1.60GHz/FSB533MHz)
Chipset		None	Intel® 945GSE + ICH7M-DH
BIOS		BIOS (mfd. By AMI)	BIOS (mfd. By Award)
Memory		4GB (204pin SO-DIMM x 1), PC3-10600 DDR3L 1333 ECC	1GB (200pin SO-DIMM x 1), PC2-4300 DDR2 SDRAM
Graphic Controller		Intel® HD Graphics (Built inCPU)	Intel® GMA950 (Built in 945GSE chipset)
External display output	DVI	640 x 480, 800 x 600, 1,024 x 768, 1,152 x 864, 1,280 x 600, 1,280 x 720, 1,280 x 768, 1,280 x 800, 1,280 x 960, 1,280 x 1,024, 1,360 x 768, 1,366 x 768, 1,400 x 1,050, 1,440 x 900, 1,600 x 900, 1,680 x 1,050, 1,920 x 1,080 (1,6770,000 colors)	640 x 480, 800 x 600, 1,024 x 768, 1,152 x 864, 1,280 x 600, 1,280 x 720, 1,280 x 768, 1,280 x 960, 1,280 x 1,024, 1,360 x 768, 1,400 x 1,050, 1,600 x 900, 1,600 x 1,200, 1,856 x 1,392, 1,920 x 1,080, 1,920 x 1,200 (1,6770,000 colors)
	Analog RGB	640 x 480, 800 x 600, 1,024 x 768, 1,152 x 864, 1,280 x 600, 1,280 x 720, 1,280 x 768, 1,280 x 800, 1,280 x 960, 1,280 x 1,024, 1,360 x 768, 1,366 x 768, 1,400 x 1,050, 1,440 x 900, 1,600 x 900, 1,680 x 1,050, 1,920 x 1,080, 1,920 x 1,200 (1,6770,000 colors)	640 x 480, 800 x 600, 1,024 x 768, 1,280 x 768, 1,280 x 1,024, 1,360 x 768, 1,400 x 1,050 (1,6770,000 colors)
Audio		HD Audio compliant, LINE OUT x 1, MIC IN x 1	AC97 compliant, LINE OUT x 1, MIC IN x 1
IDE		None	Primary IDE Master / Slave (Max. 2devices), CF card slot connection
LAN		Intel I210IT Controller 1000BASE-T/100BASE-TX/10BASE-T 2 port (Wake On LAN support)	Intel® 82573L Controller 1000BASE-T/100BASE-TX/10BASE-T 2 port (Wake On LAN support)
USB		USB3.0 compliant 1port (TYPE-A connector x 1) USB2.0 compliant 3port (TYPE-A connector x 3)	USB 2.0 compliant 4 port (TYPE-A connector x 4)
Real time clock		Lithium backup battery life: 10 years or more, The real-time clock is accurate within ±3 minutes (at 25°C) per month (CPU built-in RTC)	Lithium backup battery life: 10 years or more, The real-time clock is accurate within ±3 minutes (at 25°C) per month (Built-in ICH7M- DH)
Interface	Audio	LINE OUT: 3.5pStereo mini jack, Full-scale output level 1.4Vrms (Typ.) MIC IN: 3.5pStereo mini jack, Full-scale input level 1.4Vrms(Typ.)	LINE OUT:3.5p Stereo mini jack, Full-scale output level 1.5Vrms(Typ.), Dual 50mW Amplifier MIC IN: 3.5p Stereo mini jack, Full-scale input level 1.3Vrms(Typ.)
	CF card slot	None	2 slot, CF CARD Type I x 2, bootable
	CFast card slot	2slot, CFast CARD Type I x 2, bootable	None
Power supply		12VDC: 3.2A (Typ.) 5.0A (Max.) 24VDC: 1.8A (Typ.) 2.6A (Max.)	12VDC: 3.5A (Typ.) 5.5A (Max.) 24VDC: 1.7A (Typ.) 2.8A (Max.)
External device power supply capacity		CFast card slot : +3.3VDC 1A (500mA per slot), USB3.0 I/F: +5V : 0.9A (900mA per port) USB2.0 I/F: +5V : 1.5A (500mA per port)	CF card slot : +3.3VDC 1A (500mA per slot), USB2.0 I/F : +5V : 2A (500mA per port)
Weight		About 4.5kg (without mounting bracket) About 4.6kg (with mounting bracket)	About 4.8kg (without mounting bracket) About 4.9kg (with mounting bracket)