

Embedded-PC EPC-4000 Series



Features

- Compatible with Intel® Core™ processor series Coffee Lake

The product is equipped with the 8th-generation Intel® Core™ processor and greatly realizes lower-power consumption while ensuring fine performance of operation tasks and drawing. Adopting embedded-type CPU contributes to a stable supply.

Three types of CPU are lined up.

Intel® Core™ i7-8700T

Intel® Core™ i5-8500T

- CPU built-in high-performance graphics

CPU corresponds to the Intel® HD Graphics 630.

Full HD video can be smoothly played.

It also supports full HD output of the two-screen with the DVI-D and DisplayPort.

- "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.

- Adopt removable storage

The dual-slot model uses 2.5-inch SATA storage accessible from the front.

- Extend peripherals freely. Rich interface

This product is equipped with a variety of expansion interfaces such as DVI-D, DisplayPort, 1000BASE-T x 3, USB3.2 Gen2 (USB3.1) x 6, USB3.2 Gen1 (USB3.0) x 2, serial (RS-232C) x 1, serial (RS-232C/RS-422A/RS-485) x 1, audio, GPIO (Isolation, Input x 4, output x 4). You can assist our use in various scenes.

- Equipped with expansion slots that can house PCI-Express (x8) or PCI Express (x4) boards (Models with expansion slots only)

The model with two expansion slots is equipped with two PCI-Express (x8)-bus slots.

The model with four expansion slots is equipped with four PCI-Express (x4)-bus slots.

The maximum size of boards that can be installed is 176 (L) x 110 (H) mm.

Supported OS

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

This product is a high-performance embedded-type personal computer equipped with the 8th-generation Intel® Core™ processor. Embedded-type chipset and CPU have been adopted. The use of readily available parts ensures the ease of the use of the product. The CONTEC offers the model without an expansion slot and also two types of models with expansion slots.

* 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 November, 2022.

Included Items

	EPC-4000-xxxxxxx [The model without an expansion slot]	EPC-4000P2-xxxxxxx [The model with expansion slots (two slots)]	EPC-4000P4-xxxxxxx [The model with expansion slots (four slots)]
Name	Pcs.	Pcs.	Pcs.
Product	1	1	1
The Attachment Fittings	2	2	2
Screws for Attachment Fittings (M4)	6	6	6
Fixing screw for slot cover (M3)	-	2	4
Pan Head Screw with Nylon Washer for Fixing The 2.5-inch Storage in Place	4 *1	4 *1	4 *1
Bush for Fixing The 2.5-inch Storage	4 *1	4 *1	4 *1
Slot Cover	-	2	4
Product Guide	1	1	1

*1 The 2.5-inch storage type is already mounted on the main unit.

Optional Products

Item	Model	Description
CFast Card	CFS-4GB-A	4GB (SLC)
	CFS-8GB-A	8GB (SLC)
	CFS-16GB-A	16GB (SLC)
	CFS-32GBM-A	32GB (MLC)
	CFS-16GBQ-A	16GB (Q-MLC)
Bracket	EPC-BKT	Bracket for EPC-4000 and 4000P2 Series
	EPC-P4-BKT	Bracket for EPC-4000P4 Series

CAUTION

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

* Visit the CONTEC website for the latest optional products.

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Specification

Function Specifications

Item	Description		
	The model without an expansion slot	The model with expansion slots (two slots)	The model with expansion slots (four slots)
CPU [Selection]	Intel® Core™ i7-8700T Processor 2.4GHz Intel® Core™ i5-8500T Processor 2.1GHz Heat dissipation method : Heat sink + FAN		
Chipset	Intel® Q370		
BIOS	BIOS (mfd. by AMI)		
Memory [Selection]	Max16GB, 260pin SO-DIMM Socket x 2, DDR4-2666 SDRAM Non-ECC		
Graphic	Intel® HD Graphics 630 DVI-D x 1, DisplayPort x 1		
Storage (System)	SATA III 2.5" SSD 256GB (3D-TLC) or None		
CFast I/F	CFast Slot x 1ch, With anti-release mechanism		
Audio	HD Audio compliant, LINE OUT x 1, LINE IN x 1, MIC IN x 1		
LAN	1000BASE-T/100BASE-TX/10BASE-T RJ-45 connector x 3 Transmission speed * : 1000M/100M/10M bps LAN-A, B: Intel I210AT Controller, LAN-C: Q370 embedded controller + PHY I219LM * Use a Category 5e or higher cable to operate at 1000 Mbps.		
USB	USB 3.2 Gen2-compliant (10Gbps) x 6 USB 3.2 Gen1-compliant (5Gbps) x 2		
Serial	RS-232C 9pin D-SUB x 1 RS-232C/RS-422A/RS-485 (Switchable in BIOS settings) 9pin D-SUB x 1 Baud rate : 50 - 115,200bps (Programmable)		
Expansion Card Slot [Selection]	None	PCI-Express(x8) slot x 2 (x16 mounted connector) Usable card dimension: Max 176mm(L) x 110mm(H)	PCI-Express(x4) slot x 4 Usable card dimension: Max 176mm(L) x 110mm(H)
Security (TPM)	TCG TPM2.0		
Hardware Monitoring	Monitoring CPU temperature, fan speed, power voltage		
Watch Dog Timer	Software programmable, 255 level (1sec - 255 sec), Causes a reset upon time-out.		
RTC/CMOS	The real-time clock is accurate within ±3 minutes (at 25°C) per month, Lithium backup battery life : 10 years or more		
Power Management	Power management setup via BIOS, Power On by Ring / Wake On LAN		
Interface			
External Display	DVI-D x 1, DisplayPort x 1, Supports two displays		
Audio	Line input/output : ϕ3.5 Stereo mini jack (LINE OUT, LINE IN, MIC IN)		
Serial ATA	1-slot, removable, 2.5-inch SATA storage, serial ATA3.0 standard port		
	Built-in	Removable	Built-in
LAN	3 port (RJ-45 connector)		
USB	USB3.2 Gen2 (USB3.1) : 6 port (A-TYPE connector x 6) USB3.2 Gen1 (USB3.0) : 2 port (A-TYPE connector x 6)		
RS-232C	RS-232C : 1 port (9pin D-SUB connector [male]) RS-232C/RS-422A/RS-485 (Switchable in BIOS settings) : 1 port (9pin D-SUB connector [male])		
GPIO	15pin D-SUB [female] x 1 (Maximum path length : 20m), Optocoupler isolated type Input/output 4 points each, Disk access LED output		
Power Supply *1			
Rated Input Voltage	12 - 24VDC		
Range of Input Voltage	10.8 - 26.4VDC		
Power Consumption (Max)	< With USB supply > 6.9 A (Max) at 12 V input 3.5 A (Max) at 24 V input < Without USB supply > 3.5 A (Max) at 12 V input 1.8 A (Max) at 24 V input	< USB with expansion slot supply > 14.5 A (Max) at 12 V input 7.2 A (Max) at 24 V input < USB, without expansion slot supply > 4.1 A (Max) at 12 V input 2.0 A (Max) at 24 V input	< USB with expansion slot supply > 16.1 A (Max) at 12 V input 7.8 A (Max) at 24 V input < USB, without expansion slot supply > 5.1 A (Max) at 12 V input 2.2 A (Max) at 24 V input
USB Supply Current	USB I/F +5VD : 7.2A		
Capacity for power supply to the expansion card	None	+12V : 2.1A +3.3V : 3A *4	+12V : 2.1A +3.3V : 3A *4
Physical Dimensions (mm) *2	230(W) x 220(D) x 70(H) (Not including the attachment fitting or protrusions)	230(W) x 220(D) x 109(H) (Not including the attachment fitting or protrusions)	230(W) x 220(D) x 160(H) (Not including the attachment fitting or protrusions)
Weight *3	2.8kg approx.	3.4kg approx.	4.1kg approx.

*1 To achieve reliable performance from the installed CPUs, the system must have a clean, stable power supply. Make sure the power supply voltage is within the range of the power supply specifications under any load condition. Use a DC power cable that is 3 m or less in length.
*2 The attachment fittings and protruding parts are not included.
*3 The weight (which does not include accessories) may vary depending on the product configuration.
*4 The total capacity for power supply to the expansion card of the expansion slot model (2 slots or 4 slots) must

fall within 50 W (25W or less per slot).

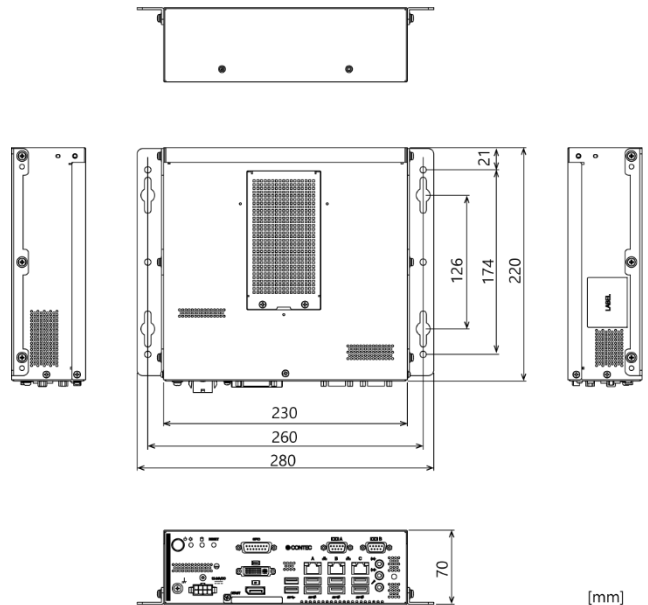
Environment Requirements

Item	Description	
Operating Temperature	0 - 55°C	
Storage Temperature	-20 - +85°C	
Humidity	20 - 85%RH (No condensation)	
Floating Dust Particles	Not to be excessive	
Corrosive Gases	None	
Line-noise Resistance	Line Noise	AC Line /±2kV (IEC61000-4-4 Level 3, EN61000-4-4 Level 3) 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	Sweep Resistance	During operation (with internal SSD) and when not energized: 10 - 57Hz / semi-amplitude 0.075mm, 57 - 150Hz / 1.0G 40minutes each in x, y, and z directions (JIS C60068-2-6-compliant, IEC60068-2-6-compliant)
	Resistance	
Shock Resistance	10G, half-sine shock for 11 ms in x, y, and z directions (JIS C60068-2-27-compliant, IEC68-2-27-compliant)	
Grounding	SG-FG / Separate	
Standard	VCCI Class A, FCC Class A, CE Marking (EMC Directive Class A, RoHS Directive), UKCA, CCC *1, UL	

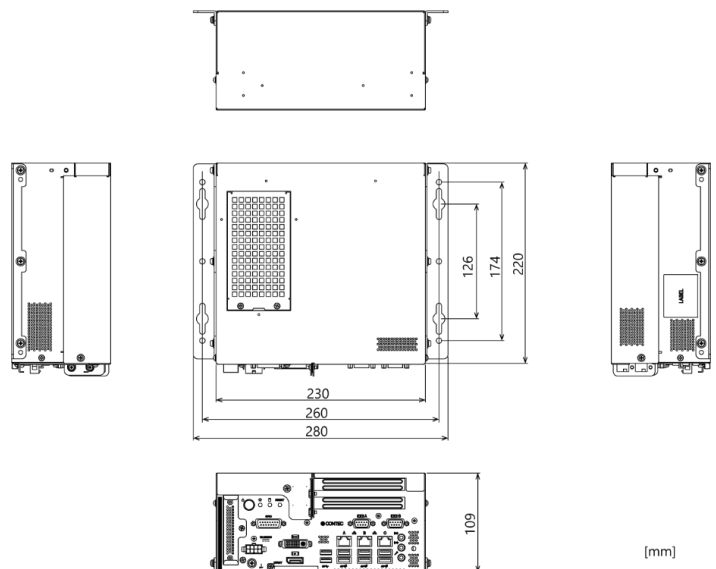
*1 Models without storage (no OS) are not covered by CCC.

Physical Dimension

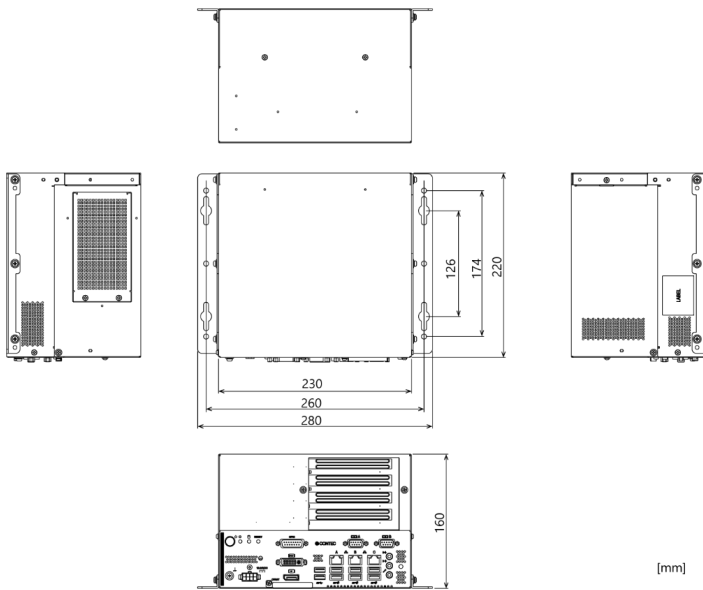
The model without an expansion slot



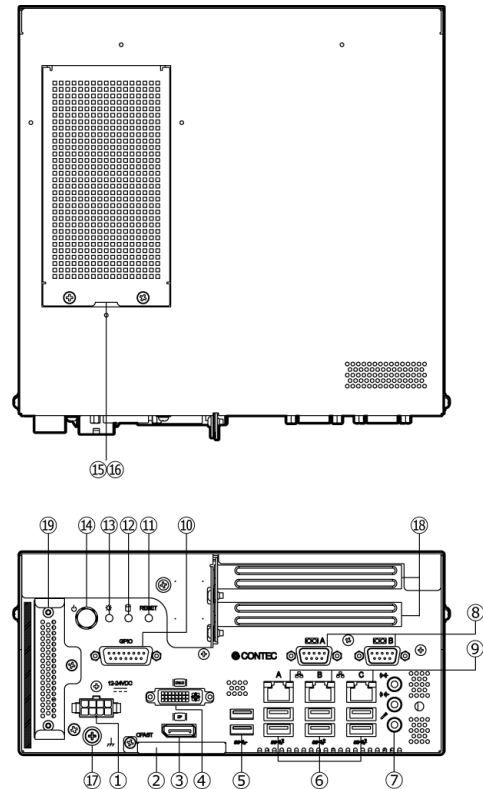
The model with expansion slots (two slots)



The model with expansion slots (four slots)

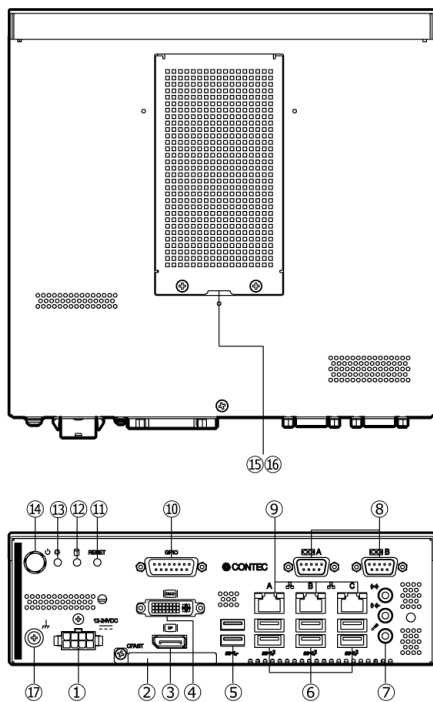


The model with expansion slots (two slots)



Nomenclature of Product Components

The model without an expansion slot



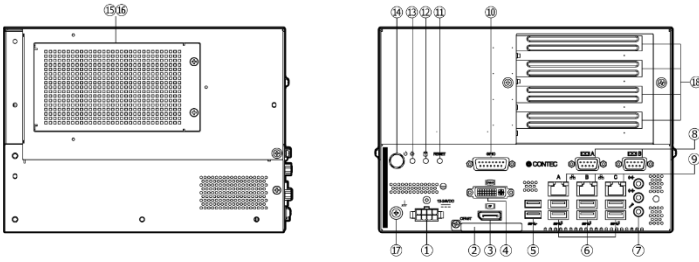
Component Function

No.	Name	No.	Name
1	DC inlet	11	Reset switch : RESET SW
2	CFast slot	12	Disk access indicator LED : ACCESS LED
3	DisplayPort connector	13	Power on indicator LED : POWER LED
4	DVI-D connector	14	Power switch : POWER SW
5	USB3.2 Gen1 (USB3.0) connector	15	Cooling fan
6	USB3.2 Gen2 (USB3.1) connector	16	Cooling fan filter
7	Top: Line input (φ3.5 phone jack) : LINE IN Middle: Line output (φ3.5 phone jack) : LINE OUT Bottom: Microphone input (φ3.5 phone jack) : MIC	17	FG
8	Serial port connector A B (9-pin D-SUB connector)	18	Expansion slot
9	Ethernet A, B 1000BASE-T/100BASE-TX/10BASE-T RJ-45 connector	19	Slot for 2.5" SATA storage1
10	GPIO port connector (15-pin D-SUB female)		

Component Function

No.	Name	No.	Name
1	DC inlet	11	Reset switch : RESET SW
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8	Serial port connector A B (9-pin D-SUB connector)		
9	Ethernet A, B 1000BASE-T/100BASE-TX/10BASE-T RJ-45 connector		
10	GPIO port connector (15-pin D-SUB female)		

The model with expansion slots (four slots)



Component Function

No.	Name	No.	Name
1	DC inlet	11	Reset switch : RESET SW
2	C/Fast slot	12	Disk access indicator LED : ACCESS LED
3	DisplayPort connector	13	Power on indicator LED : POWER LED
4	DVI-D connector	14	Power switch : POWER SW
5	USB3.2 Gen1 (USB3.0) connector	15	Cooling fan
6	USB3.2 Gen2 (USB3.1) connector	16	Cooling fan filter
7	Top: Line input (φ3.5 phone jack) : LINE IN Middle: Line output (φ3.5 phone jack) : LINE OUT Bottom: Microphone input (φ3.5 phone jack) : MIC	17	FG
8	Serial port connector A, B (9-pin D-SUB connector)	18	Expansion slot
9	Ethernet A, B 1000BASE-T/100BASE-TX/10BASE-T RJ-45 connector		
10	GPIO port connector (15-pin D-SUB female)		

Product Lineup

The product has seven models.

Model	CPU	Memory	Storage 2.5-inch	OS	Expansion slot
EPC-4000-DC39000	Core i7-8700T	16GB (8GB x 2)	None	None	None
EPC-4000-DC3941E			256GB SSD (TLC)	Win10 IoT 2019	
EPC-4000-DC28000	Core i5-8500T	8GB (8GB x 1)	None	None	
EPC-4000-DC2841E			256GB SSD (TLC)	Win10 IoT 2019	
EPC-4000P2-DC39000	Core i7-8700T	16GB (8GB x 2)	None	None	2slots (PCIe(x8))
EPC-4000P2-DC3941E			256GB SSD (TLC)	Win10 IoT 2019	
EPC-4000P2-DC28000	Core i5-8500T	8GB (8GB x 1)	None	None	
EPC-4000P2-DC2841E			256GB SSD (TLC)	Win10 IoT 2019	
EPC-4000P4-DC39000	Core i7-8700T	16GB (8GB x 2)	None	None	4slots (PCIe(x4))
EPC-4000P4-DC3941E			256GB SSD (TLC)	Win10 IoT 2019	
EPC-4000P4-DC28000	Core i5-8500T	8GB (8GB x 1)	None	None	
EPC-4000P4-DC2841E			256GB SSD (TLC)	Win10 IoT 2019	

Win10 IoT 2019 : Windows 10 IoT Enterprise 2019 LTSC 64bit (Japanese / English / Chinese / Korean)