

CONPROSYS Series
IoT Edge Controller
CPS-BXC200



- * 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 September, 2023.

Features

Secured IoT device for edge computing

As for the product with an OS model, Windows 10 IoT Enterprise 64bit version supporting four languages (Japanese, English, Chinese, and Korean), and Trellix Whitelist type anti-virus software are pre-installed. The CPS-BXC200 already has all the equipment required for an Internet-connected device.

Three Gigabit LAN ports alternating connections between different network layers

This product is equipped with three Gigabit LAN ports. This makes it the optimal device for IoT gateway applications that alternate connections between different network layers such as between field busses and controllers within a factory and higher-order information system networks.

I/O extension modules with the same API functions as PCI Express, PCI, USB bus product

Development performed with a Windows PC and CONTEC's wide array of expansion cards is made even more efficiently thanks to the fact that applications can be directly ported to product and I/O modules in the execution environment. Stacking of up to eight I/O modules is possible. (The total current consumption of configurable modules shall be 3.3A or less)

Contributing to reduction of running cost and promotion of energy efficiency

Adopting the low-power platform of Intel® Atom™ Processor E3950 achieves lower power consumption while still ensuring sufficient performance.

Adaptable to a temperature range between -20 and +60°C

The product is capable of operating in the temperature between -20 and + 60°C. It can be installed in the various environments. (when using 1000BASE-T: -20 to +55°C)

Fan-less design that reduces maintenance and inspection work

This product's spindle-less design eliminates CPU fan, and adopts SSD for the storage. The using parts that degrade over time is minimized to facilitate maintenance.

This product is an IoT Edge Controller with an Intel Atom processor E3950 and can be mounted on 35mmDIN rail. Connect a CONPROSYS series configurable I/O module with the controller to provide such function as analog I/O.

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.

A space-saving design that can be installed in spaces with roughly the same area as a palm-size.

It has extension interfaces such as Analog RGB, Display Port, 1000BASE-T, USB 3.0, and serial.

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

Moreover, this product is equipped with a RAS*1 function independent of the main computer functions. This feature provides various functions to increase system reliability by automatically restarting the system when detecting errors such as frozen programs, and a rise in internal temperature, and by saving detailed logs of the occurrence of errors, which can be useful in failure analysis.

*1 Reliability Availability and Serviceability: Support functions for stable system operation.

"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. *1 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.

CONTEC-customized BIOS provides useful utility

Useful utility of BIOS*2 customized by CONTEC is provided. 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 Only available when using CPS-BXC200-xx0xM05x.

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

*3 Contact your retailer for more information.

Packing List

Product (CPS-BXC200) ...1	Cable Tie...1
End Cover...1 (attached to the product)	3-pin Connector...1
CFast card removal prevention fitting...1	6-pin Connector...1
USB removal prevention fitting...1	DIN rail...1
Washer assembled screw (M3 x 6) ...2	Product Guide ... 1

* This product is verified in conformity with our recommended power supply. In case you use other power supplies, thus, it may not be able to fulfill certification requirements. Information about recommended power supply, see the Contec website.

* Use the supplied plastic DIN rail when connecting this product and a module on a desk top for system development or validation. If you use the supplied plastic DIN rail in the field, it cannot be covered by warranty. Therefore, when you set the product and module in the field, use the commercially available DIN rail.

Regarding Edgexross basic software (Trial version)

The CPS-BXC200-WxxxxA contains the Edgexross basic software (trial version). The shortcut menu is provided on the desktop. In order to use the product, accept the Software License Agreement and read the Installation Instructions.

Please contact the Edgexross Consortium for details on purchasing product licenses or licensed technical support.
<https://www.edgexross.org/>

As for the CPS-BXC200-WxxxxA, CONTEC will grant the Customer the right to install CONTEC data collector (software) when purchasing this particular product. Contact your retailer for details.

Specifications

Function specifications

Item	Description	
CPU	Intel® Atom™ Processor x7-E3950 1.6 GHz	
BIOS	BIOS (mfd. by AMI)	
Memory	204pin SO-DIMM socket x 1, PC3L-10600(DDR3L 1333) ECC	
	4GB	8GB
Graphic controller	Intel® HD Graphics 505 (built into CPU)	
System resolution	Analog RGB	1920 x 1200 @ 60Hz
	Display Port	3840 x 2160 @ 60Hz
Display	Analog RGB x1 (15-pin HD-SUB connector), DisplayPort x1	
M.2 card slot	1 slot, M.2 2242, SATAIII CPS-BXC200-xx0xP03: M.2 card (pSLC, 32GB) *1 CPS-BXC200-xx0xP05: M.2 card (pSLC, 64GB) *1 CPS-BXC200-xx0xM03: M.2 card (MLC, 32GB) *1 CPS-BXC200-xx0xM05: M.2 card (MLC, 64GB) *1	
CFast card slot	1 slot, CFast card Type I, bootable	
LAN *2	Intel I210IT controller	
	1000BASE-T/100BASE-TX/10BASE-T 3 ports (RJ-45 connector) (Wake On LAN support)	
USB	USB 3.0 standard follow 3ports (TYPE-A connector x3)	
Serial I/F	RS-232C (General-purpose) : 1port (SERIAL PORT A), 9pin D-SUB connector (male)	
	Baud rate : 50 - 115,200bps	
Watch Dog Timer	WDT: Software programmable, 1sec - 255sec (Time up allows reset or shutdown).	
Security (TPM)	TCG TPM2.0	
General-purpose I/O	Isolation: Input 2 (One input switchable between remote reset or remote power on.) Isolation: Output 1 (One output switchable for WDT external output)	
Hardware monitoring	Monitor CPU temperature and power voltage	
RTC/CMOS	Lithium battery 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 function, PC98/PC99 ACPI Power management support	
Stack Bus	The maximum number of stack buses: 8 (The total current consumption of the modules should be less than 3.3A)	
RAS	1 port (3.81mm pitch 6-pin)	
Power supply	Rated input voltage	24VDC
	Input voltage range	24V±10%
	Power consumption (Max)	24V 1.5A (USB I/F, without stack bus power) 24V 4.8A (USB I/F, with stack bus power)
	External device power supply capacity	CFast card slot: +3.3V 0.5A (500mA x 1), USB3.0 I/F: +5V 2.7A (900mA x 3) Stack bus I/F: 24V 3.3A
Physical dimensions (mm)	76 (W)×94(D)×124.8(H) (No projection included)	
Weight	1.1kg	
Installation method	Quick mounting on the 35mm DIN rail	
OS (For the models with OS installation)	Windows 10 IoT Enterprise LTSB 2016 64bit (Japanese, English, Chinese, and Korean)	

*1 The capacity of memory 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.

*2 Pay attention to the ambient temperature when operating 1000BASE-T.

Installation Environment Requirements

Item	Description	
Operating ambient temperature *3	-20 - +70°C (With 1000BASE-T: -20 - 65°C), airflow 0.7m/s -20 - +60°C (With 1000BASE-T: -20 - 55°C), no airflow	
Operating ambient humidity	10 - 90%RH (No condensation)	
Non-operating ambient temperature	-20 - +60°C	
Non-operating ambient humidity	10 - 90%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	Touch: ±4kV (IEC61000-4-2 Level 2, EN61000-4-2 Level 2) Air: ±8kV (IEC61000-4-2 Level 3, EN61000-4-2 Level 3)
Vibration resistance	Sweep resistance	10 - 57Hz /semi-amplitude vibration 0.15mm, 57 - 150Hz/2.0G 40minutes each in X, Y, and Z directions (JIS C60068-2-6-compliant, IEC60068-2-6-compliant)
Shock resistance		15G half-sine shock for 11ms in X, Y, and Z directions (JIS C 60068-2-27-compliant, IEC 60068-2-27-compliant)

Item	Description
Grounding	Class D grounding (previous class 3 grounding), SG-FG/ non-conduction
Standard	VCCI Class A, FCC Class A, CE Marking (EMC Directive Class A, RoHS Directive), UKCA, UL

*3 Derating occurs due to the way of installation and the load conditions.

*4 When you use an optional power product (CPS-PWD-90AW24-01).

Optional Products

DIN rail fitting power supply

CPS-PWD-90AW24-01: DIN rail fitting power supply 90[w]
(Input: 100 - 240VAC, output: 24VDC 3.8 A)

CFast Card (SLC)

CFS-4GB-A: CFast Card 4GB
CFS-8GB-A: CFast Card 8GB
CFS-16GB-A: CFast Card 16GB

CFast Card (MLC)

CFS-32GBM-A: CFast Card 32GB
CFS-128GBM2-A: CFast Card 128GB

CFast Card (Q-MLC)

CFS-16GBQ-A: CFast Card 16GB
CFS-32GBQ-B: CFast Card 32GB
(Higher environmental resistance type)

Configurable Type Model

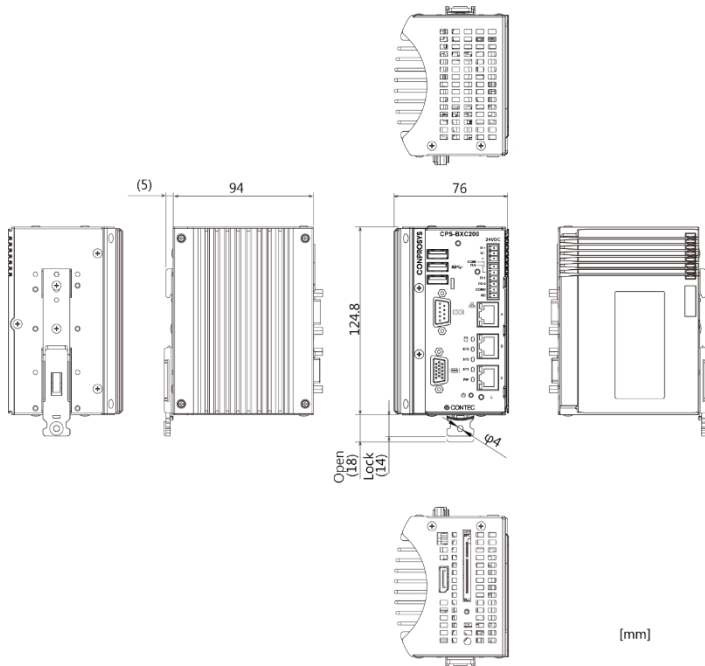
CPS-DIO-0808L with digital input/output (no built-in power supply)
CPS-DIO-0808BL with digital input/output (built-in power supply)
CPS-DIO-0808RL with digital input/output (current source)
CPS-DI-16L with digital input (16ch, current sink)
CPS-DI-16RL with digital input (16ch, current source)
CPS-DO-16L with digital output (16ch, current sink)
CPS-DO-16RL with digital output (16ch, current source)
CPS-RRY-4PCC with Relay output
CPS-AI-1608LI with analog input (voltage input 8 channels)
CPS-AI-1608ALI with analog input (current input 8 channels)
CPS-AO-1804LI with analog output (current output 4 channels)
CPS-AO-1804VLI with analog output (voltage output 4 channels)
CPS-CNT-3202I with counter input
CPS-COM-1PC with RS-232C (contains 1port)
CPS-COM-2PC with RS-232C (contains 2 ports)
CPS-COM-1PD with RS-422A/485 (1channel)
CPS-COM-2PD with RS-422A/485 (2 channels)

CAUTION

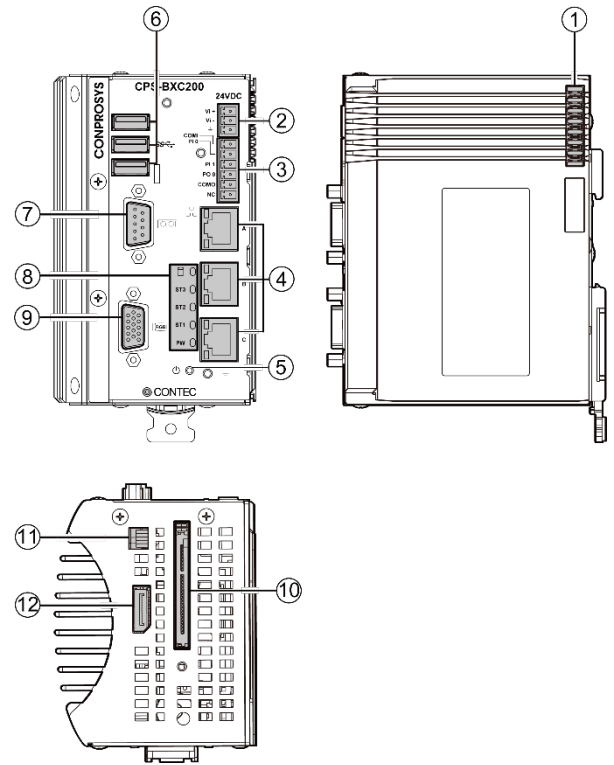
The normal operation may be impaired or the functions may be limited if a product other than our optional ones are used.

* Visit the Contec website for the latest optional products.

Physical Dimensions



Component Name



No.	Name	Function
1	Stack Bus	This is used for power supply and communication with the configurable type module.
2	Power Connector	This is a connector for the 3-pin connector included in the package.
3	General-purpose Input/Output/RAS	This is a connector for the 6-pin connector included in the package.
4	LAN Port	This is a connector for LAN.
5	Power Switch	This is used for controlling of the power supply.
6	USB Port	This is a USB3.0 port of type-A.
7	RS-232C Serial Port	This is a RS-232C serial ports (male).
8	LED Indicator	This indicates the status of the product.
9	Analog RGB	This is an analog RGB connector (female) to connect a display monitor.
10	CFast Card slot	This is a connector for CFast CARD Type I.
11	ROM Clear SW	This is used to return the BIOS settings to the default values.
12	Display Port	This is a display connector to connect to the display monitor.