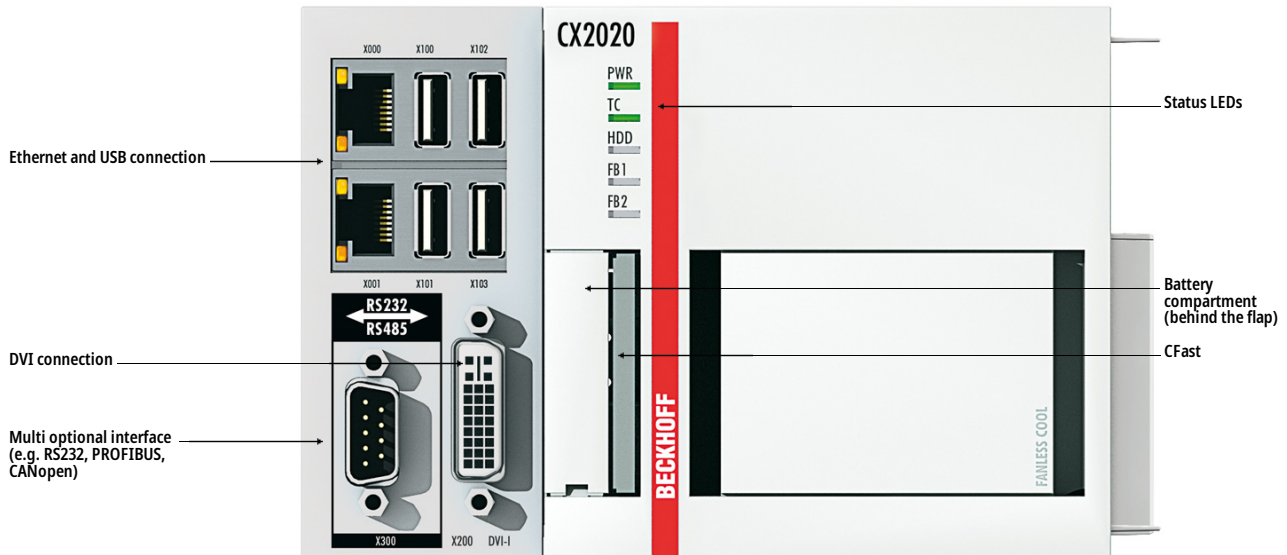


## CX2020 | Basic CPU module



**i Product status:** Regular delivery

The CX2020 has a 1.4 GHz Intel® Celeron® CPU, it is fanless and has no rotating components. In addition to the CPU and chipset, the CX2020 also contains the main memory with 2 GB RAM as standard. 4 GB is possible as option. The controller boots from the CFast flash memory card.

The basic configuration of the CX2020 includes a CFast memory card, two independent Gbit Ethernet interfaces, four USB 2.0 interfaces and a DVI-I interface.

The CPU has a 128 kB NOVRAM persistent data memory for situations where no UPS is used.

The unit can optionally be ordered with a fieldbus or serial interface. Other components from the CX2000 family can be connected via the multi-pin terminals on either side. The operating system is Microsoft Windows Embedded Compact 7, Windows Embedded Standard 7 P or Windows 10 IoT Enterprise 2016 LTSB. TwinCAT automation software transforms a CX2020 system into a powerful PLC and motion control system that can be operated with or without visualisation. Due to its high-performance the CX2020 can be used for interpolating 3-D path movements with TwinCAT NC I.

Up to four modules can be connected to the basic CPU module. The connection order is irrelevant. Internally the modules are connected via PCI Express and can be connected subsequently to the CPU "in the field".

The power supply for the CPU module comes from a CX2100 power supply module, which is connected on the right-hand side of the CPU. Two further CFast memory card modules (CX2550-0010) can be connected between the power supply unit and the CPU, so that a total of up to three CFast cards can be used. RAID can be used in situations where more than one CFast card is used.

The extended operating temperature range between -25 and +60 °C enables application in climatically demanding situations.

## Product information

### Technical Data

Technical data	CX2020
Processor	Intel® Celeron® 827E 1.4 GHz
Number of cores	1
Flash memory	20 GB or 40 GB CFAST flash card (depending on the operating system), optionally extendable
Main memory	2 GB DDR3 RAM (expandable ex factory to 4 GB)
Persistent memory	128 KB NOVRAM integrated
Interfaces	2 x RJ45 10/100/1000 Mbit/s, 1 x DVI-I, 4 x USB 2.0, 1 x optional interface
Cooling	passive cooling, optionally with active cooling ex factory
Diagnostics LED	1 x power, 1 x TC status, 1 x flash access, 2 x bus status
Clock	internal battery-backed clock for time and date (battery exchangeable)
Operating system	Windows Embedded Compact 7, Windows Embedded Standard 7 P, Windows 10 IoT Enterprise 2016 LTSB, TwinCAT/BSD
Control software	TwinCAT 2 runtime TwinCAT 3 runtime (XAR)
I/O connection	via power supply module (E-bus or K-bus, automatic recognition)
Power supply	24 V DC (-15 %/+20 %)
Max. power consumption	21 W
Dimensions (W x H x D)	144 mm x 99 mm x 91 mm
Weight	approx. 1160 g
Operating/storage temperature	-25...+60 °C/-40...+85 °C
Relative humidity	95 %, no condensation
Vibration/shock resistance	conforms to EN 60068-2-6/EN 60068-2-27
EMC immunity/emission	conforms to EN 61000-6-2/EN 61000-6-4
Protection class	IP 20
Approvals/markings	CE, UL
TwinCAT 3 platform level	Performance Plus (50); please see <a href="#">here</a> for an overview of all the TwinCAT 3 platform level

### Ordering Information

Ordering information	
CX2020-0100	no operating system, no TwinCAT
CX2020-0110	Windows Embedded Compact 7, no TwinCAT
CX2020-0111	Windows Embedded Compact 7, TwinCAT 2 PLC runtime

CX2020-0112	Windows Embedded Compact 7, TwinCAT 2 NC PTP runtime
CX2020-0113	Windows Embedded Compact 7, TwinCAT 2 NC I runtime
CX2020-0115	Windows Embedded Compact 7, TwinCAT 3 runtime (XAR)
CX2020-0120	Windows Embedded Standard 7 P 32 bit, no TwinCAT
CX2020-0121	Windows Embedded Standard 7 P 32 bit, TwinCAT 2 PLC runtime
CX2020-0122	Windows Embedded Standard 7 P 32 bit, TwinCAT 2 NC PTP runtime
CX2020-0123	Windows Embedded Standard 7 P 32 bit, TwinCAT 2 NC I runtime
CX2020-0125	Windows Embedded Standard 7 P 32 bit, TwinCAT 3 runtime (XAR)
CX2020-0130	Windows Embedded Standard 7 P 64 bit, no TwinCAT
CX2020-0135	Windows Embedded Standard 7 P 64 bit, TwinCAT 3 runtime (XAR)
CX2020-0140	Windows 10 IoT Enterprise 2016 LTSB 32 bit, no TwinCAT
CX2020-0141	Windows 10 IoT Enterprise 2016 LTSB 32 bit, TwinCAT 2 PLC runtime
CX2020-0142	Windows 10 IoT Enterprise 2016 LTSB 32 bit, TwinCAT 2 NC PTP runtime
CX2020-0143	Windows 10 IoT Enterprise 2016 LTSB 32 bit, TwinCAT 2 NC I runtime
CX2020-0150	Windows 10 IoT Enterprise 2016 LTSB 64 bit, no TwinCAT
CX2020-0155	Windows 10 IoT Enterprise 2016 LTSB 64 bit, TwinCAT 3 runtime (XAR)
CX2020-0185	TwinCAT/BSD, TwinCAT 3 runtime (XAR)

Windows Embedded Compact 7 and TwinCAT/BSD include a CFast flash card with a minimum capacity of 20 GB

Other operating systems include a CFast flash card with a minimum capacity of 40 GB.

TwinCAT 3 runtime (XAR) is preinstalled, without licenses. Please order TwinCAT 3 licenses separately from the TwinCAT 3 Price List.

## Options

Options	
CX2900-0010	Operating system preequipped on 2½-inch HDD/SSD for CX20x0, CX20x2 and CX20x3. Requires the extension module CX2550-0020 and one 2½-inch HDD/SSD.
CX2900-0011	Basic CPU module without 20 GB CFast flash card, less price
CX2900-0012	Basic CPU module without 40 GB CFast flash card, less price
CX2900-0039	40 GB CFast card, 3D flash, extended temperature range, instead of 20 GB CFast card
CX2900-0043	80 GB CFast card, 3D flash, extended temperature range, instead of 20 GB CFast card
CX2900-0045	80 GB CFast card, 3D flash, extended temperature range, instead of 40 GB CFast card
CX2900-0047	160 GB CFast card, 3D flash, extended temperature range, instead of 40 GB CFast card
CX2900-0200	"Active cooling": factory conversion of the CX2020 CPU module for active cooling in order to enable flexible installation positions (see documentation). Active cooling takes place via a fan cartridge. This option requires the use of a power supply unit type CX2100-0014 or CX2100-0914.
CX2900-0204	memory extension to 4 GB DDR3 RAM, instead of 2 GB DDR3 RAM

## Optional interfaces

CX2020-N010	DVI-D interface, additional DVI-D port for clone or extended display mode. Is not supported by Windows Embedded Compact 7.
CX2020-N011	DisplayPort interface, additional DisplayPort for clone or extended display mode. Is not supported by Windows Embedded Compact 7.
CX2020-N030	RS232 interface, D-sub plug, 9-pin
CX2020-N031	RS485 interface, D-sub socket, 9-pin, configuration as an end point, without echo, termination on
CX2020-N031-0001	RS485 interface, D-sub socket, 9-pin, configuration as an end point, with echo, termination on
CX2020-N031-0002	RS485 interface, D-sub socket, 9-pin, configuration as drop point, without echo, termination off
CX2020-N031-0003	RS485 interface, D-sub socket, 9-pin, configuration as drop point, with echo, termination off
CX2020-N031-0004	RS422 interface, D-sub socket, 9-pin, configuration as full duplex end point, termination on
CX2020-M112	2 x EtherCAT master interface
CX2020-B110	EtherCAT slave interface, EtherCAT IN and OUT (2 x RJ45)
CX2020-M310	PROFIBUS master interface, D-sub socket, 9-pin
CX2020-B310	PROFIBUS slave interface, D-sub socket, 9-pin
CX2020-M510	CANopen master interface, D-sub plug, 9-pin
CX2020-B510	CANopen slave interface, D-sub plug, 9-pin
CX2020-M930	PROFINET RT, controller interface, Ethernet (2 x RJ45 switch)
CX2020-B930	PROFINET RT, device interface, Ethernet (2 x RJ45 switched)
CX2020-B950	EtherNet/IP adapter interface, Ethernet (2 x RJ45 switched) Availability: on request

## Accessories

Accessories	
CX1900-0101	DVI-to-VGA passive adaptor for connecting a standard desktop VGA monitor to the CX system (singles out the VGA signals of the DVI-I interface).
CX1900-0102	Spare battery suitable for CX10x0, CX81x0, CX50x0, CX51x0, CX52x0, CX90x0, CX20xx – lithium button cell type CR2032, 3V/225 mAh – follow polarity when installing
CX2900-0026	20 GB CFast card, 3D flash, extended temperature range (only for Windows CE or TwinCAT/BSD operating systems)
CX2900-0038	40 GB CFast card, 3D flash, extended temperature range
CX2900-0040	80 GB CFast card, 3D flash, extended temperature range
CX2900-0042	160 GB CFast card, 3D flash, extended temperature range
CX2900-0101	Housing locking clips
CX2900-0102	Cover for left-side module bus connector, 5 pieces

CX2900-0103

Spare fan cartridge for CX2040, CX2042, CX2043, CX2062, CX2072 and CX2020, CX2030, CX2033 with fan option

- cartridge consisting of chassis and 60 mm fan
- simple exchange in the field due to wireless installation
- dimensions (W x H x D) 67 x 62 x 16 mm