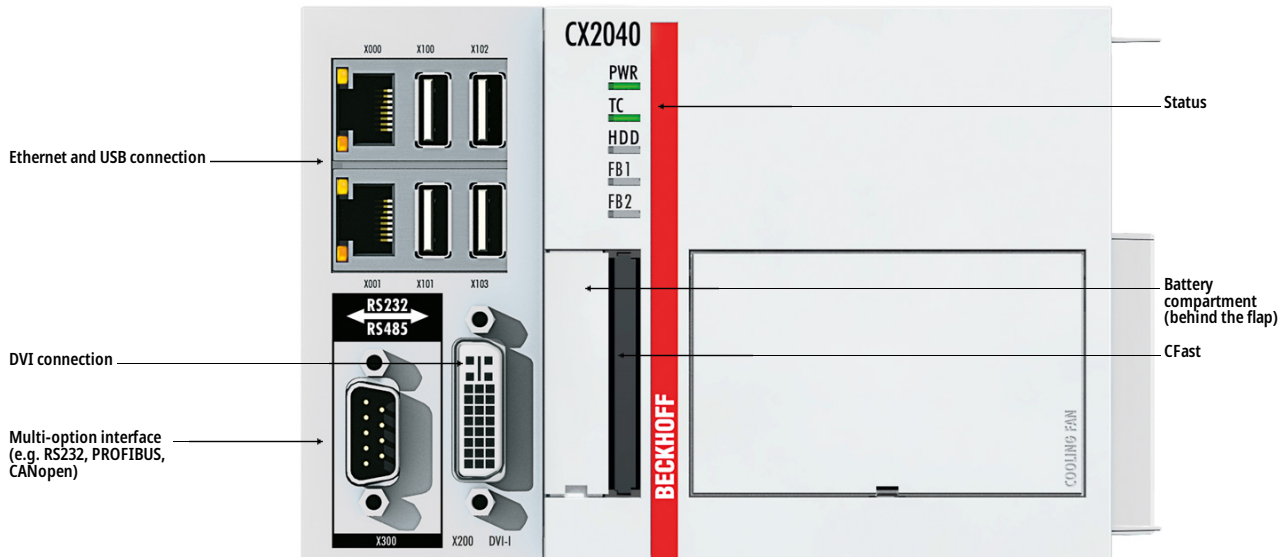




CX2040 | Basic CPU module (service phase)



i Product status: service phase | recommended alternative: CX2043

The CX2040 has a 2.1 GHz Intel® Core™ i7 quad-core CPU. Due to its high power the CPU is equipped with a fan with ball bearings and speed monitoring. In addition to the CPU and chipset the CX2040 also contains the main memory with 4 GB RAM as standard. The controller boots from the CFast flash memory card.

The basic configuration of the CX2040 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 or Windows 10 IoT Enterprise 2016 LTSB. TwinCAT automation software transforms a CX2040 system into a powerful PLC and motion control system that can be operated with or without visualization. Due to its high-performance the CX2040 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 CX2100-0014 or CX2100-0914 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	CX2040
Processor	Intel® Core™ i7 2715QE 2.1 GHz
Number of cores	4
Flash memory	20 GB or 40 GB CFast flash card (depending on the operating system), optionally extendable
Main memory	4 GB DDR3 RAM (not expandable)
Interfaces	2 x RJ45 10/100/1000 Mbit/s, 1 x DVI-I, 4 x USB 2.0, 1 x optional interface
Cooling	integrated fan with ball bearings and speed monitoring
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 (TwinCAT 3 supports only one CPU core), Windows Embedded Standard 7, 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%)
NOVRAM	128 kB
Max. power consumption	32 W
Weight	approx. 1230 g
Dimensions (W x H x D)	144 mm x 99 mm x 91 mm
Relative humidity	95%, no condensation
Operating temperature	-25...+60°C
Storage temperature	-40...+85°C
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 rating	IP20
Approvals/markings	CE, UL
TwinCAT 3 platform level	High Performance (70); please see here for an overview of all the TwinCAT 3 platform level

Ordering information

Ordering information

CX2040-0100	CPU module, no operating system, no TwinCAT
CX2040-0110	CPU module, Microsoft Windows Embedded Compact 7, no TwinCAT
CX2040-0111	CPU module, Microsoft Windows Embedded Compact 7, TwinCAT 2 PLC runtime
CX2040-0112	CPU module, Microsoft Windows Embedded Compact 7, TwinCAT 2 NC PTP runtime
CX2040-0113	CPU module, Microsoft Windows Embedded Compact 7, TwinCAT 2 NC I runtime
CX2040-0115	CPU module, Microsoft Windows Embedded Compact 7, TwinCAT 3 runtime (XAR), no licenses included
CX2040-0120	CPU module, Microsoft Windows Embedded Standard 7 P, 32 bit, no TwinCAT
CX2040-0121	CPU module, Microsoft Windows Embedded Standard 7 P, 32 bit, TwinCAT 2 PLC runtime
CX2040-0122	CPU module, Microsoft Windows Embedded Standard 7 P, 32 bit, TwinCAT 2 NC PTP runtime
CX2040-0123	CPU module, Microsoft Windows Embedded Standard 7 P, 32 bit, TwinCAT 2 NC I runtime
CX2040-0125	CPU module, Microsoft Windows Embedded Standard 7 P, 32 bit, TwinCAT 3 runtime (XAR), no licenses included
CX2040-0130	CPU module, Microsoft Windows Embedded Standard 7 P, 64 bit, no TwinCAT
CX2040-0135	CPU module, Microsoft Windows Embedded Standard 7 P, 64 bit, TwinCAT 3 runtime (XAR), no licenses included
CX2040-0140	CPU module, Microsoft Windows 10 IoT Enterprise 2016 LTSB, 32 bit, no TwinCAT
CX2040-0141	CPU module, Microsoft Windows 10 IoT Enterprise 2016 LTSB, 32 bit, TwinCAT 2 PLC runtime
CX2040-0142	CPU module, Microsoft Windows 10 IoT Enterprise 2016 LTSB, 32 bit, TwinCAT 2 NC PTP runtime
CX2040-0143	CPU module, Microsoft Windows 10 IoT Enterprise 2016 LTSB, 32 bit, TwinCAT 2 NC I runtime
CX2040-0150	CPU module, Microsoft Windows 10 IoT Enterprise 2016 LTSB, 64 bit, no TwinCAT
CX2040-0155	CPU module, Microsoft Windows 10 IoT Enterprise 2016 LTSB, 64 bit, TwinCAT 3 runtime (XAR), no licenses included
CX2040-0185	CPU module, TwinCAT/BSD, TwinCAT 3 runtime (XAR), no licenses included

The end date of the extended support for the operating systems Microsoft Windows Embedded Compact 7 and Microsoft Windows Embedded Standard 7 has already passed. Up-to-date security updates can no longer be provided. TwinCAT is only supported up to build 4024.

Windows Embedded Compact 7 supports in combination with TwinCAT 3, only one CPU core.

Windows Embedded Compact 7 and TwinCAT/BSD include a CFast flash card with a capacity of 20 GB. Other operating systems include a CFast flash card with a 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 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

Optional interfaces	
CX2040-N010	DVI-D interface, additional DVI-D port for clone or extended display mode. Is not supported by Windows Embedded Compact 7 or TwinCAT/BSD.
CX2040-N011	DisplayPort interface, additional DisplayPort for clone or extended display mode. Is not supported by Windows Embedded Compact 7 or TwinCAT/BSD.
CX2040-N030	RS232 interface, D-sub plug, 9-pin
CX2040-N031	RS485 interface, D-sub socket, 9-pin, configuration as an end point, without echo, termination on
CX2040-N031-0001	RS485 interface, D-sub socket, 9-pin, configuration as an end point, with echo, termination on
CX2040-N031-0002	RS485 interface, D-sub socket, 9-pin, configuration as drop point, without echo, termination off
CX2040-N031-0003	RS485 interface, D-sub socket, 9-pin, configuration as drop point, with echo, termination off
CX2040-N031-0004	RS422 interface, D-sub socket, 9-pin, configuration as full duplex end point, termination on
CX2040-M112	2 x EtherCAT master interface
CX2040-B110	EtherCAT slave interface, EtherCAT IN and OUT (2 x RJ45)
CX2040-M310	PROFIBUS master interface, D-sub socket, 9-pin
CX2040-B310	PROFIBUS slave interface, D-sub socket, 9-pin
CX2040-M510	CANopen master interface, D-sub plug, 9-pin
CX2040-B510	CANopen slave interface, D-sub plug, 9-pin
CX2040-M930	PROFINET RT, controller interface, Ethernet (2 x RJ45 switch)
CX2040-B930	PROFINET RT, device interface, Ethernet (2 x RJ45 switched)

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).

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 (black) for the CX52x0, CX53x0, CX56x0 and CX20xx series 10 locking pin sets (each set consisting of two pieces)
CX2900-0102	Cover for left-side module bus connector, 5 pieces
CX2900-0103	Spare fan cartridge for CX20xx 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