



CX2042 | Basic CPU module

The CX2042 has an Intel® Xeon® CPU with a clock rate of 2.2 GHz (4 cores). A fan with ball bearings and speed monitoring is integrated into the basic CPU module. In addition to the CPU, the basic module also contains the main memory with a size of 8 GB RAM, optionally available with up to 32 GB. The controller boots from a CFast flash memory card where both the operating system as well as user programs and data are stored.

The CPU has an internal 128 kB NOVRAM, which acts as a persistent data memory if no UPS is used.

Microsoft Windows 10 IoT Enterprise LTSB 64 bit is used as operating system. The use of TwinCAT 3 allows automation tasks to be distributed across the various cores of the Intel® Xeon® CPU.

All system modules from the CX2000 series for left- or right-sided functional extensions can be connected. Internally the modules are connected via PCI Express and can be plugged to the CPU in the field.

The power supply for the CPU module comes from a CX2100-0014 power supply module. Up to two mass storage modules (either CX2550-0010 CFast modules or CX2550-0020 2½-inch SSD modules) can be plugged in between the power supply unit and the CPU, allowing the use of up to three mass storage devices in total.

The order identifier of the basic CPU module is derived as follows:

<p>CX2042-01ST</p> <ul style="list-style-type: none"> 0 = no TwinCAT 5 = TwinCAT 3 runtime (XAR) <ul style="list-style-type: none"> 0 = no operating system 5 = Windows 10 IoT Enterprise LTSB 64 bit <p><small>Since not all combinations make sense, the table "Ordering information" contains a breakdown of the permissible combinations.</small></p>	<p>Optional interfaces:</p> <ul style="list-style-type: none"> CX2042-N010 = second DVI connection, DVI-D port CX2042-N011 = DisplayPort interface CX2042-N030 = RS232, D-sub plug CX2042-N031 = RS422/RS485, D-sub socket CX2042-M310 = PROFIBUS master, D-sub socket, 9-pin CX2042-B310 = PROFIBUS slave, D-sub socket, 9-pin CX2042-M510 = CANopen master, D-sub plug, 9-pin CX2042-B510 = CANopen slave, D-sub plug, 9-pin CX2042-M930 = PROFINET RT, controller CX2042-B930 = PROFINET RT, device, Ethernet (2 x RJ45 switch) CX2042-B931 = PROFINET IRT, device, Ethernet (2 x RJ45 switch) CX2042-B950 = EtherNet/IP slave, Ethernet (2 x RJ45 switch) CX2042-B110 = EtherCAT slave, EtherCAT IN and OUT (2 x RJ45)
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Technical data	CX2042
Processor	Intel® Xeon® D-1527 2.2 GHz, 4 cores (TC3: 70)
Number of cores	4
Graphics	AMD E8860, 2 GB GDDR5
Flash memory	slot for CFast card, card not included
Internal main memory	8 GB DDR4 RAM (optionally expandable)
Persistent memory	128 KB NOVRAM integrated
Interfaces	2 x RJ45, 10/100/1000 Mbit/s, 4 x USB 3.0, 1 x DVI-I
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	Microsoft Windows 10 IoT Enterprise, Long Term Servicing Branch (LTSB), 64 bit
Control software	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 loss	100 W
Dimensions (W x H x D)	204 mm x 99 mm x 91 mm
Weight	approx. 1300 g
Operating/storage temperature	-25...+50 °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	CE
TC3 performance class	high performance (70); please see here for an overview of all the TwinCAT 3 performance classes

Ordering information	no operating system	Windows 10 IoT Enterprise LTSB 64 bit	no TwinCAT	TwinCAT 3 runtime (XAR)
CX2042-0100	x	–	x	–
CX2042-0150	–	x	x	–
CX2042-0155	–	x	–	x

Accessories	
CX2900-0205	memory extension to 16 GB DDR4 RAM, instead of 8 GB DDR4 RAM
CX2900-0206	memory extension to 32 GB DDR4 RAM, instead of 8 GB DDR4 RAM
CX2900-0103	Spare fan cartridge for CX2040, CX2042, CX2062, CX2072 and CX2020, CX2030 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
CX1900-0102	Spare battery suitable for CX10x0, CX50x0, CX51x0, CX90x0, CX20xx – lithium button cell type CR2032, 3V/225 mAh – follow polarity when installing

Optional interfaces	
CX2042-N010	DVI-D interface, additional DVI-D port for clone or extended desktop operation
CX2042-N011	DisplayPort interface, additional DisplayPort for clone or extended desktop operation
CX2042-N030	RS232 interface, D-sub plug, 9-pin
CX2042-N031	RS485 interface, D-sub socket, 9-pin, configuration as an end point, without echo, termination on
CX2042-N031-0001	RS485 interface, D-sub socket, 9-pin, configuration as an end point, with echo, termination on
CX2042-N031-0002	RS485 interface, D-sub socket, 9-pin, configuration as drop point, without echo, termination off
CX2042-N031-0003	RS485 interface, D-sub socket, 9-pin, configuration as drop point, with echo, termination off
CX2042-N031-0004	RS422 interface, D-sub socket, 9-pin, configuration as full duplex end point, termination on
CX2042-B110	EtherCAT slave interface, EtherCAT IN and OUT (2 x RJ45)
CX2042-M310	PROFIBUS master interface, D-sub socket, 9-pin
CX2042-B310	PROFIBUS slave interface, D-sub socket, 9-pin
CX2042-M510	CANopen master interface, D-sub plug, 9-pin
CX2042-B510	CANopen slave interface, D-sub plug, 9-pin
CX2042-M930	PROFINET RT, controller interface, Ethernet (2 x RJ45)
CX2042-B930	PROFINET RT, device interface, Ethernet (2 x RJ45 switched)
CX2042-B931	PROFINET IRT, device interface, Ethernet (2 x RJ45 switched), in combination with TwinCAT 3 only
CX2042-B950	EtherNet/IP slave interface, Ethernet (2 x RJ45 switched)