



i CX2030 | Basic CPU module

The CX2030 has a 1.5 GHz Intel® Core™ i7 dual-core CPU, it is fanless and has no rotating components. In addition to the CPU and chipset the CX2030 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 CX2030 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 Embedded Standard 7 P. TwinCAT automation software transforms a CX2030 system into a powerful PLC and Motion Control system that can be operated with or without visualisation. Due to its high-performance the CX2030 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.

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

CX20x0-01xT		Optional interfaces:
0 = operating system only/optional TwinCAT 3		CX20x0-N010 = second DVI connection, DVI-D port
1 = with TwinCAT 2 PLC runtime		CX20x0-N030 = RS232, D-sub plug
2 = with TwinCAT 2 NC PTP runtime		CX20x0-N031 = RS422/RS485, D-sub socket
3 = with TwinCAT 2 NC I runtime		CX20x0-B110 = EtherCAT slave, EtherCAT IN and OUT (2 x RJ45)
0 = no operating system		CX20x0-M310 = PROFIBUS master, D-sub socket, 9-pin
1 = operating system Microsoft Windows Embedded Compact 7		CX20x0-B310 = PROFIBUS slave, D-sub socket, 9-pin
2 = operating system Microsoft Windows Embedded Standard 7 P 32 bit		CX20x0-M510 = CANopen master, D-sub plug, 9-pin
3 = operating system Microsoft Windows Embedded Standard 7 P 64 bit		CX20x0-B510 = CANopen slave, D-sub plug, 9-pin
2 = Intel® Celeron® processor 1.4 GHz, 1 core		CX20x0-M930 = PROFINET RT, controller
3 = Intel® Core™ processor 1.5 GHz, 2 cores		CX20x0-B930 = PROFINET RT, device, Ethernet (2 x RJ45 switch)
4 = Intel® Core™ processor 2.1 GHz, 4 cores		CX20x0-B950 = EtherNet/IP slave, Ethernet (2 x RJ45 switch)

Since not all combinations make sense, the table "Ordering information" contains a breakdown of the permissible combinations.

Technical data	CX2030
Processor	Intel® Core™ i7 2610UE 1.5 GHz, 2 cores (TC3: 60)
Flash memory	4 or 8 GB CFast flash card (optionally extendable)
Internal main memory	2 GB DDR3 RAM
Persistent memory	128 KB NOVRAM integrated
Interfaces	2 x RJ45, 10/100/1000 Mbit/s, DVI-I, 4 x USB 2.0, 1 x optional interface
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 Embedded Compact 7 or Microsoft Windows Embedded Standard 7 P
Control software	TwinCAT 2 PLC runtime, NC PTP runtime, NC I runtime
I/O connection	via power supply module (E-bus or K-bus, automatic recognition)
Power supply	24 V DC (-15 %/+20 %)
Max. power loss	20 W (including the system interfaces)
Dimensions (W x H x D)	144 mm x 100 mm x 91 mm
Weight	approx. 1165 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
TC3 performance class	mid performance (60); please see here for an overview of all the TwinCAT 3 performance classes

Ordering information	no operating system	Windows Embedded Compact 7	Windows Embedded Standard 7 P 32 bit	Windows Embedded Standard 7 P 64 bit	optional TwinCAT 3	TwinCAT 2 PLC runtime	TwinCAT 2 NC PTP runtime	TwinCAT 2 NC I runtime
CX2030-0100	x	–	–	–	–	–	–	–
CX2030-0110	–	x	–	–	x	–	–	–
CX2030-0111	–	x	–	–	–	x	–	–
CX2030-0112	–	x	–	–	–	–	x	–
CX2030-0113	–	x	–	–	–	–	–	x
CX2030-0120	–	–	x	–	x	–	–	–
CX2030-0121	–	–	x	–	–	x	–	–
CX2030-0122	–	–	x	–	–	–	x	–
CX2030-0123	–	–	x	–	–	–	–	x
CX2030-0130	–	–	–	x	x	–	–	–

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).
CX2900-00xx	Optionally expandable memory ex factory. Instead of 4 GB CFast card: 8, 16 GB CFast card Instead of 8 GB CFast card: 16, 32 GB CFast card
CX2900-0101	Housing locking clips

Optional interfaces	
CX2030-N010	DVI-D interface, additional DVI-D port for clone or extended desktop operation
CX2030-N030	RS232 interface, D-sub plug, 9-pin
CX2030-N031	RS485 interface, D-sub socket, 9-pin, configuration as an end point, without echo, termination on
CX2030-N031-0001	RS485 interface, D-sub socket, 9-pin, configuration as an end point, with echo, termination on
CX2030-N031-0002	RS485 interface, D-sub socket, 9-pin, configuration as drop point, without echo, termination off
CX2030-N031-0003	RS485 interface, D-sub socket, 9-pin, configuration as drop point, with echo, termination off
CX2030-N031-0004	RS422 interface, D-sub socket, 9-pin, configuration as full duplex end point, termination on
CX2030-B110	EtherCAT slave interface, EtherCAT IN and OUT (2 x RJ45)
CX2030-M310	PROFIBUS master interface, D-sub socket, 9-pin
CX2030-B310	PROFIBUS slave interface, D-sub socket, 9-pin
CX2030-M510	CANopen master interface, D-sub plug, 9-pin
CX2030-B510	CANopen slave interface, D-sub plug, 9-pin
CX2030-M930	PROFINET RT, controller interface, Ethernet (2 x RJ45)
CX2030-B930	PROFINET RT, device interface, Ethernet (2 x RJ45 switched)
CX2030-B950	EtherNet/IP slave interface, Ethernet (2 x RJ45 switched)

