Status LEDs

Battery compartment (behind the flap)

CFast

Ethernet and USB connection

DVI connection

Multi optional interface (e.g. RS232, PROFIBUS, CANopen)

CX2020 | Basic CPU module

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.

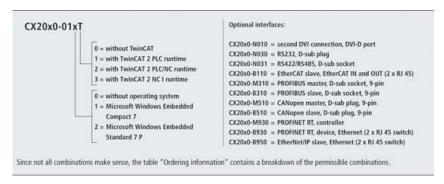The CPU has a 128 kB NOVRAM persistent data memory for situations where no UPS is used.

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 or Windows Embedded Standard 7 P. 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.

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

CX20x0-01xT

0 = without TwinCAT
1 = with TwinCAT 2 PLC runtime
2 = with TwinCAT 2 PLC/NC runtime
3 = with TwinCAT 2 NC I runtime

0 = without operating system
1 = Microsoft Windows Embedded Compact 7
2 = Microsoft Windows Embedded Standard 7 P

Optional interfaces:

CX20x0-N010 = second DVI connection, DVI-D port
CX20x0-N030 = RS232, D-sub plug
CX20x0-N031 = RS422/RS485, D-sub socket
CX20x0-B110 = EtherCAT slave, EtherCAT IN and OUT (2 x RJ 45)
CX20x0-M310 = PROFIBUS master, D-sub socket, 9-pin
CX20x0-B310 = PROFIBUS slave, D-sub socket, 9-pin
CX20x0-M510 = CANopen master, D-sub plug, 9-pin
CX20x0-B510 = CANopen slave, D-sub plug, 9-pin
CX20x0-M930 = PROFINET RT, controller
CX20x0-B930 = PROFINET RT, device, Ethernet (2 x RJ 45 switch)
CX20x0-B950 = EtherNet/IP slave, Ethernet (2 x RJ 45 switch)

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

Technical data	CX2020
Processor	Intel® Celeron® 827E 1.4 GHz, single-core
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
Power supply	24 V DC (-15 %/+20 %)
Dielectric strength	500 V (supply/internal electronics)
Max. power loss	15 W (including the system interfaces)
Dimensions (W x H x D)	144 mm x 100 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
TC3 performance class	performance plus (50); 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
CX2020-0100	x	–	–	–	–	–	–	–
CX2020-0110	–	x	–	–	x	–	–	–
CX2020-0111	–	x	–	–	–	x	–	–
CX2020-0112	–	x	–	–	–	–	x	–
CX2020-0113	–	x	–	–	–	–	–	x
CX2020-0120	–	–	x	–	x	–	–	–
CX2020-0121	–	–	x	–	–	x	–	–
CX2020-0122	–	–	x	–	–	–	x	–
CX2020-0123	–	–	x	–	–	–	–	x
CX2020-0130	–	–	–	x	x	–	–	–