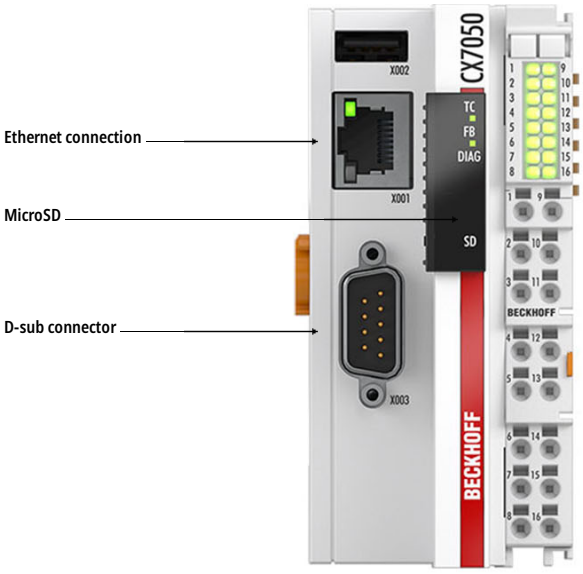
CX7050 | Embedded PC with Arm® Cortex®-M7, CANopen commander (master) and integrated I/Os



ⓘ Image similar, may contain optional accessories

Product status: regular delivery

The CX7050 Embedded PC has an Arm® Cortex®-M7 single-core processor with 480 MHz. In the basic configuration, the CX7050 has a slot for a microSD card and an Ethernet interface. As a special feature, the CX7000 series has eight integrated multi-functional inputs as well as four integrated multi-functional outputs.

The CANopen commander (master) interface of the CX7050 can also be used as a CAN or CANopen slave.

E-bus or K-bus terminals can be attached as required; the CX7050 automatically recognizes the type of I/O system connected during the start-up phase. The control system is programmed with TwinCAT 3 via the Ethernet interface.

Product information

Technical data

Technical data	CX7050
Processor	Arm® Cortex®-M7, 480 MHz
Number of cores	1
Flash memory	slot for microSD card, 512 MB included (optionally expandable)
Main memory	32 MB SDR (not expandable)

Number of inputs	8 multi-functional inputs (24 V DC)
Number of outputs	4 multi-functional outputs (24 V DC, 0.5 A, 1-wire technique)
NOVRAM	4 kB
Interfaces	1 x RJ45 10/100 Mbit/s, 1 x USB, 1 x bus interface
Cooling	passive
Bus interface	D-sub connector, 9-pin, 1 x CANopen commander (master), CAN 2.0A/2.0B
Data transfer rates	10, 20, 50, 100, 125, 250, 500, 800, 1000 kbaud
Diagnostics LED	1 x TC status, 1 x bus status, 1 x diagnostics
Clock	internal, capacitor-buffered real-time clock for time and date (storage capacity > 21 days)
Operating system	TwinCAT/RTOS
Control software	TwinCAT 3 runtime (XAR)
I/O connection	E-bus or K-bus, automatic recognition
Power supply	24 V DC (-15%/+20%)
Current supply E-bus/K-bus	1.5 A
Max. power consumption	< 2.0 W
Max. power consumption E-bus/K-bus	7.5 W
Dimensions (W x H x D)	49 mm x 100 mm x 73 mm
Weight	142 g
Operating temperature	-25...+60°C
Storage temperature	-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 rating	IP20
Included TwinCAT 3 Function	TC1000 TwinCAT 3 ADS, TC1100 TwinCAT 3 I/O, TC1200 TwinCAT 3 PLC, TF4100 TwinCAT 3 Controller Toolbox, TF4110 TwinCAT 3 Temperature Controller, TF6255 TwinCAT 3 Modbus RTU, TF6340 TwinCAT 3 Serial Communication, TF6701 TwinCAT 3 IoT Communication (MQTT), TF6730 TwinCAT 3 IoT Communicator, TF6760 TwinCAT 3 IoT HTTPS/REST
Approvals/markings	CE, UL
TwinCAT 3 platform level	Basic (10); please see here for an overview of all the TwinCAT 3 platform level

Technical data	**Multi-functional I/Os | Digital input**
Connection technology	1-wire
Nominal voltage	24 V DC (-15%/+20%)
Specification	EN 61131-2, type 3
“0” signal voltage	-3...+5 V

"1" signal voltage	11...30 V
Input filter	configurable, default: 3 ms, min.: 10 µs

Technical data	Multi-functional I/Os | Digital output
Connection technology	1-wire
Nominal voltage	24 V DC (-15%/+20%)
Load type	ohmic, inductive, lamp load
Switching times	T_{ON}: typ. 20 µs, T_{OFF}: 10 µs
Short-circuit current	typ. < 2 A
Breaking energy	< 150 mJ/channel

Technical data	Multi-functional I/Os | Counter
Connection technology	1 x up/down counter, 1 x up or down counter
Nominal voltage	24 V DC (-15%/+20%)
Specification	EN 61131-2, type 3
"0" signal voltage	-3...+5 V
"1" signal voltage	11...30 V
Limit frequency	up/down counter: 20 kHz, up counter: 100 kHz
Counter depth	32 bit
Max. output current	24 V/0.5 A (short-circuit proof)
Special features	set counter value, switch output, reload value

Technical data	Multi-functional I/Os | Encoder
Technology	incremental encoder interface
Nominal voltage	24 V DC (-15%/+20%)
Specification	EN 61131-2, type 3
Encoder connection	1 x A, B: 24 V single-ended connection
Additional inputs	latch input, 24 V DC
Limit frequency	250,000 increments (with 4-fold evaluation), equivalent 62.5 kHz
Counter depth	32 bit
Quadrature decoder	4-fold evaluation
Max. output current	24 V/0.5 A (short-circuit proof)
Special features	latch function, software gate, set counter value, switch output, reload value

Technical data	Multi-functional I/Os | Analog input

Number of inputs	2
Technology	single-ended
Signal voltage	0...10 V
Internal resistance	500 kΩ
Input filter limit frequency	2 kHz
Resolution	12 bit (16 bit presentation)
Measurement error/uncertainty	< ±0.3% (relative to full scale value)

Technical data	**Multi-functional I/Os | Pulse width modulation**
Connection technology	PWM output
Number of outputs	2
Nominal voltage	24 V DC (-15%/+20%)
Load type	ohmic, inductive, lamp load
Max. output current	24 V/0.5 A (short-circuit proof)
Frequency	15 Hz...100 kHz
Duty factor	0...100% (T_{ON} > 20 ns, T_{OFF} > 200 ns)
Short-circuit current	typ. < 2 A
Special features	separate frequency can be set for each channel

Ordering information

Ordering information	
CX7050	Embedded PC with Arm® Cortex®-M7, CANopen commander (master) and integrated I/Os
CX7051	Embedded PC with Arm® Cortex®-M7, CANopen responder (slave) and integrated I/Os

Options

Options	
CX1900-0123	1 GB microSD card, instead of 512 MB microSD card*
CX1900-0125	2 GB microSD card, instead of 512 MB microSD card*
CX1900-0131	16 GB microSD card, instead of 512 MB microSD card*

*Only available as flash memory extension in combination with a CX CPU module on order. Suitable for CX7xxx, CX80xx, CX81xx, CX9020.

Accessories

Accessories	

CX1900-0122	512 MB microSD card
CX1900-0124	1 GB microSD card
CX1900-0126	2 GB microSD card
CX1900-0132	16 GB microSD card
ZK1090-9191-0xxx	RJ45, plug, straight, male, 8-pin – RJ45, plug, straight, male, 8-pin
ZK1093-9191-0xxx	RJ45, plug, straight, male, 8-pin – RJ45, plug, straight, male, 8-pin
BZ1xxx	100 contact labels, various colors, pre-printed
BZ2xxx	100 contact labels, various Colors, blank