





- 1. The Embedded PC Company**
2. Embedded PC series
3. Product overview

Embedded PCs: PLC and Motion Control in a small format

BECKHOFF



Embedded PCs: PLC and Motion Control in a small format

BECKHOFF

- modular control system
- PC technology and I/O level as a unit on the DIN rail
- 15 CPU modules with different processors from ARM up to Intel® Core™ i7



Modular DIN-rail mounted Industrial PC series

BECKHOFF

- option to directly connect I/O components
 - Bus Terminals (IP20)
 - EtherCAT Terminals (IP20)
 - EtherCAT Box modules (IP67)
- fieldbus interfaces in slave and master versions
- expandability through different system interfaces
- Control Panels can be directly connected as a display device via DVI/USB



Modular DIN-rail mounted Industrial PC series

BECKHOFF

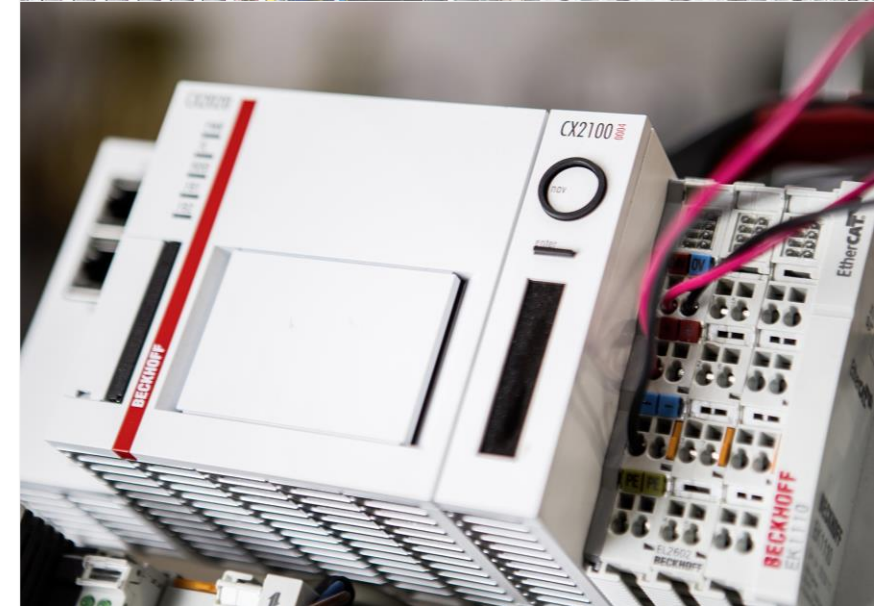
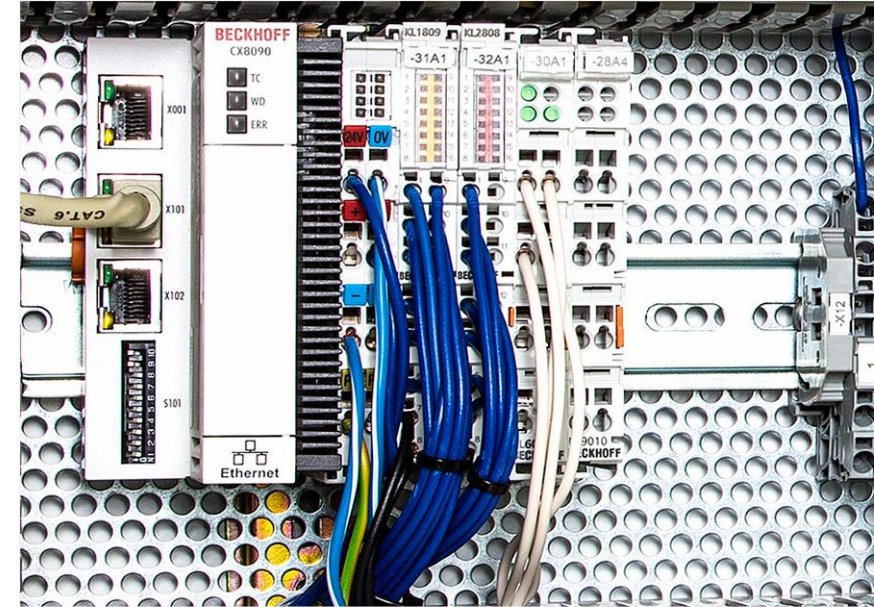
- PLC, Motion Control and visualisation
- programming with TwinCAT
- optimised price/performance ratio



Modular DIN-rail mounted Industrial PC series

BECKHOFF

- space-saving installation on the DIN rail
- maximised performance in a compact formfactor
- direct connection of I/O components – no additional costs for couplers



Fanless design without rotating parts

BECKHOFF



- no routine maintenance
- silent operation
- no wear

Highest performance for demanding control tasks

BECKHOFF



Scalable performance classes

BECKHOFF

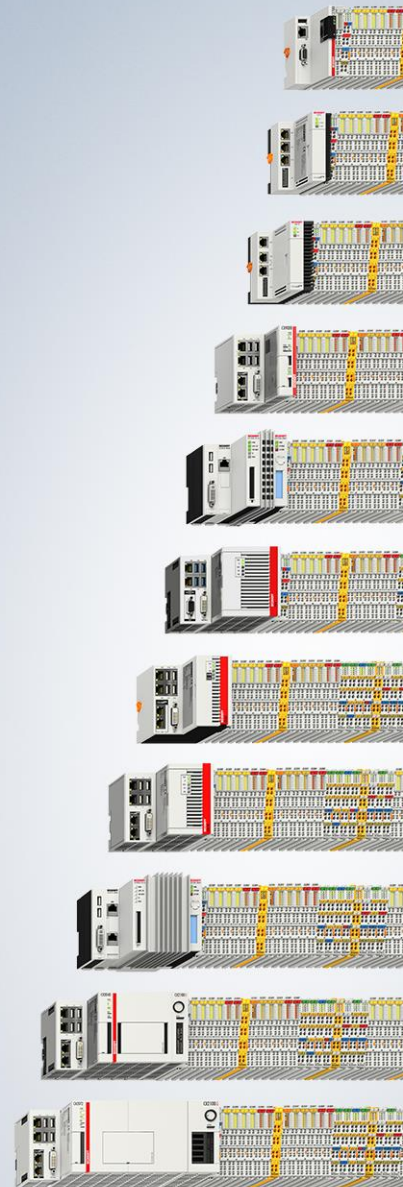
CX70xx	basic CX with ARM Cortex™-M7, 480 MHz
CX80xx	basic CX with ARM9-CPU, 400 MHz
CX81xx	basic CX with ARM Cortex™-A9, 800 MHz
CX9020	Ethernet controller with ARM Cortex™-A8, 1 GHz
CX1010	basic CX with Intel® Pentium®, 500 MHz
CX50xx	compact CX with Intel Atom® up to 1.6 GHz
CX51xx	compact CX with Intel Atom® up to 1.91 GHz
CX52xx	compact CX with Intel Atom® up to 1.6 GHz
CX56x0	Multi-core Embedded PCs with AMD Ryzen™ CPU and up to 2 cores
CX10x0	high-performance CX up to Intel® Pentium® M, 1.8 GHz
CX20x0	multi-core CX up to Intel® Core™ i7, 2.1 GHz, with up to 4 cores
CX20x3	Embedded PCs with AMD Ryzen™ CPU and up to 4 cores
CX20x2	manycore CX with Intel® Xeon™ up to 2.2 GHz and up to 12 cores



Scalable performance classes

BECKHOFF

CX70xx	basic CX with ARM Cortex™-M7, 480 MHz
CX80xx	basic CX with ARM9-CPU, 400 MHz
CX81xx	basic CX with ARM Cortex™-A9, 800 MHz
CX9020	Ethernet controller with ARM Cortex™-A8, 1 GHz
CX1010	basic CX with Intel® Pentium®, 500 MHz
CX50xx	compact CX with Intel Atom® up to 1.6 GHz
CX51xx	compact CX with Intel Atom® up to 1.91 GHz
CX52xx	compact CX with Intel Atom® up to 1.6 GHz
CX56x0	Multi-core Embedded PCs with AMD Ryzen™ CPU and up to 2 cores
CX10x0	high-performance CX up to Intel® Pentium® M, 1.8 GHz
CX20x0	multi-core CX up to Intel® Core™ i7, 2.1 GHz, with up to 4 cores
CX20x3	Embedded PCs with AMD Ryzen™ CPU and up to 4 cores
CX20x2	manycore CX with Intel® Xeon™ up to 2.2 GHz and up to 12 cores

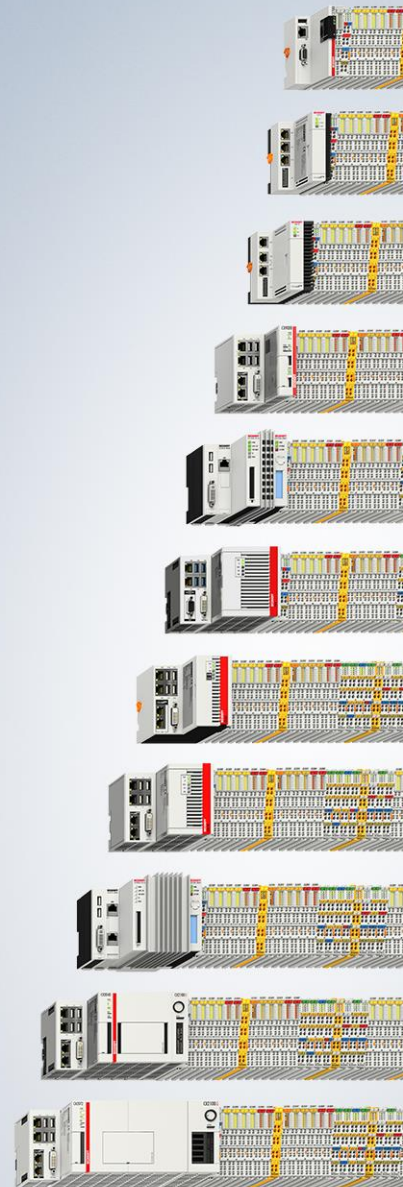
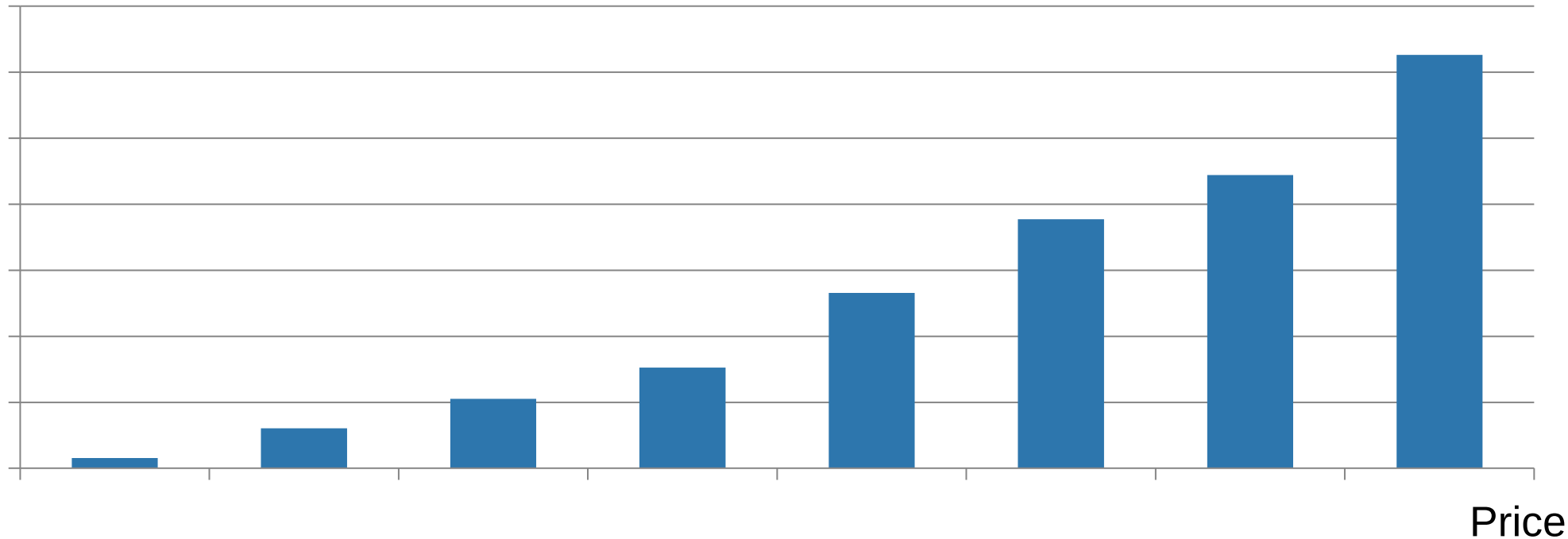


Scalable performance classes

BECKHOFF

- from ARM9 400 MHz up to Core i7 2.1 GHz quad-core processors
- universal programming with TwinCAT
- centralised or decentralised control system architectures possible

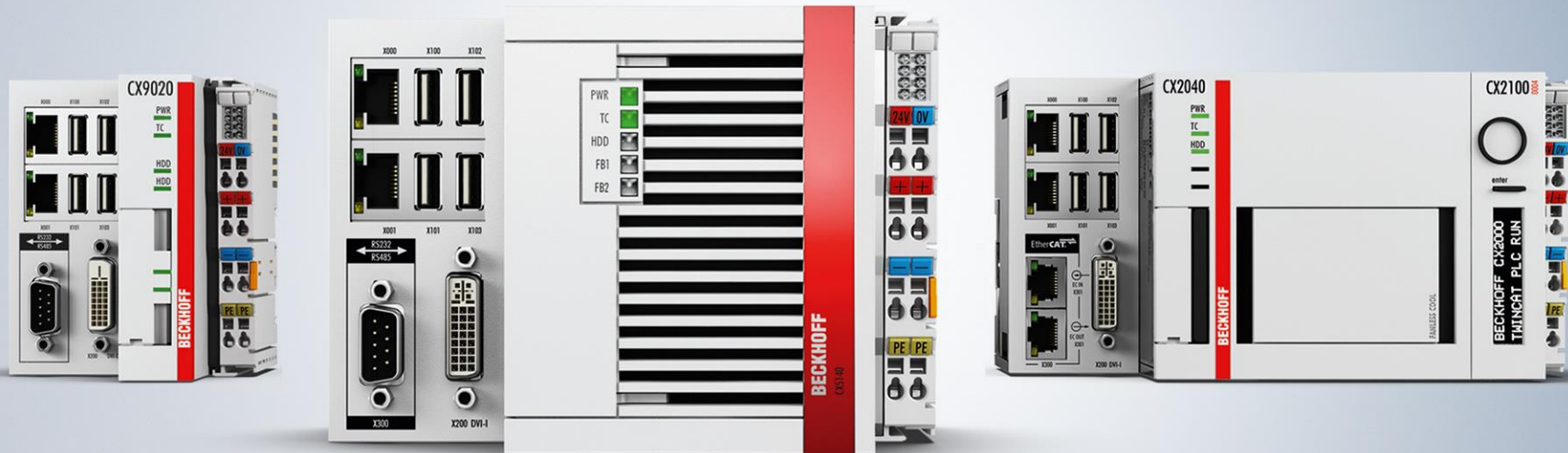
Performance



Long-term availability across the entire range

BECKHOFF

> 10 years

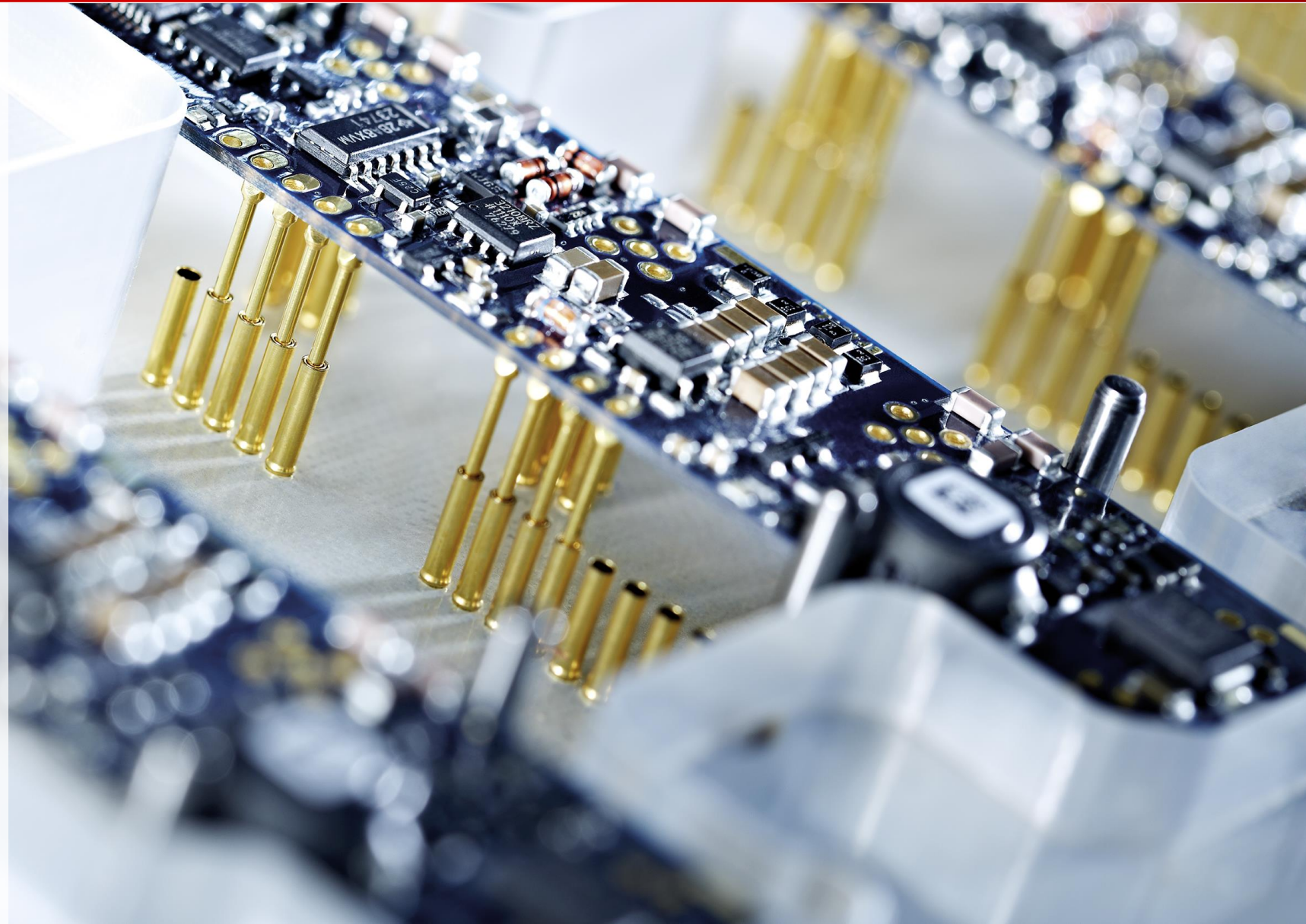


- > 10 years availability
 - Image compatible
 - No costs due to changing software
 - Serial machine can be build for a long time without software change
- Additional > 10 years of service (starting at end of LTB)



* Disclaimer: All end-Dates given are to be interpreted as "expected earliest dates": Beckhoff intends to expand time periods above dates given
Beckhoff has met or exceeded it's life cycle information in the past. However, the planned life cycle time periods and LTB/LTS dates are unwarranted estimates for future supply only.
The information provided does not constitute a warranted property of the product or service provided by Beckhoff.

- profound technological expertise in PC technology gained in more than 25 years
- production of Embedded PCs since 2002
- high quality standards
- perfectly matched components in control system
- high availability



1. The Embedded PC Company
2. **Embedded PC series**
3. Product overview

CX7000 | Embedded PC with ARM Cortex™-M7 processor

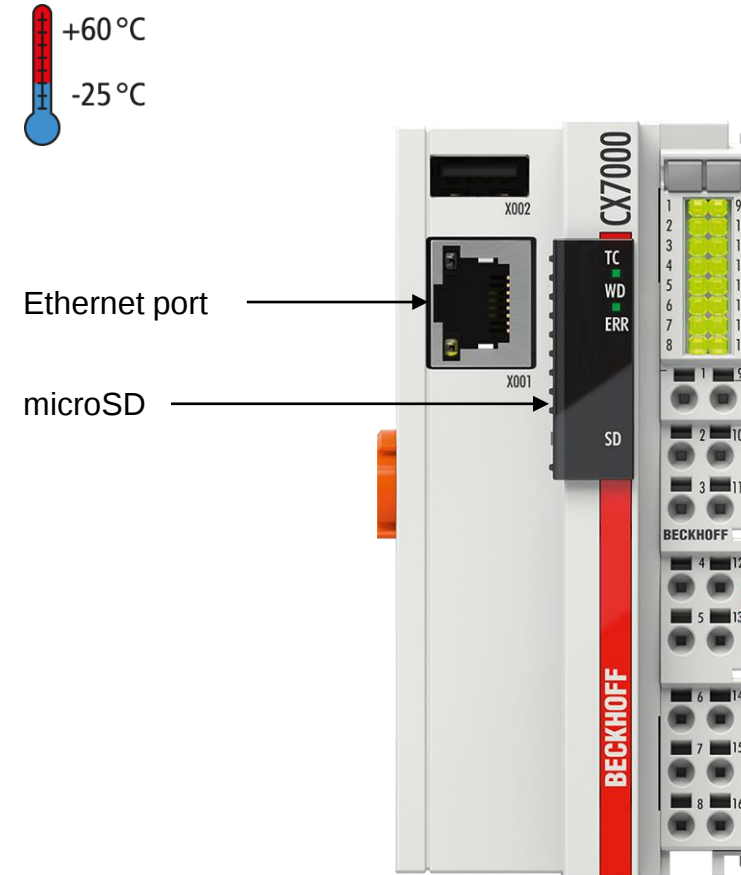
BECKHOFF



CX7000 | Embedded PC with ARM Cortex™-M7 processor

BECKHOFF

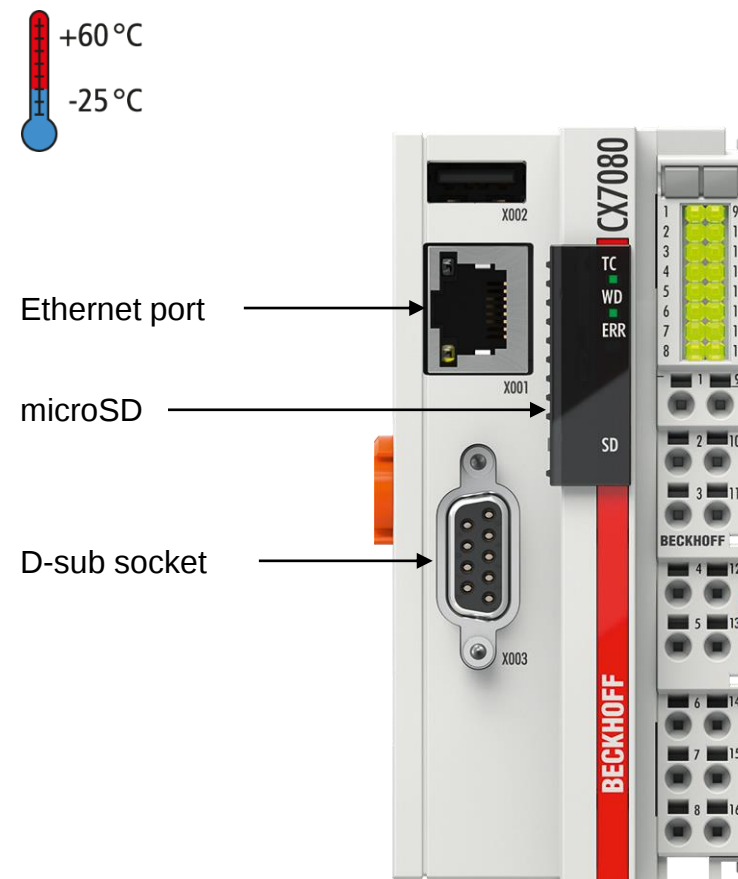
- ARM Cortex™ M7 single-core processor with 480 MHz
- 512 MB microSD (optionally 1 GB, 2 GB, 4 GB or 8 GB)
- 32 MB RAM (internal, not expandable)
- 8 multi-functional inputs
- 4 multi-functional outputs
- programming: TwinCAT 3 PLC
- 2 kB NOVRAM
- programming interface: 1 x Ethernet 10/100 Mbit/s (RJ45)
- operating temperature -25...+60 °C



CX7080 | Embedded PC for RS232/RS485

BECKHOFF

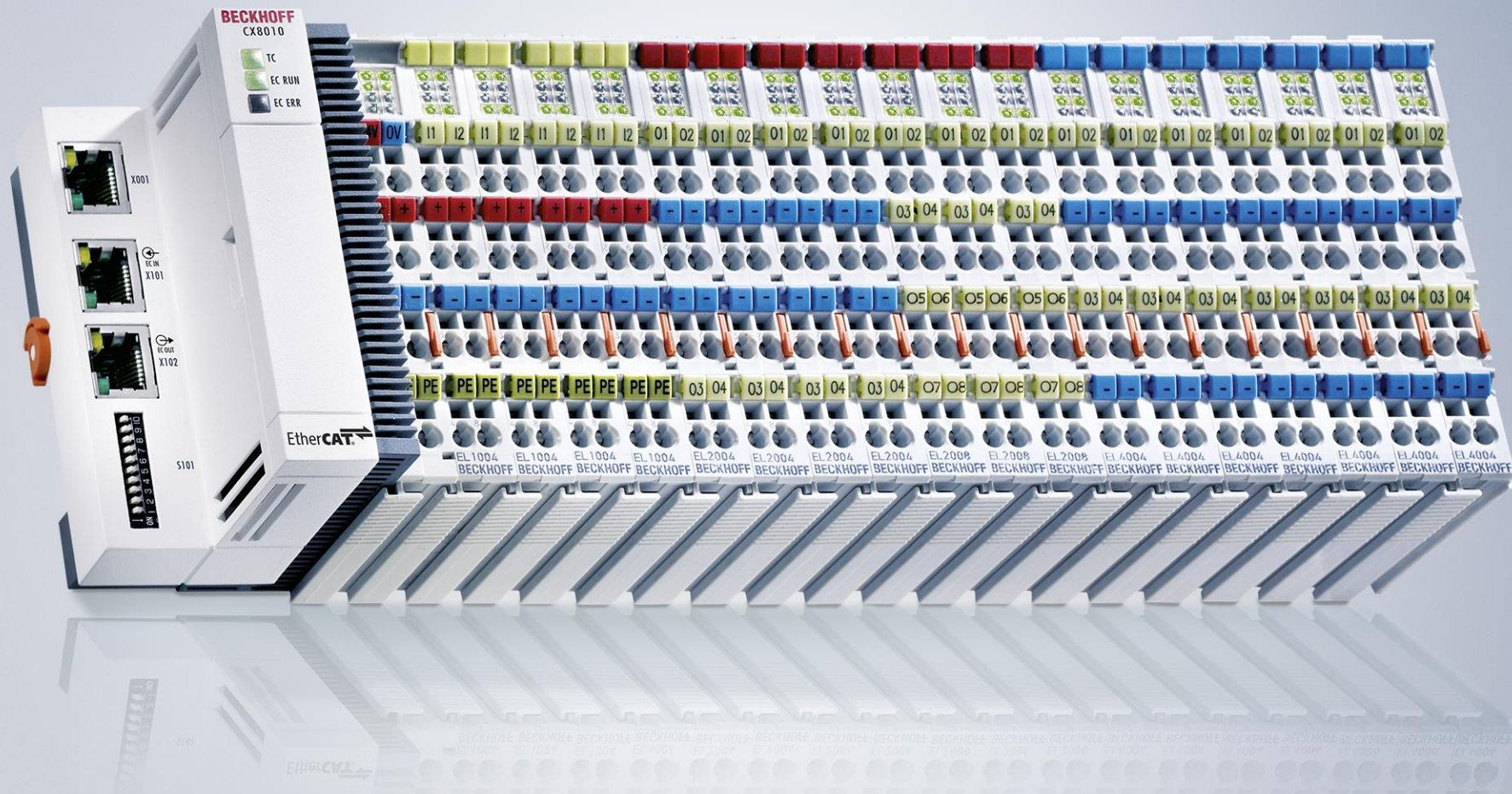
- ARM Cortex™ M7 single-core processor with 480 MHz
- 512 MB microSD (optionally 1 GB, 2 GB, 4 GB or 8 GB)
- 32 MB RAM (internal, not expandable)
- 8 multi-functional inputs
- 4 multi-functional outputs
- serial communication RS232/RS485
- programming: TwinCAT 3 PLC
- 2 kB NOVRAM
- programming interface: 1 x Ethernet 10/100 Mbit/s (RJ45)
- operating temperature -25...+60 °C



RS232
↔
RS485

CX8000 Embedded PC series

BECKHOFF



32-bit ARM processor, 400 MHz

IP20 protection class

USB interface for programming

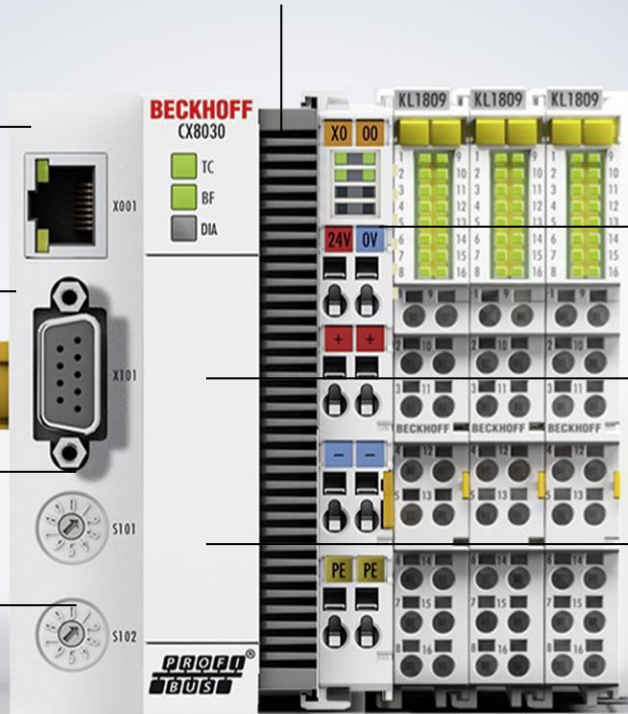
TwinCAT PLC programming

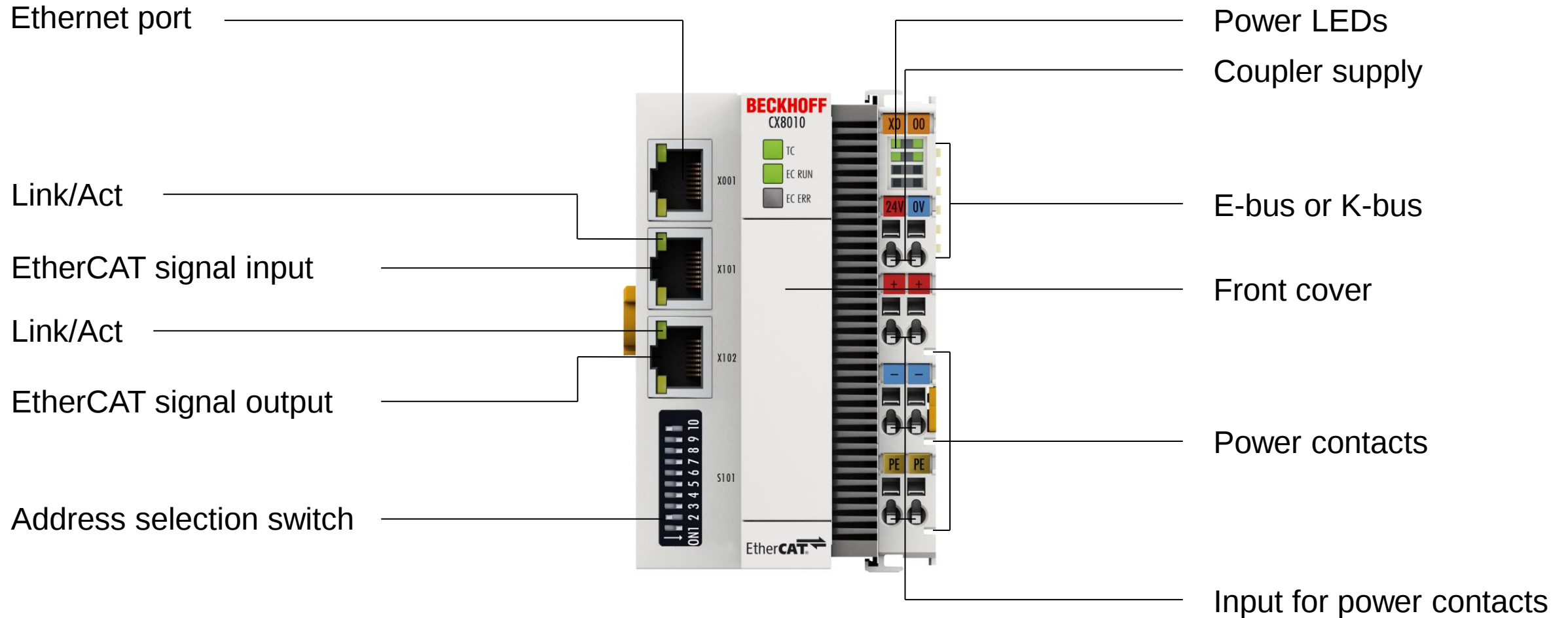
Windows CE 6

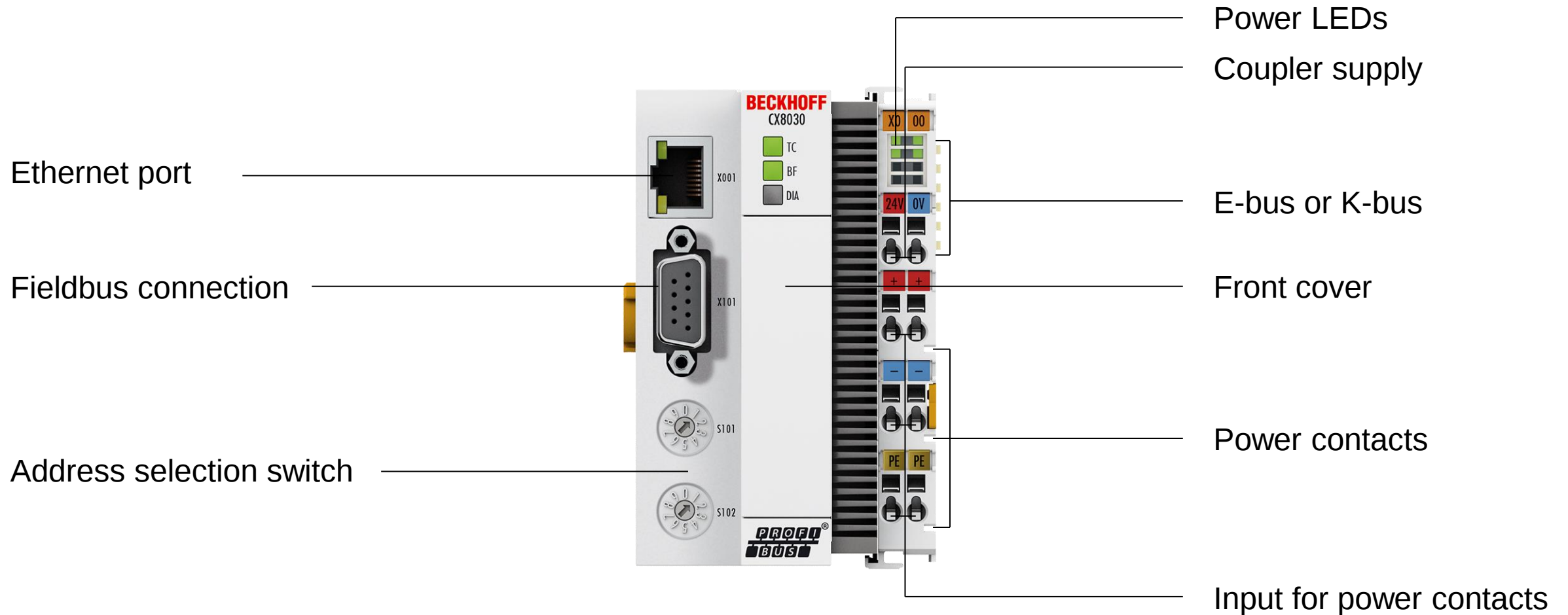
1-second UPS

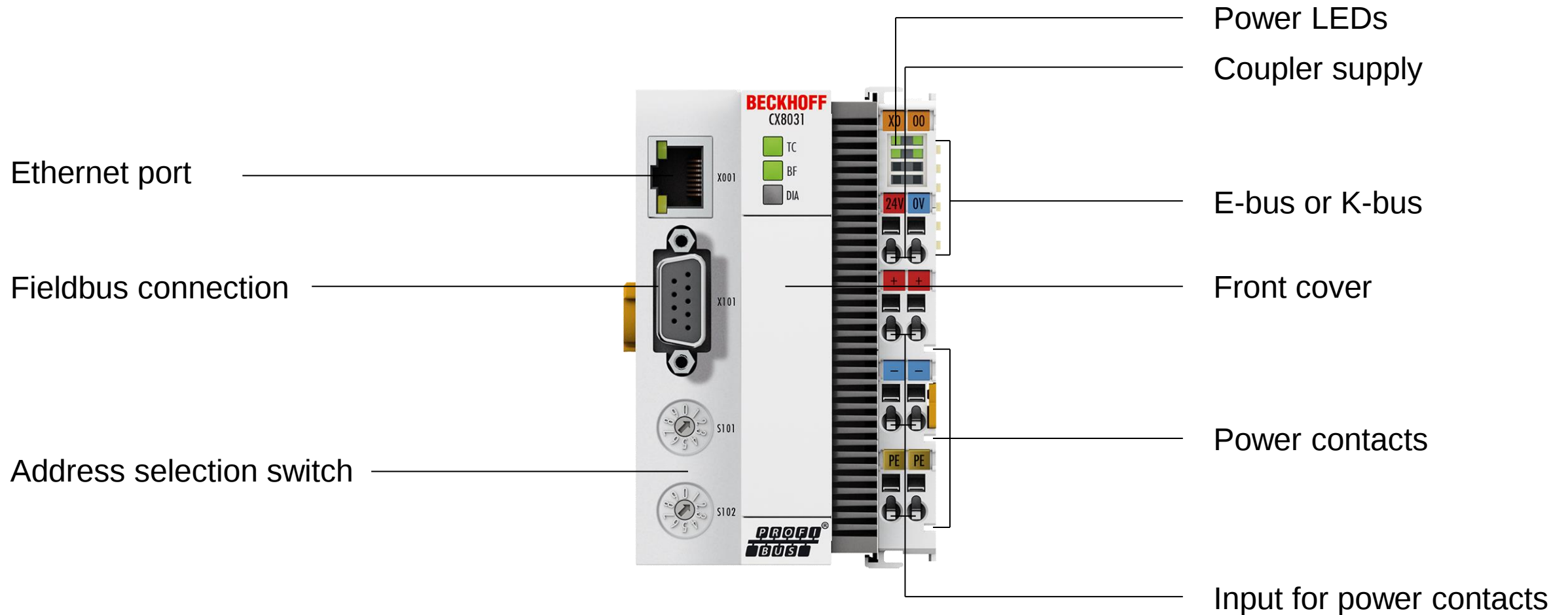
512 MB Flash (microSD)

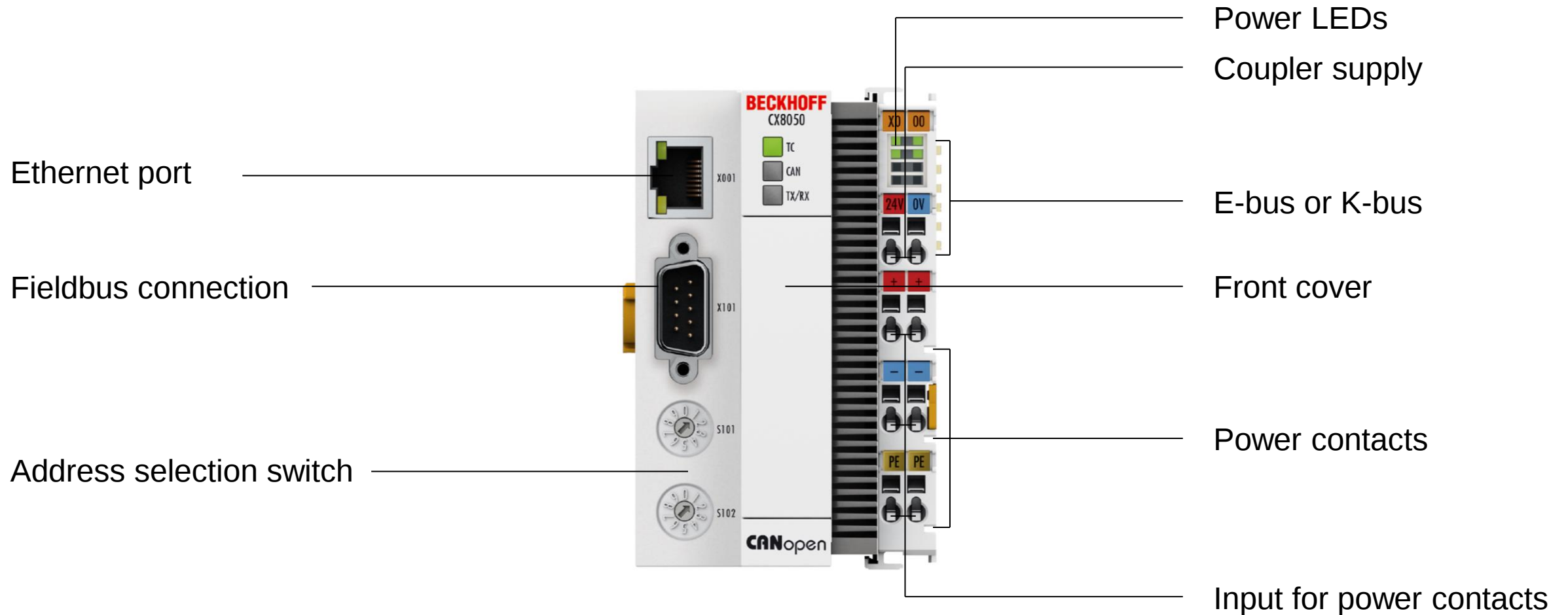
64 MB RAM

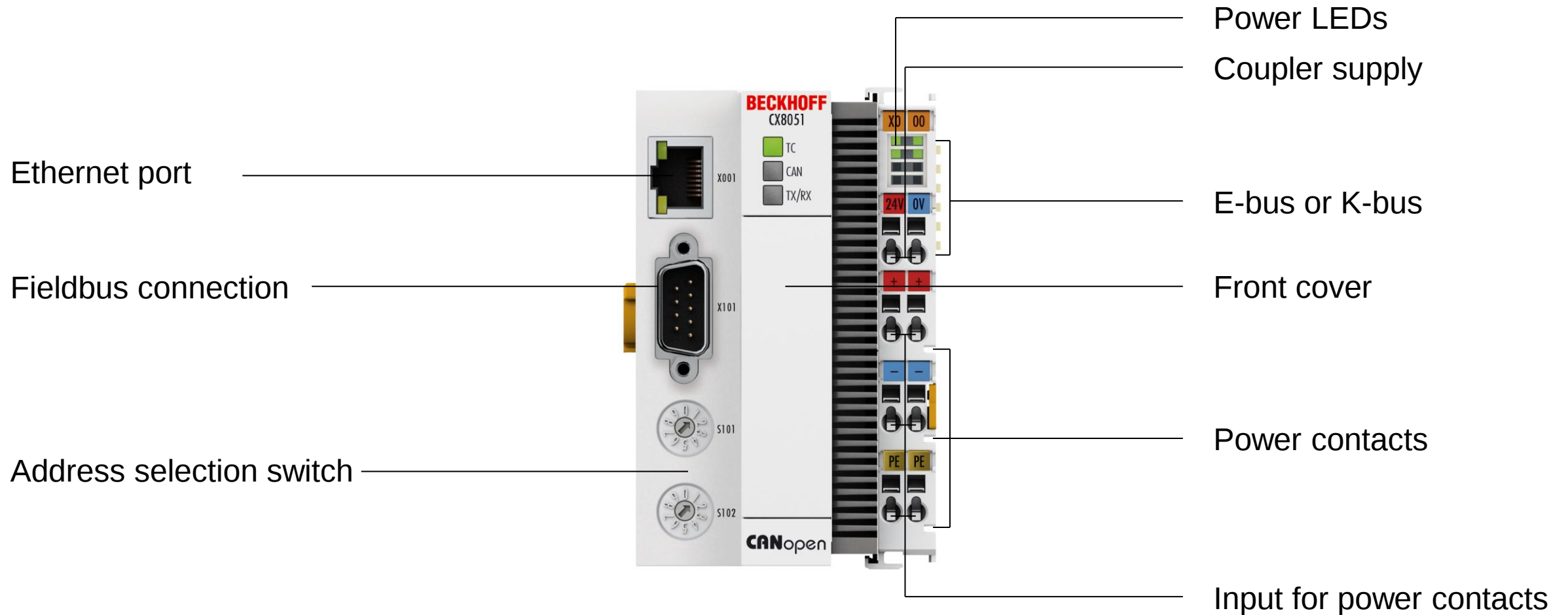


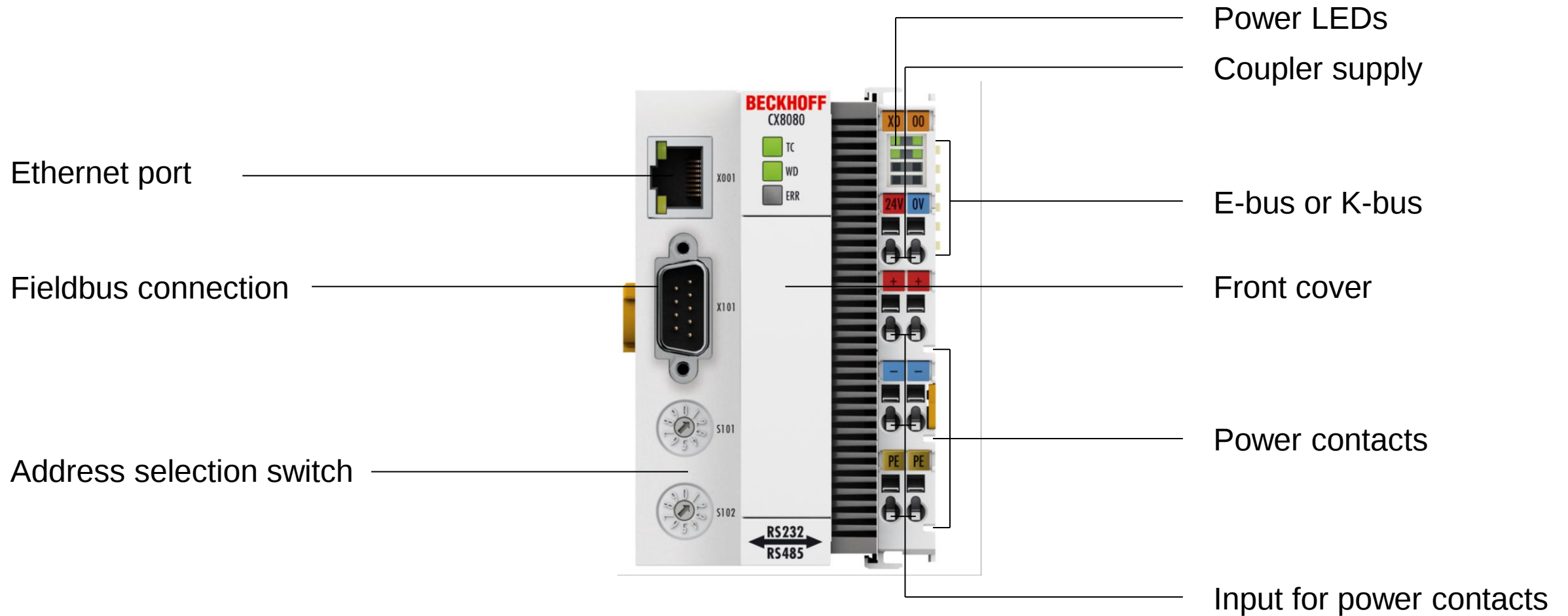


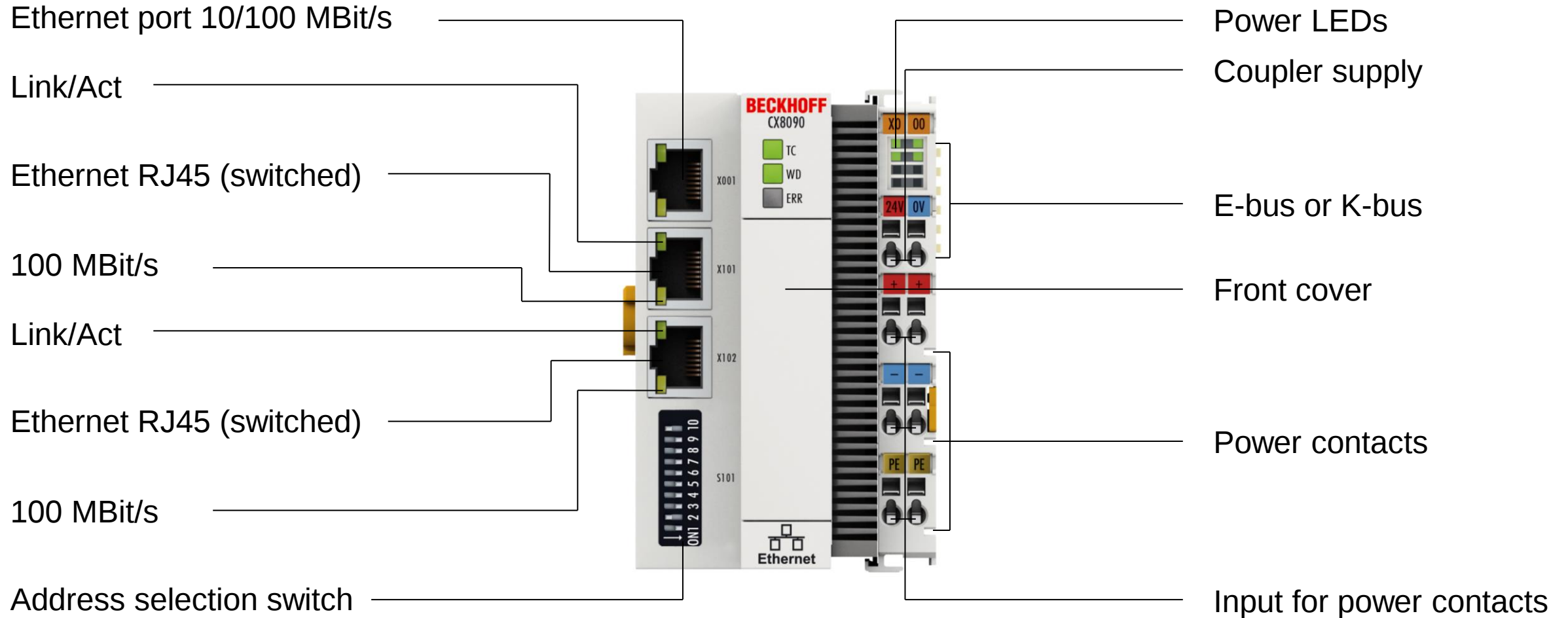


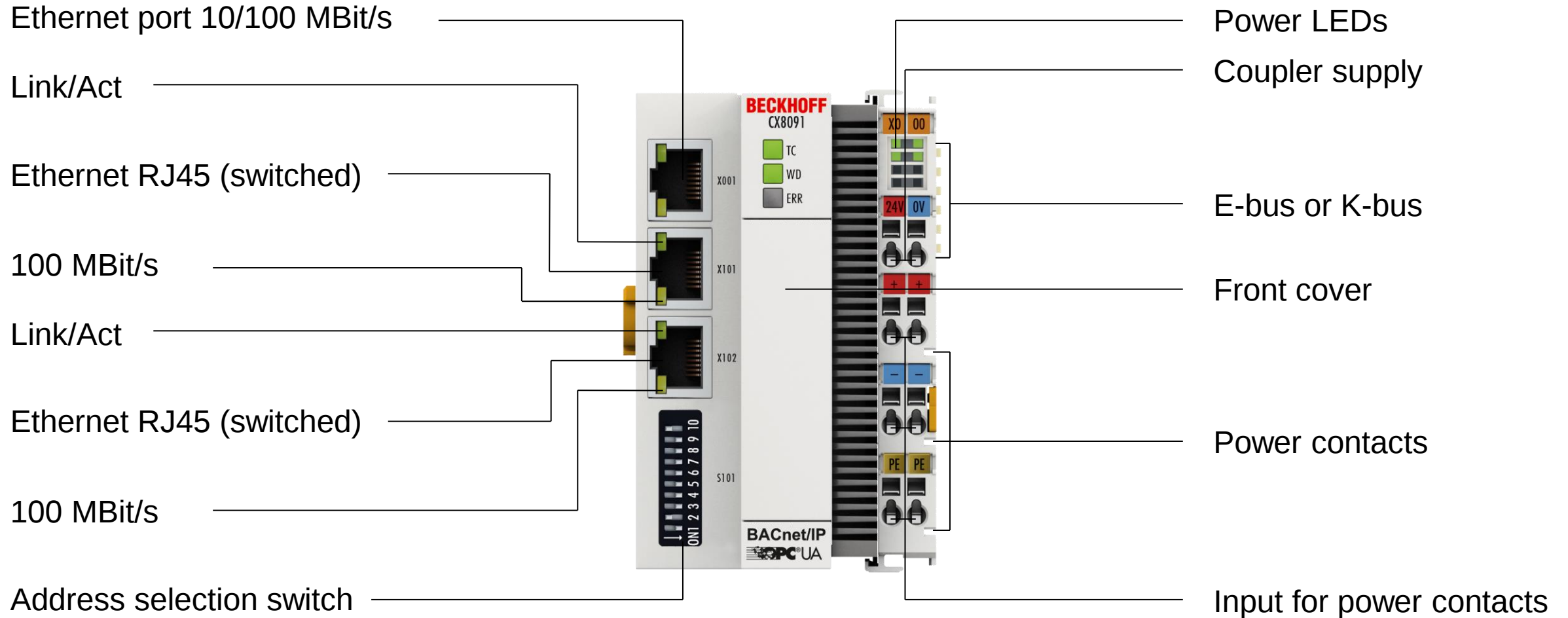


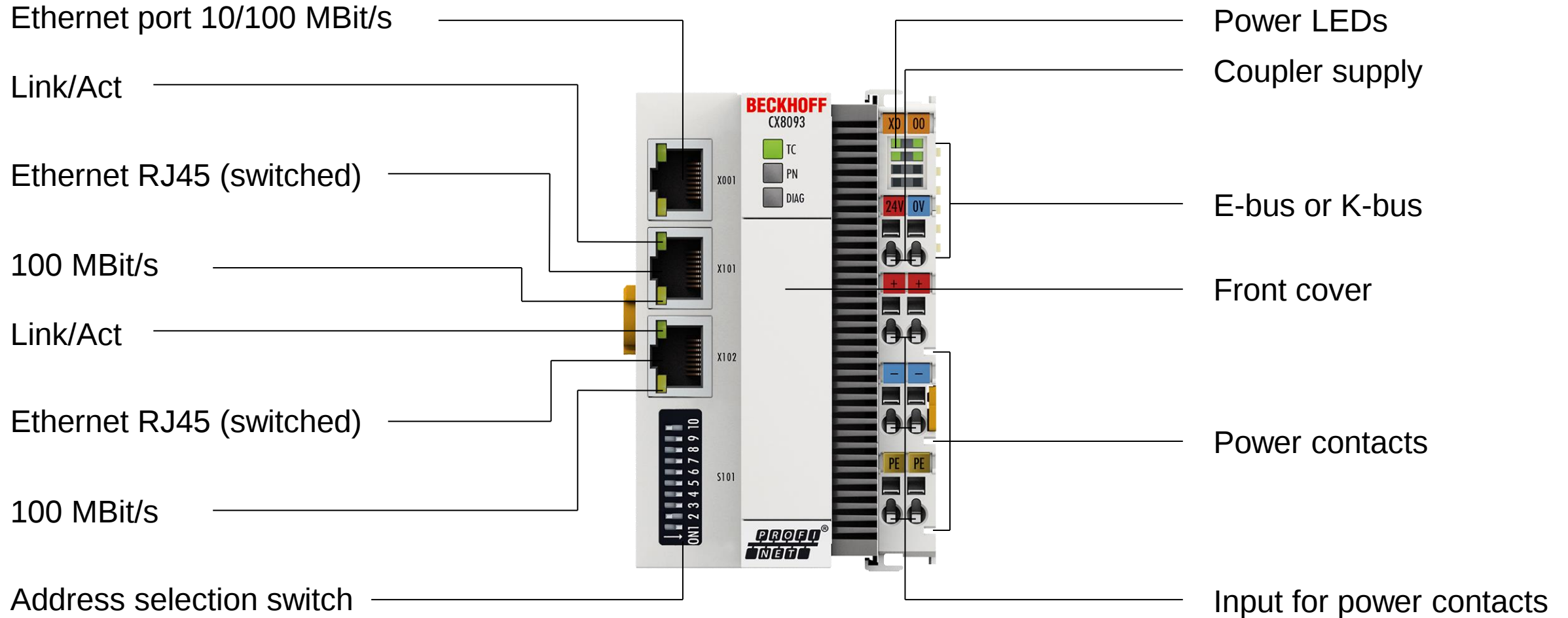


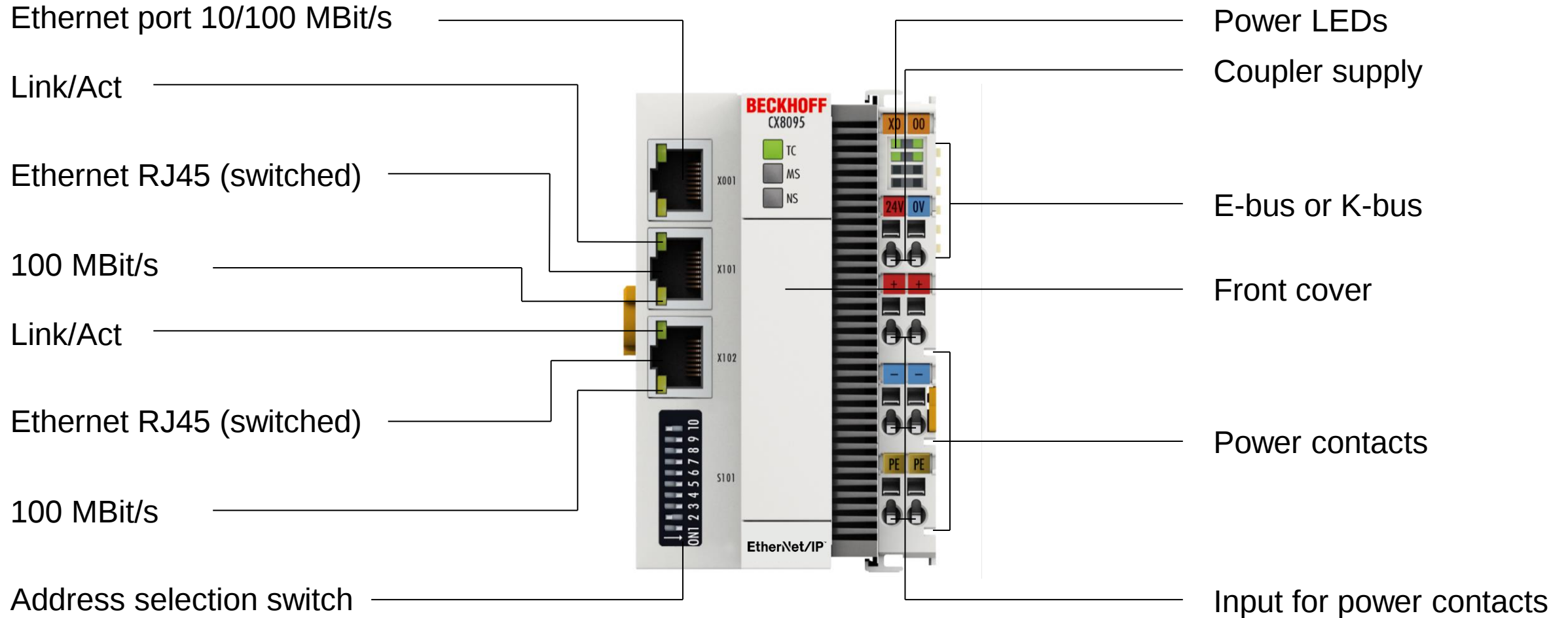






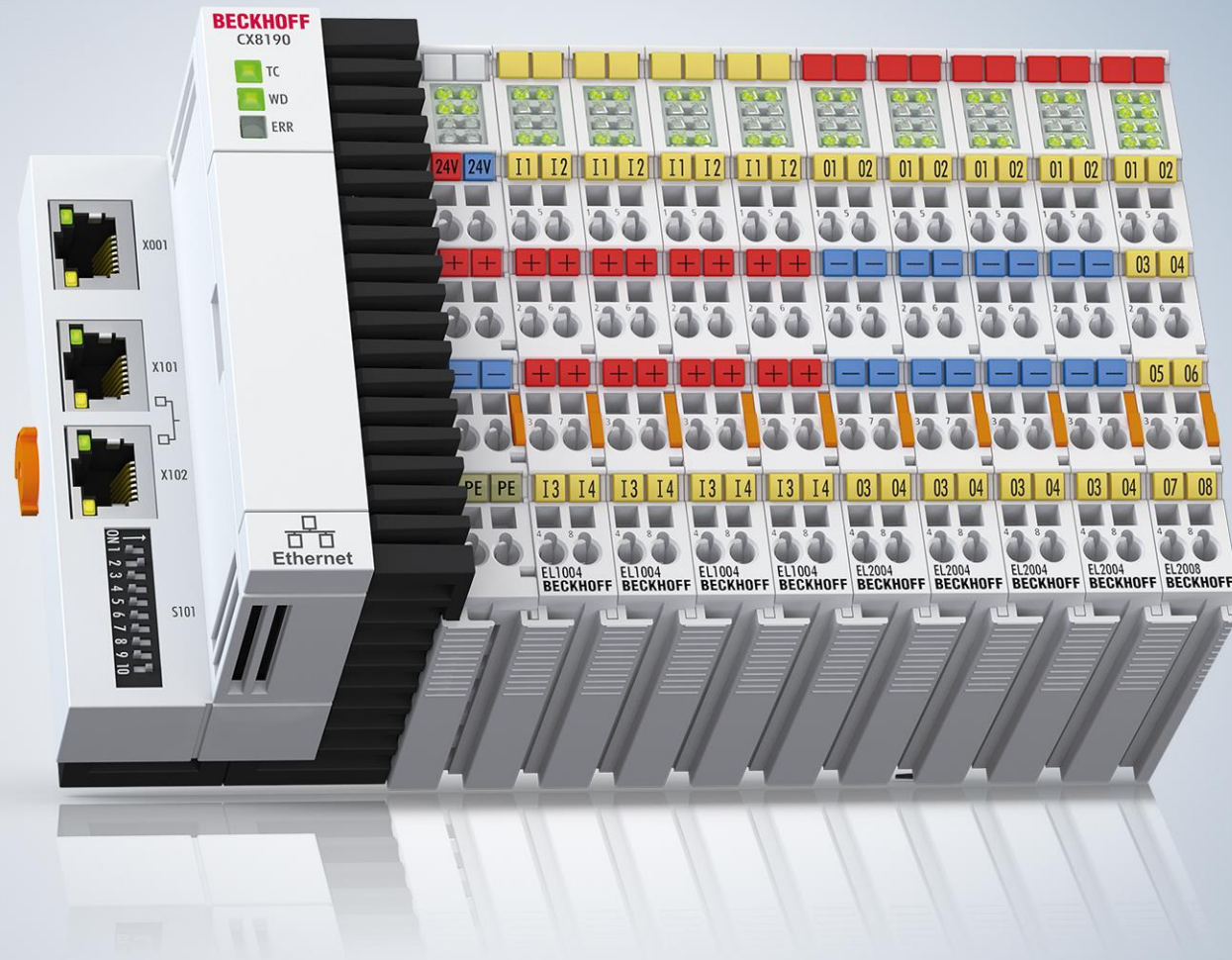






CX81xx Embedded PC series

BECKHOFF



ARM Cortex™-A9 processor, 800 GHz

IP20 protection class

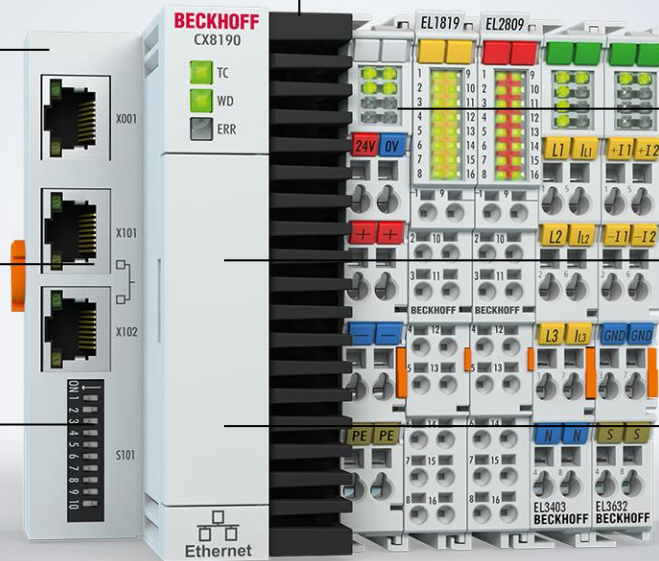
TwinCAT 3 programming

Windows Embedded
Compact 7

1-second UPS

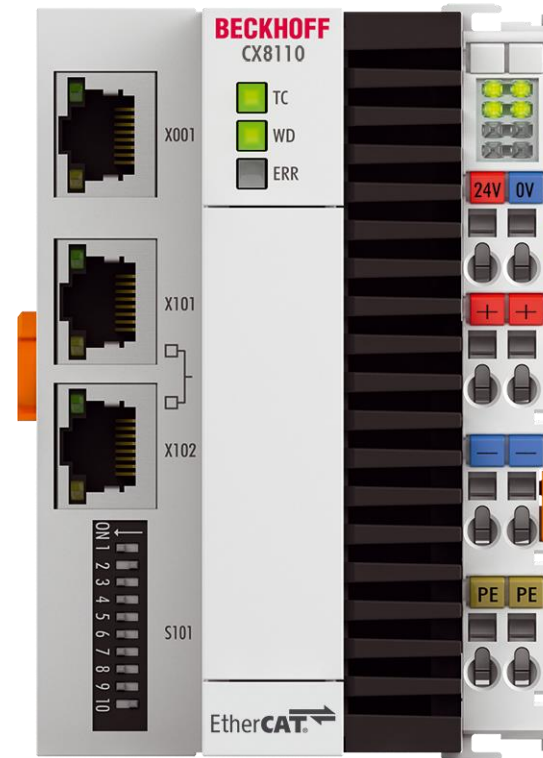
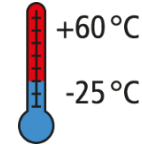
512 MB Flash (microSD)

512 MB RAM



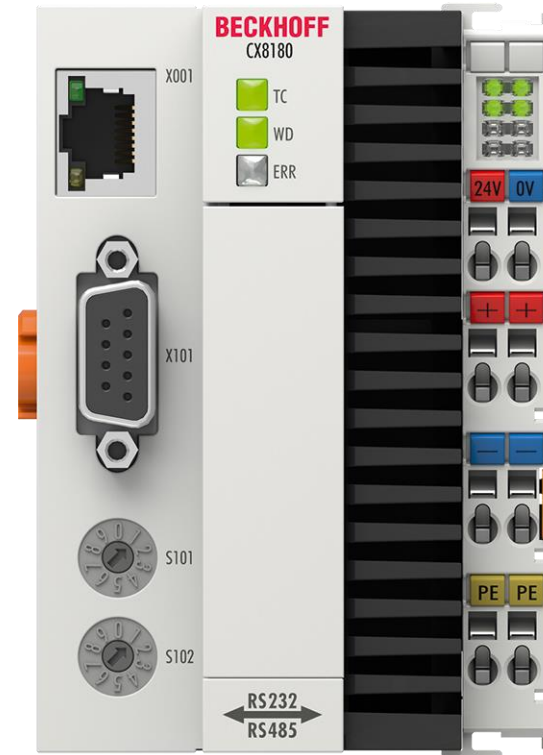
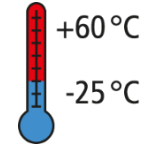
EtherCAT slave interface

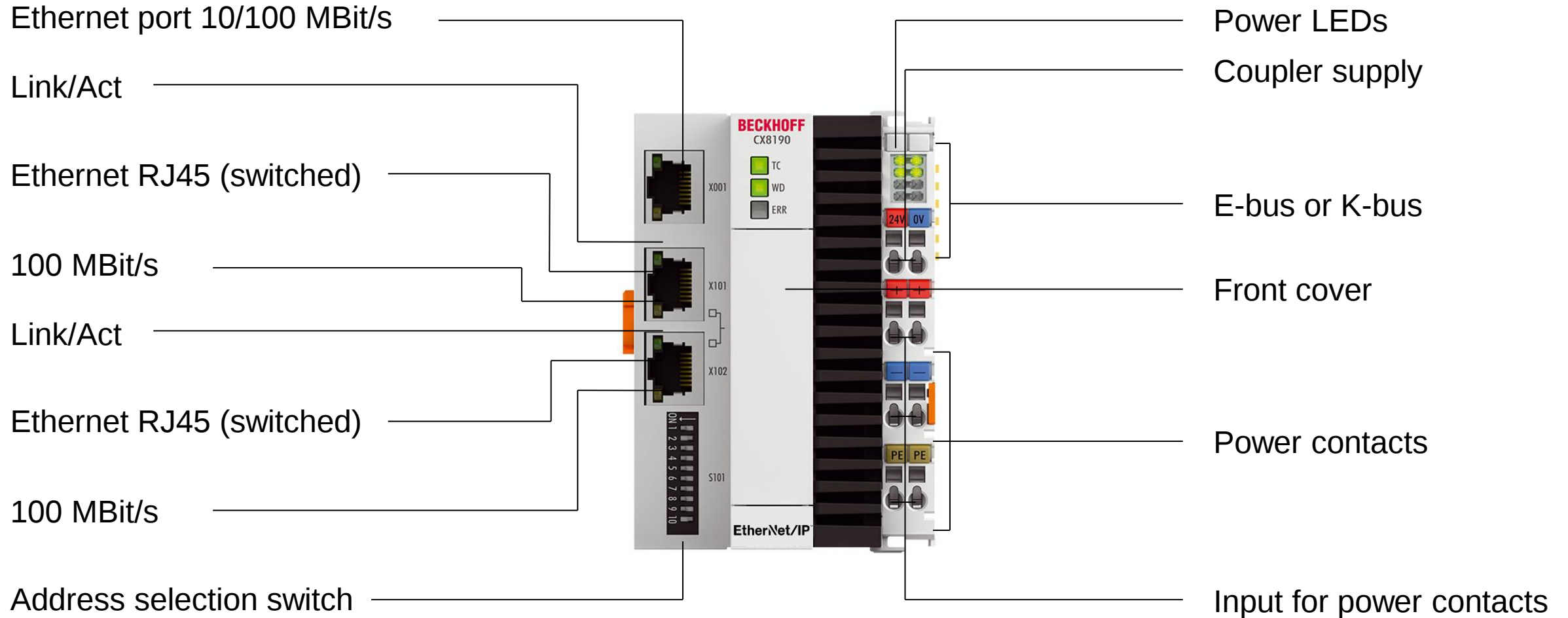
- 2 x RJ45: EtherCAT IN, EtherCAT OUT
- ARM Cortex™-A9, 800 MHz
- 512 MB MicroSD, optionally expandable,
1 x MicroSD card slot
- 512 MB DDR3 RAM
- 1-second UPS
- operating temperature -25...+60 °C
- Windows Embedded Compact 7



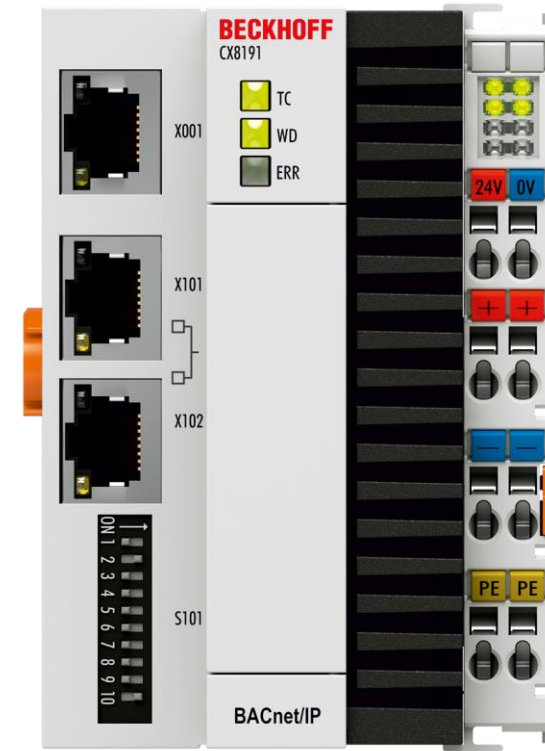
D-sub socket with two serial interfaces: RS232 and RS485

- data transfer rates
300 MBit/s...115 KBit/s
- ARM Cortex™-A9, 800 MHz
- 512 MB MicroSD, optionally expandable,
1 x MicroSD card slot
- 512 MB DDR3 RAM
- 1-second UPS
- operating temperature -25...+60 °C
- Windows Embedded Compact 7



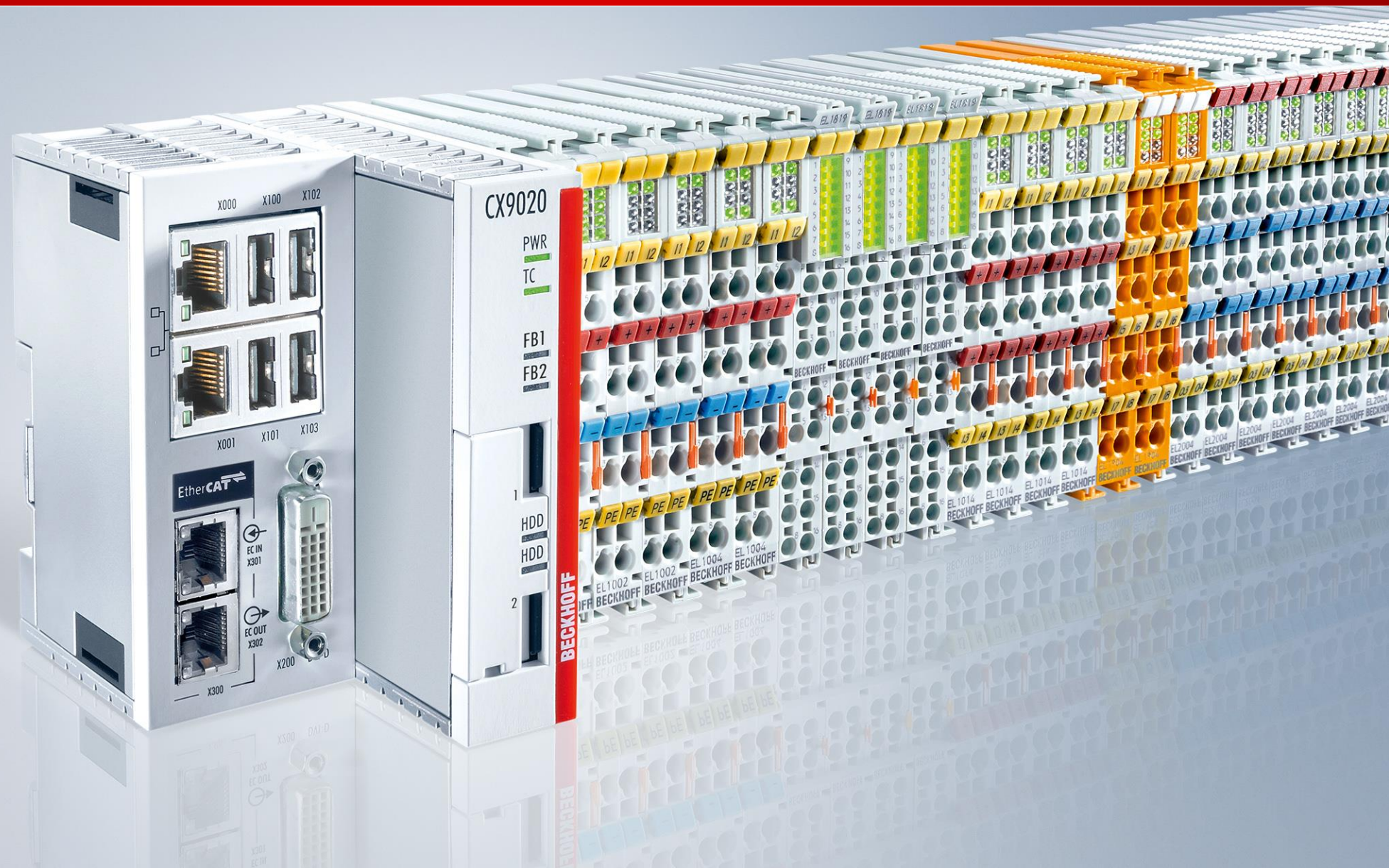


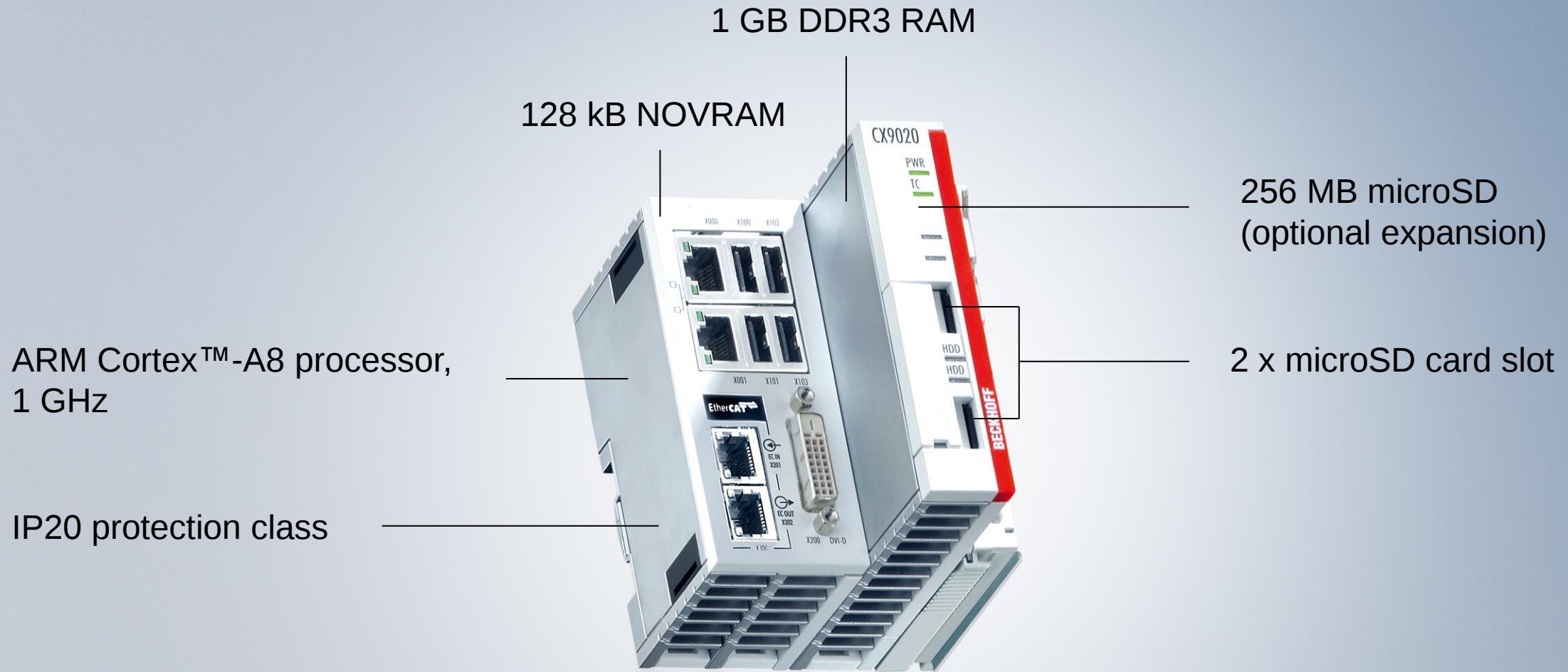
- ARM Cortex™-A9, 800 MHz
- 512 MB microSD card (expandable)
- 512 MB DDR3 RAM
- protocol: BACnet/IP (client and server) according to ISO 16484-5:2012 (rev. 14)
- 1 x RJ45 10/100 Mbit/s, 1 x USB device
- bus interface: 2 x RJ45 (switched)
- 1-second UPS
- Windows Embedded Compact 7
- MS/TP network router in conjunction with the EL6861 BACnet-MS/TP terminals
- supports further protocols and services: OPC UA, MQTT, Modbus TCP/RTU, ...

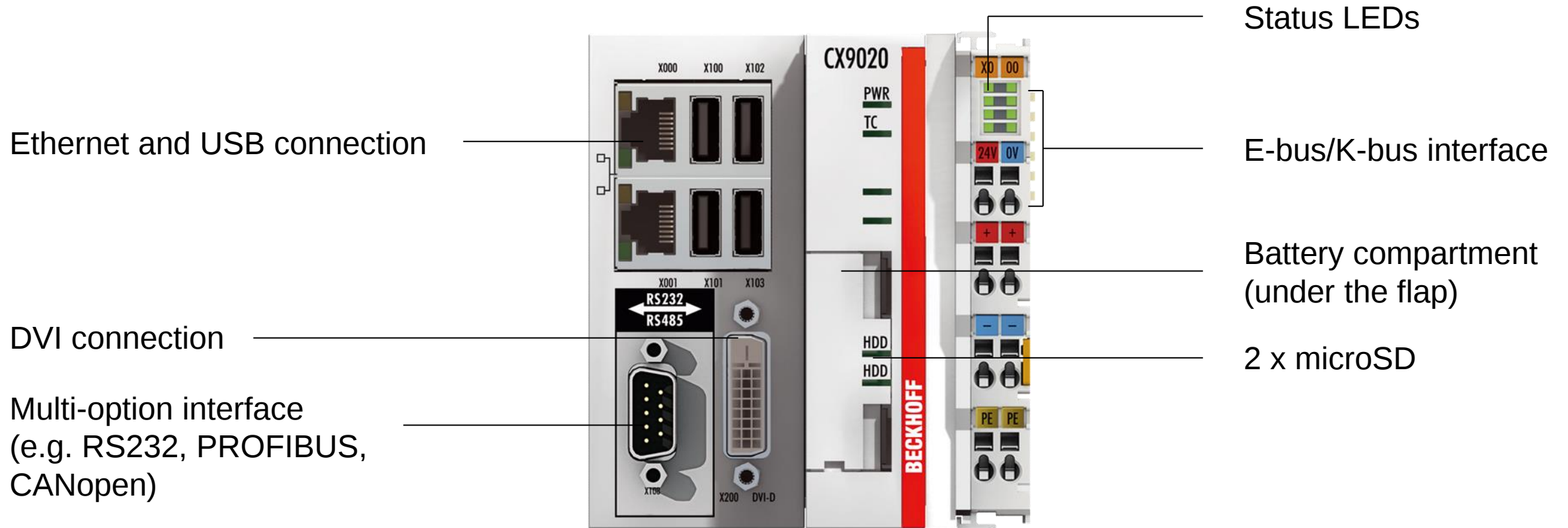


CX9020 Embedded PC series

BECKHOFF





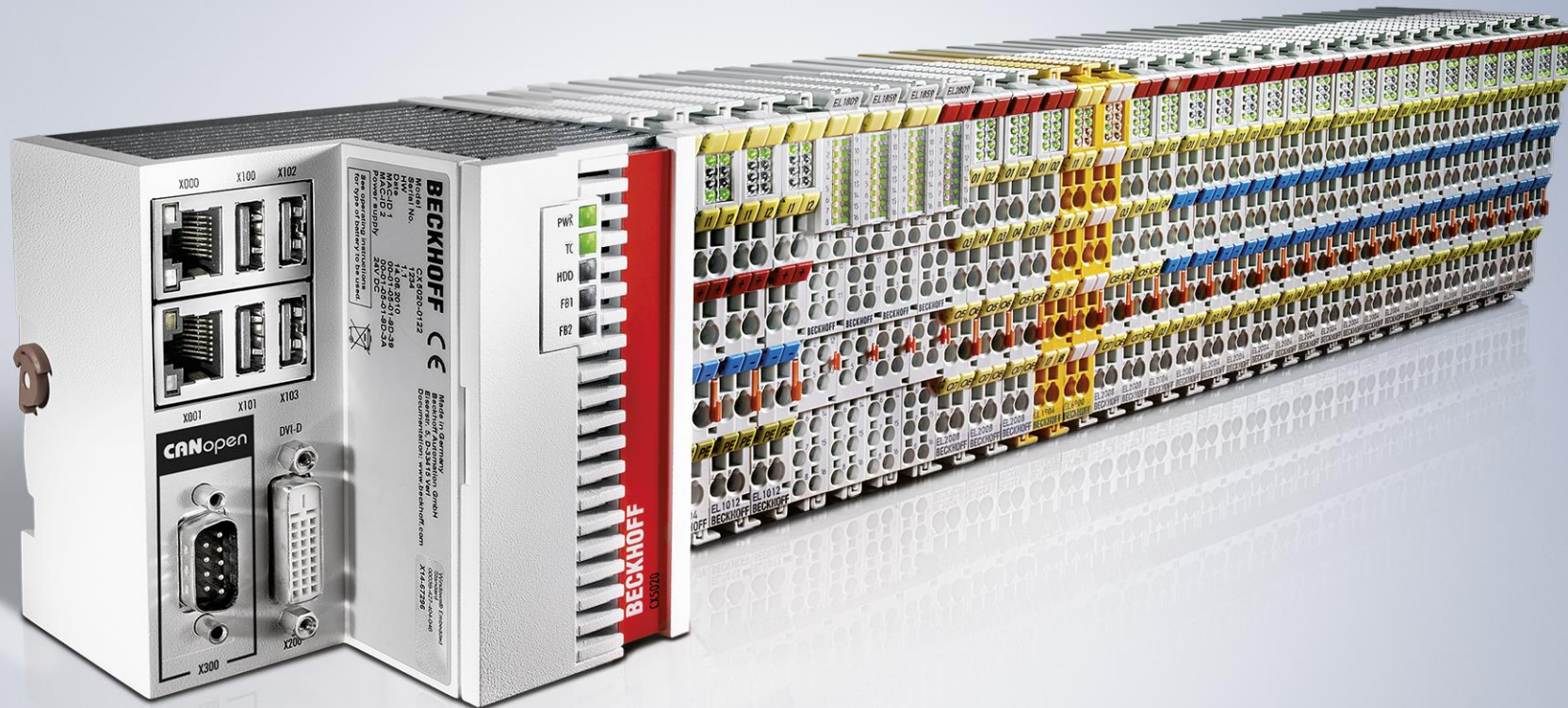


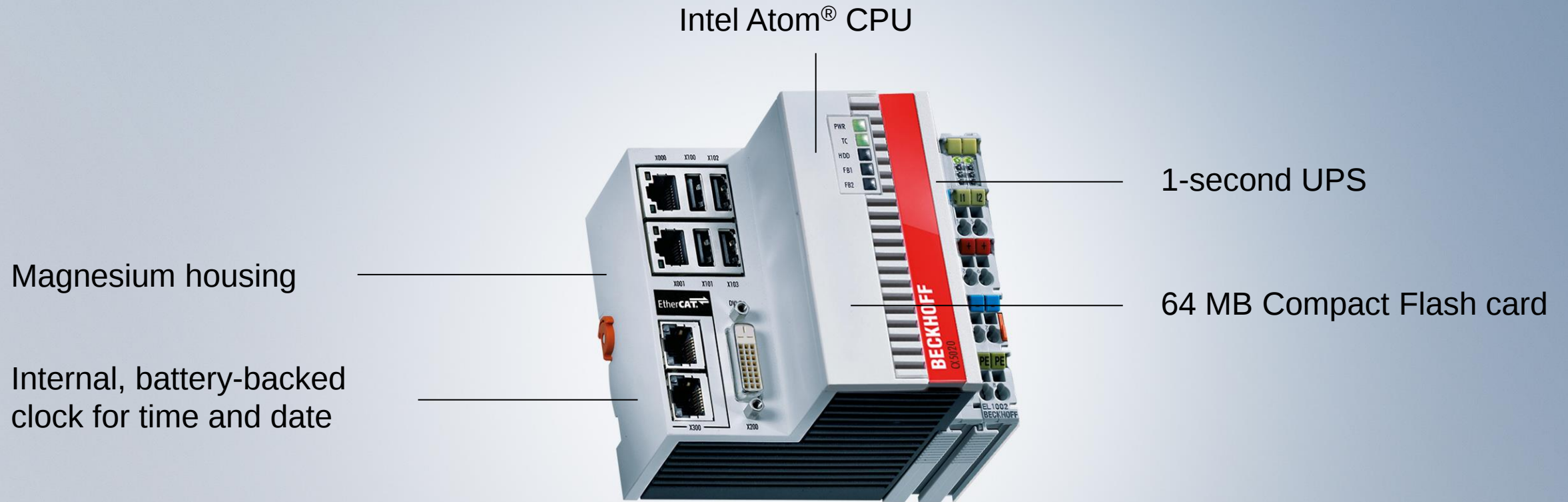
- operating system:
 - Windows Embedded Compact 7
- TwinCAT:
 - TwinCAT PLC runtime
 - TwinCAT NC PTP runtime
 - TwinCAT 3 (optional)

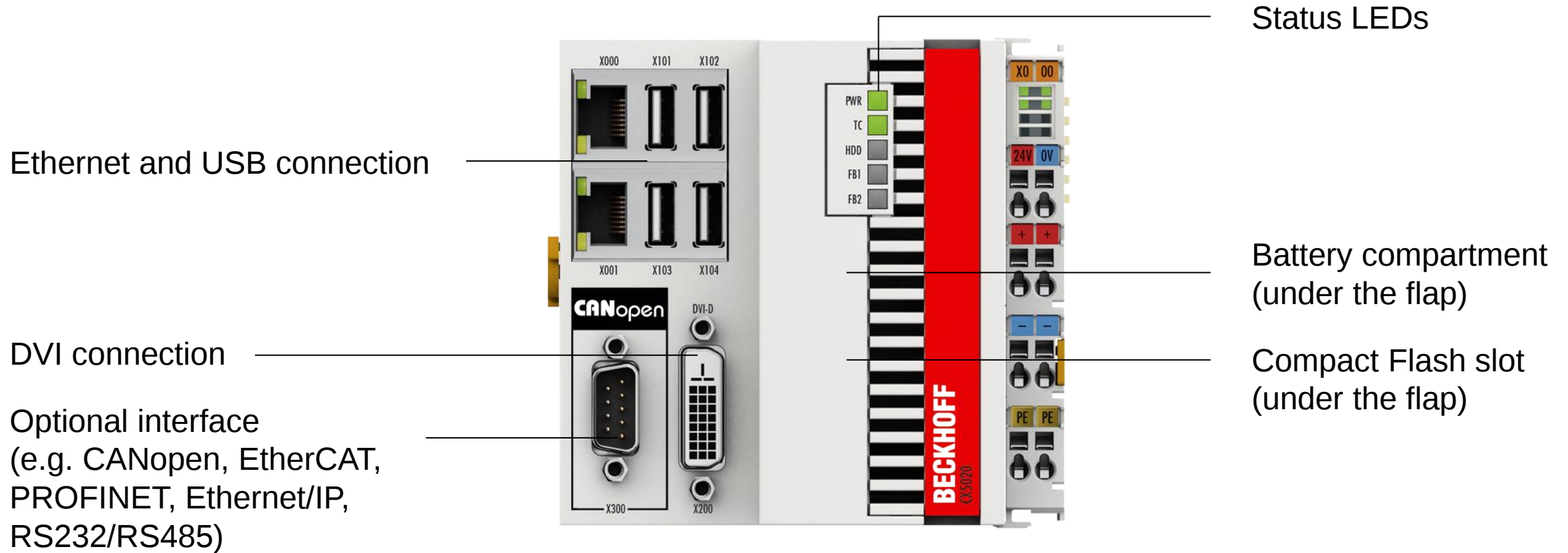


CX5000 Embedded PC series

BECKHOFF







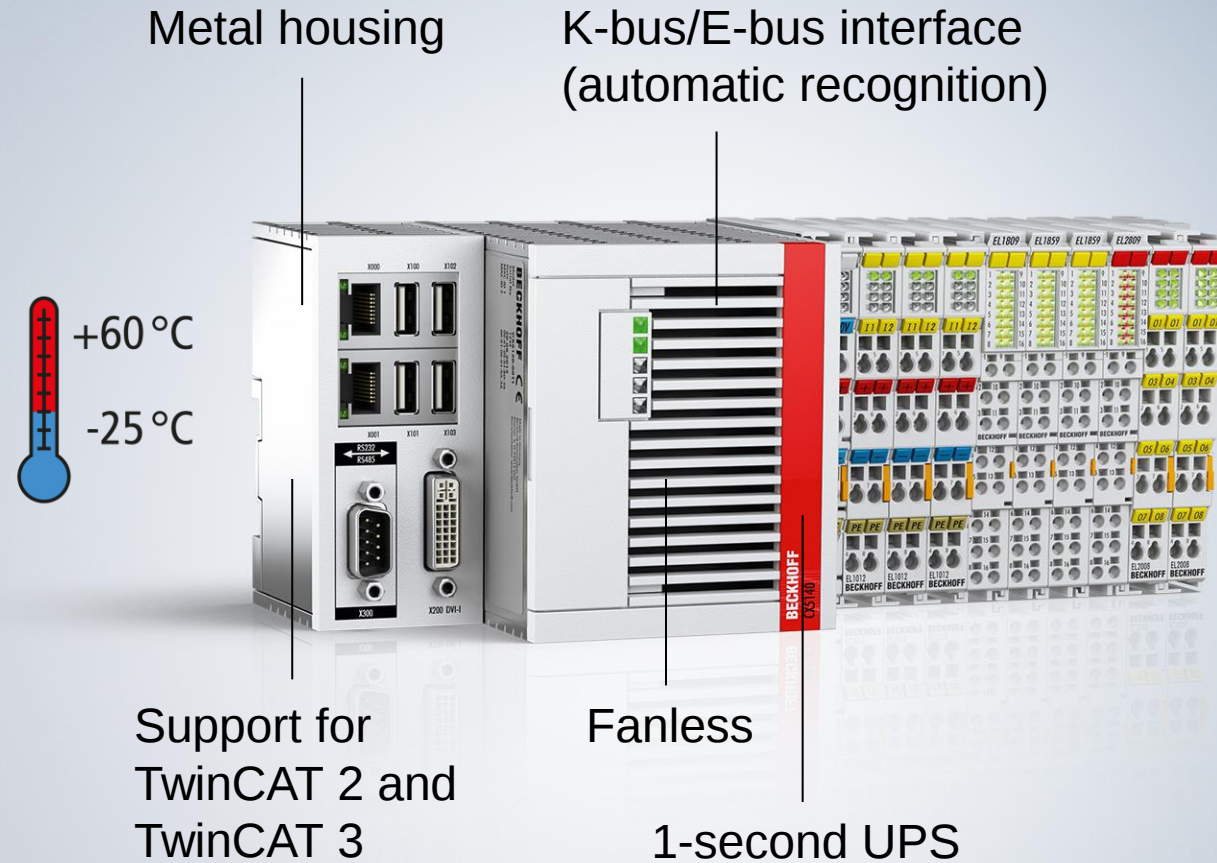
- operating systems:
 - Windows CE 6
 - Windows Embedded Standard 2009
- TwinCAT:
 - TwinCAT PLC runtime
 - TwinCAT NC PTP runtime
 - TwinCAT 3 (optional)

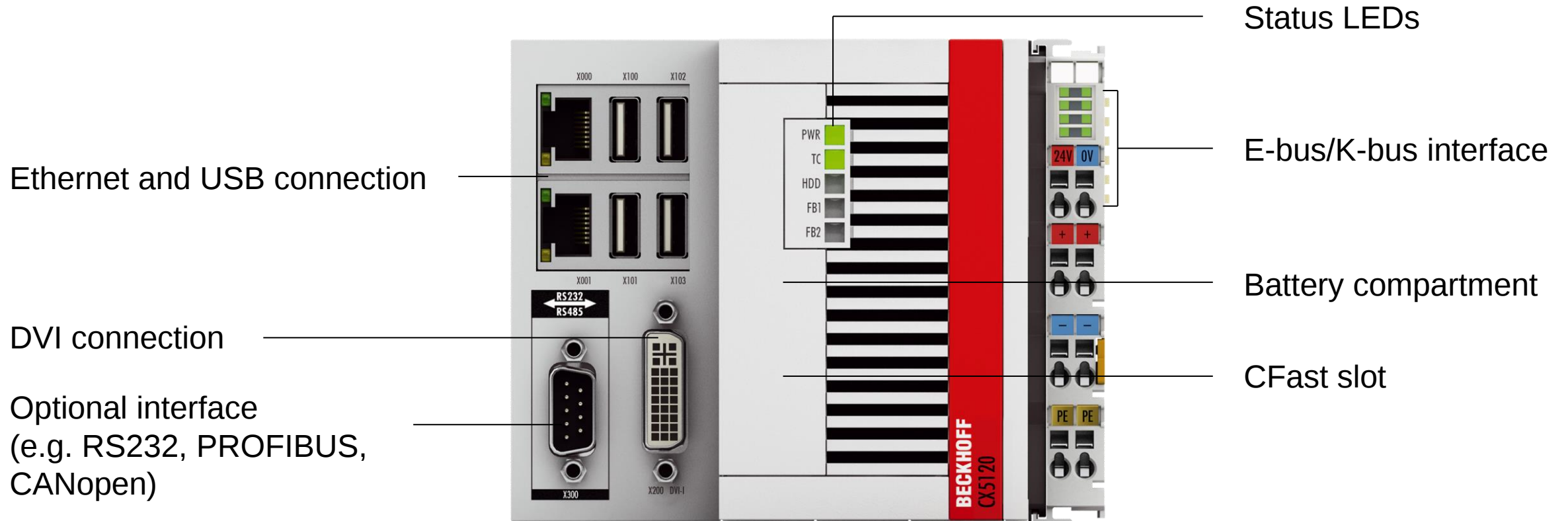


CX5100 Multi-core Embedded PC with Intel Atom® processor

BECKHOFF







- operating systems:
 - Windows Embedded Standard 7 P
 - Windows Embedded Compact 7
 - Windows 10 IoT Enterprise 2016 LTSC
 - Windows 10 IoT Enterprise 2019 LTSC
 - Windows 10 IoT Enterprise 2021 LTSC
 - TwinCAT/BSD
- TwinCAT:
 - TwinCAT 2
 - TwinCAT 3



CX5200 | Multi-core Embedded PCs with Intel Atom® CPU

BECKHOFF



CX5200 | Highlights

BECKHOFF



+60 °C

-25 °C

comfortable 4 or 8
GB RAM

electrically isolated
24 V DC power supply
unit, UPS-OCT capable

left-sided extension
interface for a system
module



CPUs from the Intel
Atom®-X series ("Apollo
Lake") with two or four
cores

fanless cooling

built-in capacitive 1-
second UPS for
persistent data storage

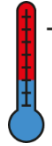
DIN-rail-mountable, fanless Embedded PCs with Intel® processors of the Atom™ X series

- CX5200 PCs supplement the existing devices of the CX5000 series.
- In direct comparison the new processors are considerably more efficient.
- **Modular construction:** The multi-pin terminal on the left-hand side enables the connection of a system or fieldbus module of the CX2000 family.



CX5200 | Embedded PCs with Intel Atom® processor

BECKHOFF



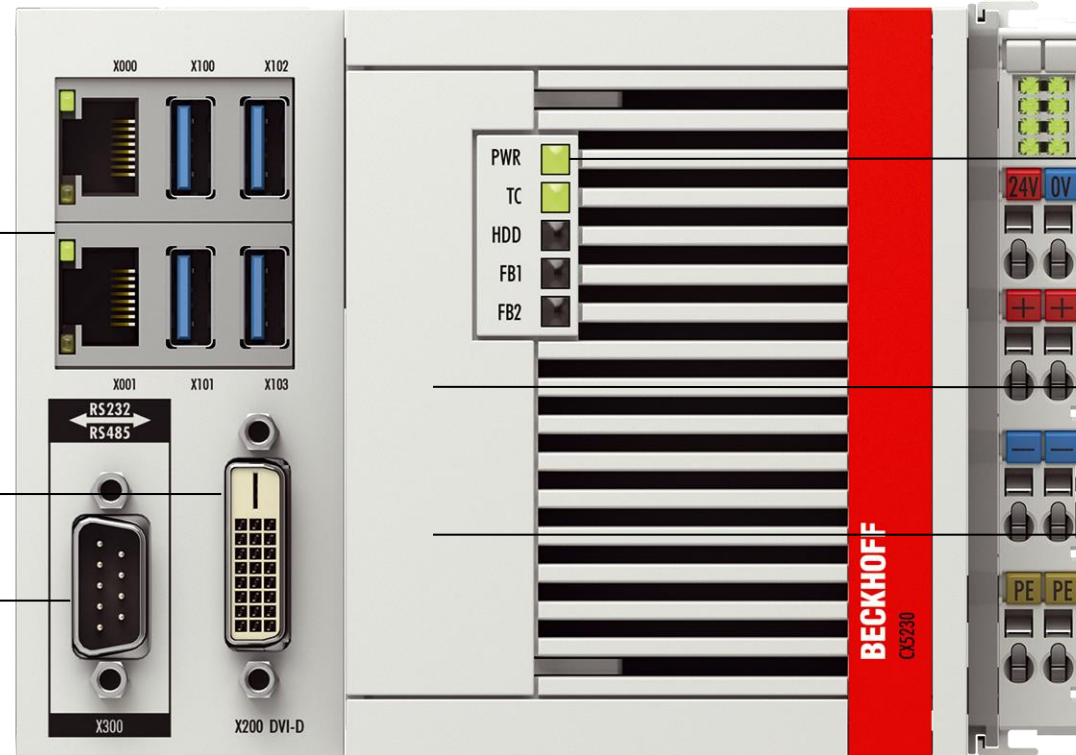
+60 °C

-25 °C

Ethernet and USB connection

DVI connection

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



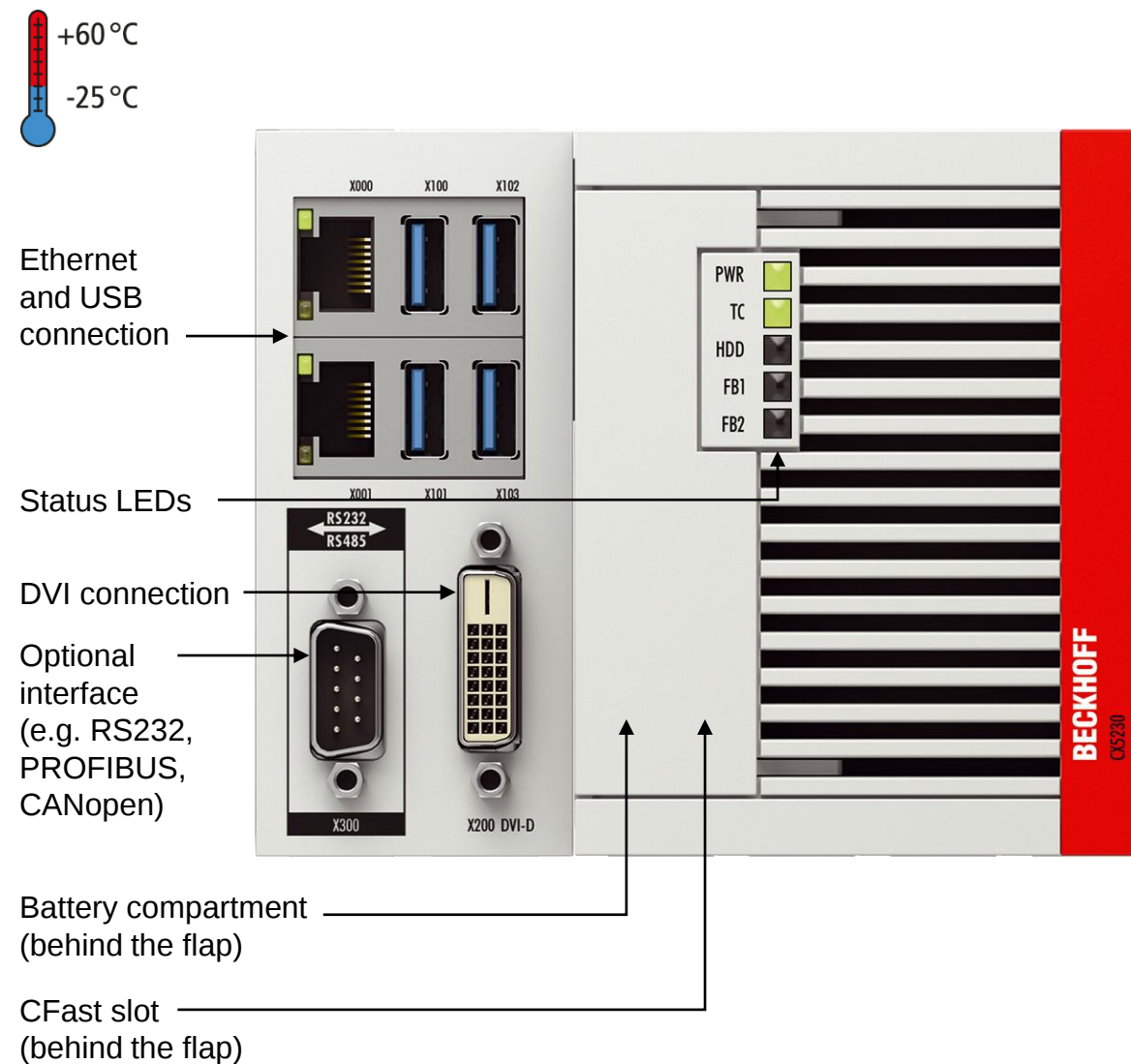
status LEDs

E-bus/K-bus interface

Battery compartment
(behind the flap)

CFast slot
(behind the flap)

- **CX5230:** Intel® Atom™ CPU, 1.3 GHz, 2 cores, 4 GB DDR4 RAM
- **CX5240:** Intel® Atom™ CPU, 1.6 GHz, 4 cores, 8 GB DDR4 RAM
- slot for CFast card and for microSD card
- integrated 1-second UPS (1 MB on CFast card)
- 2 x RJ45 10/100/1000 Mbit/s, 1 x DVI-D, 4 x USB 3.0, 1 x optional interface
- diagnostic LEDs: 1 x power, 1 x TC status, 1 x flash access, 2 x bus status



- operating systems:
 - Windows 10 IoT Enterprise 2019 LTSC
 - Windows 10 IoT Enterprise 2021 LTSC
 - TwinCAT/BSD
- TwinCAT:
 - TwinCAT 3



CX5620, CX5630 | Embedded PCs with AMD Ryzen™ CPU

BECKHOFF



CX5620, CX5630 | Highlights

BECKHOFF



+60 °C

-25 °C

comfortable 4 or
8 GB RAM

electrically isolated
24 V DC power supply
unit, UPS-OCT capable

left-sided extension
interface for a system
module

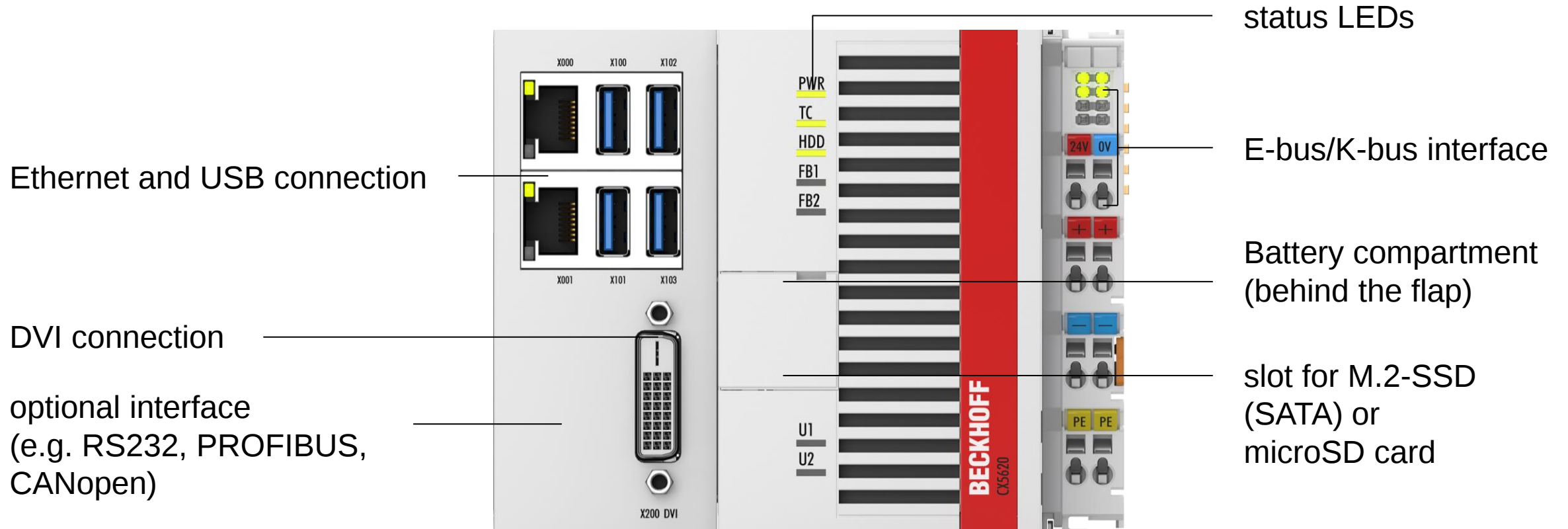


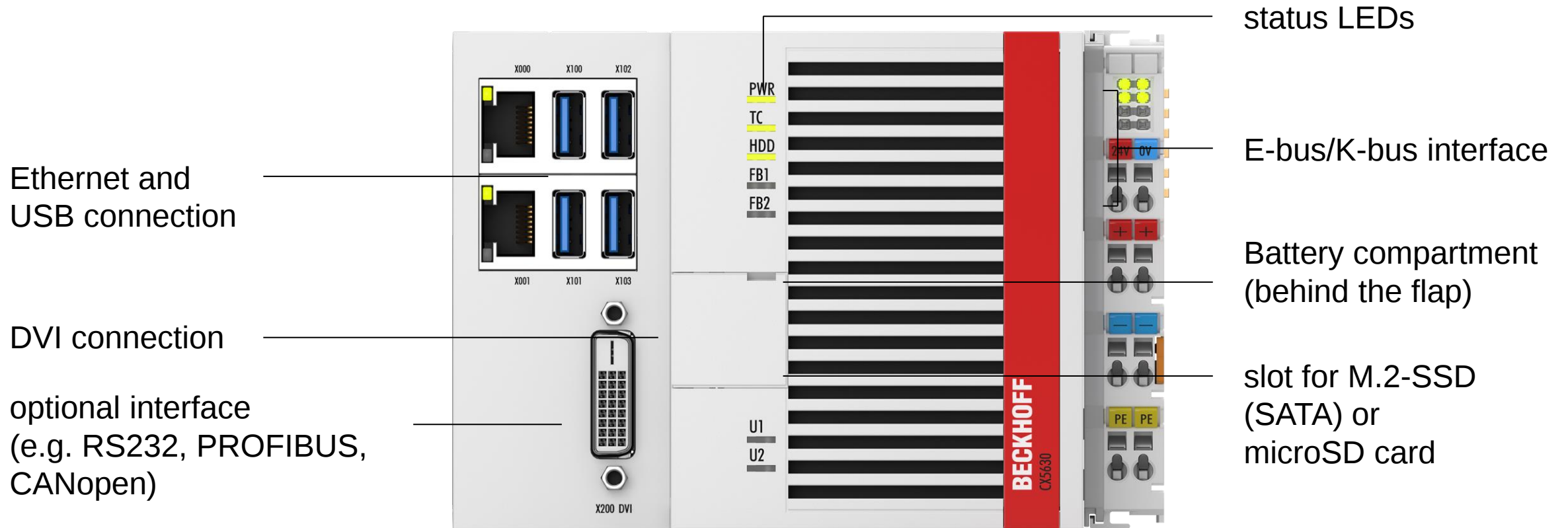
CPUs of the AMD
Ryzen™ series with
two cores

fanless cooling

powerful M.2-SSD

built-in capacitive 1-second
UPS for persistent data
storage





- operating systems:
 - Windows 10 IoT Enterprise 2019 LTSC
 - Windows 10 IoT Enterprise 2021 LTSC
 - TwinCAT/BSD
- TwinCAT:
 - TwinCAT 2
 - TwinCAT 3



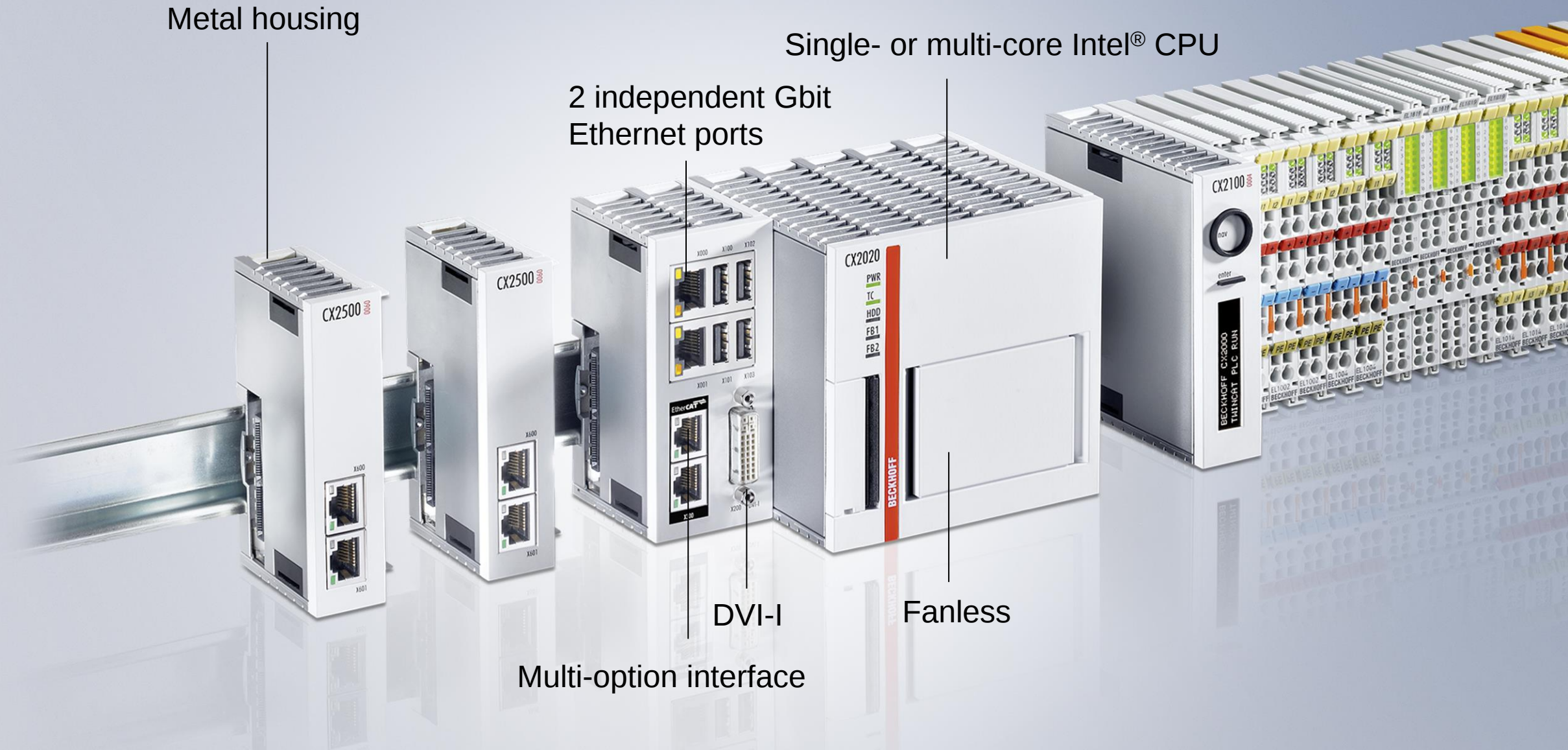
CX2000 Embedded PC series

BECKHOFF



CX2000 | Highlights

BECKHOFF



Metal housing

Single- or multi-core Intel® CPU

2 independent Gbit Ethernet ports

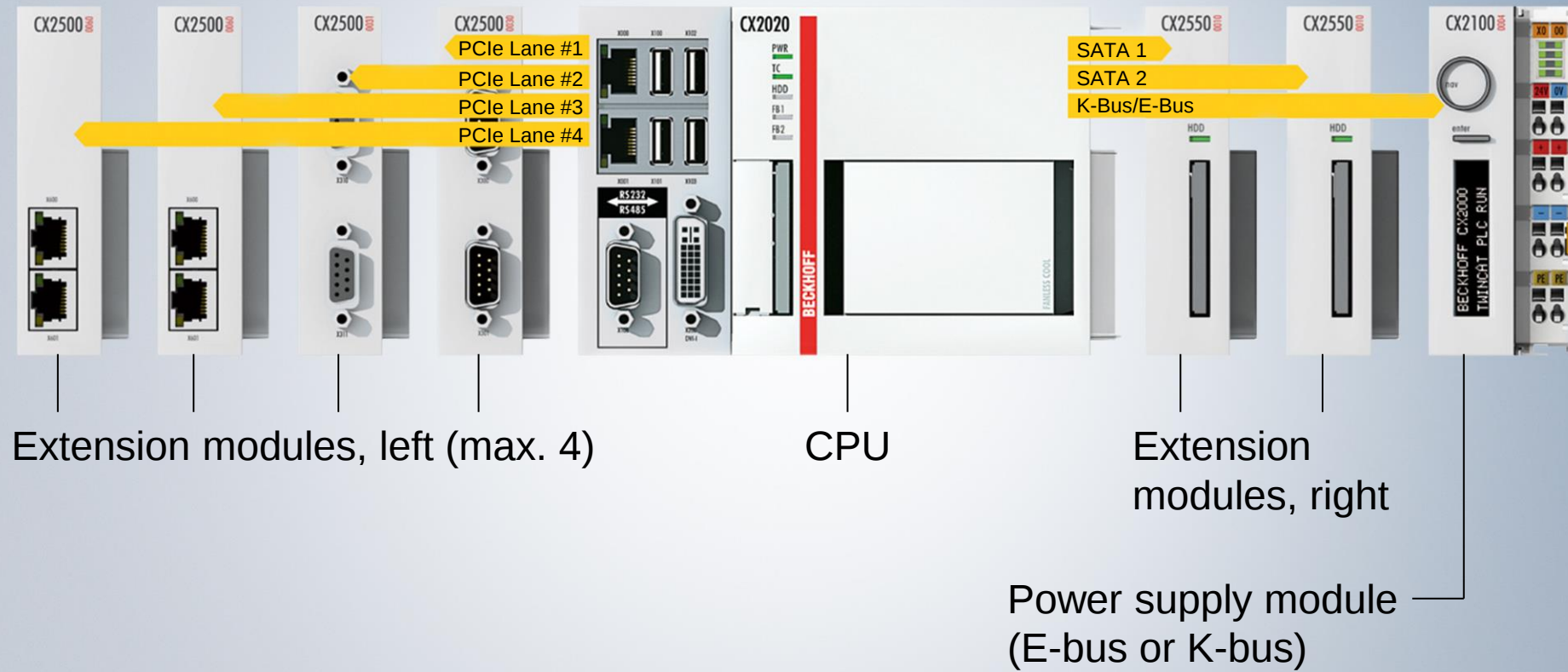
DVI-I

Fanless

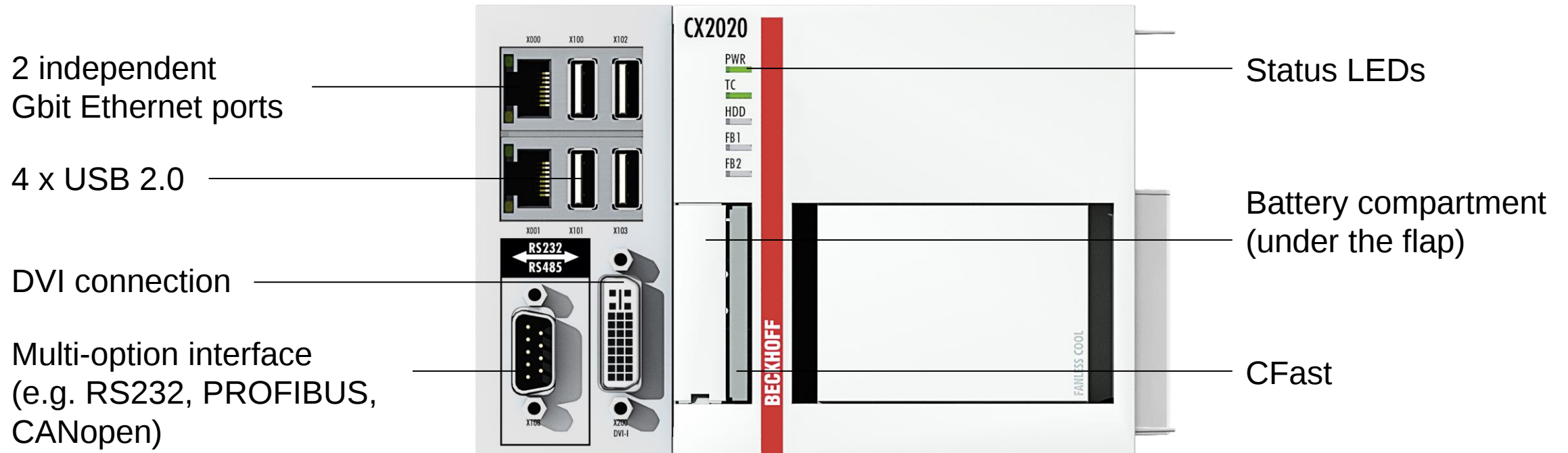
Multi-option interface

CX2000 | PCI Express as an extension bus

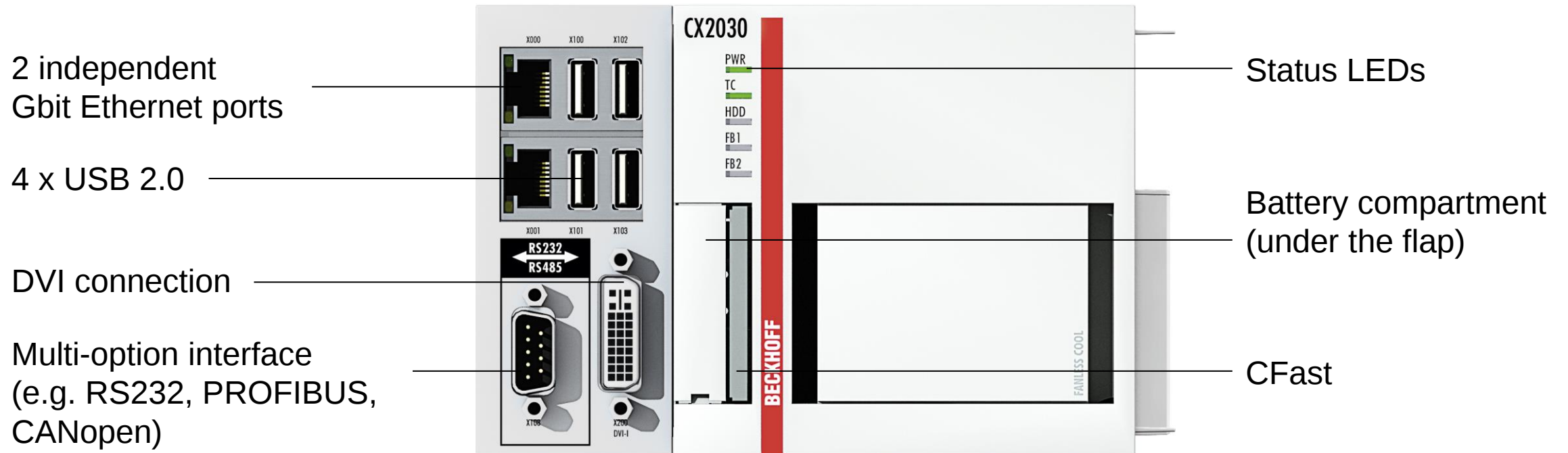
BECKHOFF



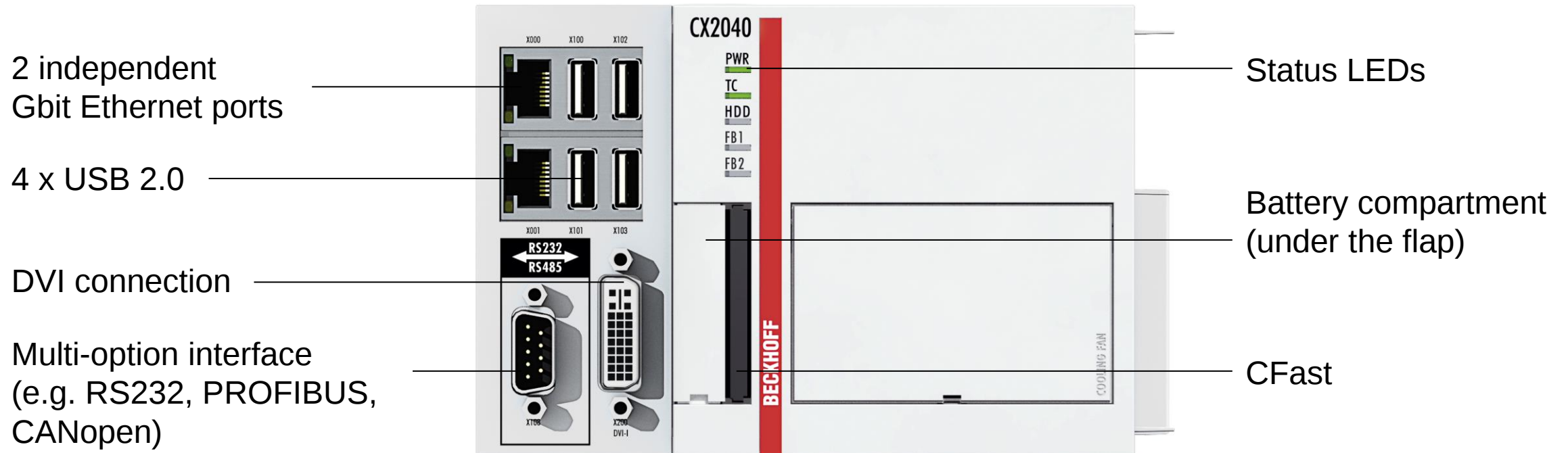
- Intel® Celeron® 1.4 GHz, single-core, 2 GB DDR3 RAM (optional 4 GB RAM)



- Intel® Core™ i7, 1.5 GHz, dual-core, 2 GB DDR3 RAM (optional 4 GB RAM)



- Intel® Core™ i7, 2.1 GHz, quad-core, 4 GB DDR3 RAM, with fan cartridge



- operating systems:
 - Windows Embedded Standard 7 P (multi-touch, multi-language)
 - Windows Embedded Compact 7 (WEC7)
 - Windows 10 IoT Enterprise 2016 LTSC
 - TwinCAT/BSD
- TwinCAT:
 - TwinCAT PLC runtime
 - TwinCAT NC PTP runtime
 - TwinCAT NC I runtime
 - TwinCAT 3



 Windows Embedded
Standard 7

TC/BSD
 Windows 10

 Windows
Embedded
Compact 7

CX20x3 | Embedded PC series

BECKHOFF



CX20x3 | Embedded PCs with AMD Ryzen™ CPU and up to four cores

BECKHOFF

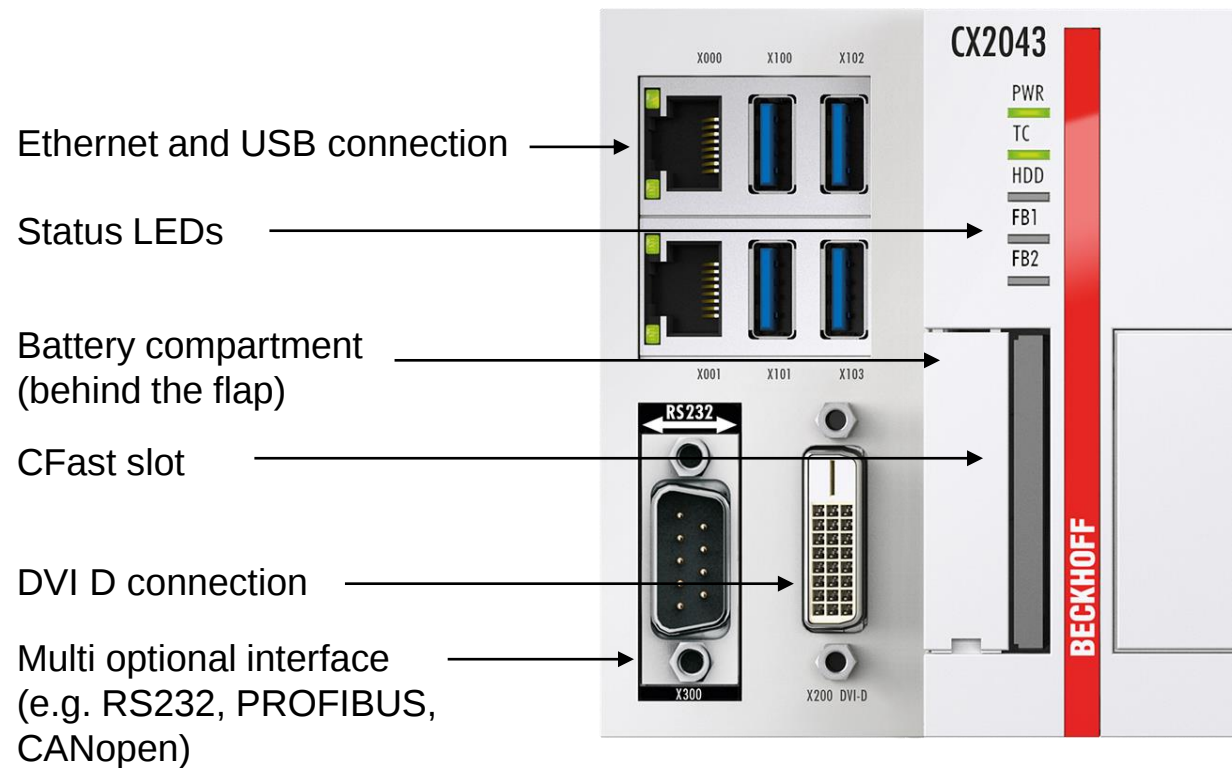
- **CX2033:** AMD-Ryzen™-V1202B, 2 cores, 2.3 GHz
- **CX2043:** AMD-Ryzen™-V1807B, 4 cores, 3.35 GHz
- 8 GB DDR4 RAM, optionally expandable up to 16 GB DDR4
- Windows 10 IoT Enterprise 2019 LTSC or TwinCAT/BSD
- TwinCAT 2 (only Win10) and TwinCAT 3



CX20x3 | Embedded PCs with AMD Ryzen™ CPU and up to four cores

BECKHOFF

- 2 x RJ45, 10/100/1000 Mbit/s, 1 x DVI-D, 4 x USB 3.1 Gen. 1, 1 x optional interface
- compatible with CX2000 modules and components
- 128 kB NOVRAM, acts as persistent data memory
- power supply: CX2100-xxxx



- operating systems:
 - Windows 10 IoT Enterprise 2019 LTSC
 - Windows 10 IoT Enterprise 2021 LTSC
 - TwinCAT/BSD
- TwinCAT:
 - TwinCAT 2-Runtime
 - TwinCAT 3-Runtime (XAR)



CX20x2 | Many-core Embedded PC series

BECKHOFF



CX20x2 | Many-core Embedded PC series

Many-core control on the DIN rail

BECKHOFF

- **CX2042:** Intel® Xeon® D-1527, 4 cores, 2.2 GHz
- **CX2062:** Intel® Xeon® D-1548, 8 cores, 2.0 GHz
- **CX2072:** Intel® Xeon® D-1567, 12 cores, 2.1 GHz
- dedicated internal AMD graphics card with 2 GB GDDR5
- 8 GB DDR4 RAM, optionally expandable up to 64 GB DDR4
- Windows 10 IoT Enterprise 2016 LTSC, Windows 10 IoT Enterprise 2019 LTSC, Windows 10 IoT Enterprise 2021 LTSC, TwinCAT/BSD

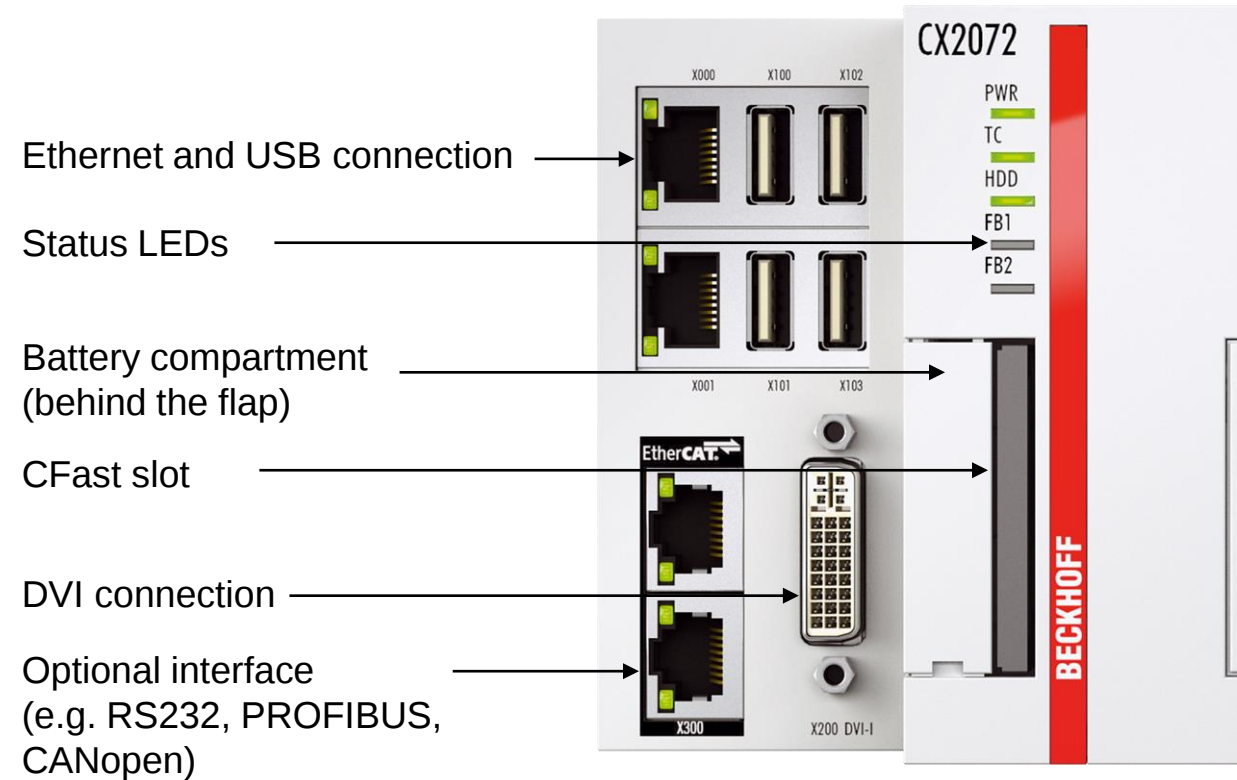


CX20x2 | Many-core Embedded PC series

Many-core control on the DIN rail

BECKHOFF

- TwinCAT 3-Runtime (XAR)
- 4 x USB 3.0, 2 x Gbit LAN, 1 x DVI-I, 1 x option interface
- temperature-controlled fan
- compatible with CX2000 modules
- 128 kB NOVRAM, acts as persistent data memory if no UPS is used
- optional use of up to two CX2500-0010 or CX2500-0020 mass storage modules
- power supply: CX2100-0014 or CX2100-0024



- operating systems:
 - Windows 10 IoT Enterprise 2016 LTSC
 - Windows 10 IoT Enterprise 2019 LTSC
 - Windows 10 IoT Enterprise 2021 LTSC
 - TwinCAT/BSD
- TwinCAT:
 - TwinCAT 3-Runtime (XAR)



Many-core Embedded PC series

BECKHOFF

- XFC applications
 - multiple PLCs with 100 μ s for fast control
- condition monitoring
 - fast data collection and processing
- measurement
 - fast data acquisition e.g. with ELM terminals and processing in real-time



- XTS
 - larger XTS installations require a lot of CPU performance
 - can be distributed over multiple cores
- HMI
 - sophisticated HMI views possible due to dedicated graphics
- computer vision
 - vision algorithms require a lot of RAM and a lot of CPU power



Many-core Embedded PC series

BECKHOFF

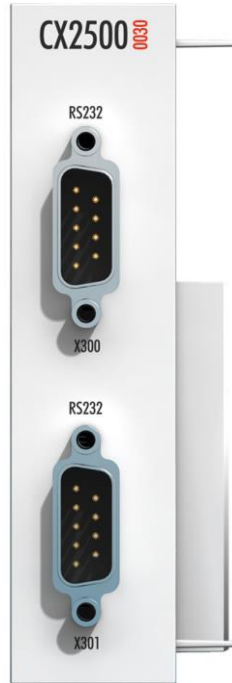


CX2500 | Left-hand side system extension modules

BECKHOFF



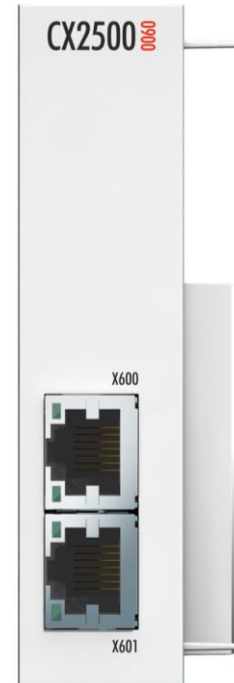
Audio connection



RS232 connection



RS422/RS485 connection



Dual Gbit Ethernet connection



Gbit Ethernet PoE connection



USB 3.0 connection

CX2500-xx10 | Right-hand side system extension modules

BECKHOFF



PROFIBUS
master



PROFIBUS slave



CANopen master



CANopen slave

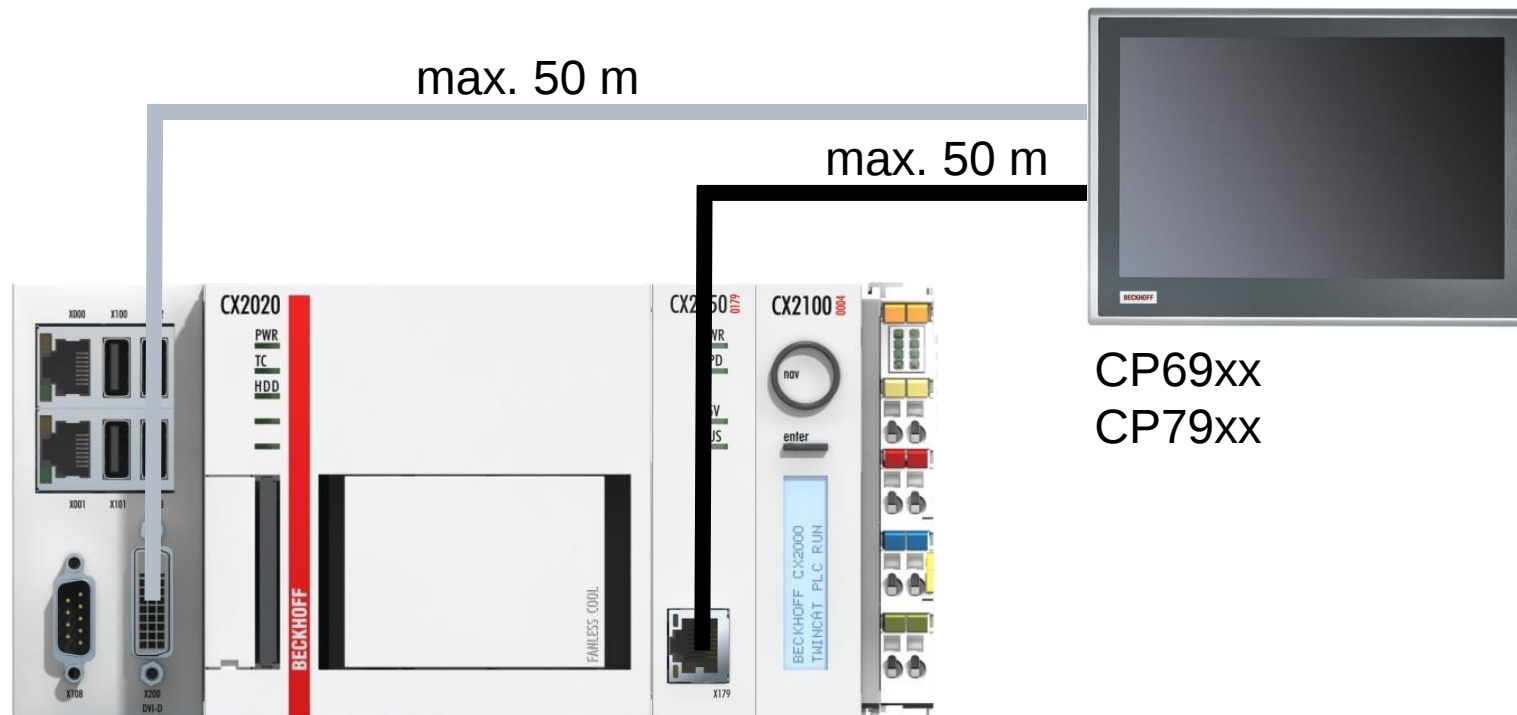


CFast slot

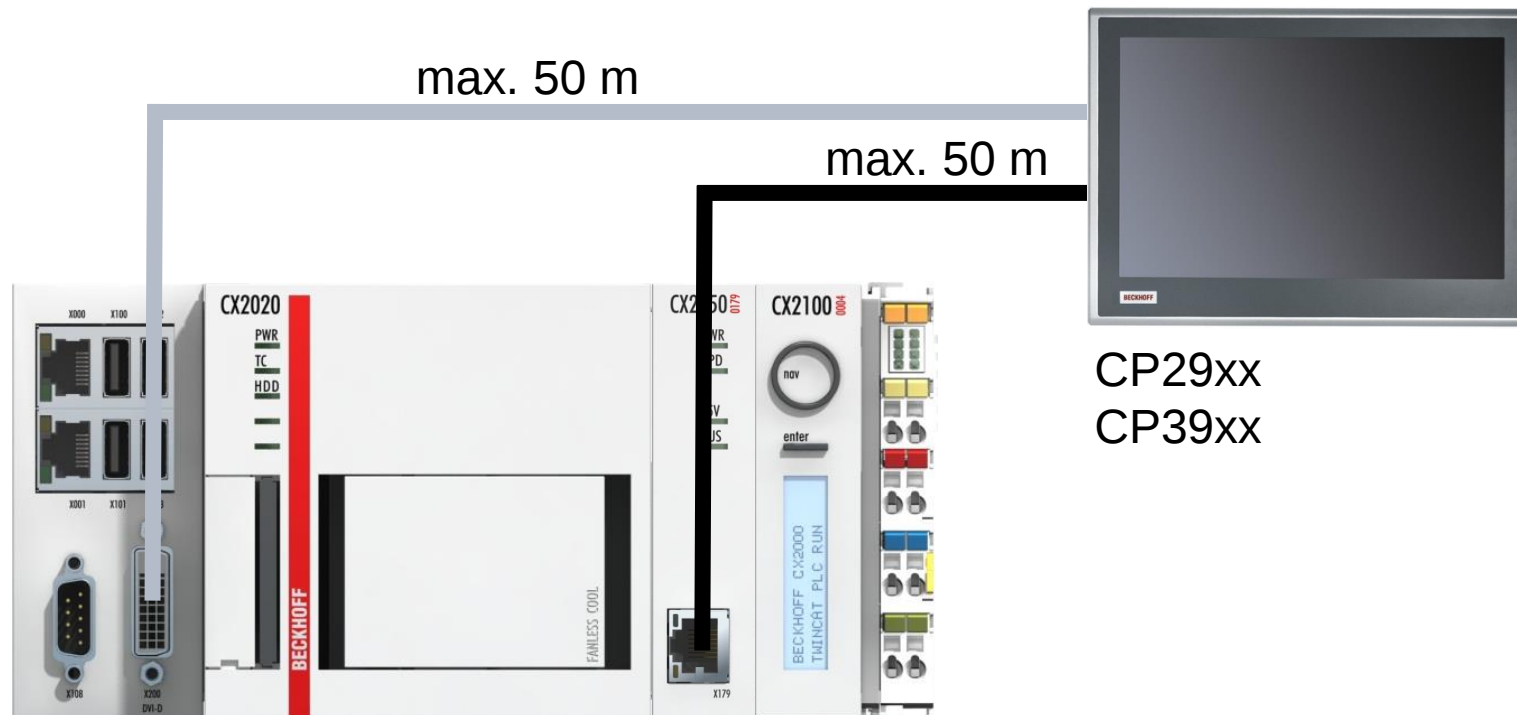


HDD/SSD module

- CX2550-0179 USB Extended 1.1
 - same functionality as CU8800
 - suitable for CP69xx and CP79xx
 - up to 50 m USB 1.1



- CX2550-0279 USB Extended 2.0
 - same functionality as CU8801
 - suitable for CP29xx and CP39xx
 - up to 50 m USB 2.0





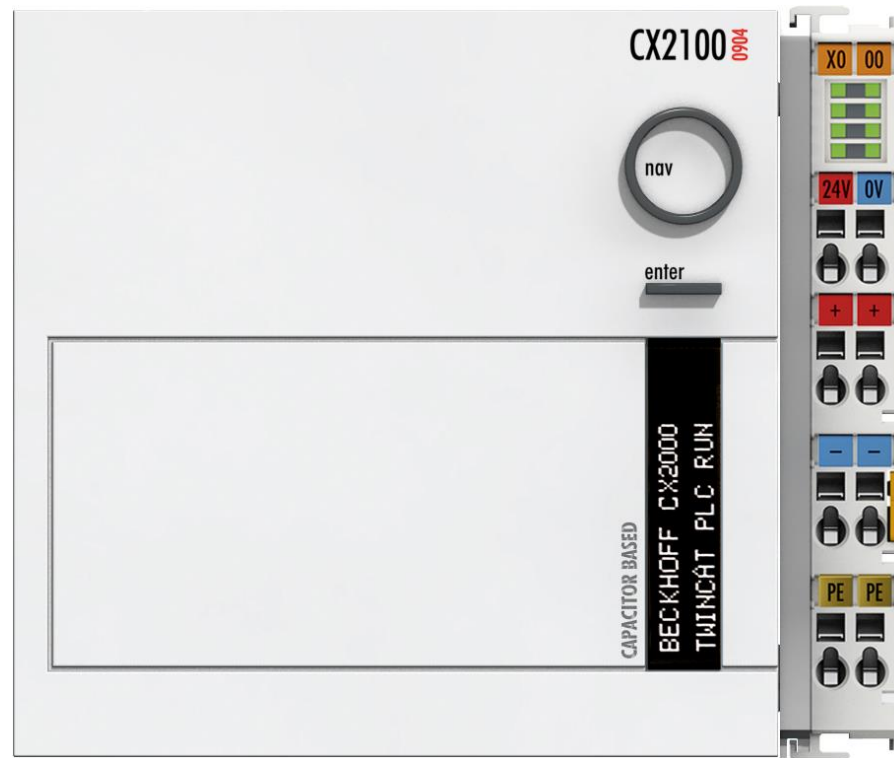
Power supply with
E-bus/K-bus interface



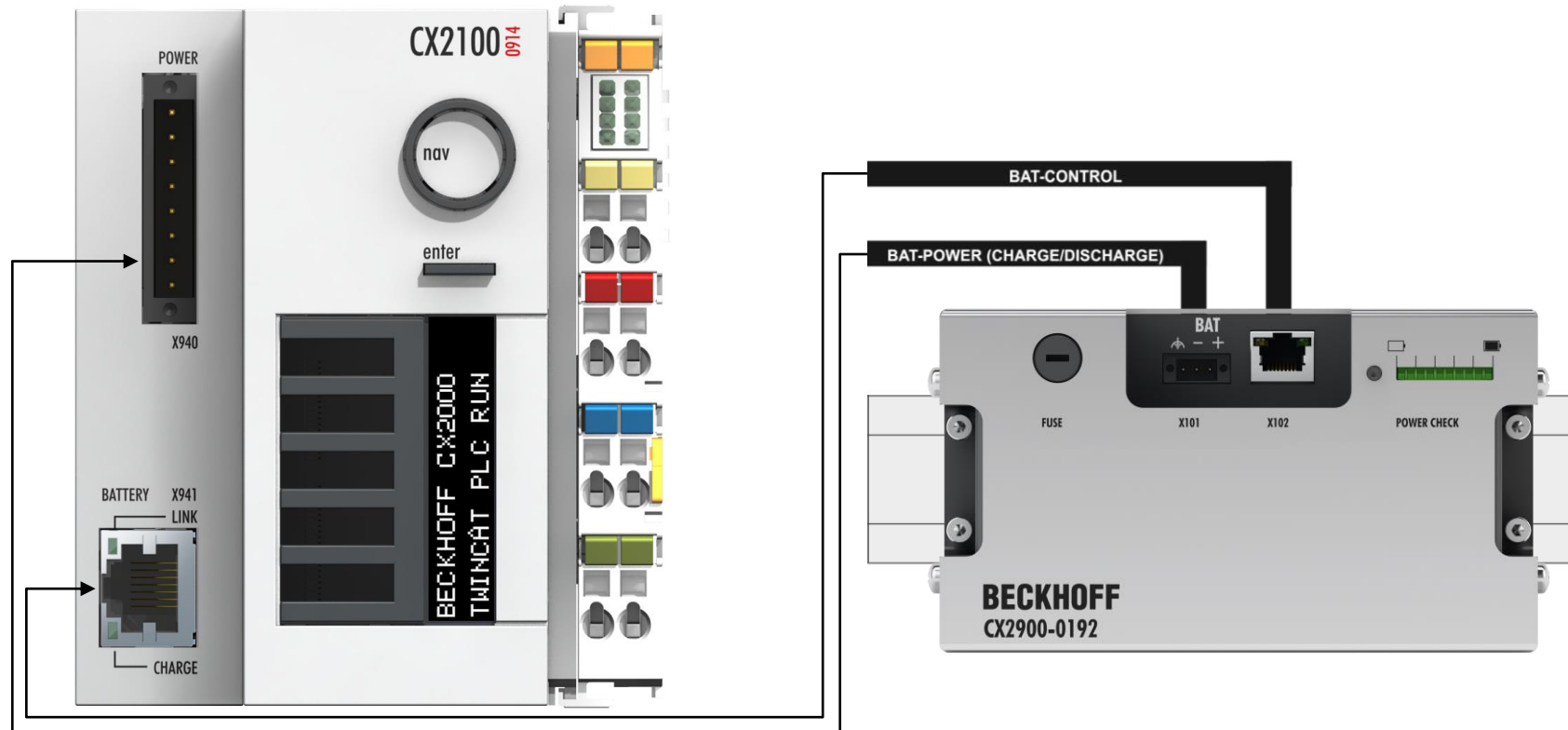
Power supply with integrated
passive heat sink and E-bus/K-bus
interface required for CX2040



Power supply with actively
cooled and E-bus-/K-bus
interface



Power supply with integrated capacitive UPS and E-bus/K-bus interface



Power supply with integrated smart battery charger and E-bus/K-bus interface required for CX2040

1. The Embedded PC Company
2. Embedded PC series
3. **Product overview**

Product overview

BECKHOFF



Product overview

BECKHOFF

Embedded PCs	CPU	Clock frequency	Memory	Operating system	TC2	TC3
CX70xx	ARM Cortex™-M7	480 MHz	512 MB microSD (extendable), 32 MB SDR RAM	TC/RTOS	—	x
CX80xx	ARM9	400 MHz	512 MB microSD (extendable), 64 MB DDR2 RAM	Windows CE 6	x	—
CX81xx	ARM Cortex™-A9	800 MHz	512 MB microSD (extendable), 512 MB DDR3 RAM	Windows Embedded Compact 7	—	x
CX9020	ARM Cortex™-A8	1 GHz	512 MB microSD (extendable), 2 x microSD card slot, 1 GB DDR3 RAM	Windows Embedded Compact 7	x	x
CX5010	Intel Atom® Z510	1.1 GHz	128 MB Compact Flash card, 512 MB RAM	Windows CE 6, Windows Embedded Standard 2009	x	x
CX5020	Intel Atom® Z530	1.6 GHz	128 MB Compact Flash card, 512 MB RAM (expandable ex factory to 1 GB)	Windows CE 6, Windows Embedded Standard 2009	x	x
CX5120	Intel Atom® E3815, single-core	1.46 GHz	Slot for CFast and microSD card (card not included), 2 GB DDR3 RAM	WEC 7, Windows 7, Windows 10 LTSB/ LTSC, TwinCAT/BSD	x	x
CX5130	Intel Atom® E3827, dual-core	1.75 GHz	Slot for CFast and microSD card (card not included), 4 GB DDR3 RAM	WEC 7, Windows 7, Windows 10 LTSB/ LTSC, TwinCAT/BSD	x	x

Product overview

BECKHOFF

Embedded PCs	CPU	Clock frequency	Memory	Operating system	TC2	TC3
CX5140	Intel Atom® E3845, quad-core	1.91 GHz	Slot for CFast and microSD card (card not included), 4 GB DDR3 RAM	WEC 7, Windows 7, Windows 10 LTSB/ LTSC, TwinCAT/BSD	x	x
CX5230	Intel Atom® x5-E3930, dual-core	1.3 GHz	Slot for CFast and microSD card (card not included), 4 GB DDR4 RAM	Windows 10 LTSC, TwinCAT/BSD	—	x
CX5240	Intel Atom® x5-E3940, quad-core	1.6 GHz	Slot for CFast and microSD card (card not included), 8 GB DDR4 RAM	Windows 10 LTSC, TwinCAT/BSD	—	x
CX5620	AMD Ryzen™ R1102G	1.2 GHz	M.2 SSD (SATA) and microSD card (storage media not included)	Windows 10 LTSC, TwinCAT/BSD	x	x
CX5630	AMD Ryzen™ R1505G	2.4 GHz	M.2 SSD (SATA) and microSD card (storage media not included)	Windows 10 LTSC, TwinCAT/BSD	x	x
CX2020	Intel® Celeron® 827E, single-core	1.4 GHz	20 GB or 40 GB CFast card (extendable), 2 GB DDR3 RAM (expandable ex factory to 4 GB)	WEC 7, Windows 7, Windows 10 LTSC, TwinCAT/BSD	x	x
CX2030	Intel® Core™ i7 2610UE, dual-core	1.5 GHz	20 GB or 40 GB CFast card (extendable), 2 GB DDR3 RAM (expandable ex factory to 4 GB)	WEC 7, Windows 7, Windows 10 LTSC, TwinCAT/BSD	x	x

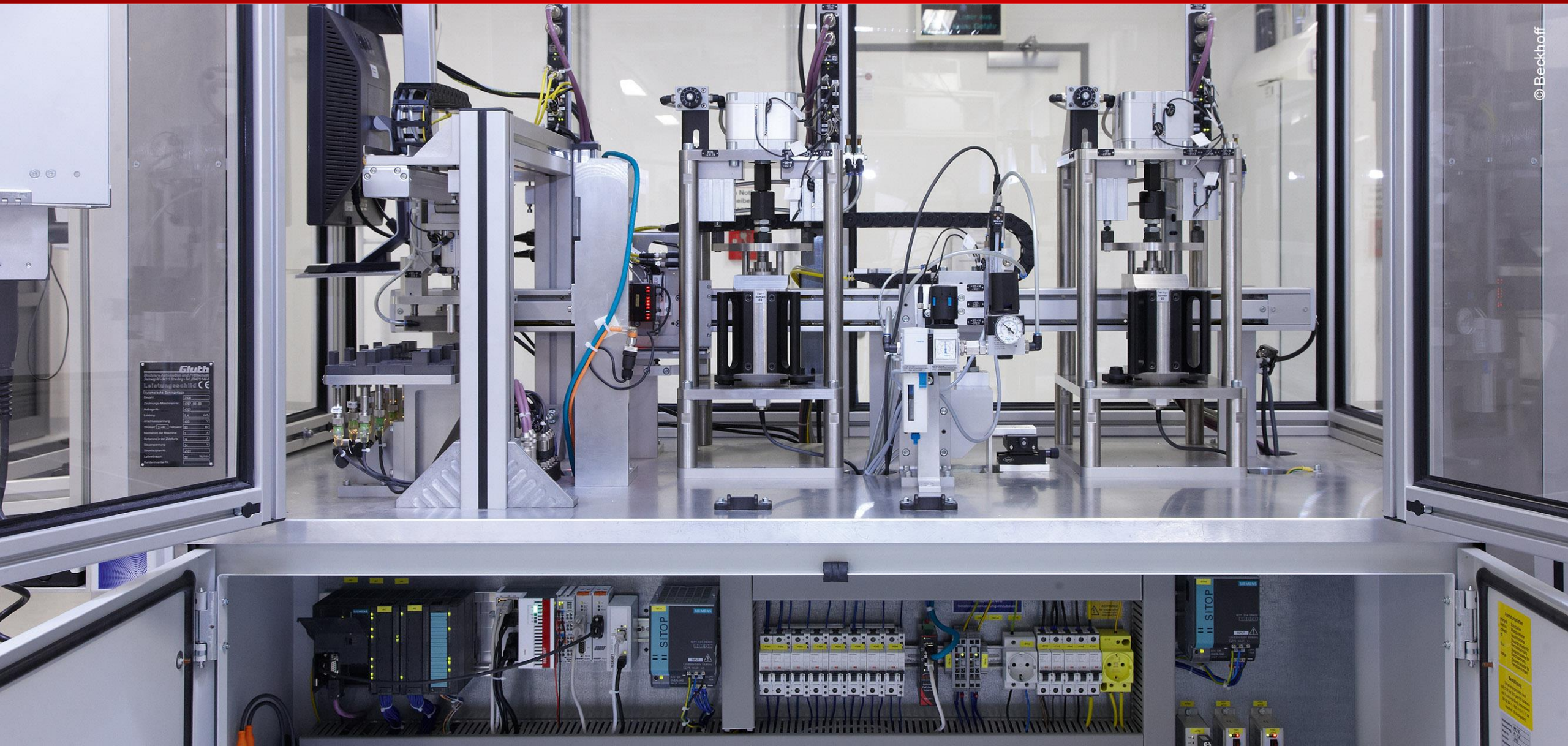
Product overview

BECKHOFF

Embedded PCs	CPU	Clock frequency	Memory	Operating system	TC2	TC3
CX2040	Intel® Core™ i7 2715QE, quad-core	2.1 GHz	20 GB or 40 GB CFast card (extendable), 4 GB DDR3 RAM	WEC 7, Windows 7, Windows 10 LTSB, TwinCAT/BSD	x	x
CX2033	AMD Ryzen™ V1202B, dual-core	2.3 GHz	Slot for CFast card (card not included), 8 GB DDR4 RAM (expandable ex factory to 16 GB)	Windows 10 LTSC, TwinCAT/BSD	x	x
CX2043	AMD Ryzen™ V1807B, quad-core	3.35 GHz	Slot for CFast card (card not included), 8 GB DDR4 RAM (expandable ex factory to 16 GB)	Windows 10 LTSC, TwinCAT/BSD	x	x
CX2042	Intel® Xeon® D-1527, quad-core	2.2 GHz	Slot for CFast card (card not included), 8 GB DDR4 RAM (expandable ex factory to 64 GB)	Windows 10 LTSC, TwinCAT/BSD	–	x
CX2062	Intel® Xeon® D-1548, 8 cores	2.0 GHz	Slot for CFast card (card not included), 8 GB DDR4 RAM (expandable ex factory to 64 GB)	Windows 10 LTSC, TwinCAT/BSD	–	x
CX2072	Intel® Xeon® D-1567, 12 cores	2.1 GHz	Slot for CFast card (card not included), 8 GB DDR4 RAM (expandable ex factory to 64 GB)	Windows 10 LTSC, TwinCAT/BSD	–	x

For all areas of automation

BECKHOFF



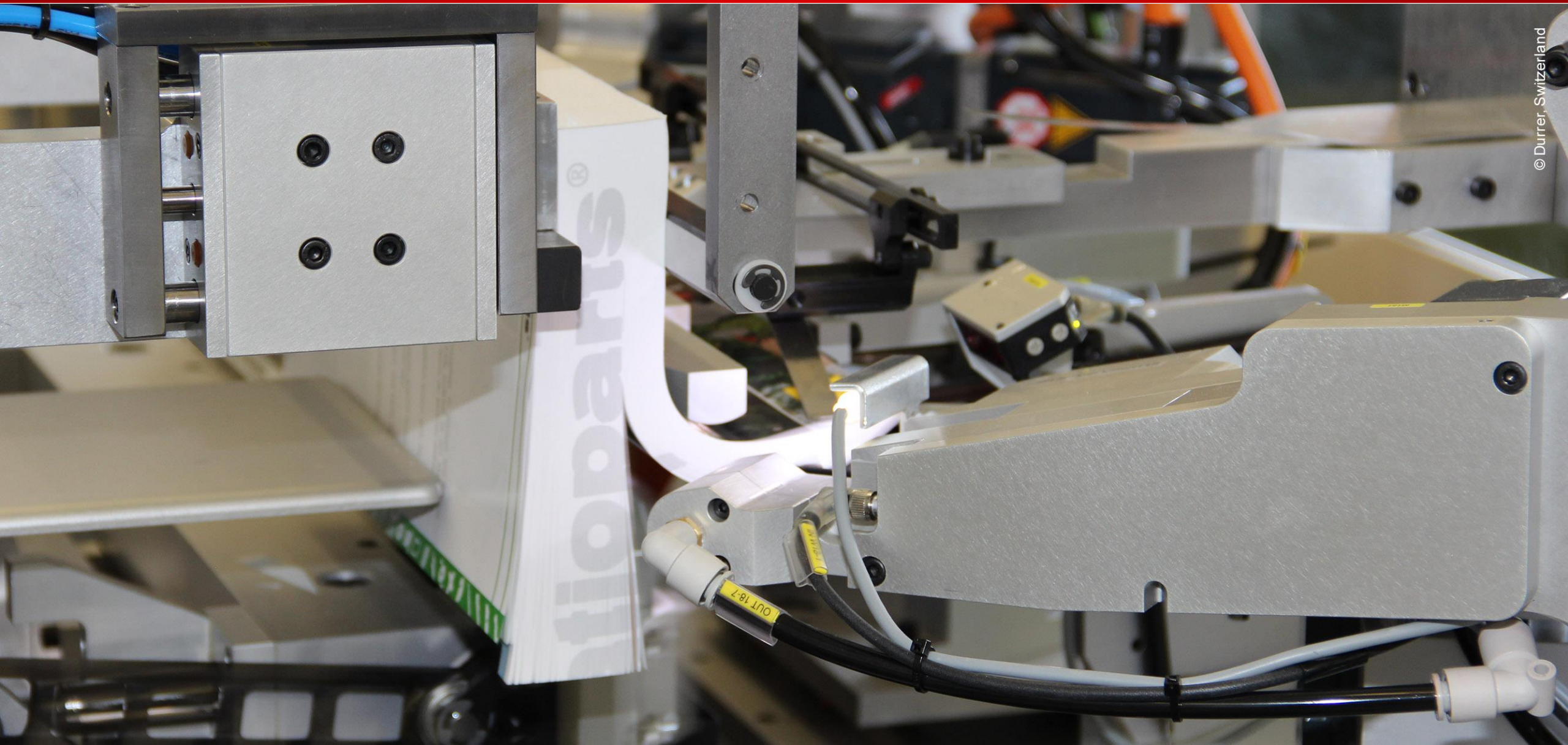
For all areas of automation

BECKHOFF



For all areas of automation

BECKHOFF



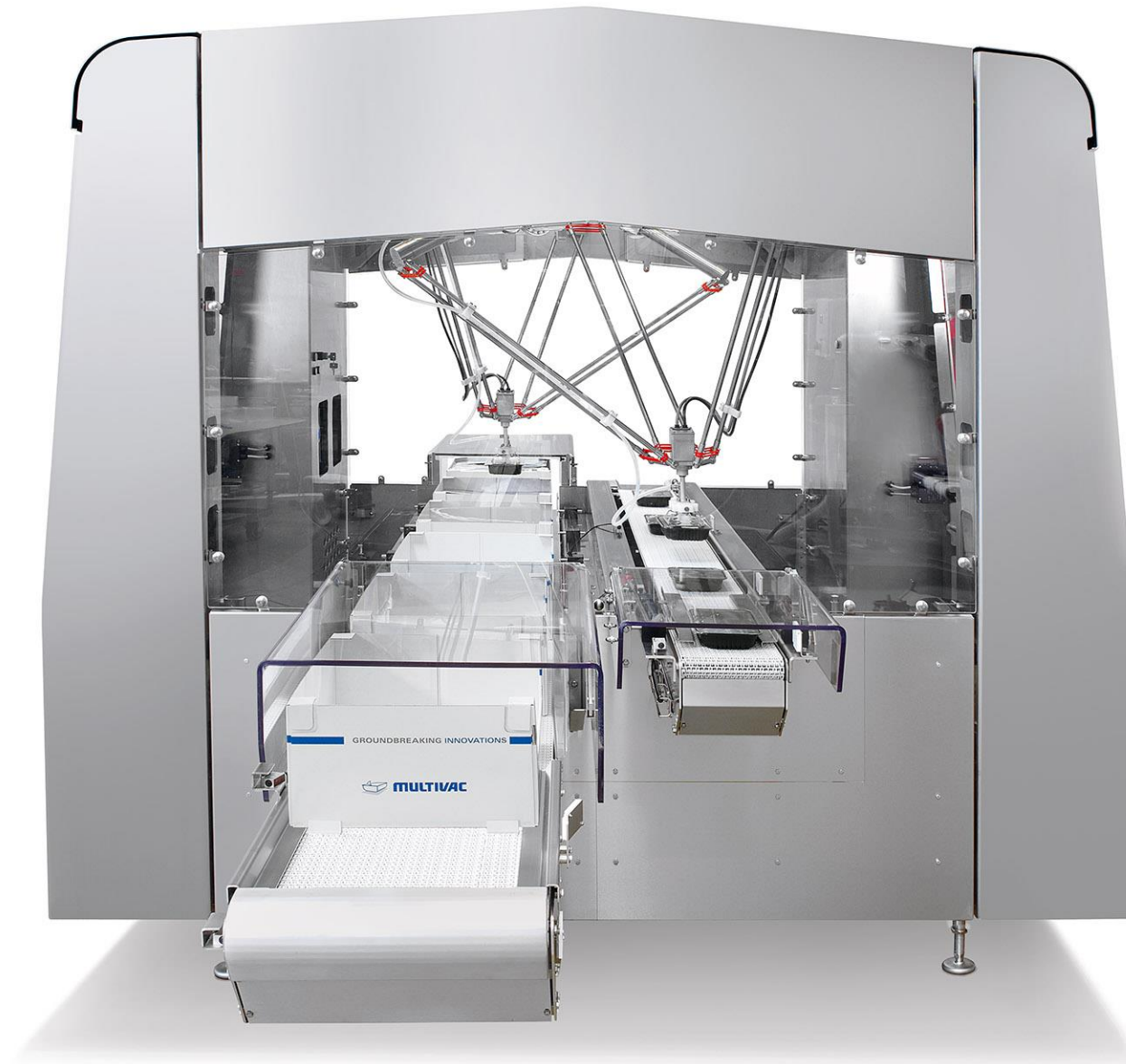
For all areas of automation

BECKHOFF



For all areas of automation

BECKHOFF



For all areas of automation

BECKHOFF



EVENTIONS PRODUCTS BV

Beckhoff Automation GmbH & Co. KG

Headquarters
Huelshorstweg 20
33415 Verl
Germany

Phone: +49 5246 963-0
E-mail: info@beckhoff.com
Web: www.beckhoff.com

© Beckhoff Automation GmbH & Co. KG 05/2022

All images are protected by copyright. The use and transfer to third parties is not permitted.

Beckhoff®, TwinCAT®, TwinCAT/BSD®, TC/BSD®, EtherCAT®, EtherCAT G®, EtherCAT G10®, EtherCAT P®, Safety over EtherCAT®, TwinSAFE®, XFC®, XTS® and XPlanar® are registered trademarks of and licensed by Beckhoff Automation GmbH. Other designations used in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owners.

The information provided in this presentation contains merely general descriptions or characteristics of performance which in case of actual application do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.