EK1100 | EtherCAT Coupler

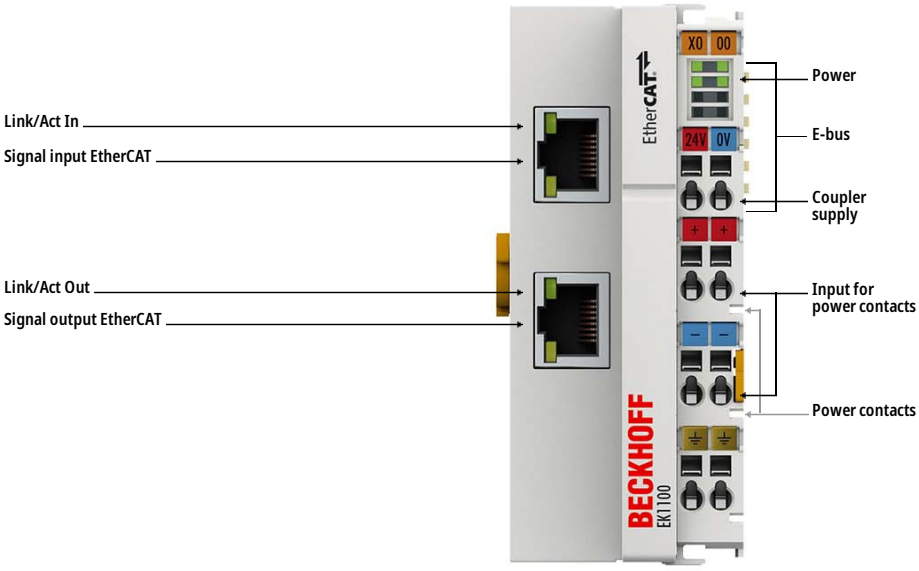

Image similar, may contain optional accessories

Product status: regular delivery

The EK1100 EtherCAT Coupler is the link between the EtherCAT protocol at fieldbus level and the EtherCAT Terminals. The coupler converts the passing telegrams from Ethernet 100BASE-TX to E-bus signal representation. A station consists of a coupler and any number of EtherCAT Terminals that are automatically detected and individually displayed in the process image.

Special features:

- Connection technology: 2 x RJ45 socket
- Connection lengths: up to 100 m
- Number of EtherCAT Terminals in the overall system: up to 65,535

The EK1100 has two RJ45 sockets. The upper Ethernet interface is used to connect the coupler to the network; the lower socket serves for the optional connection of further EtherCAT devices in the same segment. In addition, an EtherCAT junction or an EtherCAT extension can be used for the extension or for setting up a line or star topology.

The system and field supply, each 24 V DC, is provided directly at the coupler. The attached EtherCAT Terminals are supplied with the current required for communication from the supplied system voltage. The coupler can supply a maximum of 5 V and 2 A. If higher current is required, power feed terminals such as the EL9410 have to be integrated. The field supply is forwarded to the individual I/O components via the power contacts with up to 10 A.

In the EtherCAT network, the EK1100 can be installed anywhere in the Ethernet signal transfer section (100BASE-TX) – except directly at the switch. The EK9000 and EK1000 couplers are suitable for use at the switch.

Product information

Technical data

Technical data	EK1100
Task within EtherCAT system	coupling of EtherCAT Terminals (ELxxxx) to 100BASE-TX EtherCAT networks
Data transfer medium	Ethernet/EtherCAT cable (min. Cat.5), shielded
Distance between stations	max. 100 m (100BASE-TX)
Number of EtherCAT Terminals	up to 65,534
Protocol	EtherCAT
Delay	approx. 1 µs
Data transfer rates	100 Mbit/s
Bus interface	2 x RJ45
Power supply	24 V DC (-15%/+20%)
Current consumption from Us	70 mA + (∑ E-bus current/4)
Current consumption from Up	load
Current supply E-bus	2000 mA
Power contacts	max. 24 V DC/max. 10 A
Electrical isolation	500 V (power contact/supply voltage/Ethernet)
Operating temperature	-25...+60°C
Storage temperature	-40...+85°C
EMC immunity/emission	conforms to EN 61000-6-2/EN 61000-6-4
Relative humidity	95%, no condensation
Vibration/shock resistance	conforms to EN 60068-2-6/EN 60068-2-27
Protect. rating/installation pos.	IP20/variable
Approvals/markings	CE, CCC, UL, ATEX, IECEx, DNV, cFMus
Ex marking	ATEX: II 3 G Ex ec IIC T4 Gc IECEx: Ex ec IIC T4 Gc cFMus: Class I, Division 2, Groups A, B, C, D Class I, Zone 2, AEx ec IIC T4 Gc

Housing data	EK-44-8pin
Design form	compact terminal housing with signal LEDs
Material	polycarbonate
Installation	on 35 mm DIN rail, conforming to EN 60715 with lock
Side by side mounting by means of	double slot and key connection
Marking	labeling of the BZxxxx series

Wiring	solid conductor (s), flexible conductor (st) and ferrule (f): spring actuation by screwdriver
Connection cross-section	s*: 0.08...2.5 mm², st*: 0.08...2.5 mm², f*: 0.14...1.5 mm²
Connection cross-section AWG	s*: AWG28...14, st*: AWG28...14, f*: AWG26...16
Stripping length	8...9 mm
Current load power contacts	I_{max}: 10 A
Dimensions (W x H x D)	44 mm x 100 mm x 68 mm

*s: solid wire; st: stranded wire; f: with ferrule