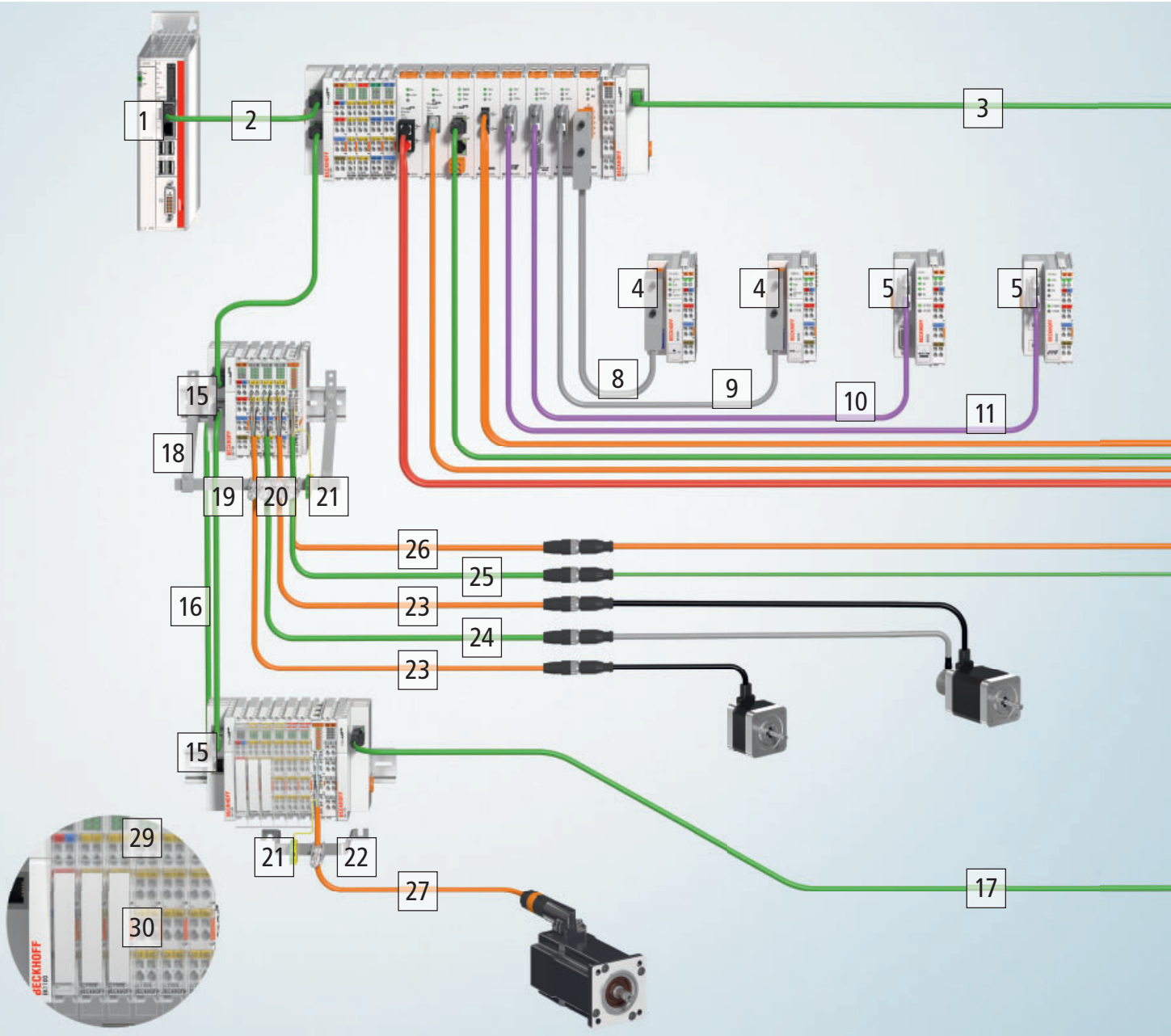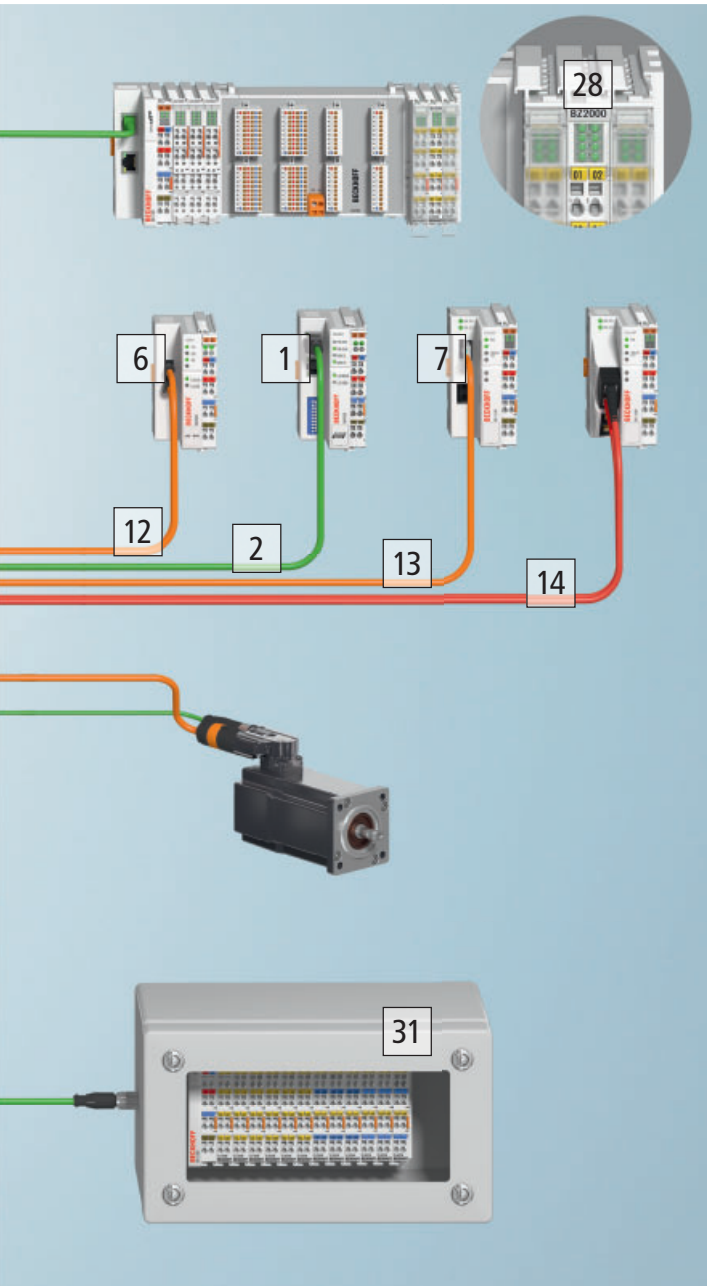# Accessories EtherCAT Terminal

Cordsets and connectors

1	ZS1090-0003 | EtherCAT/Ethernet RJ45 plug, IP 20, 4-pin, field assembly	446
2	ZB9010 | Industrial Ethernet/EtherCAT cable for fixed installation, category CAT 5e, 4-wires	446
3	ZK1090-9191-xxxx | Industrial Ethernet/EtherCAT patch cable	446
4	ZS1052-3000 | 5-pin open style connector for CANopen/DeviceNet with integrated termination resistor	688

5	ZS1031-3000 | 9-pin D-sub connector for PROFIBUS (12 Mbaud) with integrated termination resistor	688
6	Z1000 | Standard connector for 1000 µm plastic fibre	688
7	ZS1090-0008 | Connector set for direct connector assembly for POF cables	447
8	ZB5200 | DeviceNet cable	690
9	ZB5100 | CAN cable	690

15	ZS1090-0005 | EtherCAT/Ethernet RJ45 plug, IP 20, 8-pin, for field assembly	689
16	ZB9020 | Industrial Ethernet/EtherCAT cable, drag-chain suitable	690
17	ZK1090-6191-0xxx | EtherCAT cable, M12 plug, straight, d-coded, 4-pin – RJ45 plug, straight	515

Shielding connection system

18	ZB8520 | Mounting rail holder for shield busbar	448
19	ZB8510 | Shield busbar 10 x 3 mm	448
20	ZB8500 | Clamp strap for shield connection with knurled screw	448
21	ZB8530 | U-clamp terminal up to 4 mm² for PE connection to the rail	448
22	ZB8511 | Shield busbar clamp	448

Motor cables

23	ZK4000-6700-2xxx | Motor cable, shielded, for AS1000 stepper motors	870
24	ZK4000-5100-2xxx | Encoder cable for AS1000 stepper motors	870
25	ZK4724-0410 | Resolver cable for AM8100 and AM3100 servomotors	864
26	ZK4704-0411 | Motor cable for AM8100 and AM3100 servomotors	864
27	ZK4704-0421 | Motor cable for AM8100 servomotors with OCT	864

Accessories

28	BZ1xxx, BZ200x | Marking material, contact labels	447
29	BZ3200 | Insertable label cover, transparent, pluggable	448
30	BZ5100 | Push-in strips for labels	448
31	BG155x | Bus system housing with mounting rails and holes	449

▶ **www.beckhoff.com/EtherCAT-accessories**

Note: The pictured products give examples of the wide range of EtherCAT Terminal accessories. For further variants and connection possibilities please see the respective catalog pages.

10	ZB4200 | Interbus remote bus cable	689
11	ZB3200 | PROFIBUS cable	689
12	Z1100 | Plastic fibre optic	688
13	Z1190 | Fibre-optic duplex cable for direct connector assembly	447
14	ZK1091-1001-xxxx | Fibre-optic multimode cable, SC duplex plug	447

Cables and connectors for field assembly

EtherCAT cable (copper based)

Pre-assembled cable

The pre-assembled Industrial Ethernet/EtherCAT cables with RJ45 plug enable fast, easy wiring inside the control cabinet and are suitable for short distances on the machine. The robust, industrial quality PUR cables distinguish themselves from office cables by both their mechanical and their EMC characteristics. Further lengths and variants on request.
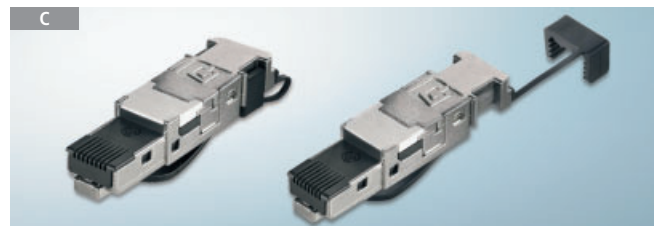
Technical data	ZK1090-9191-xxxx	A
Cross-section	4 x 2 x AWG26/7…4 x 2 x 0.128 mm²	
Cable sheath material	PUR	
Colour	green (RAL 6018)	
Line configuration	SF/UTP (shielded)	
Diameter	sheath: typ. 5.9 mm ±0.2 mm	
Bending radius	> 5 x diameter	
Category/class	CAT 5, class D	
Operating/installation temperature	-40…+75 °C/-10…+60 °C	
Insertion cycles	min. 750	

Ordering information		for pre-assembled EtherCAT/Ethernet patch cables depending on cable lengths			
ZK1090-9191-0001	0.17 m	**ZK1090-9191-0030**	3.0 m	**ZK1090-9191-0200**	20.0 m
ZK1090-9191-0002	0.26 m	**ZK1090-9191-0050**	5.0 m	**ZK1090-9191-0250**	25.0 m
ZK1090-9191-0005	0.5 m	**ZK1090-9191-0055**	5.5 m	**ZK1090-9191-0300**	30.0 m
ZK1090-9191-0010	1.0 m	**ZK1090-9191-0060**	6.0 m	**ZK1090-9191-0350**	35.0 m
ZK1090-9191-0012	1.25 m	**ZK1090-9191-0070**	7.0 m	**ZK1090-9191-0400**	40.0 m
ZK1090-9191-0015	1.5 m	**ZK1090-9191-0080**	8.0 m	**ZK1090-9191-0450**	45.0 m
ZK1090-9191-0017	1.75 m	**ZK1090-9191-0090**	9.0 m	**ZK1090-9191-0500**	50.0 m
ZK1090-9191-0020	2.0 m	**ZK1090-9191-0100**	10.0 m		
ZK1090-9191-0025	2.5 m	**ZK1090-9191-0150**	15.0 m		

Cables sold by the metre and connectors

Ordering information	Industrial Ethernet/EtherCAT cable	
ZB9010	Industrial Ethernet/EtherCAT cable, fixed installation, CAT 5e, 4 wires, SF/UTP	
ZB9020	Industrial Ethernet/EtherCAT cable, drag-chain suitable, CAT 5e, 4 wires, SF/UTP	
ZB903x	Industrial Ethernet/EtherCAT cable, for M8 wiring, SF/UTP, AWG 26, see page	514

Ordering information		Pict.
ZS1090-0003	RJ45 plug EtherCAT/Ethernet, IP 20, 4-pin, field assembly, AWG22-24, PU = 10	B
ZS1090-0005	RJ45 plug EtherCAT/Ethernet, IP 20, 8-pin, supports Gbit, field assembly, AWG22-26, PU = 10	C

A

B

C

EtherCAT cable (fibre optic)

Pre-assembled cable

Ordering information	for fibre-optic cables for EK1501, EK1521, CU1521, CU1521-0010 (multimode 50/125 µm)		
ZK1091-1001-0001	fibre-optic duplex cable, SC connector, 1 m	ZK1091-1001-0010	fibre-optic duplex cable, SC connector, 10 m
ZK1091-1001-0005	fibre-optic duplex cable, SC connector, 5 m		

Further lengths and variants on request

Cables sold by the metre and connectors

Ordering information	POF fibre-optic for EK1561 and CU1561
Z1190	POF fibre-optic duplex cable 980/1000 µm for direct connector assembly, sold by metre, PUR, 2-wire, for POF, drag-chain suitable, red
ZS1090-0008	connector set for direct connector assembly for POF cables, contains 10 connectors and 1 polishing set including sanding gauge and polishing paper

Connectors (spare parts)

Ordering information	for terminals with plug-in wiring level
ZS2010	10 connectors for KS and ES series, spare part (KS/ES terminals are supplied with connector.)

Ordering information	for connectors for KM or EM modules, spare part (KM and EM terminals are supplied with connector.)		
ZS2001-0001	1-pin, without LED	ZS2001-0004	3-pin, with LED
ZS2001-0002	1-pin, with LED	ZS2001-0005	1-pin, without LED, labelling (1…10)

Marking material and coding pins

Standard contact signs

The EtherCAT Terminals can be individually labelled with standard contact signs. The marking material is not included in the delivery.
Further versions ▶ **www.beckhoff.com/labelling**

Ordering information	for contact labels, unprinted (100 pcs)		D
BZ2000	white	BZ2006	blue
BZ2002	yellow	BZ2007	orange
BZ2005	red	BZ2008	light green

Ordering information	for contact labels, printed (100 pcs)		D
BZ1100	0 V, blue	BZ1107	+, white
BZ1102	–, blue	BZ1108	PE, light green
BZ1104	24 V, red	BZ1300	ten of each: 0…7, 20 unprinted, white
BZ1106	+, red	BZ1400	two of each: 00 01…48 49, white

Ordering information	for equipment identification labels 12 x 7 mm for Bus Terminals with removable identification section (180 pcs)		
BZ3000	unprinted	BZ3010	printed according to customer specification (in Excel file)

EtherCAT Terminal

447

Slide-in label covers

The slide-in label covers BZ3200 enable clear labelling of the individual channels or text-based functional description of the EtherCAT Terminals. The labels are inserted in the designated slots. For connecting the individual channels the label cover can be tilted upwards.

Ordering information		E
BZ3200	insertable label cover, transparent, pluggable, 11.5 mm x 104.5 mm, packing unit = 50	
BZ5100	push-in strips for labels, A4 sheet, 160 pieces, pre-punched, packing unit = 10	

Coding pins

The coding pins and sockets for KS/ES terminals with pluggable wiring level enable coding between terminal and plug in order to prevent incorrect plug insertion.

Ordering information		F
ZS2010-0010	The set contains 100 sockets and 100 pins.	

Housing and assembly

Shielding connection system

The shielding connection system enables the shielding to be located very close to the terminals of the shielded line, so that interference is reduced to a minimum. A shield busbar for attachment to a mounting rail or a bracket for separate mounting in the control cabinet are available.

Ordering information	Shield busbar with mounting rail holder	Pict.
ZB8500	clamp strap for shield connection with knurled screw, width 11 mm, shield diameter max. 8 mm, packing unit = 10	G
ZB8510	shield busbar 10 x 3 mm, 1000 mm galvanised Cu, packing unit = 1	H
ZB8520	mounting rail holder for shield busbar (10 x 3 mm), packing unit = 2	I
ZB8530	U-clamp terminal up to 4 mm² for PE connection to the rail (10 x 3 mm), packing unit = 20	

Ordering information	Shield busbar clamps	Pict.
ZB8500	clamp strap for shield connection with knurled screw, width 11 mm, shield diameter max. 8 mm, packing unit = 10	G
ZB8511	shield busbar clamp 10 x 3 mm for 5 Bus Terminals/EtherCAT Terminals 12 mm, packing unit = 10	J
ZB8530	U-clamp terminal up to 4 mm² for PE connection to the rail (10 x 3 mm), packing unit = 20	

Bus system housing

The BG1558 and BG1559 housings are especially suitable for the construction of compact I/O stations with a higher protection class (IP 65). The housings are supplied with mounting rails. If desired, the housings can be supplied fully fitted with EtherCAT Terminals, flanges and PG threaded fittings. Further sizes are available on request.

Ordering information		Pict.
BG1558	bus system housing 400 mm x 200 mm x 120 mm (W x H x D) with mounting rails and holes	K
BG1559	bus system housing 600 mm x 200 mm x 120 mm (W x H x D) with mounting rails and holes	

Assembly aids

Ordering information	
ZB8700	slot screwdriver
	assembly tool for pressing the spring force clamps on the coupler and the terminals

EtherCAT demokit

The TC9910-B11x EtherCAT demokit offers a quick introduction into EtherCAT communication. It includes EtherCAT Terminals and a Coupler for testing simple I/O functions. The enclosed CD contains a step-by-step guide and a full version of TwinCAT 2 as programming environment for the Beckhoff EtherCAT master. EtherCAT slaves of any type can be tested with this field-proven EtherCAT master. It also includes a comprehensive help collection that facilitates familiarisation with Beckhoff ADS communication and programming according to IEC 61131-3.

The demokit consists of:
– EK1100 EtherCAT Coupler
– 2 digital input terminals 24 V DC
– 2 digital output terminals 24 V DC
– Beckhoff product folder
– Beckhoff TwinCAT CD
– "TwinCAT Quickstart" documentation
– documentation describing the EK1100
– a 25 cm section of 35 mm mounting rail for fitting the terminal system
– TwinCAT 2 PLC license (only TC9910-B110)
– EL9011 end cap
– Ethernet cable

Ordering information	L
TC9910-B110	EtherCAT demokit, with TwinCAT 2 PLC license
TC9910-B111	EtherCAT demokit, without TwinCAT 2 PLC license
TC9910-B112	EtherCAT demokit, without TwinCAT 2 PLC license (1 instead of 2 digital input terminals)