ZK7102-BH00-0xxx | B12, ECP cable, PUR, 2 x 0.75 mm² + (1 x 4 x AWG22), drag chain suitable, key 1 (24 V DC)

B12, flange rear assembly, straight, long, male+male, pins 2+4, P-coded – M8 EtherCAT-P-coded + 2 x open end, plug, straight, male, 4-pin, P-coded

Plugs

Electrical data	Head A	Head B
Rated voltage (Ethernet)	24 V DC	24 V DC
Rated current (Ethernet)	3 A at 40 °C	3 A at 40 °C
Rated voltage (power)	60 V DC	-
Rated current (power)	10 A at 55 °C	-
Rated impulse voltage (power)	1.5 kV	-
Rated impulse voltage (Ethernet)	1.0 kV	-
Voltage proof (contact/contact)	1.5 kV (power - Ethernet), 1.5 kV AC (power), 1.0 kV AC (Ethernet)	-
Shielding (Ethernet)	yes	yes
Contact resistance	< 10 mΩ (signal), < 5 mΩ (power)	-
Insulation resistance	≥ 100 MΩ (according to IEC 60512)	≥ 100 GΩ (according to IEC 60512)
Mechanical data		
Installation size	B12	M8 EtherCAT-P-coded + 2 x open end
Connector type	flange rear assembly	plug
Configuration	straight, long	straight
Contact type	male+male	male
Number of positions (face)	pins 2+4	4-pin
Coding	P-coded	P-coded
Mechanical coding	key 1 (24 V DC)	-
Wire termination	crimp connection	crimp connection
Recommended torque, nut	-	0.4 Nm
Mating cycles	≥ 100	≥ 100
Way of locking	bayonet	screw
Weight per piece	0.070 kg (0.154 lb)	-
Body colour	-	black
Body material	-	TPU, UL 94
Flange housing material	GD-Zn, Ni	-
Coupling nut material	-	CuZn, Ni

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Seal	NBR, FPM	FPM
Contact carrier colour	-	red
Contact carrier material	PA 6, UL 94 V0	PA, UL 94
Contact carrier colour (Ethernet)	red	-
Contact carrier colour (power)	red	-
Contact plating	Au over Ni	Ni, Au gal.
Contact material	copper alloy	CuZn
Environmental data		
Shock resistance	50 g (490 m/s²) conforms to IEC 60512-6c, 11 ms; 18 shocks per direction, 3 axes	-
Vibration resistance	5 g (50 m /s²) conforms to IEC 60512-6d, 10 Hz. ... 500 Hz.; 10 cycles per axis; 6 h full duration	-
UV resistance	-	yes
RoHS compliant	yes	yes
Ambient temperature (operation)	-30...+80 °C, -22...+176 °F	-30…+70 °C, -22…+158 °F
Protection class	IP 65/67 in screwed condition (according to IEC 60529)	IP 67 in screwed condition (according to IEC 60529)
Pollution level	3/2 (according to IEC 60664-1)	3/2 (according to IEC 60664-1)

Cable

| **Electrical data**	
Rated voltage (Ethernet)	max. 300 V (peak value, not for high voltage purposes)
Rated voltage (power)	300 V
Operating voltage	≤ 125 V (peak value, not for high voltage purposes)
Attenuation of shielding	≥ 65 dB (30...100 MHz)
Insulation resistance	≥ 5GΩ * km
Unbalanced capacitance to ground	≤ 2000 pF/km
Mutual capacitance	48 nF/km
Characteristic impedance (Ethernet)	100 Ω ±15 Ω
Loop resistance	≤ 110.8 Ω/km
Loop resistance (Ethernet)	110.8 Ω/km
Signal running time (Ethernet)	5.3 ns/m
Electrical parameters (Ethernet)	Cat.5e, according to EN 50288-2-2
Test voltage	1000 V, 50 Hz, 1 min. (wire/wire and wire/screen)
Mechanical data	
Cable structure (Ethernet)	star quad
Conductor construction (power)	19 x 0.254 mm
Conductor construction (Ethernet)	7 x 0.25 mm
Cross section (power)	2 x 0.75 mm² (approx. AWG18)
Cross section (Ethernet)	1 x 4 x 0.34 mm² (AWG 22)
Min. bending radius, moved	8 x outer cable diameter
Min. bending radius, fixed installation	5 x outer cable diameter
Weight	72 kg/km (48.38 lb/1000 ft)
Outer cable diameter	6.5 mm ± 0.2 mm (0.2559" ± 0.0079")
Conductor material (Ethernet)	copper, tinned
Shielding	aluminium-clad foil, braiding of tinned copper wires, coupling
Optical covering factor of shielding (Ethernet)	≥ 85 %
Use	drag-chain suitable
Max. acceleration	3 m/s²
Max. speed	3 m/s
Max. travel distance	4.5 m
Max. number of cycles	3 million
Jacket colour	black (similar to RAL 9005) with red stripe (similar to RAL 3020)
Material jacket	PUR (polyurethane)
Wire colour code	yellow, orange, white, blue (Ethernet), blue, red (Power)
Wire insulation material	PP polypropylene (Ethernet), PPE polyphenyl ether (Power)
Printing on the jacket	Beckhoff Automation GmbH & Co. KG - Germany - EtherCATp Cat5e AWG22/7 E170315 AWM 20549 AWM I/II A/B 80°C 300 V
Printing colour	white
Environmental data	

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Operation temperature range, moved	-30…+70 °C, -22…+158 °F
Operation temperature range, fixed installation	-40…+80 °C, -40…+176 °F
UV resistance	good
Oil resistance	according to IEC 60811-2-1 respectively according to DIN VDE 0282 part 10
Flame-retardant	Horizontal flame test according to UL 1581 part 1090
Halogen-free	according to IEC 60754 respectively DIN VDE 0472 part 815

Attenuation

Max. insertion loss

Frequency [MHz]	1	4	10	16	20	31.25	62.5	100
[db/100 m]	-	4.9	7.8	9.9	11.1	14.1	20.4	26.4
[db/100 ft]	-	1.5	2.4	3	3.4	4.3	6.2	8

Min. near-end crosstalk attenuation

Frequency [MHz]	1	4	10	16	20	31.25	62.5	100
[db/100 m]	-	56.3	50.3	47.2	45.8	42.9	38.4	35.3
[db/100 ft]	-	17.2	15.3	14.4	14	13.1	11.7	10.8

Contact assembly
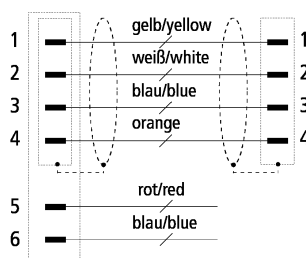
Dimensions
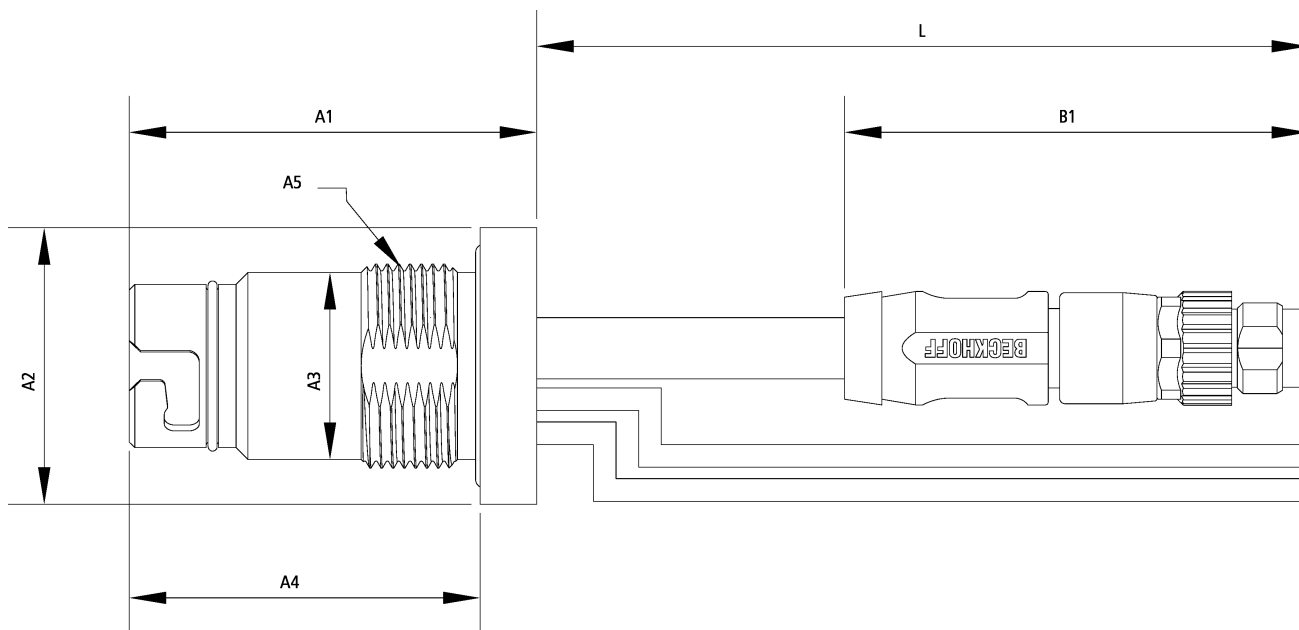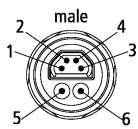
A1	36.00 mm
A2	24.40 mm
A3	16.50 mm
A4	31.00 mm
A5	M18
B1	41.00 mm

Notes

- Depending on the cable length (L), the following length tolerances apply:
0 m…3.0 m: + 100 mm | 3.0…10.0 m: ± 100 mm | ≥ 10.0 m: ± 2 %
- Illustrations similar
- Delivery with counter nut
- Further cable length on request. The last three digits of the ordering information is the cable length in decimeters, e.g. ZKxxxx-xxxx-x020 = cable length 2.00 m

Installation dimensions
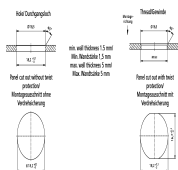
Ordering information	Length
ZK7102-BH00-0005	0.50 m
ZK7102-BH00-0010	1.00 m

Accessories	
ZS7100-B001	B12 protection cap, socket/flange, plastic, IP 67, packaging unit = 10 pieces
ZS7100-B002	B12 protection cap, socket/flange, metal, IP 67, packaging unit = 5 pieces
ZS7100-B009	B12 colour coding flange for front/rear assembly, red, packaging unit = 10 pieces
ZS7100-B010	B12 colour coding flange for front/rear assembly, yellow, packaging unit = 10 pieces
ZS7100-B011	B12 colour coding flange for front/rear assembly, blue, packaging unit = 10 pieces
ZS7100-B012	B12 colour coding flange for front/rear assembly, green, packaging unit = 10 pieces
ZS7100-B013	B12 colour coding flange for front/rear assembly, orange, packaging unit = 10 pieces
ZS7100-B014	B12 colour coding flange for front/rear assembly, grey, packaging unit = 10 pieces