

ZK7102-BF00-Axxx | B12, ENP cable, PUR, 2 x 0.75 mm² + (1 x 4 x AWG22), drag chain suitable, key 1 (24 V DC)

B12, square flange, straight, long, male+female, pins 2+4, EtherCAT-coded – RJ45 + 2 x open end, 8-pin

Plugs

Electrical data	Head A	Head B
Rated voltage (Ethernet)	60 V DC	24 V DC
Rated current (Ethernet)	4 A at 40 °C	1.1 A at 30 °C
Rated voltage (power)	60 V DC	-
Rated current (power)	10 A at 60 °C	-
Rated current (power)	10 A	-
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)	≥ 10 GΩ (according to IEC 60512-2)
Mechanical data		
Installation size	B12	RJ45 + 2 x open end
Connector type	square flange	-
Configuration	straight, long	-
Contact type	male+female	-
Number of positions (face)	pins 2+4	8-pin
Coding	EtherCAT-coded	-
Mechanical coding	key 1 (24 V DC)	-
Wire termination	crimp connection	-
Mating cycles	≥ 100	≥ 750
Way of locking	bayonet	-
Weight per piece	0.070 kg (0.154 lb)	-
Body colour	-	black
Body material	-	PC UL 94 V0
Flange housing material	GD-Zn, Ni	-
Seal	NBR, FPM	-

Contact carrier material	PA 6, UL 94 V0	-
Contact carrier colour (Ethernet)	yellow	-
Contact carrier colour (power)	red	-
Contact plating	Au over Ni	Au over Ni
Contact material	copper alloy	-
Environmental data		
Shock resistance	50 g (490 m/s ²) conforms to IEC 60512-6c, 11 ms; 18 shocks per direction, 3 axes	-
Vibration resistance	5 g (50 m/s ²) conforms to IEC 60512-6d, 10 Hz ... 500 Hz.; 10 cycles per axis; 6 h full duration	-
RoHS compliant	yes	yes
Ambient temperature (operation)	-30...+80 °C, -22...+176 °F	-40...+85 °C, -40...+185 °F
Protection class	IP 65/67 in screwed condition (according to IEC 60529)	IP 20
Pollution level	3/2 (according to IEC 60664-1)	-

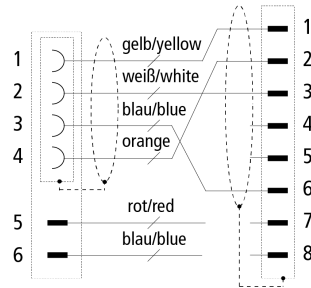
Cable

Electrical data		
Rated voltage (Ethernet)	max. 300 V (peak value, not for high voltage purposes)	
Rated voltage (power)	300 V	
Attenuation of shielding	≥ 40 dB	
Insulation resistance	≥ 500 MΩ/km	
Unbalanced capacitance to ground	1600 pF/km	
Mutual capacitance	52 nF/km (1 kHz)	
Characteristic impedance (Ethernet)	100 Ω ± 15 Ω (100 MHz)	
Loop resistance (Ethernet)	≤ 115 Ω/km	
Differential impedance (Ethernet)	250 Ω/km	
Unbalanced resistance (Ethernet)	2 %	
Dielectric strength wire/wire (Ethernet)	1000 V DC/700 V AC	
Dielectric strength wire/shield (Ethernet)	1000 V DC/700 V AC	
Signal running time (Ethernet)	5.3 ns/m	
Electrical parameters (Ethernet)	based on CAT 5	
Test voltage	≥ 2000 V	
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 mm ² (approx. AWG18)	
Cross section (Ethernet)	1 x 4 x 0.34 mm ² (AWG 22)	
Min. bending radius, moved	7.5 x outer cable diameter	
Min. bending radius, fixed installation	5 x outer cable diameter	
Weight	61 kg/km (41.0 lb/1000 ft)	
Outer cable diameter	6.5 mm ± 0.2 mm (0.142" ± 0.0079")	
Conductor material (Ethernet)	copper, tinned	
Shielding	aluminium-clad foil, braiding of tinned copper wires	
Optical covering factor of shielding (Ethernet)	≥ 85 %	
Use	drag-chain suitable	
Max. acceleration	4 m/s ²	
Max. speed	4 m/s	
Max. number of cycles	3 million	
Wall thickness of wire insulation (Ethernet)	0.375 mm	
Jacket colour	green	
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 ZB9020 Industrial Ethernet / EtherCAT Trailing Cable * CAT5PLUS * 22AWG (SHIELDED) (UL) E119100 CMX 75°C VERIFIED (UL) CAT 5E PATCH CABLE FRNC *"length in meters"	
Printing colour	black	

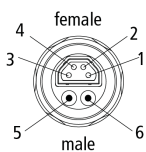
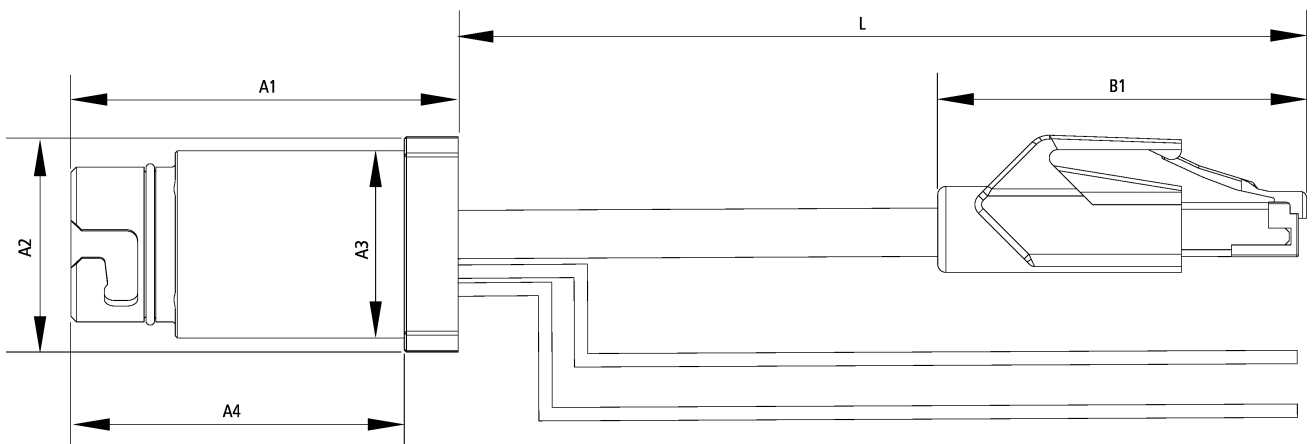
Environmental data	
Operation temperature range, moved	-40...+70 °C, -40...+158 °F
Operation temperature range, fixed installation	-20...+60 °C, -4...+140 °F
UV resistance	yes
Oil resistance	according to DIN EN 60811-2-1
Acid, lye and solvent resistance	depends on medium, concentration, temperature and duration
LABS-free	yes
Flame-retardant	yes
CFC-free	yes
Halogen-free	yes
Silicone-free	yes
Approvals	UL-Style AWM 20963

Attenuation								
Max. insertion loss								
Frequency [MHz]	1	4	10	16	20	31.25	62.5	100
[db/100 m]	2.1	4.0	6.3	8.0	9.0	11.4	16.5	21.3
[db/100 ft]	0.6	1.2	1.9	2.4	2.7	3.5	5	6.5
Min. near-end crosstalk attenuation								
Frequency [MHz]	1	4	10	16	20	31.25	62.5	100
[db/100 m]	80	76.0	70.0	65.0	63.0	60.0	55.0	50.0
[db/100 ft]	24.4	23.2	21.3	19.8	19.2	18.3	16.8	15.2

Contact assembly



Dimensions



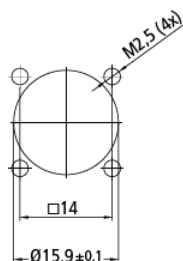
A1	36.00 mm
A2	20.00 mm
A3	17.40 mm

A4	31.00 mm
B1	43.80 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
- 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-BF00-A005	0.50 m
ZK7102-BF00-A010	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-B006	B12 colour coding connector/square flange, yellow, packaging unit = 10 pieces
ZS7100-B005	B12 colour coding connector/square flange, red, packaging unit = 10 pieces
ZS7100-B007	B12 colour coding connector/square flange, blue, packaging unit = 10 pieces
ZS7100-B008	B12 colour coding connector/square flange, green, packaging unit = 10 pieces
ZS7100-B015	B12 colour coding connector/square flange, orange, packaging unit = 10 pieces
ZS7100-B016	B12 colour coding connector/square flange, grey, packaging unit = 10 pieces

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