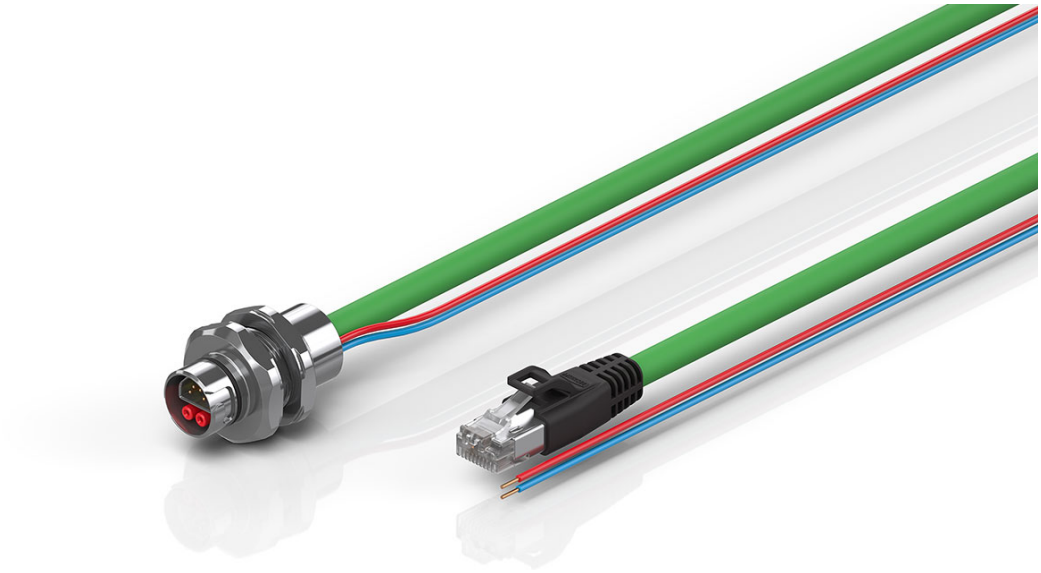
ZK7102-AE00-Axxx | B12, ENP cable, PUR, 2 x 0.75 mm² + (1 x 4 x AWG22), drag-chain suitable, key 1 (24 V DC)

B12, flange front assembly, straight, short, female+male, pins 2+4, EtherCAT-coded – RJ45, plug, straight, male, 4-pin – open end, 2-wire



Plugs

Electrical data	Head A	Head B	Head C
Rated voltage	-	150 V	-
Rated voltage (Ethernet)	60 V DC	-	-
Rated current (Ethernet)	4 A at 40°C	-	-
Rated voltage (power)	60 V DC	-	-
Rated current (power)	10 A at 60°C	-	-
Rated current	-	1.5 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	-	yes	-
Shielding (Ethernet)	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	open end
Connector type	flange front assembly	plug	-
Configuration	straight, short	straight	-
Contact type	female+male	male	-
Number of positions (face)	pins 2+4	4-pin	2-wire
Coding	EtherCAT-coded	-	-
Mechanical coding	key 1 (24 V DC)	-	-
Wire termination	crimp connection	-	-
Mating cycles	≥ 100	≥ 750	-
Way of locking	bayonet	-	-
Weight	0.070 kg (0.1543 lb)	-	-
Body color	-	black	-
Body material	-	TPU, UL 94 HB	-
Flange housing material	GD-Zn, Ni	-	-
Seal	NBR, FPM	-	-
Contact carrier material	PA 6, UL 94 V0	PC UL 94 V-0	-
Contact carrier color (Ethernet)	yellow	-	-
Contact carrier color (power)	red	-	-
Contact plating	Au over Ni	Ni, Au gal.	-
Contact material	copper alloy	CuZn	-
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...+70°C, -40...+158°F	-
Protection rating	IP65/67 in screwed condition (according to IEC 60529)	IP20	-
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 (AWG22)
Outer cable diameter	6.5 mm ± 0.2 mm (0.142" ± 0.0079")
Min. bending radius, moved	7.5 x outer cable diameter
Min. bending radius, fixed installation	5 x outer cable diameter
Weight	61.0 kg/km (41.0 lb/1000 ft)
Conductor material (Ethernet)	tinned copper
Shielding	aluminum-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 color	green
Material jacket	PUR (polyurethane)
Wire color 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 color	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

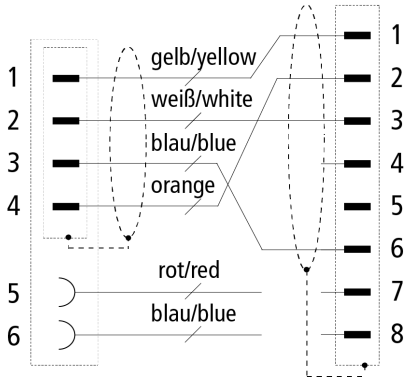
Max. insertion loss

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

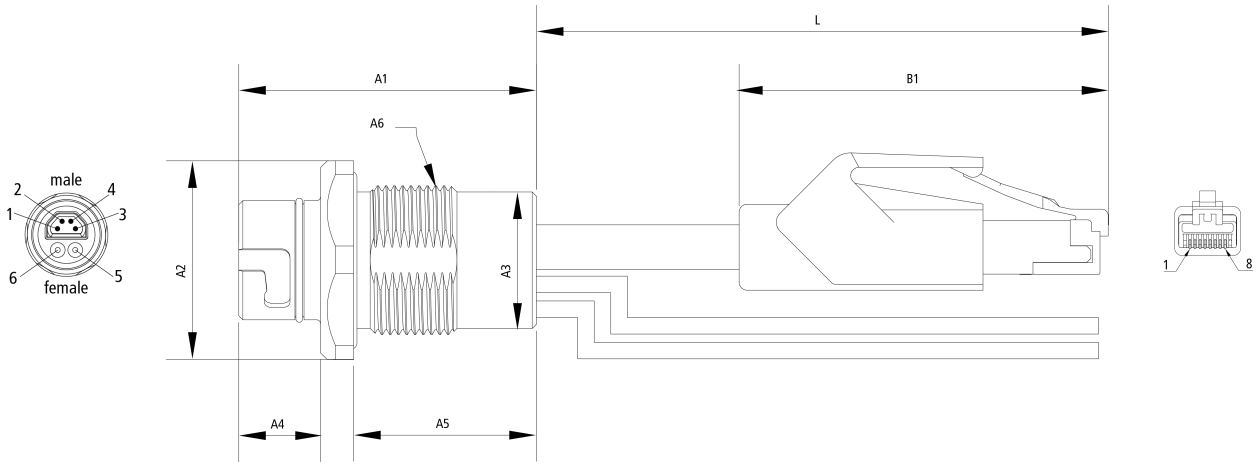
Min. near-end crosstalk attenuation

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

Pin assignment



Dimensions



A1	36.00 mm
A2	WAF24
A3	16.50 mm
A4	9.90 mm
A5	22.10 mm
A6	M18
B1	43.80 mm

Mechanical coding

Mechanical keying uses defined keyways that only allow insertion and subsequent locking rotation when correctly aligned. For more information, please refer to the keying guide for correct use.

Notes

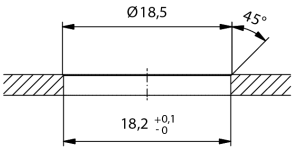
- Depending on the cable length (L), the following length tolerances apply:
0 m...3.0 m: + 100 mm | 3.0...10.0 m: ± 100 mm | ≥ 10.0 m: ± 2%
- Illustrations similar
- Delivery with counter nut

- 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
- The design of the pre-assambled cable shown here may differ from the products supplied, despite technically identical specifications.

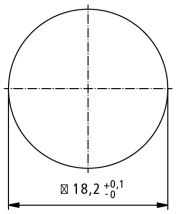
CE, UL	
CE	yes

Installation dimensions

Hole/ Durchgangsloch

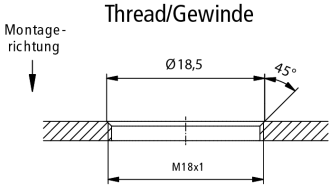


Panel cut out without twist protection/
Montageausschnitt ohne Verdrehsicherung

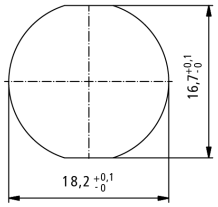


min. wall thickness 1.5 mm/
Min. Wandstärke 1,5 mm
max. wall thickness 5 mm/
Max. Wandtsärke 5 mm

Thread/Gewinde



Panel cut out with twist protection/
Montageausschnitt mit Verdrehsicherung



Ordering information	Length
ZK7102-AE00-A005	0.50 m
ZK7102-AE00-A010	1.00 m

Further length on request

Accessories	
ZS7100-B001	B12 protection cap, socket/flange, plastic, IP67, packaging unit = 10 pieces, including loss protection
ZS7100-B002	B12 protection cap, socket/flange, metal, IP67, packaging unit = 5 pieces, including loss protection
ZS7100-B009	B12 color coding flange for front/rear assembly, red, packaging unit = 10 pieces
ZS7100-B010	B12 color coding flange for front/rear assembly, yellow, packaging unit = 10 pieces
ZS7100-B011	B12 color coding flange for front/rear assembly, blue, packaging unit = 10 pieces
ZS7100-B013	B12 color coding flange for front/rear assembly, orange, packaging unit = 10 pieces
ZS7100-B012	B12 color coding flange for front/rear assembly, green, packaging unit = 10 pieces
ZS7100-B014	B12 color coding flange for front/rear assembly, gray, packaging unit = 10 pieces

Products marked with a crossed-out wheeled bin shall not be discarded with the normal waste stream. The device is considered as waste electrical and electronic equipment. The national regulations for the disposal of waste electrical and electronic equipment must be observed.

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