

## ZK7224-2425-Axxx | B17, ENP cable, PUR, 4 x 1.5 mm<sup>2</sup> + (1 x 4 x AWG22), drag chain suitable, key 1 (2 x 24 V DC)

B17, plug, straight, male+female, pins 4+4, EtherCAT-coded – B17, plug, straight, female+male, pins 4+4, EtherCAT-coded

### Plugs

Electrical data	Head A	Head B
Rated voltage (Ethernet)	60 V DC	60 V DC
Rated current (Ethernet)	4 A at 40 °C	4 A at 40 °C
Rated voltage (power)	630 V AC / 850 V DC, 600V AC / DC (UL)	630 V AC / 850 V DC, 600V AC / DC (UL)
Rated current (power)	15.5 A at 45 °C	15.5 A at 45 °C
Rated current (power)	15.5 A	15.5 A
Rated impulse voltage (power)	1.0 kV	1.0 kV
Rated impulse voltage (Ethernet)	1.0 kV	1.0 kV
Voltage proof (contact/contact)	1.5 kV (power - Ethernet), 3.31 kV AC (power), 1.0 kV AC (Ethernet)	1.5 kV (power - Ethernet), 3.31 kV AC (power), 1.0 kV AC (Ethernet)
Shielding (Ethernet)	yes	yes
Contact resistance	< 10 mΩ (signal), < 5 mΩ (power)	< 10 mΩ (signal), < 5 mΩ (power)
Insulation resistance	≥ 100 MΩ (according to IEC 60512)	≥ 100 MΩ (according to IEC 60512)
Mechanical data		
Installation size	B17	B17
Connector type	plug	plug
Configuration	straight	straight
Contact type	male+female	female+male
Number of positions (face)	pins 4+4	pins 4+4
Coding	EtherCAT-coded	EtherCAT-coded
Mechanical coding	key 1 (2 x 24 V DC)	key 1 (2 x 24 V DC)
Wire termination	crimp connection	crimp connection
Mating cycles	≥ 100	≥ 100
Way of locking	bayonet	bayonet
Weight per piece	0.090 kg (0.198 lb)	0.090 kg (0.198 lb)
Body colour	black	black
Body material	TPU, UL 94 HB	TPU, UL 94 HB
Coupling nut material	GD-Zn, Ni	GD-Zn, Ni
Seal	NBR, FPM	NBR, FPM

Contact carrier material	PA 6, UL 94 V0	PA 6, UL 94 V0
Contact carrier colour (Ethernet)	red	red
Contact carrier colour (power)	red	red
Contact plating	Au over Ni	Au over Ni
Contact material	copper alloy	copper alloy
<b>Environmental data</b>		
Shock resistance	50 g (490 m/s <sup>2</sup> ) conforms to IEC 60512-6c, 11 ms; 18 shocks per direction, 3 axes	50 g (490 m/s <sup>2</sup> ) conforms to IEC 60512-6c, 11 ms; 18 shocks per direction, 3 axes
Vibration resistance	5 g (50 m/s <sup>2</sup> ) conforms to IEC 60512-6d, 10 Hz. ... 500 Hz.; 10 cycles per axis; 6 h full duration	5 g (50 m/s <sup>2</sup> ) 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	-30...+80 °C, -22...+176 °F
Protection class	IP 65/67 in screwed condition (according to IEC 60529)	IP 65/67 in screwed condition (according to IEC 60529)
Pollution level	3/2 (according to IEC 60664-1)	3/2 (according to IEC 60664-1)
Approvals	UL 2237: File E484763	UL 2237: File E484763

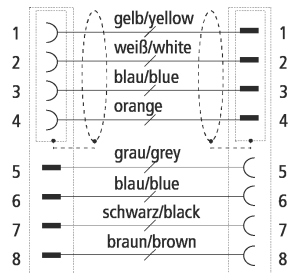
## Cable

<b>Electrical data</b>	
Operating voltage	≤ 1000 V AC
Mutual capacitance wire/wire (Ethernet)	nom. 55 nF/km
Attenuation of shielding	≥ 40 dB
Insulation resistance	≥ 500 MΩ/km
Mutual capacitance	AWG 22: nom. 55 nF/km
Wire resistance (power)	≤ 13.7 Ω/km
Wire resistance (Ethernet)	≤ 58.0 Ω/km (20 °C)
Characteristic impedance (Ethernet)	100 Ω ±5 Ω (100 MHz) (EN 50289-1-11)
Dielectric strength wire/wire (power)	4 kV 50 Hz 5 min. (DIN VDE 0472 T.509C)
Dielectric strength wire/shield (power)	4 kV 50 Hz 5 min. (DIN VDE 0472 T.509C)
Dielectric strength wire/wire (Ethernet)	2 kV ( 50 Hz, 1 min)
Dielectric strength wire/shield (Ethernet)	2 kV ( 50 Hz, 1 min)
<b>Mechanical data</b>	
Cable structure (Ethernet)	star quad
Conductor construction (Ethernet)	7-strand
Cross section (power)	4 x 1.5 mm <sup>2</sup> (approx. AWG16)
Cross section (Ethernet)	1 x 4 x 0.34 mm <sup>2</sup> (AWG 22)
Min. bending radius, moved	7 x outer cable diameter
Min. bending radius, fixed installation	4 x outer cable diameter
Outer cable diameter	10.8 mm ± 0.2 mm ("0.4252 ± 0.0079")
Conductor material (power)	copper bare
Conductor material (Ethernet)	copper bare, Class 6 according to DIN EN 60228
Shielding	braiding of tinned copper wires, metallised plastic fleece, aluminium-clad foil
Optical covering factor of shielding (Ethernet)	≥ 85 %
Optical covering factor of shielding (total)	no
Use	drag-chain suitable
UL-Style Conductor	UL758 (AWM) Style 21223 (jacket) and Style 10492 (core)
Max. acceleration	30 m/s <sup>2</sup>
Max. speed	4 m/s
Max. travel distance	20 m (horizontal)
Max. number of cycles	3 million
Jacket colour	black (similar to RAL 9005) with yellow stripe (similar to RAL 1003)
Material jacket	PUR (polyurethane)
Wire colour code	yellow, orange, white, blue (Ethernet) grey, blue, black, brown (Power)
Wire insulation material	PO (Polyolefine)
Printing on the jacket	XXXXM Beckhoff Automation GmbH & Co. KG-Germany-Industrial Ethernet/EtherCAT- 4x1.5mm <sup>2</sup> + (4xAWG22)/C E170315 AWM 20233 AWM I/II A/B 80°C 300V FT1 RoHS MM/JJ CE
Printing colour	white

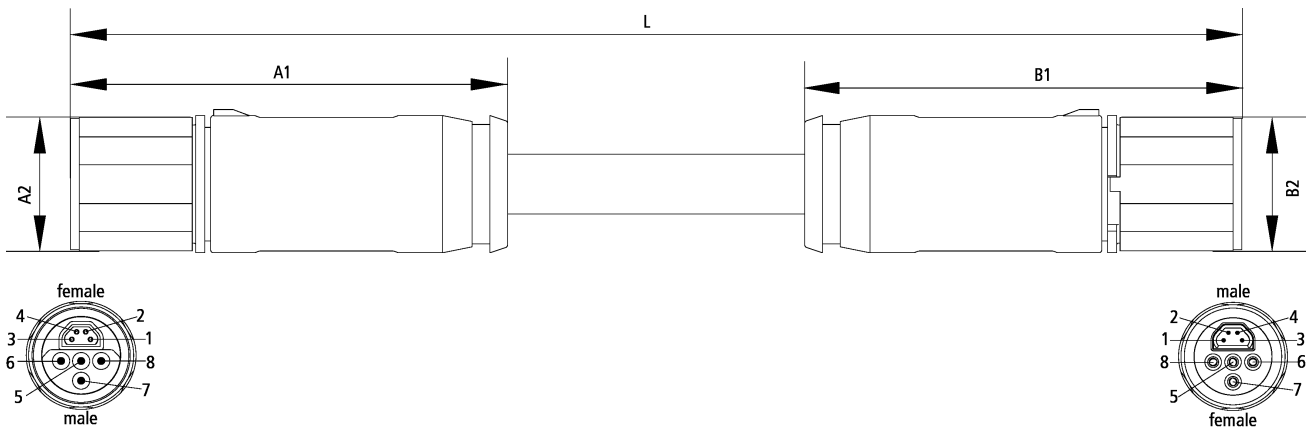
Torsion angle in °/m	max. ± 30 °/m
<b>Environmental data</b>	
Operation temperature range, moved	-20...+60 °C, -4...+140 °F
Operation temperature range, fixed installation	-40...+80 °C, -40...+176 °F
UV resistance	yes
Oil resistance	according to DIN EN 60811-404
CFC-free	yes
Halogen-free	yes
Silicone-free	yes
Approvals	cRUus

<b>Attenuation</b>	
<b>Max. insertion loss</b>	
Frequency [MHz]	<b>1      4      10      16      20      31.25      62.5      100</b>
[db/100 m]	2.3      4.2      6.8      8.6      9.7      12.3      18.0      23.6
[db/100 ft]	0.7      1.3      2.1      2.6      3      3.7      5.5      7.2
<b>Min. near-end crosstalk attenuation</b>	
Frequency [MHz]	<b>1      4      10      16      20      31.25      62.5      100</b>
[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	73.60 mm
A2	23.00 mm
B1	73.60 mm
B2	23.00 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

- 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

Ordering information	Length
ZK7224-2425-Axxx	

Accessories	
ZS7200-B003	B17 protection cap, plug, plastic, IP 67, packaging unit = 10 pieces
ZS7200-B004	B17 protection cap, plug, metal, IP 67, packaging unit = 5 pieces
ZS7200-B005	B17 colour coding connector/square flange, red, packaging unit = 10 pieces
ZS7200-B006	B17 colour coding connector/square flange, yellow, packaging unit = 10 pieces
ZS7200-B007	B17 colour coding connector/square flange, blue, packaging unit = 10 pieces
ZS7200-B008	B17 colour coding connector/square flange, green, packaging unit = 10 pieces
ZS7200-B015	B17 colour coding connector/square flange, orange, packaging unit = 10 pieces
ZS7200-B016	B17 colour coding connector/square flange, grey, packaging unit = 10 pieces
ZB8802-0002	assembly tool for B17 connector, AF22

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