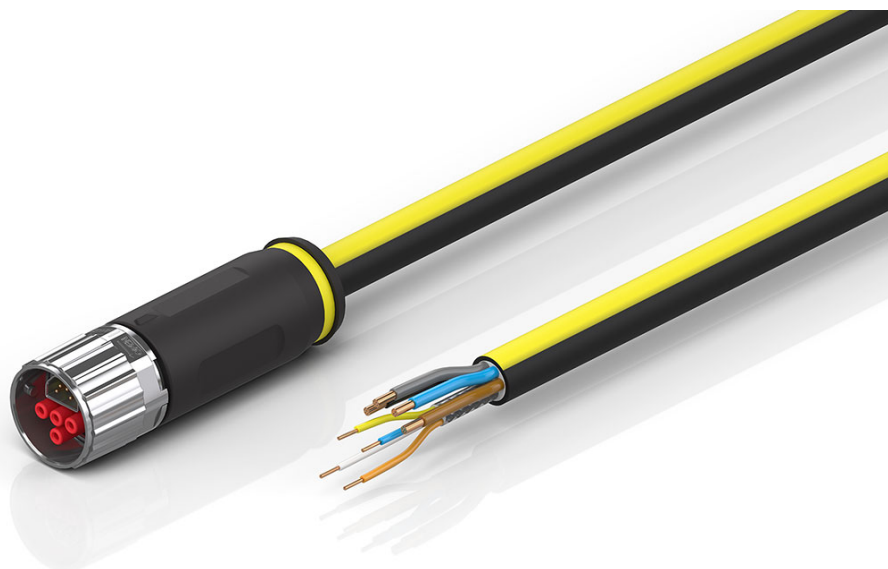


# ZK7224-2500-Axxx | B17, ENP cable, PUR, 4 x 1.5 mm<sup>2</sup> + (1 x 4 x AWG22), drag-chain suitable, key 1 (2 x 24 V DC)



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



## Plugs

Electrical data	Head A	Head B
Rated voltage (Ethernet)	60 V DC	-
Rated current (Ethernet)	4 A at 40 °C	-
Rated voltage (power)	630 V AC / 850 V DC, 600V AC / DC (UL)	-
Rated current (power)	15.5 A at 45 °C	-
Rated impulse voltage (power)	1.0 kV	-
Rated impulse voltage (Ethernet)	1.0 kV	-
Voltage proof (contact/contact)	1.5 kV (power - Ethernet), 3.31 kV AC (power), 1.0 kV AC (Ethernet)	-
Shielding (Ethernet)	yes	-
Contact resistance	< 10 mΩ (signal), < 5 mΩ (power)	-
Insulation resistance	≥ 100 MΩ (according to IEC 60512)	-
Mechanical data		
Installation size	B17	open end

Connector type	plug	-
Configuration	straight	-
Contact type	female+male	-
Number of positions (face)	pins 4+4	-
Coding	EtherCAT-coded	-
Mechanical coding	key 1 (2 x 24 V DC)	-
Wire termination	crimp connection	-
Mating cycles	≥ 100	-
Way of locking	bayonet	-
Weight per piece	0.090 kg (0.198 lb)	-
Body color	black	-
Body material	TPU, UL 94 HB	-
Coupling nut material	GD-Zn, Ni	-
Seal	NBR, FPM	-
Contact carrier material	PA 6, UL 94 V0	-
Contact carrier color (Ethernet)	red	-
Contact carrier color (power)	red	-
Contact plating	Au over Ni	-
Contact material	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	-
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	-
RoHS compliant	yes	-
Ambient temperature (operation)	-30...+80°C, -22...+176°F	-
Protection rating	IP65/67 in screwed condition (according to IEC 60529)	-
Pollution level	3/2 (according to IEC 60664-1)	-
Approvals	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> (AWG22)
Outer cable diameter	10.8 mm ± 0.2 mm ("0.4252 ± 0.0079")
Min. bending radius, moved	7 x outer cable diameter
Min. bending radius, fixed installation	4 x outer cable diameter
Conductor material (power)	copper bare
Conductor material (Ethernet)	copper bare, Class 6 according to DIN EN 60228
Shielding	braiding of tinned copper wires, metallized plastic fleece, aluminum-clad foil
Optical covering factor of shielding (Ethernet)	≥ 85 %
Optical covering factor of shielding (total)	no
Use	drag-chain suitable
UL-Style	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 color	black (similar to RAL 9005) with yellow stripe (similar to RAL 1003)
Material jacket	PUR (polyurethane)
Wire color code	yellow, orange, white, blue (Ethernet) gray, 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 color	white
Torsion angle in °/m	max. ± 30 °/m

**Environmental data**

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

**Attenuation**

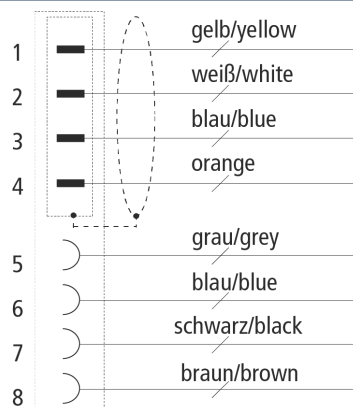
Max. insertion loss

Frequency [MHz]	1	4	10	16	20	31.25	62.5	100
[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

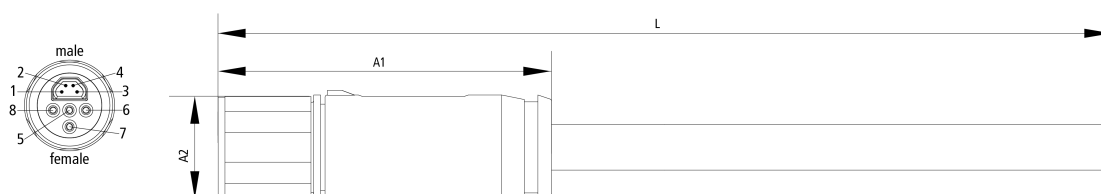
Min. near-end crosstalk attenuation

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	73.60 mm
A2	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:  $\pm 100$  mm |  $\geq 10.0$  m:  $\pm 2\%$
- Illustrations similar
- Further cable length on request. The last three digits of the ordering information is the cable length in decimeters, e.g. ZKxxxx-xxx-x020 = cable length 2.00 m

CE, UL	
CE	yes

Ordering information	Length
ZK7224-2500-A120	12.00 m

Accessories	
ZS7200-B003	B17 protection cap, plug, plastic, IP67, packaging unit = 10 pieces, including loss protection
ZS7200-B004	B17 protection cap, plug, metal, IP67, packaging unit = 5 pieces, including loss protection
ZS7200-B005	B17 color coding connector/square flange, red, packaging unit = 10 pieces
ZS7200-B006	B17 color coding connector/square flange, yellow, packaging unit = 10 pieces
ZS7200-B007	B17 color coding connector/square flange, blue, packaging unit = 10 pieces
ZS7200-B008	B17 color coding connector/square flange, green, packaging unit = 10 pieces
ZS7200-B015	B17 color coding connector/square flange, orange, packaging unit = 10 pieces
ZS7200-B016	B17 color coding connector/square flange, gray, packaging unit = 10 pieces
ZB8802-0002	assembly tool for B17 connector, AF22
ZB8805-0001	Flange/Panel feed-through for B17 pre-assembled, for fixing the connector, plastic, including screws, washers and lock nuts



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.

Beckhoff®, TwinCAT®, TwinCAT/BSD®, TC/BSD®, EtherCAT®, EtherCAT G®, EtherCAT G10®, EtherCAT P®, Safety over EtherCAT®, TwinSAFE®, XFC®, XTS® and XPlanar® are registered trademarks of and licensed by Beckhoff Automation GmbH. Other designations used in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owners.

© Beckhoff Automation GmbH & Co. KG 06/2024

The information provided in this brochure contains merely general descriptions or characteristics of performance which in case of actual application do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.