

ZK7825-3100-Axxx | B40, ECP cable, PUR, 5 G 16.0 mm² + (1 x 4 x AWG22), drag chain suitable, key 2 (400 V AC)

B40, plug, straight, female+male, pins 4+PE+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)	66 A at 50 °C	-
Rated current (power)	66 A	-
Rated impulse voltage (power)	6.0 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	B40	open end
Connector type	plug	-
Configuration	straight	-
Contact type	female+male	-
Number of positions (face)	pins 4+PE+4	-
Coding	EtherCAT-coded	-
Mechanical coding	key 2 (400 V AC)	-
Wire termination	crimp connection	-
Mating cycles	≥ 100	-
Way of locking	bayonet	-
Weight per piece	0.520 kg (1.146 lb)	-
Body colour	black	-
Body material	PA6, UL94 V0	-
Coupling nut material	GD-Zn, Ni	-
Seal	NBR	-

Contact carrier material	PA, UL 94	-
Contact carrier colour (Ethernet)	yellow	-
Contact carrier colour (power)	red	-
Contact plating	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	-
Ambient temperature (operation)	-30...+90 °C, -22...+194 °F	-
Protection class	IP 65/67 in screwed condition (according to IEC 60529)	-
Pollution level	3/2 (according to IEC 60664-1)	-

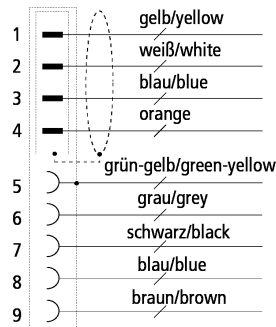
Cable

Electrical data		
Mutual capacitance wire/wire (Ethernet)	50 ±15 pF/m at 800 Hz (EN 50289-1-5)	
Attenuation of shielding	≥ 65 dB (30...100 MHz)	
Insulation resistance	≥ 500 MΩ * km (DIN EN 50395)	
Wire resistance (power)	≤ 1.21 Ω/km	
Wire resistance (Ethernet)	≤ 58.0 Ω/km according to DIN EN 50395	
Characteristic impedance (Ethernet)	100 Ω ±15 Ω (100 MHz)	
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)	
Mechanical data		
Cable structure (Ethernet)	star quad	
Conductor construction (Ethernet)	7-strand	
Cross section (power)	5 x 16.0 mm ² (approx. AWG5)	
Cross section (Ethernet)	1 x 4 x 0.34 mm ² (AWG 22)	
Min. bending radius, moved	7 x outer cable diameter	
Min. bending radius, fixed installation	4 x outer cable diameter	
Weight	1100 kg/km (739.1 lb/1000 ft)	
Outer cable diameter	24.0 mm ± 0.5 mm (0.9448" ± 0.01969")	
Conductor material (power)	copper bare, Class 6 according to DIN EN 60228	
Conductor material (Ethernet)	copper, tinned	
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 ² by 5 m travel distance 15 m/s ² by 10 m travel distance 5 m/s ² by 20 m travel distance	
Max. speed	4 m/s	
Max. travel distance	20 m (horizontal) 5 m (vertical)	
Max. number of cycles	5 million	
Wall thickness of wire insulation (power)	0.65 mm	
Wall thickness of wire insulation (Ethernet)	0.4 mm	
Jacket colour	black (similar to RAL 9005) with yellow stripe (similar to RAL 1003)	
Material jacket	PUR (polyurethane)	
Wire colour code	Ethernet: white, yellow, blue, orange Power: red, blue, grey, black, green/yellow	
Wire insulation material	PP (polypropylene)	
Printing on the jacket	00000M Beckhoff Automation GmbH & Co. KG - Germany - Industrial Ethernet / EtherCAT ZB7401 +90°C 5 G 16 + (4xAWG22)/C E170315 cRUus AWM Style 21223 AWM I/II A/B 80°C 1000V FT1	
Printing colour	white	

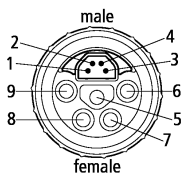
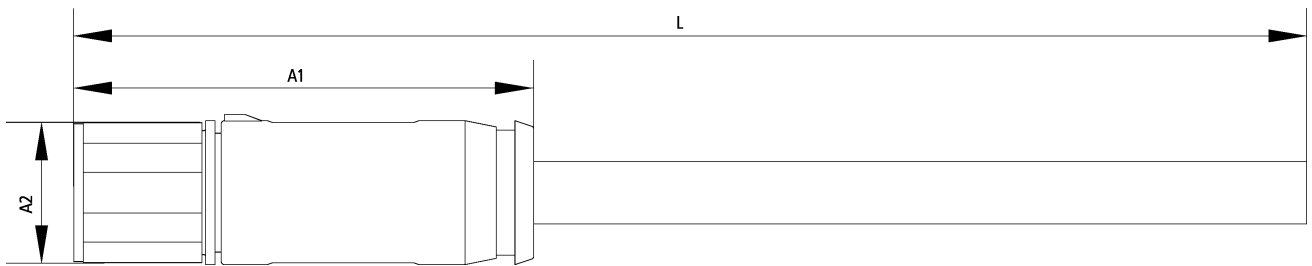
Torsion angle in °/m	max. ± 30 °/m
Environmental data	
Operation temperature range, moved	-30...+90 °C, -22...+194 °F; in drag-chain with mechanical strain: -20...+60 °C, -4...+140 °F
Operation temperature range, fixed installation	-40...+90 °C, -40...+194 °F
UV resistance	yes
Oil resistance	according to DIN EN 60811-404
Flame-retardant	according to IEC 60332-1-2
CFC-free	yes
Halogen-free	DIN VDE 0472 part 815
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	131.5
A2	47.0

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
ZK7825-3100-Axxx	–

Accessories	
ZS7400-B003	B40 protection cap, plug, plastic, IP 67, packaging unit = 10 pieces
ZS7400-B004	B40 protection cap, plug, metal, IP 67, packaging unit = 5 pieces
ZS7400-B005	B40 colour coding connector/square flange, red, packaging unit = 10 pieces
ZS7400-B006	B40 colour coding connector/square flange, yellow, packaging unit = 10 pieces
ZS7400-B007	B40 colour coding connector/square flange, blue, packaging unit = 10 pieces
ZS7400-B008	B40 colour coding connector/square flange, green, packaging unit = 10 pieces
ZS7400-B015	B40 colour coding connector/square flange, orange, packaging unit = 10 pieces
ZS7400-B016	B40 colour coding connector/square flange, grey, packaging unit = 10 pieces

Beckhoff®, TwinCAT®, 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 03/2021

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.