ZK7825-3031-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, male+female, pins 4+PE+4, EtherCAT-coded – B40, plug, straight, female+male, pins 4+PE+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)	66 A at 50°C	66 A at 50°C
Rated impulse voltage (power)	6.0 kV	6.0 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	B40	B40
Connector type	plug	plug
Configuration	straight	straight
Contact type	male+female	female+male
Number of positions (face)	pins 4+PE+4	pins 4+PE+4
Coding	EtherCAT-coded	EtherCAT-coded
Mechanical coding	key 2 (400 V AC)	key 2 (400 V AC)
Wire termination	crimp connection	crimp connection
Mating cycles	≥ 100	≥ 100
Way of locking	bayonet	bayonet
Weight	0.520 kg (1.146 lb)	0.520 kg (1.146 lb)
Body color	black	black
Body material	PA6, UL94 V0	PA6, UL94 V0
Coupling nut material	GD-Zn, Ni	GD-Zn, Ni
Seal	NBR	NBR
Contact carrier material	PA, UL 94	PA, UL 94
Contact carrier color (Ethernet)	yellow	yellow
Contact carrier color (power)	red	red
Contact plating	Au over Ni	Au over Ni
Contact material	copper alloy	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	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	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...+90°C, -22...+194°F	-30...+90°C, -22...+194°F
Protection rating	IP65/67 in screwed condition (according to IEC 60529)	IP65/67 in screwed condition (according to IEC 60529)
Pollution level	3/2 (according to IEC 60664-1)	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 mm² (approx. AWG5)
Cross-section (Ethernet)	1 x 4 x 0.34 mm² (AWG22)
Outer cable diameter	24.0 mm ± 0.5 mm (0.9448" ± 0.01969")
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)
Conductor material (power)	copper bare, Class 6 according to DIN EN 60228
Conductor material (Ethernet)	tinned copper
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/s² by 5 m travel distance 15 m/s² by 10 m travel distance 5 m/s² 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 color	black (similar to RAL 9005) with yellow stripe (similar to RAL 1003)
Material jacket	PUR (polyurethane)
Wire color code	Ethernet: white, yellow, blue, orange Power: red, blue, gray, 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 MM/YY CE

Printing color	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	according to DIN VDE 0472 part 815
Silicone-free	yes
Approvals	cRUus

Attenuation

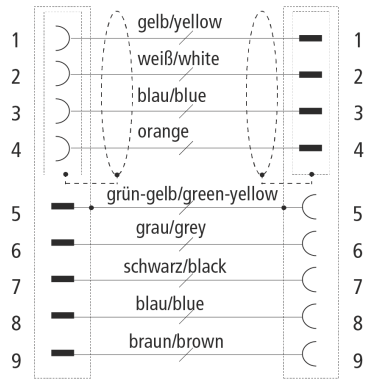
Max. insertion loss

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

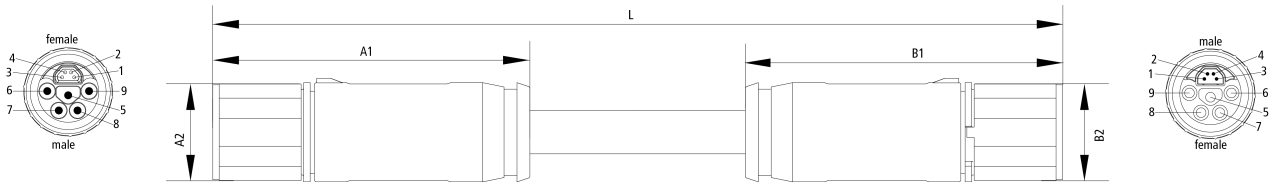
Min. near-end crosstalk attenuation

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

Pin assignment



Dimensions



A1	131,5
A2	47.0
B1	131.5
B2	47.0

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
- 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

Ordering information	Length
ZK7825-3031-Axxx	–

Further length on request

Accessories	
ZS7400-B003	B40 protection cap, plug, plastic, IP67, packaging unit = 10 pieces, including loss protection
ZS7400-B004	B40 protection cap, plug, metal, IP67, packaging unit = 5 pieces, including loss protection
ZS7400-B005	B40 color coding connector/square flange, red, packaging unit = 10 pieces
ZS7400-B006	B40 color coding connector/square flange, yellow, packaging unit = 10 pieces
ZS7400-B007	B40 color coding connector/square flange, blue, packaging unit = 10 pieces
ZS7400-B008	B40 color coding connector/square flange, green, packaging unit = 10 pieces

ZS7400-B015	B40 color coding connector/square flange, orange, packaging unit = 10 pieces
ZS7400-B016	B40 color coding connector/square flange, 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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