



## ZB7309-xxxx | EtherCAT-/Ethernet cable, no total screen, PVC, fixed installation, 5G4 mm<sup>2</sup> + (1 x 4 x AWG22), black with yellow stripe, OD = 13.8 mm (±0.2 mm)

Electrical data	
Operating voltage	≤ 1000 V AC
Mutual capacitance wire/wire (Ethernet)	50 ±15 pF/m at 800 Hz (EN 50289-1-5)
Insulation resistance	≥ 500 MΩ * km (DIN EN 50395)
Mutual capacitance	AWG 22: 50 ± 15 pF/m at 800 Hz according to EN 50289-1-5
Wire resistance (power)	≤ 4.95 Ω/km (DIN EN 50395)
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)
Dielectric strength wire/wire (Ethernet)	2 kV ( 50 Hz, 1 min)
Dielectric strength wire/shield (Ethernet)	2 kV ( 50 Hz, 1 min)
Mechanical data	
Cable structure (Ethernet)	star quad
Conductor construction (Ethernet)	7-strand
Cross section (power)	5 x 4.0 mm <sup>2</sup> (approx. AWG12)
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	5 x outer cable diameter
Weight	340 kg/km (228.00 lb/1000 ft)
Outer cable diameter	13.8 mm ± 0.2 mm (0.543" ± 0.0079")
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	fixed installation
UL-Style Conductor	UL758 (AWM) Style 21223 (jacket) and Style 10492 (core)
Wall thickness of wire insulation (power)	1.0 mm
Jacket colour	black (similar to RAL 9005) with yellow stripe (similar to RAL 1003)
Material jacket	PVC (polyvinyl chloride)
Wire colour code	Ethernet: white, yellow, blue, orange Power: red, blue, grey, black, green/yellow
Wire insulation material	PO (Polyolefine)
Printing on the jacket	XXXXM Beckhoff Automation GmbH & Co. KG-Germany-Industrial Ethernet/EtherCAT ZB7309- 5G4+ (4xAWG22)/C E170315 AWM 20233 AWM I/II A/B 80°C 1000V FT1 RoHS MM/YY CE
Printing colour	white
<b>Environmental data</b>	
Operation temperature range, moved	-5...+90 °C, 23...+194 °F
Operation temperature range, fixed installation	-40...+90 °C, -40...+194 °F
UV resistance	yes
Oil resistance	according to DIN EN 60811-404
LABS-free	yes
Flame-retardant	yes
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

## Notes

- The following length tolerances apply: 2-3 %
- Illustrations similar

Ordering information	Length
ZB7309-0050	5.00 m
ZB7309-0100	10.00 m
ZB7309-0250	25.00 m
ZB7309-0500	50.00 m
ZB7309-R001	100 m
ZB7309-R002	250 m
ZB7309-R003	500 m
ZB7309-R004	1000 m

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