



## ZB7213-xxxx | EtherCAT/Ethernet cable, no overall shield, PUR, drag-chain suitable, 4 x 1.5 mm<sup>2</sup> + (1 x 4 x AWG22), black with yellow stripe, OD = 10.8 mm (±0.2 mm)

Electrical data	
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)
Mechanical data	
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

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
ZB7213-0050	5.00 m
ZB7213-0100	10.00 m
ZB7213-0250	25.00 m
ZB7213-0500	50.00 m
ZB7213-1000	100 m
ZB7213-R001	250 m
ZB7213-R002	500 m
ZB7213-R003	1000 m

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