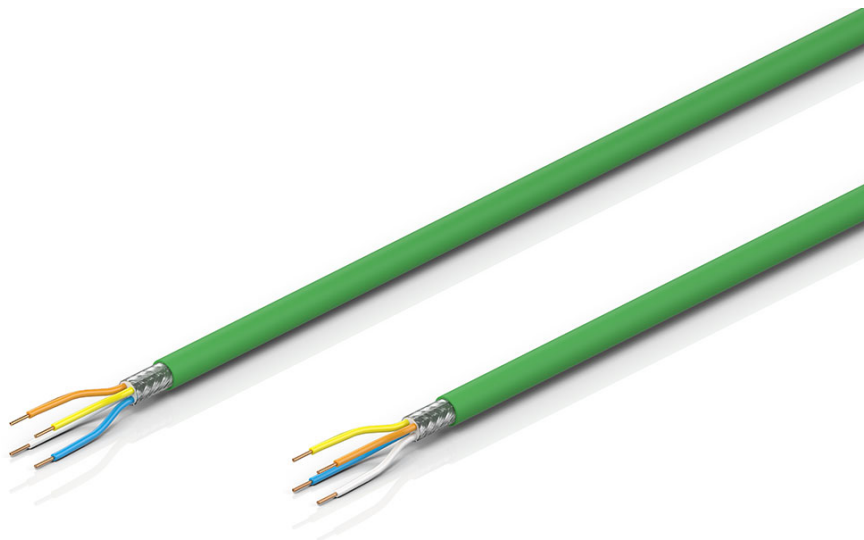


ZB9021 | Industrial Ethernet/EtherCAT cable, shielded, PUR, 1 x 4 x AWG22, capable of torsion, Cat.5, green



Electrical data	
Rated voltage	600 V
Insulation resistance	$\geq 5\text{G}\Omega \cdot \text{km}$
Mutual capacitance	48 nF/km
Characteristic impedance (Ethernet)	$100\ \Omega \pm 15\ \Omega$
Loop resistance (Ethernet)	$\leq 115\ \Omega/\text{km}$
Signal running time (Ethernet)	5.3 ns/m
Electrical parameters (Ethernet)	based on Cat.5
Test voltage	1500 V, 50 Hz, 1 min.
Mechanical data	
Cable structure (Ethernet)	star quad
Conductor construction (Ethernet)	19-strand
Cross-section (Ethernet)	$1 \times 4 \times 0.34\ \text{mm}^2$ (AWG22)
Outer cable diameter	$6.6\ \text{mm} \pm 0.2\text{mm}$ ($0.259'' \pm 0.0079''$)
Min. bending radius, moved	10 x outer cable diameter
Min. bending radius, fixed installation	5 x outer cable diameter
Conductor material (Ethernet)	tinned copper
Shielding	two layers of conductive wrapping and braiding of special wires

Optical covering factor of shielding (Ethernet)	≥ 85 %
Use	suitable for torsion/robotic application
Max. acceleration	20 m/s ²
Max. speed	4 m/s
Max. travel distance	5 m
Max. number of cycles	1 million
Jacket color	green
Material jacket	PUR (polyurethane)
Material jacket, further characteristics of	halogen-free, flame-retardant, matt and low adhesion
Wire color code	yellow, orange, white, blue
Wire insulation material	PO (Polyolefine)
Printing on the jacket	XXXX Beckhoff Automation GmbH & Co. KG-Germany-ZB9021 EtherCAT Cat5e Torsion AWM22/19 E170315 cRUus> AWM21209 AWM I/II A/B 90°C 600V MM/YY CE
Printing color	black
Torsion angle in °/m	max. ± 180°/m
Torsion speed	36 cycle/min.
Number of torsion cycles	5 million
Load weight	20 N
Claimed torsion length	1 m
Environmental data	
Operation temperature range, moved	-30...+90°C, -22...+194°F
Operation temperature range, fixed installation	-40...+90°C, -40...+194°F
Oil resistance	according to DIN EN 60811-404 (7x24 h/90 °C)
Flame-retardant	VW-1 Flame Test UL 1581 section 1080 and IEC 60332-1-2
Halogen-free	according to IEC 60754 or DIN VDE 0472 part 815
UL	yes, UL E-file number: E170315

Attenuation								
Max. insertion loss								
Frequency [MHz]	1	4	10	16	20	31.25	62.5	100
[db/100 m]	-	4.9	7.8	9.9	11.1	14.1	62.5	26.4
[db/100 ft]	-	1.5	2.4	3	3.4	4.3	19.1	8
Min. near-end crosstalk attenuation								
Frequency [MHz]	1	4	10	16	20	31.25	62.5	100
[db/100 m]	-	56.3	50.3	47.2	45.8	42.9	38.4	35.3
[db/100 ft]	-	17.2	15.3	14.4	14	13.1	11.7	10.8

Notes

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

Ordering information	Length
ZB9021	sold by the meter



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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