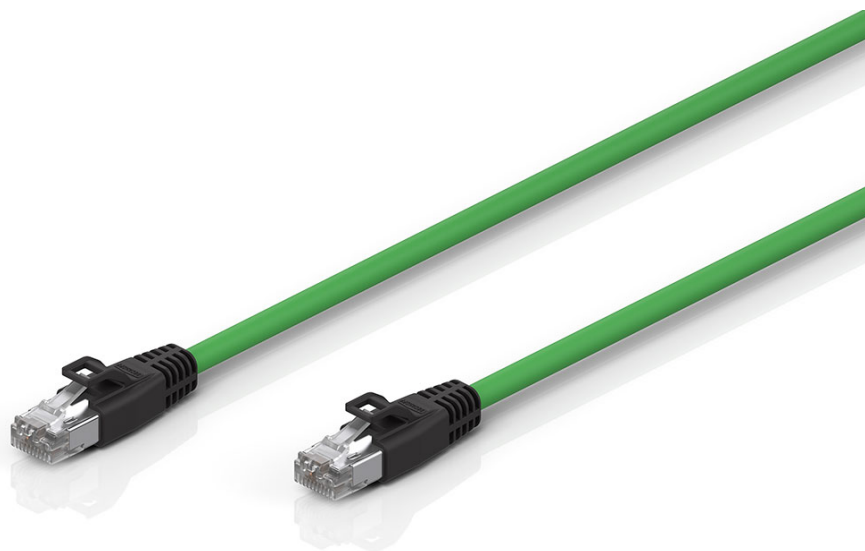


ZK1090-9191-Axxx | EtherCAT cable, PUR, 1 x 4 x AWG22, capable of torsion



RJ45, plug, straight, male, 4-pin – RJ45, plug, straight, male, 4-pin



Plugs

Electrical data	Head A	Head B
Rated voltage	150 V	150 V
Rated current	1.5 A	1.5 A
Shielding	yes	yes
Insulation resistance	$\geq 10 \text{ G}\Omega$ (according to IEC 60512-2)	$\geq 10 \text{ G}\Omega$ (according to IEC 60512-2)
Mechanical data		
Installation size	RJ45	RJ45
Connector type	plug	plug
Configuration	straight	straight
Contact type	male	male
Number of positions (face)	4-pin	4-pin
Mating cycles	≥ 750	≥ 750
Body color	black	black
Body material	TPU, UL 94 HB	TPU, UL 94 HB
Contact carrier material	PC UL 94 V-0	PC UL 94 V-0

Contact plating	Ni, Au gal.	Ni, Au gal.
Contact material	CuZn	CuZn
Environmental data		
RoHS compliant	yes	yes
Ambient temperature (operation)	-40...+70°C, -40...+158°F	-40...+70°C, -40...+158°F
Protection rating	IP20	IP20

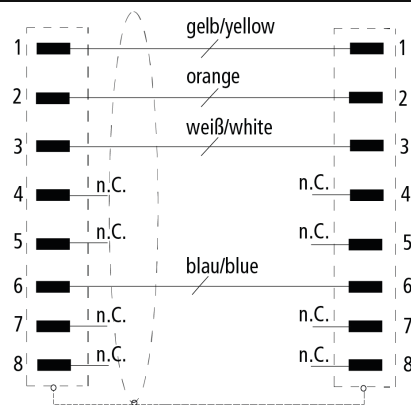
Cable

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 x 4 x 0.34 mm ² (AWG22)	
Outer cable diameter	6.6 mm $\pm$ 0.2mm (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)	$\geq 85 \%$	
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	

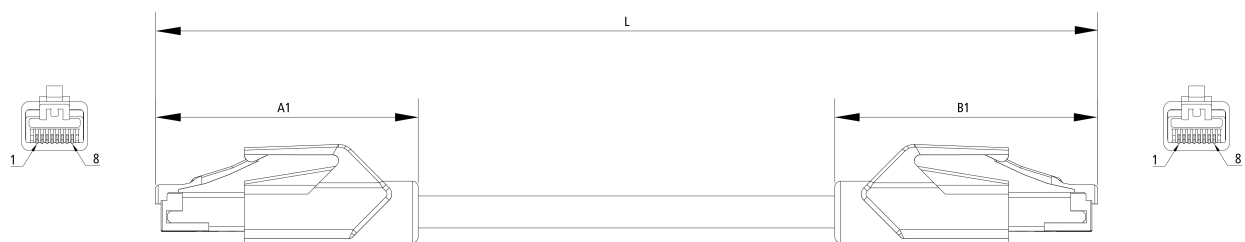
Wire color code	yellow, orange, white, blue
Wire insulation material	PO (Polyolefine)
Printing on the jacket	XXX Beckhoff Automation GmbH & Co. KG-Germany-ZB9021 EtherCAT Cat5e Torsion AWG22/19 E170315 cRUus> AWM21209 AWM I/II A/B 90°C 600V MM/YY CE
Printing color	black
Torsion angle in °/m	max. ± 180°/m
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

Pin assignment	
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Dimensions



A1 43.80 mm

B1 43.80 mm

Notes

- Depending on the cable length (L), the following length tolerances apply:
0 m...<0.2 m: ± 10 mm | 0.2...4.0 m: $+ 40$ mm | ≥ 4.0 m: $+ 1\%$
- Illustrations similar
- Further cable length on request.

Ordering information	Length
ZK1090-9191-A010	1.00 m
ZK1090-9191-A020	2.00 m
ZK1090-9191-A030	3.00 m
ZK1090-9191-A040	4.00 m
ZK1090-9191-A050	5.00 m
ZK1090-9191-A060	6.00 m
ZK1090-9191-A075	7.50 m
ZK1090-9191-A100	10.00 m
ZK1090-9191-A200	20.00 m

Further length on request

Accessories

ZK1096-9696-0000

RJ45, socket, straight, female, 8-pin – RJ45, socket, straight, female, 8-pin



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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