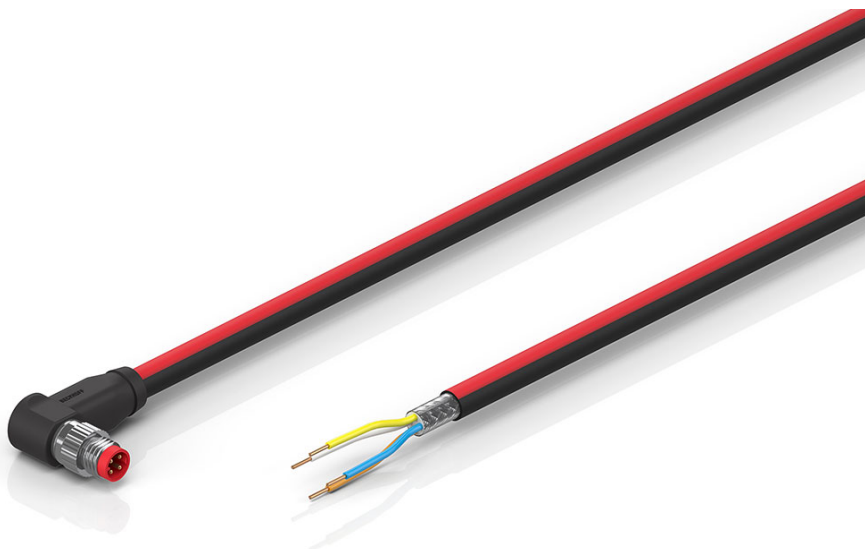


ZK7000-0300-6xxx | EtherCAT P cable, AWG22, PUR, capable of torsion



M8, plug, angled, male, 4-pin, EtherCAT P-coded – open end, 4-wire + strand and shielding



Plugs

Electrical data	Head A	Head B
Rated voltage	24 V DC (according to IEC 61076-2-104)	-
Rated current	3 A at 40°C (according to IEC 61076-2-104)	-
Shielding	yes	-
Insulation resistance	≥ 100 GΩ (according to IEC 60512)	-
Mechanical data		
Installation size	M8	open end
Connector type	plug	-
Configuration	angled	-
Contact type	male	-
Number of positions (face)	4-pin	4-wire + strand and shielding
Coding	EtherCAT P-coded	-
Recommended torque, nut	0.4 Nm	-
Mating cycles	≥ 100	-

Way of locking	screw	-
Body color	black	-
Body material	TPU, UL 94	-
Coupling nut material	CuZn, Ni	-
Seal	FPM	-
Contact carrier color	red	-
Contact carrier material	PA, UL 94	-
Contact plating	Ni, Au gal.	-
Contact material	CuZn	-
Environmental data		
UV resistance	yes	-
RoHS compliant	yes	-
Ambient temperature (operation)	-40...+85°C, -40...+185°F	-
Protection rating	IP65/67 in screwed condition (according to IEC 60529)	-
Pollution level	3/2 (according to IEC 60664-1)	-

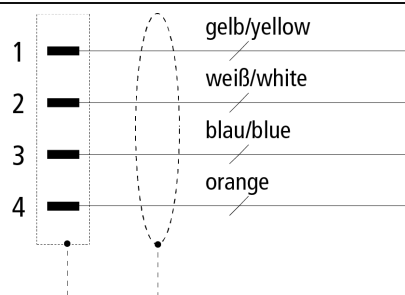
Cable

Electrical data		
Rated voltage	30 V	
Insulation resistance	$\geq 5\text{G}\Omega \cdot \text{km}$	
Unbalanced capacitance to ground	48 nF/km	
Mutual capacitance	48 nF/km	
Characteristic impedance (Ethernet)	100 $\Omega \pm 15 \Omega$	
Loop resistance	$\leq 115 \Omega/\text{km}$	
Dielectric strength wire/wire (Ethernet)	1.5 kV (50 Hz, 1 min)	
Dielectric strength wire/shield (Ethernet)	1.5 kV (50 Hz, 1 min)	
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	6.3 mm $\pm$ 0.2 mm (0.248" $\pm$ 0.0079")	
Min. bending radius, moved	10 x outer cable diameter	
Min. bending radius, fixed installation	5 x outer cable diameter	

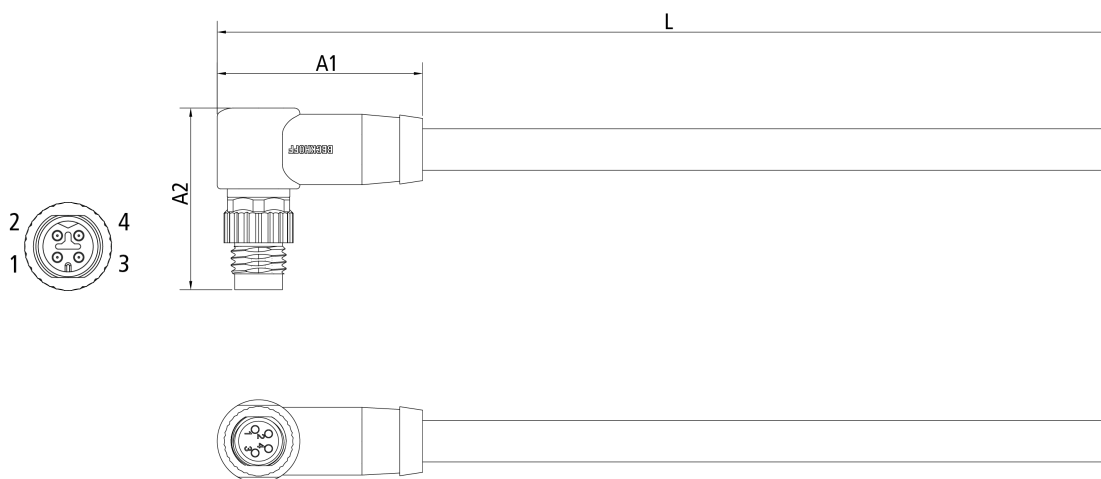
Conductor material (Ethernet)	tinned copper
Shielding	aluminum-clad foil, braiding of tinned copper wires, coupling
Optical covering factor of shielding (Ethernet)	≥ 85 %
Use	suitable for torsion/robotic applications
Jacket color	black (similar to RAL 9005) with red stripe (similar to RAL 3020)
Material 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 – ZB7004 EtherCAT Cat5e Torsion AWG22/19 E170315 AWM 20963 AWM I/II A/B 80°C 30V MM/YY RoHS
Printing color	white
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...+70°C, -22...+158°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
Approvals	c(UL)us AWM Style 20963

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	29.80 mm
A2	26.30 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.

CE, UL

CE	yes
UL	yes, UL E-file number: E480185

Ordering information	Length
ZK7000-0300-6010	1.00 m
ZK7000-0300-6020	2.00 m
ZK7000-0300-6050	5.00 m
ZK7000-0300-6070	7.00 m

Further length on request

Accessories

ZB8801-0000	torque wrench for hexagonal plugs, adjustable
ZB8801-0001	torque cable key, M8/wrench size 9, for ZB8801-0000



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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