ZK7000-0101-6xxx | EtherCAT P cable, AWG22, PUR, capable of torsion

M8, plug, straight, male, 4-pin, EtherCAT P-coded – M8, plug, straight, male, 4-pin, EtherCAT P-coded



Plugs

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

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

Cable

Electrical data	
Rated voltage	30 V
Insulation resistance	≥ 5GΩ * km
Unbalanced capacitance to ground	48 nF/km
Mutual capacitance	48 nF/km
Characteristic impedance (Ethernet)	100 Ω ±15 Ω
Loop resistance	≤ 115 Ω/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 mm² (AWG22)
Outer cable diameter	6.3 mm ± 0.2 mm (0.248" ± 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	XXXX 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

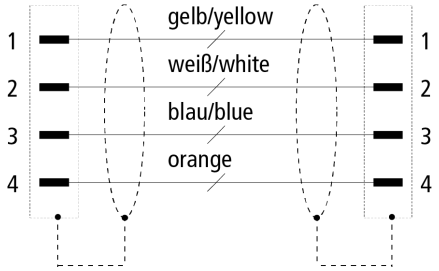
Max. insertion loss

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

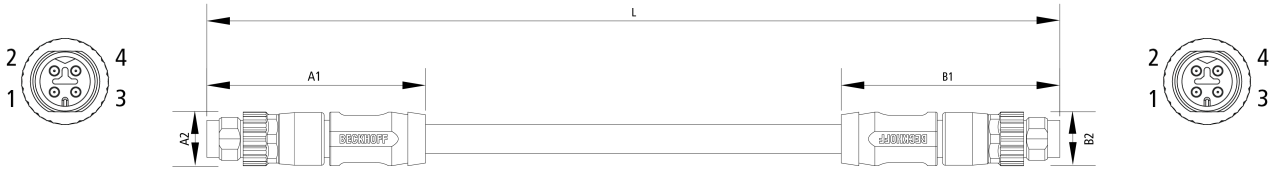
Min. near-end crosstalk attenuation

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



Dimensions



A1	41.00 mm
A2	Ø10.10 mm
B1	41.00 mm
B2	Ø10.10 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: E499669

Ordering information	Length
ZK7000-0101-6002	0.20 m
ZK7000-0101-6003	0.30 m
ZK7000-0101-6005	0.50 m
ZK7000-0101-6010	1.00 m
ZK7000-0101-6015	1.50 m
ZK7000-0101-6020	2.00 m

ZK7000-0101-6030	3.00 m
ZK7000-0101-6040	4.00 m
ZK7000-0101-6050	5.00 m
ZK7000-0101-6060	6.00 m
ZK7000-0101-6070	7.00 m
ZK7000-0101-6075	7.50 m
ZK7000-0101-6080	8.00 m
ZK7000-0101-6095	9.50 m
ZK7000-0101-6100	10.00 m
ZK7000-0101-6105	10.50 m
ZK7000-0101-6120	12.00 m
ZK7000-0101-6130	13.00 m
ZK7000-0101-6150	15.00 m
ZK7000-0101-6170	17.00 m
ZK7000-0101-6190	19.00 m
ZK7000-0101-6200	20.00 m
ZK7000-0101-6230	23.00 m
ZK7000-0101-6250	25.00 m

Accessories	
ZB8801-0000	torque wrench for hexagonal plugs, adjustable
ZB8801-0001	torque cable key, M8/wrench size 9, for ZB8801-0000
ZB8803-0001	Flange/Panel feed-through for M8 pre-assembled, for fixing the connector, plastic, including screws, washers and lock nuts

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