ZK7000-0303-0xxx | EtherCAT P cable, AWG22, PUR, drag-chain suitable

M8, plug, angled, male, 4-pin, P-coded – M8, plug, angled, male, 4-pin, 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	angled	angled
Contact type	male	male
Number of positions (face)	4-pin	4-pin
Coding	P-coded	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

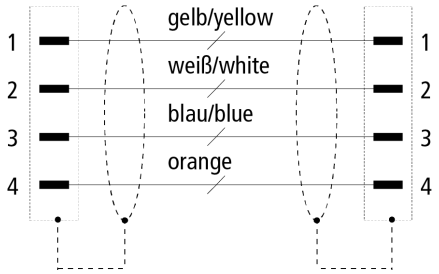
Electrical data	
Rated voltage	max. 300 V (not for high voltage purposes)
Operating voltage	≤ 125 V (peak value, not for high voltage purposes)
Attenuation of shielding	≥ 65 dB (30...100 MHz)
Insulation resistance	≥ 5GΩ * km
Unbalanced capacitance to ground	≤ 2000 pF/km
Mutual capacitance	48 nF/km
Characteristic impedance (Ethernet)	100 Ω ±15 Ω
Loop resistance	≤ 110.8 Ω/km
Signal running time (Ethernet)	5.3 ns/m
Electrical parameters (Ethernet)	based on Cat.5
Test voltage	1000 V, 50 Hz, 1 min. (wire/wire and wire/screen)
Mechanical data	
Cable structure (Ethernet)	star quad
Conductor construction (Ethernet)	7-strand
Cross-section (Ethernet)	1 x 4 x 0.34 mm² (AWG22)
Outer cable diameter	6.5 mm ± 0.2 mm (0.2559" ± 0.0079")
Min. bending radius, moved	8 x outer cable diameter

Min. bending radius, moved in drag-chain	15 x outer cable diameter
Min. bending radius, fixed installation	5 x outer cable diameter
Weight	72 kg/km (48.38 lb/1000 ft)
Conductor material (Ethernet)	copper, tinned
Shielding	aluminum-clad foil, braiding of tinned copper wires, coupling
Optical covering factor of shielding (Ethernet)	≥ 85 %
Use	drag-chain suitable
Max. acceleration	35 m/s²
Max. speed	5 m/s
Max. travel distance	5 m
Max. number of cycles	3 million
Jacket color	black (similar to RAL 9005) with red stripe (similar to RAL 3020)
Material jacket	PUR (polyurethane)
Wire color code	yellow, orange, white, blue
Wire insulation material	PO (Polyolefine)
Printing on the jacket	Beckhoff Automation GmbH & Co. KG - Germany - EtherCATp Cat5e AWG22/7 E170315 AWM 20549 AWM I/II A/B 80°C 300 V MM/YY RoHS
Printing color	white
Environmental data	
Operation temperature range, moved	-30...+70°C, -22...+158°F
Operation temperature range, fixed installation	-40...+80°C, -40...+176°F
UV resistance	good
Oil resistance	according to DIN EN 60811-404
Flame-retardant	Horizontal flame test according to UL 1581 part 1090
Halogen-free	according to IEC 60754 or DIN VDE 0472 part 815
UL	yes, UL E-file number: E170315

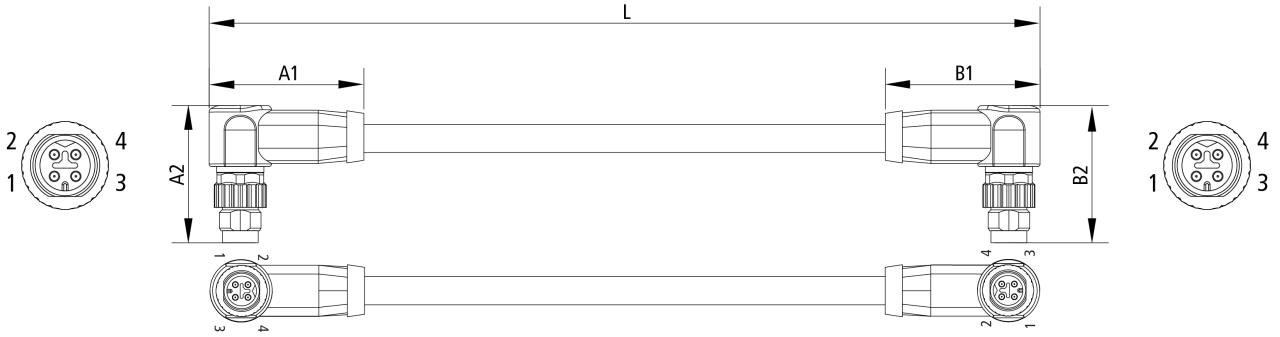
Attenuation								
Max. insertion loss								
Frequency [MHz]	**1**	**4**	**10**	**16**	**20**	**31.25**	**62.5**	**100**
[db/100 m]	-	4.9	7.8	9.9	11.1	14.1	20.4	26.4
[db/100 ft]	-	1.5	2.4	3	3.4	4.3	6.2	8
Min. near-end crosstalk attenuation								
Frequency [MHz]	**1**	**4**	**10**	**16**	**20**	**31.25**	**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

Contact assembly



Dimensions



A1	29.80 mm
A2	26.30 mm
B1	29.80 mm
B2	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: E499669

Ordering information	Length
ZK7000-0303-0001	0.15 m
ZK7000-0303-0002	0.20 m
ZK7000-0303-0003	0.30 m

ZK7000-0303-0004	0.40 m
ZK7000-0303-0005	0.50 m
ZK7000-0303-0006	0.60 m
ZK7000-0303-0007	0.70 m
ZK7000-0303-0008	0.80 m
ZK7000-0303-0009	0.90 m
ZK7000-0303-0010	1.00 m
ZK7000-0303-0011	1.10 m
ZK7000-0303-0012	1.20 m
ZK7000-0303-0013	1.30 m
ZK7000-0303-0014	1.40 m
ZK7000-0303-0015	1.50 m
ZK7000-0303-0020	2.00 m
ZK7000-0303-0030	3.00 m
ZK7000-0303-0040	4.00 m
ZK7000-0303-0050	5.00 m
ZK7000-0303-0060	6.00 m
ZK7000-0303-0070	7.00 m
ZK7000-0303-0080	8.00 m
ZK7000-0303-0100	10.00 m
ZK7000-0303-0150	15.00 m
ZK7000-0303-0200	20.00 m
ZK7000-0303-0300	30.00 m
ZK7000-0303-0400	40.00 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

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.

The information provided in this brochure contains merely general descriptions or characteristics of performance which in case of actual application do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressively agreed in the terms of contract.