ZK1093-3166-0xxx | EtherCAT cable, PUR, AWG26, drag-chain suitable

M8, plug, straight, male, 4-pin, A-coded – M12, flange, straight, female, 4-pin, D-coded



Plugs

Electrical data	Head A	Head B
Rated voltage	50 V AC/60 V DC (according to IEC 61076-2-104)	160 V (according to IEC 61076-2-101)
Rated current	4 A at 40°C (according to IEC 61076-2-104)	4 A at 40°C (according to IEC 61076-2-101)
Shielding	yes	yes
Insulation resistance	≥ 100 GΩ (according to IEC 60512)	≥ 100 MΩ (according to IEC 60512)
Mechanical data		
Installation size	M8	M12
Connector type	plug	flange
Configuration	straight	straight
Contact type	male	female
Number of positions (face)	4-pin	4-pin
Coding	A-coded	D-coded
Recommended torque, nut	0.4 Nm	1...1.2 Nm

Mating cycles	≥ 100	≥ 100 (according to IEC 60512-9a)
Way of locking	screw	screw
Weight	0.028 kg (0.0617 lb)	-
Body color	black	metal
Body material	TPU, UL94	CuZn, Ni
Coupling nut material	GD-Zn, Ni	CuZn, Ni
Seal	FPM	FPM
Contact carrier color	green	green
Contact carrier material	PA 6, UL 94 V0	PBT GF, UL 94
Contact plating	Ni, Au gal.	Ni, Au gal.
Contact material	CuZn	CuZn
Environmental data		
Special features	halogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1	halogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1
RoHS compliant	yes	yes
Ambient temperature (operation)	-30...+70°C, -22...+158°F	-30...+70°C, -22...+158°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

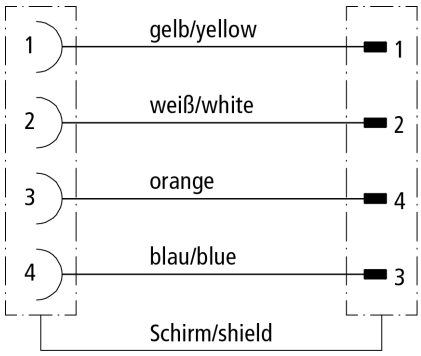
Electrical data	
Rated voltage	30 V (according to IEC 61076-2-101)
Attenuation of shielding	≥ 43 dB
Insulation resistance	≥ 150 MΩ/km
Unbalanced capacitance to ground	≤ 3400 pF/km
Mutual capacitance	51 pF/m at 1 kHz
Characteristic impedance (Ethernet)	100 Ω ±5 Ω (100 MHz)
Loop resistance (Ethernet)	250 Ω/km
Unbalanced resistance (Ethernet)	< 3 %
Dielectric strength wire/wire (Ethernet)	1000 V DC/700 V AC
Dielectric strength wire/shield (Ethernet)	1000 V DC/700 V AC
Signal running time (Ethernet)	5.55 ns/m
Electrical parameters (Ethernet)	based on Cat.5
Test voltage	700 V
Mechanical data	

Cable structure (Ethernet)	star quad
Conductor construction (Ethernet)	19 x 0.1 mm
Cross-section (Ethernet)	1 x 4 x 0.14 mm² (AWG26)
Outer cable diameter	5.4 mm ± 0.3 mm (0.213" ±0.0118")
Min. bending radius, moved	20 x outer cable diameter
Min. bending radius, fixed installation	4 x outer cable diameter
Weight	41 kg/km (27.55 lb/1000 ft)
Conductor material (Ethernet)	tinned copper
Shielding	aluminum-clad foil, braiding of tinned copper wires
Optical covering factor of shielding (Ethernet)	90 %
Use	drag-chain suitable
Max. acceleration	15 m/s²
Max. speed	15 m/s
Max. number of cycles	20 million
Wall thickness of wire insulation (Ethernet)	0.25 mm
Jacket color	yellow
Material jacket	PUR (polyurethane)
Wire color code	yellow, orange, white, blue
Wire insulation material	PP (polypropylene)
Printing on the jacket	"sequential length in metres" Industrial Ethernet Cat5 trailing * E130266 AWM 20963 80 °C 30 V *ZB9035 "month/year" "internal order number"
Printing color	black
Environmental data	
Operation temperature range, moved	-40...+80°C, -40...+176°F
Operation temperature range, fixed installation	-40...+80°C, -40...+176°F
Acid, lye and solvent resistance	depends on medium, concentration, temperature and duration
LABS-free	yes
CFC-free	yes
Halogen-free	yes
Silicone-free	yes
RoHS compliant	yes
UL	yes, UL E-file number: E130266
Approvals	UL-Style AWM 20963

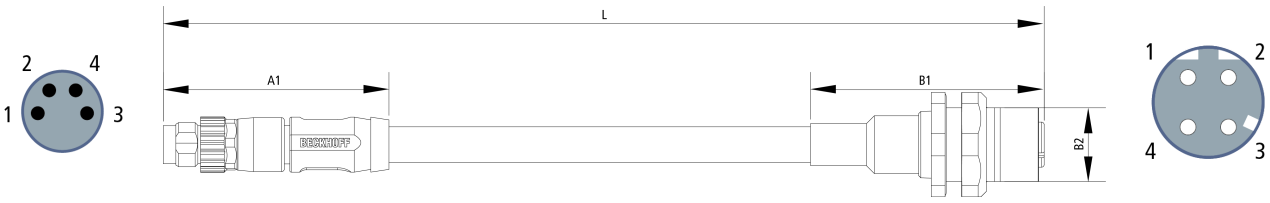
Attenuation	

Max. insertion loss								
Frequency [MHz]	**1**	**4**	**10**	**16**	**20**	**31.25**	**62.5**	**100**
[db/100 m]	3.1	6.5	9.9	12.3	13.8	17.7	25.6	33.0
[db/100 ft]	0.9	2	3	3.7	4.2	5.4	7.8	10.1
Min. near-end crosstalk attenuation								
Frequency [MHz]	**1**	**4**	**10**	**16**	**20**	**31.25**	**62.5**	**100**
[db/100 m]	62	53.0	47.0	44.0	42.0	40.0	35.0	32.0
[db/100 ft]	18.9	16.2	14.3	13.4	12.8	12.2	10.7	9.8

Pin assignment



Dimensions

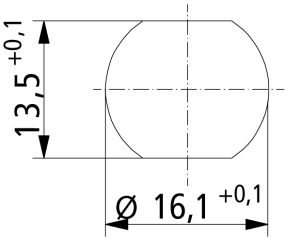


A1	41.00 mm
A2	Ø 10.1 mm
B1	43.00 mm
B2	M12 inner diameter, M16 outer diameter

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.

Installation dimensions



Ordering information	Length
ZK1093-3166-0002	0.20 m
ZK1093-3166-0003	0.30 m
ZK1093-3166-0005	0.50 m
ZK1093-3166-0010	1.00 m
ZK1093-3166-0020	2.00 m
ZK1093-3166-0030	3.00 m
ZK1093-3166-0050	5.00 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
ZB8801-0002	torque cable key, M12/wrench size 13, for ZB8801-0000
ZB8803-0001	Flange/Panel feed-through for M8 pre-assembled, for fixing the connector, plastic, including screws, washers and lock nuts



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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