ZK1096-8181-4xxx | Industrial Ethernet/EtherCAT G/G10 cable, Cat.6, PUR, 4 x 2 x AWG26, drag-chain suitable

M12, plug, straight, male, 8-pin, X-coded – M12, plug, straight, male, 8-pin, X-coded



Plugs

Electrical data	Head A	Head B
Rated voltage	50 V AC/60 V DC (according to IEC 61076-2-104)	50 V AC/60 V DC (according to IEC 61076-2-104)
Rated current	0.5 A at 40°C	0.5 A at 40°C
Shielding	yes	yes
Contact resistance	< 5 mΩ	< 5 mΩ
Insulation resistance	≥ 100 MΩ	≥ 100 MΩ
Transmission characteristics	Cat.6A	Cat.6A
Mechanical data		
Installation size	M12	M12
Connector type	plug	plug
Configuration	straight	straight
Contact type	male	male

Number of positions (face)	8-pin	8-pin
Coding	X-coded	X-coded
Recommended torque, nut	0.6 Nm	0.6 Nm
Mating cycles	≥ 100 (according to IEC 60512-9a)	≥ 100 (according to IEC 60512-9a)
Way of locking	screw	screw
Body color	black	black
Body material	TPU	TPU
Coupling nut material	CuZn, Ni	CuZn, Ni
Contact carrier color	transparent	transparent
Contact carrier material	PA	PA
Contact plating	Au	Au
Contact material	CuSn (bronze)	CuSn (bronze)
Environmental data		
RoHS compliant	yes	yes
Ambient temperature (operation)	-30...+90°C, -22...+194°F	-30...+90°C, -22...+194°F
Protection rating	IP65/67/68 in screwed condition	IP65/67/68 in screwed condition
Pollution level	3	3
Approvals	UL listed, EAC	UL listed, EAC

Cable

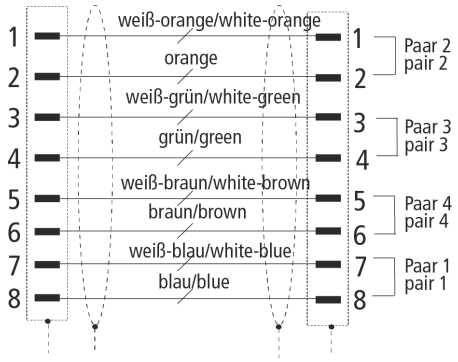
Electrical data	
Rated voltage	100 V
Insulation resistance	≥ 500 MΩ * km (DIN EN 50395)
Mutual capacitance	52 nF/km
Characteristic impedance	100 Ω ± 15 Ω (100 MHz)
Loop resistance	≤ 280 Ω/km
Dielectric strength wire/wire	700 V
Dielectric strength wire/shield	700 V
Signal running time	< 534 ns/100 m
NVP	approx. 0.67 c
Transmission characteristics	IEC 11801 Class D, EIA/TIA-568, TSB-36
Electrical parameters (Ethernet)	Cat.6
Mechanical data	
Cable structure	S/FTP
Cable structure (Ethernet)	twisted shielded pair
Conductor construction (Ethernet)	19-strand

Cross-section (Ethernet)	4 x 2 x 0.14 mm² (AWG26)
Outer cable diameter	7.8 mm ±0.2 mm (0.3071" ± 0.0079")
Min. bending radius, moved	7.5 x outer cable diameter
Min. bending radius, fixed installation	4 x outer cable diameter
Conductor material (Ethernet)	tinned copper
Shielding	braiding of tinned copper wires, metallized plastic fleece for pair shielding
Optical covering factor of shielding (total)	≥ 85 %
Use	drag-chain suitable
Max. acceleration	3 m/s²
Max. speed	3 m/s
Max. number of cycles	4 million
Jacket color	green
Material jacket	PUR (polyurethane)
Wire color code	white / blue, white / orange, white / green, white / brown
Wire insulation material	PP (polypropylene)
Printing on the jacket	„sequential length in metres" Beckhoff Automation GmbH & Co. KG - Germany – EtherCAT DRAG-CHAIN PUR CAT6 *AWG26/19* c(UL)us CMX UL 444 E224252 80°C 100 V *ZB9065 "year/internal order number"
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 CSA 22.2, 4 days/100°C
Acid, lye and solvent resistance	depends on medium, concentration, temperature and duration
Flame-retardant	VW-1 Flame Test UL 1581 section 1080 and IEC 60332-1-2
Halogen-free	yes
RoHS compliant	yes, acc. to directive 2011/65/EU
UL	yes, UL E-file number: E224252
Approvals	c(UL)us type CMX according to UL 444

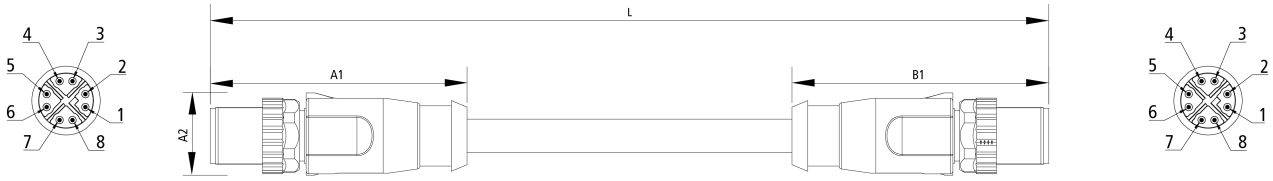
Attenuation								
Max. insertion loss								
Frequency [MHz]	**1**	**4**	**10**	**16**	**20**	**31.25**	**62.5**	**100**
[db/100 m]	3.1	5.8	9.0	11.4	12.8	16.1	23.2	29.9
[db/100 ft]	0.9	1.8	2.7	3.5	3.9	4.9	7.1	9.1
Min. near-end crosstalk attenuation								

Frequency [MHz]	1	4	10	16	20	31.25	62.5	100
[db/100 m]	66	65.3	59.3	56.2	54.8	51.9	47.4	44.3
[db/100 ft]	20.1	19.9	18.1	17.1	16.7	15.8	14.4	13.5

Pin assignment



Dimensions



A1	50.5 mm
A2	Ø 15.0 mm
B1	50.5 mm
B2	Ø 15.0 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

Ordering information	Length
ZK1096-8181-4010	1.00 m
ZK1096-8181-4030	3.00 m
ZK1096-8181-4050	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
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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