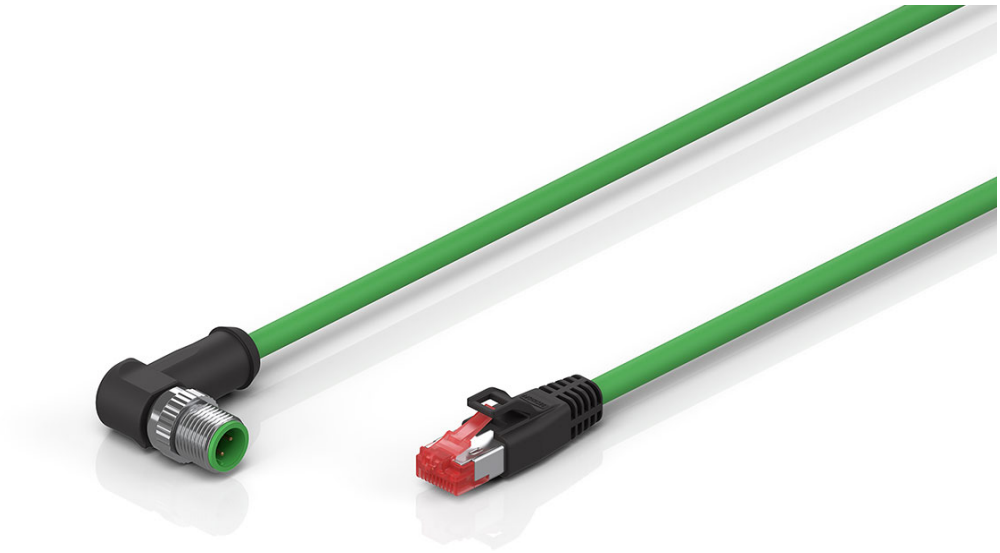
ZK1090-6391-4xxx | EtherCAT cable, PUR, AWG26, drag-chain suitable

M12, plug, angled, male, 4-pin, D-coded – RJ45, plug, straight, male, 8-pin



Plugs

Electrical data	Head A	Head B
Rated voltage	160 V (according to IEC 61076-2-101)	125 V
Rated current	4 A at 40°C (according to IEC 61076-2-101)	1 A at 40°C
Rated impulse voltage	2.5 kV	-
Shielding	yes	yes
Contact resistance	< 5 mΩ	-
Insulation resistance	≥ 10 GΩ (according to IEC 60512-2)	≥ 100 MΩ (according to IEC 60512)
Mechanical data		
Installation size	M12	RJ45
Connector type	plug	plug
Configuration	angled	straight
Contact type	male	male
Number of positions (face)	4-pin	8-pin
Coding	D-coded	-
Recommended torque, nut	0.6 Nm	-

Mating cycles	≥ 100 (according to IEC 60512-9a)	≥ 750
Way of locking	screw	-
Body color	black	black
Body material	TPU, UL 94	PC UL 94 V0
Coupling nut material	CuZn, Ni	-
Seal	FPM	-
Contact carrier color	green	-
Contact carrier material	TPU GF, UL 94	PC 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	-
RoHS compliant	yes	yes
Ambient temperature (operation)	-30...+80°C, -22...+176°F	-40...+60°C, -40...+140°F
Protection rating	IP65/67 in screwed condition (according to IEC 60529)	IP20
Pollution level	3/2 (according to IEC 60664-1)	3/2 (according to IEC 60664-1)
Approvals	-	UL

Cable

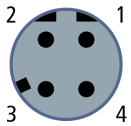
Electrical data	
Rated voltage	30 V (according to IEC 61076-2-101)
Attenuation of shielding	≥ 43 dB
Insulation resistance	≥ 150 MΩ/km
Unbalanced capacitance to ground	3400 pF/km
Mutual capacitance	51 pF/m at 1 kHz
Characteristic impedance (Ethernet)	100 Ω ±15 Ω (100 MHz)
Loop resistance (Ethernet)	250 Ω/km
Unbalanced resistance (Ethernet)	2 %
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	40 kg/km (26.9 lb/1000 ft)
Conductor material (Ethernet)	copper, tinned
Shielding	braiding of tinned copper wires
Optical covering factor of shielding (Ethernet)	90 %
Use	drag-chain suitable
Max. acceleration	10 m/s²
Max. speed	15 m/s
Max. number of cycles	20 million (5 million with 14 x D, v = 5 m/s and a = 15 m/s², min. 1 million with 9.5 x D, a = 1 m/s², travel distance = 1 m)
Wall thickness of wire insulation (Ethernet)	0.25 mm
Jacket color	green
Material jacket	PUR (polyurethane)
Wire color code	yellow, orange, white, blue
Wire insulation material	PP (polypropylene)
Printing on the jacket	"sequential length in meters" Industrial Ethernet Cat5 trailing * E130266 “UL Recognized” UL AWM 20963 80 °C 30V * ZB9032 “month/year” “ internal order number”
Printing color	black
Environmental data	
Operation temperature range, moved	-40...+80°C, -40...+176°F
Oil resistance	according to DIN EN 60811-404 (7x24 h/90 °C)
Acid, lye and solvent resistance	depends on medium, concentration, temperature and duration
CFC-free	yes
Halogen-free	yes
Silicone-free	yes
RoHS compliant	yes
CE	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

Dimensions



A1	35.30 mm
A2	32.50 mm
B1	44.0 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, UL E-file number: E499669

Ordering information	Length
ZK1090-6391-4030	3.00 m
ZK1090-6391-4200	20.00 m

Accessories	
ZB8801-0000	torque wrench for hexagonal plugs, adjustable
ZB8801-0002	torque cable key, M12/wrench size 13, for ZB8801-0000

ZB8803-0003	Flange/Panel feed-through for M12 pre-assembled, for fixing the connector, plastic
ZK1096-9696-0000	RJ45, socket, straight, female, 8-pin – RJ45, socket, straight, female, 8-pin

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.