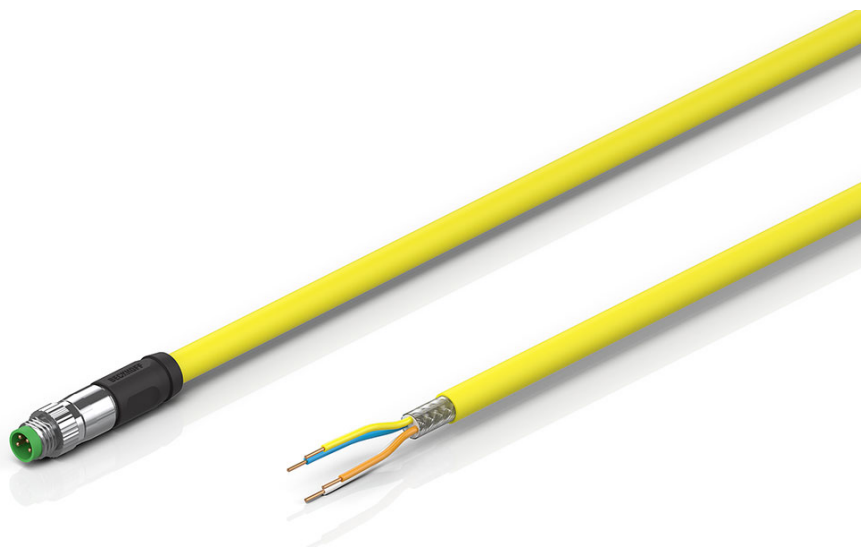


# ZK1093-3100-3xxx | EtherCAT cable, PVC, AWG22, fixed installation



M8, plug, straight, male, 4-pin, A-coded – open end, 4-wire + shielding



## Plugs

Electrical data	Head A	Head B
Rated voltage	63 V (according to IEC 61076-2-111)	-
Rated current	4 A at 40°C (according to IEC 61076-2-104)	-
Shielding	yes	-
Insulation resistance	≥ 100 GΩ (according to IEC 60512)	-
Mechanical data		
Installation size	M8	open end
Connector type	plug	-
Configuration	straight	-
Contact type	male	-
Number of positions (face)	4-pin	4-wire + shielding
Coding	A-coded	-
Recommended torque, nut	0.4 Nm	-
Mating cycles	≥ 100	-
Way of locking	screw	-

Weight per piece	0.028 kg (0.0617 lb)	-
Body color	black	-
Body material	TPU, UL94	-
Coupling nut material	GD-Zn, Ni	-
Seal	FPM	-
Contact carrier color	green	-
Contact carrier material	PA 6, UL 94 V0	-
Contact plating	Ni, Au gal.	-
Contact material	CuZn	-
<b>Environmental data</b>		
Special features	halogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1	-
RoHS compliant	yes	-
Ambient temperature (operation)	-30...+70°C, -22...+158°F	-
Protection rating	IP65/67 in screwed condition (according to IEC 60529)	-
Pollution level	3/2 (according to IEC 60664-1)	-

## Cable

<b>Electrical data</b>		
Rated voltage	600 V	
Insulation resistance	≥ 500 MΩ/km	
Characteristic impedance (Ethernet)	100 Ω ±15 Ω (100 MHz)	
Loop resistance (Ethernet)	≤ 115 Ω/km	
Signal running time (Ethernet)	5.3 ns/m	
Electrical parameters (Ethernet)	based on Cat.5	
Test voltage	≥ 2000 V	
<b>Mechanical data</b>		
Cable structure (Ethernet)	twisted pair	
Conductor construction (Ethernet)	solid	
Cross-section (Ethernet)	1 x 4 x 0.34 mm <sup>2</sup> (AWG22)	
Outer cable diameter	6.5 mm ± 0.2 mm (0.2559" ± 0.0079")	
Min. bending radius, moved	7.5 x outer cable diameter	
Min. bending radius, fixed installation	3 x outer cable diameter	
Weight	67 kg/km (45.0 lb/1000 ft)	
Shielding	aluminum-clad foil, braiding of tinned copper wires	

Optical covering factor of shielding (Ethernet)	90 %
Use	fixed installation
Jacket color	yellow
Material jacket	PVC (polyvinyl chloride)
Wire color code	yellow, orange, white, blue
Printing color	black
<b>Environmental data</b>	
Operation temperature range, moved	-40...+75°C, -40...+167°F
Operation temperature range, fixed installation	-20...+60°C, -4...+140°F
Ambient temperature, transport/storage	-40...+75°C, -40...+167°F
Flame-retardant	according to IEC 60332-1-2, according to UL 1685 (CSA FT 4)
UL	yes, UL E-file number: E119100

<b>Attenuation</b>	
Max. insertion loss	
Frequency [MHz]	<b>1      4      10      16      20      31.25      62.5      100</b>
[db/100 m]	1.6    3.2    5.2    6.9    7.8    10.5    15.0    19.5
[db/100 ft]	0.5    1      1.6    2.1    2.4    3.2    4.6    5.9
Min. near-end crosstalk attenuation	
Frequency [MHz]	<b>1      4      10      16      20      31.25      62.5      100</b>
[db/100 m]	80    75.0    70.0    65.0    63.0    60.0    55.0    50.0
[db/100 ft]	24.4    22.9    21.3    19.8    19.2    18.3    16.8    15.2

<b>Contact assembly</b>	
<p>1 — gelb/yellow 2 — weiß/white 3 — blau/blue 4 — orange</p>	

<b>Dimensions</b>	
-------------------	--



A1	41.00 mm
A2	Ø 10.1 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.

Ordering information	Length
ZK1093-3100-3020	2.00 m
ZK1093-3100-3050	5.00 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.

Beckhoff®, TwinCAT®, TwinCAT/BSD®, TC/BSD®, EtherCAT®, EtherCAT G®, EtherCAT G10®, EtherCAT P®, Safety over EtherCAT®, TwinSAFE®, XFC®, XTS® and XPlanar® are registered trademarks of and licensed by Beckhoff Automation GmbH. Other designations used in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owners.

© Beckhoff Automation GmbH & Co. KG 02/2024

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 expressly agreed in the terms of contract.