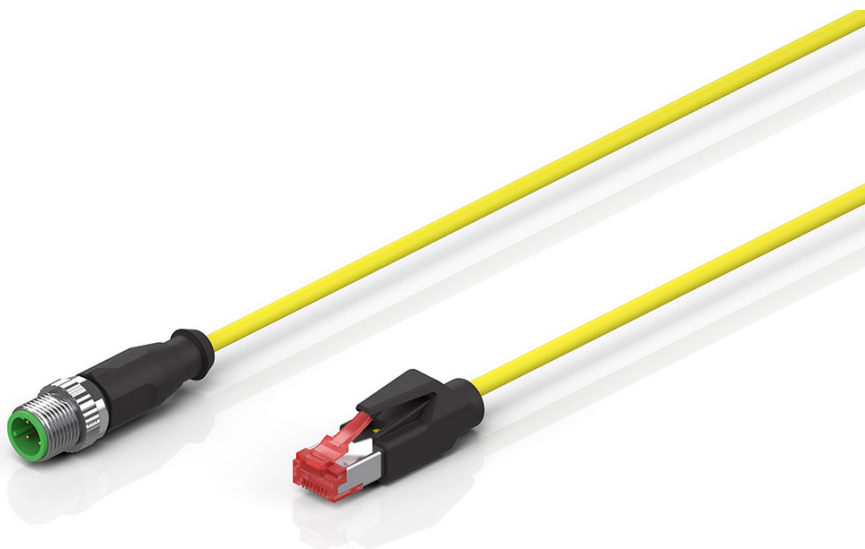


ZK1093-6191-2xxx | EtherCAT cable, PUR, AWG26, fixed installation, comfortable installation at short distances



M12, plug, straight, 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 | straight | 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 | | |
| 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

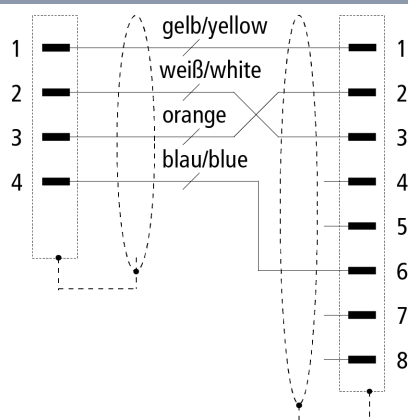
| | | |
|--|---|--|
| Electrical data | | |
| Rated voltage | 30 V (according to IEC 61076-2-101) | |
| Attenuation of shielding | ≥ 50 dB (30...100 MHz) | |
| Insulation resistance | ≥ 500 MΩ/km | |
| Unbalanced capacitance to ground | ≤ 2000 pF/km | |
| Mutual capacitance | nom. 50 nF/km | |
| Characteristic impedance (Ethernet) | 100 Ω ±15 Ω | |
| Loop resistance (Ethernet) | ≤ 260 Ω/km | |
| Unbalanced resistance (Ethernet) | 2 % | |
| Dielectric strength wire/wire (Ethernet) | 1 kV AC (50 Hz, 1 min.)/1 kV DC (50 Hz) | |
| Dielectric strength wire/shield (Ethernet) | 1 kV AC (50 Hz, 1 min.)/1 kV DC (50 Hz) | |
| Signal running time (Ethernet) | 4.8 ns/m | |
| Electrical parameters (Ethernet) | based on Cat.5 | |
| Test voltage | 1000 V, 50 Hz, 1 min. | |
| Mechanical data | | |
| Cable structure (Ethernet) | star quad | |

| | |
|---|---|
| Conductor construction (Ethernet) | 7-strand |
| Cross-section (Ethernet) | 1 x 4 x 0.14 mm ² (AWG26) |
| Outer cable diameter | 3.65 mm ± 0.15 mm (0.1496" ± 0.0059") |
| Min. bending radius, moved | 15 x outer cable diameter |
| Min. bending radius, fixed installation | 8 x outer cable diameter, 2.5 x outer cable diameter (fixed with single bend) |
| Weight | 30 kg/km (20.2 lb/1000 ft) |
| Conductor material | copper bare |
| Shielding | braiding of tinned copper wires |
| Optical covering factor of shielding (Ethernet) | ≥ 85 % |
| Use | fixed installation |
| Jacket color | yellow |
| Material jacket | PUR (polyurethane) |
| Wire color code | yellow, orange, white, blue |
| Wire insulation material | PO (Polyolefine) |
| Printing on the jacket | 00000m Beckhoff Automation GmbH & Co. KG - Germany – Industrial Ethernet / EtherCAT ZB9037 Cat5e AWG26/7 E170315 AWM 20963 AWM I A/B 80°C 30V Fa.No.xxxxx |
| Printing color | black |
| 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 (7x24 h/90 °C) |
| Acid, lye and solvent resistance | depends on medium, concentration, temperature and duration |
| Flame-retardant | Horizontal flame test according to UL 1581 part 1090 |
| CFC-free | yes |
| Halogen-free | according to IEC 60754 or DIN VDE 0472 part 815 |
| Silicone-free | yes |
| UL | yes, UL E-file number: E170315 |

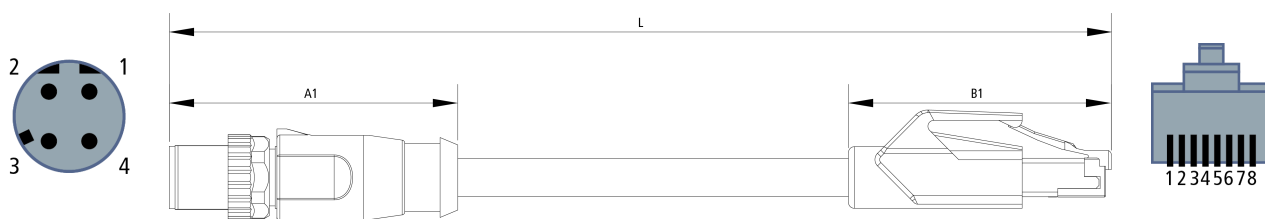
| | |
|-------------------------------------|--|
| Attenuation | |
| Max. insertion loss | |
| Frequency [MHz] | 1 4 10 16 20 31.25 62.5 100 |
| [db/100 m] | 3.2 6.2 10.5 13.4 14.7 18.8 27.2 35.0 |
| [db/100 ft] | 1 1.9 3.2 4.1 4.5 5.7 8.3 10.7 |
| Min. near-end crosstalk attenuation | |
| Frequency [MHz] | 1 4 10 16 20 31.25 62.5 100 |

| | | | | | | | | |
|-------------|------|------|------|------|------|------|------|------|
| [db/100 m] | 65 | 56.3 | 50.3 | 47.2 | 45.8 | 42.9 | 38.4 | 35.3 |
| [db/100 ft] | 19.8 | 17.2 | 15.3 | 14.4 | 14 | 13.1 | 11.7 | 10.8 |

Contact assembly



Dimensions



| | |
|----|-----------|
| A1 | 49.00 mm |
| A2 | Ø14.50 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

| | |
|------------------|--------|
| ZK1093-6191-2015 | 1.50 m |
| ZK1093-6191-2050 | 5.00 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, including screws, washers and lock nuts |
| 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.

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