



ZK7A21-CH00-Axxx | B23, ENP cable, PUR, 4 G 4.0 mm² + 2 x 2.5 mm² + (1 x 4 x AWG22), drag chain suitable, key 3 (user-defined voltage)

B23, flange front assembly, straight, long, male+female, pins 3+PE+2+4, EtherCAT-coded – RJ45 + 6 x open end, 8-pin

Plugs

| Electrical data | Head A | Head B |
|----------------------------------|---|------------------------------------|
| Rated voltage (Ethernet) | 60 V DC | 24 V DC |
| Rated current (Ethernet) | 4 A at 40 °C | 1.1 A at 30 °C |
| Rated voltage (power) | 630 V AC / 850 V DC, 600V AC / DC (UL) | - |
| Rated current (power) | 22 A + 25 A at 40 °C | - |
| Rated current (power) | 22 A + 25 A | - |
| Rated impulse voltage (power) | 6.0 kV | - |
| Rated impulse voltage (Ethernet) | 1.0 kV | - |
| Voltage proof (contact/contact) | 1.5 kV (power - Ethernet), 3.31 kV AC (power), 1.0 kV AC (Ethernet) | - |
| Shielding (Ethernet) | yes | yes |
| Contact resistance | < 10 mΩ (signal), < 5 mΩ (power) | - |
| Insulation resistance | ≥ 100 MΩ (according to IEC 60512) | ≥ 10 GΩ (according to IEC 60512-2) |
| Mechanical data | | |
| Installation size | B23 | RJ45 + 6 x open end |
| Connector type | flange front assembly | - |
| Configuration | straight, long | - |
| Contact type | male+female | - |
| Number of positions (face) | pins 3+PE+2+4 | 8-pin |
| Coding | EtherCAT-coded | - |
| Mechanical coding | key 3 (user-defined voltage) | - |
| Wire termination | crimp connection | - |
| Mating cycles | ≥ 100 | ≥ 750 |
| Way of locking | bayonet | - |
| Weight per piece | 0.200 kg (0.441 lb) | - |
| Body colour | - | black |
| Body material | - | PC UL 94 V0 |

| | | |
|-----------------------------------|--|-----------------------------|
| Flange housing material | GD-Zn, Ni | - |
| Seal | NBR | - |
| Contact carrier material | PA, UL 94 | - |
| Contact carrier colour (Ethernet) | yellow | - |
| Contact carrier colour (power) | red | - |
| Contact plating | Au over Ni | Au over Ni |
| Contact material | copper alloy | - |
| Environmental data | | |
| Shock resistance | 50 g (490 m/s ²) conforms to IEC 60512-6c, 11 ms; 18 shocks per direction, 3 axes | - |
| Vibration resistance | 5 g (50 m/s ²) conforms to IEC 60512-6d, 10 Hz. ... 500 Hz.; 10 cycles per axis; 6 h full duration | - |
| RoHS compliant | yes | yes |
| Ambient temperature (operation) | -30...+80 °C, -22...+176 °F | -40...+85 °C, -40...+185 °F |
| Protection class | IP 65/67 in screwed condition (according to IEC 60529) | IP 20 |
| Pollution level | 3/2 (according to IEC 60664-1) | - |
| Approvals | UL 2237: File E484763 | - |

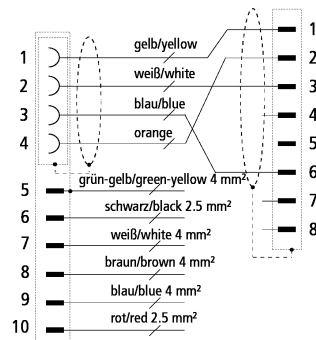
Cable

| | | |
|---|--|--|
| Electrical data | | |
| Rated voltage (Ethernet) | max. 300 V (peak value, not for high voltage purposes) | |
| Rated voltage (power) | 600 V | |
| Attenuation of shielding | ≥ 40 dB | |
| Insulation resistance | ≥ 500 MΩ/km | |
| Unbalanced capacitance to ground | 1600 pF/km | |
| Mutual capacitance | 52 nF/km (1 kHz) | |
| Characteristic impedance (Ethernet) | 100 Ω ±15 Ω (100 MHz) | |
| Loop resistance (Ethernet) | ≤ 115 Ω/km | |
| Differential impedance (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) | 5.3 ns/m | |
| Electrical parameters (Ethernet) | based on CAT 5 | |
| Test voltage | ≥ 2000 V | |
| Mechanical data | | |
| Cable structure (Ethernet) | star quad | |
| Conductor construction (power) | 19 x 0.30 mm | |
| Conductor construction (Ethernet) | 7 x 0.25 mm | |
| Cross section (power) | 4 x 4.0 mm ² (approx. AWG12) + 2 x 2.5 mm ² (approx. AWG14) | |
| Cross section (Ethernet) | 1 x 4 x 0.34 mm ² (AWG 22) | |
| Min. bending radius, moved | 7.5 x outer cable diameter | |
| Min. bending radius, fixed installation | 5 x outer cable diameter | |
| Outer cable diameter | 6.5 mm ± 0.2 mm (0.2559" ± 0.0079") | |
| Conductor material (Ethernet) | copper, tinned | |
| Shielding | aluminium-clad foil, braiding of tinned copper wires | |
| Optical covering factor of shielding (Ethernet) | ≥ 85 % | |
| Use | drag-chain suitable | |
| Max. acceleration | 4 m/s ² | |
| Max. speed | 4 m/s | |
| Max. number of cycles | 3 million | |
| Wall thickness of wire insulation (Ethernet) | 0.375 mm | |
| Jacket colour | green | |
| Material jacket | PUR (polyurethane) | |
| Wire colour code | yellow, orange, white, blue (Ethernet), black, red (2.5 mm ²), white, green/yellow, brown, blue (4.0 mm ²) | |
| Wire insulation material | PP polypropylene (Ethernet), PPE polyphenyl ether (Power) | |

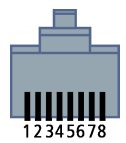
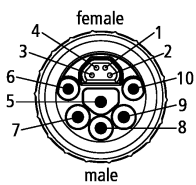
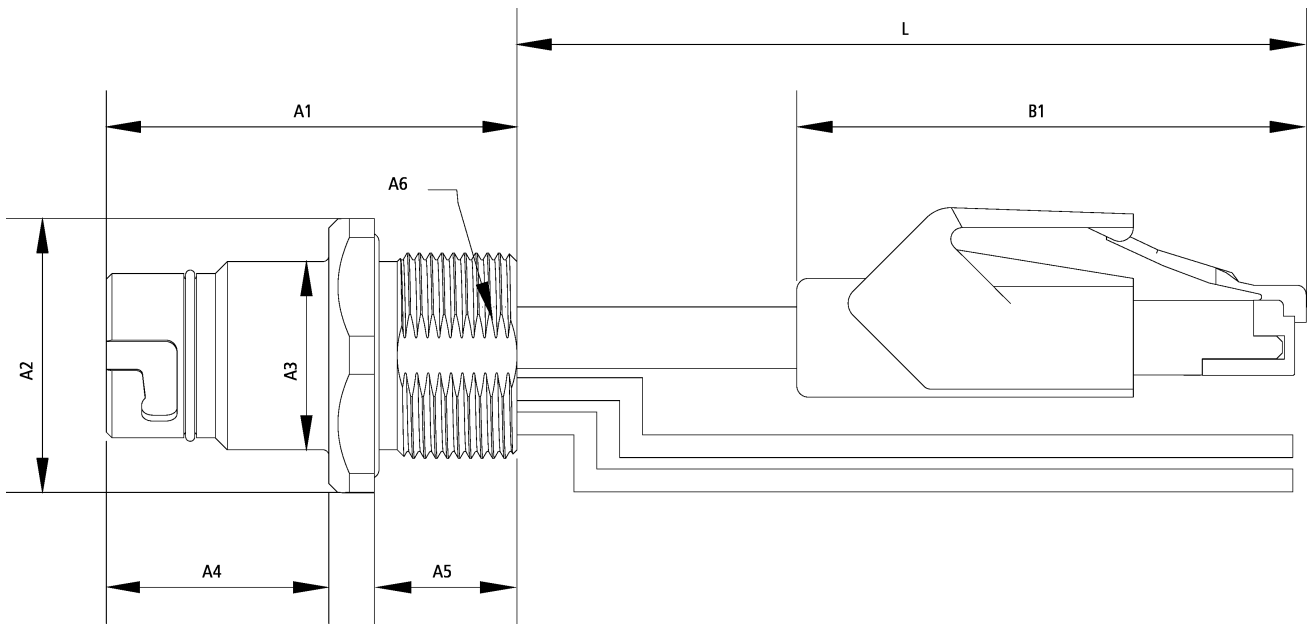
| | |
|---|--|
| Printing on the jacket | BECKHOFF ZB9020 Industrial Ethernet / EtherCAT Trailing Cable * CAT5PLUS * 22AWG (SHIELDED) (UL) E119100 CMX 75°C VERIFIED (UL) CAT 5E PATCH CABLE FRNC * "length in meters" |
| Printing colour | black |
| Environmental data | |
| Operation temperature range, moved | -40...+70 °C, -40...+158 °F |
| Operation temperature range, fixed installation | -20...+60 °C, -4...+140 °F |
| UV resistance | yes |
| Oil resistance | according to DIN EN 60811-2-1 |
| Acid, lye and solvent resistance | depends on medium, concentration, temperature and duration |
| LABS-free | yes |
| Flame-retardant | yes |
| CFC-free | yes |
| Halogen-free | yes |
| Silicone-free | yes |
| Approvals | UL-Style AWM 20963 |

| | |
|-------------------------------------|--|
| Attenuation | |
| Max. insertion loss | |
| Frequency [MHz] | 1 4 10 16 20 31.25 62.5 100 |
| [db/100 m] | 2.1 4.0 6.3 8.0 9.0 11.4 16.5 21.3 |
| [db/100 ft] | 0.6 1.2 1.9 2.4 2.7 3.5 5 6.5 |
| Min. near-end crosstalk attenuation | |
| Frequency [MHz] | 1 4 10 16 20 31.25 62.5 100 |
| [db/100 m] | 80 76.0 70.0 65.0 63.0 60.0 55.0 50.0 |
| [db/100 ft] | 24.4 23.2 21.3 19.8 19.2 18.3 16.8 15.2 |

Contact assembly



Dimensions

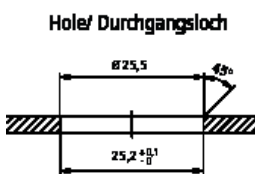


| | |
|----|----------|
| A1 | 47.50 mm |
| A2 | 30.00 mm |
| A3 | 24.90 mm |
| A4 | 32.50 mm |
| A5 | 10.00 mm |
| A6 | M25 |
| B1 | 43.80 mm |

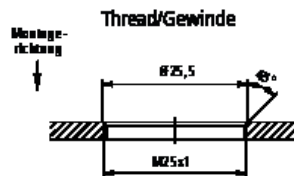
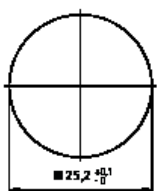
Notes

- Depending on the cable length (L), the following length tolerances apply:
0 m...3.0 m: + 100 mm | 3.0...10.0 m: ± 100 mm | ≥ 10.0 m: ± 2 %
- Illustrations similar
- Delivery with counter nut
- Further cable length on request. The last three digits of the ordering information is the cable length in decimeters, e.g. ZKxxxx-xxxx-x020 = cable length 2.00 m

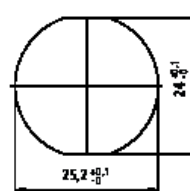
Installation dimensions



Panel cut out without twist protection/
Montageausschnitt ohne Verdrehsicherung



Panel cut out with twist protection/
Montageausschnitt mit Verdrehsicherung



min. wall thickness 1 mm/
Min. Wandstärke 1 mm
max. wall thickness 5 mm/
Max. Wandstärke 5 mm

| Ordering information | Length |
|----------------------|--------|
| ZK7A21-CH00-Axxx | – |

| Accessories | |
|-------------|--|
| ZS7300-B003 | B23 protection cap, plug, plastic, IP 67, packaging unit = 10 pieces |
| ZS7300-B004 | B23 protection cap, plug, metal, IP 67, packaging unit = 5 pieces |
| ZS7300-B009 | B23 colour coding flange for front/rear assembly, red, packaging unit = 10 pieces |
| ZS7300-B010 | B23 colour coding flange for front/rear assembly, yellow, packaging unit = 10 pieces |
| ZS7300-B011 | B23 colour coding flange for front/rear assembly, blue, packaging unit = 10 pieces |
| ZS7300-B012 | B23 colour coding flange for front/rear assembly, green, packaging unit = 10 pieces |
| ZS7300-B013 | B23 colour coding flange for front/rear assembly, orange, packaging unit = 10 pieces |
| ZS7300-B014 | B23 colour coding flange for front/rear assembly, grey, packaging unit = 10 pieces |

Beckhoff®, TwinCAT®, 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 03/2021

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.