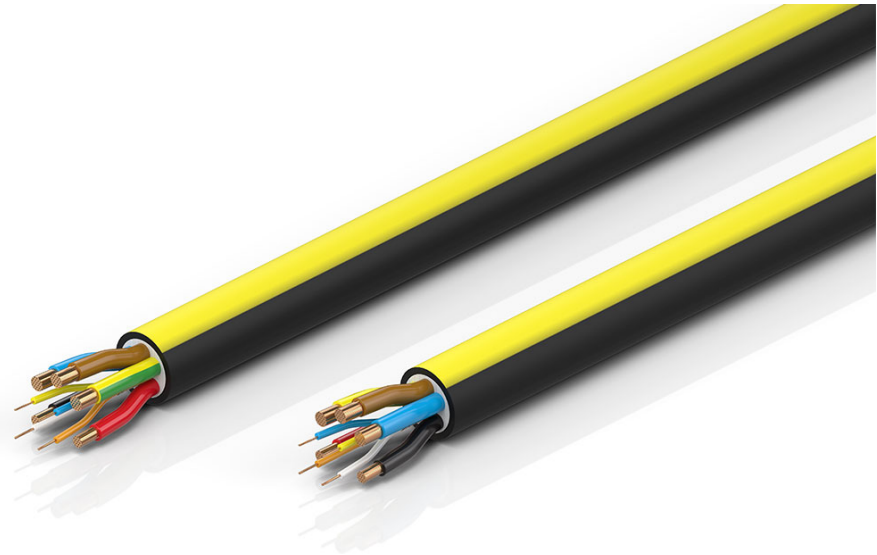
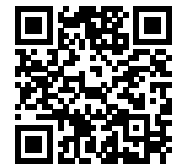


# ZB7303-xxxx | EtherCAT cable, overall shield, PUR, drag-chain suitable, 3G4 mm<sup>2</sup> + 2 x 2.5 mm<sup>2</sup> + (1 x 4 x AWG22), black with yellow stripe, OD = 16.5 (±0.4 mm)



| Electrical data                            |  |
|--|--|
| Operating voltage                          | ≤ 1000 V AC  |
| Mutual capacitance wire/wire (Ethernet)    | 50 ±15 pF/m at 800 Hz (EN 50289-1-5)                     |
| Attenuation of shielding                   | ≥ 65 dB (30...100 MHz)                                   |
| Insulation resistance                      | ≥ 500 MΩ * km (DIN EN 50395)                             |
| Mutual capacitance                         | AWG 22: 50 ± 15 pF/m at 800 Hz according to EN 50289-1-5 |
| Wire resistance (power)                    | ≤ 4.95 Ω/km (DIN EN 50395)                               |
| Wire resistance (signal/24V)               | ≤ 7.98 Ω/km according to DIN EN 50395                    |
| Wire resistance (Ethernet)                 | ≤ 58.0 Ω/km according to DIN EN 50395                    |
| Characteristic impedance (Ethernet)        | 100 Ω ±5 Ω (100 MHz) (EN 50289-1-11)                     |
| Dielectric strength wire/wire (power)      | 4 kV 50 Hz 5 min. (DIN VDE 0472 T.509C)                  |
| Dielectric strength wire/shield (power)    | 4 kV 50 Hz 5 min. (DIN VDE 0472 T.509C)                  |
| Dielectric strength wire/wire (Ethernet)   | 2 kV ( 50 Hz, 1 min)                                     |
| Dielectric strength wire/shield (Ethernet) | 2 kV ( 50 Hz, 1 min)                                     |
| Mechanical data                            |  |
| Cable structure (Ethernet)                 | star quad  |

|   |   |
|---|---|
| Conductor construction (Ethernet)               | 7-strand  |
| Cross-section (power)                           | 4 x 4.0 mm <sup>2</sup> (approx. AWG12)   |
| Cross-section (signal)                          | 2 x 2.5 mm <sup>2</sup> (approx. AWG14)   |
| Cross-section (Ethernet)                        | 1 x 4 x 0.34 mm <sup>2</sup> (AWG22)  |
| Outer cable diameter                            | 16.4 mm ± 0.4 mm (0.6456" ± 0.0157")  |
| Min. bending radius, moved                      | 7 x outer cable diameter  |
| Min. bending radius, fixed installation         | 4 x outer cable diameter  |
| Weight  | 420 kg/km (282.23 lb/1000 ft)   |
| Conductor material (power)                      | copper bare, Class 6 according to DIN EN 60228  |
| Conductor material (signal/24V)                 | copper bare, Class 6 according to DIN EN 60228  |
| Conductor material (Ethernet)                   | copper, tinned  |
| Shielding                                       | braiding of tinned copper wires, metallized plastic fleece, aluminum-clad foil  |
| Optical covering factor of shielding (Ethernet) | ≥ 85 %  |
| Optical covering factor of shielding (total)    | yes   |
| Use   | drag-chain suitable   |
| UL-Style  | UL758 (AWM) Style 21223 (jacket) and Style 10492 (core)   |
| Max. acceleration                               | 30 m/s <sup>2</sup> by 5 m travel distance<br>15 m/s <sup>2</sup> by 10 m travel distance<br>5 m/s <sup>2</sup> by 20 m travel distance |
| Max. speed                                      | 4 m/s   |
| Max. travel distance                            | 20 m (horizontal)<br>5 m (vertical)   |
| Max. number of cycles                           | 3 million   |
| Wall thickness of wire insulation (power)       | 0.4 mm  |
| Wall thickness of wire insulation (Ethernet)    | 0.4 mm  |
| Jacket color                                    | black (similar to RAL 9005) with yellow stripe (similar to RAL 1003)  |
| Material jacket                                 | PUR (polyurethane)  |
| Wire color code                                 | Ethernet: white, yellow, blue, orange Power: brown, blue, white, green/yellow Signal: red, black  |
| Wire insulation material                        | PP (polypropylene)  |
| Printing on the jacket                          | XXXX Beckhoff Automation GmbH & Co. KG-Germany- 4G4+2x2,5 + (4xAWG22)/C E170315 AWM 20233 AWM I/II A/B 80°C 300V FT1 RoHS MM/JJ CE      |
| Printing color                                  | white   |
| Torsion angle in °/m                            | max. ± 30 °/m   |
| <b>Environmental data</b>                       |   |
| Operation temperature range, moved              | -30...+80°C, -22...+176°F, in drag-chain applications: -20...+60°C, -4...+140°F   |

|   |                               |
|---|-------------------------------|
| Operation temperature range, fixed installation | -40...+80°C, -40...+176°F     |
| UV resistance                                   | yes                           |
| Oil resistance                                  | according to DIN EN 60811-404 |
| LABS-free                                       | yes                           |
| Flame-retardant                                 | yes                           |
| CFC-free  | yes                           |
| Halogen-free                                    | yes                           |
| Silicone-free                                   | yes                           |
| Approvals                                       | cRUus                         |

| Attenuation                         |        |        |        |        |        |        |        |        |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Max. insertion loss                 |        |        |        |        |        |        |        |        |
| Frequency [MHz]                     | 1      | 4      | 10     | 16     | 20     | 31.25  | 62.5   | 100    |
| [db/100 m]                          | ≤ 2.3  | ≤ 4.2  | ≤ 6.8  | ≤ 8.6  | ≤ 9.7  | ≤ 12.3 | ≤ 18.0 | ≤ 23.6 |
| [db/100 ft]                         | ≤ 0.7  | ≤ 1.3  | ≤ 2.1  | ≤ 2.6  | ≤ 3    | ≤ 3.7  | ≤ 5.5  | ≤ 7.2  |
| 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 |

## Notes

- The following length tolerances apply: 2-3%
- Illustrations similar

| Ordering information | Length  |
|----------------------|---------|
| ZB7303-0050          | 5.00 m  |
| ZB7303-0100          | 10.00 m |
| ZB7303-0250          | 25.00 m |
| ZB7303-0500          | 50.00 m |
| ZB7303-R001          | 100 m   |
| ZB7303-R002          | 250 m   |
| ZB7303-R003          | 500 m   |
| ZB7303-R004          | 1000 m  |



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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