



ZB7001 | EtherCAT P cable, shielded, PUR, drag-chain suitable, 1 x 4 x AWG24/7, black with red stripe, OD = 5.2 mm (± 0.2 mm)

| Electrical data | |
|---|---|
| Rated voltage | max. 300 V (not for high voltage purposes) |
| Operating voltage | ≤ 125 V (peak value, not for high voltage purposes) |
| Attenuation of shielding | min. 80 dB between 30 MHz and 125 MHz (type test) |
| Insulation resistance | $\geq 5\text{G}\Omega \cdot \text{km}$ |
| Unbalanced capacitance to ground | ≤ 2000 pF/km |
| Mutual capacitance | nom. 50 nF/km |
| Characteristic impedance (Ethernet) | $100 \Omega \pm 15 \Omega$ |
| Loop resistance | $175.2 \Omega/\text{km}$ |
| Dielectric strength wire/wire (Ethernet) | 1 kV (50 Hz, 1 min.) |
| 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 | 750 V, 50 Hz, 1 min. |
| Mechanical data | |
| Cable structure (Ethernet) | star quad |
| Conductor construction (Ethernet) | 7-strand |
| Cross section (Ethernet) | $1 \times 4 \times 0.22 \text{ mm}^2$ (AWG24) |
| Min. bending radius, moved | 15 x outer cable diameter |
| Min. bending radius, moved in drag chain | 15 x outer cable diameter |
| Min. bending radius, fixed installation | 8 x outer cable diameter |
| Weight | 42 kg/km (28.2 lb/1000 ft) |
| Outer cable diameter | $5.2 \text{ mm} \pm 0.2 \text{ mm}$ ($0.2047'' \pm 0.0079''$) |
| Conductor material (Ethernet) | copper, tinned |
| Shielding | aluminium-clad foil, braiding of tinned copper wires, coupling |
| Optical covering factor of shielding (Ethernet) | $\geq 85 \%$ |
| Use | drag-chain suitable |

| | |
|---|---|
| Max. acceleration | 35 m/s ² |
| Max. speed | 5 m/s |
| Max. travel distance | 10 m |
| Max. number of cycles | 3 million |
| Jacket colour | black (similar to RAL 9005) with red stripe (similar to RAL 3020) |
| Material jacket | PUR (polyurethane) |
| Wire colour code | yellow, orange, white, blue |
| Wire insulation material | PO (Polyolefine) |
| Printing on the jacket | Beckhoff Automation GmbH & Co. KG - Germany - EtherCATp Cat5e AWG24/7 E170315 AWM 21198 AWM I/II A/B 80°C 300 V |
| Printing colour | white |
| 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 |
| Flame-retardant | Horizontal flame test according to UL 1581 part 1090 |
| Halogen-free | according to IEC 60754 respectively DIN VDE 0472 part 815 |

| Attenuation | | | | | | | | |
|--|----------|----------|-----------|-----------|-----------|--------------|-------------|------------|
| Max. insertion loss | | | | | | | | |
| Frequency [MHz] | 1 | 4 | 10 | 16 | 20 | 31.25 | 62.5 | 100 |
| [db/100 m] | 3.0 | 6.0 | 9.5 | 12.1 | 13.5 | 17.1 | 24.8 | 32.0 |
| [db/100 ft] | 0.9 | 1.8 | 2.9 | 3.7 | 4.1 | 5.2 | 7.6 | 9.8 |
| 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 |

| Ordering information | Length |
|-----------------------------|-------------------|
| ZB7001 | sold by the metre |

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