

10GXE02

Networking Cables
Datatwist® cable
CAT 6A S/FTP LSNH
2012-02-22 v2

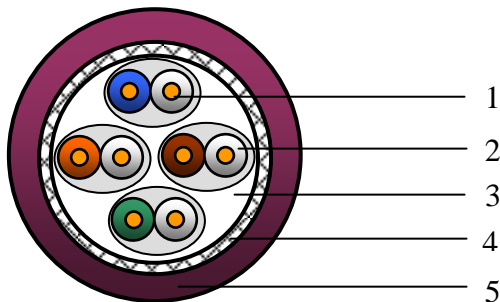
Applications

- Horizontal and building backbone cable
- Support current and future Category 6a and 7 applications, such as:
10GBase-T (10 Gigabit Ethernet), 1000Base-T (Gigabit Ethernet), 100 Base-T, 10 Base-T, FDDI, ATM

General standards

- International standard: ISO/IEC 11801 2nd edition (2002) and ISO/IEC 11801 Amendment 2 (2010)
- European standard: EN 50173-1 (2002) and EN 50173-1 Amendment 1 (2009)

Construction & Dimensions



| | |
|----------------------------------|---|
| 1. Conductor | |
| Material | Solid bare copper ETP |
| Diameter | AWG 23 |
| 2. Insulation | |
| Material | Foamed polyethylene |
| Nominal diameter over insulation | 1.45 mm |
| 3. Cable core | |
| Pair | 2 twisted insulated conductors with overall foil |
| Foil | Laminated aluminium-polyester Aluminium facing outside |
| Number of shielded pairs | 4, all twisted together |
| Colour code pair 1 | White / Blue |
| Colour code pair 2 | White / Orange |
| Colour code pair 3 | White / Green |
| Colour code pair 4 | White / Brown |
| 4. Braid | |
| Material | Solid tinned copper |
| Coverage | ≥ 30% |

5. Jacket

| | |
|---|---|
| Material | LSNH |
| Diameter | 7.2 ± 0.3 mm |
| Ripcord | Nylon ripcord under jacket |
| Colour | Purple (RAL 4005), grey (RAL 7037), blue (RAL 5015) |
| Standard text (+ batch code and length indication per meter): | |

BELDEN 10GXE02 - 4PR23 SHIELDED LSNH ISO/IEC 11801 EN50173 - S/FTP CAT 6A EXTRAPOLATED TO 625 MHz

Electrical characteristics

Reference standard : ISO/IEC 61156-5 edition 2.0 (2009)

| Low frequency and D.C. (at 20°C) | Specification | Unit |
|---|---------------|---------|
| D.C. resistance conductor | < 9,5 | Ω/100m |
| Resistance unbalance: within a pair / between pairs | < 2 / < 4 | % |
| Insulation resistance | ≥ 5000 | MΩ.km |
| Dielectric strength conductor-conductor and conductor-screen (2 sec.) | 2.5 | kV DC |
| Mutual capacitance | < 56 | nF/km |
| Capacitance unbalance pair to ground | < 1600 | pF/km |
| Nominal velocity of propagation (for information only) | 0.78 | c |
| Delay skew (differential delay) | ≤ 45 | ns/100m |
| Transfer impedance according IEC 61156-5 | Grade 2 | |
| Coupling attenuation according IEC 61156-5 | Type II | |

| High frequency (at 20°) | | | | | | | | | | | | | | |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| TYPE | 1* | 4 | 10 | 16 | 31.2 | 62.5 | 100 | 125 | 200 | 250 | 300 | 500 | 625 | MHz |
| Attenuation | 2.1 | 3.8 | 5.9 | 7.5 | 10.5 | 15.0 | 19.1 | 21.5 | 27.6 | 31.1 | 34.3 | 45.3 | 51.2 | dB/100m |
| NEXT | 75.3 | 66.3 | 60.3 | 57.2 | 52.9 | 48.4 | 45.3 | 43.8 | 40.8 | 39.3 | 38.1 | 34.8 | 33.4 | dB/100m |
| PS NEXT | 72.3 | 63.3 | 57.3 | 54.2 | 49.9 | 45.4 | 42.3 | 40.8 | 37.8 | 36.3 | 35.1 | 31.8 | 30.4 | dB/100m |
| ACR | 73.2 | 62.5 | 54.4 | 49.8 | 42.4 | 33.4 | 26.2 | 22.3 | 13.2 | 8.3 | 3.9 | -10.4 | -17.8 | dB/100m |
| PS ACR | 70.2 | 59.5 | 51.4 | 46.8 | 39.4 | 30.4 | 23.2 | 19.3 | 10.2 | 5.3 | 0.9 | -13.4 | -20.8 | dB/100m |
| ACR-F | 68.0 | 56.0 | 48.0 | 43.9 | 38.1 | 32.1 | 28.0 | 26.1 | 22.0 | 20.0 | 18.5 | 14.0 | 12.1 | dB/100m |
| PS ACR-F | 65.0 | 53.0 | 45.0 | 40.9 | 35.1 | 29.1 | 25.0 | 23.1 | 19.0 | 17.0 | 15.5 | 11.0 | 9.1 | dB/100m |
| Return Loss | 20.0 | 23.0 | 25.0 | 25.0 | 23.6 | 21.5 | 20.1 | 19.4 | 18.0 | 17.3 | 17.3 | 17.3 | 17.3 | dB/100m |
| TCL level 1 | 40.0 | 34.0 | 30.0 | 28.0 | 25.1 | 22.0 | 20.0 | 19.0 | 17.0 | 16.0 | | | | dB/100m |
| EL TCTL | 35.0 | 23.0 | 15.0 | 10.9 | 5.1 | | | | | | | | | dB/100m |
| PS ANEXT | 67.0 | 67.0 | 67.0 | 67.0 | 67.0 | 65.6 | 62.5 | 61.0 | 58.0 | 56.5 | 55.3 | 52.0 | 50.6 | dB/100m |
| PS AACR-F | 67.0 | 66.2 | 58.2 | 54.1 | 48.3 | 42.3 | 38.2 | 36.3 | 32.2 | 30.2 | 28.7 | 24.2 | 22.3 | dB/100m |
| Impedance upper limit | 122.2 | 115.2 | 111.9 | 111.9 | 114.1 | 118.3 | 121.9 | 123.9 | 128.8 | 131.5 | 131.6 | 131.6 | 131.6 | Ω |
| Impedance lower limit | 81.8 | 86.8 | 89.4 | 89.4 | 87.7 | 84.5 | 82.0 | 80.7 | 77.6 | 76.0 | 76.0 | 76.0 | 76.0 | Ω |
| Propagation delay | 570 | 552 | 545 | 543 | 540 | 539 | 538 | 537 | 536 | 536 | 536 | 536 | 536 | ns/100m |

NOTE: Limits below 4MHz are for information only.

Mechanical characteristics

| | Specification | Unit |
|---|---------------|------|
| Elongation at break of the conductors | 8 | % |
| Minimum elongation at break of the insulation | ≥ 100 | % |
| Minimum elongation at break of the sheath | ≥ 100 | % |
| Tensile strength of sheath | > 9 | MPa |

Environmental and overall characteristics

| | Specification | Unit |
|---|---------------|--------|
| Maximum operating voltage (for all temperatures cable is intended to be used) | 72 | V D.C. |
| Maximum continuous current per conductor (@25°C) | 1.5 | A |
| Temperature rating installation | 0 / 50 | °C |
| Temperature rating operation | - 30 / 60 | °C |
| Total cable weight | 52 | kg/km |
| Minimum bending radius (during operation and installation) | 29 / 58 | Mm |
| Maximum pulling strength | 85 | N |
| Burning load | 500 | kJ/m |
| Smoke density acc. to IEC 61034-1/2 & EN50268-1/2; transmittance | > 60 | % |
| Amount of halogen acid gas acc. to IEC 60754-1/2 & EN50267-1/2; pH | > 4.3 | |
| Amount of halogen acid gas acc. to IEC 60754-1/2 & EN50267-1/2; Conductivity | < 10 | µS/mm |
| Fire performance according IEC 60332-1 | Pass | |



Belden declares this product to be in compliance with the environmental regulations EU RoHS (Directive 2002/95/EC, 27 January 2003); this is valid for all material produced after the RoHS compliant date for this product.