

1583E

Networking Cables

Datatwist® cable

CAT 5E U/UTP PVC

2011-07-28 v2

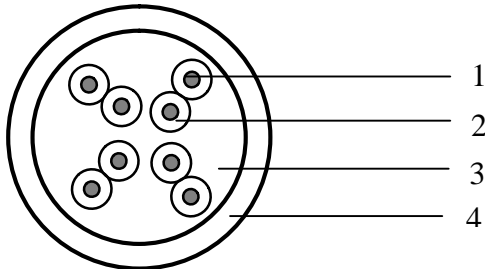
Applications

- Horizontal and building backbone cable
- Support current and future Category 5e applications, such as:
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)
- U.S. Standards: ANSI/TIA/EIA 568-B.2-1 (2002)

Construction & Dimensions



| | |
|----------------------------------|--------------------------------|
| 1. Conductor | |
| Material | Solid bare copper ETP |
| Diameter | AWG 24 |
| 2. Insulation | |
| Material | Polyethylene |
| Nominal diameter over insulation | 0.90 mm |
| 3. Cable core | |
| Pair | 2 twisted insulated conductors |
| Number of pairs | 4, all twisted together |
| Colour code pair 1 | White / Blue & Blue |
| Colour code pair 2 | White / Orange & Orange |
| Colour code pair 3 | White / Green & Green |
| Colour code pair 4 | White / Brown & Brown |
| 4. Jacket | |
| Material | PVC |
| Diameter | 4.8 ± 0.3 mm |

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 (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) | > 0.6 | c |
| Delay skew (differential delay) | ≤ 40 | ns/100m |

| High frequency (at 20 °), reference standard: ISO/IEC61156-5 | | | | | | | | | |
|--------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| TYPE | 1* | 4 | 10 | 16 | 20 | 31.25 | 62.5 | 100 | MHz |
| Attenuation | 2.1 | 4.0 | 6.3 | 8.0 | 9.0 | 11.4 | 16.5 | 21.3 | dB/100m |
| NEXT | 65.3 | 56.3 | 50.3 | 47.2 | 45.8 | 42.9 | 38.4 | 35.3 | dB/100m |
| PS NEXT | 62.3 | 53.3 | 47.3 | 44.2 | 42.8 | 39.9 | 35.4 | 32.3 | dB/100m |
| ACR | 63.2 | 52.32 | 44.0 | 39.2 | 36.8 | 31.5 | 21.9 | 14.0 | dB/100m |
| PS ACR | 60.2 | 49.3 | 41.0 | 36.2 | 33.8 | 28.5 | 18.9 | 11.0 | dB/100m |
| ACR-F | 64.0 | 52.0 | 44.0 | 39.9 | 38.0 | 34.1 | 28.1 | 24.0 | dB/100m |
| PS ACR-F | 61.0 | 49.0 | 41.0 | 36.9 | 35.0 | 31.5 | 25.1 | 21.0 | dB/100m |
| Return Loss | 20.0 | 23.0 | 25.0 | 25.0 | 25.0 | 23.6 | 21.5 | 20.1 | dB/100m |
| TCL level 1 | 40.0 | 34.0 | 30.0 | 28.0 | 27.0 | 25.1 | 22.0 | 20.0 | dB/100m |
| EL TCTL | 35.0 | 23.0 | 15.0 | 10.9 | 9.0 | 5.5 | | | dB/100m |
| Impedance upper limit | 122.2 | 115.2 | 111.9 | 111.9 | 111.9 | 114.1 | 118.3 | 121.9 | Ω |
| Impedance lower limit | 81.8 | 86.8 | 89.4 | 89.4 | 89.4 | 87.7 | 84.5 | 82.0 | Ω |
| Propagation delay | 570 | 552 | 545 | 543 | 540 | 539 | 538 | 537 | 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 | 28 | kg/km |
| Minimum bending radius (during operation and installation) | 20 / 40 | mm |
| Maximum pulling strength | 65 | N |
| Burning load | 290 | kJ/m |
| 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.