

1633ENS

Networking Cables
Datatwist® cable
CAT 5E SF/UTP LSNH
2012-07-11 v3

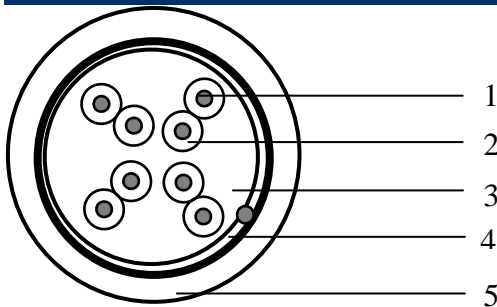
Applications

- 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 | 1.05 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 |
| Foil | Overlapping polyester foil over cable core |
| 4. Foil shielding | |
| Material | Laminated Aluminium / Polyester |
| Position aluminium | Facing outside, in contact with drain wire |
| Drain wire material | Solid tinned copper |
| Drain wire diameter | AWG 26 |

Braid material solid tinned copper
Coverage $\geq 30\%$

5. Jacket

Material LSNH
Diameter $6.0 \pm 0.3 \text{ mm}$

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	$\Omega/100\text{m}$
Resistance unbalance: within a pair / between pairs	< 2 / < 4	%
Insulation resistance	≥ 5000	$\text{M}\Omega.\text{km}$
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)	> 0.6	c
Delay skew (differential delay)	≤ 40	ns/100m
Transfer impedance according IEC 61156-5	Grade 2	
Coupling attenuation according IEC 61156-5	Type II	

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	45	kg/km
Minimum bending radius (during operation and installation)	24 / 48	mm
Maximum pulling strength	72	N
Burning load	440	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.