

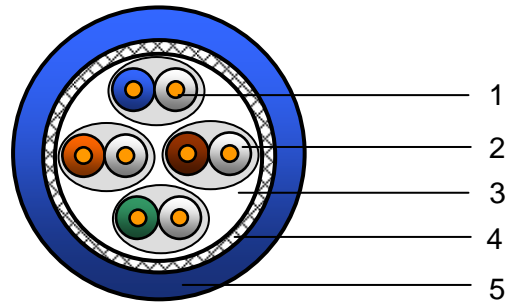
1886ENH

Networking Cables

Datatwist® cable

CAT 7a S/FTP AWG23 LSNH

2017-10-03 V2



Applications

- Horizontal and building backbone cable
- Support current and future Category 6a, 7 and 7a 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	7.5 ± 0.3 mm
Ripcord	Nylon ripcord under jacket

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)	0.76	c
Delay skew (differential delay)	≤ 25	ns/100m
Transfer impedance according IEC 61156-5	Grade 2	
Coupling attenuation according IEC 61156-5	Type Ib	

High frequency (at 20°)														
TYPE	1*	4	10	16	31.2	62.5	100	155	250	500	600	1000	1200*	MHz
Attenuation	2.1	3.7	5.8	7.3	10.3	14.6	18.5	23.2	29.7	42.8	47.1	61.9	68.4	dB/100m
NEXT	78.0	78.0	78.0	78.0	78.0	78.0	75.4	72.5	69.4	64.9	63.7	60.4	59.2	dB/100m
PS NEXT	75.0	75.0	75.0	75.0	75.0	75.0	72.4	69.5	66.4	61.9	60.7	57.4	56.2	dB/100m
ACR	75.9	74.3	72.2	70.7	67.7	63.4	56.9	49.3	39.7	22.2	16.6	-1.5	-9.1	dB/100m
PS ACR	72.9	71.3	69.2	67.7	64.7	60.4	53.9	46.3	36.7	19.2	13.6	-4.5	-12.1	dB/100m
ACR-F	78.0	78.0	75.3	71.2	65.4	59.4	55.3	51.5	47.3	41.3	39.7	35.3	33.7	dB/100m
PS ACR-F	75.0	75.0	72.3	68.2	62.4	56.4	52.3	48.5	44.3	38.3	36.7	32.3	30.7	dB/100m
Return Loss	20.0	23.0	25.0	25.0	23.6	21.5	20.1	18.8	17.3	17.3	17.3	15.1	14.3	dB/100m
TCL level 1	40.0	34.0	30.0	28.0	25.2	22.0	20.0	18.1	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	67.0	67.0	67.0	67.0	67.0	65.8	62.5		
PS AACR-F	67.0	67.0	67.0	67.0	63.3	57.3	53.2	49.4	45.2	39.2	37.6	33.2		
Impedance upper limit	122.2	115.2	111.9	111.9	114.1	118.3	121.9	126.0	131.5	131.6	131.6	142.8	147.8	Ω
Impedance lower limit	81.8	86.8	89.4	89.4	87.7	84.5	82.0	79.3	76.0	76.0	76.0	76.0	67.6	Ω
Propagation delay	570	552	545	543	540	539	538	537	536	536	536	535	535	ns/100m

NOTE: Limits below 4MHz are for information only. Values at 1200 MHz are for information only.

Mechanical characteristics

	Specification	Unit
Elongation at break of the conductors	10	%
Minimum elongation at break of the insulation	≥ 300	%
Minimum elongation at break of the sheath	≥ 125	%
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)	32 / 64	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
Reaction to fire according IEC 60332-1	Pass	
Reaction to fire according EN50575	Eca	



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.