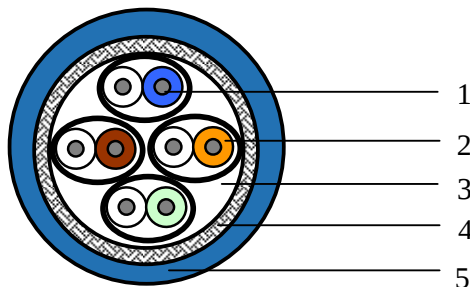


BE43802

Railway Datacable CAT 7 S/FTP LSNH

16-03-2016 V6



Applications

- Support current and future Category 6A and 7 applications for fixed installation in railway vehicles, supports protocols 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)
- EN 45545-2:2013, DIN 5510-2
- LU 1-085

Construction & Dimensions

1.	Conductor Material Diameter	Stranded tinned copper ETP AWG 24/19
2.	Insulation Material Nominal diameter over insulation	E-beam X-linked Foam-skin polyethylene max 1.60 mm
3.	Cable core Pair Foil Number of shielded pairs Colour code pair 1 Colour code pair 2 Colour code pair 3 Colour code pair 4	2 twisted insulated conductors with overall foil Laminated aluminium-polyester Aluminium facing outside 4, all twisted together White / Blue White / Orange White / Green White / Brown
4.	Braid Material Coverage	Solid tinned copper ≥ 80%
5.	Jacket Material Nominal Diameter Diameter tolerance Colour	E-beam X-FRNC/LSNH 8.1 mm +/- 0.3 mm Blue.

Electrical characteristics

Reference standard : ISO/IEC 61156-6 edition 2.0

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)	≤ 25	ns/100m
Transfer impedance according IEC 61156-5	Grade 1	
Coupling attenuation according IEC 61156-5	Type I	

High frequency (at 20°)											
TYPE	1*	4	10	16	31.2	62.5	100	300	600	1000*	MHz
Attenuation	2.9	5.6	8.8	11.1	15.6	22.3	28.5	51.3	75.1	100.4	dB/100m
NEXT	80.0	80.0	80.0	80.0	80	75.5	72.4	65.2	60.7	57.4	dB/100m
PS NEXT	77.0	77.0	77.0	77.0	77.0	72.5	69.4	62.2	57.7	54.4	dB/100m
ACR	76.0	74.3	72.1	70.6	67.6	60.6	53.4	31.1	10.6	-	dB/100m
PS ACR	73.0	71.3	69.1	67.6	64.6	57.6	50.4	28.1	7.6	-	dB/100m
ACR-F	78.0	78.0	75.3	71.2	65.4	59.4	55.3	45.8	39.7	35.3	dB/100m
PS ACR-F	75.0	75.0	72.3	68.2	62.4	56.4	52.3	42.8	36.7	32.3	dB/100m
Return Loss	20.0	23.0	25.0	25.0	23.6	21.5	20.1	17.3	17.3	-	dB/100m
TCL level 1	40.0	34.0	30.0	28.0	25.1	22.0	20.0				dB/100m
EL TCTL	35.0	23.0	15.0	10.9	5.1						dB/100m
Impedance upper limit	122.2	115.2	111.9	111.9	114.1	118.3	121.9	131.6	131.6	142.8	Ω
Impedance lower limit	81.8	86.8	89.4	89.4	87.7	84.5	82.0	76.0	76.0	70.0	Ω
Propagation delay	570	552	545	543	540	539	538	536	535	535	ns/100m

NOTE: Limits below 4MHz are for information only. Values at 1000 MHz are for information only.

Mechanical characteristics

	Specification	Unit
Minimum elongation at break of the insulation	≥ 200	%
Tensile strength of insulation	> 5	MPa
Setting (fixed) radius	4*D	mm
Bending radius (during installation)	8*D	mm
Bulk cable weight	78	g/m

Environmental and overall characteristics

	Specification	Unit
Maximum operating voltage	72	V D.C.
Maximum continuous current per conductor (@25°C)	1.5	A
Temperature rating installation	-5 / 50	°C
Temperature rating storage	-40 / 90	°C
Temperature rating operation acc. EN 50264-1	-40 / 90	°C
Temperature rating operation acc. EN50290-2-29	- 40 / 90	°C
Aging test insulation 240 hrs @ 135°C acc. EN50290-2-29	Pass	
Aging test 240 hrs @ 120°C acc EN50264-1	Pass	

Rolling stock characteristics

	Specification
Fire protection Railway vehicles	DIN 5510-2 protection level 1 to 4 EN 45545-2: HL1-HL3
Flame resistance	IEC 60332-1-2 EN50305 (9.1.1) IEC60332-3-25 cat D
Smoke density according to DIN EN 61034-2, EN50268-2	T >70%
Smoke density according to LUL 1-085	Pass
Toxicity (NF X70-100-1)	CITc < 0.7
Toxicity to EN45545-2	ITC < 6
Oil resistance	IEC 60811-2-1
Resistance against mineral oil	EN 50306 par 4.8 1.5kV/1min.
Resistance against Fuel	EN 50306 par 4.9 1.5kV/1min
Resistance against acid and alkali	EN 50306 par 4.10 1.5kV/1min.
Halogen content according to IEC 60754-1, EN 50267-1-2	Zero
Corrosivity of fire gases according to IEC 60754-2, EN 50267-2-2	Conductivity ≤ 10 us/mm pH value ≥ 4.3

