

tBL<sup>®</sup> - S/FTP 4P AWG23/1 Cat.7<sub>A</sub> LSHF-FR



## tBL<sup>®</sup> - tde Basic Link (TP)

tBL<sup>®</sup> tde Basic Link (TP) is a complete system solution for structured cabling in Cat6A for transfer rates of up to 10GbE in real time. The tBL<sup>®</sup> - cabling link corresponds to a permanent link in accordance with ISO / IEC 11801 (EN 50173). The RJ45 modules are available in the form factors Keystone (KS) and Data Center (DC). The compact design of the 6fold RJ45 DC module allows a high packing density of up to 48 RJ45 ports on 1U. The RJ45 module is connected to the tBL<sup>®</sup> - cable termination block by simply plugging. The slim cable termination block can be easily assembled on the cable by using the tBL<sup>®</sup> - crimp tool and is suitable for preterminated cables. The modular design of individual RJ45 modules are interchangeable at any time without termination. The RJ45 modules are optional with a LID - Light ID function available. This feature facilitates searching of related ports within a cable link. A cost effective alternative product is the RJ45 keystone module without cable termination block in the tool-less design.

The system solution is complemented by an extensive portfolio of carrier systems. These include design-capable data outlets, floor box frames, Consolidation points, DIN rail modules and patch panels in 1/2 and 1U.

### Application



**tde<sup>®</sup> trans data elektronik GmbH**

**Headquarter address:**

Lingener Str. 2  
D-49626 Bippen/Ohrte  
Tel.: +49 5435 9511 0  
Fax.: +49 5435 9511 32

**Sales office address:**

Prinz-Friedrich-Karl-Str. 46  
D-44135 Dortmund  
Tel.: +49 231 914 36 99  
Fax.: +49 231 914 31 29

info@tde.de | www.tde.de

## tBL<sup>®</sup> - S/FTP 4P AWG23/1 Cat.7<sub>A</sub> LSHF-FR

**Primär (Campus), Sekundär (Riser), Tertiär (Horizontal)**  
**IEEE 802.3: 10Base-T, 100Base-T, 1000Base-T, 10GBase-T; IEEE 802.5**  
**ISDN, TPDDI, ATM, CATV, Breitband-Video**  
**Power over Ethernet (PoE) / PoE+**

### Standards

**EN 50173-1; EN 50288-9-1; ISO/IEC 11801; IEC61156-5; IEEE 802.3at**

### Standards

**LSHF-FR (LSOH-FR): IEC 60332-1; IEC 60332-3-24; IEC 60754-2; IEC 61034; EN 50399 Class D<sub>ca</sub>**

## Technical Data

### Construction

Conductor	Bare copper wire Ø 0.58 mm (AWG 23/1)
Insulation	Foam-Skin PE, Ø 1.4 mm
Twisting	2 cores to the pair
Pair screen	Al-laminated plastic foil
Cable lay up	4 pairs
Screen	Copper braid, tinned (approx. 65%)
Sheath	Halogen free, flame and fire retardant sheathing material: LSHF-FR (LSFROH), yellow, (RAL 1028)

### Mechanical properties

Minimum bending radius	Without load	≥ 30 mm
	With load	≥ 60 mm
Temperature range	During operation	-20°C up to +60°C
	During installation	0°C up to +50°C

### Electrical properties at 20°C ± 5°C

Loop resistance		≤ 135 Ω/km
Resistance unbalance		≤ 2%
Insulation resistance	500 V	≥ 5000 MΩ*km
Mutual capacitance	at 800 Hz	Nom. 43 nF/km
Capacitance unbalance	(pair/ground)	≤ 1500 pF/km
Characteristic impedance	100 MHz	(100 ± 5) Ω
Nominal velocity of propagation		ca. 76%
Propagation delay		439 ns/100m
Delay skew		12 ns/100m
Test voltage	(DC, 1 min) core/core and core/screen	1000 V
Transfer impedance	at 1 MHz	≤ 5 mΩ/m
	at 10 MHz	≤ 5 mΩ/m
	at 30 MHz	≤ 10 mΩ/m

## tBL<sup>®</sup> - S/FTP 4P AWG23/1 Cat.7<sub>A</sub> LSHF-FR

Coupling attenuation ≥ 85 dB

### Electrical properties (nominal) at 20°C

F	Attenuation	NEXT	PS-NEXT	ACR	PS-ACR	ELFEXT	PS-ELFEXT	Returnloss
MHZ	dB/100m	dB	dB	dB/100m	dB/100m	dB/100m	dB/100m	dB
1.0	1.8	100	97	98	95	105	103	22
4.0	3.4	100	97	97	94	93	91	25
10.0	5.4	100	97	95	92	85	83	27
16.0	6.8	100	97	93	90	81	79	27
20.0	7.7	100	97	92	89	79	77	27
31.2	9.6	100	97	90	87	75	73	26
62.5	13.7	100	97	86	83	69	67	24
100.0	17.4	100	97	83	80	65	63	22
125.0	18.6	95	92	76	73	63	61	21
155.5	19.5	95	92	75	69	61	59	21
175.0	22.1	92	89	70	67	60	58	20
200.0	25.0	92	89	67	64	59	57	20
250.0	28.1	90	87	62	59	57	55	19
300.0	30.9	89	86	58	55	55	53	19
450.0	37.4	87	84	50	47	52	50	19
600.0	44.8	85	82	40	37	49	47	19
750.0	50.5	83	80	32	29	59	56	19
900.0	55.9	82	79	26	23	58	55	19
1000.0	58.5	82	79	24	21	57	54	19
1200.0	63.4	81	78	19	16	52	49	17

Outer diameter	7.8 mm
Fire load	589 MJ/km
Weight	68 kg/km
Copper content	39 kg/km
Tensile force	340 N

### Product variants & accessories

Art.-No.	Description
TBL-1200-23	tBL <sup>®</sup> - S/FTP 4P AWG23/1 Cat.7 <sub>A</sub> LSHF-FR