

# tML® - TP Trunk Cable 5HP black both ends preterminated 10GbE 6x RJ45 length: xx

## Description

tML® is a patented, modular cabling system consisting of the three key components module, trunk cable and rack mount enclosure. The system components are 100 percent manufactured, pre-assembled and tested in Germany. They enable plug-and-play installation on site – especially in data centres, but also in industrial environments – within the shortest possible time. Heart of the system are the rear MPO/MTP® and Telco connectors, which can be used to connect at least six or twelve ports at a time. Depending on the module configuration, transfer rates of up to 200G are currently possible with SR4. The fibre optic and TP modules can be used together in a module carrier with a very high port density. The tde offers its tML® cabling system as a proven tML® standard system and in the highly innovative variants tML® 12, tML® 24, tML® 32 and now tML® 24+ System for extreme scalability and very easy migration to higher transmission rates such as 40G, 100G, 200G, 400G and 800G and more.



The tML® - TP Trunk Cable 5HP is intended for the installation in the tML® Rack Mount Enclosure 3U (for 17 x Modules).

## Technical Data

tML® - TP Trunk Cable is preterminated on both ends with modules 6x RJ45 10GbE. tML® - TP Trunk Cables can with tML® - FO modules in a module carrier to be combined. A full assembly results in 104 RJ45 ports on 3U. The module is marked with sequential serial number and article number.

Exit	6x RJ45 Jacks shielded for 10GbE
Strain relief	integrated in the box
Cable	S/FTP Round Cable 24x2xAWG 26/1, CAT 7, Pet-Al foil around each pair, 3 layers of screened pairs (2+8+14), LSHF-FR
Tests	Link Performance Tests, Elektronischer Test on short-circuit and Visual Final Inspection; all measured values are electronically archived
	QS-Managementsystem ISO 9001, ISO 14001 and TL 9000

xx - stands for the cable length in meters (max. length is 60m)

Box	Galvanized steel sheet
Front Panel	black

**TP Cable**

Type	UC FUTURE COMPACT AWG26/1 Cat.7 S/FTP 24P
Conductor	Bare copper wire, diameter 0.4 mm (AWG26)
Insulation	Foam-skin PP, diameter 1.0 mm
Twisting	2 insulated wires to the pair
Pair screening	Pet-Al foil around each pair
Stranding	6 (5+1) bundles with 4 foiled pairs blue, orange, green, brown
	Coloured tapes are around each bundle
Screen	Tinned copper braid 85% coverage
Sheath	LSHF-FR, diameter 13.9 mm

**Application**

IEEE 802.3: 10Base-T; 100Base-T; 10GBase-T, ISDN; xDSL  
IEEE 802.5 16 MB; ISDN; TPDDI; ATM155Mbit/s

The conductor diameter is smaller compared to the standard installation cables. This leads to an increased attenuation and therefore the operating distance is reduced (60m instead of 90m installation cable in standard permanent link).

**Standards**

IEC 61156-6 work area cable  
ISO/IEC 11801 2<sup>nd</sup> ed.  
EN 50173-5  
EN 50288-4-2

**Flame resistance**

PVC IEC 60332-1  
LSHF-FR IEC 60332-3-24; IEC 60754-2; IEC 61034 ; EN 50399 Class D<sub>ca</sub>

**Mechanical properties**

Minimum bending radius	Without load	≥ 55 mm
	With load	≥ 110 mm
Temperature range	During operation	-20°C up to +60°C
	During installation	10°C up to +40°C

**Electrical properties at 20°C**

Loop resistance		≤ 280 Ω/km
Resistance unbalance		≤ 2%
Test voltage	core/core	1000 V <sub>DC</sub> 1 min
	core/screen	1000 V <sub>DC</sub> 1 min

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Capacitance	800 Hz	Nom. 44 nF/km
Capacitance unbalance		≤ 1600 pF/km
Impedance	100 MHz	100 Ω± 5 Ω
Nominal velocity of propagation		ca. 76%
Insulation resistance	500 V	≥ 2000 MΩkm
Transfer impedance	at 1 MHz	≤ 5 mΩ /m
	at 10 MHz	≤ 5 mΩ /m
	at 30 MHz	≤ 10 mΩ /m

## Electrical Data (nominal) acc. to Cat.7 (at 20°C)

F MHZ	Attenuation dB/10m	NEXT dB	PS-NEXT dB	ELFEXT dB/100m	PS-ELFEXT dB/100m	Return loss dB
1.0	0.3	90	87	80	77	23
4.0	0.6	90	87	80	77	24
10.0	1.0	90	87	80	77	25
16.0	1.3	90	87	76	73	25
20.0	1.4	90	87	74	71	25
31.2	1.8	90	87	70	67	25
62.5	2.6	90	87	64	61	23
100.0	3.2	87	84	60	57	21
125.0	3.6	85	82	58	55	20
155.5	4.0	84	81	56	53	19
175.0	4.3	83	80	55	52	19
200.0	4.6	82	79	54	51	18
250.0	5.1	81	78	52	49	18
300.0	5.6	80	77	50	47	17
450.0	6.9	77	74	47	44	17
600.0	7.9	75	72	44	41	17

## Technical Data

Designation	J-02YS(ST)CH
Type	24x2x0.4PiMF
Outer diameter	13.9 mm

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Fire load	2.171 MJ/km
Fire load	0.603 kWh/m
Reaction to Fire	D <sub>Ca</sub> -s2, d2, a1
Weight	230 kg/km
Copper content	115 kg/km
Tensile force	500 N

Art.-No.	Description
TML-T06RJ45-xx-S	tML® - TP Trunk Cable 5HP black both ends preterminated 10GbE 6x RJ45 length: xx