tML® - TP Trunk Cable both ends RJ45 DC 6fold Module 5HP w. LID (one enclosed) Cat.6_A UC Future 24x2xAWG26 LSHF

tML® - tde Modular Link

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® Xtended, tML® 24 System and now tML® 32 System for extreme scalability and very easy migration to higher transmission rates such as 40G, 100G, 200G and 400G.

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Technical Data

5TE xxxx	Length in cm

TP RJ45 Modules

System platforms	tML®/ tSML
	4x tBL® - 6fold Modules can be integrated in a tSML - TP Module.
	1x tBL® - 6fold Module can be integrated in a tML® - TP Module.
Equipping	6x tBL® RJ45 DC Module Cat.6_A

TP RJ45 Modules

Mechanical properties

Type	RJ45 Jack shielded LID
Connector standard	IEC 60603-7-5-1
Installation dimension	19.3 x 14.7 mm
Mating force	≤30 N
Mating cycles (RJ45 side)	≥750
Mating cycles (opposite side)	≥100
Housing material	nickel-plated die-cast zinc
Insulation components material	PC aqua opak
Gold plating in contact area	30 µ"
Contacting	AWG 27-22
Cable diameter	5-10 mm

Environmental requirements

Connection class	IP20
Temperature range	-40°C to +70°C

Electrical properties

Contact resistance	≤20 mΩ
Insulation resistance between contacts	≥500 MΩ
Dielectric withstanding voltage contact – contact	≥1000 V DC/AC
Dielectric withstanding voltage contact – screen	--
Current-carrying capacity at 50°C	1.25 A
PoE+ per IEEE 802.3at	PoE+

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Transmission characteristics

10 GbE	supported
Cat.6_A	ISO/IEC 11801 AM1 and AMD2, Link length: >1 m

LiD Function

supply voltage	12 V DC
lightdetection	≥200 m
light exits	≤20

TP Termination Block

Construction	plastic with insulation displacement connection
Gold plating termination block	30 µ"
Color	transparent white
Application	Flex cable AWG 26 - AWG 27, alternative AWG 26 Solid Wire
	Plug bears small flag-like installation guide with color codes for pin-out according to EIA/TIA 568 A and B.

TP Cable

Construction

Type	UC FUTURE COMPACT AWG26/1 Cat.7 S/FTP 24P
Conductor	Bare copper wire, diamter 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 2nd ed.

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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_{ca}

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_{DC} 1 min
	core/screen	1000 V_{DC} 1 min
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	Atten-uation 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

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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
Fire load	2.171 MJ/km
Fire load	0.603 kWh/m
Reaction to Fire	D_{ca}-s2, d2, a1
Weight	230 kg/km
Copper content	115 kg/km
Tensile force	500 N

Product variants & accessories

Art.-No.	Description
TML-TS06RJ45C26-xx	tML® - TP Trunk Cable both ends RJ45 DC 6fold Module 5HP Cat.6_A UC Future 24x2xAWG26 LSHF
TML-TS06RJ45C26-xxL	tML® - TP Trunk Cable both ends RJ45 DC 6fold Module 5HP w. LID Cat.6_A UC Future 24x2xAWG26 LSHF
TML-TS06RJ45C26-xxLU	tML® - TP Trunk Cable both ends RJ45 DC 6fold Module 5HP w. LID (one enclosed) Cat.6_A UC Future 24x2xAWG26 LSHF
TML-TS06RJ45C26-xxU	tML® - TP Trunk Cable both ends RJ45 DC 6fold Module 5HP (one enclosed) Cat.6_A UC Future 24x2xAWG26 LSHF