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

\*\*tML® 24

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

\*\*tML® Xtended

tML® Xtended 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® 12 fiber 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® 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.

\*\*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.

\*\*tML® - TP Trunk Cables

The tML® - TP Trunk Cable is intended for the installation in the tML® Rack Mount Enclosure 1U (for 8 x Modules).

\*\*TECHNISCHE\_DATEN

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 48 RJ45 ports on 1U. 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 | Stainless steel |
| Dimensions | 110 x 108 x 20 mm |

\*\*\*TP Cable

|  |  |
| --- | --- |
| 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.
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 Dca

|  |  |  |
| --- | --- | --- |
| 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 |

|  |  |  |
| --- | --- | --- |
| Loop resistance |   | ≤ 280 Ω/km |
| Resistance unbalance |   | ≤ 2% |
| Test voltage | core/core | 1000 VDC 1 min |
|   | core/screen | 1000 VDC 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 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 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 |
| 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 |

|  |  |
| --- | --- |
| 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 | Dca-s2, d2, a1 |
| Weight | 230 kg/km |
| Copper content | 115 kg/km |
| Tensile force | 500 N |