tML® - TP Trunk Cable both ends RJ45 DC 6fold Module Cat.6A UC Future 24x2xAWG26 LSHF

\*\*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

\*\*TECHNISCHE\_DATEN

|  |  |
| --- | --- |
| xx | Length in m |

\*\*\*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.6A |

\*\*\*TP RJ45 Modules

|  |  |
| --- | --- |
| Type | RJ45 Jack shielded |
| Connector standard | IEC 60603-7-5-1 |
| Certification | GHMT |
| 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 |
| Gold plating in contact area | 30 µ" |
| Contacting | AWG 27-22 |
| Cable diameter | 5-10 mm |

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

|  |  |
| --- | --- |
| Contact resistance | ≤20 mΩ |
| Insulation resistance between contacts | ≥500 MΩ |
| Dielectric withstanding voltage contact – contact | ≥1000 V DC/AC |
| Dielectric withstanding voltage contact – screen | ≥1500 V DC/AC |
| Current-carrying capacity at 50°C | 1.25 A |
| PoE+ per IEEE 802.3at | PoE+ |

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

\*\*\*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

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