# COMMUNICATION CABLE - 4 x 0.5mm2 S/FTQ QUAD CABLE LSZH

The complete requirements for procuring the wire described herein shall consist of this document and the issue in effect of the referenced specifications. This document takes precedence over documents referenced herein.

## PRODUCT DETAILS

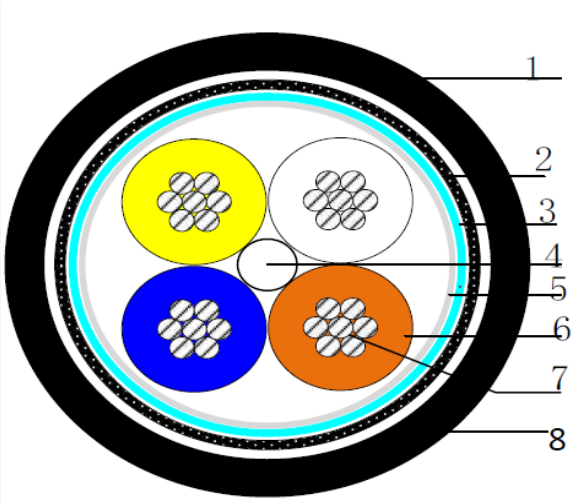
### DESCRIPTION

Application: Profinet
IEEE 802.3bt Types 1 & 2

Rated temperature: 80°C
Reference Standard: 61156-6, ISO/IEC 11801
Flammability Rating: IEC 60332-3-25 & IEC 60332-1-2

Stranded Tinned Copper Conductor
Colour-coded PE Insulation
LSZH Jacket
Packaging: Per customer request

CROSS SECTION




| | |
|---|---|
| 1 | Jacket |
| 2 | Braid |
| 3 | AL/Polyester |
| 4 | Filler (Optional) |
| 5 | Separating Tape |
| 6 | Insulation |
| 7 | Conductor |
| 8 | Tape |

### PHYSICAL CHARACTERISTICS

| | | |
|---|---|---|
| **Structure** | Construction | SF/UTP |
| | Number of Conductors | 4 |
| **Conductor** | AWG / mm² | AWG20 / 0.50 mm² |
| | Conductor material | Stranded Tinned Copper |
| | Conductor dimension(mm) | (19/0.185) ± 0.02 mm |
| **Insulation** | Insulation material | PE |
| | Insulation dimension (mm) | 2.00 ± 0.08 mm |
| | Insulation Colour | 1.White |
| | (Pure Colour) | 2.Yellow |
| | | 3.Blue |
| | | 4.Orange |
| **Cabling** | Cabling Lay Length | ≤ 100mm |
| **Filler** | Filler | Optional |
| **Tapes** | Inner Tape | Separating Tape |
| **Overall Shield** | Primary Shield Material | AL/Polyester |
| | Secondary Shield & Material | Tinned Copper Wire |
| | Shield Coverage | ≥ 80% |
| **Outer Jacket** | Outer Jacket material | LSZH |
| | Overall Nom Dimension (mm) | 8.50 ± 0.50 |
| | Outer Jacket Rip cord | N/A |
| | Outer Jacket Colour | Blue |
| **Physical Characteristics** | Operating Temp Range | -25°C to +80°C |
| | Bulk Cable weight | N/A |
| | Max. Pulling Tension | 80N |
| | Min. Bend Radius (Install) | 70mm |
| | Outer Jacket Tensile Strength | ≥ 9 MPa |
| | Outer Jacket Elongation | ≥ 100% |
| | Outer Jacket Ageing | 168h @ 100°C |
| | Tensile Strength Variation | ≧ 70% of Unaging |
| | Elongation Variation | ≧ 50% of Unaging |
| **Electrical Characteristics** | Nom. mutual capacitance | ≦ 5.6 nF/100m (@1kHz) |
| | Pair to ground capacitance unbala | ≦ 160 pF/100m |
| | Nominal velocity of propagation | 65% |
| | Max. delay skew | 45 ns/100m |
| | Max. conductor DC resistance | 40.1 Ω/km (@ 20 ℃) |
| | Max. Conductor resistance unbalance | 2% |
| | Min. insulation resistance | 150 MΩ·km |
| | Max. operating voltage - UL | 300 V |

### JACKET MARK

"TE CONNECTIVITY - TECC0029C5 - 4 X 0.5mm² SFUTP CAT 5E CABLE LSZH - YEAR OF MANUFACTURE - BATCH NUMBER - METRE MARK"

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## ELECTRICAL CHARACTERISTICS CONTINUED

| Frequency | Input Impedance | ATT | RL | NEXT | ELFEXT | DELAY |
|---|---|---|---|---|---|---|
| (MHz) | (Ω) | (Db/100m) | (dB Min) | (dB Min) | (dB Min) | (Db/100m Max) |
| 1 | 100 ± 15 | 2.1 | - | 59.0 | 58.0 | 570.0 |
| 4 | 100 ± 15 | 4.3 | 23.00 | 50.0 | 46.0 | 552.0 |
| 10 | 100 ± 15 | 6.6 | 25.00 | 44.0 | 38.0 | 545.4 |
| 16 | 100 ± 15 | 8.2 | 25.00 | 41.0 | 34.0 | 543.0 |
| 20 | 100 ± 15 | 9.2 | 25.00 | 39.0 | 32.0 | 542.0 |
| 31.25 | 100 ± 15 | 11.8 | 23.60 | 37.0 | 28.0 | 540.4 |
| 62.5 | 100 ± 15 | 17.1 | 21.50 | 32.0 | 22.0 | 538.6 |
| 100 | 100 ± 15 | 22.0 | 20.10 | 29.0 | 18.0 | 537.6 |

Remark : Cable that meet the requirements of the template are not required to be measured for return loss; alternately cables that meet the return loss requirements are not required to be measured for characteristic impedance.

**Mechanical performance Requirements for the tests for outer jacket.**

| | | | |
|---|---|---|---|
| EN 45545 R15&R16 HL3 | T09.01 EN 60332-1-2 | Single vertical flame | IEC 60332-1-2 |
| | T09.03 EN50305 (for | Bunched cable flame | IEC 60332-3-25 |
| | T13 EN 61034-2 | Smoke emission | ⩾ 70% |
| | T15 EN 50305 | Toxicity index | ITC ⩽ 6 |
| | | | |
| Ozone resistance | (0.00015-0.00025%)(40±-2)℃/72h | No Crack | EN 50305 7.4.2 |
| Mineral oil resistance | IRM902/(25)℃X24h | Tensile strength Variation ⩽±30%. | EN 60811-2-1 10 |
| | | Elongation at break Variation ⩽±40%. | |
| Fuel resistance | IRM903/(25)℃X24h | Tensile strength Variation ⩽±30%. | |
| | | Elongation at break Variation ⩽±40%. | |
| Cold bend | -（20±2）℃,8D | No Crack | EN 60811-1-4 8.1 |
| Assessment of halogens | HCl and HBr | ⩽0.5% | EN 50267-2-1 |
| | pH | ⩾4.3 | EN 50267-2-2 |
| | Conductivity | ⩽10μS/mm | |

Approval  Electronic sign off - no signatures will appear.

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