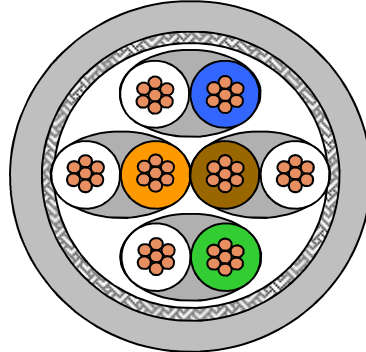


ICS IE ToughCat 7

S/FTP Installation Cable for tougher environments



Application

Generic Data transmission. This cable is a **Cat7 S/FTP** cable meant for use as installation/horizontal cable in tougher electrical and mechanical environment, including ships and offshore units.

Standards

EN 50173-1; EN 50288-4-1
 ISO/IEC 11801; IEC 61156-5
 Power over Ethernet(PoE/PoE+)
 Det Norske Veritas (DNV) specification No. 6-827.50-2

Fire rating

LSHF-FR(SHF1) : IEC 60754-2; IEC 61034, IEC 60332-3-24

Chemical resistance

Mineral oils IRM 902 (IEC60811-2-1) : 7 days/23°C, 4 hours/70°C
 Diesel - IRM 903 (IEC60811-2-1) : 7 days/23°C, 4 hours/70°C

Certification

This cable is certified by: Det Norske Veritas (DNV) and American Bureau of Shipping (ABS)

Construction

| | |
|----------------|--|
| Conductor | Stranded copper wire Ø 0.27 mm ² , AWG23 |
| Insulation | PE, Ø 1.6 mm |
| Twisting | 2 cores to the pair |
| Cable lay up | 4 pairs |
| Pair screen | Al-laminated plastic foil around each pair |
| Overall screen | Copper braid, tinned Ø 6,6 mm |
| Sheath | Oil resistant, Fire retardant and halogen free LSHF-FR (SHF1). |

Mechanical Properties

| | | |
|----------------------|---------------------|-----------------|
| Bending radius | Installation | 8 x D |
| | Installed | 4 x D |
| Temperature range | During operation | -40°C to + 85°C |
| | During installation | -15°C to + 50°C |
| Fire load | 4 pair | 670 MJ/km |
| Maximum tensile load | During operation | No load |
| | During installation | 100 N |

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Electrical Properties

at 20°C

| | | |
|---------------------------------|--------------------|----------------|
| DC loop resistance | | ≤ 138 Ω/km |
| Resistance unbalance | | ≤ 2% |
| Insulation resistance | (500 V) | ≥ 5000 MΩxkm |
| Capacitance | at 800 Hz | Nom. 43 nF/km |
| Capacitance unbalance | (pair to ground) | ≤ 1500 pF/km |
| Mean Characteristic impedance | @ 100 MHz) | 100 ± 5 Ω |
| Nominal velocity of propagation | | 0,76c |
| Propagation delay | | ≤ 450 ns/100 m |
| Delay skew | | ≤ 15 ns/100 m |
| Transfer impedance | at 1 MHz | ≤ 10 mΩ /m |
| | at 10 MHz | ≤ 8 mΩ /m |
| | at 30 MHz | ≤ 10 mΩ /m |
| Coupling attenuation | | ≥ 85 dB |
| Segregation classification | Acc. to EN 50174-2 | "D" |

Nominal Transmission characteristics

at 20°C

| F (MHz) | Attenuation (dB/100m) | NEXT (dB) | ACR (dB/100m) | Return loss (dB) | PS-NEXT (dB) | PS-ACR (dB/100m) | ELFEXT (dB/100m) | PS-ELFEXT (dB/100m) |
|------------|--------------------------|--------------|------------------|---------------------|-----------------|---------------------|---------------------|------------------------|
| 1 | 2,0 | 90 | 88 | | 87 | 85 | 85 | 82 |
| 4 | 3,6 | 90 | 86 | 27 | 87 | 83 | 85 | 82 |
| 10 | 5,5 | 90 | 84 | 30 | 87 | 81 | 79 | 76 |
| 16 | 7,5 | 90 | 82 | 30 | 87 | 79 | 75 | 72 |
| 20 | 7,7 | 90 | 82 | 30 | 87 | 79 | 73 | 70 |
| 31.25 | 9,8 | 90 | 80 | 30 | 87 | 77 | 69 | 66 |
| 62.50 | 14,0 | 86 | 72 | 30 | 83 | 69 | 63 | 60 |
| 100 | 17,9 | 83 | 65 | 30 | 80 | 62 | 59 | 56 |
| 155.00 | 22,4 | 81 | 59 | 26 | 78 | 55 | 57 | 54 |
| 200.00 | 25,6 | 78 | 52 | 25 | 75 | 49 | 53 | 50 |
| 250.00 | 28,8 | 77 | 48 | 25 | 74 | 45 | 51 | 48 |
| 300.00 | 31,6 | 73 | 41 | 23 | 70 | 38 | 47 | 44 |
| 600.00 | 45,7 | 71 | 25 | 20 | 68 | 22 | 44 | 41 |

Technical data

| Part no. | Description | Colour | Outer diameter mm | Fire load | | Weight kg/km |
|----------|---------------------------------|-----------------|----------------------|-----------|-------|-----------------|
| | | | | MJ/km | kWh/m | |
| 1016274 | ToughCat C7 LSHF-FR 4x2/0.27mm2 | Grey RAL7035 | 8,1 | 670 | 0,186 | 75 |

Product Code Table

| Product Description | Product Code | PG Reference Code | PG Part Number |
|--|-----------------|-------------------|-----------------|
| ToughCat C7 LSHF-FR 4x2/0.27mm2 | 1016274 | 60011617 | 60011617 |
| ToughCat C7 LSHF-FR 4x2/0.27mm2 500DP | 1016274-00500DP | 60011617 | 60015820 |
| ToughCat C7 LSHF-FR 4x2/0.27mm2 1000DP | | 60011617 | 60030363 |

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