

Clearfield®

Steel Armored Temperature Sensing Cable



Application

- Raman- and Brillouin-based Distributed Temperature Sensing (DTS)
- Approach cable to sensing cables, including for communication purposes
- Outdoor, subsea and harsh environments
- Suitable for deployment in conduits, directly in the ground or attached to structures

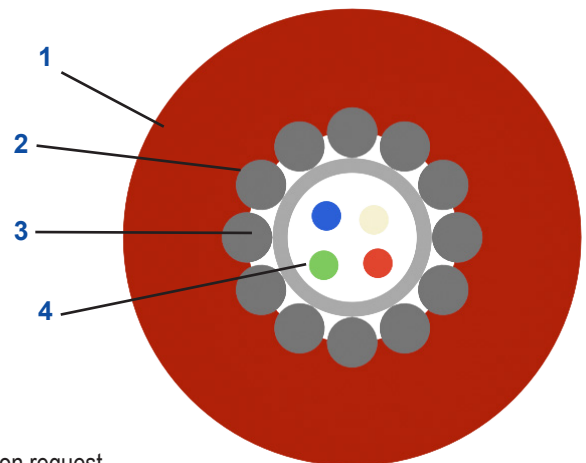
Description

Distributed Fiber-Optic Temperature Sensing (DFOTS) cable with Fiber In Metal Tube (FIMT) encapsulated optical fibers, steel wire armoring, and a PA outer sheath

Construction

1. PA outer sheath
2. Stainless steel wires, 316L
3. Gel-filled stainless steel loose tube, 316L
4. Bend insensitive optical fibers

- Hermetically sealed tube
- High tensile strength and crush resistance
- Excellent rodent protection
- High chemical resistance
- Robust abrasion resistant cable sheath
- Compact, high flexibility, small bending radius
- Halogen-free cable design
- Fast temperature response



Customization Options and Services

- Standard cable marking with meter marks, special labeling of outer sheath upon request
- Accessories such as loops, fan-outs, connectors, mounting brackets etc. available
- Custom fiber types

Technical Specifications

Steel Armored Temperature Sensing Cable	
Standard Optical Fiber	A range of cable variants are available, with either multimode or single-mode fibers, or a combination thereof. Up to 8 optical fibers (*)
Standards	Cable tests complying with IEC 60794-1-2
Jacket color	Red, similar to RAL 3000
Operating temperature	-40 °C ... +85 °C
Storage temperature	-40 °C ... +85 °C
Installation temperature	-10 °C ... +50 °C
Short-term temperature	-50° C ...+150°C

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Technical Data at 20°C

Type	Max. nb. of fibers	Cable ø mm	Weight kg/km	Max. crush res. N/cm	Max. tensile strength - Installation N	Max. tensile strength - Operation N
3.4	1	3.4	18	1200	800	600
3.0	4 (*)	3.0	22	450	1500	1000
3.8	4 (*)	3.8	26	600	1500	1000
4.2	6 (*)	4.2	40	600	3000	2000
4.4	6 (*)	4.4	41	600	3000	2000
4.8	8 (*)	4.8	46	800	3000	2000
6.0	4 (*)	6.0	44	600	1500	1000

(*) Please consult Clearfield for the maximum recommended fiber count, depending on your application.

Fiber Optic Sensing Cable

Type	Min. Bending Radius With Tensile mm	Min. Bending Radius Without Tensile mm	Hydrostatic Pressure Resistance x100kPa (Bar)
3.4 ... 6.0	20xD	15xD	300

Optical Fiber Data (Cabled) at 20°C

Fiber Type	Attenuation, dB/km 850 nm	Attenuation, dB/km 1300/1310 nm	Attenuation, dB/km 1550 nm
MMF 50/125	≤ 3.0	≤ 1.0	-
MMF 62.5/125	≤ 3.5	≤ 1.0	-
SMF	-	≤ 0.36	≤ 0.25