

14.1422 DITEMP SELF HEATING TEMPERATURE SENSING CABLE

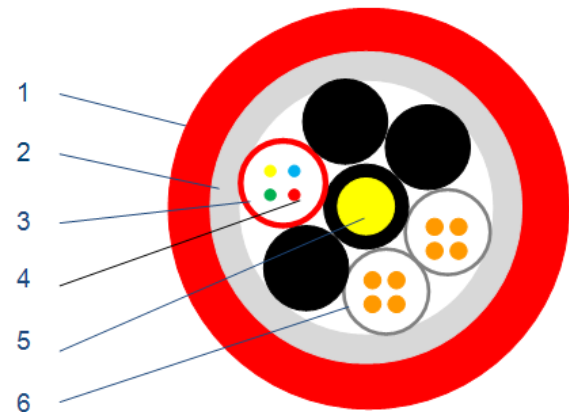
For distributed temperature sensing



GENERAL DESCRIPTION

The DiTemp® Self Heating Temperature Sensing cable is a unique sensor for the evaluation of distributed temperature over distances up to 1.5 km.

The DiTemp® Self Heating Temperature Sensing cable is used in a range of hydro & geo-technical applications that require distributed temperature sensing, where the temperature contrast between the ground and the fluid to be monitored is not sufficient to provide a reliable detection. The DiTemp® Self Heating Temperature Sensing cable is particularly used in the monitoring of dams, dikes, embankments and levees just to name a few.



TECHNICAL DESCRIPTION

The DiTemp® Self Heating Temperature Sensing cable is a fiber optic cable, with a central construction around a FRP strength member. Different plastic loose tubes are allocated both for dual layer acrylate coating for increased micro bending performance and isolated copper wires. The isolated copper wires permit to heat the cable up to relative short distance thanks to the low resistivity. The outer HDPE sheath ensures the cable to be watertight.

This sensor is particularly suitable for outdoors and harsh environment applications with different methodology of installation: direct burial in the ground or concrete or anchored to an already existing structure.

Thanks to the special package design the DiTemp® Self Heating Temperature Sensing cable offers high tensile strength, crush resistance, lateral water tightness, chemical and abrasion resistance and standard rodent protection.

The DiTemp® Self Heating Temperature Sensing cable is fully compatible with the DiTemp® system and all its accessories.

- 1 HDPE outer sheath
- 2 Glass fibers with water-blocking tape
- 3 Gel filled high strength 3.0 mm dual layer plastic tube
- 4 Bend insensitive optical fibers
- 5 FRP central strength member
- 6 Copper wires

FEATURES

- DiTemp compatible
- High tensile strength
- High crush resistance
- Standard rodent protection
- Good chemical resistance
- Robust abrasion resistant cable sheath
- Laterally watertight
- Compact and flexible
- Halogen free
- Fast temperature response

TEMPERATURE RANGE

- | | |
|----------------------------------|------------------|
| • Operating temperature | -40 °C to +85 °C |
| • Storage temperature | -40 °C to +85 °C |
| • Installation temperature | -10 °C to +50 °C |
| • Short-term temperature (3 min) | +150°C |

TECHNICAL DATA

- | | |
|------------------------|--------------------------|
| • Outer diameter | 14.5 mm |
| • Weight | 240 kg/km |
| • Max crush resistance | 300 N/cm |
| • Max tensile strength | 5000 N (installation) |
| • Max tensile strength | 3000 N (operation) |
| • Min bending radius | 290 mm (with tensile) |
| • Min bending radius | 220 mm (without tensile) |
| • Hydrostatic pressure | 300 kPa (bar) |

ELECTRICAL TECHNICAL DATA

- | | |
|--------------------------------|------------------------|
| • Continuous operation current | - - |
| • Electrical resistance | 37 Ω / km, each couple |

FIBER TYPOLOGY

- | | |
|--------------------------------------|---|
| • Fiber support | 4 MMF 50 / 125 μm ITU-T G.651 compliant |
| • Fiber attenuation (cabled @ 20 °C) | ≤ 3.0 dB @ 850 nm
≤ 1.0 dB @ 1300 nm |
| • Number of fiber | 4 |

CERTIFICATION AND COMPLIANCE

Cable tests complying with IEC 60794-1-2

ACCESSORIES AND ORDERING INFORMATION

- Cable termination with optical and electrical connectors
- Heating module
- Junction box
- Splice box