DiTeSt® & DiTemp®

Fibre Optic Temperature Sensing Cables

- Distributed temperature sensing
- Wide temperature range
- DiTeSt® & DiTemp® compatible
- Mechanically reinforced
- Easy and fast installation
- Up to four sensors per cable
- Light weight, small diameter, long lengths

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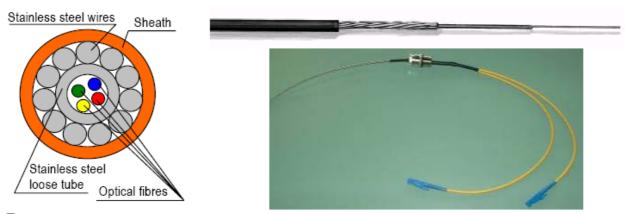## Description

The DiTeSt® & DiTemp® Temperature Sensing Cables are designed for distributed temperature monitoring over long distances. They consist of up to 4 Single or Multi Mode (SM or MM) optical fibres contained in a stainless steel loose tube, protected with stainless steel armouring wires and polyamide (PA) or fluoropolymer (PFA) sheath. These components can be differently combined in order to adapt the cable to the required performance and application. The use of appropriate optical fibre coating allows to work in different temperature ranges, the stainless steel protection

provides high mechanical and additional chemical resistance while the sheath guarantees corrosion protection. Thus, the cables can be used in a wide range of applications that require distributed temperature sensing, such as temperature monitoring of concrete in massive structures, waste disposal sites, on-shore, off-shore and downhole sites in gas and oil industry, hot spots, cold spots and leakage detection of flow-lines and reservoirs, fire detection in tunnels, just to name a few.

The cables are fully compatible with DiTeSt® & DiTemp® systems. They are delivered on spools with maximal lengths of 5 km and with all the necessary accessories such as the gland nuts (IP65), pigtails and connectors (E-2000, FC/APC or other).

Technical characteristics

	Ordinary temperature cable -55° C / +85° C			Medium temperature cable -60° C / +150° C			High temperature cable -65° C / +300° C	
Components	Single or Multi Mode (SM, MM) optical fibres (Polyacrylate), stainless steel loose tube and stainless steel armouring with polyamide (PA) sheath Optional: FRNC sheath - Flame Retarded Non Corrosive			Single or Multi Mode (SM, MM) optical fibres (Polyacrylate), stainless steel loose tube and stainless steel armouring with fluoropolymer (PFA)* sheath * Future option: PUR & FRNC sheath			Single or Multi Mode (SM, MM) optical fibres (Polyimid), stainless steel loose tube and stainless steel armouring with fluoropolymer (PFA) sheath	
Temperature ranges for sensing cables	Standard PA & FRNC sheath -40°C to +70°C operation -5°C to +50°C installation -40°C to +70°C storage	Improved PA sheath -55°C to +85°C operation -5°C to +50°C installation -55°C to +85°C storage		-60°C to +150°C - Operation -5°C to +50°C - Installation -40°C to +70°C - Storage			-60°C to +300°C - Operation (w/o PFA sheath) -60°C to +260°C - Operation (with PFA sheath) -5°C to +50°C - Installation -40°C to +70°C - Storage	
Temperature ranges for pigtails	-40°C to 80°C							
Number of optical fibres	1	2	4	1	2	4	2	4
Cable Ø without sheath with sheath	1.6 mm 3.4 mm	2.2 mm 3.8 mm	2.2 mm 3.8 mm	1.6 mm 3.4 mm	2.2 mm 3.8 mm	2.2 mm 3.8 mm	2.2 mm 3.8 mm	2.2 mm 3.8 mm
Cable weight without sheath with sheath	11 kg/km 18 kg/km	17 kg/km 25 kg/km	17 kg/km 15 kg/km	11 kg/km 18 kg/km	17 kg/km 25 kg/km	17 kg/km 15 kg/km	17 kg/km 25 kg/km	17 kg/km 15 kg/km
Minimal bending radius	15 x D without tensile load / 20 x D with tensile load							
Maximal tensile strength at 20°C without sheath with sheath	600 N long time 800 N short term	1100 N long term 1500 N short term	900 N long term 1300 N short term	600 N long time 800 N short term	1100 N long term 1500 N short term	900 N long term 1300 N short term	1100 N long term 1500 N short term	900 N long term 1300 N short term
Max. crush resistance without sheath With sheath	1000 N/cm 2000 N/cm	700 N/cm 960 N/cm	600 N/cm 800 N/cm	1000 N/cm 2000 N/cm	700 N/cm 960 N/cm	600 N/cm 800 N/cm	700 N/cm 960 N/cm	600 N/cm 800 N/cm
Max. hydrostatic pressure	700 x 10⁵ Pa (700 bar)							