TENDEKA

Sentinel DTS

Distributed Temperature Sensing System

The Tendeka Sentinel DTS unit is the most technologically advanced distributed temperature sensing system today

DTS gives you the tool to continuously obtain measurements in real time along the entire length of your wellbore. The Sentinel range of DTS units lead the way in terms of performance in DTS technology, with temperature resolutions better than 0.01°C achieved in the field, the fastest measurement speeds available and the greatest coverage of up to 30km from a single channel. Based on analysis of Raman back-scatter signals in an optical fiber, DTS systems use a combination of variations in backscattered light intensity and time domain reflectometry to create temperature against distance profiles. The fiber acts as both sensing element and transmission medium. Many thousands of discrete measurement points can be achieved over distances up to 30km using a single fiber.

Surface Acquisition Unit

The self-contained Sentinel DTS surface system operates with an intuitive user interface allowing fast and simple calibration and configuration. The system has been designed with safety in mind and has been tested to the industry's most rigorous standards.

Features

- High performance - industry leading temperature resolution better than 0.01°C enables interpretation in the most difficult applications
- Fine spatial resolution - 1m spatial resolution allows accurate location of changing temperature events
- Fast measurement speed - Measurements as short as 10 seconds to enable real-time monitoring of transient events, particularly in safety critical applications

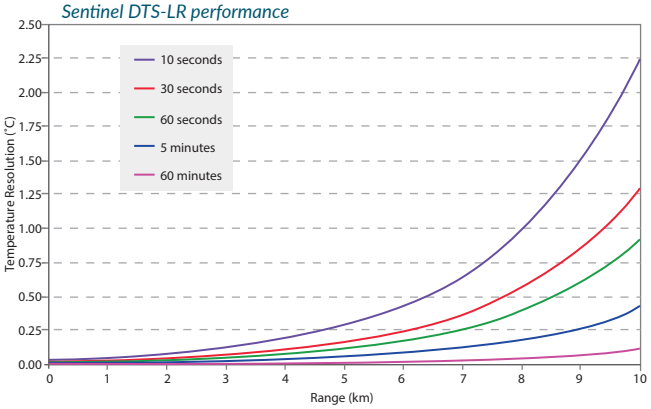
Benefits

- Intuitive configuration - intuitive user interface allowing fast and simple calibration and configuration. Double-ended calibration through use of a multiplexer
- Multiple channels - 2, 4, 8 and 16 channel multiplexer modules available to increase system flexibility
- Remote operation - system can be configured and operated remotely through its Ethernet interface

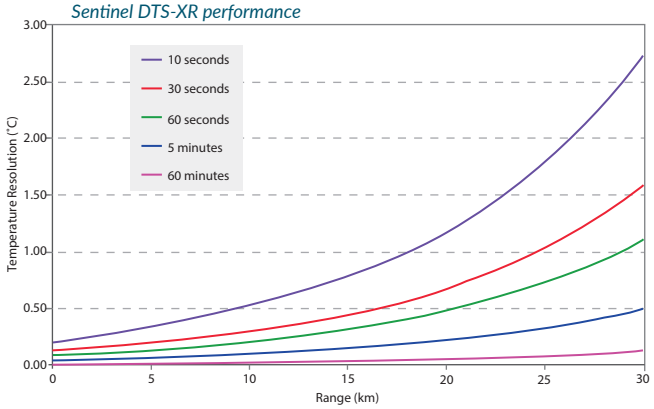
Tendeka offers the widest range of DTS to meet your every monitoring requirement, specific to any need, environment and challenge. You can rely on us to provide the full solution - from system engineering and design, to installation, data interpretation services and global support services. We will take the time to fully understand your business goals and the unique context and physical circumstances of your asset to provide the best solution to you.

Coupled with the SureSight permanent cable range, the Sentinel DTS gives you the tool to continuously obtain measurements in real time along the entire length of your wellbore. Laser light pulses generated within the Sentinel DTS control unit are launched into the optical fiber. As the light pulse encounters temperature features along the fiber, the pattern of back-scattered light is analysed to provide a real time temperature footprint.

Sentinel DTS-LR performance



Sentinel DTS-XR performance



Technical Specifications	Sentinel DTS - SR	Sentinel DTS - MR	SentinelDTS - LR	Sentinel DTS - XR
Unit Description	Short Range	Medium Range	Long Range	Extreme Range
Range	0 - 5km	0 - 8km	0 - 10km	0 - 30km
Temperature Resolution	<0.01°C	<0.01°C	<0.01°C	<0.05°C
Spatial Resolution	1m	1m	1m	1m (<20km) 2m (>20km)
Sampling Resolution	0.5m	0.5m	0.5m	1m (<20km) 2m (>20km)
Operating Temperature	+5°C to +40°C			
Storage Temperature	-15°C to +65°C			
Humidity	25% to 95% relative humidity, non-condensing			
Power Requirements	AC Power 100V - 240V, 50Hz - 60Hz; DC Power 24V or 48V supply option available			
Power Consumption	120W Maximum			
Dimensions	HxWxD* 180mm x 435mm x 480mm (7.1" x 17.1" x 18.9") *fits in standard 19"rack mounting			
Weight	21kg (46lb)			
Safety	Independently classified to EN 60825-1 (2001-03) as a Class 1M laser product. The DTS (1mW mean power output) is suitable to monitor Zone 0 Hazardous areas according to the European Commission report no. EUR 16011 EN (1994).			
EMC	EN61326:1997/A1:1998; Conducted Emissions: Class B; Radiated Emissions: Class A**; EN 61000-4-3:1996; EN 61000-4-6:1996; EN 61000-4-4:1995; EN 61000-4-2:1995/A1:1998/A2:2001; EN 61000-4- 11:1994; EN 61000-4-5:1995; EN 61000-3-2:1995; EN 61000-3-2:2000; EN 61000-3- 3:1995 ** Excluding monitor and keyboard			
CE Mark	Accordance with 89/336 EEC EMC Directive Accordance with LVD 72/23 EEC Directive: EN 41003; EN 50178;EN 60065; EN 60825-1; EN 60950; EN 61010-1			