



Product  
Bulletin

# Fiber Optic DTS

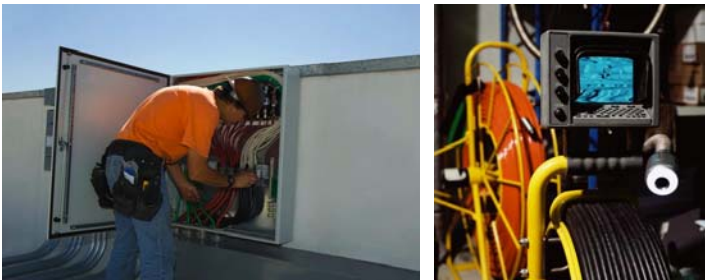
Best In Class  
OEM Solutions



QOREX is pleased to offer integrated distributed temperature sensor (DTS) systems built upon a platform of commercially available Raman DTS instruments, optical sensing cables, and components. DTS technology provides accurate temperature measurement to 0.1°C resolution every meter or so along a sensing fiber over several kilometers in length. The sensing section and system configuration can be easily adapted to suite the requirements of a particular application and operating environment.

QOREX brings one of the fiber optic sensor industry's most experienced teams with an impressive track record in development and commercialization of fully integrated, systems-level fiber optic sensor products deployed in harsh environments- from high temperature, hydrogen-rich thermal recovery and deepwater oil and gas wells, to challenging nuclear radiation and hot geothermal well environments.

The emergence of fiber optic sensors in a number of markets has spurred significant refinement in optical components supporting these sensors to the point today where a broad spectrum of fit for purpose optical cables, instruments, and communication devices are now commercially available. Integrating these into a fully operational, application appropriate sensing systems delivering high quality of data, reliably, requires expertise- this is where QOREX plays a key role.



As a systems integrator, QOREX has worked closely with the supply chain and has intimate knowledge of performance and inter-compatibility of these components. QOREX works directly with end user clients to turn these into application-specific, fully functioning sensing solutions. We manage the entire process from initial engineering design through installation, commissioning, interface to customer IT and data management systems. QOREX takes on the role of project manager to bring together key technology partners and subcontractors to deliver fully integrated solutions to the data and information “dashboard” level.

***QOREX is the preferred choice to bring customized, best in class reliability and performance solutions to clients- on time, on budget, meeting customer expectations.***

## Custom DTS Solutions

- Team Experience and Track Record
- Intimate Knowledge of the Supply Chain
- Key Subcontractor Partners to Offer Fully Integrated Solution
- Select The Best Instrument and Components For Optimum Reliability and Performance
- Domain Expertise in Oil & Gas and Harsh Environment Sensing

## System Specifications

	Short Reach DTS	Long Reach DTS
Measurement Range	2km	12km
Temperature Accuracy		0.8°C
Temperature Resolution		0.1°C
Nominal Update Rate		30-minutes
Temperature Measurement Range		-55 to 350°C
Minimum Spatial Resolution	1.0m	1.5m
Minimum Sampling Resolution	0.5m	1.0m
Instrument Operating Temperature		-10° to 60°C
Instrument Storage Temperature		-40° to 80°C
Maximum Steady State Power Draw		<40W
Measurement Mode		Single or Dual-Ended
Data Interface		RS-232, USB, Ethernet
Single Pass Loss Budget		15dB
Number of Channels		4
Optional Enclosure		NEMA 4

## Instrument and Operating Features

Reliable, simple operation with low maintenance and no field calibration after setup and configuration. At the heart of the instrument is a rugged optics module sealed in an inert gas package for long life and reliable performance. Internal fiber reference assures high measurement repeatability over a wide operating temperature range over the lifetime of the instrument. The stability of the module allows for outdoor installation using an optional NEMA 4 enclosure.

Operates on standard 50/125µm graded index optical fiber (ITU G652). Easy, intuitive graphic user interface. Flexible, programmable interrogation settings allow for adjustment of measurement time and spatial resolution. Single and dual-ended operating modes with fiber break detection and localization. OTDR loss trace function reporting in dB. Programmable alarming functions with optional relay board. Internal data storage easily expandable.

## Features

- Reliable, Easy Operation
- Low Maintenance, No Calibration
- Operates On Standard Fibers with Optional Pure Silica Core Fiber for Hydrogen Environments
- Capable of Outdoor Operation in NEMA 4 Enclosure
- Single or Dual Ended Operation
- Fiber Break Localization and Loss Trace Reported in dB
- Programmable Operating Modes and Alarming Functions

## Sensing Cables

QOREX works closely with a leading cable manufacturer to offer a set of standard sensing cables to cover a range of thermal ratings and deployment environments. Custom cables with special design features and fibers can be accommodated.

Cable	Application	Temp Rating	Features
LSZH Cable	General Use	85°C	Low Smoke/Zero Halogen Jacket
Steel Tube Cable	Infrastructure Monitoring	150°C	Fast Thermal Response
Armored Steel Tube Cable	Surface Cable	150°C	Crush and Tensile Performance
Downhole Cable	Downhole Oil and Gas	185°C	Resistance to Hydrogen Ingress

## Contact Information

**QOREX**  
11 Asylum Street  
Suite 515  
Hartford, CT USA 06103

+1 860 727-1031  
[www.qorexllc.com](http://www.qorexllc.com)

