

# Pipeline Leak Detection

## Distributed Temperature Sensor

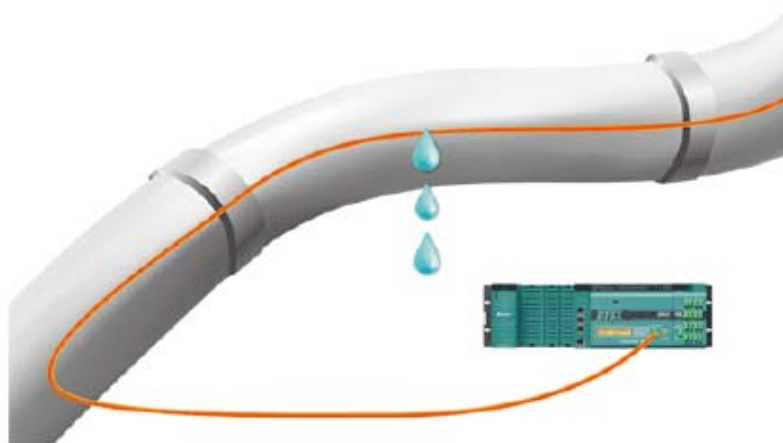
Industry: Oil & Gas, Chemical, Refining

Product: Distributed Temperature Sensor, SCADA system, PLC/RTU

## Leak Detection Guarantees Pipeline Safety as Your Business Grows

### Introduction

Risk management is crucial when expanding your business. For example, when adding or expanding long range pipelines for LNG or liquid ammonia, ethylene, sulfur, compressed gas, or other hazardous substances, it is essential to form a risk prevention plan not only for inside the facilities but also for the surrounding areas. Failing to assemble the requirements for guaranteeing safety makes it impossible to add or expand plants, and potentially rules the company out from major business opportunities. The DTSX distributed temperature optical fiber sensor is a pipeline leak detection solution whose core value lies not only in avoiding risk during operations, but also in guaranteeing safety when adding or expanding plants. In certain projects, adding the safety instrumented systems that are key to those same applications wins approval from independent government agencies to install pipelines for liquid ammonia near residential areas. Pipelines that connect factories to shipping yards approximately 5 km away help customers expand their export businesses. And pipeline leak detection applications play a major role in developing new business.



### What is the DTSX Distributed Temperature Optical Fiber Sensor?

The DTSX is a module that can be used as an optical fiber sensor to enable temperature monitoring over wide areas.

### Customer Benefits

- ✓ Monitors the Entire Area 24 Hours a Day, 365 Days a Year
- ✓ Identifies Even Minor Leaks in 1-meter Units, and Triggers Shutdowns
- ✓ Avoid Risk while Keeping Running Costs Down

## Solutions and Benefits

### Monitor the Entire Area 24 Hours a Day, 365 Days a Year

Optical fiber sensors along surface of the pipeline notify you of leaks by detecting temperature changes. One DTSX and its software application cover up to 50 km of pipeline. Since it monitors 24 hours a day, 365 days a year with no blind spots, it is an ideal component of a risk prevention system.

### Identifies Even Minor Leaks in 1-meter Units, and Triggers Shutdowns

Slight leaks in pipelines can grow to large disasters. However, detection through pressure drops, mass balance, modeling, and other techniques is difficult, and it is tricky to pinpoint a location. The DTSX leak detection application captures changes in the surface temperature of the pipeline in 1-meter units at least every 10 seconds. That means it can immediately detect leaks of any size, and even makes it easy to find the location of a leak. And as part of a total Yokogawa solution, you can install a safety system that links up with the leak detection function to shut down the pipeline.

### Avoid Risk while Keeping Running Costs Down

Pipeline sensor installations only require optical fiber, so no control of power system lines are needed. Also, optical fiber sensors require almost no maintenance. You can decrease risk while minimizing running costs.

## Even Broader YOKOGAWA Solutions

In addition to the DTSX, Yokogawa offers a variety of solutions such as ones incorporating thermal cameras and thermocouples and services such as safety instrumented systems. Combining these helps you avoid risk in a more robust and comprehensive way. We will continue to pursue solutions that focus on "HSE + maintenance."

## Related Products



## Related Solutions



### What the Eyes Don't See: Decreasing the Risk of Conveyor Belt Fires at Large Scale Plants

The world has seen its fair share of large-scale accidents in recent years. Despite many near-misses, unless major accidents happen some companies continue to claim that their facilities are sound. And no small number of these companies depend on others for monitoring.

Power

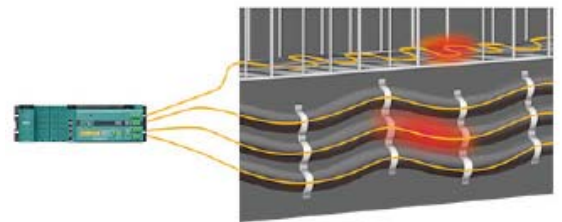
Please refer to the application note (Bulletin 39J00P21-01E) for more details.

### Finding Danger where It's Impossible to Look

With industrial and economic development comes increasingly large and advanced power plants and factories. Nevertheless, we find many cases where the original cables, cable tunnels, and other components of the power infrastructure have languished under continuous operation.

Power

Please refer to the application note (Bulletin 39J00P41-01E) for more details.



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