

Distributed Temperature Sensing (DTS) Linear Optical Fiber Fire Detector

HeatSCAN Series | Technical Specification & Product Datasheet

Product Description

The **Distributed Temperature Sensing (DTS) Linear Optical Fiber Fire Detector (HeatSCAN Series)** is an advanced, complex system integrating optics, electronics, precision mechanics, and proprietary software algorithms. Fully independently developed and manufactured with multiple patented technologies, it features a modular design, stable performance, low power consumption, self-developed high-quality optical amplifiers, low-noise high-bandwidth signal processing circuitry, and a high-speed data acquisition system. It offers industry-leading spatial resolution, exceptional performance metrics, and a user-friendly operator interface.

Temperature Sensing Host Unit



Technical Specifications & Configurations

Product Metrics	
Measurement Distance	Up to 10 km per channel
Spatial Resolution*	0.25m / 0.5m / 1.0m / 2.0m (Depending on product model)
Positioning Accuracy*	±0.125m / ±0.25m / ±0.5m (Depending on product model)
Measurement Time	< 1s (per channel)
Temp. Range	-190°C to ~700°C (Depends on sensing fiber type)
Temp. Accuracy	±0.5°C (1s measurement time)
Temp. Resolution	0.1°C

Software & Interface	
Standard Software*	Windows or Linux dedicated DTS package
Communication Ports*	Ethernet×2, USB×2, RS232×1, VGA×1
Protocols*	Modbus TCP, Modbus 485 (Customizable)
Alarm Zones	Up to 500 zones per channel
Diagnostics	Real-time system self-test

Hardware Configuration	
Sensing Fiber	50/125μm, 62.5/125μm multimode fiber
Optical Channels*	Typical 2~4 channels (FC/APC), customizable
Relay Modules*	Built-in 8-ch / optional external module, expandable to any channels (Depending on product model)
Operating Env.	-10°C ~ +50°C (Standard) 0 ~ 95% RH (Non-condensing)
Industrial PC*	Internal / External configuration options
Power Supply	DC 24V
Dimensions (L×W×H)*	482.6 × 343.8 × 92.0 mm
Weight*	6 kg

* Note: Parameters marked with an asterisk (*) vary depending on specific product models.

Application Fields

Power Cable Infrastructure: Temperature monitoring for cable trays, cable tunnels, cable trenches, and high-voltage power cables.

Oil & Gas Storage Tanks: Continuous thermal monitoring for crude oil, gas, and chemical storage tank bodies.

Pipeline Leak Detection: Leakage and thermal monitoring for crude oil, natural gas, and thermal power pipelines.

Transportation Tunnels: Real-time linear fire hazard monitoring for highway tunnels, subway tunnels, and urban underground passages.

Coal Handling & Energy Plants: Fire hazards and hotspot detection for coal conveyor belts, coal trestles, and coal storage yards.

Civil & Hydro Structures: Seepage monitoring for dams and levees, as well as concrete curing temperature management for bridges and dams.