

YOKOGAWA

Co-innovating tomorrow™

OpreX™ Field Instruments

Fiber Optic Heat Detector

DTSX 1

Measuring temperature and detecting heat with fiber optic cable

Bulletin 39J06A35-01E

DTSX1 protects your equipment and devices against abnormal heat

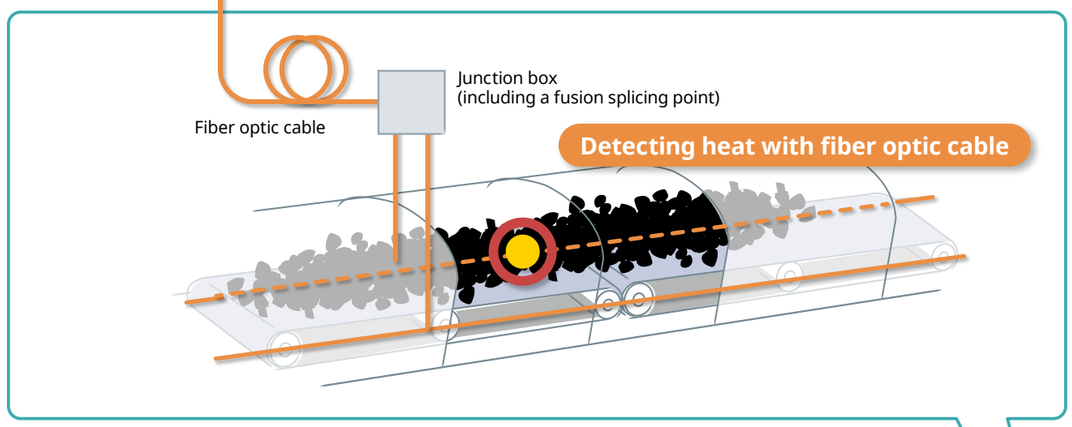
More affordable and More convenient heat detection

The DTSX1 measures temperature and detects heat with fiber optic cable. It detects high heat over a wide area quickly and precisely. Also, the ability to configure the alarm display and sound individually to suit your applications enables rapid detection, localization, and identification of abnormalities. This prevents heat-induced equipment failures and abnormalities, as well as large fire incidents that may result from them, in order to maintain operations in plants and other places, and protect your assets.



- **Rapid detection of fire over a wide area**
- **Human error reduction Human dependency prevention**
- **Time and effort reduction for building your system, etc.**
- **Running cost and warranty cost reduction**

Example of thermal power plant



Compact and easy to deploy

Pursuit of functionality and simplicity

The heat sensing function is utilized and the parts and equipment configuration are standardized as much as possible. The pursuit of simplicity has produced an easy-to-handle heat detector in a single box. Visibility is increased by placing the alarm display for each channel on the front display panel area.

Simple solution by laying a cable in an ingenious way

The laying of a single optical fiber cable in an ingenious way enables rapid detection of high heat without fail.
This enables wide range precise fire detection and hot spot monitoring to be implemented simply.

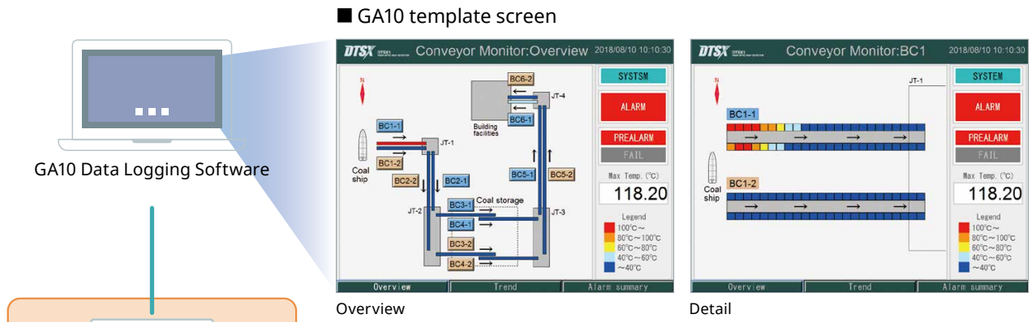
User-friendly

Minimizing initial trouble and time and effort, including engineering and complex operations needed for installation and configuration processes, helps reduce total system cost. Once the system is up and running, it reduces the cost of maintenance including daily maintenance of equipment and devices.

Interaction with integrated system products

By seamlessly interacting with Yokogawa's integrated system products, the DTSX1 provides safety and security as a core component of equipment abnormality detection in the fire risk management of plant operations. It is useful in promoting optimization of the equipment maintenance plan.

Time and effort reduction by heat detection system

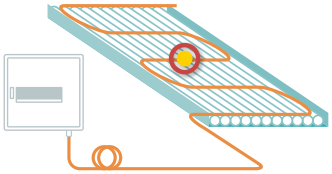


The DTSX1, which incorporates a heat detection function in a single box, can be used as a heat detector right away by simply connecting the fiber optic cable supplied as standard. The use of a DTSX1 and optical fiber cable package eliminates the time and effort needed to select the necessary accessories.
Since the DTSX1 can be used as a standard system in conjunction with the GA10, which is capable of displaying temperature in graphical format, it is possible to reduce the time and effort needed in processes, such as deployment, configuration, and operation.

Applications

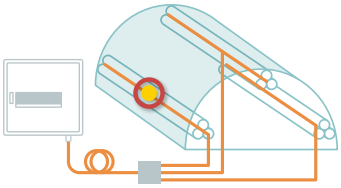
Abnormal temperature monitoring in cable racks

Rapid detection of abnormal heat generation, leading to a fire hazard, such as an abnormal temperature rise in a cable rack or power line.



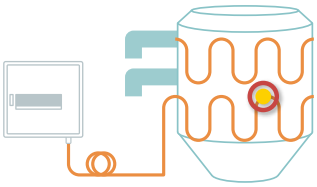
Heat detection in cable tunnels

Utility tunnels are accessible, but people do not normally pass through them. The detection of abnormal temperature and heat generation there can avoid fire risks associated with a temperature rise, etc.



Furnace health

Hot spot monitoring with a heat detector ensures detection of the deterioration and abnormal state of a furnace and enables identification of the location.



Specifications

DTSX1 Fiber Optic Heat Detector



Item	Specifications
Measurement distance range	2/4/6/8/10/16 km
Number of channels	1/2/4
Sampling resolution	Measuring temperature at 1-meter intervals
Minimum temperature measurement time	5 sec
Relay output	8 / 64 ports, max. 35 V / 1 A DC
Relay input	4 ports, 12 to 30 V / 5 mA DC
Power supply operating voltage	10 to 30 V DC
Power consumption	30 W (normally 15 W at an ambient temperature of 23°C)
External dimensions	500 (W) × 500 (H) × 250 (D) mm (Note)
Weight	28 kg

Note: External dimensions exclude protrusions (for details, see the external dimensions drawing)
• Fire detection standard (EN 54-22) certificated.

Fiber Optic Sensor Cable

Type	Model/parts	Specifications*1
Standard*2	S9552TK	2 km
	S9554TK	4 km
	S9556TK	6 km
	S9558TK	8 km
Robust*2	S9581TK	1 km
	S9582TK	2 km
	S9583TK	3 km
	S9584TK	4 km
	S9585TK	5 km
	S9586TK	6 km
	S9587TK	7 km
	S9588TK	8 km

Peripheral

Item	Model	Specifications
Junction Box	D1JB-01	External dimensions: 400 (W) × 500 (H) × 160 (D) mm Fiber optic cable through hole: 3 holes
	D1JB-03	External dimensions: 700 (W) × 500 (H) × 160 (D) mm Fiber optic cable through hole: 9 holes
Patch Cable	D1PT-01	50/125 GI optical fiber cable with E2000 connector on one side: 10 m
Cable Clamp	D1CL-01	A bracket that secures an optical fiber cable to a wall or ceiling when laying it.

*1 : Indicates the length of the fiber optical sensor cable at the time of shipment.
*2 : Compliant with the fire detection standard (EN 54-22 Class A1N, A2N, BN, and CN) certification. (VdS-approval No. G 220001)

Related Products

DTSX3000 Distributed Temperature Sensor



Measurement distance range: 10/16/30/50 km

DTSX200 Distributed Temperature Sensor



Measurement distance range: 1/3/6 km

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YOKOGAWA ELECTRIC CORPORATION
YPHQ Sales Center Control Sales Division
9-32, Nakacho 2-chome, Musashino-shi, Tokyo 180-8750, Japan
E-mail: OFS_Inquiry@cs.jp.yokogawa.com

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