Distributed Temperature Sensing Enhances Site Safety, Asset Monitoring and Facilities Maintenance Functions

Intrinsically safe leak detection, industrial process and asset monitoring systems

Ruggedized fiber optic sensor cable is deployed on the monitored area for continuous temperature monitoring along the entire cable length – no discrete sensors are required.

Areas of temperature change indicating leakage or other process abnormalities can be detected for corrective action.

Principal monitoring applications:
- Heat build up along industrial conveyor systems
- Cable tunnels, ducts, trays or rack systems where heat build-up could become a fire hazard
- Power cable operating temperatures for real-time thermal capacity rating and smart grid optimization
- Furnace chamber deterioration diagnosis via external wall surface temperature profiling

DTSX200 Fiber Optic Distributed Temperature Sensing System

Features:
- Easy process control system integration
- Wide operating environment range
- Compact and ultra-low power consumption
- Measure up to 6km (3.7mi) or a 12km (7.5mi) span
- Optional 2, 4, or 16 channel modular optical switch
- Ethernet and Serial Modbus Communications
- LAS 2.0 and WITSML 1.3.1.1 data formatting option
- STARDOM Field Controller (NFCP050) option
- Field enclosure with solar panels, batteries, and wireless communications available

= LAS is Log ASCII Standard
= WITSML is Well-site Information Transfer Standard Markup Language
Specifications

Features:

== Spatial Specifications
Measurement distance range: 1 to 6 km
Spatial resolution: 1 m

== Temperature Specifications
Measurement temperature range: -200 to 800°C
Temperature resolution (°C, typical):
Range: 1 km 3 km 6 km
Duration: 10 min. 0.07 0.15 0.5
(1 sigma)

== Optical Specifications
Optical connector and optical fiber: E2000/APC, 50/125GI optical fiber

== Communication Interface
Modbus: Serial and Modbus/TCP
LAN: 10 BASE-T or 100 BASE-T

== General Specifications
Operating temperature range: -40 to 65°C (-40 to 149°F)
Supply voltage: depends on power supply module used
Power consumption: 10 W (in operating mode)
Laser safety standards: IEC 60825-1 Class 1M, FDA 21CFR Part 1040.10
Explosion proof:

Optical Switch Modules (optional)
Number of channels
- 2 ch DTO2
- 4 ch DTO4
- 16 ch DTO16

Application Software

The DTSX200 Control Visualization Software (DTAP200) PC application can be used to control the DTSX200 and visualize DTS data.

Selection Guide

Choose the required modules to suit your application

<table>
<thead>
<tr>
<th>DTSX200</th>
<th>DTBM20D</th>
<th>DTO52</th>
<th>DTO54</th>
<th>DTO16</th>
<th>Power Supply</th>
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</thead>
<tbody>
<tr>
<td>Outdoor</td>
<td>40° to 60° C</td>
<td>✔</td>
<td></td>
<td></td>
<td>✔ NFPW426/05-30V-DC</td>
</tr>
<tr>
<td>Indoor</td>
<td>0° to 50° C</td>
<td>✔</td>
<td></td>
<td></td>
<td>✔ NFPW443/10-30V-DC</td>
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</tbody>
</table>

The optional DTAP200 software is recommended for easier configuration of the DTSX200.

Ordering Information

DTSX200 Distributed Temperature Sensor
DTSX200-NOE E2000/APC
Base module for DTSX200
DTSBM10-NOE Standard type
Optical Switch module
DTO52-NOE 2ch, E2000/APC
DTO54-NOE 4ch, E2000/APC
DTO16-NOE 16ch, E2000/APC
Power Supply
Selected from NFPW426, NFPW441, NFPW442, NFPW444

Notes:
Please contact us about ISA Standard G3 option.

When DTSX200 is used under the ATEX Type “n” environment, the Instruction Manual, IM 39J0648-10E “Explosion Protection of DTSX200 Products” is required for safer installation and wiring.

- DTS is a registered trademark of Yokogawa Electric Corporation.
- STARDOM is a trademark of Yokogawa Electric Corporation.
- Ethernet is a registered trademark of Xerox Corporation.
- Modbus is a registered trademark of AEG Schneider.
- E2000 is a trademark of Swiss Diamond.

The DTSX200 Control Visualization Software (DTAP200) PC application can be used to control the DTSX200 and visualize DTS data.

Using the DTAP200 application, you can configure and control the DTSX200, display measured temperature data and generate LAS format data, and remotely perform control, monitoring and analysis anywhere via Ethernet.

The Data Conversion Software option (DTAP200D) allows the DTSX200 to generate data files in WITSML format. When the DTSX200 is configured for WITSM conversion using DTAP200D, the DTSX200 will generate data files in WITSM format.

Ordering Information

DTSX200 Control Visualization Software
DTAP200-NOE Standard type, One license per PC
Data Conversion Software
DTAP200D-NOE WITSML 1.3.1.1, One license per DTSX

VigilantPlant is Yokogawa’s automation concept for safe, reliable, and profitable plant operations. VigilantPlant aims to enable an ongoing state of Operational Excellence where plant personnel are watchful and attentive, well-informed, and ready to take actions that optimize plant and business performance.

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