

# Control and Monitoring of Wide Area Temperature

*Fiber Optic Sensing Technology never miss the Spot*

Widen the solution for monitoring and control by integrating YOKOGAWA SCADA systems **FAST/TOOLS** and PLC/RTU systems **STARDOM**

## Data Secured

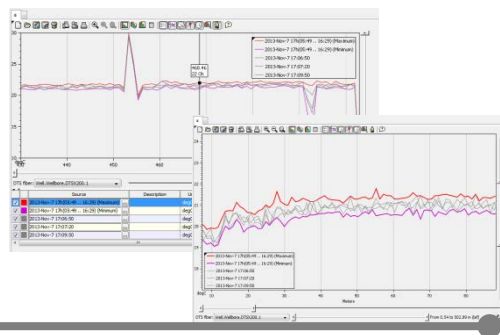
DTSX data is stored in the DTSX unit in case of network failure  
FAST/TOOLS automatically recovers data when network recovers

*No worry about losing data*



## Tailored Made Trend Components

Two type of information trend available



## Native Driver for DTSX

TCP/IP base communication



Controller CPU (NFCP050)

Temperature Information



Distributed Temperature Sensor

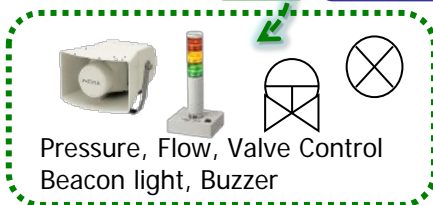
Control on the same body

DI, DO, AI, AO embedded on CPU (NFCP050)



## Minimum Footprint

CPU fits on DTSX backplane



Pressure, Flow, Valve Control  
Beacon light, Buzzer

## Wide Operating Temperature Range

-40 to 65°C for DTSX  
-40 to 70°C for STARDOM CPU

## Low Power Consumption

16W for DTSX3000 and 10W for DTSX200  
2.9W for NFCP050 (network and serial used)

### Challenges

- Unable to predict abnormal location
- Multipoint monitoring by single point sensors is complex and not economical

### Benefits

- Easily locate abnormal temperature
- Prevent unplanned outage
- Significant cost saving

~Application~



Heat Detection at belt conveyer



Leak Detection at pipeline and tank



Temperature monitoring at power cable

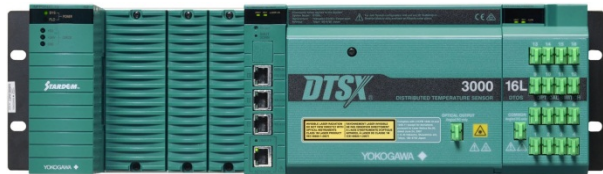


Temperature monitoring at furnace surface

Bulletin 39J06B40-02E

www.yokogawa.com

# ■ DTSX3000/DTSX200 Specification



Flexible Optical Fiber fits to any installation

- Maximum Length 50km
- Spatial Resolution 1m
- High Resolution from 0.03°C

		Spec.		
Model		DTSX3000	DTSX200	
General	Power	Power save mode	2.1 W	2.1 W
		Operating mode	16 W	10 W
	Operation Temp.		-40~65 °C	
	Power Supply		12V DC, 24V DC, 100~120V AC, 220~240V AC selective	
	Laser Safety		IEC 60825-1 Class 1M, FDA 21CFR Part 1040.10	
	Explosion Proof		N.A. (*4)	FM Nonincendive, ATEX Type "n"
Network	Interface	Ethernet	100/10 Mbps (100BASE-TX, 10BASE-T) : 1 port, RJ-45 modular Jacks	
		Serial	RS-232-C : 2 ports Maintenance : 1 port	
	Com. Protocol	Ethernet	Modbus TCP Server, SSH Server (SFTP client, SCP client connectable)	
		Serial	Modbus (ASCII / RTU) master	
Opt.	Optical Switch Module	2 ch, 4 ch, 16 ch		

		Spec.		
Model		DTSX3000	DTSX200	
Temp. Measurement	Distance	Distance Range(*1)	6km, 10km, 16km, 20km, 30km, 50km	1km, 2km, 3km, 4km, 6km
		Spatial resolution	1 m (10 to 90%) (*2)	
	Temp	Measurement Temp.	-220 to +800°C (*3)	-200 to +800°C (*3)
		Temp. Resolution (10min)	10 Km : 0.03 °C 16 Km : 0.06 °C 30 Km : 0.2 °C 50 Km : 2.6 °C	1 Km : 0.1 °C 3 Km : 0.2 °C 6 Km : 0.7 °C
Optical Fiber	Optical Fiber	50/125µm GI		
	Optical Connector	E2000/APC		

\*1: Indicated nominal values vary with the refractive index of the optical fiber.

\*2: Distance between the 10% and 90% points on the DTS response to step temperature change in the near end part of the optical fiber.

\*3: Depend on temperature range of the optical fiber sensor

\*4: Scheduled on 2015 for DTSX3000

## Related Documents

- DTSX Series Catalogue (BU 39J06B40-01)
- DTSXL Distributed Temperature Sensor Long Range System (GS 39J06B40-01E / GS 39J02B40-01E)
- DTSXM Distributed Temperature Sensor Middle Range System (GS 39J06B45-01E / GS 39J02B45-01E)
- Autonomous Controllers FCN, FCN-RTU, FCJ (BU 34P02A00-71E)
- Supervisory Systems FAST/TOOLS (BU 50A01A00-01EN)

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