General Specifications

GS 39J02B45-01EN

DTSXM
Distributed Temperature Sensor
Middle Range System
(Software)

■ GENERAL

This General Specification (GS) describes the system configuration and software configuration of the DTSXM Distributed Temperature Sensor Middle Range System.



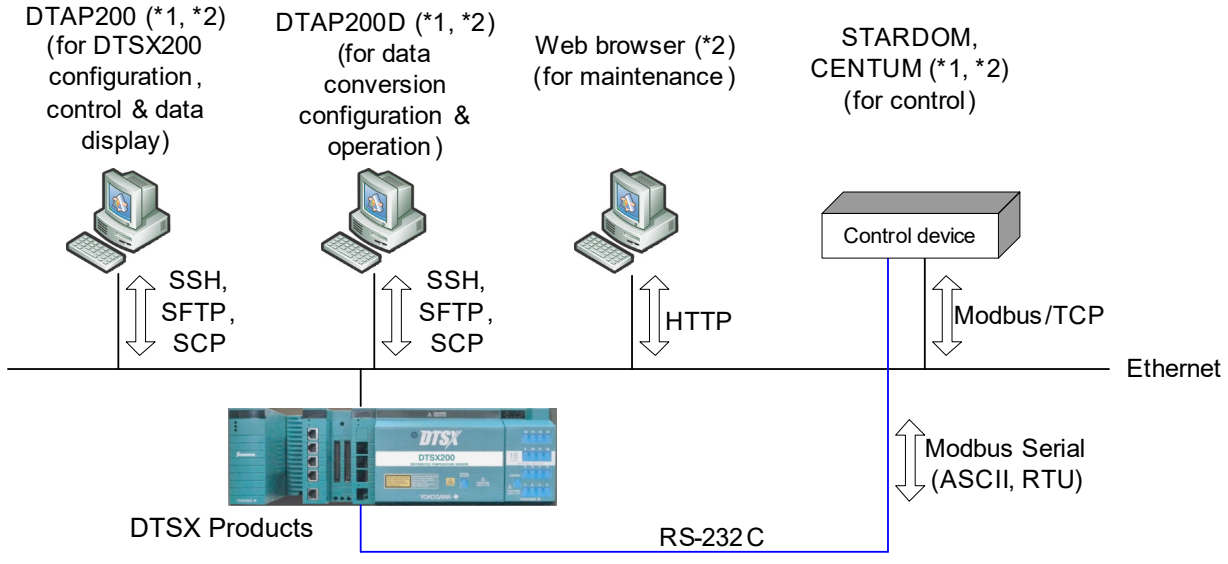
■ FEATURES

The DTSXM Distributed Temperature Sensor Middle Range System (DTSXM System) measures temperatures at various points along the length of an optical fiber by launching a pulse of light into a connected optical fiber and analyzing the signal components of the returned backscatter. By using the optical fiber as the intrinsic temperature sensing element, the DTSX200 of DTSXM System is capable of measuring temperature distribution over an area where the optical fiber is laid.
As the DTSX200 lacks a man-machine interface, a dedicated DTSX200 Control Visualization Software (DTAP200) tool is provided to allow a user to perform control, monitoring and analysis via a communication interface.
For more details on the DTSXM System, see “DTSXM Distributed Temperature Sensor Middle Range System” (GS 39J06B45-01EN).

■ CONFIGURATION

● System Configuration

Up to four control and monitoring stations can be connected to one DTSXM System unit.
The DTSX200 of the DTSXM System performs temperature distribution measurement according to instructions from control and monitoring stations and then calculates and accumulates temperature data internally at the end of each profile measurement.
A control and monitoring station polls the DTSX200 constantly and when measurement data is available, it retrieves and displays the data. The DTSX200 can also convert data into LAS format or WITSML format (when used with DTAP200D) for transmission to a host data server.



System Configuration Example

(*1) Requires separate purchase; (*2) Neither hardware nor software is included in this specification.

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■ SOFTWARE

Software tools for use with the DTSXM System include the DTAP200 DTSX200 Control Visualization Software and the DTAP200D DTSX200 Data Conversion Software.

● DTAP200 DTSX200 Control Visualization Software

The DTAP200 DTSX200 Control Visualization Software tool is used for configuring and controlling temperature measurement by DTSX200, as well as displaying measurement data graphs.

Item		Description
Boot modes	Control mode	The control mode is used for configuring and controlling measurement, as well as displaying measurement results while connected to the DTSX200.
	Monitoring mode	The monitoring mode is used for displaying measurement results while connected to the DTSX200.
	Trace mode	The trace mode is used for displaying trace data without connecting to the DTSX200.
	Calibration mode	The calibration mode is used for tuning temperature measurement parameters while connected to the DTSX200.
Measurement configuration functions (*1)	(Global) measurement settings	Settings for channel combination, measurement sequence, measurement mode (single-ended or double-ended), measurement interval and measurement start time
	(Channel) measurement settings	Repetition rate, measurement time (*2) or averaging times, distance range, sampling resolution and fiber failure detection threshold
	(Channel) fiber settings	Fiber length, wavenumber, group index, loss correction, temperature offset correction and winding coefficient (distance-depth conversion factor)
	Alarm settings	Up to 10 alarm detection zones can be defined with temperature high limit, low limit, rise limit, fall limit and difference limit values specified for each zone.
	Zone temperature data generation settings	Up to 100 data generation zones can be defined with the temperature output data type (average, maximum, minimum, difference or slope) selected for each zone
DTSX200 control functions	Connect/Disconnect (*3)	Authentication using username and password
	Start/Stop measurement (*4)	
	Self-test (*4)	Self-diagnosis by DTSX200
Status display functions	Connection status display and measurement status display	
Alarm display	Notification	An alarm is indicated by a lit alarm lamp button.
	Detailed information display	Alarm type and alarm location (only for the first occurrence)
Measurement result display functions	Graph settings	Data type (temperature, signal level), data unit, graph type (2D or 3D) and display range
	Graph display	Displays measurement data.
Help functions	Version information display and user manual display	
Calibration functions (*5)	Calibration of various sensor fiber parameters	Fiber connection calibration and fiber parameter calibration
Communications functions (*3)	Communications with DTSX200	Uses SSH, SFTP and SCP.

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Data management functions	Get measurement data (*3)	Saves data to specified folder.
	Measurement data time series log (*6)	Records time series data for a specified depth.
	CSV output (*7)	Exports specified measurement data in CSV format. (*8)
LAS data configuration function	LAS data conversion configuration and LAS data transmission configuration	Configuration of LAS (Log ASCII Standard) data conversion (LAS version 2.0 compatible) and data transmission to server by DTSX200

*1: DTSX200 settings can be modified in control mode or calibration mode
*2: The measurement time setting refers solely to the measurement duration for averaging.
It does not include time for hardware preparation, temperature calculation, alarm detection, zone data creation, file creation, data conversion, data transfer and other auxiliary time.
*3: These functions are available only in control mode, monitoring mode and calibration mode.
*4: These functions are available only in control mode and calibration mode.
*5: These functions are available only in calibration mode.
*6: These functions are available only in control mode and monitoring mode.
*7: These functions are available only in trace mode.
*8: Exported CSV files cannot be re-imported by the DTSX200 Control Visualization Software

● DTAP200D DTSX200 Data Conversion Software

The DTAP200D is used for configuring data conversion by DTSX200.
If WITSML (Wellsite Information Transfer Standard Markup Language) conversion is configured using this software, the DTSX200 will generate data files in WITSML format.

Item	Specification	Remarks
DTSX200 control functions	Connect/Disconnect	Authentication using user name and password
	Start/Stop conversion	
Status display functions	Connection status display and conversion status display	
Alarm display	DTSX200 failure notification	An alarm is indicated by a lit alarm button
Communications function	Communications with DTSX200	Uses SSH, SFTP and SCP
WITSML data configuration function	WITSML data conversion configuration and WITSML data transmission configuration	Configuration of WITSML data conversion (WITSML version 1.3.1.1 compatible) and data transmission to server by DTSX200

● Operating Environment[*1]

The DTAP200 DTSX200 Control Visualization Software, DTAP200D DTSX200 Data Conversion Software , the Maintenance page and other related development tools have the following common PC system requirements.

Item	Specification
OS	Windows 10 (English, Japanese)
CPU	Dual-core 32-bit processor 2 GHz or better
Main Memory	2 GB or more (4 GB or more is recommended)
Storage free space	2 GB or more
Optical drive[*2]	CD-ROM drive
Ethernet adaptor	100BASE-TX or 10BASE-T
PDF Reader[*3]	Adobe Acrobat Reader

*1 : Operation is not guaranteed for all PC environments that meet these requirements.
*2 : Optical drive is required for software installation.
*3 : The PDF reader is required to display the Instruction Manual (IM).

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■ SOFTWARE MEDIA

● **DTAP200 DTSX200 Control Visualization Software**

The user manual (IM) and programs for the DTSX200 Control Visualization Software are supplied on a CD-ROM.

- DTAP200 DTSX200 Control Visualization Software Guide (IM) (Electronic document)
- DTAP200 DTSX200 Control Visualization Software LAS 2.0 Data Conversion Guide (IM) (Electronic document)
- DTAP200 DTSX200 Control Visualization Software
- DTAP200 DTSX200 Control Visualization Software LAS 2.0 Data Conversion

● **DTAP200D DTSX200 Data Conversion Software**

The user manual (IM) and programs for the DTSX200 Data Conversion Software are supplied on a CD-ROM.

- DTAP200D DTSX200 Data Conversion Software WITSML1.3.1.1 Guide (IM) (Electronic document)
- DTAP200D DTSX200 Data Conversion Software

■ MODEL AND SUFFIX CODES

● **DTAP200 DTSX200 Control Visualization Software**

		Description
Model	DTAP200	DTSX200 Control Visualization Software
Suffix Codes	-N	Standard license (Runtime license for one PC)
	0	Basic type
	E	English

● **DTAP200D DTSX200 Data Conversion Software**

		Description
Model	DTAP200D	DTSX200 Data Conversion Software
Suffix Codes	-N	Standard license (Runtime license for one DTSX200)
	1	WITSML1.3.1.1
	E	English

■ ORDERING INFORMATION

Specify the model and suffix codes when placing an order.

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