

## Datasheet SDT 200 Standard and ATEX version

### Description:

Keep your machines healthy and reduce energy costs with SDT 200 and its sensors, in a simple way. Locate air leaks, monitor, and listen to your bearings, safely inspect your electrical panels, and schedule repairs at your convenience, long before they cause you to shut down - all with ultrasonic technology.







### Main features:

- Available in Standard or ATEX version
- Measures broadband ultrasound signals up to 100 kHz bandwidth
- Realizes data acquisition in static mode or in dynamic mode
- Uses long-duration time sampling and data streaming
- Integrates built-in pyrometer with a laser
- Includes a SQL database
- Insures full measurement traceability from Operator to sensor
- Warns the Operator when an alarm is triggered
- Is remotely controlled and operated

### Specifications:

General		
Function		Handheld multifunction detector
Operable with		Provided sensors
Software compatibility		DataDump only
Versions		FUR200, FUR200A (ATEX)
ATEX marking		CE 0029 Ex II(1) G Ex ia II C T3/T2 Ga
Input interface		1 channel via 7 pole LEMO connector
Built-in sensors		Ultrasonic airborne sensor Pyrometer sensor
Display		Graphic LCD with backlighting (128 x 64 pixels)
Support languages		Multilingual
Keyboard		12 functions keys
Measuring frequency range	kHz	Up to 100
Signal amplification	dB	from 0 to +90 by step of +10
Typical measuring range	dB	-13 to + 99.9
Resolution	digits	0.1
Refresh RMS period time	ms	250
Raw sampling frequency	ksps	256
ADC Resolution	bits	16
Response time	ms	10
Auto power down	min	Customizable
Communication		USB interface

System features		
Firmware		Regular updates
Data logger		- 100 Measurement Nodes (measurement points) - Total 4000 Measurements (measurements data)
Max acquisition time per recording	s	10 seconds at 8 ksps
Recording format		.wav
Environmental		
Standard temperature range	°C (°F)	-15 to +48 (5 to 118), non-condensing
Ambient temperature range on ATEX version		-Class T2 / -15 °C to +60 °C / 5 °F to 140 °F  -Class T3 / -15 °C to +48 °C / 5 °F to 118 °F
IP rating		IP 30
Approvals		EMC compliant (directive 2014/30/EU)  ROHS compliant (directive 2011/65/EU)  LVD compliant (directive 2014/35/EU)  ATEX compliant (directive 2014/34/EU ) ; for the concerned version
Mechanical		
Housing material		Extruded aluminum
Protective holster		Fluorosilicone, hydrocarbon-resistant
Dimensions	mm (in)	L x W x H : 226 x 90 x40 (8.9 x 3.5 x 1.6)
Weight	g (oz)	770 (27), battery and holster included
Audio connector		6.5 mm jack
Utility connector		USB Mini (import/export data and update the firmware)
(Cannot be used as a recharging port)		
Battery		
Battery pack		Internal, rechargeable type NiMh
<i>for optimum performance, this battery pack is equipped with an electronic management system (includes digital serial number, capacity, and temperature management)</i>		
Nominal capacity	mAh	4600
Voltage	V	4.8
Autonomy	hours	~ 8
Battery charger		specific for SDT2XX NiMH battery pack Power supply: 230 or 110 VAC +15% /-10% - 50/60Hz Output voltage: +4.0 or 8.5 V DC (depends on operating mode) Current: 1000 mA maximum Recharge time: 5 to 6 hours typical in fast mode / 12 to 14 hours typical in slow mode
(Please only used the provided charger)		
  Battery charge of the SDT2XX ATEX must exclusively be performed outside potentially explosive environments.		

		Protection: temperature protected; limit set at 60°C / 140 °F
<b>Audio</b>		
Operable with		provided headset only (Peltor) :25 dB NRR with Peltor quality headphones
Safety note		Compliant with directive 2003/10/EC, noise exposure, health and safety protection using SDT devices and provided headsets
Maximum audio output (protection)	dB SPL	+83 with SDT provided headset
<b>Ultrasound measurement</b>		
Operable with		SDT provided sensors/ built-in sensor (intUS1)  SDT ATEX sensors are only intended for use with ATEX instruments
Sensitivity		-65 dB/V/μbar at 40 kHz  Class I exceeding ASTM 1002-11 requirements for gas leak detection with the built-in sensor
Reference calibrated voltage		$V_0 = 1 \mu V = 0 \text{ dB}\mu V$
dB scale definition		$X \text{ dB}\mu V = 20 \log(V/V_0)$ where V is measured then converted in X dBμV
Typical measuring range		from -10 dBμV to 109 dBμV using gain function *depending on the sensing capacity of the sensor
Sampling rate	ksps	8 (heterodyned)
Available filters		Determined from the sensor recognition
Indicators		RMS, Max RMS, Peak and Crest Factor
Refresh rate	ms	250
Audible rendering		Indirect via heterodyne method
Mixer frequency	kHz	Tunable, default mixer from the sensor recognition to provide the best audible rendering
<b>Temperature module (on-board)</b>		
Type		High precision non-contact infrared thermometer
Available units		Celsius, Fahrenheit, Rankine, Kelvin
Adjustable emissivity		[0.01 to 1], 1 by default
Measuring range	°C (°F)	-40 to +380 (-94 to +716)
High accuracy in a wide temperature range (0°C to 50°C--32°F to 122°F)	°C	± 0.5 °C
Field of view (attenuation of 50%)		10° : cover a spot of 10 cm (1/3 ft) at a distance of 10 cm (1 ft)
Type of source		Red laser Class II   
Cautions		<ul style="list-style-type: none"> <li>• Never look directly to the laser beam</li> <li>• Never point the laser beam at a person's eye</li> <li>• Do not aim the laser at specular reflective surfaces</li> </ul>

		<ul style="list-style-type: none"> <li>• <i>Never view the laser using an optical instrument</i></li> </ul>
<b>Warranty</b>		
Lifetime warranty		Visit <a href="http://www.sdtultrasound.com">www.sdtultrasound.com</a> for details

*NB: Additional details are available from the download section of SDT website*

## Compatibilities:

SDT 200 receiver is designed to work in combination with the provided sensors and the associated cables of predefined length.

Sensors denomination	type	Non-exhaustive pillar applications
RS1T (available in ATEX version) /RS2T	contact	Mechanical, steam trap
RS1NL 100-300-500 (available in ATEX version)	contact	Mechanical, steam trap, valves, hydraulics
RS2NL 100-300-500		
LUBESense1	contact	Lubrication
FLEX (available in ATEX version) /FLEX ID2	airborne	Leak, electrical, tightness
PARADISH 2 (available in ATEX version)	airborne	Electrical

In addition, SDT 200 receiver is compatible with SDT Datadump running on windows OS. The communication is ensured with the provided USB cable.

Make sure you always run the latest version of the software & firmware to take advantage of new features. Please refer to the user manual for instructions on how to proceed.

## Safety recommendations:

- Do not expose the equipment to rough handling or heavy impacts
- Please read the user manual carefully before first use
- Opening the housing of the instrument may result in hazardous mishandling and voids warranty
- The equipment should not be used in areas where there is a risk for explosion
- Do not expose the equipment to high humidity or direct contact with water
- All repair work must be performed by SDT or authorized services
- Using any other headset or any sensor than the one supplied with the instrument can cause internal damage to the device

4	CMA 2021/07/20	New layout	BDG
3	CMA 2021-22-01	Correction du nobo, ajout temp range atex T2/T3	CGR
2	BDK 2015-07-13	Ethernet not available on ATEX version	GEL
1	JPD	Original version	GEL
<b>Ver.</b>	<b>Editor</b>	<b>Nature of modification</b>	<b>Verified</b>

*The information herein is believed to be accurate to the best of our knowledge.  
Due to continuous research and development, specifications are subject to change without prior notice.*