Ultrasound Solutions

Commercial document DC.R200.DAT.001

Datasheet SDT 200 Standard and ATEX version

Description:

The SDT 200 and its advanced sensors make it simple to keep your machines running smoothly. Effortlessly locate air leaks, monitor and assess bearing conditions, safely inspect electrical panels, and plan repairs proactively—well before any potential downtime. Harness the power of ultrasonic technology for efficient, reliable maintenance

Main features:

- Available in Standard and ATEX version (ATEX EOL 2024)
- Measures broadband ultrasound signals up to 100 kHz bandwidth
- Supports data acquisition in static mode
- Utilizes long-duration time sampling and continuous data streaming
- Integrates a built-in pyrometer with laser targeting for precision measurements
- Includes an SQL database for data management compatible with SDT DataDump software
- Ensures full traceability of measurements from the operator to the sensor

Specifications:

General		
Function		Handheld multifunction detector
Operable with		Provided sensors
Software compatibility		SDT DataDump
Versions		FUR200, FUR200A (ATEX EOL2024)
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
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 stage of +10
Typical measuring range	dB	-10 to + 110
Resolution	digits	0.1
Refresh RMS period time	ms	250
Raw sampling frequency	ksps	256
Heterodyned sampling rate	ksps	8
ADC Resolution	bits	16
Response time	ms	10
Auto power down	min	Customizable
Communication		USB interface

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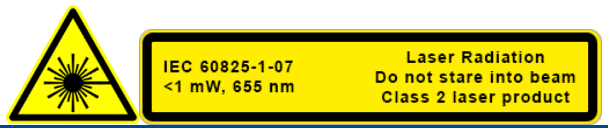
System features		
Firmware		Regular updates (EOL 2024)
Data logger		- 100 Measurement Nodes (measurement points) - Total 4000 Measurements (measurements data)
Max acquisition time per recording	s	10 seconds at 8 ksps
Environmental		
Standard temperature range	°C (°F)	-15 to +48 (5 to 118), non-condensing
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)
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 (Cannot be used as a recharging port)		USB Mini (import/export data and update the firmware)
Battery		
Battery pack *for optimum performance, this battery pack is equipped with an electronic management system (includes digital serial number, capacity, and temperature management)*		Internal, rechargeable type NiMh
Nominal capacity	mAh	4600
Voltage	V	4.8
Autonomy	hours	~ 8
Battery charger (Please only used the provided charger) Battery charge of the SDT2XX ATEX must exclusively be performed outside potentially explosive environments.		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 Protection: temperature protected; limit set at 60°C / 140 °F

Audio		
Operable with		provided headset only (Peltor) :25 dB NRR with Peltor quality heaphones
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
Ultrasound measurement		
Operable with		SDT provided sensors/ built-in sensor (intUS1)
Sensitivity		-65 dB/V/µbar at 40 kHz (built-in sensor) Class I exceeding ASTM 1002-11 requirements for gas leak detection with the built-in sensor
Reference calibrated voltage		V_0 = 1 µV = 0 dBµV
dB scale definition		X dBµV = 20log(V/V_0) where V is measured then converted in X dBµV
Available filters		Determined from 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
Temperature module (on-board)		
Type		High precision non-contact infrared pyrometer
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		• *Never look directly to the laser beam* • *Never point the laser beam at a person' eye* • *Do not aim the laser at specular reflective surfaces* • *Never view the laser using an optical instrument*
Warranty		
Lifetime warranty		Visit www.sdtultrasound.com 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) RS2NL 100-300-500	contact	Mechanical, steam trap, valves, hydraulics
LUBESense1	contact	Lubrication
FLEX (available in ATEX version) /FLEX ID2	airborne	Leak, electrical, tightness
PARADISH 2 (available in ATEX version)	airborne	Electrical

ATEX-certified sensors are exclusively compatible with the ATEX receiver. 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:

- Handle the equipment with care to avoid rough handling or heavy impacts.
- Before first use, ensure you thoroughly read and understand the user manual.
- Opening the device's housing may lead to incorrect handling and void the warranty.
- Do not operate the device in environments with a potential risk of explosion.
- Avoid exposing the equipment to high humidity or direct water contact.
- Repairs must only be carried out by SDT or authorized service providers.
- Use only the headset or sensors supplied with the device, as alternatives may cause internal damage.
- Always charge your device before a long period of storage.

5	CMA 2024/12/02	Revision EOL 2024 + Minor changes	NZO 2024/12/03
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
Ver.	**Editor**	**Nature of modification**	**Verified**

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.