PREVENTIVE MAINTENANCE

- Leak detection and classification
- Condition monitoring of machinery
- Steam trap inspection
- Valve inspection
- Tightness testing
- Detection of partial discharges

GENERAL SONAPHONE DATA

Device design	Digital ultrasonic testing device
Display	5" TFT-Display with multi-touch controller
Acoustic output of signals	Via loudspeakers or wired corded headphones
Dimensions (W x H x D)	90 x 174 x 25 mm
Weight	370 g
Temperature range	**Storage temperature:** -20 to +60 °C **Operating temperature:** -10 to +65 °C
Battery	Charging time (typical): 4 h Operating time (practical use): 8 to 12 h Operating time (continuous use): 4 h or 8 h with high capacity battery
Connectors and interfaces	1 x fast ultrasonic channel (Lemo), USB 2.0 (microB), headphones (jack plug 3.5 mm), slot for microSD card
Protection class	IP40
Memory	8 GB internal RAM 16 GB internal microSD memory card
Standards and directives	EMV RL 2014/30/EU, WEEE RL 2012/19/EU, RoHS RL 2011/65/EU, ASTM E1002-2005

LEVELMETER APP

Data display	Level • level record • spectrogram • switch between portrait/landscape format • measurement time • play position
Measurement values	Displayed in Db: L – Instantaneous level LF – Instantaneous level with time weighting Lpk – Peak level Leq – Equivalent continuous sound level Lmin – Minimum level of instantaneous level Lmax – Maximum level of instantaneous level
Other functions	Photo recording • Voice memo recording • Comment recording • Current application selection • PDF report generation • Data set selection and export for further processing with PC

INCLUDED ITEMS AND ACCESSORIES

Included Items (Basic Set)	SONAPHONE ultrasonic testing device • headphones • headphone cord • LevelMeter app • case • power supply unit • user manual
Optional sensor(s)	Airborne sound sensor BS10; Structure-borne sound and temperature sensor BS20 ; Parabolic sensor BS30 (scanning range up to 35 meters)
Optional app(s)	LeakExpert
Optional PC software	DataViewer (requires Windows 7 or higher); Visualization of the level curve, spectrogram and FFT spectrum

AIRBORNE SOUND SENSOR

Device design	Sensor for detection of air ultrasound signals incl. target laser and LED light
Operation	Via keys on sensor or via SONAPHONE touchscreen **Keys:** start/stop measurements • laser • LED light • volume
Dimensions (W x H x D)	30 x 155 x 30 mm
Weight	80 g
Temperature range	**Storage temperature:** -20 to +60 °C **Operating temperature:** -10 to +40 °C
Protection class	IP40
Broadband frequency range	20 to 100 kHz Simultaneous recording
Resolution	1 dB
Connector	Cable connection to SONAPHONE Coiled cable length: 160 cm
Accessories	**Interchangeable attachments to increase the signal strength:** Small acoustical horn for close range Large acoustical horn for long distances Attachment for precisely locating defects

STRUCTURE-BORNE SOUND AND TEMPERATURE SENSOR

Device design	Contact sensor for detection of structure-borne ultrasound, interchangeable waveguides, contactless infrared temperature sensor, LED-light
Operation	Via keys on sensor or via SONAPHONE touchscreen **Keys:** start/stop measurements • laser • LED light • volume
Dimensions (W x H x D)	30 x 155 x 30 mm
Weight	140 g
Temperature range	**Storage temperature:** -20 to +60 °C **Operating temperature:** -10 to +40 °C
Protection class	IP40
Broadband frequency range	20 to 100 kHz Simultaneous recording
Temperature measurement range	-70 to +380 °C object temperature
Resolution	**Ultrasound:** 1 dB **Temperature:** 1 K
Connector	Cable connection to SONAPHONE Coiled cable length: 160 cm
Accessories	**Short waveguide:** Length: 22 mm; Diameter: 18 mm; Weight: 33 g **Long waveguide:** Length: 150 mm; Diameter: 18 mm; Weight: 15 g

SALES & SUPPORT

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SONOTEC

ISO 9001 certified

65°C guaranteed operating temperature in accordance to DIN EN 60068-2-2:2007

resists storing conditions up to 90 % rel. humidity @ 40 °C according to DIN EN 60068-2-78

- LEAK DETECTION AND CLASSIFICATION
- CONDITION MONITORING OF MACHINERY
- STEAM TRAP INSPECTION
- VALVE INSPECTION
- TIGHTNESS TESTING
- DETECTION OF PARTIAL DISCHARGES

ULTRASONIC TESTING DEVICE

SONAPHONE

THE NEW DEVICE CLASS FOR PREVENTIVE MAINTENANCE

MADE IN GERMANY

SONOTEC
ULTRASONIC SOLUTIONS

Advantages at a glance

MONITOR THE CONDITION OF YOUR SYSTEMS
Implement maintenance 4.0 in your company

BROADBAND ULTRASOUND ANALYSIS
20 to 100 kHz

USER-FRIENDLY APPS
LevelMeter and LeakExpert

STORE TEST DATA AND SPECTROGRAMS
Add photographs, voice memos and comments

CREATE TEST REPORTS WITH A FEW CLICKS
Illustrate and store energy savings and system condition information

TOUCHSCREEN TECHNOLOGY
5" multi-touch screen

ROBUST HOUSING
Very well suited to harsh industrial environments

PC SOFTWARE DATAVIEWER
Integration of the data into existing systems

minimize	increase	improve	optimize
DOWNTIMES	OPERATIONAL SAFETY	ENERGY EFFICIENCY	PROCESSES

Ultrasonic testing device for maintenance 4.0

A company's successful implementation of maintenance 4.0 requires device technology that meets networking and mobility requirements. Information on the condition of machines and systems must be available promptly for process optimization, energy cost minimization and early problem detection.

For this reason **SONOTEC** developed the new **SONAPHONE**. The digital ultrasonic testing device combines novel sensors and software that can be operated intuitively for preventive maintenance. Broadband airborne and structure-borne sound sensors that detect ultrasonic frequencies from 20 to 100 kHz, pave the way for new domains of use. Using the **SONAPHONE** you can find and classify leaks in compressed air, gas and vacuum systems, analyze the condition of your machines and systems, detect partial discharges and check the function of steam traps and valves. The mobile handheld device is operated with a touchscreen like a tablet and is the ideal companion throughout the entire test procedure. Besides test values and spectrograms, it is also possible to store photographs, voice memos and comments relating to the measuring points. With only a few clicks, you receive a test report and can prove to management your contribution to energy efficiency and process optimization.

MAINTENANCE APPS

LEVELMETER
✓ Detect and record ultrasonic frequencies from 20 to 100 kHz
✓ Applications:
  Leak detection
  Electrical inspection
  Condition Monitoring
  Steam trap inspection
  Valve inspection
✓ Add photos, voice memos and comments
✓ Data as CSV, ZIP and PDF
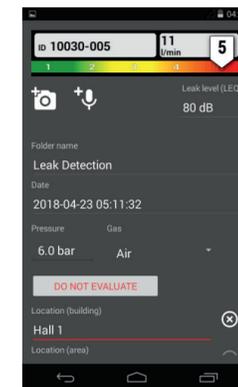
LEAKEXPERT
✓ Specific app for leak detection and classification
✓ Patent-pending method **for leak classification and evaluation** in l/min
✓ Process-accompanying documentation
✓ Add photos, voice memos and comments
✓ Add locations, define priorities and save details on repairs
✓ PDF report

Innovative ultrasonic sensors

FREQUENCY RANGE 20 - 100 kHz

AIRBORNE SOUND SENSOR BS10
▸ Interchangeable attachments
▸ Including target laser and LED lamp

APPLICATIONS
▸ Leak detection and classification
▸ Tightness testing of unpressurized systems
▸ Detection of partial discharges

STRUCTURE-BORNE SOUND AND TEMPERATURE SENSOR BS20
▸ Interchangeable waveguides
▸ Including temperature sensor and LED light

APPLICATIONS
▸ Monitoring rotating machine parts
▸ Monitoring lubrication states
▸ Steam trap and valve inspection

PARABOLIC SENSOR BS30
▸ Scanning range up to 35 meters
▸ Integrated target laser and red dot sight

APPLICATIONS
▸ Leak detection and tightness testing
▸ Detection of partial discharges

PLANNING
With the SONAPHONE you always have an overview of your systems' condition. Manage and organize your inspection tasks with apps that are easy to operate. Whether it is leak classification, condition monitoring of machinery or steam trap testing – the recorded parameters are adapted optimally to different preventive maintenance tasks.
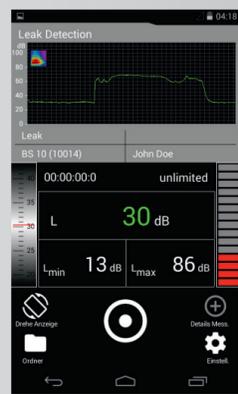
INSPECTION
Adapt views to the respective inspection task in no time! You can hear and see what is happening in the ultrasonic frequency range from 20 to 100 kHz. The spectrogram and level record in particular help you detect potential defects quickly.
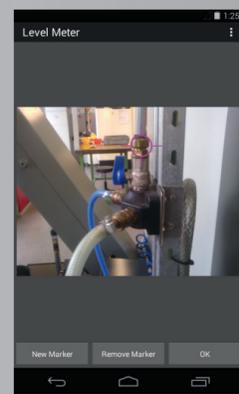
DOCUMENTATION
The apps offer all functions you need for comprehensive analysis of the inspection data. Besides measured values and the spectrogram, it is also possible to add images, voice memos and comments to the respective measuring point. A clear presentation of the data gathered makes subsequent analysis easier.
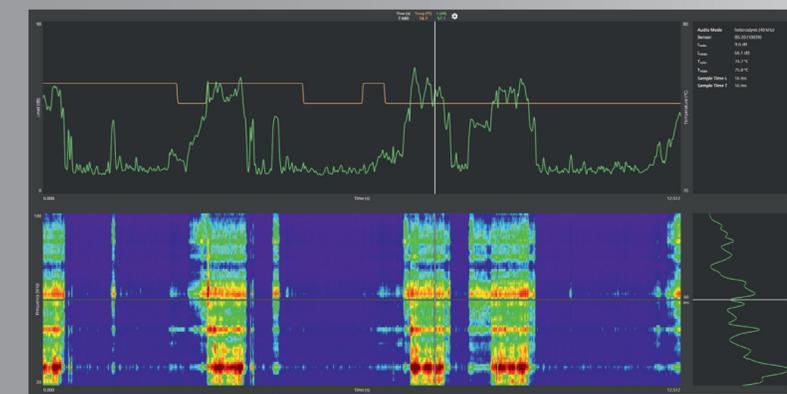
ANALYSIS
You generate the test report (PDF, ZIP or CSV) at the end of a test procedure with only a few clicks directly on the device. Thus, error-prone and complicated paper records are obsolete. Alternatively, you can evaluate the LevelMeter app data using the DataViewer PC software. Realize energy savings, increase operational safety and machine availability.