



- ▶ 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



PREVENTIVE MAINTENANCE

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



MONITOR CONDITION OF YOUR SYSTEMS

Implement maintenance 4.0 in your company

RECORD ULTRASONIC FREQUENCIES FROM 20 TO 100 KHZ

Find and classify leaks

USER-FRIENDLY SOFTWARE

Variable display of the measured data

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

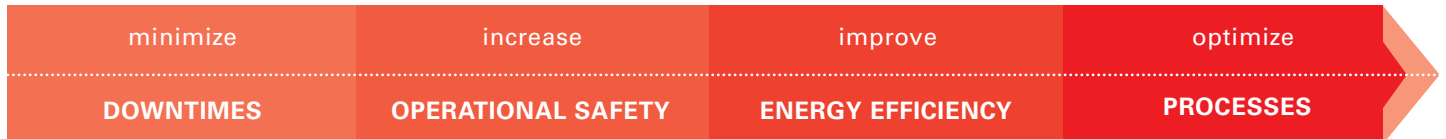
5" multi-touch screen

ROBUST HOUSING

Very well suited to harsh industrial environments

PC SOFTWARE

Integration of the data into existing systems



PLANNING

With the SONAPHONE you always have an overview of the condition of your systems. Manage and organize your inspection tasks with apps, which are easy to operate. Whether leak classification, condition monitoring of machinery or steam trap testing – the parameters to be recorded are adapted optimally to the different tasks of preventive maintenance.



INSPECTION

The user-friendly interface speeds up your inspection process. Adapt views in no time to the respective inspection task and you can hear and see what is happening in the ultrasonic frequency range from 20 to 100 kHz. Especially the spectrogram and level record help you to detect potential defects early on.

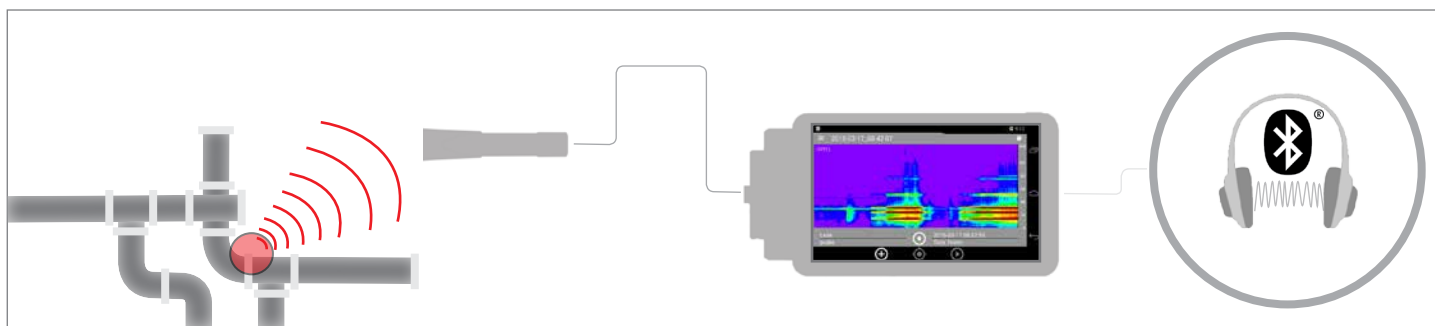
ULTRASONIC TESTING DEVICE FOR MAINTENANCE 4.0

Successful implementation of maintenance 4.0 in a company requires device technology that meets requirements on networking and mobility. Information on the condition of machines and systems must be available quickly, so processes can be optimized, energy costs can be minimized, and problems can be detected early on.

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. Innovative airborne and structure-borne sound sensors that can be connected to the multi-function testing device

with just one simple motion, 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 management your contribution to energy efficiency and process optimization.

NEW APPLICATIONS THROUGH NEW PROCESSES



With the **SONAPHONE** you can see and hear everything that happens in the ultrasonic frequency range from 20 to 100 kHz. Thus the innovative sensors pave the way for new domains of use. While other ultrasonic testing devices can only find leaks, **SONAPHONE** can also be used to classify the leak size at the same time. Based on methods of aeroacoustics

SONOTEC developed a completely new process for classification and evaluation of leaks for the latest generation of the **SONAPHONE** testing device. The result of the patent-pending methods are plausible values for the classification of the leak size and for estimation of the savings potential.



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.

AIRBORNE SOUND SENSOR

Interchangeable attachments including target laser and LED lamp

STRUCTURE-BORNE SOUND AND TEMPERATURE SENSOR

Interchangeable waveguides including LED lamps

LEAK DETECTION AND CLASSIFICATION

Detect and classify leaks in compressed air, gas and vacuum systems and reduce the energy costs for your compressed air system by up to 30 percent.

TIGHTNESS TESTING

Identify leaks in windows, doors, vehicles, components and containers and ensure compliance with specified quality requirements.

DETECTION OF PARTIAL DISCHARGES

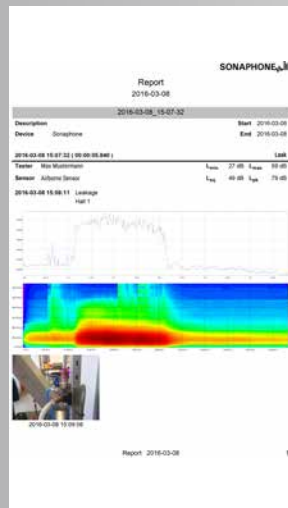
Increase your operation safety and find electrical partial electrical discharges and insulation damage.

CONDITION MONITORING OF MACHINERY

Monitor the condition of your machines and systems, determine the optimal maintenance time and prevent unscheduled downtimes.

STEAM TRAP TESTING

Assess the function of steam traps and prevent energy and steam loss and damage to the steam system.



ANALYSIS

You generate the test report at the end of a test procedure with only few clicks. Thus error-prone and laborious paper records are a thing of the past. Document the valuable contribution which maintenance generates to the company's success. Realise energy savings, increase operational safety and machine availability.

GENERAL DATA SONAPHONE

Device design	Digital ultrasonic testing device
Display	5" TFT-Display with multi-touch controller
Acoustic output of signals	Via loudspeakers or wired headphones (optional Bluetooth® headphones)
Dimensions (W x H x D)	90 x 174 x 25 mm
Weight	370 g
Temperature range	Storing temperature: -20 ... +60 °C Operating temperature: -10 ... +40 °C
Battery	Charging time 4 h typically Operating time in practical use 8-12 h Operating time in continuous operation 4 h
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 Flash system memory 16 GB Flash internal measurement data memory
Standards and directives	EMV RL 2014/30/EU, WEEE RL 2012/19/EU, RoHS RL 2011/65/EU, ASTM E1002-2005

APP: LEVEL METER

Data display	Level, level record, spectrogram, switching between portrait or 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	Take photos Record of voice memos Comments Selection of current application Generation of PDF reports Export of selected data sets for subsequent processing via PC
Languages	German, English

SCOPE OF DELIVERY & ACCESSORIES

Scope of delivery (Maintenance Basic Set)	Ultrasonic testing device SONAPHONE, airborne sound sensor, headphones, Level Meter app, case, power-supply unit
Optional sensor	Structure-borne sound & temperature sensor
Optional app	Leak Expert
Optional software	Data viewer (Windows 7 or higher)
Additional accessories	Protective cover, protective foil, carrying strap

AIRBORNE SOUND SENSOR

Device design	Sensor for detection of air ultrasound signals incl. target laser and LED light
Operating	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	Storing temperature: -20 ... +60 °C Operating temperature: -10 ... +40 °C
Protection class	IP40
Frequency range	20 to 100 kHz
Resolution	1 dB
Connector	Cable connection to SONAPHONE Length coiled cable: 160 cm
Accessories	Interchangeable attachments to increase the signal strength: Small acoustical horn for close range Large acoustical horn for long distances Attachment for precise localization of defective parts

STRUCTURE-BORNE SOUND & TEMPERATURE SENSOR

Device design	Contact sensor for detection of structure-borne ultrasound, interchangeable waveguides, contactless infrared temperature sensor, LED-light
Operating	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	Storing temperature: -20 ... +60 °C Operating temperature: -10 ... +40 °C
Protection class	IP40
Frequency range	20 to 100 kHz
Temperature range	-70 to +380 °C object temperature
Resolution	Ultrasound: 1 dB Temperature: 1 K
Connector	Cable connection to SONAPHONE Length coiled cable: 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

SONOTEC preserves the right to change technical specifications without further notice. (Rev. 1 / 2016-04-11)

SALES & SUPPORT

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