

LEAK DETECTION FITTING SEAL INTEGRITY BEARING DIAGNOSTICS



SONAPHONE RD
Ultrasonic detector

SONOTECH 

*User friendly
Quick response time
Reliable
Low cost*

SONAPHONE RD Ultrasonic detector



LEAK DETECTION FITTING SEAL INTEGRITY BEARING DIAGNOSTICS

APPLICATIONS

Detection of leakages in compressed-air or vacuum systems

- Saves energy costs

Applications in the field of motor and rail vehicles

- Location of leaks at compressed-air breaks or aggregates
- Sealing tests in cabins, doors, boot/trunk or cold storage chambers
- Check of fuel injection in diesel engines

In industry

- Verify steam pipes seals
- Seal integrity of fittings and condenser drains
- Search for faults in electrical insulation
- Detection of early wear in bearings with rotating parts



Air sound probe



Waterproof body sound probe

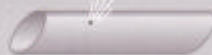


Body sound probe

PRINCIPLES OF OPERATION

- At leakages the stream of gas or liquids in pipelines gives rise to internal friction and thus to the emission of ultrasonic waves. These high frequency signals can be precisely located. In the SONAPHONE they are transformed into audible or electrical signals.
- In pressure less systems a small ultrasonic transmitter is inserted, the signals of which can pass leakages and are located with the SONAPHONE RD.
- Developing wear at bearings give rise to enhanced friction which is detectable with a body sound detector.

There is no problem to detect and locate leaks in compressed-air or steam systems with the SONAPHONE RD.



The recognition of pressure losses in any compressed-air or vacuum system is done with the ultrasonic probe; at difficult accessible locations a separate flexible probe is used.



The control of correct operation of gates, valves, ball taps, condenser drains and other fittings is fast and reliably done with body sound probes.



YOUR ADVANTAGE ...

The ease of operation

The SONAPHONE RD allows fast and reliable checks. The received ultrasonic signals are transformed into audible signals. After a few preliminary tests, the instrument can be reliably used. Changing the gain, the sensitivity is adjusted to satisfy the specific conditions. The SONAPHONE RD is equipped with a second amplification circuit such that the digital display is independent of the amplification controller. A built-in memory for maximum values assists in identifying the location of faults or leaks.

Ultrasonic transmitter SONAPHONE T

This device emits ultrasonic signals. With the transmitter it is possible to test the seals in cars, vessels, doors or windows or for example, under conditions with no pressure difference. The signals are frequency-modulated to achieve a differentiation from the noise of the environment. The intensity is variable.

Battery charger

Directional tube and tip

Headphones highly sensitive, sound-insulated headphone

Leather bag

The bag simplifies the measurements by leaving one of your hands free.

Waterproof body sound probe

This encapsulated sensor allows the detection of signals from liquids and is thought for tests below the liquid surface. In contact with the investigated object it serves as a body probe sensor

Body sound probe

for the registration of body sounds of pipes or fittings, high reproducibility

Air sound probe
probe is used for limited access locations, e.g. of leaks at compressed-air systems.



| | |
|---------------------------|--|
| Frequency of measurement: | 40kHz +/- 1 kHz |
| Display: | digital LC-display with illumination, loudspeaker and LED-bargraph |
| Maximum value storage: | switchable |
| Accumulator: | internal, for 10 h of use with charge control |
| Auto-power-off-function | |
| Dimensions: | 120 x 65 x 25 (transmitter) 190 x 110 x 85 |
| Weight: | complete case about 3.6 kg |



Socket
Used to connect air sound, waterproof or body sound probe

LC-display
Displays a signal independent of the position of the amplification controller. The values for sound intensity follow a dB-scale. An integrated light sensor initiates the illumination of the display in the dark

LED-display
The displayed intensity at the LED-bars agrees with the volume of the headphones and both are regulated via the amplification controller.

Plug in of recharger

Charge control of the battery

Amplification controller
Individual adjustment of the received signals in the headphones.

MAX
Pressing this button one stores the selected maximum intensity value.

on/off - button
with automatic power-off-function

Plug in of headphones

**FITTING SEAL
INTEGRITY**

**LEAK
DETECTION**

**BEARING
DIAGNOSTICS**



SONAPHONE E
Ultrasonic detector

SONOTEC 

*User friendly
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SONAPHONE E

The early warning system

Diagnose areas of potential concern to eliminate unscheduled downtime!

- The SONAPHONE E is an early warning system. Faults in any machinery can be detected by ultrasonic signals – very early before the damage occurs!
- Identifying the exact location of a fault with the SONAPHONE E enables a quick reaction time, preventing major damage, expensive repair, minimal disturbance of the production process.

Verify seals of fittings, valves, gates or condenser drains

- The fast and easy operation of the SONAPHONE E saves time, material, energy and reduces the loss of condensates.
- Leaking fitting seals can be detected at an early stage.

Early wear detection of ball bearings

- Easy detection of developing faults in bearings during operation by use of body sound detection.

Reduces operating costs for your facilities!

Leak detection of compressed-air systems or gas and vacuum facilities

- Compressed-air is a conservation-conscious form of energy but leakages within the system usually fast developing and increases long term energy costs.
- Actual operations have shown that: the periodic removal of leaks in a compressed-air system reduces the energy costs by more than 30%!

TECHNICAL DATA

| | |
|-----------------------|---|
| Sensor frequency: | 40 kHz |
| Plugs: | ultrasonic sensors, temperature sensor, headphones, infrared-interface (IrDA 1.0), battery charger |
| Current supply: | internal accumulators for about 8 h of operation |
| Additional functions: | memory for 1000 test data, menu guidance, integrated speaker, portable leather bag, transportation case |
| Accessories: | flexible ultrasonic sensor, body sound sensor, waterproof probe, telescopic-prolongation for sensors |
| Housing: | shock-proof plastic with wipe-resistant keyboard (foil) |
| Dimensions: | 190x110x85 mm |
| Weight: | ca. 600 gramme |

SONOTEC 
 certified with
 DIN EN ISO 9001 TÜV



First signs of wear in sliding or rolling bearings are easily detected using body sound detection technology.



Intrinsically safe,
 can be used in Hazardous areas
 (Ex-Zones: device category II 2 G)

Further highlights:

PC-interface

The SONAPHONE E contains a digital data memory and has an infrared PC interface. Special custom supplied software organizes the data transfer and analysis.

Easy operation

The intuitive menu and the simple functioning of the device enables accurate measurements and stress free operation with minimal effort.

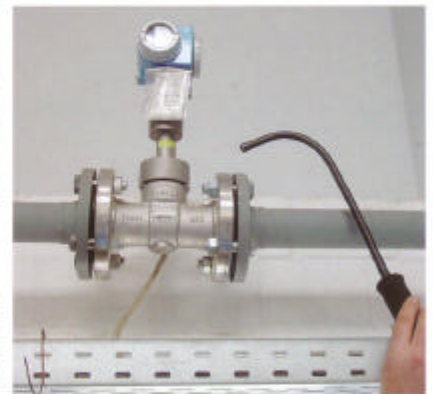
Temperature measurement

Range: 0° to 300° C
 (32°F – 572°F)



Picture above:
 Leak detection by an air sound detector

Picture below:
 a telescope bar offers a wide range for location of leaks (maximum length 3 m 9.8 feet); large mobility by using a flexible probe



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ACOUSTICAL LEAKAGE SEARCH AT CONCEALED PLACES

THE MULTITALENT

HEATING
SANITARY
AIR-CONDITIONING
VENTILATION



SONAPHONE UH

*fast
safe
inexpensive*

SONAPHONE UH

acoustical leakage search with acoustic and ultrasound

Using the SONAPHONE UH smallest leaks and leakages in pressurized systems can be detected in heating, sanitary, air-conditioning and ventilation plants.

The device is suited especially for leakage search in pipelines at concealed places.

When leakages f. e. in a floor heating or water pipelines behind tiled floors have to be found very fast, the respective system is to drain and to admit with compressed air or nitrogen.

Already by an overpressure of 2 - 3 bar the floors or the tiled floors can be scanned sectional using the ultrasonic microphone.

The medium escaping through the leak generates noises and so signalises the leakage.

The costs of leakage removal are obviously cut, because only the defect part has to be opened.

With SONAPHONE UH the leakage information can be evaluated in acoustic field as well as in high-frequently range of ultrasound.

Searching smaller leakages this is a good advantage, because ultrasound has a better directive efficiency than acoustic noises.

The sound absorbing head phones allow the operation also with ambient noises.

Connecting additional impact sound probes equipment and steam traps can be checked.

By means of ultrasonic air sensors it is possible to detect compressed-air leakages in a simple and fast way.

TECHNICAL DATA

| | |
|--|---|
| Connection to | Ground sound probe Ultrasonic microphone Impact sound probe |
| Optical display of ultrasonic intensity | LED-barograph, 10 steps |
| Digital display of ambient noises | LCD-display with 0 - 120 scale graduation (like dB) |
| Acoustical playback | Sound absorbing head phones, strong absorbing of ambient noises |
| Voltage supply with automatic power-off-function | 4 x batteries AA |
| Operation | about 10 hours |
| Dimensions | 195x100x40 mm |
| Weight | 550 g |
| Operating temperature | 0 °C to + 40°C |
| Storage temperature | -10 °C to + 50°C |
| MODE change-over | acoustic and ultrasound |



SONAPHONE UH with head phones and ground microphone in the small set. Ideal, because change-over in two acoustic and ultrasound