SONOTEC

Ultrasonic Testing Device

SONAPHONE *Pocket*

Operating manual

Distribution:	SONOTEC Ultraschallsensorik Halle GmbH
Model:	Ultrasonic testing device
Type:	SONAPHONE *Pocket* Multifunction device for leak detection, tightness control and other maintenance tasks

---

SONOTEC Ultraschallsensorik Halle GmbH
Nauendorfer Str. 2
06112 Halle (Saale), Germany

Phone: +49 (0)345 133 17-0
Fax: +49 (0)345 133 17-99

E-mail: sales_eu@sonotec.de
Web: www.sonotec.eu

Revision: 1, Date: 2016-08-02
Subject to technical modifications!

Contents

1 Notes on the operating manual

1.1 General

Thank you for choosing the SONAPHONE *Pocket*.

This manual forms part of the SONAPHONE *Pocket* and should therefore be stored in the immediate vicinity of any operator and should be accessible at any time. It contains all the information needed to ensure proper and efficient use, along with all the instructions to ensure safe operation of the SONAPHONE *Pocket*.

1.2 Symbols used

Hazards or special information are indicated as follows:

	**Warning!** This information warns of possible personal injury and damage to property.

	**Caution!** This information warns of possible damage to property.

	**Note** This symbol provides information or draws attention to special features.

2 Safety

2.1 Safety information

The SONAPHONE *Pocket* corresponds to state-of-the-art technology and complies with safety regulations. The manufacturer has taken every possible action to guarantee safe operation. The user must ensure that safe use is not impaired. The device is factory tested and was delivered in a safe operating condition.

Warning!

Incorrect operation and use of the SONAPHONE *Pocket* and its accessories may present a hazard for the user.

- The SONAPHONE *Pocket* may only be operated with power sources in the operating voltage range specified in the technical data.
- Operation and storage of the SONAPHONE *Pocket* outside the temperature ranges specified in the technical data is not permitted.
- The SONAPHONE *Pocket* may not be immersed in liquids.
- The SONAPHONE *Pocket* may only be exposed to limited risks due to mechanical factors. If there is visible damage, the SONAPHONE *Pocket* must be taken out of operation immediately.
- Check the headphone cable regularly for damage and avoid bending, crushing or tugging the cable.
- Opening the SONAPHONE *Pocket* and its accessories or performing repair work on them without authorization is not permitted. This may only be carried out by the manufacturer.

- You should always be able to see the device and the probes clearly while at work. Never work with the probes near exposed live parts or without visual contact in unfamiliar areas.
- When locating ultrasonic signals on electrical systems, a sufficient safety distance must be observed in order to avoid electrical flashovers.

2.2 User qualifications

Warning!

The SONAPHONE *Pocket* may only be installed and operated by users who have read and understood the entire operating manual.

3 Device description and probes

3.1 Designated use

The SONAPHONE *Pocket* is used to detect ultrasound.

Any use other than the designated use is prohibited and can result in personal injury or damage to property. The SONOTEC Ultraschallsensorik Halle GmbH accepts no liability for damage, including damage to third parties, caused by improper handling of the device.

3.2 Measuring method and functioning

Using the SONAPHONE *Pocket*, faulty components can be localized in different systems and their potential risk for the process can be assessed. It is based on ultrasonic signals which can be caused by friction on defective parts, for example.

Ultrasound can be created during a wide range of processes, including:

- at leaks in compressed air, steam and vacuum systems,
- during the operation of steam traps,
- at leaking valves, gates, barriers or taps in pipe systems,
- during the normal function of rolling bearings
- during cavitation caused by pumps and compressors, as well as
- in the event of flashovers or corona discharges in electrical systems

The ultrasonic signals created during the specified processes are detected with the SONAPHONE *Pocket*, converted into audible sound and output in their intensity through the headphones. At the same time, the ultrasound level is reported on the display.

3.3 Device construction

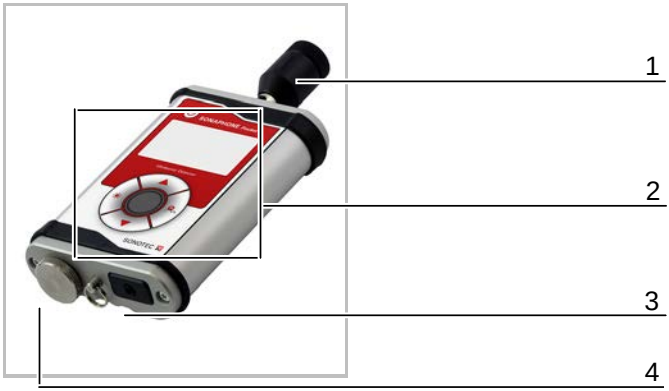


Figure 1: Ultrasonic testing device SONAPHONE *Pocket*

Item number	Function
1	Slot for ultrasonic probes
2	Display and operating buttons
3	Headphones port
4	Battery compartment

Table 1: SONAPHONE *Pocket* device elements

3.4 Display and operating buttons

Description of the display elements:

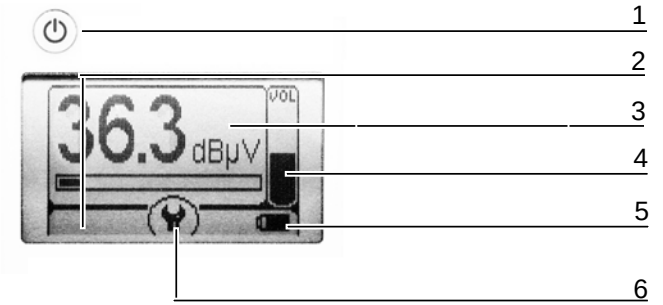


Figure 2: Display

Item number	Function/view on the display
1	Device: On/Off switch
2	Maximum sound level display: Maximum value detection On Max xx.x / Off (no display)
3	Sound level display xx.x dBµV
4	Volume display
5	Battery status view
6	Function of the enter key in the menu

Table 2: Description of the display elements

Description of the operating buttons:

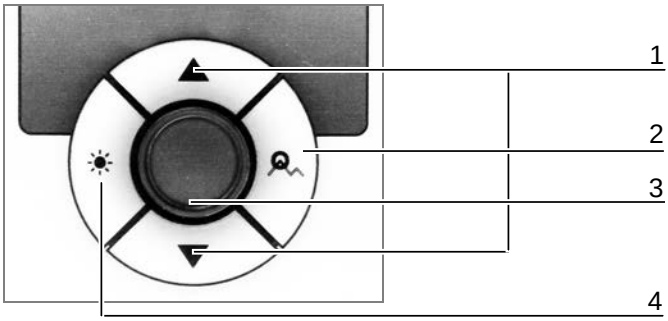


Figure 3: Operating buttons

Item number	Function
1	1. Changing the volume 2. Settings in the menu: Increase ▲ or decrease value ▼
2	Maximum value detection: On/Off In the menu: Cancel
3	Enter key: Switch to menu or confirm value
4	Display lighting On/Off

Table 3: Description of the operating buttons

3.5 Accessories

Batteries

Operating manual

Probes*

- Airborne sound probe L50
- Directional tube with tip (for airborne sound probe L50)
- Acoustic horn (attachment for airborne sound probe L50)
- Structure-borne sound probe L52
- Airborne ultrasonic probe L53 (flexible probe)
- Parabolic probe L55 – SONOSPOT
- Extension cable for ultrasonic probes

Other accessories*

Carrying case

Headphones

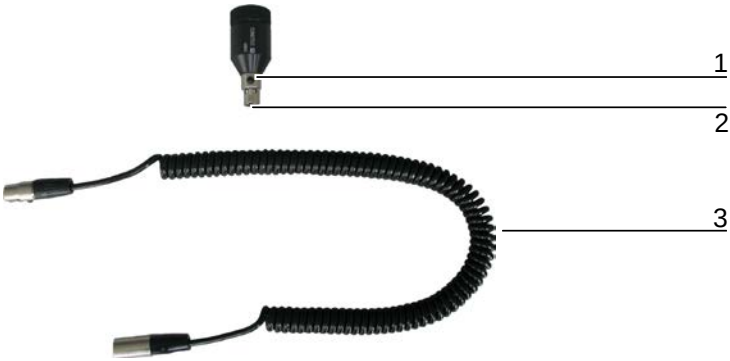
Carrying strap

For leak testing*

- Ultrasonic transmitter SONAPHONE T with airborne sound probe L50
- Spherical transmitter L56 – SONOSPHERE with magnetic and suction cup attachment, tripod, carrying case with carrying strap and user manual

**according to the order*

3.6 Airborne sound probe L50



Item number	Function
1	Button for unlocking
2	Connector
3	Extension cord (optional)

Table 4: Elements of the airborne sound probe

3.7 Acoustic horn (attachment for airborne sound probe L50)

3.8 Directional tube with tip (for probe L50)

⚠	**Caution!** Slip the rubber grommet carefully over the L50. Avoid exerting pressure on the probe; this may damage the probe grid!

3.9 Structure-borne sound probe L51 for valve testing

3.10 Structure-borne sound probe L52

3.11 Airborne ultrasonic probe L53 (flexible probe)

3.12 Parabolic probe L55 – SONOSPOT

3.13 Ultrasonic transmitter SONAPHONE T and spherical transmitter L56 – SONOSPHERE

4 Commissioning and installing

4.1 Inserting the batteries

	**Caution!** Make sure you install the batteries in the correct position. The device may be damaged by incorrect insertion.

The correct position for installing the batteries is shown on the device.

⇨ Unscrew the battery compartment cover.

⇨ Insert the batteries (2 AA 1.5 V) into the battery compartment according to the illustration on the bottom of the device.

↳ When the device is operational, the battery status (1.5 V) is shown on the display.

Appropriate accumulators can also be used to operate the device. The charge status for the accumulators (1.2 V) is then shown approximately.

4.2 Plug in headphones

	**Caution!** Malfunctions in device may occur: • Only connect headphones with a stereo plug. • When connecting the headphones, make sure both plugs (on the device and the headset) are fully inserted into the socket.

4.3 Installing probes

Caution!

Make sure the probe connector is in the correct position.
The device and the probe may be damaged during installation.

The slot for probes is provided with a notch which indicates the correct position for insertion.

⇨ Install the required probe in the specified position. You must feel the connector click into place.

↳ The probe is installed and ready to use.

4.4 Uninstalling probes

Caution!

Do not turn the probe to remove it!
The device and the probe may be damaged during installation.

⇨ Press the button to unlock the connector.

⇨ Pull the probe carefully in a straight line to remove it from its slot.

5 Operating the SONAPHONE *Pocket*

5.1 Switching the SONAPHONE *Pocket* on and off

⇨ Switch the device on or off by pressing the On/Off  button.

↳ The device is ready to use and displays the current sound level during operation.

5.2 Setting the volume

The volume can be varied in regular steps of 2 between -42 dB and 0 dB. The factory setting is -22 dB.

⇨ Press the arrow buttons to increase  or decrease the volume  .

↳ The current volume is shown on the display.

5.3 Switch on maximum value detection

⇨ Press the button for maximum value detection  to switch the function on and off.

↳ The value is displayed on the bottom left of the display.

Max xx.x Maximum value detection on

5.4 Switch on the display lighting

⇨ Press the Light button  to switch the display lighting on and off.

The lighting automatically switches off after approx. 20 seconds.

5.5 Adjust display contrast settings

To adapt the view to individual ambient conditions, the display contrast can be altered.

The factory setting is 50 %.

⇨ Press the Enter key  1x to select the contrast.

⇨ Select a contrast value using the arrow keys  .

⇨ Confirm the value with the Enter key  to return to the main menu.

6 Cleaning and care

Caution!

Incorrect cleaning of the SONAPHONE *Pocket* and its parts may damage the device.

It must not be cleaned

- with abrasive and aggressive cleaning agents
- by immersion in liquids.

7 Maintenance and troubleshooting

Caution!

In the event of errors or problems, it is not permitted to open the SONAPHONE *Pocket* or accessories or to undertake repair work on them without authorisation. This may only be carried out by the manufacturer.

The SONAPHONE *Pocket* is practically maintenance free.

If errors or problems do occur, please contact the manufacturer.

8 Technical data

SONAPHONE *Pocket*, Version 1.0 Ultrasonic testing device	
Operating frequency	About 40 kHz
Functionality	Detection and conversion of ultrasonic signals: Making ultrasound audible Report of sound level on the display Auto Power Off function
Display	Illuminated LC display
Connections	For different ultrasonic probes; Stereo jack plug
Power supply	2 AA batteries or accumulators
Operating voltage	2x 1.5 V battery or 2x min. 1.2 V accumulator
Running time	Approx. 24 hours with battery operation
Operating temperature	-10 °C ... +60 °C
Storage temperature	-20 °C ... +60 °C
Protection type	Device: IP54
	Probe: IP20

Directives	CE 2014/30/EU, electromagnetic compatibility; 2011/65/EU, on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)
Dimensions	Without probe: LWH 130 x 85 x 30 mm With L50 probe: Length ~170 mm Probe: Length ~ 52 mm, Ø ~ 22 mm
Items supplied	Ultrasonic testing device, probes as specified in the order, stereo headphones, carrying case, user manual

Table 5: Technical data for the SONAPHONE *Pocket*