



Digital Ultrasonic Testing Device

# SONAPHONE®

for Preventive Maintenance

MADE IN GERMANY

# SONAPHONE® Digital Maintenance Process



## Planning

Route planning and measurement point organization with the modular web app SONAPHONE DataSuite



## Inspection

Transfer the routes to the SONAPHONE and carry out the test with the corresponding app: LevelMeter | LeakExpert | SteamExpert



## Record Ultrasonic Signal

Recording of the broadband ultrasonic signal in the frequency range from 20 kHz to 100 kHz



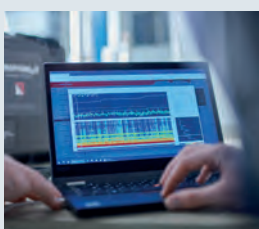
## Documentation

Add photos, videos, voice memos and text notes to the measurement point



## Trend & Analysis

Evaluation of the data with the help of thresholds, alarm levels, status displays and trend analysis in the SONAPHONE DataSuite



## Report

Create a PDF report directly on the handheld device or in SONAPHONE DataSuite



# Applications and Apps



## LevelMeter®

App for all structure-borne and airborne sound applications



## Condition Monitoring



→ Detect bearing damage early and optimize bearing lubrication

## Electrical Inspection



→ Detect partial discharges early and increase operational safety

## Leak Detection and Assessment



## LeakExpert®

- Special App for leak detection and assessment
- Patented method for leak classification and evaluation in l / min or CFM as well as in € or \$



Reduction of energy costs for compressed air by up to 30 %

## Steam Trap Testing

### Special Apps



## SteamExpert

- Special app for steam trap testing
- Optimized workflow for fast testing, including steam loss estimation in the web app



Reduce energy costs for generating steam by up to 20 % and increase process stability

# SONAPHONE®

## Digital Ultrasonic Testing Device for Maintenance



### Areas of Application:

#### Airborne and structure-borne

Leak detection | Electrical inspection | Condition monitoring | Steam trap test

### Intuitive apps

Special apps that guide you through the entire test process

### Bundle important information about the measurement point

Record the spectrogram and level and add photos, voice memos and text comments to the measurement point

### Broadband ultrasound analysis

Record 20kHz to 100kHz simultaneously

### Optional: modular software platform DataSuite

for Measurement point organization | Route planning | Trend analysis | documentation

### Test reports with just a few clicks

Professional PDF reports created directly on the device

### Touchscreen-Technologie

5-inch display with multi-touch screen

### Robust housing in a smart design

Well suited for harsh industrial environments

### Realizing Maintenance 4.0

Detect problems early and avoid downtimes

## Airborne Sensors

### BS10



- Range up to 8 m
- Interchangeable attachments
- Integrated laser pointer and LED light

### BS30



- Range up to 35 m
- Integrated laser pointer and red dot sight
- Very good directivity and sensitivity

### BS20



- Integrated infra-red thermometer for -70 °C to +380 °C object temperature
- Exchangeable waveguides

### BS40



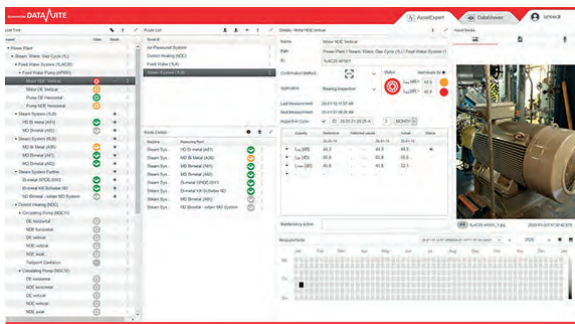
- Magnetic base for smooth and curved surfaces
- Optional: coupling via UNF 1/4" - 28 screw connection

# SONAPHONE DataSuite Software

## Routenplanung, Trending und Analysis



- Central data hub for the organization, presentation and analysis of ultrasonic tests
- Modern web app technology – available as a desktop, server or cloud application
- Organization of ultrasonic measurement data in measurement points and system trees
- Measurement point information in a modern dashboard view
- Easy creation and management of inspection routes for condition-based planning of maintenance activities
- Integrated DataViewer: display and analysis of ultrasonic test data using various dB levels, audio files, thresholds, status displays and trend analyses
- Integrated reporting tool for creating PDF test reports based on test routes and system status



## AssetExpert

### App for Route Planning with SONAPHONE®

- Special app for data acquisition, on-site evaluation and synchronization to the SONAPHONE DataSuite
- Data acquisition based on routes
- An overview of historical data for each test point
- Identification of measurement points via QR code or ID



# Technical Data

General Data	
Device Design	Digital ultrasonic testing device with touchscreen
Display	5"-TFT-Display, Resolution WVGA 800 Pixel × 480 Pixel
Touchscreen	PCT, 5-Point Multi-Touch-Controller
Acoustic Output of Signals	Via loudspeakers or wired headphones
Storage	8 GB Flash System Memory; 16 GB Flash Internal Measurement Storage 2 GB SDRAM
Connection and Interface	Ultrasonic sensors: Lemo; Charging power supply: USB 2.0 Micro-B Jack plug stereo headphones: 3.5mm; Memory for data export: slot for microSD card (up to 32 GB)
Others	5 MP camera on the back of the device; Integrated microphone; Integrated tilt sensor
Dimensions (B x H x T)	90 mm × 174 mm × 25 mm (90 mm × 174 mm × 30 mm with large battery)
Weight	370 g (420 g inkl. großem Akku)
Standard and Guidelines	EMV RL 2014/30/EU; WEEE RL 2012/19/EU; RoHS RL 2011/65/EU; ASTM E1002-2005

Power and Battery	
Battery	Type: Lithium polymer battery; 3,7 V; 4,05 Ah, 15 Wh (large battery: 3,7 V; 7,35 Ah, 27,2 Wh)
Power supply	Charging adapter with micro USB connection (5 V, 2 A)
Operating Time	In practical use: 8 h... 12 h, In continuous operation: 4 h (or 8 h with large battery)
Charging Time	~ 4 h

Environmental conditions	
Operating temperature	-10 °C ... +65 °C (according to DIN EN 60068-2-2:2007)
Storage temperature	-20 °C ... +65 °C
Protection Class	IP40

Accessories	
Sensors	Airborne sensors: BS10, BS30; Structure-borne sensors: BS20, BS40
Apps for testing device	LeakExpert for leak location and assessment; SteamExpert for steam trap testing AssetExpert for route planning and measurement point organization
PC Software	SONAPHONE DataSuite

## Inspection Software: LevelMeter App

Details	<ul style="list-style-type: none"> <li>• Level Record (in dB, reference p0 = 20 μPa, temporal resolution: 16 ms per level value)</li> <li>• Spectrogram (temporal resolution: 16 ms per frequency spectrum)</li> <li>• Level wheel and level bar (current level)</li> <li>• Level table, with configurable arrangement, number (max. 5) and type of level displayed</li> <li>• The following can be displayed:               <ul style="list-style-type: none"> <li>• Sound pressure level and temperature</li> <li>• (T, only active with structure-borne sound sensor BS20)</li> <li>• L – instantaneous level</li> <li>• LF – time-weighted instantaneous level (smoothed)</li> <li>• Lpk – Peak level</li> <li>• Leq – Equivalent continuous sound Level</li> <li>• Lmin – Minimum value of the instantaneous level</li> <li>• Lmax – Maximum value of the instantaneous level</li> </ul> </li> <li>• Switch between portrait and landscape format</li> <li>• Measurement time</li> </ul>
Functions	<ul style="list-style-type: none"> <li>• Take photos to attach to data sets or measurements</li> <li>• Inserting markers immediately after the photo</li> <li>• Record voice memos for attaching to data sets and measurements</li> <li>• Storage of text comments</li> <li>• Select the current application (leak, bearing, etc.) for the context for measurements</li> <li>• Creation of PDF reports of selected records</li> <li>• Export of selected data records for further analysis on the computer (e.g. in the DataViewer)</li> </ul>
Languages	Chinese, English, French, German, Italian, Japanese, Korean, Dutch, Polish, Portuguese, Russian, Spanish, Czech, Turkish, Hungarian

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