



EN - english

Instructions for installation and operation

Leak Detector **METPOINT® LKD**



Dear customer,

Thank you for deciding in favour of the METPOINT LKD leak detector. Please read these operating instructions carefully before starting up the METPOINT LKD and follow our directions. Perfect functioning of the METPOINT LKD and safe operation can only be guaranteed when the provisions and notes stipulated here are strictly adhered to.

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1 Safety instructions



Please check whether or not these instructions correspond to the device type.

Please adhere to all advice given in these operating instructions. They include essential information which must be observed during operation. Therefore, it must be ensured that these operating instructions are read by the fitter /user and the responsible operator / certified skilled personnel prior to the start-up.

The operating instructions must be accessible at all times at the place of application of the METPOINT LKD.

In addition to these operating instructions, local and national regulations need to be observed, where required.

If you have any queries regarding these operating instructions or the device, please contact BEKO TECHNOLOGIES.



Danger!

Compressed air!

Risk of serious injury or death through contact with quickly or suddenly escaping compressed air or through bursting plant components.

Measures:

- Make sure that persons or objects cannot be hit by escaping compressed air!



Danger!

Supply voltage!

There is the risk of an electric shock involving injury or death when coming into contact with non-insulated components carrying supply voltage.

Measures:

- During electric installations, all regulations in force need to be adhered to (e.g. VDE 0100)!
- **Do not open the housing of the METPOINT LKD and of the power pack!**
- All types of electrical work must be carried out by authorised and skilled personnel only.



Danger!

Reduced exterior noises!

When using the headphones, ambient noise levels are reduced. This can lead to accidents as, for example, approaching lorries may not be heard. There is an increased accident hazard involving injury or death.

Measures:

- Pay attention to your environment.
- Have a look around at regular intervals.
- Take off the headphones from time to time and pay attention to noises in your vicinity.

Further safety instructions:

- During operation, the national regulations and safety instructions in force also need to be observed.
- The leak detector must not be employed in hazardous areas.



Caution!

Malfunctions of the METPOINT LKD

Incorrect handling and improper transport can lead to malfunctions of the METPOINT LKD which may impair the function and lead to misinterpretations.

2 Field of application


- The METPOINT LKD is a leak detector for the detection of leakages and leaks in compressed-air and vacuum systems.
- With the METPOINT LKD, leaks and leakages can be detected. The measurement of the escaping amount of gas is not possible with the METPOINT LKD.
- In vacuum systems, only leakages can be detected. Leaks caused by diffusion cannot be detected with the METPOINT.

3 Special advantages

- Easy handling and operation.
- An external receiver facilitates the detection of leakages even at places which are difficult to access.
- Separate control of sensitivity and loudness level.
- Very luminous and very legible OLED display.
- Headphones with attenuation of the ambient noises (approximately 20dB).

Technical data

4 Technical data

	
METPOINT LKD	
Measuring range	40 kHz +/- 1 kHz
Frequency range	2.5 kHz
Visual display	OLED display: Signal leakage (analogue pointer deflection) Sensitivity: bargraph and percentage indication Loudness level: bargraph and percentage indication State of charge: multi-stage
Signal level indicator	Digital pointer deflection and percentage indication
Sensitivity	0 to 100% adjustable
Headphones output	3.5 mm jack bush
Loudness level headphones	Adjustable 10 steps
Voltage supply	3.7V Li-ion rechargeable battery with 1100 mAh
Charging time	2.5h
Battery life	> 40 h
State of charge indication	Multi-stage
Weight	Approximately 250g
Housing	Aluminium
Dimensions	120 x 70 x 23 mm
Operating temperatures	-20°C to +60°C
Keyboard	Membrane IP51 (resistant to oils etc.)
Interface	USB (updatable)

Power pack	
Input voltage	90 ... 264 VAC
Input frequency	47 ... 63 Hz
Power	5 watt
Output voltage	5 VDC
Operating temperature	0°C ... +40°C
Storage temperature	-40°C ... +85°C
Dimensions	71.7 x 45 x 29.8 mm
Weight	60g
Connecting plug	Mini USB type B

5 Accessories in the scope of delivery

The following table shows all products included in the scope of delivery of the METPOINT LKD. In the event of loss or damage, the individual parts can be reordered.

METPOINT LKD	Leak detector with display
External sensor	Sensor for detection, including cable
Headphones	Headphones with sound insulation against exterior noises (approx. 20 dB damping), incl. connecting cable with 3.5mm jack plug
Power pack	External power supply plug to charge the METPOINT LKD, incl. adapter for worldwide employment
USB cable	For connection to a PC. METPOINT LKD can be charged via the USB connection.
Car adapter	Adapter for the connection to the 12V car battery (via cigarette lighter)
Shipping case	Serves to protect the METPOINT LKD during the transport

Operating principle

6 Operating principle

When compressed air escapes into the ambient air via a leak, ultrasonic waves develop at the leak. This ultrasound cannot be perceived by the human ear.

The METPOINT LKD leak detector makes use of this fact. The developing ultrasound is picked up via the external sensor. The electronics in the METPOINT LKD evaluate the intensity of the ultrasound and indicates the result as a pointer deflection on the display. In addition, the ultrasound is internally converted into audible frequencies. You can hear the result in the headphones.

During localisation, it is advisable to always work with the combination of display and headphones.

7 Savings potential in compressed-air plants

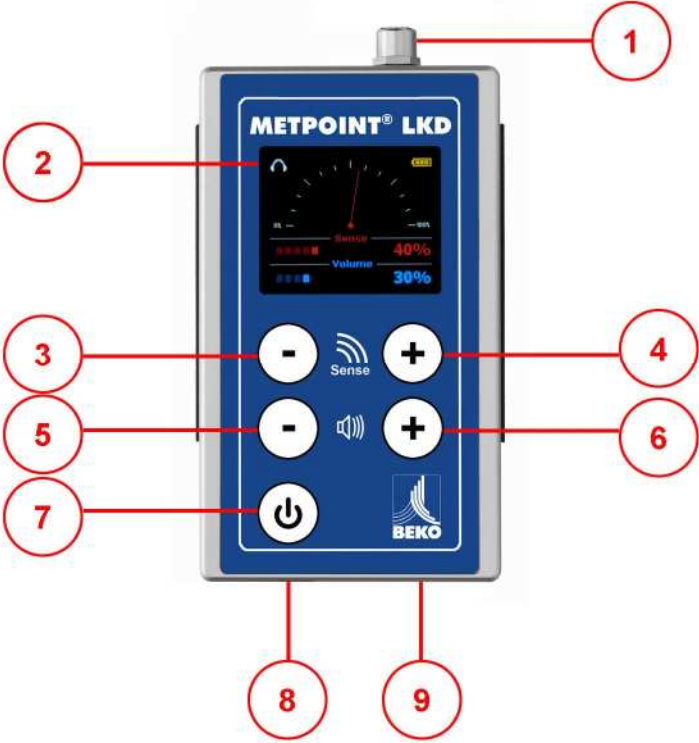
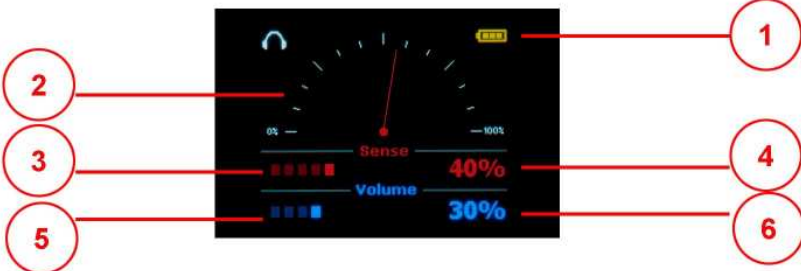
In many companies, compressed-air systems exist with leaks in ducts, couplings and hoses (leakages of 30% and more are not uncommon). This results in significant costs for the company. Moreover, additional unnecessary maintenance measures are required for the compressor and the compressed-air processing.

The following example clearly shows the financial consequences of smaller leaks (acoustically hardly perceivable by the human ear).

Leak in mm	Amount of air l/min	Amount of air m ³ /h	Costs EUR/year
1	75	4.5	788,40
2	260	15.6	2733,12
3	600	36	6307,20
4	1110	66	11563,20

Average operating costs for compressed air 0.02 EUR/m³, 7 bar, 365 days/year

8 Control elements and display METPOINT LKD

 <p>The diagram shows the front panel of the METPOINT LKD device. At the top, a small cylindrical port is labeled '1'. Below it is a large rectangular OLED display labeled '2'. Under the display are two rows of buttons. The first row has a minus sign button labeled '3', a 'Sense' button with a Wi-Fi icon, and a plus sign button labeled '4'. The second row has a minus sign button labeled '5', a speaker icon button, and a plus sign button labeled '6'. Below these is a power button labeled '7'. At the bottom of the panel are two ports labeled '8' and '9'. The device is blue and white with the 'BEKO' logo at the bottom right.</p>	<ol style="list-style-type: none"> 1. Connection external sensor 2. OLED display 3. Button sensitivity – 4. Button sensitivity + 5. Button loudness level – 6. Button loudness level + 7. On/off button 8. Headphone connection 3.5mm jack 9. Power pack connection Mini USB type B
 <p>The diagram is a close-up of the OLED display. At the top right, a battery status icon is labeled '1'. Below it is an analogue pointer on a scale from 0% to 100%, labeled '2'. Under the pointer is a bargraph with five segments, labeled '3'. To the right of the bargraph is the text 'Sense' and '40%', labeled '4'. Below that is another bargraph with five segments, labeled '5'. To the right of this bargraph is the text 'Volume' and '30%', labeled '6'.</p>	<ol style="list-style-type: none"> 1. Battery status indication 2. Analogue pointer (detection result) 3. Bargraph adjusted sensitivity 4. Percentage adjusted sensitivity 5. Bargraph adjusted loudness level 6. Percentage adjusted loudness level

Start-up of the leak detector

9 Start-up of the leak detector

9.1 Switching-on

To switch on the device, press the on/off button.

During the starting process, the software version is indicated in the upper left corner of the display.

9.2 Adjusting the sensitivity

By pressing the sensitivity + and sensitivity – buttons, the sensitivity can be adjusted, depending on the strength of the received signal (leak).

On the display, you can see the respective sensitivity setting as a bargraph and as a percentage indication.

The pointer deflection depends on the adjusted sensitivity and the intensity of the received ultrasound signal (of the leakage).

It is advisable to start with the highest sensitivity setting and to reduce sensitivity the more you approach the leakage.




9.3 Adjusting the loudness level

Via the loudness level – and loudness level + buttons, the loudness of the headphone output can be adjusted.

On the display, you can see the respective loudness setting as a bargraph and as a percentage indication.

9.4 State of charge/charging

In the upper right corner of the display, you can find the battery indicator. It shows the state of charge of the rechargeable battery.

	Battery status 100%
	Battery status 50%
	Battery status approx. 10%: please recharge soon.

To charge the battery, please connect the supplied power pack with the power pack connection of the METPOINT LKD.

The charging process is terminated as soon as three bars reappear on the display.



Note:

Please charge the device from time to time to ensure the perfect functioning of the device.

9.5 Switching-off

To switch off the device, press the on/off button.

10 Employment

Start up the METPOINT LKD. Subsequent to switching it on, the device is serviceable within a short period of time.

A basic sensitivity and loudness is preset when the device is switched on.

Now direct the external sensor to the zone you want to check.

It is advisable to start with the highest sensitivity setting and to reduce sensitivity the more you approach the leakage.

By directing the external sensor to an existing leakage, the deflection of the pointer is indicated on the OLED display.

In addition, the intensity and the adjusted loudness levels are visualised via a bargraph indication.

The headphones also offer the possibility to detect a leakage without the need to continuously keep the display in view.

The sensitivity of the sensor and the loudness level of the headphone signal can be controlled independently of each other via the corresponding "+" and "-" buttons.

By combining both functions, leakages can be detected quickly and easily.

11 Cleaning

The surfaces of the METPOINT LKD are resistant to dust, oils and similar contaminations.

You can use a damp cloth for cleaning, to remove gross contaminations.

Please do not use aggressive, alcoholic or caustic cleaning agents. These may affect and damage the surfaces.

12 Declaration of Conformity

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EG-Konformitätserklärung

Wir erklären hiermit, dass die nachfolgend bezeichneten Produkte den Anforderungen der einschlägigen Richtlinien und technischen Normen entsprechen. Diese Erklärung bezieht sich nur auf die Produkte in dem Zustand, in dem sie von uns in Verkehr gebracht wurden. Nicht vom Hersteller angebrachte Teile und/oder nachträglich vorgenommene Eingriffe bleiben unberücksichtigt.

Produktbezeichnung:	Leckage-Detektor
Modelle:	METPOINT LKD
Betriebsspannung:	5 VDC
Produktbeschreibung und Funktion:	Detektor zur Erkennung von Leckagen und Undichtigkeiten an Druckluft- und Vakuumsystemen.

EMV-Richtlinie 2004/108/EG
Angewandte Normen:

EN 61326-1:2006
EN 55011:2007 (Gruppe 1, Klasse B)

Neuss, 13.09.2011

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Leiter Qualitätsmanagement

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EC Declaration of Conformity

We hereby declare that the products indicated hereafter comply with the stipulations of the relevant directives and technical standards. This declaration only refers to products in the condition in which they have been placed into circulation. Parts which have not been installed by the manufacturer and/or modifications which have been implemented subsequently remain unconsidered.

Product designation:	Leak detector
Types:	METPOINT LKD
Operating voltage:	5 VDC
Product description and function:	Detector for the detection of leakages and leaks in compressed-air and vacuum systems.

EMC Directive 2004/108/EC	
Standards applied:	EN 61326-1:2006 EN 55011:2007 (Group 1, Class B)

Neuss, 13 September 2011

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Original instructions in German.

Translation of the original instructions.

Subject to technical changes / errors excepted.

METPOINT_LKD_manual_en_2010-10