PCE Instruments PCE-LDC 8 Ultrasonic Leak Detector User Manual

Contents

PCE

PCE Instruments PCE-LDC 8 Ultrasonic Leak Detector

Product Information

Specifications

- **Product Name**: PCE-LDC 8 Leak Detector
- **Manufacturer**: PCE Instruments

Product Usage Instructions

Safety Instructions

Please check if this instruction manual accords to the product type. Please observe all notes and instructions indicated in this manual. It contains essential information which has to be observed before and during installation, operation, and maintenance. Therefore, this instruction manual has to be read carefully by the technician as well as by the responsible user/qualified personnel. This instruction manual has to be available at the operation site of the leak detector at any time. In case of any obscurities or questions regarding this manual or the product, please contact the manufacturer.

WARNING

- Compressed air! Any contact with quickly escaping air or bursting parts of the compressed air system can lead to serious injuries or even death!
- Laser pointer! Do not point into the eyes with the laser, as it can lead to serious injuries particularly on the lens and retina or even blindness due to a reflection of the laser.
- Voltage used for supply! Any contact with energized parts of the product may lead to an electrical shock which can result in serious injuries or even death!
- Permitted operating parameters! Observe the permitted operating parameters, as any operation exceeding these parameters can lead to malfunctions and may cause damage to the instrument.

General Safety Instructions

ATTENTION! Measurement values can be affected by malfunction! The product must be used properly and frequently maintained; otherwise, it may lead to wrong measurement values, which can result in incorrect results.

Application
The PCE-LDC 8 Leak Detector is designed for a specific application, which is described in the manual. It is important to ensure that the device is used only for its intended purpose and not for any other application.

Features
The PCE-LDC 8 Leak Detector comes with the following features

- Feature 1
- Feature 2
- Feature 3

Technical Data
The technical specifications of the PCE-LDC 8 Leak Detector are as follows

- **Product Name**: PCE-LDC 8 Leak Detector
- **Manufacturer**: PCE Instruments
- **Specification 1**: Value 1
- **Specification 2**: Value 2
- **Specification 3**: Value 3

FAQ (Frequently Asked Questions)

- **Q: Can I use the PCE-LDC 8 Leak Detector for purposes other than the described application?**
  A: No, the device is intended exclusively for the described application. Using it for other purposes may result in malfunction or damage to the instrument.
- **Q: What should I do if I have any questions or uncertainties regarding the product or the manual?**
  A: If you have any questions or uncertainties regarding the product or the manual, please contact the manufacturer for assistance.
- **Q: How should I store and transport the PCE-LDC 8 Leak Detector?**
  A: Proper storage and transportation of the leak detector are important to maintain its performance and prevent damage. Please refer to the storage and transportation instructions provided in the manual.

Dear Customer,

- thank you for choosing our product.
- The operating instructions must be read in full and carefully observed before starting up the device. The manufacturer cannot be held liable for any damage which occurs as a result of non-observance or non-compliance with this manual.
- Should the device be tampered with in any manner other than a procedure which is described and specified in the manual, the warranty is cancelled and the manufacturer is exempt from liability.
- The device is destined exclusively for the described application.
- PCE Instruments offers no guarantee for the suitability for any other purpose. PCE Instruments is also not liable for consequential damage resulting from the delivery, capability or use of this device.

Errors and changes reserved.

Safety instructions

Please check if this instruction manual accords to the product type

Please observe all notes and instructions indicated in this manual. It contains essential information which have to be observed before and during installation, operation and maintenance. Therefore this instruction manual has to be read carefully by the technician as well as by the responsible user / qualified personnel.
This instruction manual has to be available at the operation site of the leak detector at any time. In case of any obscurities or questions, regarding this manual or the product, please contact the manufacturer.

WARNING!
Compressed air!
Any contact with quickly escaping air or bursting parts of the compressed air system can lead to serious injuries or even death!

- Avoid that persons get hit escaping air or bursting parts of the system.

WARNING!
Laser pointer!
Do not point into the eyes with the laser, it can lead to serious injuries particularly on lens and retina or even blindness!

- Never look directly in the laser
- Never point the laser at persons.
- Never point the laser at smooth and reflective surfaces it can lead to a reflection of the laser.

WARNING!
Voltage used for supply!
Any contact with energized parts of the product, may lead to an electrical shock which can lead to serious injuries or even death!

WARNING!
Permitted operating parameters!
Observe the permitted operating parameters, any operation exceeding this parameters can lead to malfunctions and may lead to damage on the instrument.

- Do not exceed the permitted operating parameters.
- Make sure the product is operated in its permitted limitations.
- Do not exceed or undercut the permitted storage and operation temperature and pressure.
- The product should be maintained and calibrated frequently, at least annually.

General safety instructions

- It is not allowed to use the product in explosive areas.
- observe the national regulations before/during operation.

Remarks

- It is not allowed to disassemble the product.

ATTENTION!
Measurement values can be affected by malfunction!
The product must be used properly and frequently maintained, otherwise it may lead to wrong measurement values, which can lead to wrong results.

- Avoid condensation on the leak detector element as this will affect the accuracy enormously.

Storage and transportation

- Make sure that the transportation temperature of the leak detector is between 20°C… 50°C.
- For transportation it is recommended to use the packaging which comes with the leak detector.
- Please make sure that the storage temperature of the sensor is between 10°C… 50°C.
- Avoid direct UV and solar radiation during storage.
- For the storage the humidity has to be <90%, no condensation.

Application

- The PCE LDC 8 is a leak detector for pneumatic systems. When gases are leaking through tubes and tanks an ultrasonic sound is produced which can be detected by PCE LDC 8 even from several meter distance.
- The PCE LDC 8 transforms these inaudible signals into a frequency which can be easily heard by using the supplied noise isolated headset. In unpressurised systems an ultrasonic tone generator can be used whose sound will leak through small openings.
- The integrated laser pointer helps to spot the leak from distance.
- The PCE LDC 8 leak detector is not developed to be used in explosive areas. For the use in explosive areas please contact the manufacturer.
- The PCE LDC 8 leak detector is mainly used in compressed air systems in industrial environment.

Features

- Leak detection in compressed air, refrigerants, simple of any gas.
- Insulation test of doors and windows.
- Detection of partial electrical discharges causing damages on insulations.
- Can be used in noisy environments.
- Included laser pointer helps to locate the leak.
- Included display, showing the level of the leak.

Technical Data

General

Principle of measurement	Ultrasonic leak detection
Measuring medium	Air, refrigerants and any gases
Plugs	• **Plug 1:** 4 pole connector shared by headphone and battery charge r • **Plug 2:** 3.5 mm stereo phone jack for sensor or sensor cable conn ection.
Operating frequency	40 kHz ± 2 kHz
Operating temperature	0°C… 40°C
Operating time	About 6 hours without Laser pointer on About 4 hours with Laser point er on
Charging temperature	10°C… 45°C
Charging time	Around 1.5 hours
Material of the detector	PC + ABS
Dimensions	See dimensional drawing on the next page
Display	3 colour black-mask LCD, 10 level
Laser pointer	• 640… 660 nm wavelength • 0.4.0.5 mW output power
Weight	2.5 kg (full set)

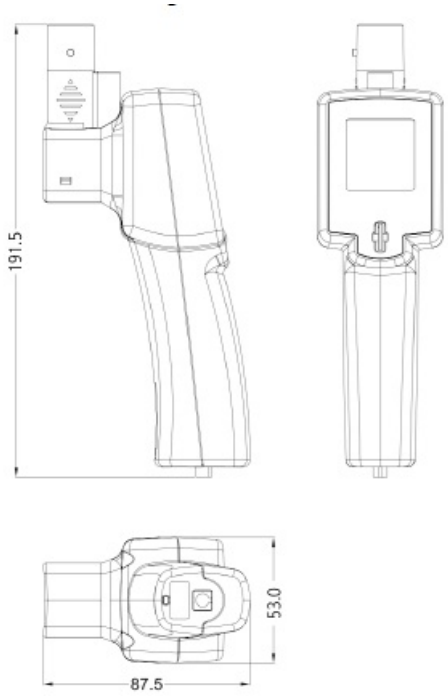
Electrical Data

Power supply	Internal NiMH rechargeable battery

Performance chart
The table shows the detection distance of at various hole diameters and different pressures (lab environment).

Pressure / diameter	**0.1 mm**	**0.2 mm**	**0.5 mm**
0.5 bar	2m	2m	10m
5.0 bar	8m	14m	18m

Dimensional drawing



Operation

Please make sure that all components listed below are included in your package.

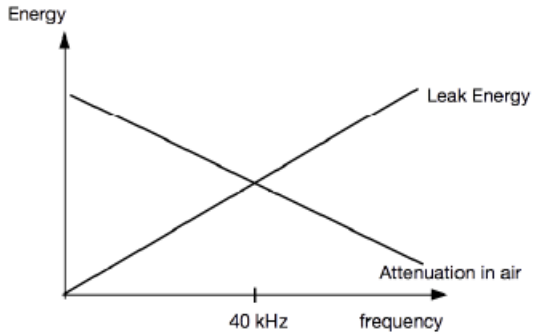
Qty Description

- PCE LDC 8 leak detector
- Sensor unit
- noise isolated headphones
- focus tube incl. focus tip
- Cable from instrument to sound probe
- Battery charger
- Transport case
- user manual

Remark
The sensor unit can be unplugged from the main instrument by pulling the unit out of the holder. A separate coiled extension cable is used to connect the sensor to the main unit

Operating Principle
Air leaks produce wide ban d ultrasounds in the range of 20… 80 kHz. The higher the frequency the more energy it contains. But higher frequencies can not be transported in air that far. That i s why the leak detector operates at a centre frequency of 40 kHz which compromises an optimum um between energy and distance. Frequencies

below and above are cut in order to minimize the noise level.



Operating Procedure

The following steps explain the procedure of an appropriate use

1. Press the Power button.
2. The Display of the PCE LDC 8 look like the picture on the left side.
    - The laser pointer is off.
    - The Display will show you
    - The battery level.
    - The segments green till red.
    - User can change the sensitivity with the wheel .
3. To activate the laser, please
4. press the button which is shown
5. on the left side.
6. Point with the laser at an assumed leak. The display will show the level of the leak.
7. To find the exact location of the leak screw the focus tube and the focus tip on the sensor.
8. Scan with the focus tip the roughly location till the exact location is found.
9. For difficult attainable location you can use the separate coiled extension cable.

Electrical connection
Either the headphone or the charger can be connected to PCE PCE-LDC 8 at a time time.

Remark
If the instrument has not been used for more than 2 months, the battery might be over discharged. Connect the battery charger an and wait about 2 2-3 minutes until the display can show you the actual battery status.

Maintenance

To clean the sensor and its accessories it is recommended to use moist cloth only.

ATTENTION!
Do not use isopropyl alcohol to clean the sensor and its accessories!

Disposal

- For the disposal of batteries in the EU , the 2006 / EC directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose.
- In order to comply with the EU directive 2012/19/EU we take our devices back. We either re re-use them or give them to a recycling company which disposes of the devices in line with law.
- For countries outside the EU, batteries and devices should be disposed of in accordance with your local waste regulations regulations.
- If you have any questions, please contact PCE Instruments.

Contact
If you have any questions, suggestions or technical problems, please do not hesitate to contact us. You will find the relevant contact information at the end of this user manual.

Documents / Resources

	PCE Instruments PCE-LDC 8 Ultrasonic Leak Detector [pdf] User Manual PCE-LDC 8, PCE-LDC 8 Ultrasonic Leak Detector, Ultrasonic Leak Detector, Leak Detector, Detector

References

- PCE Instruments UK: Test Instruments | PCE Instruments
- User Manual