English

Instruction and operation manual

S 530

Leak detector for pneumatic systems

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.

CS-iTEC offers no guarantee for the suitability for any other purpose. CS-iTEC is also not liable for consequential damage resulting from the delivery, capability or use of this device.

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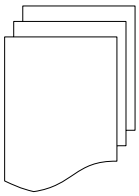
1. Safety instructions



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 a 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.
- Please 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.

2. Application

The S 530 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 S 530 even from several meter distance.

The S 530 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 S 530 leak detector is not developed to be used in explosive areas. For the use in explosive areas please contact the manufacturer.

The S 530 leak detector is mainly used in compressed air systems in industrial environment.

3. 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.

4. Technical Data

4.1 General

CE	
Principle of measurement	Ultrasonic leak detection
Measuring medium	Air, refrigerants and any gases
Plugs	Plug 1: 4 pole connector shared by headphone and battery charger Plug 2: 3.5 mm stereo phone jack for sensor or sensor cable connection.
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 pointer 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)

4.2 Electrical Data

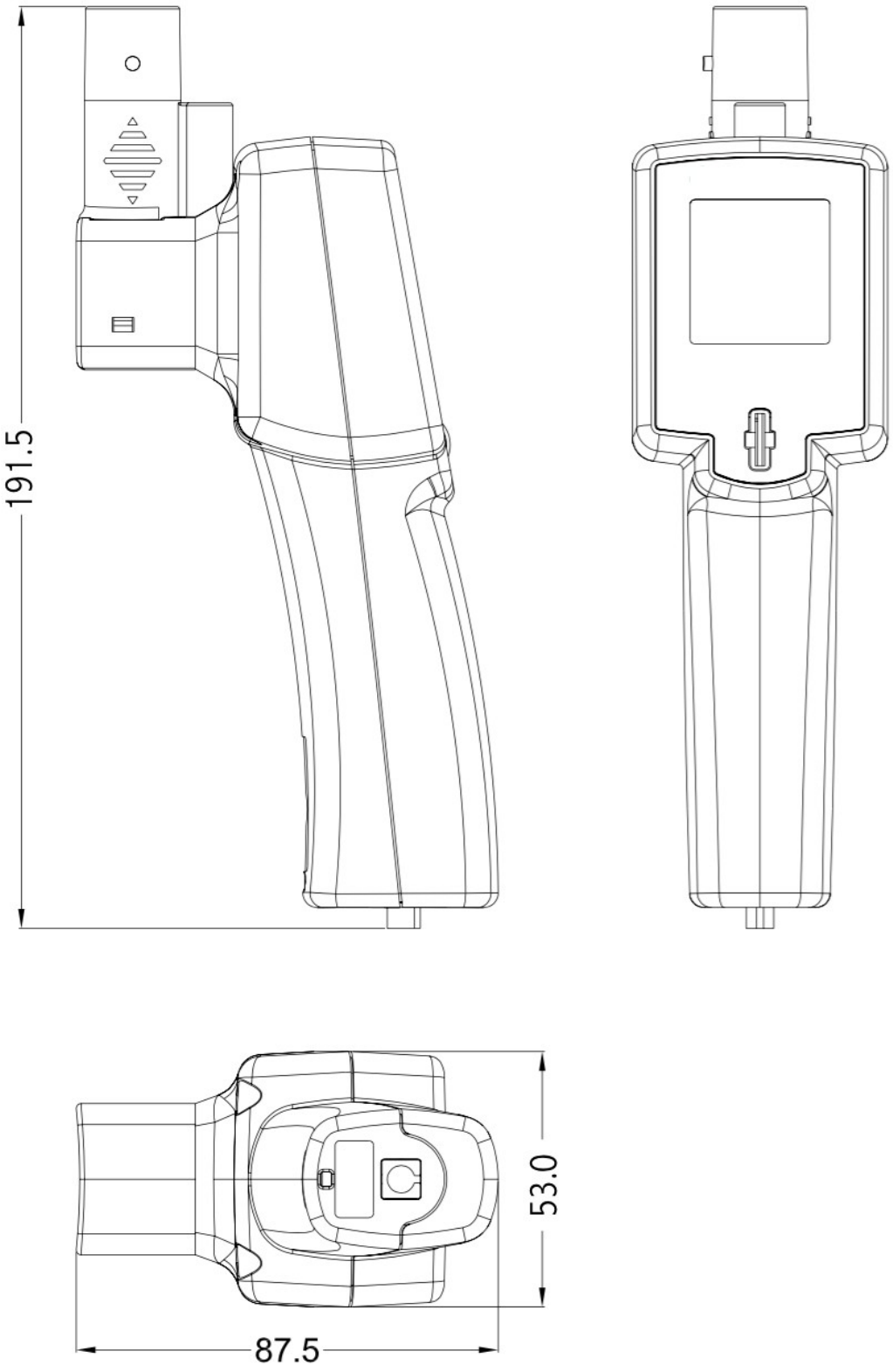
Power supply	Internal NiMH rechargeable battery

4.3 Performance chart

The table shows the detection distance of varicose hole diameters at 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

5. Dimensional drawing



6. Operating

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

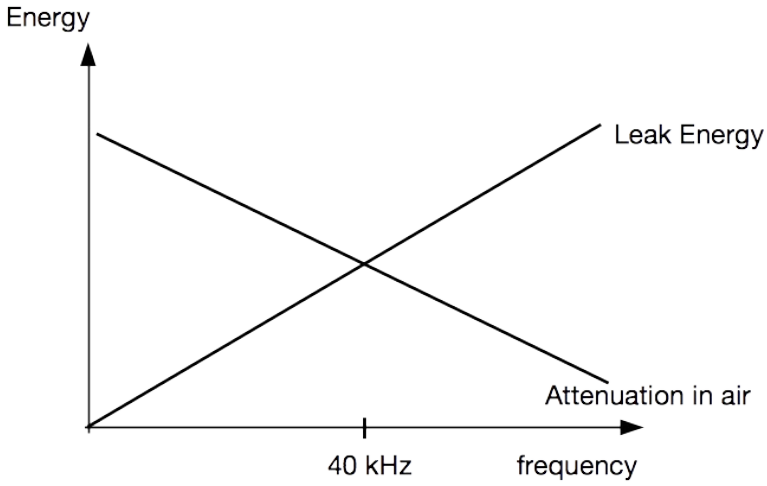
Qty	Description	Item No.
1	S 530 leak detector	P560 0102
1	Sensor unit	S605 0001
1	Noise isolated head set	A554 0102
1	Focus tube and focus tip	A530 0101
1	Cable to detach sound probe from instrument	A553 0101
1	Battery charger	A554 0001
1	Transport case	A554 0101

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. For this have a look at the picture above.

6.1 Operating Principle

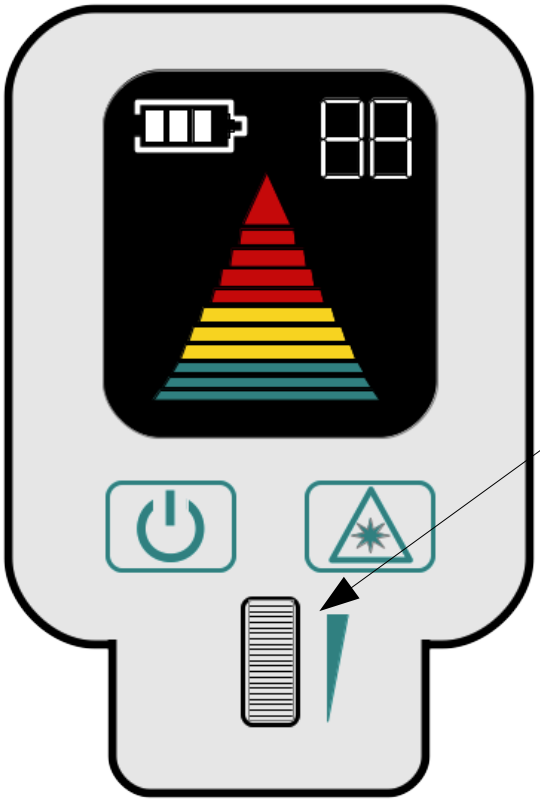
Air leaks produce wide-band ultrasounds in the range of 20... 80 kHz. The higher the frequency the more energy it contains. But higher frequencies can not be transported in air that far. Thats why the leak detector operates at a centre frequency of 40 kHz which compromises an optimum between energy and distance. Frequencies below and above are cut in order to minimize the noise level.



6.2 Operating Procedure

The following steps explain the procedure of an appropriate use.

1. Press the Power button.



2. The Display of the S 530 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

press the button which is shown on the left side.

4. Point with the laser at a assumed leak. The display will show the level of the leak.

5. To find the exact location of the leak screw the focus tube and the focus tip on the sensor.

6. Scan with the focus tip the roughly location till the exact location is found.

7. For difficult attainable location you can use the separate coiled extension cable.

6.3 Electrical connection

Either the headphone or the charger can be connected to S 530 at a 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 wait about 2-3 minutes until the display can show you the actual battery status.

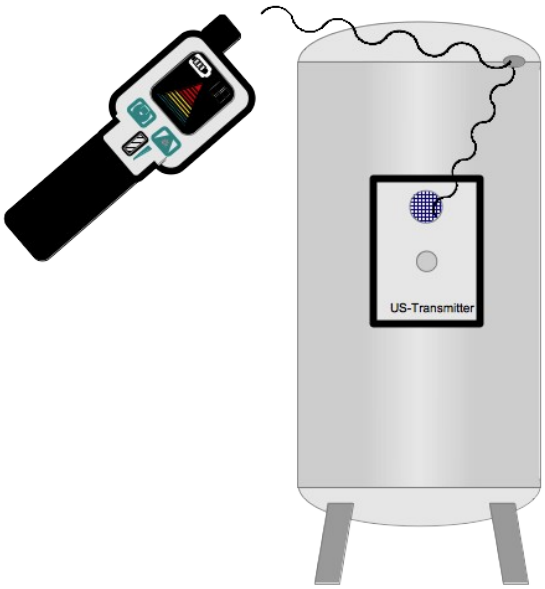
7. Optional extra accessories

7.1 Ultrasonic tone generator

The Ultrasonic tone generator is an optional extra accessory for the S 530. It generate an ultrasonic tone which can be detected by the S 530. Thats why a leak detection in a system without overpressure is possible.

Specification

- Frequency: 40 kHz +/- 10%
- Automatically shut-down after 10 min +/- 20%
- Power supply internal: E-Block 6LR61 9V



For example Leak test at a tank:

If an US tone generator is inside of a tank the ultrasonic which is produced by the generator can flow through leaks and detected by the S 530.

8. 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!

9. Disposal or waste

Electronic devices are recyclable material and do not belong in the household waste.
The detector, the accessories and its packings must be disposed according to your local statutory requirements. The dispose can also be carried by the manufacturer of the product, for this please contact the manufacturer.

10. Warranty

CS-iTEC provides a warranty for this product of 24 months covering the material and workmanship under the stated operating conditions from the date of delivery. Please report any findings immediately and within the warranty time. If faults occurring during the warranty time CS-iTEC will repair or replace the defective unit, without charge for labour and material costs but there is a charge for other service such as transport and packing costs.
Excluded from this warranty is:

- Damage caused by:
  - Improper use and non-adherence to the instruction manual.
  - Use of unsuitable accessories.
  - External influences (e.g. damage caused by vibration, damage during transportation, excess heat or moisture).

The warranty is cancelled:

- If the user opens the measurement instrument without a direct request written in this instruction manual.
- If repairs or modifications are undertaken by third parties or unauthorised persons.

- If the serial number has been changed, damaged or removed.

Other claims, especially those for damage occurring outside the instrument are not included unless responsibility is legally binding.

Warranty repairs do not extend the period of warranty.

ATTENTION!

Batteries have a reduced warranty time of 12 month.

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