

Manual Leakage Tester DP5 Plus



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1. Specification

The Leakage Tester DP5 measures the leakage rate of exhaust systems with over- and underpressure. A test pressure of 40, 200, 1500 or 5000 Pa (class N1, P1, M1, H1) can be set according to the pressure classes of EN 1443.

The Leakage Tester DP5 measures the volume flow, which is necessary to maintain the test pressure.

The device is TÜV tested and approved for: "**Guidelines for suitability test of leak testing devices and for checking exhaust gas systems operated under excess pressure**".

The Leakage Tester DP5 is also suitable for carrying out the 4/8 Pa-test, to check the negative pressure limiting value, in a simple and detailed procedure (according to the DVGW worksheet G 625 / 2010).

Differential pressure - measuring channels:

Measuring range 1: 0 up to ± 125 Pa
Resolution: 0,1 Pa
Measuring principal: silicon low pressure measuring cell
Accuracy: $\pm 5\%$ measured value

Measuring range 2: 0 up to 5000 Pa
Resolution: 1 Pa
Measuring principal: piezoresistive ceramic low pressure sensor
Accuracy: $\pm 5\%$ measured value

Volume flow - measuring channels:

Measuring range 1: 0,1 up to 10 NL/min
Measuring range 2: 0 up to 60 Nm³/h
Resolution: 0,01 NL/min
Measuring principle: Hot film anemometer
Accuracy: $\pm 0,1$ l/min in range 0,1 up to 1,00 l/min
 $\pm 5\%$ measured value in range 1,00 up to 10,00 l/min

Technical data:

Power supply: Mains operation at 230 V, 50 Hz
or battery operation with LiPo 4000 mAh at 24 V
Storage temperature: -20 to +50 °C
Operating temperature: 5 to 40 °C
Weight: 3450 g
Overall dimensions: approx. 22x31x8,5 cm

Working with the device:

The device can be used by battery or electricity. Do not plug or unplug the power cord during operation. Changing the voltage during operation will lead to measurement errors. The following message will be displayed: "User information: malfunction / fault".

The Leakage Tester is also suitable for measurements on roofs. Prevent water from entering.

2. Working with the device

2.1 Leak test

200 Pa, 250 Pa, 1000 Pa, 1500 Pa, 5000 Pa

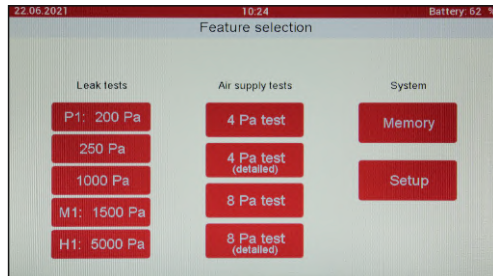
Before testing the leakage of exhaust gas systems, seal both ends with sealing bladders.

Hold the device horizontally, maximum 45° degrees in each direction. Then the sealing bladder with the device hose can be connected to the measuring device.

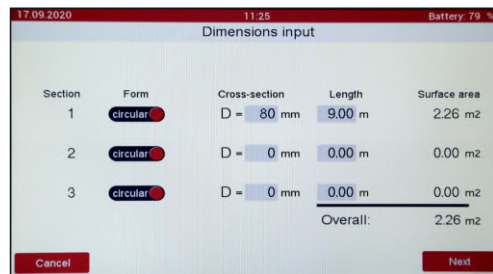


Note: if possible, measure from roof to prevent water from entering.

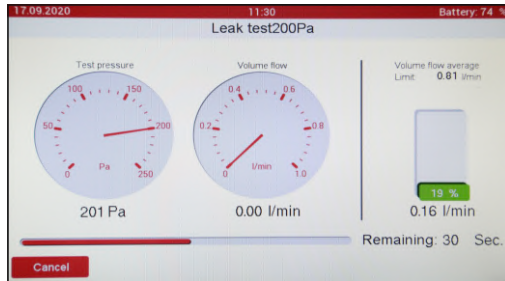
The device is switched on/off at the front panel. The main menu will appear. Selection via the touch display. Now the test pressure can be selected.



Enter measurements of the pipe. It is possible to enter up to three different pipe sections.



After selecting the pipe measurements, press "continue" to start the actual measurement. The device will then self-test and calibrate. Then the measurement menu appears. After the test pressure has been built up, the measurement will start over a period of 1 minute and finally shows the result as an average value.

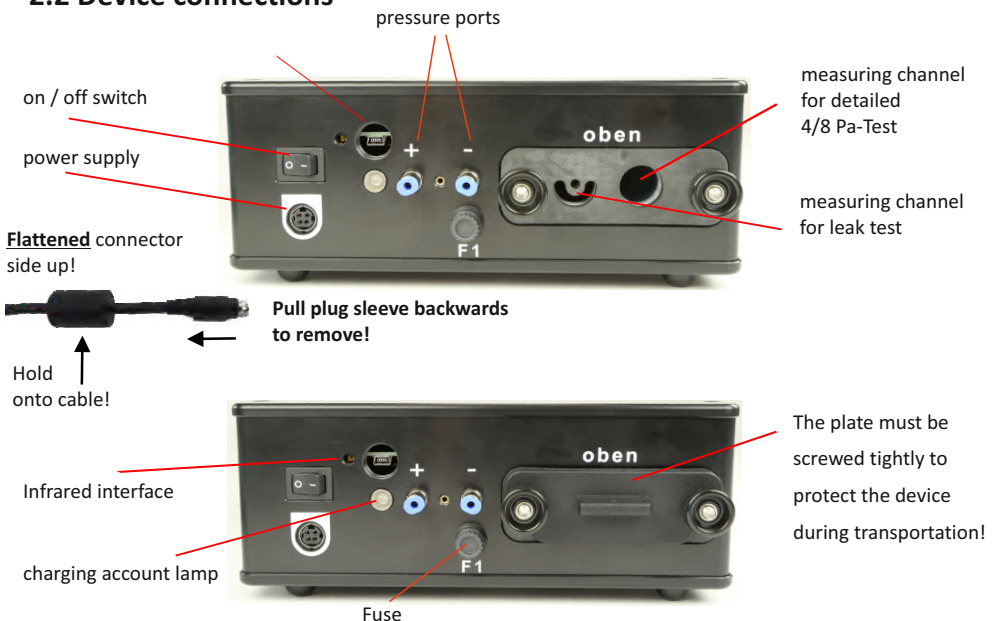


The volume flow is shown as l/min on the display, as well as the test pressure. In addition, the leakage is given in percent. The maximum permissible leak rate is 100%.

Via menu item "print" the values can be printed wirelessly. The infrared printer (accessories) must be held in front of the interface.

After the measurement the device can be switched off.

2.2 Device connections



2.3 Simple 4/8 Pa-Test

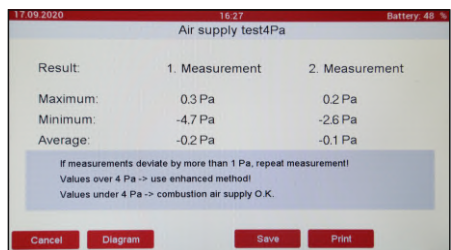
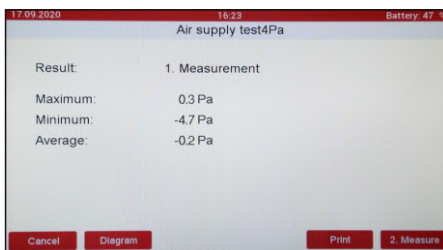
Before each measurement please make sure, that the battery has enough voltage. Do not plug or unplug the power cord during operation! Changing the voltage during operation will lead to measurement errors.

After switching on the DP5 device, the measurement can be selected in the main menu. Before the measurement, both capillary tubes and the front plate must be connected. The negative pressure connection serves as a reference pressure and should be outside of the building. The positive pressure connection remains in the installation room.

Hoses can be detached by pressing the blue discs.



- Open an outside window or a door to the reference room and test proper operation of the appliance. Ensure that there are no backdraft conditions.
- Select 4Pa-Test, device will calibrate
- Lead the hose outside: through a window seal, into the stairways, through the door rebate or the keyhole (+installation room / -outside)
- Switch on appliance and all air conditioning (fan, dryer) with maximum power
- Start measurement
- Follow instructions on display: alternately open and close windows/doors
- The DP5 device records the measurement process over 4 minutes



Two measurements (each 4 minutes) will be carried out and the result displayed. A tip is issued for the measurement result. Under "Graphics" a graphical history can be displayed.

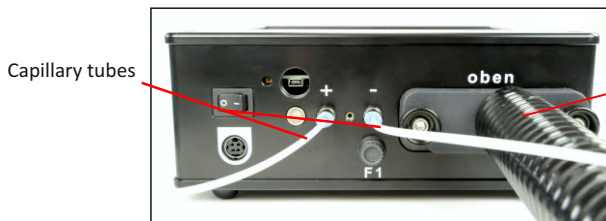
Before the beginning of the measurement, the pressure curve is displayed and it will move to the left hand side. The measurement can be saved as a PDF file.

2.4 Detailed 4/8 Pa-Test

Before each measurement please make sure, that the battery has enough voltage. Do not plug or unplug the power cord during operation! Changing the voltage during operation will lead to measurement errors.

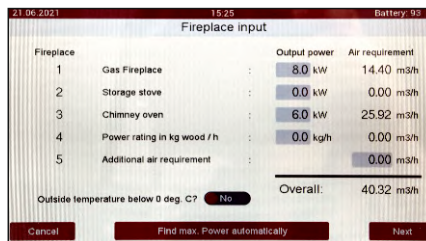
The Detailed 4/8 PA-Test can be used as proof of adequacy air supply. The test measures the differential pressure between the indoor and outdoor air. The device simulates a chimney and is used as a controlled suction system.

After switching on the DP5 device, the measurement can be selected in the main menu. Please wait until calibration is completed. Then both capillary tubes must be connected to the front plate. The negative pressure connection serves as a reference pressure and should be outside of the building. The positive pressure connection remains in the installation room. Hoses can be detached by pressing the blue discs.



Screw the suction hose onto the device and connect the other end to the exhaust system in place of the heating appliance, using a sealing element.

- Remove the connecting piece of the fireplace and connect the suction hose with a suitable Sealing Element to the exhaust gas system.
- Open an outside window or a door to the reference room and test proper operation of the appliance. Ensure that there are no backdraft conditions.
- Select 4Pa-Test, device will calibrate
- Lead the hose outside: through a window seal, into the stairways, through the door rebate or the keyhole (+installation room / -outside)
- Switch on appliance and all air conditioning (fan, dryer) with maximum power
- Start measurement
- Follow instructions on display: alternately open and close windows/door

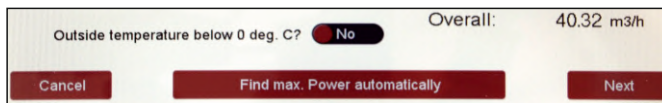


Before measurement, the rated power of the system must be entered and when the Temperature is below 0°C.

In addition, the fuel throughput can be entered for fireplaces with solid fuels (for example: Stoves - how many Kilograms of wood per hour). The air requirement is calculated from this.

Advice:

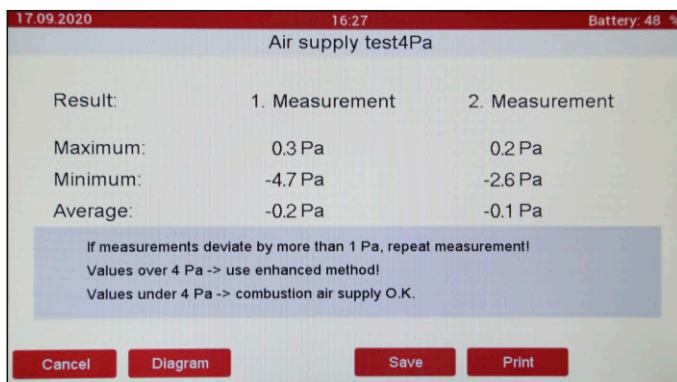
The function "Find max. Power automatically" can only be carried out, by the external blower (optional). If the blower is not connected, the following error message will appear: "The entered heating power is too high".



Measurement procedure 4/8 PA-Test

Two measurements (each 4 minutes) will be carried out and the result displayed. Before the beginning of the measurement, the pressure curve is displayed and it will move to the left hand side. Under "Graphics" a graphical history can be displayed.

The measurement can be printed or saved as a PDF file. A tip is issued for the measurement result.



2.5 Air supply test recording

By pressing "save" a PDF file is created. A maximum of 10 measurements can be saved. The oldest file will be overwritten. The numbering is continuous.

To transfer the files, the DP5 device must be connected to the computer via USB port. The USB port is behind the plastic cover the front plate.

2.6 Printout

Via menu item "print" the values can be printed wirelessly. The printer (accessories; art.-no. 4007-C) must be placed with the IR-interface in front of the front plate of the DP5.

2.7 N1-measurement (optional)

Leakage test

Before starting a Leakage test, the chimney must be sealed with suitable sealing elements. The hose with the connection plate must be screwed tightly onto the DP5.

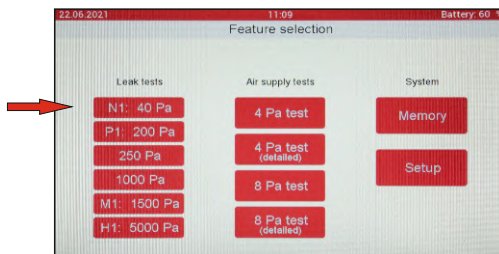
Then plug the capillary hose into the "-" connection.



First pass the capillary hose through the sealing element and then through the tube. Important: the capillary hose must be fixed minimum 5cm behind the hose end. Then insert the sealing element into the stove connection piece or into the fireplace door.



Switch on the DP5. The measurement is started via the menu item "40 pa".



After entering the dimension, press "Next" to start the measurement. The device will self-test and then calibrate. The measurement menu will appear. After the test pressure has been built up, the measurement will start, duration approximately 1 minute, and finally show the result as an average. The volume flow is shown with l/min in the display as well the test pressure.

The leakiness is shown in percent. The maximum still permissible leak rate corresponds to 100%.

3. Operation and Maintenance

The flawless functioning of the device must be determined by a regular six-monthly inspection.

A special calibration Functional test for Leakage Tester must be used.

It must be avoided that condensate from the exhaust pipe can enter the inside the device!

The new device must first be charged for approx. 2 hours with the power supply. The battery is charged only when the device is switched off. You can view the charging progress on the LCD display. When the device is switched on, the DP5 Plus is powered via the mains socket.

Charging processes:

To charge the DP5 Plus leak testing device, place it on a non-combustible surface. Connect the power supply unit—the red LED will light up continuously. Charging takes approximately 2.5 hours when the battery is empty. During the charging process, the internal fan activates to cool the device. The charging progress is shown on the LCD display, which turns off after about 10 seconds. You can touch the display to view the charging progress again. If the DP5 is switched on during charging, the charging process stops and the device operates on mains power.

Important Note on Battery Maintenance for Your DP5 Plus:

To ensure long-term reliable operation of your DP5 Plus, it is essential to regularly charge the battery fully to 100%. Only during a complete charging cycle are the individual battery cells properly balanced. If this balancing process is neglected for an extended period, it may lead to malfunctions in the charging electronics. In such cases, the device will need to be sent in for service.

Please also note: Never store your device for an extended period with an empty battery, as this can cause permanent damage. For longer storage, a battery charge level of around 35% is recommended to optimally preserve battery life.

By following these simple steps, you significantly contribute to the health of your battery and the reliability of your DP5 Plus.

Defective Device:

If your device is defective—for example, if water has entered the device or it has suffered impact damage—please remove the fuse located on the front side of the device before sending it in and include it separately.

Sealing Bladders:

They must not be pulled over sharp edges, otherwise there is a risk of damage.

Do not inflate the bladder above the specified diameter, otherwise there is a risk of bursting.

A bulge is not a defect or an impairment in functionality. This can occur due to the material.

4. Language setting

Go to the “Function Selection” main menu and press the “Setup” button. Press on “Language” to select the desired language.

5. Error Messages and Troubleshooting

- **Battery voltage too low:** Charge the battery
- **Self-test error - pressure:** Pressure fluctuation too large – check environmental conditions
- **Self-test error - flow:** Possibly water in the flow sensor – send in device for service
- **Temperature too high:** Allow the device to cool down
- **Use power supply unit:** Battery voltage too low for measurement
- **Regulator error:** In 99% of cases not a device fault – check the test setup
 1. For pressure tests:
 - 1.1 Pressure sensor not properly zeroed (depressurize exhaust line before repeating a measurement)
 - 1.2. Pressure cannot build up (leak in the line, damaged bladder, or outside the measuring range)
 2. For N1 measurement:
 - 2.1 Chimney is leaking
 - 2.2 Cross-section too large
 3. For extended 4/8 Pa measurement:
 - 3.1. Air cannot be vented (chimney/flue pipe blocked, unfavorable wind conditions)
- **Pressure sensor 125 Pa** - Sensor is overloaded.
 - Too much wind (Try placing the hose in a different location or the measurement cannot be performed)
 - Hose is kinked or blocked
- **Pressure sensor 5000 Pa**
 - Switch the device off and on again.
- Test pressure not reached: Is the exhaust line leaking?

General device check for exhaust line testing:

Block the front air outlet of the sealing bladder connected to the DP5. If pressure builds up, the device is measuring correctly.

6. Working with the device

The Leakage Tester can lead to malfunctions when used in residential areas. The electromagnetic radiation can interfere with the radio and television relay reception, unless special measures are made to reduce the electromagnetic radiation.

If you need to repeat a leak test, it is absolutely essential to depressurize the exhaust line before starting the new measurement. Otherwise, the results will be inaccurate.

7. Declaration of Conformity

Manufacturer:
RESS GmbH & Co. KG
Am Hasselbruch 28
D-32107 Bad Salzuflen

declares that the product

Product: Leakage Tester
Model: RESS DP5

complies with the key safety requirements set down in the guidelines of the Council for the Harmonization of the Legal Requirements of the Member States in relation to the electro-magnetic compatibility 2014/30/EU and the low voltage 2014/35/EU.

The following standards were availed of to evaluate the product in respect of the electro-magnetic compatibility:

EN 61326-1 (Chart 1 - Immunity - EMC requirement)
EN 55011, Unit 1, category A
EN 61000-3-2, EN 61000-3-3

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Volker Buhr
Managing director

Bad Salzuflen, 07.01.2020

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