DD|COMPOUND

Vac Checker®
Digital Vacuum Gauge

Instruction manual

Content

1 Safety and waste disposal

1.1 About this document

- The instruction manual is an integral part of the instrument.
- Keep this document throughout the entire operating life of the instrument.
- Always use the complete original instruction manual.
- Please read this instruction manual through carefully and familiarise yourself with the product before putting it to use.
- Pay particular attention to the safety instructions and warning advice in order to prevent injury and damage to the product.

1.2 Safety

General safety instructions

- Only operate this instrument in the proper manner, for its intended purpose and within the parameters specified in the technical data.
- Do not apply any force to open the instrument.
- Do not operate the instrument if there are signs of damage at the housing, mains unit or connected cables.
- Always comply with the locally valid safety regulations when carrying out measurements. Dangers may also arise from objects to be measured or the measuring environment.
- Do not store the product together with solvents.
- Do not use any desiccants.
- Only perform maintenance and repair work on this instrument that is described in this documentation. Follow the prescribed steps exactly.
- Use only original spare parts from Testo.

Batteries

- Improper use of batteries may cause the batteries to be destroyed, or lead to injury due to current surges, fire or escaping chemicals.
- Only use the batteries supplied in accordance with the instructions in the instruction manual.
- Do not short-circuit the batteries.
- Do not take the batteries apart and do not modify them.
- Do not expose the batteries to heavy impacts, water, fire or temperatures in excess of 60 °C.
- Do not store the batteries in the proximity of metal objects.
- Do not use any leaky or damaged batteries.
- In the event of contact with battery acid: rinse affected areas thoroughly with water, and if necessary consult a doctor.
- Take batteries out of the instrument immediately if they are not functioning properly or if they show signs of overheating.
- Remove all batteries from the instrument if it is to remain unused for a longer period.

Warnings

Always pay attention to any information denoted by the following warnings. Implement the precautionary measures specified!

Display	Explanation
⚠ WARNING	Indicates possible serious injury.
⚠ CAUTION	Indicates possible minor injury.
ATTENTION	Indicates possible damage to equipment.

1.3 Waste disposal

- Dispose of faulty rechargeable batteries and spent batteries in accordance with the valid legal specifications.
- At the end of its useful life, dispose of the instrument via separate collection for electro- and electronic devices. Please observe local regulations concerning waste disposal. Or alternatively return the product to DD-Compound for disposal.

2 Technical data

Feature	Values
Absolute pressure sensor (absolute)	max. 6 bar (87 psi) **ATTENTION** **Pressure exceeded.** **Destruction of the absolute pressure sensor!** **- Do not exceed the maximum value.**
Vacuum measuring range	1100 - 0 mbar / 825080 - 0 micron
Sensor overload (relative)	5 bar / 72 psi
Vacuum resolution	0.01 hPa / 10 micron
Vacuum accuracy (at 22 °C, after field calibration, confidence level 95%)	- 0 to 1.33 hPa / 0 to 1000 micron: up to ±10 micron - 0 to 200 hPa / 0 to 150000 micron: ±0.3% FS = ±0.6 hPa - 200 to 1100 hPa / 150000 to 825080 micron: ±0.3% FS = ±3.3 hPa
Operating temperature	-20 to 50 °C / -4 to 122 °F
Storage temperature	-20 to 50 °C / -4 to 122 °F
Temperature measuring range	-20 to 50 °C / -4 to 122 °F
Temperature resolution	0.1 °C / 0.1 °F
Battery life	2400 h (2x AA) (approx. 130 h with background illumination activated)
Protection class	IP 42
Parameter	mmHG, Torr, mbar, hPa, micron, inH2O, inHg. Pa
Measuring cycle	0.5 sec
Sensor	1× absolute pressure sensor
Connections	- 2× 7/16" UNF - 1x MiniDIN
Warranty	2 years

Setting values alarm treshold

Unit	Setting range	Resolution
mbar / hPa	0 - 7,5	0,05
micron	0 - 7500	50

3 Description of the instrument

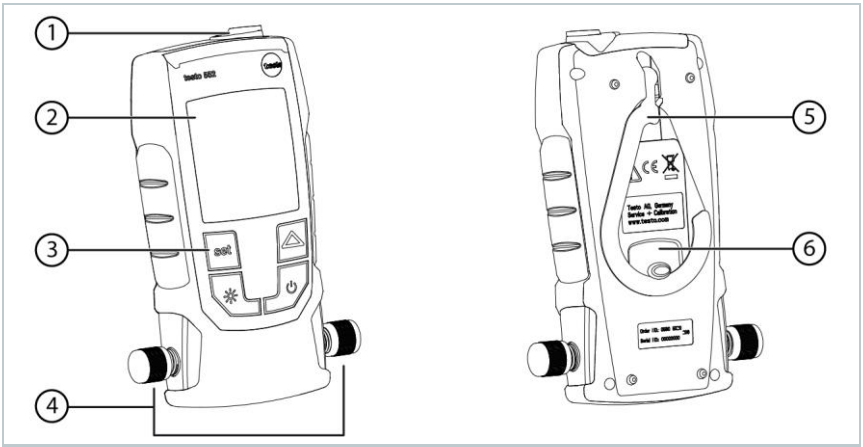
3.1 Use

The Vac Checker® is a digital vacuum gauge for the precise measurement of extremely small pressures in the vacuum range. This allows you to monitor the evacuation (usually during commissioning) of refrigeration systems and heat pumps.

With the Vac Checker®, you can therefore measure the current pressure in a refrigeration system, and thus gather information about the degree of dehumidification and the removal of foreign matter (oils, foreign gases, etc.).

A vacuum gauge is always used in conjunction with a vacuum pump (generates the vacuum). A manifold (analogue or digital) is also often used in order to obtain controlled access to the refrigeration system.

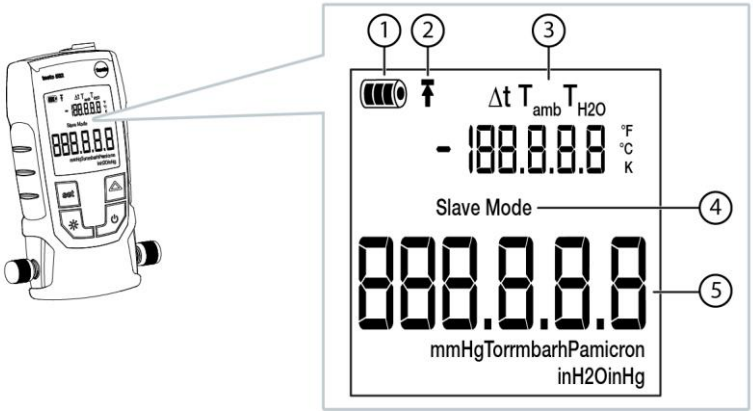
3.2 Instrument overview



	Element	Function
1	MiniDIN probe socket	Cable connection for connecting to the testo 570.
2	Display	Displays instrument status icons, measuring units and measuring values.
3	Control keys	Instrument operation.
4	Connections 7/16" UNF, brass	Connection of refrigerant hoses, vacuum pump, manifolds, etc.

5	Hook	Suspension device
6	Battery compartment	Contains two AA batteries.

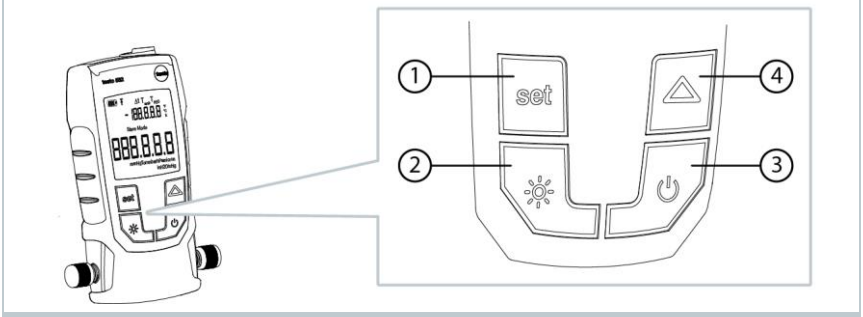
3.3 Displays overview



	Element	Function
1	Icon [ ]	Displays the remaining battery capacity. >75% >50% >25% <10%
2	Icon [ ]	An alarm threshold is set.
3	Temperature display	- selected, currently measured temperature - Measurement parameter: T_{H2O} = evaporation temperature of water T_{amb} = ambient temperature Δt = temperature difference between evaporation temperature of water and ambient temperature - unit set (°C, °F)
4	Slave Mode	Appears when the Vac Checker®, is connected to a testo 570 via a connecting cable and the testo 570 is in **Evacuation** mode.

5	Pressure display	Displays the currently measured pressure, the measurement parameter and the unit set (mmHG, Torr, mbar, hPa, micron, inH2O, inHg).

3.4 Control keys overview



	Element	Function
1	set	- Switches to the settings. - Switches between the set-up options.
2	☼	Switches the display illumination on or off.
3	⏻	Switches the instrument on or off.
4	△	- Switches between the temperature displays. - Navigates in the Set menu.

4 Operation

4.1 Connecting

Always use refrigerant hoses that are specifically intended for evacuations.

1 - Remove sealing caps.
- Connect the Vac Checker®, to the circuit.

4.2 Switching instrument on and off

1 - Press .

▸ The instrument switches on or off.

4.3 Switching background illumination on and off

1 - Switch the instrument on.
- Press .

▸ The background illumination switches on or off.

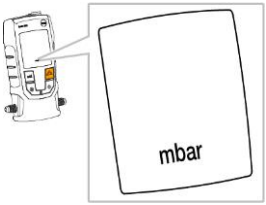
4.4 Setting units and AutoOff

The set-up menu must always be completely navigated through, even if only one parameter needs to be changed.

1 - Switch the instrument on.

2 - Press set to change settings.

3 - Press △ to set the pressure unit required.

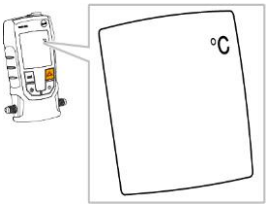


4 - Press set.

▸ The unit is set.

▸ The display shows the temperature unit.

5 - Press △ to set the temperature unit required.



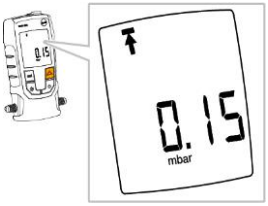
6 - Press set.

▸ The temperature unit is set.

▸ The display shows the setting for the alarm threshold.

Adjusting the alarm threshold causes an alarm to be triggered when the set value is exceeded.

7 - Press △ to set the alarm threshold.



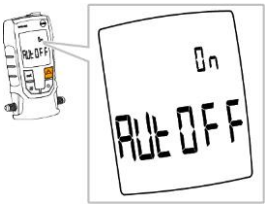
8 - Press set.

▸ The alarm threshold is set.

▸ The display shows the AutoOff setting.

If AutoOff is activated, the instrument switches off after 2 hours in which no buttons are pressed.

9 - Press △ to switch AutoOff on or off.



10 - Press **set**.

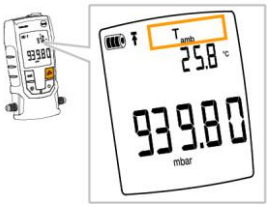
- All settings are stored.
- The display changes to the measuring mode.
- The instrument can now be used.

4.5 Displaying temperature values

1 - Press △ to change the temperature measurement parameter.

▸ The temperature measurement parameter switches between TH2O, Tamb and □□t.

ℹ □t is displayed in K for °C, and in °F for °F.



4.6 Field calibration

ℹ
- Field calibration should be carried out at <15 hPa, field calibration is not possible at ambient pressure.
- The connected vacuum pump should ideally be able to create a minimum trace pressure of <0.1hPa.
- Field calibration tunes the Vac Checker® to your vacuum pump.

1 - Connect the vacuum pump to a port of the Vac Checker®.
- Close the second port with the sealing cap.
- Start the vacuum pump.

2 - Wait until minimum pressure is reached.
- Press set and △ at the same time for at least 3 seconds.

▸ The Vac Checker® is zeroed and field calibration is completed.

4.7 Calibration with reference vacuum gauge

- Calibration should be carried out at <15 hPa (<11250 microns), calibration is not possible at ambient pressure.
- You need a reference vacuum gauge.

1 - Connect the vacuum pump to a port of the reference vacuum gauge
- Connect the Vac Checker® in parallel.
- Start the vacuum pump.

2 - Wait until minimum pressure is reached. (Duration approx. 2 min)
- Press ☼ and △ at the same time for at least 3 seconds.
- Using the △ key, input the reading from the reference vacuum gauge (e.g. 150 microns/0.2 hPa).
- On the Vac Checker® press ☼ and △ at the same time for at least 3 seconds.

▸ The Vac Checker® is calibrated and calibration is completed.

5 Maintenance

5.1 Changing batteries

1 - Switch the instrument off.

2 - Flip hook up.

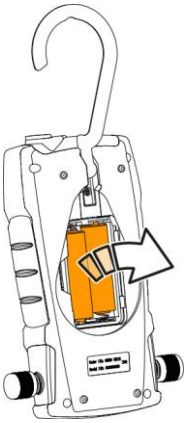
3 - Open the battery compartment.

4 - Remove batteries.

5 - Insert new batteries, observing the indications inside the battery compartment.

6 - Close the battery compartment.

7 - Fold hook down.



5.2 Cleaning the instrument

ATTENTION

Aggressive cleaning agents or solvents.
Sensor may be damaged!

- **The sensor should not be cleaned.**

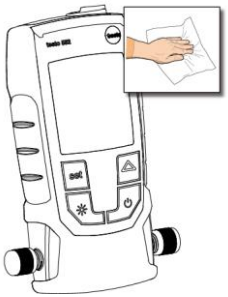
ATTENTION

Aggressive cleaning agents or solvents.
The instrument may be damaged!

- **Only clean the instrument housing.**
- **Use mild household cleaning agents or soapy water.**

✓ - Close the connections using the sealing caps.
- Close the battery compartment lid.

1 - Wipe the instrument housing with a damp cloth. Use mild household cleaning agents or soapy water for this.



6 Tips and assistance

6.1 Questions and answers

Question	Possible cause / solution
Readings are incorrect.	- Check that the Vac Checker® is connected properly. - Connect the Vac Checker® directly to the vacuum pump in order to check the values. - Check that all hoses are leak-tight. - Carry out the field calibration of Vac Checker®.

If we have not been able to answer your question, please contact your dealer or DD-Compound at www.dd-compound.de