

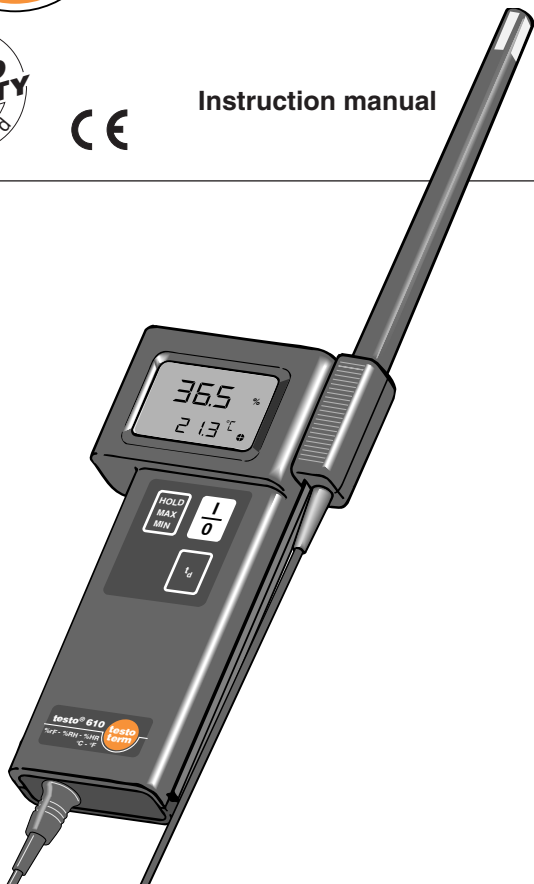
testo

testo® 610

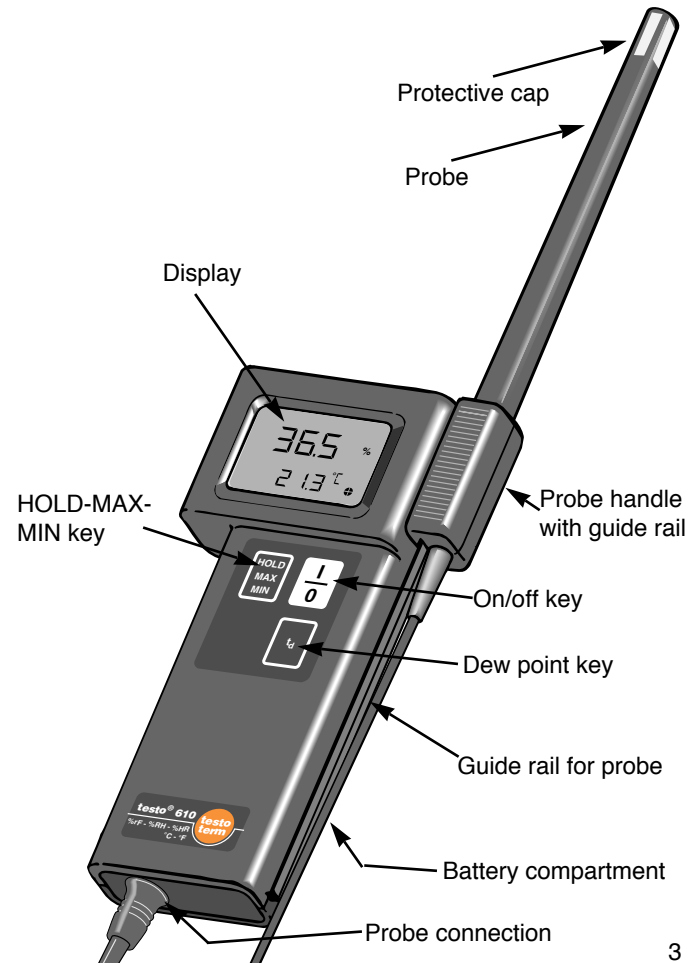
**Humidity/temperature
meas. instrument**



Instruction manual



- 1. Instrument description3
- 2. Description4
- 3. Safety instructions5
- 4. Operation instructions6
 - 4.1 Connecting the probe6
 - 4.2 Switching on the instrument ..7
 - 4.3 Auto-Off function8
 - 4.4 HOLD-MAX-MIN function8
 - 4.4.1 HOLD function8
 - 4.4.2 MAX function9
 - 4.4.3 MIN function9
 - 4.5 Dew point10
- 5. °C/°F conversion11
- 6. Care and maintenance12
 - 6.1 Battery replacement12
 - 6.2 Probe13
 - 6.3 Measuring instrument14
- 7. Basics of measurement15
 - 7.1 Absolute/relative humidity15
 - 7.2 Dew point16
- 8. Technical data17
 - 8.1 Instrument17
 - 8.2 Probe18
 - 8.3 Warranty18
- 9. Ordering data19



testo 610 is a simple to clean, rugged and easy-to-use humidity and temperature meas. instrument for a range of 0 to 100 %RH, - 20 °C to + 70 °C (0 to +160 °F). Furthermore **testo 610** calculates the dew point of the measured air.



IP 54

The water-proof housing (IP 54 protection, shower-proof and dust protection) as well as being easy to handle makes the instrument suitable for applications in all areas of trade and industry.

CE Measuring instrument conforms with EN 50 081-1 + EN 50 082-1



Please read before using instrument!

Observe measuring ranges!
Overheating will destroy the sensors.

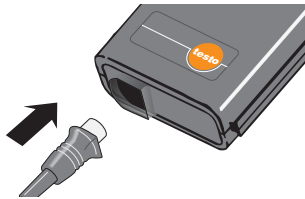
Observe permissible storage, transport and operating temperatures (e.g. protect measuring instrument from direct sunlight)

IP 54 protection is only guaranteed when original probes are used.

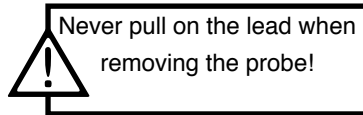
If the instrument is opened, improperly handled or if force is applied, no warranty will be granted!

4. Operation instructions

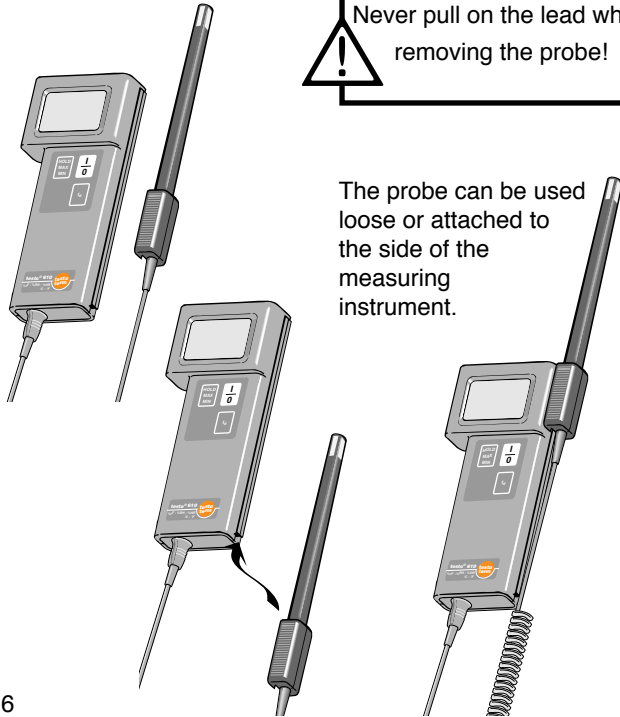
4.1 Connecting the probe



Insert the probe plug into the socket of the measuring instrument. Observe the markings (> <) on the instrument and the attachment plug.



Never pull on the lead when removing the probe!



The probe can be used loose or attached to the side of the measuring instrument.

4. Operation instructions

4.2 Switching on the instrument



Switch on the instrument



This is followed by a short display and segment test.



The measuring instrument is now operational.



Should the error message "probe" be displayed, once the instrument has been switched on:

- Connect the probe. Switch on the instrument again.
- Check to see if probe is correctly connected. Switch on the instrument again.
- The probe is faulty, please contact our service department.

4. Operation instructions

4.3 Auto-Off function



Auto-Off function

If the meas. instrument is not operated for 10 minutes, the instrument switches off automatically



The Auto-Off function appears in the display.

The circle disappears from the display at a rate of 2.5 minutes/segment

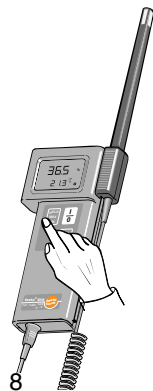
When the last segment disappears, the instrument switches itself off.

4.4 HOLD-MAX-MIN function

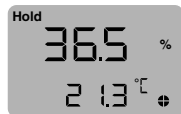


By using the **HOLD-MAX-MIN** key, measured values can be held in display, minimum and maximum values can be called up.

4.4.1 HOLD function



Press the **HOLD-MAX-MIN** key.



The measured value and the HOLD function are shown on the display.

4. Operation instructions

4.4.2 MAX function

After the HOLD function, the maximum values can be obtained by pressing the **HOLD-MAX-MIN** key once more.



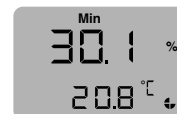
4.4.3 MIN function



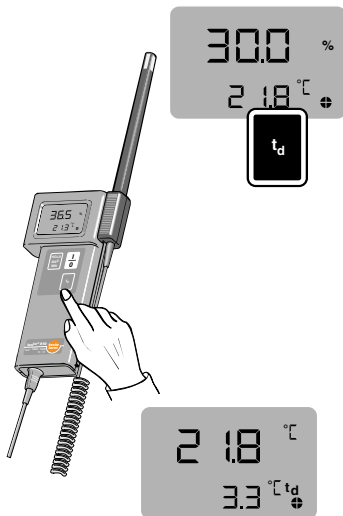
The minimum values can be called up after the MAX function

Press the **HOLD-MAX-MIN** key.

The MIN function and the corresponding value are shown in the display



testo 610 calculates the actual dew point t_d . This can also be seen whilst the HOLD-MAX-MIN function is in use, whereby the maximum and minimum stored dew point values are displayed.



Press the dew point key during measurement or whilst the HOLD-MAX-MIN function is in use.

The actual (or the MAX or MIN) temperature appears in the top line. In the bottom line the actual (or MAX or MIN) dew point is displayed.

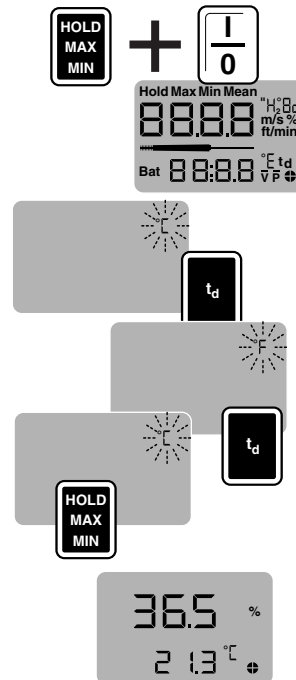
testo 610 can be converted from °C to °F.

Keep the **HOLD-MAX-MIN** key pressed when switching on the instrument and quickly press the **I/O** key. Keep the **HOLD-MAX-MIN** key pressed until the segment test is over and "°C" flashes in the display .

Adjust the unit of measurement °C - °F with the **dew point** key.

Confirm with **HOLD-MAX-MIN** key.

The unit of measurement remains stored even after the instrument has been switched off.



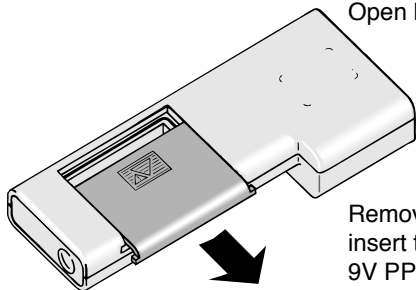
6. Care and maintenance

6.1 Battery replacement

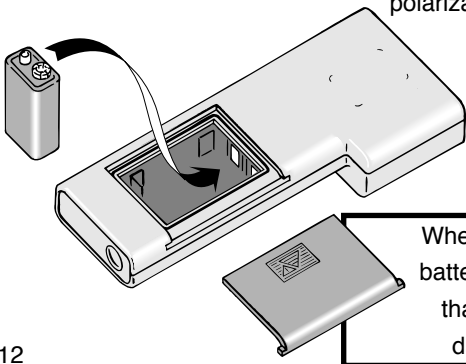


Should "Bat" appear in the display, the battery has a remaining life of 5 hours. Should the battery voltage be too low, the instrument switches off automatically.

Open battery compartment.



Remove the old battery and insert the new battery, type 9V PP3 (IEC 6 F 22) (observe polarization).



When replacing the battery, please ensure that the ring is not damaged.

6. Care and maintenance

6.2 Probe

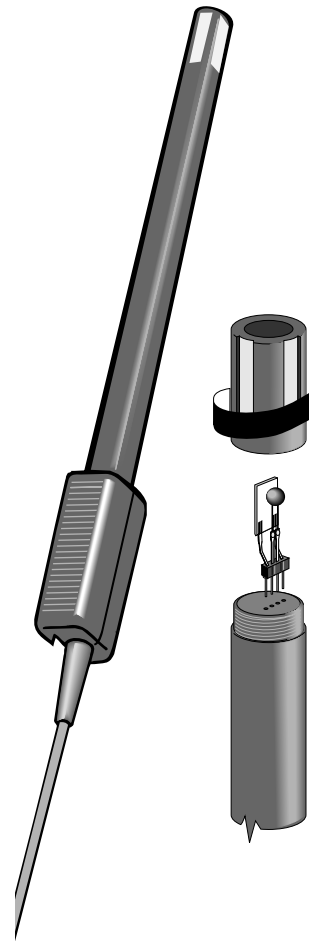
The probe head contains a rugged and stable humidity sensor.

When used in air conditioning applications, we recommend a yearly service and for use in harsh environments (e.g. swimming pool atmospheres, strong velocities, salty air) we recommend a service every 3 months with our control and calibration set **0554.0660**.

Dirty sensors can be cleaned with alcohol (Isopropanol) or distilled water.

Unscrew the protective cap. Dip the sensor in the alcohol, rinse with distilled water and leave to dry in the air.

Replace the protective cap.



!
Never touch the sensor. Measurements should only be effected when the protective cover is attached.

Should the sensors be faulty, please contact our service department.

6. Care and maintenance

6.3 Measuring instrument

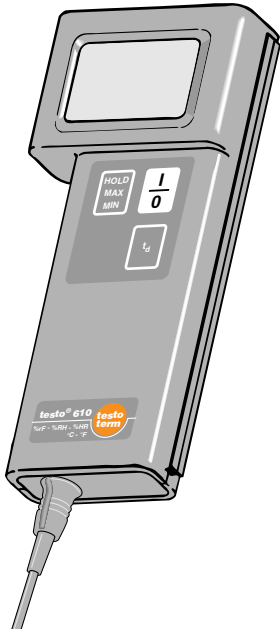
testo 610 requires no maintenance and is therefore not subject to particular maintenance intervals.

Clean the housing with a damp cloth. Weak household cleaners can be used.

Strong detergents or solvents should never be used for cleaning the meas. instrument

After use in an aggressive environment, the instrument should to be cleaned with a damp cloth.

Please note that the protection type IP 54 is only guaranteed when original plugs are connected. Never clean with a water jet.



IP 54

7. Basics of measurement

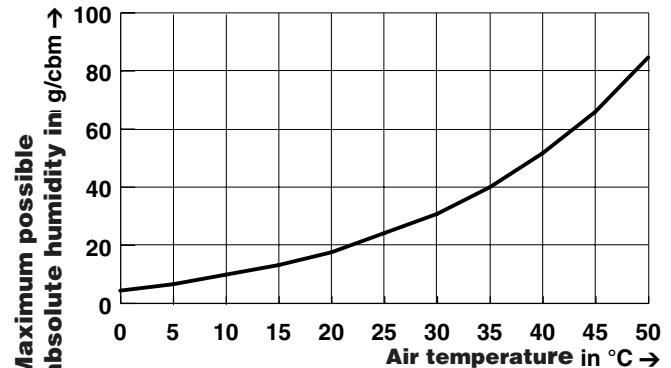
7.1 Absolute humidity/relative humidity

Air humidity plays a decisive roll in many areas of everyday life. Chemical reactions (such as oxidation processes), drying processes, meteorological changes (rain, snow etc.) and last but not least the comfort of human beings is heavily dependant on the humidity content of the air.

Humidity is the physical amount of water molecules present in the air.

Technically, we differentiate between absolute and relative humidity.

Absolute humidity is the water content of the air in weight, also known as water vapour density. The unit of measurement is g/m^3 . As warm air is able to absorb more water than cold air, the absolute humidity content is dependant on temperature.



Maximum possible absolute humidity in the air in relation to temperature

This curve is technically known as the saturation curve or 100 % curve.



7. Basics of measurement

7.1 Absolute humidity / relative humidity

As a rule, air is not enriched with a 100 % water vapour content. The relationship between the available air humidity and the maximum air humidity is known as **relative humidity (%RH)**.

As with saturation humidity, relative humidity also depends on temperature. A humidity measuring instrument must, therefore, measure 2 values:
- air humidity and
- temperature.

7.2 Dew point

If air, with a certain value of water, is cooled, the water vapour condenses to water when the dew- point temperature is reached.

Why?

As can be seen from the diagramme (p. 15), cold air does not absorb as much water as warm air. If warm air, with e.g. 60 % RH, is cooled, you will eventually reach the temperature at which the relative air humidity is 100 % RH. This is the dew point.

8. Technical data

8.1 Instrument

Input:	testo® ceramic sensor
Meas. range:	0 to 100 %RH, - 20 to + 70°C(0 to +160 °F) dew point temp. -50 to +70 °C (-60 to 160 ° F)
Accuracy:	system accuracy ± 2 %RH (2 to 98 %RH) ± 0.4 °C (- 20 to 0 °C) (0 to + 32 °F) ± 0.2 °C (0 to + 70 °C) (+ 32 to + 160 °F)
Resolution:	0.1 %RH / 0.1 °C/°F
Display	two lines, height of characters 9mm und 6mm
Battery life:	> 50 hours low batt. warning auto. switch off (after 10 mins)
Operating temperature:	0 to +40°C (+32 to +105°F)
Storage/transport temp.:	-20 to +70 °C(0 to +160 °F)
Housing:	ABS

8.2 Probe

Probe	Meas. range 0 to 100 %RH (- 20 to+ 70 °C/0 to +160°F)
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8. Technical data

8.3 Warranty

Meas. instrument testo 61024 months

Probe12 months

If the instrument is opened, improperly handled or if force is applied, no warranty will be granted!

9. Ordering data

Description	Part no.
Humidity meas. instrument testo 610 instrument with probe, battery, case and instruction manual	0563.6105
Humidity probe	0636.9761
Sintered cap (stainless steel)	0554.0647
Humidity calibration set 11,3 % / 75,3 % , instruction manual	0554.0650
9 V rech. battery	0515.0025
Recharger	0554.0025
for external recharging of rech. battery	
Standard calibration certificate	0520.0006
Special calibration certificate	0520.0106
DKD calibration certificate	0520.0206

Testo weltweit

Testo worldwide

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