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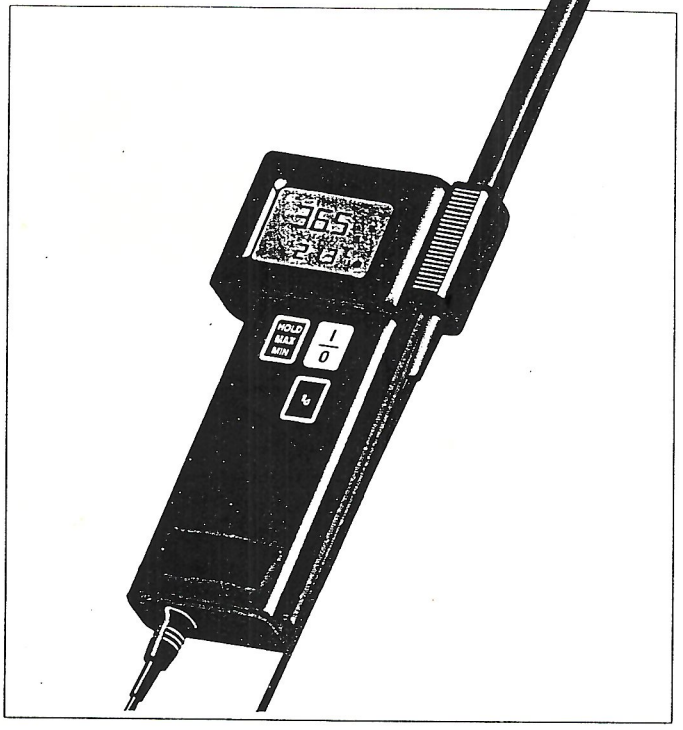
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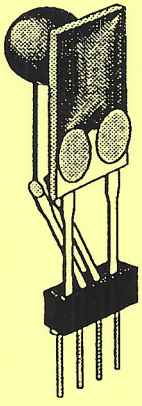
ets
electro - tech
systems, inc.
GLENSIDE, PA

Humidity/temperature meas. instrument

Instruction manual



Please read



Previous construction

New construction

The older version of the humidity sensor can be damaged when the protective cap is screwed on and off. In the new construction, the humidity chip is in the middle of the probe shaft and should, thus, avoid being damaged.

The old and new constructions of the humidity sensors are compatible.

The **part no.** for the **humidity control and calibration set** is incorrect in the instruction manual. Please use the part no. indicated below.

9. Ordering data

Description	Part no.
Humidity control and calibration set 12 % / 76 %, instruction manual	0554.0660

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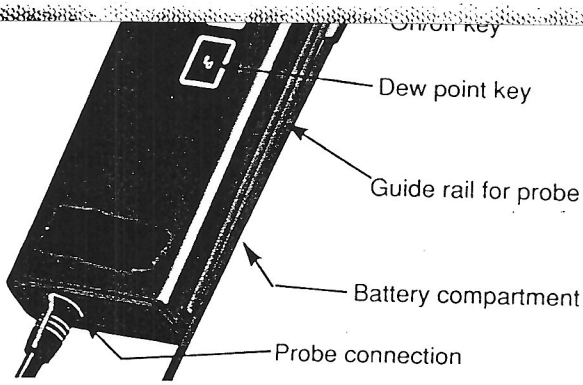
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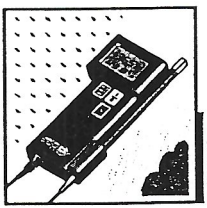
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is a simple to clean, rugged and easy-to-use humidity and temperature meas. instrument for a range of 0 to 100 %RH, - 20 °C to + 70 °C (0 to +160 °F). Furthermore calculates the dew point of the measured air.



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.



Please read before using instrument!

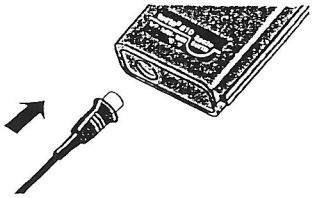
Observe measuring ranges!
Overheating will destroy the sensors.

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.

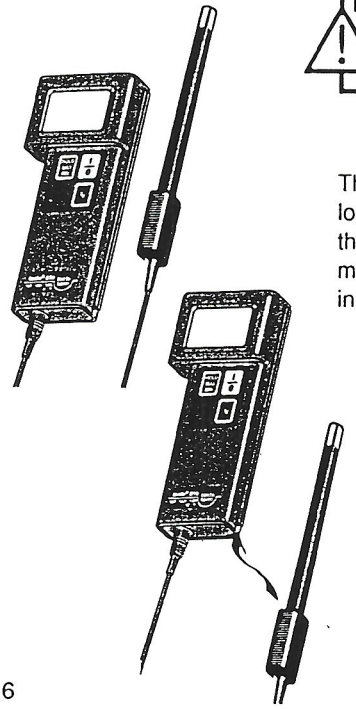
If the instrument is opened, improperly handled or if force is applied, no warranty will be granted!

4.1 Connecting the probe

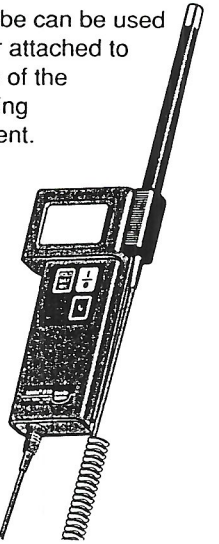


Insert the probe plug into the socket of the measuring instrument. Observe the markings (→) on the instrument and the attachment plug.

Never pull on the lead when removing the probe!



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

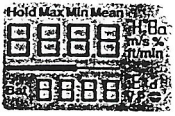


4.2 Switching on the instrument

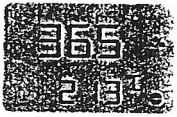




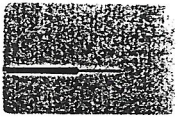
Switch on the instrument



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:

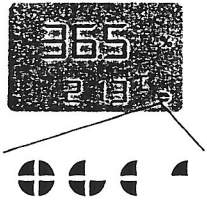
- Connect the probe. Switch on the instrument again.
- Check to see if probe is correctly connected. Switch on the instrument again.
- The probe is faulty, please contact our service department.

4.3 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



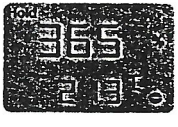
By using the **HOLD-MAX-MIN** key, measured values can be held in display, minimum and maximum values can be called up.

4.4.1 HOLD function





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

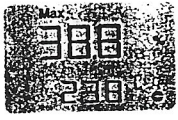


The measured value and the HOLD function are shown on the display.

4.4.2 MAX function

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

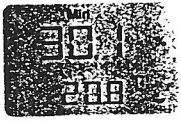




4.4.3 MIN function



The minimum values can be called up after the MAX function

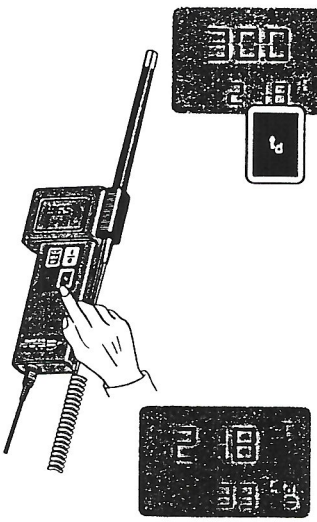


Press the **HOLD-MAX-MIN** key.

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

4.5 Dew point

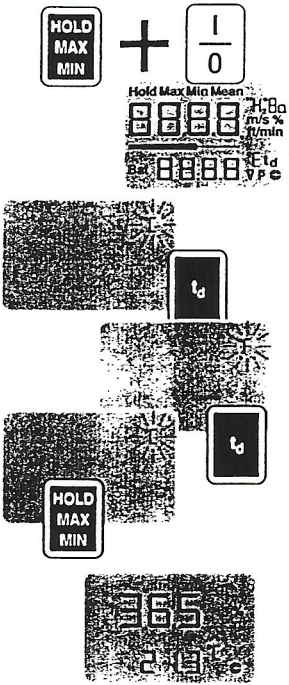
calculates the actual dew point t_d. This can also be seen whilst the HOLD-MAX-MIN function is in use, whereby the maximum and minimum stored dew point values are displayed.



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.

can be converted from °C to °F.



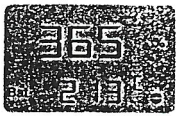
Keep the **HOLD-MAX-MIN** key pressed when switching on the instrument and quickly press the **I/0** key.
Keep the **HOLD-MAX-MIN** key pressed until the segment test is over and "°C" flashes in the display .

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

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

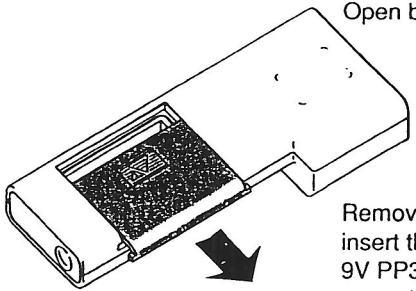
The unit of measurement remains stored even after the instrument has been switched off.

6.1 Battery replacement

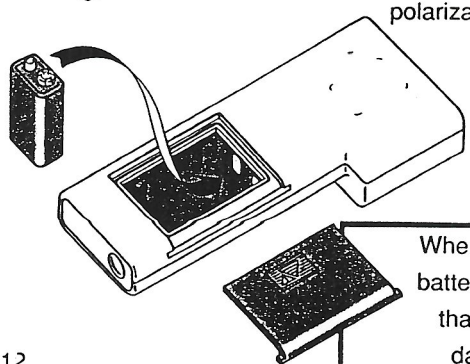


Should *"Bat"* appear in the display, the battery has a remaining life of 5 hours. Should the battery voltage be too low, the instrument switches off automatically.

Open battery compartment.

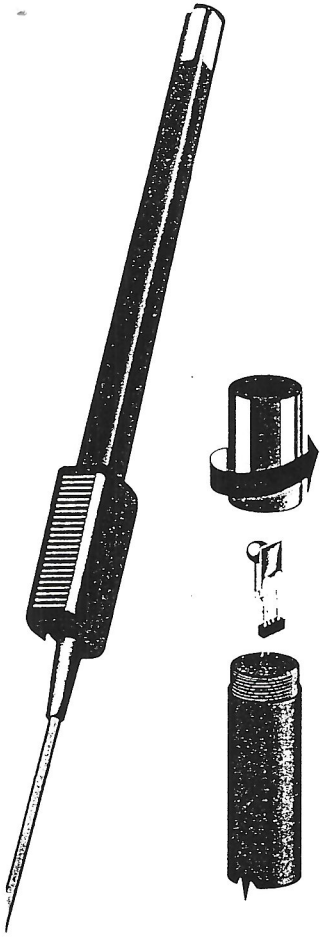


Remove the old battery and insert the new battery, type 9V PP3 (IEC 6 F 22) (observe polarization).



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

7.2 Probe



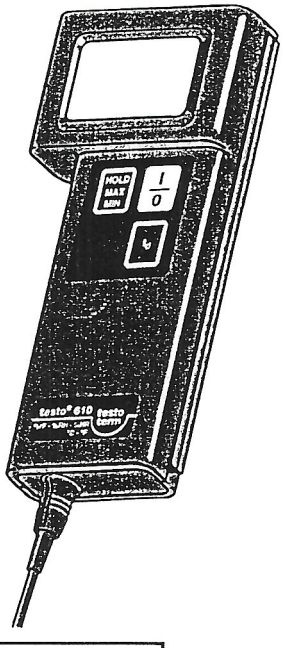
The probe head contains a rugged and stable humidity sensor.
When used in air conditioning applications, we recommend a yearly service and for use in harsh environments (e.g. swimming pool atmospheres, strong velocities, salty air) we recommend a service every 3 months with our control and calibration set **0554.0650**.

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.

7.3 Measuring instrument

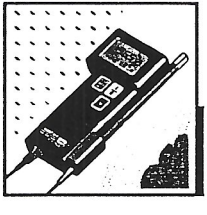


requires no maintenance and is therefore not subject to particular maintenance intervals.

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.

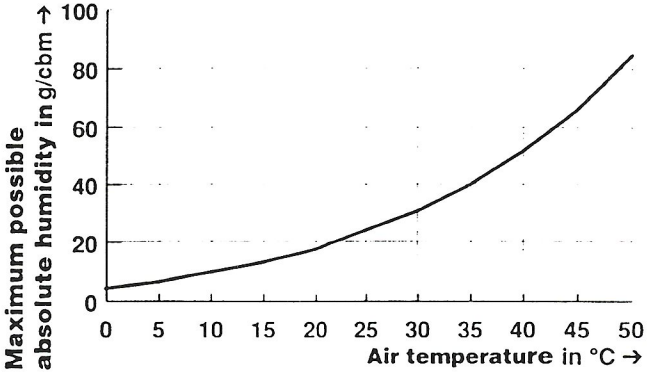


IP 54

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

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/m³. 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.

8. Basics of measurement

8.1 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.

8.2 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.

9.3 Warranty

Meas. instrument .....12 months

Probe .....12 months

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

10. Ordering data

Description	Part no.
Humidity meas. instrument instrument with probe, battery, case and instruction manual	0563.6105
Humidity probe	0636.9761
Humidity calibration set **12 % / 76 %,** instruction manual	0554.0650
9 V rech. battery	0515.0025
Recharger for external recharging of rech. battery	0554.0025

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