

PCE Americas Inc.
711 Commerce Way
Suite 8
Jupiter
FL-33458
USA
From outside US: +1
Tel: (561) 320-9162
Fax: (561) 320-9176
info@pce-americas.com

PCE Instruments UK Ltd.
Units 12/13
Southpoint Business Park
Ensign way
Hampshire / Southampton
United Kingdom, SO31 4RF
From outside UK: +44
Tel: (0) 2380 98703 0
Fax: (0) 2380 98703 9
info@pce-instruments.com

www.pce-instruments.com/english
www.pce-instruments.com

Manual Hygrometer PCE-WM 1



1. APPLICATION

Thermo-Hygrometer PCE-WM 1 is an electronic microprocessor based device for measuring relative air humidity (%RH), temperature (°C), absolute humidity (g/m³) and dew point temperature (°C). It is equipped with TP-1 Electrode which enables the user to obtain temperature readings for various surfaces (e.g. steel constructions). Absolute humidity and dew point temperature are calculated by the microprocessor, which performs linearization and mathematical computations.

The device is widely used in industry and laboratories, it is extremely user friendly. It is supplied together with other standard equipment in a shock proof case.

2. TECHNICAL DATA

RELATIVE HUMIDITY (%RH)

Range	10 % - 95 %
Sensor type	EE HC 200 (Austria)
Response time T ₉₀	15 s
Accuracy	±2 % (± 3 %)

TEMPERATURE (°C)

Range	- 20°C - 80°C
Sensor type	EE KF 6645 (Austria)
Response time T ₉₀	15 s
Accuracy	± 0.5°C
Resolution	0.1 °C

SURFACE TEMPERATURE (°C)

Range	- 20°C - 80°C
Sensor type	EE KF 6645 (Austria)
Response time T ₉₀	240 s
Accuracy	± 0.5°C
Resolution	0.1 °C
Electrode fastening	magnetic grip

ABSOLUTE HUMIDITY (g/m³)

Absolute humidity is calculated by the microprocessor using formulas commonly known in thermodynamics.

DEW POINT TEMPERATURE (°C)

Dew point temperature is determined by the microprocessor using a two dimensional (humidity and temperature) table.

REMAINING TECHNICAL DATA

Display	LCD 3 ¹ / ₂ digits
Nonlinearity correction	yes
Power	9V, battery 6F22
Auto power off	yes, after 4 min.
Size	
instrument	165*80*33 mm
case	270*180*55 mm

3. PREPARING THE INSTRUMENT FOR MEASUREMENTS

Before starting the measurement connect the probe to the instrument.

4. MEASUREMENTS

The instrument is turned on by pressing the ON/OFF button once. The results of measurements of air temperature, relative humidity, dew point temperature and absolute humidity are instantaneous after switching the knob to (respectively): TEMP.[°C], RH [%], DEW POINT [°C], HUMIDITY [g/m³].

Surface temperature measurement should be conducted with the TP-1 electrode connected to the mini-jack socket located in the lower part of the probe. Set the knob to TEMP. [°C].

5. OUT OF RANGE INDICATION

The instrument indicates the results that are out of range in the following way:

- 1_ _ .1 - upper temp. range exceeded ($t > 79.5^{\circ}\text{C}$),
- 1_ _ .1 - lower temp. range exceeded ($t < -19.5^{\circ}\text{C}$),
- 1_ _ .2 - upper RH range exceeded ($\text{RH}\% > 99.9\%$),
- 1_ _ .2 - lower RH range exceeded ($\text{RH}\% < 10\%$),
- 1_ _ .3 - upper dew point temp. range exceeded ($t_{\text{dp}} > 79.5^{\circ}\text{C}$),
- 1_ _ .3 - lower dew point temp. range exceeded ($t_{\text{dp}} < -19.5^{\circ}\text{C}$).

6. REPLACING THE BATTERY

The instrument is powered by one 9V battery type 6F22. The battery should be replaced when the "LO BAT" sign is displayed on the LCD. To replace the battery remove the cap, unscrew the screw holding the two halves of the case together and carefully separate them.

7. EXPLOITATION REMARKS

- 7.1 Do not allow the cold humidity sensor to come in contact with warm and humid air. This causes condensation and totally falsifies the results. Condensation does not damage the sensors nor does it change its characteristic.
- 7.2 Humidity sensor is not resistant to acetone or other chemical solvents.
- 7.3 If the sensors become dusted wash it gently with alcohol and let to dry. Mechanical cleaning is not allowed as it may case scratches.

8. HUMIDITY STANDARDS

Periodical verification of the Thermo-Hygrometer PCE-WM 1 operation can be done with appropriate saturated salts solutions or humidity generators. Checking can be done by the manufacturer or other specialized company. It is recommended to calibrate the instrument every 12 months.

9. GUARANTEE AND SERVICE

PCE.Group warrants the Thermo-Hygrometer PCE-WM 1 to be free from malfunction and defects in both materials and workmanship for one year (12 months) from the date of purchase.

If the Thermo-Hygrometer PCE-WM 1 does not function properly during the warranty period due to defects in either, materials or workmanship, our company will, at its option, either repair or replace the instrument without charge, subject to the conditions and limitations stated herein. Such repair service will include any necessary adjustments and replacement part.

Limitations

This warranty does not cover damage that may occur if you use excess force (in variance with instructions of this users manual) to hammer the device into the wood.

This warranty becomes null and void if you fail to pack your PCE-WM1 in a manner consistent with the original product packaging and damage occurs during product shipment.

This warranty does not cover: circumstance beyond our company's control; service required as the result of unauthorized modifications or service; misuse, abuse; failure to follow our company operating or maintenance instructions.

Repair or replacement without charge is our company's only obligation under this warranty. Our company will not be responsible for any special, consequential or incidental damages resulting from the purchase, use, or improper functioning of this equipment regardless of the cause. Such damages for which our company's will not be responsible include, but are not limited to, loss of revenue or profit, downtime costs, loss of use of the equipment, cost of any substitute equipment, facilities of services, or claims of your customers for such damages.