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-EM 883

Version 1.0
Date of creation: 18.05.2015
Date of last change: 17.06.2015

Contents

1 Introduction

Thank you for purchasing a multifunctional environmental meter from PCE Instruments.
This multifunctional environmental meter combines a sound level meter, a light meter, a wind meter and a thermometer and a hygrometer. This means, you only need one device to determine the key figures of the environmental conditions. Due to its compact design and low weight, the environmental meter is well-suited for measurements in the field.

2 Safety notes

Please read this manual carefully and completely before you use the device for the first time. The device may only be used by qualified personnel and repaired by PCE Instruments personnel. There is no warranty of damages or injuries caused by non-observance of the manual.

- The device may not be used in altitudes of more than 2,000 meters.
- The device may only be used in approved temperature range (-20 … +60 °C; 10 … 90 % RH)
- The opening of the case should only be done by qualified personnel of the PCE Instruments.
- The instrument should never be placed with the user interface (e.g. keyboard side on a table)
- You should not make technical changes on the device
- The appliance should only be cleaned with a damp cloth / use only pH-neutral cleaner

This user's handbook is published from PCE Instruments without any guarantee.

We expressly point to our general guarantee terms, they can be found in our general terms of business.

If you have any questions please contact PCE Instruments.

3 Specification

3.1 Technical specifications

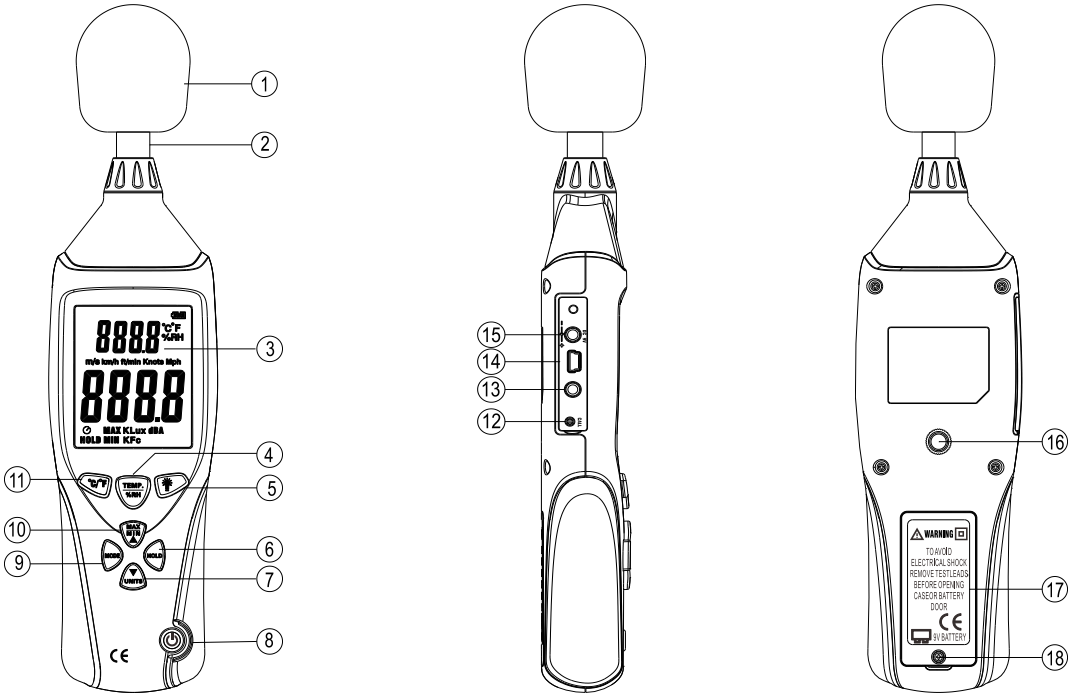
Sound level	
Applied Standard	IEC61672-1 CLASS2
Accuracy	±3.0 dB
Display	4 Digits
Resolution	0.1 dB
Frequency response	31.5 Hz … 8 kHz
Measurement range	Auto: 35 dB … 130 dB
Frequency weighting	dBA
Microphone	½ inch electric condenser microphone
Light	
Measurement range	0 … 200,000 lux; 0 Fc … 20,000 Fc
Spectral response	CIE photoptic (CIE human eye response curve)
Spectral accuracy	CIE Vλ function f1'≦6%
Cosine response	f2'≦2%
Accuracy	±15 %
Photo detector	One silicon photo diode with filter
Air velocity	
Measurement range	0.5 … 30.0 m/s
Accuracy	±10 %
Measurement units	m/s, km/h, ft/min, knots, mph
Temperature	
Measurement range	-40 … +70 °C (-40 … +158 °F)
Accuracy	±2.0 °C (±3.6 °F)
Resolution	0.1 °
Measurement units	°C / °F
Humidity	
Measurement range	10 … 90 % RH
Accuracy	±5 % RH
Resolution	0.1 %
General specifications	
Data update	1 time/sec
Maximum value	MAX
Minimum value	MIN
Data hold	HOLD
Auto power off	Automatic power-off after approx.. 15 minutes of inactivity
Power supply	1 x 9 V battery (006P, NEDA1604 or IEC6F22)
Battery life	Approx. 30 hours
Operating conditions	-20 … +60 °C; 10 … 90 % RH
Storing conditions	-40 … +60 °C; 10 … 75 % RH
Dimensions	252 x 66 x 33 mm
Weight	568 g

3.2 Accessories

1 x PCE-EM 883
1 x temperature and humidity probe
1 x anemometer probe
1 x light detector
1 x wind screen
1 x screw driver (for calibration screw)
1 x 9 V battery
1 x user's manual

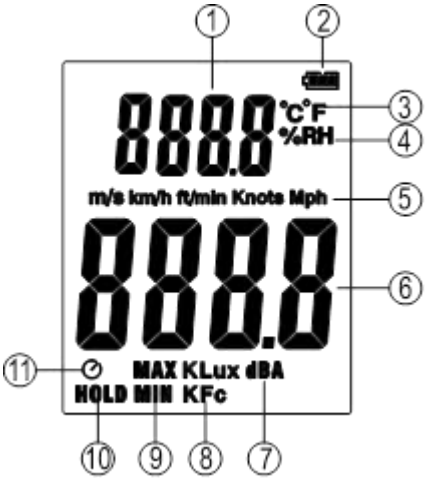
4 System description

4.1 Measuring device



1. Microphone wind screen
2. Mikrophone
3. LCD display
4. Temp. / humidity button
5. Backlight button
6. HOLD button
7. Unit selection button
8. Power ON/OFF button
9. Funktion button
10. MAX / MIN button
11. °C / °F selection button
12. Potentiometer calibration for sound level (calibration screw)
13. Connection for anemometer and photometer probe
14. Connection for temperature and humidity probe
15. Connection for external power supply (9 V DC; OD: 3.5 mm; ID: 1.35 mm)
16. Tripod nut
17. Battery compartment
18. Battery compartment screw

4.2 Display description



1. Temp./Humidity reading
2. Battery status
3. Temperature unit
4. Humidity unit
5. Air velocity unit
6. Sound level, air velocity or light reading
7. Sound level unit
8. Light unit
9. MAX/MIN indication
10. Data hold indication
11. Auto power off indication

5 Operation

5.1 Getting started

1. Open the battery compartment and install a 9 V battery.
2. Close the battery compartment and tighten the screw.
3. Turn on the device.
4. Select the desired measuring function.

Note:

- If the battery status indication appears on the display, you should replace the battery.
- You can hold the device in your hand or you can use a tripod when performing measurements.
- When performing sound level measurements, the best measuring distance from microphone to the sound source is about 1 – 1.5 m.
- If you want to use an external power supply, use the connection on the side of the device (see #15 in chapter 4.1).

5.2 Switch between temperature and humidity measurements

To switch between temperature and humidity measuring, press the “TEMP/%RH” button (see chapter 4.1).

5.3 Display backlight

To turn on the display backlight, press the backlight button on the device (see chapter 4.1). Press the button again, to turn the backlight back off. The display backlight automatically turns off after approx. 30 seconds of inactivity.

5.4 Data hold

Press the “HOLD” button once to activate the display hold function. The hold indication should now appear and the current reading is frozen on the display. To return to the normal measuring mode, just press the “HOLD” button again.

5.5 Select the measuring unit

5.5.1 Wind speed

To change the measuring unit of the wind speed, press the “UNITS” button when wind speed measuring is active. You can choose between m/s, km/h, ft/min, knots and mph.

5.5.2 Light

To change the measuring unit of the light, press the “UNITS” button when light measuring is active. You can choose between lx and Fc.

5.6 ON/OFF button

By pressing the “ON/OFF” button once, you can turn the device on. To turn the device off, you have to press and hold the “ON/OFF” button for 3 seconds.

5.7 MODE button

If the device is turned on, press the “MODE” button to select the desired function. You can choose between sound level, air velocity and light.

5.8 MAX/MIN recording

When in measuring mode, press the “MAX/MIN” button once to activate the capturing of the maximum value. A “MAX” indication appears and the maximum value is shown on the display. To activate the minimum value capturing, press the “MAX/MIN” button again. The display now shows the minimum value, as well as a “MIN” indication. To exit the “MAX/MIN” mode just press the “MAX/MIN” button once more.

5.9 Select the temperature unit

To change the temperature unit, press the “°C/°F” button. You can choose between °C and °F.

5.10 Sound level calibration procedure

You can calibrate the device for sound level measurements by using an optional calibrator. To do so, follow these steps:

1. Set the frequency weighting of the calibrator to A-weighting (dBA).
2. Carefully insert the microphone into the insertion hole of the calibrator (94 dB @ 1kHz).
3. Turn on the calibration and use the potentiometer (calibrat6ion screw) on the side of the device (see #12 in chapter 4.1) to adjust the displayed value, until 94.0 dB is shown.

Note: Every device is calibrated before the delivery. We recommend a recalibration once a year.

6 Contact

If you have any questions about our range of products or measuring instruments please contact PCE Instruments.

6.1 PCE Instruments UK

By post:
PCE Instruments UK Ltd.
Units 12/13 Southpoint Business Park
Ensign Way, Southampton
Hampshire

United Kingdom, SO31 4RF

By phone:
02380 987 035

6.2 PCE Americas

By post:
PCE Americas Inc.
711 Commerce Way
Suite 8
Jupiter
33458 FL
USA

By phone:
561 320 9162