User Manual

PCE-EM 888 Wind Speed Meter

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v1.0

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Contents

1   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. Damage or injuries caused by non-observance of the manual are excluded from our liability and not covered by our warranty.

- The device must only be used as described in this instruction manual. If used otherwise, this can cause dangerous situations for the user and damage to the meter.
- The instrument may only be used if the environmental conditions (temperature, relative humidity, …) are within the ranges stated in the technical specifications. Do not expose the device to extreme temperatures, direct sunlight, extreme humidity or moisture.
- Do not expose the device to shocks or strong vibrations.
- The case should only be opened by qualified PCE Instruments personnel.
- Never use the instrument when your hands are wet.
- You must not make any technical changes to the device.
- The appliance should only be cleaned with a damp cloth. Use only pH-neutral cleaner, no abrasives or solvents.
- The device must only be used with accessories from PCE Instruments or equivalent.
- Before each use, inspect the case for visible damage. If any damage is visible, do not use the device.
- Do not use the instrument in explosive atmospheres.
- The measurement range as stated in the specifications must not be exceeded under any circumstances.
- Non-observance of the safety notes can cause damage to the device and injuries to the user.

We do not assume liability for printing errors or any other mistakes in this manual.

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

If you have any questions please contact PCE Instruments. The contact details can be found at the end of this manual.

2   Introduction

The PCE-EM 888 climate meter enables the user to measure the most important environmental conditions. Due to its dimensions and its low weight, this environmental tester is like a portable weather station and can be used in any place. You only need to press a single key to view all weather information in numerical terms. This makes the PCE-EM 888 ideal for construction workers, field staff, engineers / technicians, sailors, pilots, farmers and lots of other persons who have to rely on the weather or whose work is substantially influenced by the weather.

2.1   Delivery contents

1 x PCE-EM 888 hygrometer
1 x Type K thermocouple sensor TF-500
1 x 9V battery
1 x User manual

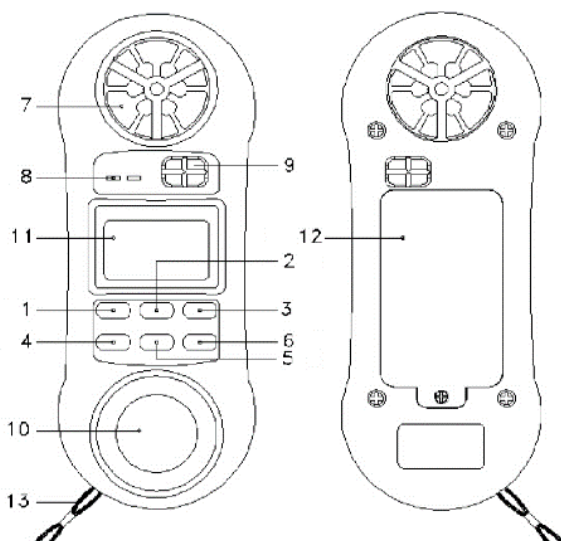## 3   Specifications

Wind speed	
Measuring range	80 ... 5910 ft / min 0.4 ... 30 m / s 1.4 ... 108 km / h 0.9 ... 67 mph 0.8 ... 58.9 knots
Resolution	1 ft / min 0.1 m / s 0.1 km / h 0.1 mph 0.1 knot
Accuracy	< 20 m / s: ± 3% of range > 20 m / s: ± 4% of range
Volumetric air flow	
Measuring range	Max. 54000 CMM Max. 908400 CFM
Resolution	0.0001 ... 1 CMM 0.001 ... 100 CFM
Relative humidity	
Measuring range	10 ... 95% RH
Resolution	0.1% RH
Accuracy	< 70% RH ± 4% of range > 70% RH ± (4% of range + 1.2% RH)
Air temperature	
Measuring range	0 ... 50 ° C / 32 ... 122 ° F
Resolution	0.1 ° C / 0.1 ° F
Accuracy	± 1.2 ° C / ± 2.5 ° F
Light	
Measuring range	0 ... 2000 lux 1800 ... 20000 lux 0 ... 204 ft-cd 170 ... 1860 ft-cd
Resolution	1 lux 10 lux 0.1 ft cd 1 ft cd
Accuracy	± 5% of range ± 8 digits

Type K thermocouple sensor	
Measuring range	-100 ... 1300 ° C / -148 ... 2372 ° F
Resolution	0.1 ° C / 0.1 ° F
Accuracy	± (1% of range + 1 ° C) ± (1% of range + 2 ° F)
Barometric pressure	
Measuring range	10 ... 999.9 hPa 1000 ... 1100 hPa 7.5 ... 825 mmHg 0.29 ... 32.48 inHg
Resolution	0.1 hPa 1 hPa 0.1 mmHg 0.01 inHg
Accuracy	± 1.5 hPa ± 2 hPa ± 1.2 mmHg 0.05 inHg
General specifications	
Display	8 mm (0.32") LCD
Measurement functions	Air speed / velocity Volumetric air flow Relative humidity Air temperature Light Atmospheric / barometric pressure Thermocouple type K
Operating conditions	0 ... 50 ° C (32 ... 122 ° F) / Max. 80% RH
Power supply	1 x 9 V battery
Current consumption	Approx. 6.2 mA
Weight	Approx. 160 g / 0.36 lb
Dimensions	156 x 60 x 33 mm / 6.2 x 2.4 x 1.3"

4   Device Description

1 Power/ESC Button
2 Hold Button
3 MIN/MAX Button
4 Unit/Zero Button
5 Temp./Lux Button
   (℃/℉/▲/Lux/Ft-cd)
6 Function/▼ Button
7 Wind Sensor
8 Connection
   K-type thermocouple
9   Temp./Humidity
Sensor
10 Light Sensor
11 Display
12 Battery Compartment
13 Carrying Strap

5   Power on/off

Power on: Press "Power Button" once.
Power off: During power on, press "Power Button" once.

Note: If MAX/Min recording has been started ("REC" icon in the display), you will not be able to turn off the instrument.

6   Measuring Functions

The meter has these 7 functions:

Display indication	Measuring function
An	Air flow and temperature
AirFL	Volume flow
bAr	Absolute air pressure
tP	K-type thermometer
LIgHt	Light
rH	Humidity/Temp.
dP	Dew point

In order to change the measuring function, press the function key until the right function is displayed.

Note: If the measured value is held („HOLD" icon in the display) or MAX/MIN recording has been started ("REC" icon in the display), the measuring function cannot be switched.

6.1 Air flow measurement and temperature

During the airflow measurement, you can also read out the current temperature in the display. The temperature will be shown in the bottom left-hand part of the display.
Now press the Unit/Zero Button to switch the airflow units. In order to change the temperature, press the Temp./Lux Button (℃/℉/▲/Lux/Ft-cd).

6.2 Volume flow measurement

For volume flow measurement, you can select the unit "CMM" for cubic meters or "CFM" for cubic feet per minute. Press the "Unit/Zero Button" to switch the volume flow unit.

6.2.1 Set measuring area for volume flow

To set the measuring area for the volume flow, first select the desired unit. The press the Temp./Lux Button (℃/℉/▲/Lux/Ft-cd). The display will show "m-2" for square metres and "f-2" for square feet. Now set the area. The Unit/Zero Button is used to get to the next digit and the Temp./Lux Button (℃/℉/▲/Lux/Ft-cd) and the Function/▼ Button are used to increase and decrease the value respectively. To confirm the set value, push the MIN/MAX Button. The measurement will start after a few minutes.

Note: It is not possible to enter round measuring areas.

6.3 Barometric pressure measurement (abs. pressure)

To change the unit for the air pressure measurement, press the Unit/Zero Button. You can select HPA, inHP or mmHP.

6.4 K-type thermocouple

First plug a K-type thermocouple into the socket of the device. The temperature value will be displayed immediately. To change the temperature unit, push the Temp./Lux Button (°C/°F/▲/Lux/Ft-cd).

6.5 Light measurement

When you make a light measurement, the display will turn by 180 °. Turn the device by 180 ° as well to make sure the light sensor lies bare and you can read out the measurement values. Press the Temp./Lux Button (℃/℉/▲/Lux/Ft-cd) to select measuring unit "Lux" or "Ft-cd".

6.5.1 Zero point of the light sensor

When the environmental temperature or the battery capacity changes, the zero point of the light sensor can drift. To get the most accurate measurement results, it is recommended to zero the device regularly. To do so, cover the sensor so that it is no longer exposed to any light. Then press the Unit/Zero Button to zero the device. Zeroing is only possible if the indicated value is below 20 lux.

6.6 Humidity and ambient temperature

While measuring the current air humidity, you can also read out the current ambient temperature. To change the temperature unit, press the Temp./Lux Button (℃/℉/▲/Lux/Ft-cd).

6.7 Dew point measurement

When making a dew point measurement, you can change the unit by pressing the Temp./Lux Button (℃/℉/▲/Lux/Ft-cd).

7   Hold function

Whenever you press the Hold Button, the current reading will freeze and a "HOLD" symbol will appear on the display. Press the Hold Button again to unfreeze the value and proceed with your ongoing measurement.

8   MAX/MIN data recording

Recording can be started by pressing the MIN/MAX Button. "REC" will appear in the display. Only the lowest and the highest value will be saved when using this function. All other values will be dropped. Press the MIN/MAX Button to view the saved values. Press the Hold Button to start recording again. To get back to normal measurement mode, press and hold the MAX/MIN Button for three seconds.

9   Auto Power Off

In order to prolong the battery life, the instrument has an "Auto Power Off" function. The meter will switch off automatically if no buttons are pressed for around 10 minutes. When data are recorded or a value has been held, this function will be disabled.

10   Battery level indicator

When the LCD display shows the ▮▬ symbol, it is necessary to replace the 9 V block battery. Measurement may still be made for several hours after the low battery indicator appears. However, faulty measurements can occur then.

To change the battery, open the battery compartment cover on the rear side of the meter. To loosen the screw, you will need a screwdriver. Remove the old battery and replace it by a new one. Observe correct polarity and re-install the battery compartment cover.

11   Contact

If you have any questions, suggestions or technical problems, please do not hesitate to contact us. You will find the relevant contact information at the end of this user manual.

12   Disposal

For the disposal of batteries in the EU, the 2006/66/EC directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose.

In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law.

For countries outside the EU, batteries and devices should be disposed of in accordance with your local waste regulations.

If you have any questions, please contact PCE Instruments.

PCE Instruments contact information

Germany
PCE Deutschland GmbH
Im Langel 4
D-59872 Meschede
Deutschland
Tel.: +49 (0) 2903 976 99 0
Fax: +49 (0) 2903 976 99 29
info@pce-instruments.com
www.pce-instruments.com/deutsch

France
PCE Instruments France EURL
23, rue de Strasbourg
67250 SOULTZ-SOUS-FORETS
France
Téléphone: +33 (0) 972 3537 17
Numéro de fax: +33 (0) 972 3537 18
info@pce-france.fr
www.pce-instruments.com/french

Spain
PCE Ibérica S.L.
Calle Mayor, 53
02500 Tobarra (Albacete)
España
Tel. : +34 967 543 548
Fax: +34 967 543 542
info@pce-iberica.es
www.pce-instruments.com/espanol

United States of America
PCE Americas Inc.
711 Commerce Way suite 8
Jupiter / Palm Beach
33458 FL
USA
Tel: +1 (561) 320-9162
Fax: +1 (561) 320-9176
info@pce-americas.com
www.pce-instruments.com/us

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

Italy
PCE Italia s.r.l.
Via Pesciatina 878 / B-Interno 6
55010 LOC. GRAGNANO
CAPANNORI (LUCCA)
Italia
Telefono: +39 0583 975 114
Fax: +39 0583 974 824
info@pce-italia.it
www.pce-instruments.com/italiano

The Netherlands
PCE Brookhuis B.V.
Institutenweg 15
7521 PH Enschede
Nederland
Telefoon: +31 (0)53 737 01 92
Fax: +31 53 430 36 46
info@pcebenelux.nl
www.pce-instruments.com/dutch

Chile
PCE Instruments Chile S.A.
RUT: 76.154.057-2
Santos Dumont 738, local 4
Comuna de Recoleta, Santiago, Chile
Tel. : +56 2 24053238
Fax: +56 2 2873 3777
info@pce-instruments.cl
www.pce-instruments.com/chile

Hong Kong
PCE Instruments HK Ltd.
Unit J, 21/F., COS Centre
56 Tsun Yip Street
Kwun Tong
Kowloon, Hong Kong
Tel: +852-301-84912
jyi@pce-instruments.com
www.pce-instruments.cn

China
PCE (Beijing) Technology Co.,Ltd
1519 Room, 6 Building
Men Tou Gou Xin Cheng,
Men Tou Gou District
102300 Beijing
China
Tel: +86 (10) 8893 9660
info@pce-instruments.cn
www.pce-instruments.cn

Turkey
PCE Teknik Cihazları Ltd.Şti.
Halkalı Merkez Mah.
Pehlivan Sok. No.6/C
34303 Küçükçekmece - İstanbul
Türkiye
Tel: 0212 471 11 47
Faks: 0212 705 53 93
info@pce-cihazlari.com.tr
www.pce-instruments.com/turkish