User Manual

PCE-325 / PCE-325D Sound Level Meter

User manuals in various languages (français, italiano, español, português, nederlands, türk, polski, русский, 中文) can be found by using our

product search on: www.pce-instruments.com

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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.

2 Technical specification

Applicable standards	IEC61672-1: 2013 class 2
Measurement range	Auto: 30 … 130 dB Manual: 30 … 90 dB, 50 … 110 dB, and 70 … 130 dB
Accuracy	±1.5 dB (at reference condition of 94 dB and 1 kHz)
Resolution	0.1 dB
Data update rate	500 ms
Frequency weighting	A and C
Response time	FAST: 125 ms, SLOW: 1 sec
Standard calibrator	1 KHz sine wave @ 94 or 114 dB
Display	3 1/2-digit LCD with analogue bar graph
Out of range indication	"OVER" and "UNDER" indicators on LCD
Auto power off	after 3 minutes of inactivity
Battery level indication	⊏ flashes when the battery voltage is too low
Data logger (PCE-325D)	32,000 sets of measured values
Power supply	3.7 V Li-Ion battery
Operating conditions	-10 ... 50 °C / <80 % RH
Storage conditions	-20 ... 50 °C / <80 % RH
Dimensions	Meter: 162 x 88 x 32 mm (6.38 x 3.46 x 1.26 ") Sensor: 102 x 60 x 25 mm (4.01 x 2.36 x 0.98")
Weight	approx. 306 g (0.674 lbs)

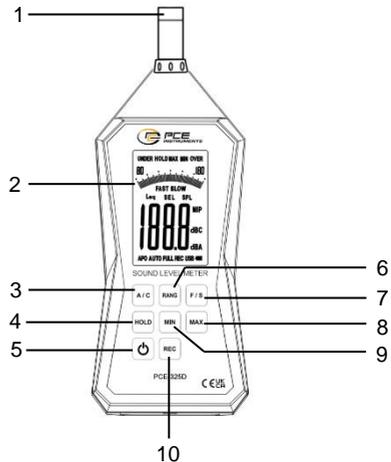## 3 Delivery Scope

1 x sound level meter PCE-325 or PCE-325D
1 x USB cable
1 x PC software (PCE-325D)
1 x service bag
1 x user manual

4   Device description

4.1   Key description

1. Sensor
2. LCD
3. A/C frequency weighting key
4. HOLD key
5. ON/OFF key
6. RANGE selection key
7. Fast/slow response time key
8. MAX key
9. MIN key
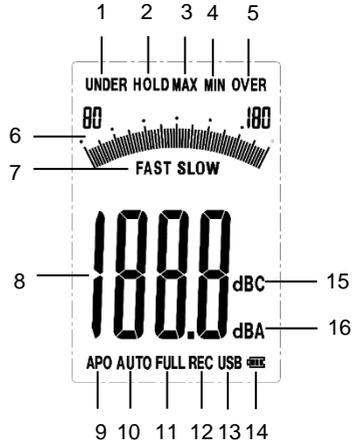10. REC key (PCE-325D) / RANGE selection key (PCE-325 only)

Note:
The micro USB socket is located at the bottom of the meter.

4.2   Display

1. Under-range indicator
2. Data HOLD
3. MAX mode indicator
4. MIN mode indicator
5. Over-range indicator
6. Analogue bar graph
7. Fast/slow response time indicator
8. Digital display
9. Automatic power off
10. AUTO ranging indicator
11. Memory full indicator
12. Data recording icon
13. USB icon
14. Battery icon
15. C frequency weighting (decibel)
16. A frequency weighting (decibel)

5 Operating instructions

5.1 Switch the meter on/off

Press and release the ⏻ key to turn on the sound level meter and press and hold the same key for 3 seconds to turn off the sound level meter.

5.2 Select A/C frequency weighting

Press the A / C key to select the desired frequency weighting. The "A" or "C" indicator will appear on the LCD.
A weighting is commonly used for measuring general noise levels. It emulates the response of the human ear.
C weighting is typically used for peak measurements and more accurately characterizes low frequency noise.

5.3 Select F/S Mode

Press the F/S key to select the desired response time. The "FAST" or "SLOW" indicator will appear on the LCD.
FAST sampling: once every 125 milliseconds
SLOW sampling: once per second
To measure a short sound burst or record a peak sound level, use the FAST response time. For general sound level measurements, use the SLOW response time.

5.4 Selecting decibel ranges

This sound level meter has three manual ranges as well as an auto-range mode. It defaults to auto-ranging on power-up with a range of 30 … 130 dB. The manual ranges are: 30 … 90 dB, 50 … 110 dB and 70 … 130 dB. Use the RANG (only for PCE-325D, for PCE-325 use the arrow keys) key to select the preferred range. The selected range will display in the top left and right of the LCD. When in auto-ranging mode, the AUTO indicator will appear at the bottom left. When selecting your range, observe the indicators UNDER and OVER at the top of the LCD to help guide you in selecting the best range. UNDER means you should select a lower range. OVER means you need to select a higher range. Ideally, the analogue bar graph should be reading near the middle of the range. When in doubt, use auto-range mode.

5.5 Measurement

Hold the instrument away from your body or mount it onto a tripod. Point the microphone at the sound source. The LCD displays the current sound level reading. It is updated twice per second.

Note:
When using the instrument in windy conditions (greater than 20 mph), use the windshield ball to avoid inaccurate readings.

5.6   MAX/MIN mode

To capture maximum sound levels, press the MAX/MIN key once. The MAX indicator will appear on the LCD. Now, only the maximum sound level will be captured and displayed.
The displayed value will not update until a higher sound level value is detected.
However, the analogue bar graph will continue to reflect the instantaneous readings.
To capture minimum sound levels, press the MAX/MIN key again, the MIN indicator will appear on the LCD. Now, only the minimum sound level will be captured and displayed. Press the key one more time to exit the MAX/MIN measurement mode.

5.7   Hold data

Press the HOLD key. The digital reading is held and the "HOLD" icon appears on the LCD. Press the HOLD key again to return to normal operation.

5.8   Recording mode (PCE-325D only)

The sound level meter has a data logging function. Before starting the recording function, connect the sound level meter to the PC via micro USB and set up the parameters via the PCE software. Press the REC key on the sound level meter to start recording. The REC icon will start flashing and will be displayed on the LCD.
Do not turn off the meter during recording mode. When the set number of data is reached, the sound level meter will be turned off automatically. When the memory is full, the FULL icon appears at the bottom of the LCD. When all data have been deleted, the FULL icon disappears.

Note:
If the sound level meter is turned off during recording, connect it to the PC and set up the parameters again before starting to record again. Otherwise, the ERR icon will be displayed on the LCD when you press the REC key for recording.

5.9   Auto Power Off

The APO function is set to ON by default. To turn off the APO function, press the ⏻ key lightly. To extend the battery life, the sound level meter will automatically turn off after about 3 minutes when not in use.
In recording mode or when the meter is connected via USB, the APO function is automatically disabled until the memory is full or the set number of records is reached.

5.10   Data recording and software installation

This sound level meter is able to record data in its internal memory. Before you can record data, you need to install the PCE software on your PC. The latest version of this software and detailed instructions on how to install and use it can be found at https://www.pce-instruments.com. A CD with the software is included for your convenience but we recommend downloading the latest version at the pce-instruments website.
To setup for a recording, connect the meter to a PC via the micro USB port.

6 Calibration

The sound level meter calibration requires a standard acoustic calibrator (94dB, 1kHz sine wave). Remove the back cover of the meter by unscrewing the four screws at the corners. Keep the battery connected. Locate the calibration potentiometer near the top of the circuit board.

Turn on the sound level meter and set it to A weighting, fast response and a range of 70 … 130 dB. Carefully insert the microphone into the 1/2 inch hole of the calibrator set to 94dB @ 1kHz. Adjust the calibration potentiometer with a small screw driver. Reattach the back cover.

Note:
The instrument has been calibrated before shipment. The recommended calibration interval is one year.

7   Maintenance and cleaning

7.1   Cleaning and storage

1. The white plastic sensor dome should be cleaned with a damp, soft cloth, if necessary.
2. Store the sound level meter in an area with moderate temperature and relative humidity.

7.2   Charging the battery

When the battery power is insufficient, the battery icon appears on the LCD and flashes. Use the DC 5V power adaptor to connect to the micro USB charging port at the bottom of the meter. The battery icon on the LCD will indicate that the battery is charging and will disappear when the battery is fully charged.

8   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.

9   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 26
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 Mula, 8
02500 Tobarra (Albacete)
España
Tel. : +34 967 543 548
Fax: +34 967 543 542
info@pce-iberica.es
www.pce-instruments.com/espanol

United Kingdom
PCE Instruments UK Ltd
Trafford House
Chester Rd, Old Trafford
Manchester M32 0RS
United Kingdom
Tel: +44 (0) 161 464902 0
Fax: +44 (0) 161 464902 9
info@pce-instruments.co.uk
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

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

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

United States of America
PCE Americas Inc.
1201 Jupiter Park Drive, 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

Denmark
PCE Instruments Denmark ApS
Birk Centerpark 40
7400 Herning
Denmark
Tel.: +45 70 30 53 08
kontakt@pce-instruments.com
www.pce-instruments.com/dansk