English

User Manual

PCE-423N Heat Wire Anemometer

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.
- Do not touch the hot wire.

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.

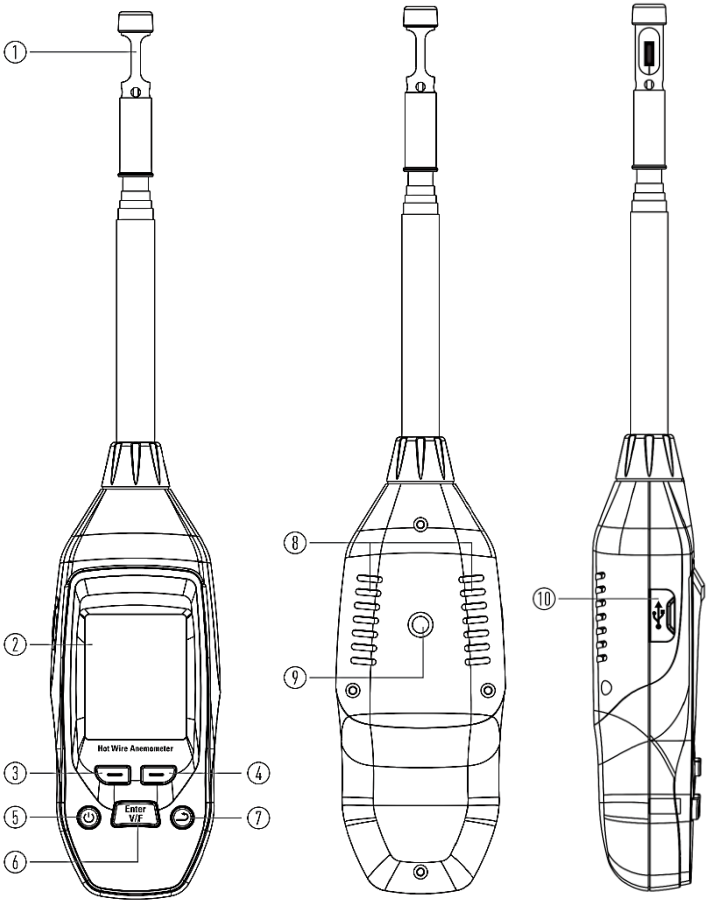
2 Specifications

Velocity	
Measurement range	0.00 ... 30.00 m/s 0.0 ... 5905.5 ft/min
Resolution	0.01 m/s 0.1 ft/min
Accuracy* *the higher value applies	±0.10 m/s or ±5 % of rdg. at 0 ... 5 m/s ±0.30 m/s or ±5 % of rdg. at 5 ... 30 m/s ±19.6 ft/min or ±5 % of rdg. at 0 ... 984.2 ft/min ±59.0 ft/min or ±5 % of rdg. at 984.2 ... 5905.5 ft/min
Flow rate	
Measurement range	0.0 ... 339120.0 m^3 /h 0.0 ... 99598.0 CFM
Resolution	0.1 m^3 /h 0.1 CFM
Temperature	
Measurement range	0 ... 50 °C 32 ... 122 °F
Resolution	0.1 °C 0.1 °F
Accuracy*	±1 °C ±1.8 °F
Further specification	
Telescopic probe length	210 ... 426 mm / 8.2 ... 16.7"
Telescopic probe diameter	12 mm / 0.47"
Memory space	10,000 measuring points
File format	CSV
Interface	micro USB
Bracket	3/8" tripod bracket
Display	2" LCD, 176 x 220 pixels
Measurement rate	1 Hz
Power supply (rechargeable battery)	internal rechargeable 1000 mAh battery
Power supply (external)	5 V DC, 1 A
Operating conditions	0 ... 50 °C (32 ... 122 °F), <85 % RH, non-condensing
Storage conditions	-10 ... 60 °C (14 ... 140 °F), <85 % RH, non-condensing
Dimensions (without telescopic probe)	145 x 50 x 35 mm / 5.7 x 1.9 x 1.3"
Weight	156 g / 0.34 lbs

3 Delivery scope

1 x hot wire anemometer PCE-423N
1 x micro USB cable
1 x user manual

4 Device description



No.	Meaning / function
1	flow sensor, temperature sensor
2	display
3	left function key
4	right function key
5	on / off key
6	Enter-V/F key, toggle key (velocity, flow rate)
7	back key
8	air slits
9	tripod bracket
10	micro USB connector

5 Switching the meter on and off

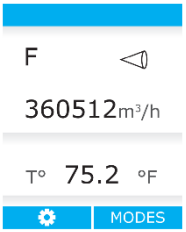
To switch the meter on or off, press and hold the ⏻ key.

6 Measurement preparation

Before making a measurement, slide the probe guard down. Switch on the device. Point the opening of the sensor in the direction of the flow to be measured. When you have finished your measurement, push the guard back up so that the sensor system is not damaged.

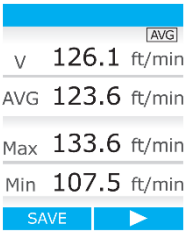
7 Measuring mode

7.1 Main display



After the meter has been switched on, the velocity measurement is carried out immediately. At the same time, the current temperature is measured and displayed. To select between the velocity and the flow rate measurement, press and release the enter-V/F key once. The "V" on the display stands for velocity and the "F" for flow. The flow rate depends on the velocity and the set area. You can set the area under 8.2 Flow rate setting to set the area.
Note: Saving individual measured values is not possible in normal measuring mode:

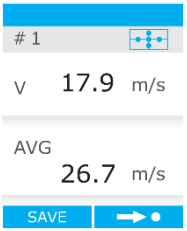
7.2 Average measurement (time-dependent)



To display the average, press the right function key in measuring mode to select MODES. The display now shows AVG for the average reading (time-dependent) and ●●●. Now press the left function key to select AVG. The current velocity, the average, the highest and the lowest measured value are displayed here. Press the left function key to save the displayed values SAVE. Press the right function key to start or pause the current average measurement ▶. To repeat the average measurement, go to normal measurement mode with the back key and start the average measurement again.

7.3 Average measurement (different points)

To determine the average of different measuring points, press the right function key MODES in measuring mode.



Press the right function key again to select ●●●. To save the displayed values, now press the left function key SAVE. The values are saved once per keystroke. To include the current measuring point in the average measurement and select the next one, press the right function key →●. To repeat the average measurement, go back to normal measuring mode with the back key and start the average measurement again.

8 Settings

To make settings, press the left function key ⚙ in measuring mode. Use the function keys to select between the individual functions displayed. At the same time, you can change selected parameters with the function keys. To open a setting, press the enter-V/F key. Press the back key to go back one level. Press the enter-V/F key to confirm your entry.

Setting	Meaning
Unit	Set the unit
Area / Funnel	Enter the dimensions for the flow rate
Auto-off	Set the automatic power off
History	Read memory
Brightness	Show brightness of the display
Date / Time	Set date and time
Calibration	Calibrate flow

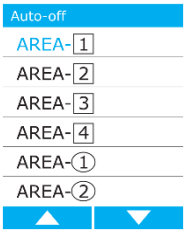
8.1 Set unit

To set the unit for the flow and the temperature, go to the Settings menu and to the Unit menu item. Here, you can select between the temperature or the flow rate. Then you can change the unit.

Function	Units
Flow rate	m/s, m³/h / ft/min, CFM
Temperature	°C, °F

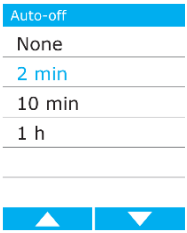
8.2 Flow rate setting

To specify the dimensions for the flow rate, go to the settings and select the menu item "Area/Funnel". Here, you can specify four different dimensions for square as well as round areas. In addition, a cylindrical area can be specified. The last selected area is adopted in measuring mode.



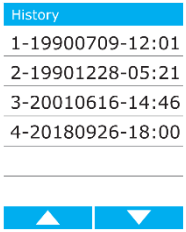
8.3 Automatic power off

Via the automatic power off function, the meter can be set to switch itself off after the set time. The following setting options are available here: "NONE" (function deactivated), 2 minutes, 10 minutes, 1 hour.



8.4 View saved data

To view the saved data, go to the settings and select the item "History". All saved measurement data can be viewed there. It is not possible to delete or edit the data on the meter itself.
Note: If no data has been saved, this item cannot be opened.

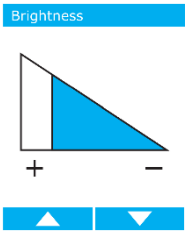


8.4.1 Transfer data to the computer

To transfer the measurement data to a computer, the meter must first be switched off. Now connect the meter to a computer which recognises it as a mass data storage device. The data can now be found in CSV data format.

8.5 Display brightness

To adjust the display brightness, go to the settings and open the item "Brightness". You can now use the function keys to adjust the brightness of the display.

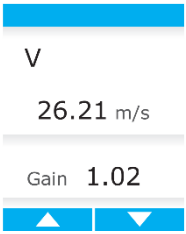


8.6 Date and time

To set the date and time, go to the settings and open the menu item "Data/Time Setup". Here, the date and time can be set in the format YYYY/MM/DD. You can also choose between English and German style here. Use the function keys to change the parameters as desired. Use the enter-V/F key to accept the value and jump to the next item at the same time.

8.7 Calibration

To calibrate the flow rate, go to the "Calibration" item in the settings. Here, the displayed measured value can be set using a factor ("Gain"). The default value is 1.00.
The coefficient range is between 0.5 and 2.



9 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.

10 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.

www.pce-instruments.com

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 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 Kingdom
PCE Instruments UK Ltd
Unit 11 Southpoint Business Park
Ensign Way, Southampton
Hampshire
United Kingdom, SO31 4RF
Tel: +44 (0) 2380 98703 0
Fax: +44 (0) 2380 98703 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