USER MANUAL

AW TESTER

PCE-WAM 20

ENGLISH

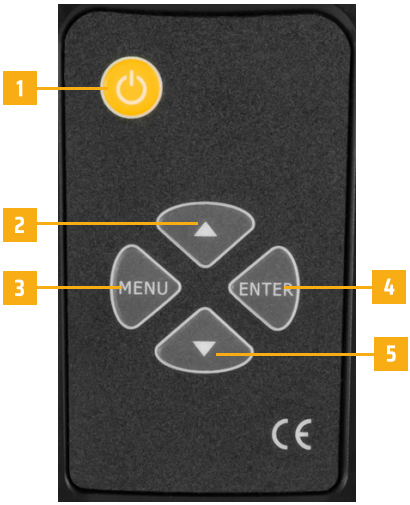
User manuals in various languages (français, italiano, español, português, nederlands, türk, polski) can be found via our product search on:
www.pce-instruments.com

DEVICE DESCRIPTION

1 - Aw-tester host
2 - Measuring probe (AwSensor)
3 - Aw-Base
4 - Measuring cup
5 - Probe interface

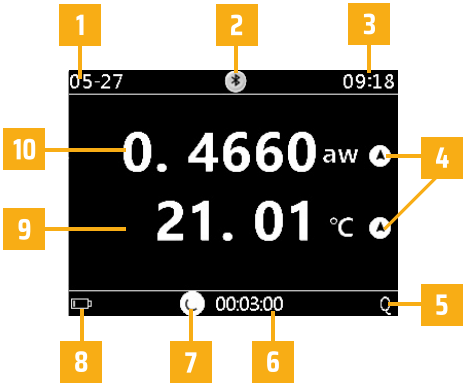
KEY DESCRIPTION

1 - Power button (lightly press to start the machine, and long press to shut it down)
2 - Up key measurement (backlight adjustment)
3 - Menu key (return key)
4 - Enter key (confirm button)
5 - Down key (Bluetooth switch key)



MAIN INTERFACE DESCRIPTION

1 - Date
2 - Bluetooth
3 - Time
4 - Trend
5 - Test mode
6 - Test time
7 - Testing
8 - Battery
9 - Temperature
10 - AW



QUICK OPERATION

» Connect the instrument. Prepare samples;

» The instrument and sample shall be at the same ambient temperature for more than 1 hour to ensure that the temperature of the sample and instrument is the same before the test;

» Turn on the power and start the machine;

» After startup, the optional default printer is not turned on to save power. If you need to print, first turn on the Bluetooth printer, place the printer next to the side, press the down button, and the Bluetooth icon appears above, the Bluetooth icon indicating that it has been successfully turned on. When you need to print, it will automatically connect to print;

» Cancel printing, press the down button again, the Bluetooth icon disappears, and the cancellation is successful;

» Put the sample into the measuring cup, not more than 3/4, and put it into the measuring base;

» Place the sensor probe to ensure that the probe is correctly placed and that the seal is leak free;

» Press the measurement key to start the measurement. If you press the measurement key again, the test will be cancelled;

» When the measurement is completed, there will be a prompt tone automatically, and the printer will print the results (if printing is turned on);

» In the main interface, if there is no test, press the up button to adjust the backlight brightness;

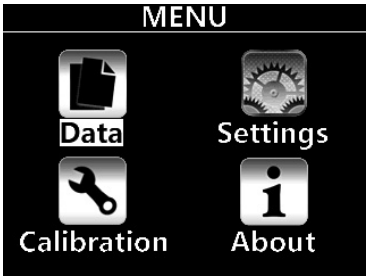
» In the continuous measurement mode (i.e. in the main interface, when the measurement key is not pressed for measurement), the instrument always displays real-time data. You can press the measurement key for more than 3 seconds and let go. The screen appears **- H - .** Press the measurement key again to cancel the lock. The data is stored and can be called for viewing and printing in the data;

» After measurement, please shut down, clean and store in a cool place;

» Please remove the battery if it is not used for a long time.

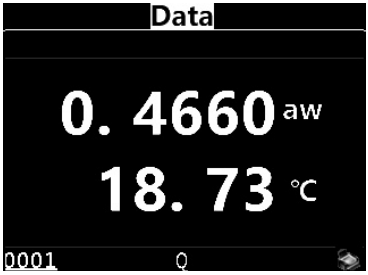
SETTINGS

Introduction to main menu:
There are four menu options in total:
» data,
» setting,
» calibration and
» about;

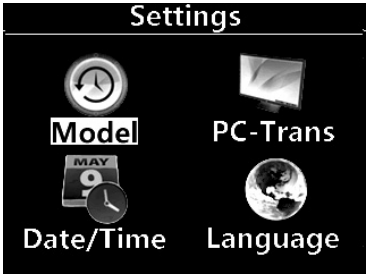


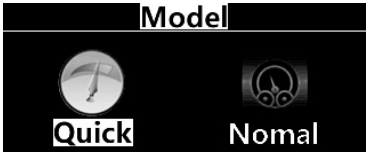
Data menu:
» There are 5030 groups of data, and each data consists of number, time, measurement mode, test data, test temperature, measurement duration*, measurement end time*;
» The up and down keys can switch data, and long press can quickly jump to the data number;
» Press the measurement key (enter) in the interface with data. If a printer is connected, the data can be printed;
» Delete data: when the transmission mode is off, long press the measurement key, and **delete?** will appear;
» All data will be deleted after this operation is confirmed. Please select carefully.

*displayed during print transmission

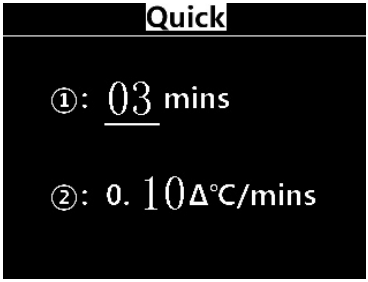


Settings:
There are four setting options in total:
» Model
» PC-Trans
» Date/Time
» Language

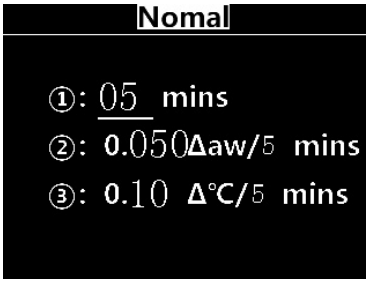




Quick mode: (machine default mode)
Sampling time: 1 ... 20 minutes, 3 minutes by default →
setting range of temperature difference per minute: 0.01 ... 0.30 °C, 0.10 °C /min by default

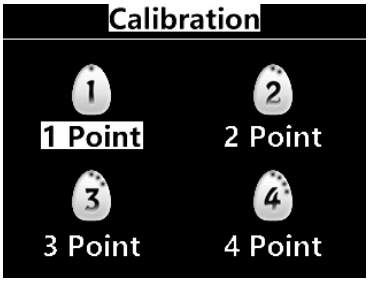


Normal mode: (default setting: GB 5009.238-2016)
Comparison interval: 1 ... 10 minutes, default: 5 minutes;
Setting range of water activity difference: 0.0001 ... 0.0100 default: 0.0050 aw/5 mins →
setting range of temperature difference: 0.01 ... 0.50 °C default: 0.10 °C/5 mins

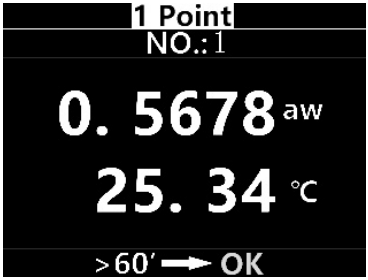


Time setting:
Set the year, month, day, hour, minute and second by this way. Press the OK key to enter the next option after setting an item. The setting is successful until you exit after setting the second.
Transfer settings: off by default
Turn on this setting when connecting the computer for software control.When the printer is turned on, it turns off automatically.
Language selection: default Chinese

Calibration:
calibration is divided into: single point, 2-point, 3-point and 4-point calibration



Press MENU to cancel the calibration procedure;
After 60 minutes or more, click ENTER to confirm, press the up and down buttons to adjust the correct activity value, confirm, enter the next step, exit or enter the next calibration point until the calibration is completed.



About setting:
display the instrument information and reset to the original factory setting (operate carefully, but the test data will not be lost)

OPERATION

Assemble the battery or connect the power supply, you can use the equipped power adapter or other USB ports such as the computer to supply power;

Turn on the power:

- Press the power button gently;
- After startup, the default printer is not turned on to save power. If you need to print, first turn on the Bluetooth printer, place the printer next to the side, press the down button, and the Bluetooth icon appears above, indicating that it has been successfully turned on. When you need to print, it will automatically connect to print;
- Cancel printing, press the down button again, the Bluetooth icon disappears, and the cancellation is successful;

Backlight adjustment:

- in the main interface state, press the up button to open it;
- After opening, press the up and down keys to adjust the brightness, adjust it to the appropriate position and exit the brightness. It is recommended that the brightness be as low as possible to ensure power saving;

Product calibration (if necessary): refer to the calibration section;

Setting parameters: refer to the setting section to set your own requirements;

Sample preparation:

- The sample and instrument shall be kept in a stable environment at the same temperature for a period of time to make the temperature of the sample and instrument consistent
- The sample can be placed in the measuring cup in advance, and the placing amount should not exceed 3/4. Note that the sample should not touch the outside, and can be wiped with a paper towel in time to prevent contamination of the instrument sensor
- If the sample is placed in the measuring cup in advance, the cover shall be covered in time for measurement (the placing time shall not be too long)
- Timely sampling and measurement can be directly put into the measurement base for the next measurement

Start test: in the main interface state, press the measurement key (enter) to start the measurement. There are three modes of measurement:

QUICK MODE:

» Q will be displayed at the bottom right of the screen, which is the default mode. If it has been changed, please set the quick mode in the setting, see the **setting** chapter;

» Generally, the measurement settings are set. Generally, the results will be obtained after 5 minutes of testing;

» The fastest time to set sampling is 1 minute. If the temperature change does not exceed the set range, the test result can be given in 3 minutes.

NORMAL MODE:

» N will be displayed at the bottom right of the screen, which is not this mode by default. If you need to change it, please set the quick mode in the setting, see the **setting** chapter;

» In the normal mode, it is determined that the change of temperature per minute is within the set range, and then the change of water activity value also reaches the set range. The test reaches the end point, ends the test, and prints the results

CONTINUOUS MEASUREMENT MODE:

» When you do not press other buttons on the main page, it is the continuous measurement mode, which continuously displays the test data in real time, and can monitor the experimental data in real time;

» The instrument always displays real-time data. You can long press the measurement key for more than 3 seconds and let go. The screen appears **-H- .** Press the measurement key again to cancel the lock. The data is stored and can be called for viewing and printing in the data;

End of test:

» turn off the power supply,

» clean the measuring base and sensor (alcohol is not allowed). If the measuring cup needs to be reused, it should also be cleaned and dried, and placed in a dry and clean environment for use.

CALIBRATION

- The instrument needs to be calibrated once a year, and can be calibrated at any time according to their own needs.
- If you do not have the conditions, please do not calibrate at will. Please submit it to a professional institution or our company for calibration.
- The calibration should have a good constant temperature environment. The standard can use saturated salt solution (see the attached table) according to the temperature requirements of the standard.
- The instrument and standard sample shall be placed in a constant temperature environment for a period of time to achieve uniform temperature.
- Calibration: single point, 2-point, 3-point and 4-point calibration
  Single point: when your test sample has only one sample or the commonly used activity value is at a water activity point, you can select the standard with the nearest activity value for calibration.
  2 points: when your sample changes within a certain range of activity values, you can select 2 standards whose activity values are closest to your product activity values for 2 points calibration.
  3-point and 4-point: if your sample is wide and diverse, it is recommended that you use 3-point or 4-point calibration, and select the standard that is still the closest to the activity value of your product.
- If 2-point, 3-point or 4-point calibration is selected, it should be noted that the standard should be selected for step-by-step calibration from low activity value to high activity value.
- Put the standard into the test box, cover the test probe, enter the calibration program, select your calibration points, and enter the calibration interface.
- Wait for 60 minutes or more at each calibration point, press the up and down buttons to adjust the accurate activity value after confirmation, and then confirm the input.
- If it is canceled or interrupted, the calibration needs to be repeated.

MAINTENANCE AND PRECAUTIONS

- Do not place and measure organic solvent products with the instrument: alcohol and alcoholic products, volatile chemicals, such as chemical solvents or organic compounds, especially high concentration and long-term contact will be more dangerous (ethyl) ketene, acetone, isopropanol, ethanol, toluene, etc. have been shown to cause humidity readings to shift – in most cases irreversibleThese chemicals are the main components of epoxy materials, glues, adhesives, etc., and are easy to appear in the drying and curing process. Such chemicals are also added to many plastics, used as packaging materials, and sometimes released from plastics.
- Both acid and alkali may cause irreversible accuracy drift of the sensor, so contact with the following chemicals should be avoided: hydrochloric acid, sulfuric acid, nitric acid, ammonia. High concentrations of ozone or hydrogen peroxide may also lead to the same results. It should also be noted.The above substances are examples only and are not complete lists.
- The sensor shall not contact with detergent (such as plate washing water) and shall not be blown by strong wind containing oil and gasContact with detergent may cause the sensor output to shift or be completely damaged. In order to avoid exposure to high concentration volatile chemicals (solvents, such as ethanol, isopropanol, methanol, acetone, detergent, etc.), good ventilation (fresh air circulation) shall be ensured.
- Storage requirements: 10 ... 50 °C, 20 ... 60 % rh. Recommend put silica gel desiccant into the measuring base and cover the probe for storage.
- Do not place the instrument in direct sunlight.
- Do not store in a high humidity state for a long time, which will lead to high data. Placed in a dry environment for a period of time, the accuracy will be restored automatically.
- Avoid sensor contact with the sample during measurement to prevent contamination.
- Prevent liquids and irritant gases from entering the sensor.
- Please use USB-5v to connect the power supply.
- Please remove the battery if it is not used for a long time.
- Please store the instrument in a cool and dry place.

DISPOSAL

For the disposal of batteries in the EU, the (EU) 2023/1542 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.

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