Palintest

pH Pocket Meter

Large Screen Waterproof pH/Temperature Tester Double Junction

Instruction Manual

Before You Begin

Your instrument has been factory calibrated and usually works well out of the box. However, after extended periods of non-use, it's best to soak the sensor in electrode storage solution, or pH buffer for 10 minutes or so. A brief rinse with deionised (DI) water is OK, but avoid soaking or storing in deionised water as this will shorten the pH electrode life. Prior to taking measurements, periodic calibration with certified standards is recommended for best accuracy.

pH Buffer Set Selection

Your sensor features USA (pH 4.01, pH 7.00 and pH 10.01) or NIST (pH 4.01, pH 6.86, and pH 9.18) standards. Select either one to suit your requirements.

1 While pressing the HOLD/ENT button, switch on the sensor by pressing the ON/OFF button.
2 Release the HOLD/ENT button. The display will flash either USA or NIST.
3 Press CAL button to toggle between the two buffer set standards.
4 Press the HOLD/ENT button to confirm the selection of the buffer set.

With meter powered off, press HOLD/ENT and ON/OFF at the same time. First release ON/OFF button, then HOLD/ENT button.

After buffer selection, whole LCD segment lits up and goes back to measurement mode.

Figure 1: Buffer Selection Sequence

pH Calibration

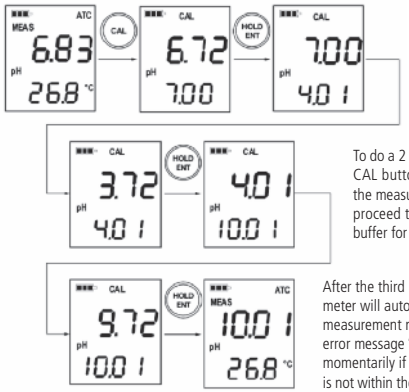
Calibration should be done regularly, preferably once a week. You can calibrate up to three points using either the USA or the NIST buffer set standards.

1 Press ON/OFF button to switch unit on.
2 Dip electrode about 2 to 3 cm into the pH standard buffer solution.
3 Press the CAL button to enter calibration mode. The 'CAL' indicator will be shown. The upper display will show the measured reading based on the last calibration while the lower display will indicate the pH standard buffer solution.

Note: To abort calibration, press the 'CAL' button.

4 Allow about 2 minutes for the sensor reading to stabilise before pressing the HOLD/ENT button to confirm the first calibration point. The upper display will be calibrated to the pH standard buffer solution and the lower display will then search for the next pH standard buffer solution.
5 Repeat with other buffers if necessary. Rinse electrode before dipping into next buffer.

Note: The calibration mode allows you to perform up to three calibration points before returning to the measurement mode automatically. However, if you opted to have only one or two calibration points, simply skip the remaining calibration points by exiting to the measurement mode by pressing the CAL button.



To do a 1 point calibration only, press CAL button at this point to exit to the measurement mode. Otherwise, proceed to second buffer for a second buffer for a second point calibration.

To do a 2 point calibration only, press CAL button at this point to exit to the measurement mode. Otherwise, proceed to third buffer for a third buffer for a third point calibration.

After the third point calibration, the meter will automatically return to the measurement mode. At any point, an error message 'Er. 1' will be displayed momentarily if the confirmed pH value is not within the pH calibration window.

Figure 2: Example of pH Calibration Sequence

pH Measurement

1 Press the ON/OFF button to switch the sensor on.
2 Dip the electrode about 2 to 3cm into the test solution. Stir and let the reading stabilise. **CAUTION:** Testing dry samples is not accurate and can lead to sensor damage or breakage. Soils must be wet and free of particulates that may scratch the glass sensor. Excessive force into dry samples can cause glass breakage.
3 Note the pH value or press HOLD/ENT button to freeze the reading. To release the reading, press HOLD/ENT again.
4 Press ON/OFF to turn off the sensor. If you do not press a button for 8.5 minutes, the sensor will automatically shut off to conserve battery life.

HOLD Function

This feature lets you freeze the display for a delayed observation.

1 Press HOLD/ENT button to freeze the measurement. A 'HOLD' indicator will be displayed and the measurement will be frozen.
2 Press HOLD/ENT again to release the measurement. The 'HOLD' indicator will not be displayed anymore indicating the held measurement is released.

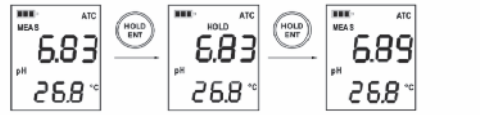


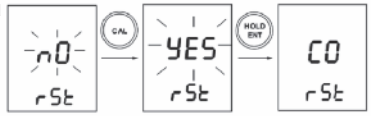
Figure 3: Example of HOLD Function

User Reset

You can reset the pH calibration to the factory default by using the user reset function. Buffer set selection and temperature user calibration are not affected by the user reset function.

1 Switch off the sensor.
2 While pressing the 'CAL' button, press and release the ON/OFF button to enter the 'User Reset' selection menu. The screen will display 'rSt' on the bottom display with a flashing 'nO' selection.
3 Use the 'CAL' button to toggle between 'nO' and 'YES' selection.
   - nO deactivates reset selection
   - YES activates the reset selection
4 Press the HOLD/ENT button to confirm the selection made.
5 If you have selected 'YES', the unit will show 'CO' momentarily and proceed to the measurement mode with the calibration reset back to factory default value.
6 If 'nO' is selected, the unit will proceed to the measurement mode without any calibration reset performed.

With meter powered off, press CAL and ON/OFF at the same time. First release ON/OFF button, then CAL button.



After reset, whole LCD segment lits up and goes back to measurement mode.

Figure 4: User Reset Sequence

ATC - Automatic Temperature Compensation

Through its in-built temperature sensor, the measurement error from changes in electrode sensitivity due to changes in temperature is compensated to give the actual pH reading of the sample measured.

Notes: To exit this program without confirming the calibration, press the CAL button before the automatic confirmation takes place.

Temperature Calibration

From the measurement mode,

1 Press the HOLD/ENT button to bring the sensor into the 'HOLD' mode.
2 Press the CAL button for 3 seconds to switch to the °C or °F mode setting selection screen. Pressing the CAL button continuously for 3 seconds allows you to toggle in between the °C and °F mode setting selection screen.
3 Release the CAL button to confirm your mode selection and the display will go to the temperature calibration mode with the upper display flashing. The upper display shows the current measured temperature reading based on the last set offset and the lower display shows the current measured temperature reading based on factory default calibration.
4 Dip the sensor into a solution of known temperature and allow time for the in built temperature sensor to stabilise.
5 Press the HOLD/ENT button to set the upper display to the temperature value of the solution.
6 Once the new temperature setting is reached, the new value is automatically confirmed and returns to the measurement mode if no button is pressed after 5 seconds.

Notes: To exit this program without confirming the calibration, press the CAL button before the automatic confirmation takes place.

Electrode Maintenance

1 Before measuring soil pH, wet your soil sample with distilled water and ensure that the soil is free of particulates. Even though the sensor is robust, hard surfaces such as stones and pebbles can still cause breakage.
2 Rinse the electrode with electrode storage solution after each measurement. Care has to be taken not to damage the sensor's glass electrode especially while rinsing the sensor.
3 In aggressive chemicals, dirty or viscous solutions, and solutions with heavy metals or proteins, take readings quickly and rinse electrode immediately afterward. For the sensor, the remnants of the semi solid samples on the penetrating electrode can be removed by rubbing it with some table salt and then rinsing. Mild detergent can be used to wash the penetrating electrode clean.
4 If possible, keep a small piece of paper or sponge in the electrode cap - moistened with clean water or electrode storage solution (NOT de-ionised water) - and close the cap over the electrode.

Changing Batteries

1 Open battery compartment lid (with attached lanyard loop).
2 Remove old batteries; replace with fresh ones. Note polarity.

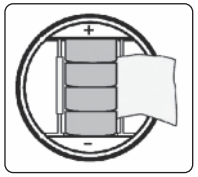


Figure 5

Self-Diagnostic Messages

Low Battery indicator		3 Bars indicates battery is full (100%)
		2 Bars indicates 50% of the battery life is left
		1 Bar indicates 25% of the battery life is left
		Blinking battery casing indicates the need to replace batteries with fresh ones as specified by manufacturer
Over Range / Under Range Signal	**Or/Ur** (Still)	Electrode is not in contact with solution or electrode is failing
		Replacement sensor is not connected properly to the meter during sensor replacement
		Measured pH value or temperature value exceeds its specified maximum or minimum value
	ATC/Or/Ur (Blinking)	Blinking 'ATC', 'Or' or 'Ur' indicates that there is a short or open circuit at the built in temperature sensor
Error Message	**Er.0**	Temperature calibration error of attempting to calibrate Testr to a value which is out of range or under range
	Er.1	pH calibration error of attempting to confirm a calibration value which is not within the specified calibration window

Electrode Replacement

You can replace the electrode module at the fraction of the cost of a new instrument. When the sensor fails to calibrate or gives fluctuating readings in calibration standards, you need to change the electrode.

1 With dry hands, grip the ribbed instrument collar with electrode facing you. Twist the collar counter clockwise (see figure 6). Save the ribbed Testr collar and O-ring for later use.
2 Pull the old electrode module away from the instrument.
3 Align the four tabs on the new module so that they match the four slots on the instrument (see figure 7).
4 Gently push the module onto the slots to sit it in position. Push the smaller O-ring fully onto the new electrode module. Push the collar over the module and thread it into place by firmly twisting clockwise.

Note: It is necessary that you recalibrate your sensor prior to measurement after an electrode replacement.

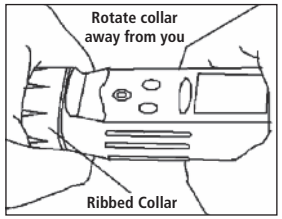


Figure 6:
Removal of collar from tester

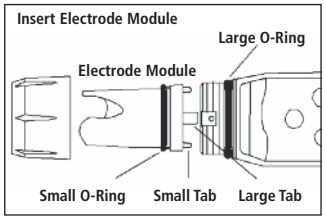


Figure 7:
Example of electrode module fitting alignment

Applications

Water quality testing • pools • spas • aquariums • aquaculture • hydroponics • ecology studies • water and wastewater treatment • boilers • steam generators • car washes • sanitation plants • labs • food sectors and more!

Warranty

Your waterproof instrument is warranted to be free from manufacturing defects for 1 year and electrode module for 6 months. If repair, adjustment or replacement is necessary and has not been the result of abuse or misuse within the time period specified, please contact your local distributor for assistance.

Return of Items

Authorisation must be obtained from your distributor before returning items for any reason. When applying for authorisation, please include information regarding the reason the item(s) are to be returned.

Note: We reserve the right to make improvements in design, construction and appearance of products without notice. Prices are subject to change without notice.

Replacement Parts

Type	Part Code
Replacement Sensor	PT155PH
pH Pocket Sensor Complete	PT155

pH Sensor Specifications

pH Range	-1.00 to 15.00 pH
Resolution	0.01 pH
Relative Accuracy	0.01 pH
Calibration Points	Up to 3 points
Buffer Set Standard Selection	USA - 4.01/7.00/10.01 NIST - 4.01/6.86/9.18
Calibration Window (USA Buffer Set Standard)	±1.00 pH (pH 4.01 & pH 10.01), ±1.50 pH (pH 7.00)
Calibration Window (NIST Buffer Set Standard)	±1.00 pH (pH 4.01 & pH 9.18), ±1.25 pH (pH 6.86)
Temperature	0-50.0°C or 32.0-122.0°F
Temperature Compensation	Automatic
Temperature Resolution	0.1°C/°F
Temperature Accuracy	0.5°C/0.9°F
Temperature Calibration Window	±(5°C/9°F) from default value
Auto Off	After 8.5 minutes from last key press
User Reset	Yes
Non Volatile Memory Backup	Yes
LCD Display	Dual
Power Requirement	4 x 1.5V "A 76" micro alkaline batteries
Battery Life	More than 500 hrs
Operating Temperature	0 - 50°C
Testr Dimensions	6.5 "L x 1.5"dia. (165 x 38 mm)
Weight	3.25oz (90gm)

Certificate of Conformity

Palintest Ltd certify this instrument, PT155 has been tested and calibrated to meet all performance specifications.

It is recommended that regular calibration of the probe is carried out in accordance with the instruction manual to ensure correct operation.

The process used to verify this product is carried out in accordance with procedures contained within Palintest's certified ISO 9001 Business Management System.

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