Operating Instructions

OAKTON®

PCTSTestr™ 50 Pocket Tester

CE

Applications

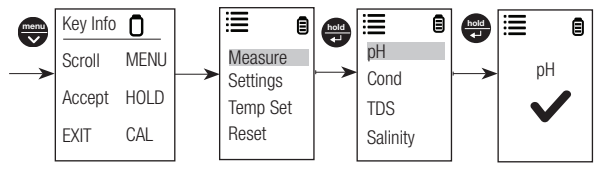
- Agriculture
- Aquaculture
- Aquariums and fish farms
- Boiler blow-down
- Car washes
- Drinking water
- Ecology
- Electroplating rinse tanks
- Food sectors
- Hydroponics
- Labs
- Printing industry
- Swimming pools
- Verification of reverse osmosis system operation
- Water and waste-water treatment

Getting Started

The PCTSTestr 50 Pocket Tester has been factory calibrated and usually works well out of the box. However, after extended periods of non-use, it is best to remove the sensor cap and soak the sensor in warm tap water for 10 minutes or so. Prior to taking the measurements, periodic calibration with certified standards is recommended for best accuracy.

Measurement Parameter Setting

1. Press ON/OFF (⏻) to power on the tester.
2. Press MENU/∨ to enter setup window. Press HOLD/↵ to select Measure. The display shows pH, Cond, TDS and Salinity.
3. Scroll down by pressing MENU/∨ to toggle between pH, Cond, TDS and Salinity. Press HOLD/↵ to select pH.
4. The display shows the selected parameter with a ✔.

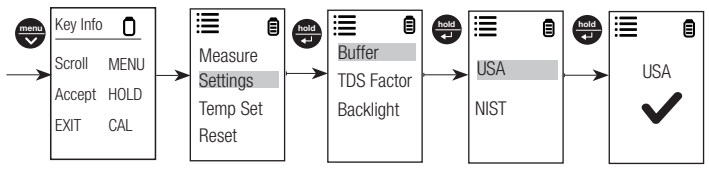


pH Buffer Set Selection

PCTSTestr 50 Pocket Tester 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.

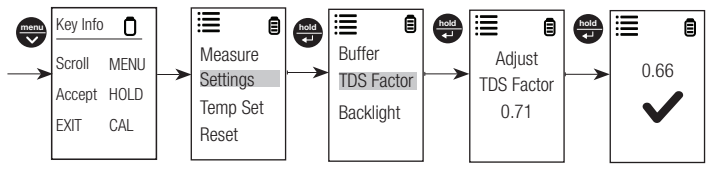
1. Press MENU/∨ to enter setup window. Press HOLD/↵ to select Settings. The display shows Buffer, TDS Factor and Backlight.

2. Press HOLD/↵ to select Buffer. Display shows USA and NIST.
3. Press HOLD/↵ to select USA or scroll down by pressing MENU/∨ to toggle between the two buffer standards.
4. The display shows the selected buffer standard with a ✔.



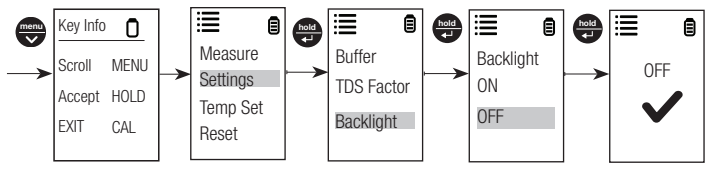
TDS Factor Setting

1. Press MENU/∨ to enter setup window. Scroll down by pressing MENU/∨ to select Settings.
2. Press HOLD/↵ to select Settings. The display shows Buffer, TDS Factor and Backlight.
3. Scroll down by pressing MENU/∨ to toggle between the Buffer, TDS Factor and Backlight. Press HOLD/↵ to select the TDS Factor.
4. Press HOLD/↵ to select the default TDS factory setting or MENU/∨ to adjust the setting.
5. Press HOLD/↵ to confirm the selection of the setting. The display shows the selected value (TDS factor) with a ✔.



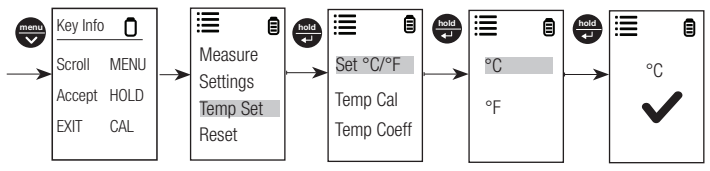
Backlight Settings

1. Press MENU/∨ to enter setup window. Scroll down by pressing MENU/∨ to select Settings.
2. Press HOLD/↵ to select Settings. The display shows Buffer, TDS Factor and Backlight.
3. Scroll down by pressing MENU/∨ to toggle between Buffer, TDS Factor and Backlight. Press HOLD/↵ to select Backlight.
4. The display shows ON and OFF. Scroll down by pressing MENU/∨ to toggle between ON and OFF. Backlight ON increases readability in low-light conditions.
5. Press HOLD/↵ to select the desired backlight option. The display shows the selected backlight option with a ✔.



Temperature Settings

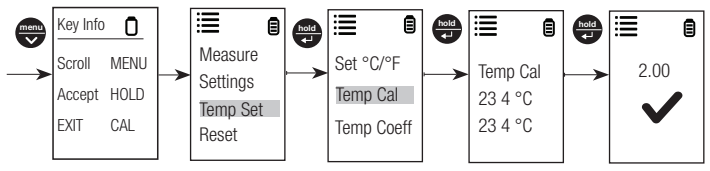
1. Press MENU/∨ to enter setup window. Scroll down by pressing MENU/∨ to select Temp Set. Press HOLD/↵ to select Temp Set. The display shows Set °C/°F, Temp Cal and Temp Coeff.
2. Press HOLD/↵ to select Set °C/°F. Scroll down by pressing MENU/∨ to toggle between °C and °F.
3. Press HOLD/↵ to select temperature unit. The display shows the selected temperature setting with a ✔.



Temperature Calibration

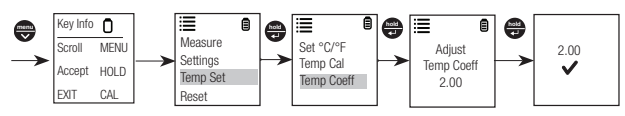
1. Press MENU/∨ to enter setup window. Scroll down by pressing MENU/∨ to select Temp Set.
2. Press HOLD/↵ to select Temp Set. The display shows Set °C/°F, Temp Cal and Temp Coeff.
3. Scroll down by pressing MENU/∨ to toggle between Set °C/°F, Temp Cal and Temp Coeff. Press HOLD/↵ to select Temp Cal.
4. The lower display shows the current measured temperature reading based on the last set offset and the upper display shows the current measured temperature reading based on factory default calibration.
5. Dip the tester into a solution of known temperature and allow time for the built-in temperature sensor to stabilize.
6. Press MENU/∨ to adjust the temperature value or press the HOLD/↵ to confirm the calibrated value as the new temperature value of the solution.

Note: To exit this program without confirming the calibration, press CAL/ESC.



Temperature Coefficient

1. Pres MENU/∨ to enter setup window. Scroll down by pressing MENU/∨ to select Temp Set.
2. Press HOLD/↵ to select Temp Set. The display shows Set °C/°F, Temp Cal and Temp Coeff.
3. Scroll down by pressing MENU/∨ to toggle between Set °C/°F, Temp Cal and Temp Coeff.
4. Press HOLD/↵ to select Temp Coeff or MENU/∨ to adjust the Temp Coeff.
5. Press HOLD/↵ to confirm the Temp Coeff value. The new value is automatically confirmed with a ✔.



pH Calibration

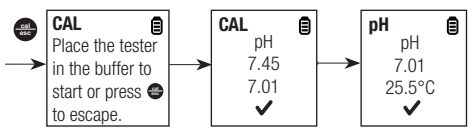
Calibration should be done regularly, recommended once a week. Calibrate up to three points using either the USA or the NIST buffer set standards.

1. Press ON/OFF (⏻) to power on the tester if needed.
2. Dip electrode about 2 cm to 3 cm into the pH standard buffer solution.
3. Stir gently and press CAL/ESC to enter calibration mode. The CAL indicator will be displayed. 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 CAL/ESC to escape.

4. Allow about 2 minutes for the tester reading to stabilize. The timer icon blinks during this time. Once the reading is stabilized, the timer stops blinking. Automatic confirmation happens when the buffer is found and the display returned to measurement window with reading calibrated to 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. Calibration is automatically confirmed with the buffer identification. No user interaction is required after starting the calibration by pressing CAL/ESC.

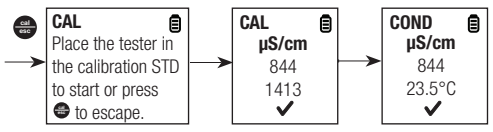


Calibration for Conductivity, TDS, or Salinity

For best results, periodic calibration with an accurate standard is recommended prior to measurement. Use the calibration standard value that is close to your intended sample value. The tester will retain one calibration value in each mode (conductivity, TDS, salinity) when the instrument is powered off. The conductivity value can be calibrated automatically or manually, while the TDS & salinity values require manual calibration. The tester will begin in the measurement mode that was used when it was powered off. See "Measurement Parameter Setting" to change the desired parameter.

Automatic Calibration for Conductivity

1. Remove the cap and press ON/OFF (⏻) to power on.
2. Dip the sensor in at least 30 mm of calibration standard.
3. Stir gently and press CAL/ESC to begin the calibration.
4. The display will show CAL followed by the default value. CAL is indicated on the display during calibration mode.
5. If the reading is within the calibration range of the automatically recognized standards; 80 (84 µS/cm), 1410 (1413 µS/cm), or 12.90 (12.88 mS/cm), the ✔ icon is displayed when the automatic calibration standard value has been detected.
6. Press HOLD/↵ to accept the auto conductivity standard and finish the calibration.
7. Display returns to Measurement window.



Manual Calibration

When the conductivity reading is outside calibration range of the automatic conductivity standards or when TDS or salinity is used, the tester will require manual adjustment.

1. Repeat steps 1 to 4 from "Automatic Calibration for Conductivity".
2. Press MENU/∨ to manually adjust the value to the desired reading.

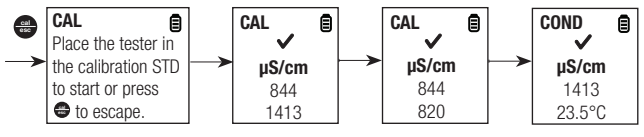
Note: The adjustment will decrease only, however the adjustment will eventually cycle to the highest available value after decreasing by 40% of the initial value.

3. Press HOLD/↵ to accept and finish the calibration when the desired value is selected.

Note: To abort calibration, press CAL/ESC to escape.

4. Once the calibration is finished and user has accepted the changes, measurement window will now show the calibrated reading.

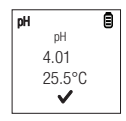
Note: The auto conductivity standards are 84 µS/cm, 1413 µS/cm & 12.88 mS/cm.



Measurement

1. Press ON/OFF (⏻) to power on the tester if needed.
2. Dip the electrode in about 2 cm to 3 cm into the test solution. Stir and let the reading stabilize. The timer icon will blink during this time. Once the reading is stabilized, the timer stops blinking and ✔ will appear to indicate the stability of the reading.

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.

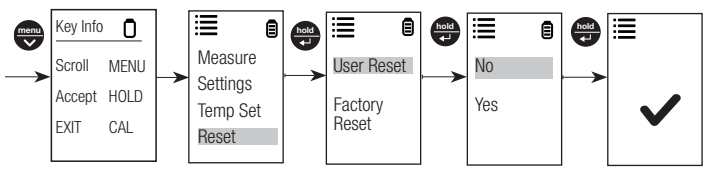


3. Note the value or press HOLD/↵ to freeze the reading. To release the reading, press HOLD/↵ again.
4. Press ON/OFF (⏻) for 3 seconds to turn off tester. If you do not press a button for 8.5 minutes, the tester will automatically shut off to conserve batteries.

User Reset

Reset to the user's default settings by using the User Reset function. Buffer selection and user temperature calibration are not affected by the user reset function.

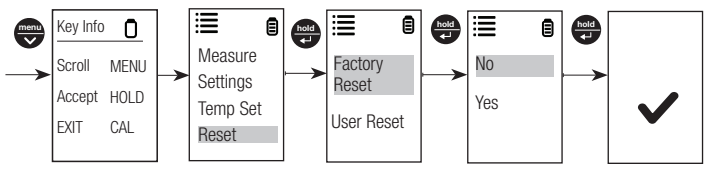
1. Press MENU/∨ to enter setup window. Scroll down by pressing MENU/∨ to select Reset. Press HOLD/↵ to select Reset. The display shows User Reset and Factory Reset.
2. Press HOLD/↵ to select User Reset.
3. The display automatically shows No and Yes. Scroll down by pressing MENU/∨ to toggle between No and Yes.
4. Press HOLD/↵ to confirm either No or Yes. The display shows the User Reset option with a ✔.



Factory Reset

Reset to the Factory Default Settings by using the Factory Reset function.

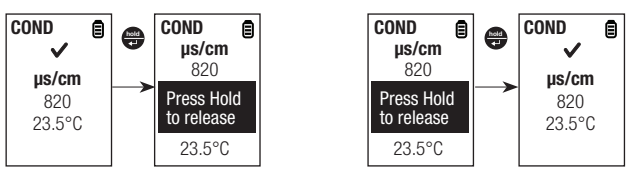
1. Press MENU/v to enter setup window. Scroll down by pressing MENU/v to select Reset. Press HOLD/↵ to select Reset. The display shows User Reset and Factory Reset.
2. Scroll down by pressing MENU/v to toggle between the resets. Press HOLD/↵ to select Factory Reset.
3. The display automatically shows No and Yes. Scroll down by pressing MENU/v to toggle between No and Yes.
4. Press HOLD/↵ to confirm either No or Yes. The display shows the Factory Reset option with a ✔.



HOLD Function

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

1. Press HOLD/↵ button to freeze the measurement.
2. Press HOLD/↵ again to release the measurement.



Sensor Maintenance

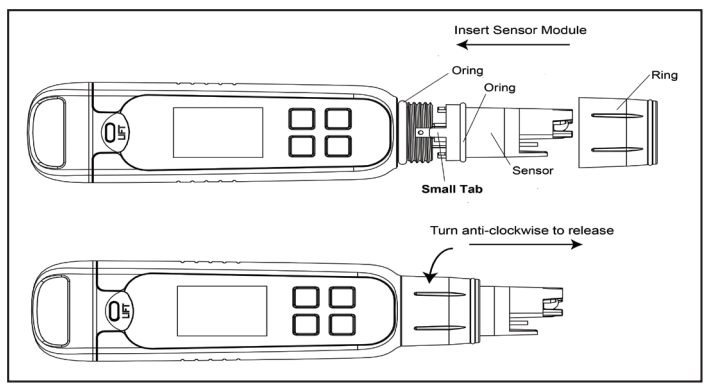
1. Always keep the sensor electrodes clean. Rinse the electrodes with de-ionized water and wipe them dry with clean cloth before storing with its protective cap. For cup type electrodes, remove the white plastic cup and insert to thoroughly clean viscous solutions. **Note:** Never scratch electrodes with a hard substance.
2. For better performance, soak the electrode in alcohol for 10 to 15 minutes and rinse with de-ionized water before starting any measurement process. This is to remove dirt and oil stains on the electrode, which may affect the accuracy of the measurements.

Sensor Replacement

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

1. With dry hands, grip the ring with sensor facing you. Twist the ring counterclockwise. Save the ring for later use.
2. Pull the old sensor module away from the tester.
3. Align the four tabs on the new module so that they match the four slots on the tester.
4. Gently push the module onto the slots to sit it in position. Push the smaller O-ring fully onto the new sensor module. Push the other O-ring over the module and thread it into place by firmly twisting clockwise.

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



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Replacing the Batteries

The PCTSTestr 50 Pocket Tester uses four AAA 1.5 V batteries.

1. To remove the battery cover, see Figure 1. Clear the front catch and then the back catch, before sliding the cover off.
2. To remove the battery plate, push the center tab towards the front of the tester as shown in Figure 2. Once unlocked, remove the plate to access the batteries.
3. Invert the tester upside down to remove the batteries. Each side uses two AAA batteries. Orient each battery with positive terminal facing downward.
4. To lock the battery place, align the small tabs (Figure 3) into the guide ribs on the housing and then press down. See Figure 4.

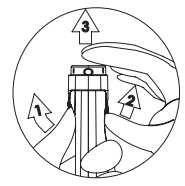

Fig. 1: Removing battery cover

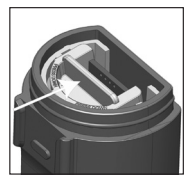
Fig. 2: Push to unlock

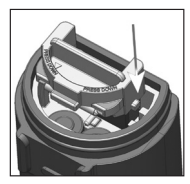
Fig. 3: Align tabs


Fig. 4: Push down to lock

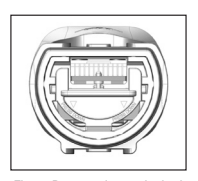
Fig. 5: Battery plate unlocked

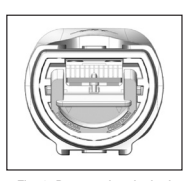
Fig. 6: Battery plate locked

Warranty

This instrument is supplied with a warranty against manufacturing defects for a period of one year from the date of purchase.

Return of Items

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

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

Self-Diagnostic Messages

🔋	Batteries are weak and need replacement soon.
stable error	Appears when calibration is attempted but the reading is not yet stable. Wait for the reading to stabilize or manually confirm the calibration by pressing enter.
buffer error	The buffer is outside of the calibration range.
slope error	The 2nd and 3rd calibration point is not within 80% to 120% slope range.
over range	The reading is above the measuring range of tester.
under range	The reading is below the measuring range of tester.

Specifications

Specifications	PCTSTestr 50
pH	
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	±1.00 pH
Calibration type	Point to point
Conductivity	
Conductivity range	0.0 to 200.0 µS, 200 to 2000 µS, 2.00 to 20.00 mS
Resolution	0.1 µS, 1 µS, 0.01 mS
Relative accuracy	±1% full scale
Normalization temperature	25.0ºC (77ºF)
Temperature co-efficient	0.0% to 10.0%
Calibration points	Up to 3 points
TDS	
TDS range	0.0 to 100.0 ppm, 100 to 1000 ppm, 0.10 to 10.00 ppt (TDS factor 0.5)
Resolution	0.1 ppm, 1 ppm, 0.01 ppt
Relative accuracy	±1% full scale
Calibration points	Up to 3 points
TDS factor	0.40 to 1.00 (selectable)
Salinity	
Salinity range	0.00 to 10.00 ppt
Resolution	0.10 ppt
Relative accuracy	±1% full scale
Calibration points	1

Specifications (cont.)	PCTSTestr 50
Temperature	
Temperature range	0 to 60°C (32.0 to 140.0°F)
Temperature resolution	0.1°C / 0.1°F
Temperature accuracy	From 0 to 50ºC (±0.5°C / ±0.9°F + 1 LSD); from 50 to 60°C (±1.0ºC / ±1.8°F + 1 LSD)
Temperature compensation	Yes (Automatic Temperature Compensation)
General	
Display	Graphics, dot matrix 80 x 100 pixel
Backlight	Yes, selectable (30 sec from last key press)
Auto off	8.5 minutes (from last key press)
Reset	User / Factory
Power requirement	Four AAA 1.5 V batteries
Battery life	>150 hours
Water proofing	IP67
Regulatory certifications	CE, FCC
Environmental Operating Conditions	
Ambient operating temperature	5 to 45°C / 41 to 113°F
Relative humidity	5% to 85% noncondensing
Storage temperature	–20 to 60°C / –4 to 140°F
Storage humidity	5% to 85% noncondensing

Accessories

Ordering Code	Product Description
35634-35	PCTSTestr 50 pocket tester with case, lanyard, and batteries
35634-37	Replacement sensor module for PCTSTestr 50
35634-09	Replacement sensor cap
09376-00	Replacement alkaline batteries; AAA, 1.5 V. Pack of 12
17101-45	NIST-traceable calibration with data for pocket testers

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