

# Operating Instructions



## ORPTestr® 50 Pocket Tester



### Applications

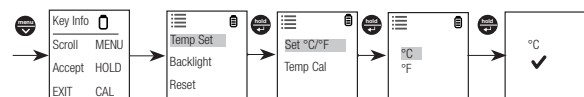
- Aquaculture
- Food sectors
- Spas
- Aquariums
- Hydroponics
- Studies
- Boilers
- Labs
- Water and wastewater treatment
- Car washes
- Sanitation plants
- Water quality testing in pools and more
- Ecology
- Steam generators

### Getting Started

The ORPTestr 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 or ORP buffer for 10 minutes or so. A brief rinse with deionized (DI) water is OK, but avoid soaking or storing in deionized water as this will shorten ORP electrode life. Prior to taking the measurements, periodic calibration with certified standards is recommended for best accuracy.

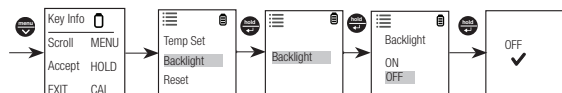
### Temperature Settings

1. Press ON/OFF (⏻) to power on if needed.
2. Press MENU/√ to enter setup window. Press HOLD/← to select Temp Set. The display shows Set °C/°F and Temp Cal.
3. Press HOLD/← to select Set °C/°F. Display automatically shows °C and °F.
4. Scroll down by pressing MENU/√ to toggle between °C and °F.
5. Press HOLD/← to select a temperature unit. The display shows the selected temperature setting with a ✓.



### Backlight Settings

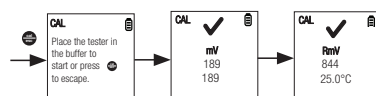
1. Press ON/OFF (⏻) to power on if needed.
2. Press MENU/√ to enter setup window. Scroll down by pressing MENU/√ to select Backlight. Press HOLD/← to select Settings. The display shows Backlight.
3. Press HOLD/← to select Backlight. The display shows ON and OFF.
4. Scroll down by pressing MENU/√ to toggle 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 ✓.



### ORP Calibration

Calibration should be done regularly, preferred once in a week. ORP tester allows one point calibration.

1. Press ON/OFF (⏻) to power on if needed.
2. Dip electrode in about 2 cm to 3 cm into the calibration standard solution.
3. Press the CAL/ESC key to enter calibration mode. The CAL indicator will be displayed.
4. Allow the reading to stabilize. The timer icon blinks during the reading stabilization. Once the reading stabilized the timer stops blinking.
5. Upper display shows current measured value based on the factory default.
6. Lower display shows current measured mV with last calibration (if no calibration is performed earlier both display shows the same measurement value).
7. Press MENU/√ to adjust the mV value to match the calibration standard value.
8. Press HOLD/← to confirm the calibration or press CAL/ESC key to exit the calibration without confirmation.



### ORP Measurement

1. Press ON/OFF (⏻) to power on if needed.
2. Dip the electrode about 2 cm to 3 cm into the test solution. Stir and let the reading stabilize. The timer icon blinks 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.

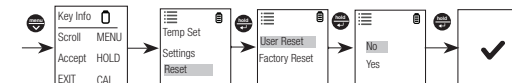


3. Note the ORP value or press HOLD/← to freeze the reading. To release the reading, press HOLD/← again.
4. Press ON/OFF (⏻) for 3 seconds to turn off tester. If a key is not pressed for 8.5 minutes, the tester will automatically shut off to conserve batteries.

### User Reset

Reset the ORP calibration to the default using the user reset function.

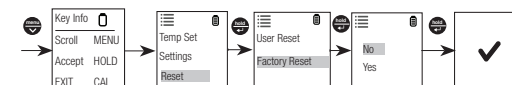
1. Press MENU/√ to enter setup window. Scroll down by pressing MENU/√ to select Reset. Press HOLD/← to select Reset. The display shows User Reset and Factory Reset.
2. Press HOLD/← to select User Reset. The display automatically shows No and Yes.
3. Scroll down by pressing MENU/√ to toggle between No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



### Factory Reset

Reset the tester to the factory default using the factory reset function.

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

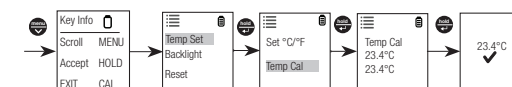


### Manual Temperature Setting

The MTS range is 0°C to 60.0°C (32.0°F to 140.0°F). User reset will set temperature to default value 25°C or 77°F.

1. Press MENU/√ to select setup window. Scroll down by pressing MENU/√ to select Temp Set. Press HOLD/← to select Temp Set. The display shows Set °C/°F and Temp Cal.
2. Scroll down by pressing MENU/√ to toggle between Set °C/°F and Temp Cal. Press HOLD/← to select Temp Cal.
3. 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.
4. Dip the tester into a solution of known temperature and allow time for the built-in temperature sensor to stabilize.
5. Press MENU/√ to adjust the temperature value or press the HOLD/← to confirm the calibrated value as new temperature value of the solution.

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



## HOLD Function

This feature helps to 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

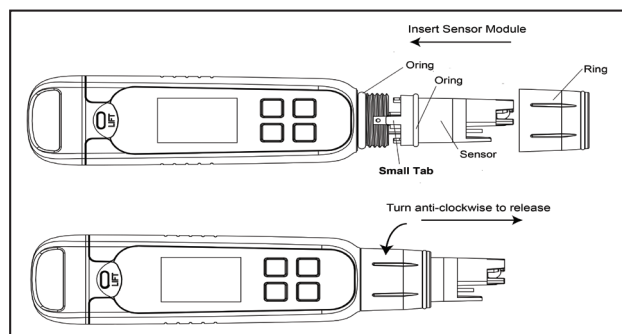
1. Rinse the sensor with sensor storage solution after each measurement. Care has to be taken not to damage the sensor's glass electrode.
2. In aggressive chemicals, dirty or viscous solutions, and solutions with heavy metals or proteins, take readings quickly and rinse electrode immediately afterward.
3. If possible, keep a small amount of clean water or electrode storage solution (NOT de-ionized water) in sensor cap to keep sensor hydrated.

## Sensor Replacement

Replace the sensor module at the fraction of the cost of a new tester. When the tester fails to calibrate or gives fluctuating readings in calibration standards, 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 sensor 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 sensor ring into place by firmly twisting clockwise.

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



## Replacing the Batteries

The pH tester 50 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 plate, align the small tabs (Figure 3) into the guide ribs on the housing and then press down. See Figure 4.

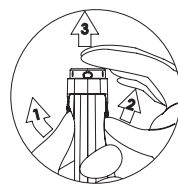


Fig. 1: Removing battery cover

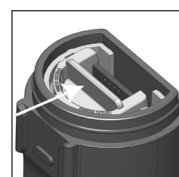


Fig. 2: Push to unlock

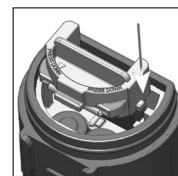


Fig. 3: Align tabs

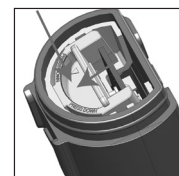


Fig. 4: Push down to lock

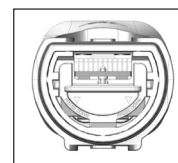


Fig. 5: Battery plate unlocked

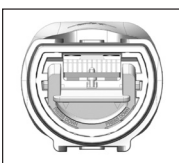


Fig. 6: Battery plate locked

## 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 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.
over range	The reading is above the measuring range of tester.
under range	The reading is below the measuring range of tester.

## Specifications

Specifications	ORPTestr 50
<b>ORP/RMV</b>	
ORP range	-1000 to 1000 mV
Resolution	±1 mV
Relative accuracy	±2 mV ±1 LSD
Calibration points	One
Calibration window	±200 mV
Calibration type	Offset
<b>Temperature</b>	
Temperature range	0 to 60°C / 32.0 to 140.0°F
Temperature resolution	0.1°C / 0.1°F
Temperature accuracy	NA
Temperature compensation	Manual
Temperature calibration window	0 to 60.0°C / 32.0 to 140.0°F
<b>General Specifications</b>	
Display	Graphics, dot matrix 80 x100 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	>250 hours
Waterproofing	IP67
Regulatory certifications	CE, FCC
Ambient operating temperature	5 to 45°C / 41 to 113°F
Relative humidity	5% to 85% noncondensing
Storage temperature	-20 to 60°C
Storage humidity	5% to 85%, noncondensing

## Accessories

Ordering Code	Product Description
35634-45	ORPTestr 50 pocket tester with case, lanyard, and batteries
35634-47	Replacement sensor module
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 pH testers
05478-60	YSI® Zobell solution

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I N S T R U M E N T S

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