

# MicroDirect

## Redox/ORP 10



- Large Screen
- Waterproof ORP / Redox Tester
- Double Junction

**GB** Instruction manual

### Before you begin:

To condition electrode, immerse electrode in electrode storage solution or tap water for at least 30 minutes before use. DO NOT use de-ionized water.

### Calibration

Calibration is not necessary unless exact readout agreement with a work standard and at a specific ORP value is needed. To achieve this, use the following procedure:

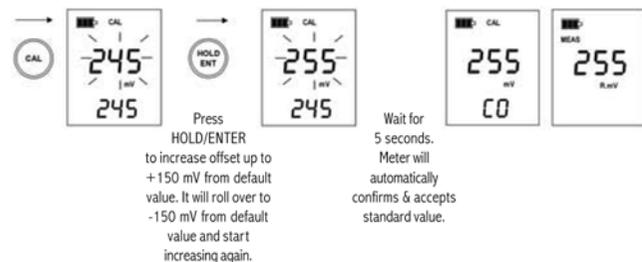
1. Switch unit on (ON/OFF button)
2. Select a known solution sample from the actual process as near the critical ORP value as possible, for example, 470 mV.
3. Dip the conditioned electrode into this solution for 2 to 5 minutes until the readings stabilize. Ensure the whole sensor is immersed.
4. Press CAL button to enter Calibration mode. The screen will switch to a dual display with the upper display flashing the relative mV value to be calibrated and the lower display showing the default measurement value of the sample. The 'CAL' indicator will also be shown on the screen replacing 'MEAS' to indicate that the tester is in calibration mode.

**Note:** To abort calibration, press the 'CAL' button to return to the measurement mode.

5. Immediately press and hold the HOLD/ENT button to scroll the reading to match value of the known solution sample. The offset adjustment is up to +/- 150mV from the default measurement.

6. To complete the calibration, release the HOLD/ENT button and wait for 5 seconds for automatic confirmation. The primary display will stop flashing and the secondary display will automatically show 'CO' before the screen return to the single display measurement mode. The mV annunciator will now changed to 'R.mV' indicating the value displayed is a relative mV value of the default measurement.

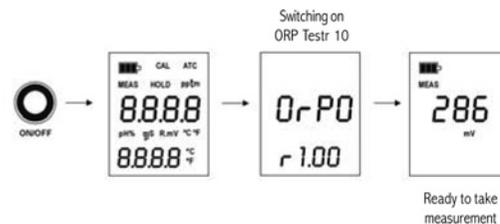
7. Rinse electrode in tap water before measuring other solutions.



**Figure 1: Calibration or Offset Adjustment Sequence**

### ORP Measurement

1. Remove cap from the electrode and press the ON/OFF button to switch the tester on.
2. Dip the electrode about 2 to 3 cm into the test solution. Stir once and let the reading stabilize for 2 to 5 minutes.
3. Note the ORP value or press HOLD/ENT button to freeze the reading. Press HOLD/ENT again to release the reading.
4. Press ON/OFF to turn off tester. If you do not press a button for 8.5 minutes, the tester will automatically shut off to conserve batteries.

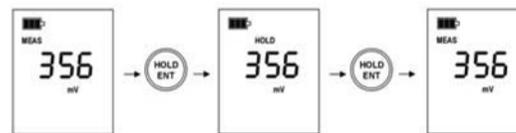


**Figure 2: Power Up Sequence**

### 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.

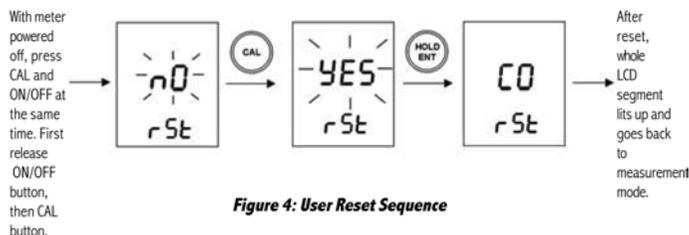


**Figure 3: Hold Function**

### User Reset

You can reset the ORP calibration to the factory default by using the user reset function.

1. Switch off the tester.
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.



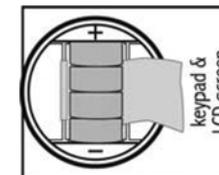
**Figure 4: User Reset Sequence**

### Electrode Maintenance

1. Rinse the electrode with tap water or electrode storage solution after each measurement.
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 piece of paper or sponge in the electrode cap – moistened with clean water or electrode storage solution (NOT de-ionized 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 (shown in diagram below).



### Self-Diagnostic Messages

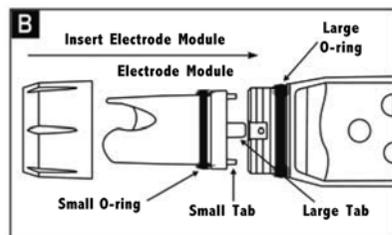
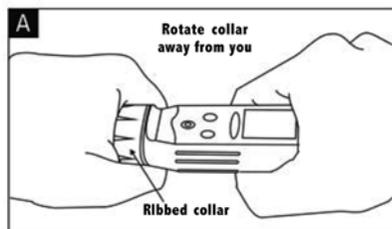
Low battery indicator		3 Bars indicates Battery is full (100%)
		2 Bars indicates 50% of the battery life is left
		1 Bar indicates 25% of the battery life is left
Over range / Under range signal		Blinking battery casing indicates the need to replace batteries with fresh ones as specified by manufacturer
	Or / Ur	Electrode is not in contact with solution or electrode is failing Replacement sensor is not connected properly to the tester during sensor replacement
Error Message	Er.0	mV calibration error while attempting to calibrate tester to a value which is out of range

## Electrode Replacement

You can replace the electrode module at the 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 ribbed tester collar with electrode facing you. Twist the collar counter clockwise (see picture A). Save the ribbed tester collar and O-ring for later use.3. Align the four tabs on the new module so that they match the four slots on the tester (see picture B).
2. Pull the old electrode module away from the tester.
3. Align the four tabs on the new module so that they match the four slots on the tester (see picture B).



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 tester prior to measurement after an electrode replacement.

## Applications

Water quality testing • pools • spas • cooling towers • water purification • chromate reduction • cyanide oxidation • boilers • pulp bleaching • ozone systems • water and wastewater treatment • and more!

## Warranty

The waterproof ORPTester10 are warranted to be free from manufacturing defects for 2 years and electrode module for 12 months. If repair, adjustment or replacement is necessary and has not been the result of abuse or misuse within the time period, please return the tester – freight prepaid – and correction will be made without charge. Out of warranty products will be repaired on a charge basis.

## 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.

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

## Accessories:

19 46 66 Replacement sensor MicroDirect ORP10

## Specifications

Large Screen Tester	ORPTestr10
Range	-999 mV to +1000 mV
Resolution	1 mV
Accuracy	±2 mV
Calibration Window	Offset adjustment up to ± 150mV
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 hours
Operating Temperature	0 – 50 °C
Tester Dimension	6.5 "L x 1.5" dia. (165 x 38 mm) Boxed: 220 x 60 x 50 mm
Weight	3.25 oz (90 gm)