



## LDO Calibration Video Transcript

### Function

The Hach LDO probe measures the oxygen dissolved in water by flashing a blue light on the sensor cap coated with a luminescent material and measuring the time it takes for the sensor to return red light. More oxygen in the water causes a shorter time delay.

### Maintenance

The Hach LDO probe is nearly maintenance free. To ensure accurate readings and long sensor life, the probe should be kept clean.

After each deployment, the sensor should be cleaned with a cotton swab or soft brush and soapy water to remove any oils or organisms. Organisms living on the sensor will consume or produce oxygen and change the readings.

Hard scrubbing will remove the black coating from the outside of the sensor cap. If more than half of the coating is removed, the cap must be replaced. If deposits on the sensor are difficult to remove, soak the sensor in warm fresh water until the deposits soften.

NEVER use organic solvents such as acetone or methanol on any part of the sensor or cap.

When the sensors are clean, the LDO is ready to calibrate.

### Calibration

The LDO sensor compensates for the temperature of the water. To perform an accurate calibration it is important that the temperature of the water remain constant during the procedure. The easiest way to do this is to allow the water used for calibration to sit overnight in an open container until it equilibrates to room temperature. If the temperature changes by more than 0.5C during calibration, dissolved oxygen measurements may be inaccurate and the sensor will need to be recalibrated when the temperature of the water stabilizes. For this reason, the calibration should also not be done in direct sunlight.

Stand the sonde so the sensors are pointed upwards with the storage cup attached.

Add about one Liter of **room temperature** De-Ionized water (or clean tap water with a conductivity of less than 500 micro-Siemens per centimeter) to a clean one gallon jug. Shake the jug very vigorously for 40 seconds.

Establish a connection to the sonde using Hydras3 LT and click the button labeled '**Operate Sonde**'. Wait for Hydras to initialize the sensors. Progress can be monitored on the bar at the bottom of the screen.





Fill the storage cup over the sensors to the bottom of the threads and place the storage cap on upside-down. Do not screw the cap on.

When the sonde is ready to operate click the '**Calibration**' tab.

Select the '**LDO (%Sat)**' tab. A picture of the LDO sensor should appear on the screen.

Wait for the current value and temperature readings to stabilize. If the cap was stored wet this should happen very quickly. A dry cap may take several minutes to stabilize.

Enter the current absolute barometric pressure in mm/Hg in the box. Click '**Calibrate**'.

A "Calibration Successful" message will be displayed.

### Verification

Click the red 'X' in the upper right corner and close the Calibration window. In the Connection window click the button labeled '**Terminal mode**'

Using the Arrow keys, highlight '**Login**' and press <Enter>.

Highlight '**Level 3**' and press <Enter>.

Type the password and press <Enter>. The default is '**Hydrolab**' and it is case sensitive.

Use the Arrow keys to highlight '**Setup**' and press <Enter>.

Highlight '**Sensors**' and press <Enter>.

Highlight '**LDO**' and press <Enter>.

Highlight '**LDO % SAT**' and press <Enter>.

Read the Scale Factor. A valid calibration will produce a Scale Factor between 0.5 and 1.5. Values outside of these parameters may indicate a problem with the sensor or electronics.

DO NOT type a new value for the Scale Factor. This will invalidate the calibration and cause the sensor to take incorrect readings!

Press <Esc> after you have verified the Scale Factor is acceptable.

Your LDO is now calibrated and ready to deploy.

