QUICK GUIDE | OmniCTRL (pH/CO₂) 1.0 LOLIGO[®] SYSTEMS

FIRST TIME USE

a graph on the left. Click Export to save the current protocol as an editable text file (arrow, 10). Load the saved protocol file during an experiment (i.e. choose File as regulation type).

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00:10:0

tep time [HH:MM:S

Setpoint

Hysteresis Oxygen Channel 3

Protocols

Steps

Start

Range

Direction

Step height

Step time [HH:MM:SS]

Export

0

Yes

> 25,00 50,00

> > Up

5,00

00:10:00

QUICK GUIDE | OmniCTRL (pH/CO₂)

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b

d

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pH -> **CO**₂ **conversion**: Calibrate (13) the WTW SenTix HWD pH probe before conversion. Prepare three water samples of the same quality (i.e. buffer capacity) as the water used for experiments, and keep water temperature constant and the same.

Use a gas mixing pump (Wösthof), mass flow cells, or ready-made gas mix to bubble the three samples at three different pCO_2 levels within the range of your experiment min/max pCO_2 level.

Place the SenTix HWD pH probe in the first water sample, click the $\frac{-12}{2}$ to measure pH, and then type in the corresponding pCO₂ level. Click + to add the next measurement point (11). Perform three measurements per water sample to ensure stabilized readings. The conversion is now done.

When to calibrate... In general, you should perform a new sensor calibration if you experience sensor performance issues (e.g. signal drift). Otherwise, a new calibration is recommended:

- WTW Oxi 3310 (CellOx 325): When the probe symbol flashes (after the set calibration interval has expired (150 days as standard)) or when using a new probe.
- 12 WTW Cond 3310 (TetraCon 325): Every 6 months or when using a new probe.
 - WTW pH 3310 (SenTix HWD): When the probe symbol flashes (after the set calibration interval has expired (7 days as standard)) or when using a new probe.
 - Witrox: When the % air sat. level drifts with > +/-10 % or when using a new oxygen sensor. The temp. probe is pre-calibrated and cannot be manually calibrated.
- 13 **Calibrate a WTW probe**: Please see the respective WTW meter user manual for more instructions. Each manual can be found at: <u>loligosystems.com/manuals</u>

Calibrate a Witrox oxygen sensor: In OmniCTRL > Main menu > Calibration > Choose Witrox instrument. Click on the relevant channel (CH1-CH4) to open the channel calibration menu (14). Select the type of temperature input (Witrox controlled or User defined) and then perform a **Manual 2-point calibration** (14 and 14.1):

- a. Place the sensor tip in a mixed air-equilibrated water sample. This can be achieved by purging atmospheric air into sample water, e.g. with an air pump.
- Wait for the phase reading (sensor signal) to stabilize and then click Read current values to save the current value as the HIGH calibration value (100 % air saturation).
 - c. Transfer the sensor to an oxygen free water sample, e.g. by purging nitrogen gas into sample water or by dissolving ~10 grams of Na_2SO_3 in 500 ml of distilled water.
 - d. Wait for the phase reading to stabilize and then click **Read current values** to save the current sensor signals as the LOW calibration value (0 % air saturation).

How to clean... In general, clean each instrument and sensor between uses.

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- WTW probes: Please follow the cleaning instructions provided in the manual for the CellOx 325, TetraCon 325, or SenTix HWD probe. Each manual can be found at: loligosystems.com/manual
- Witrox oxygen sensor: Use a mild soap solution or bleach, and rinse with demi water. Then dry (15).
- WTW and Witrox meters: Wipe the outside of the measuring instrument with a damp, lint-free cloth. Disinfect the housing with isopropanol as required. Avoid contact with acetone or similar detergents that contain solvents.

Store all sensors in a dark, dry place between trials. Avoid exposing the fluorescent dye on the Witrox oxygen sensor to UV light. UV light will bleach the sensor dye and decrease the signal strength (amplitude).



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