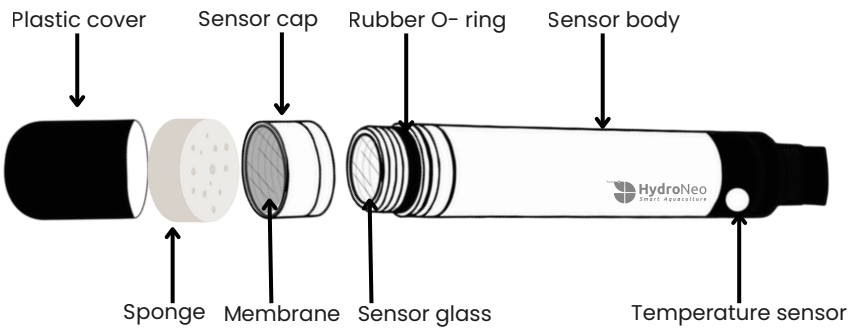
Version 1.1
July 2025

HydroNeo
Smart Aquaculture

Quick Dissolved Oxygen (DO) Sensor Guide

Parts of the Dissolved Oxygen Sensor



Remove the plastic cover used to protect the membrane from drying out during longer periods of storage before using the sensor. Plastic cover and sponge should be kept for future storage purpose, e.g. in-between production cycles.

Connecting the cable

- Connect the sensor to the cable by aligning the sensor mark with the cable (See figure 1).
- Ensure that the locking ring on the cable connector is fully tightened before use to prevent water leakage into the sensor.

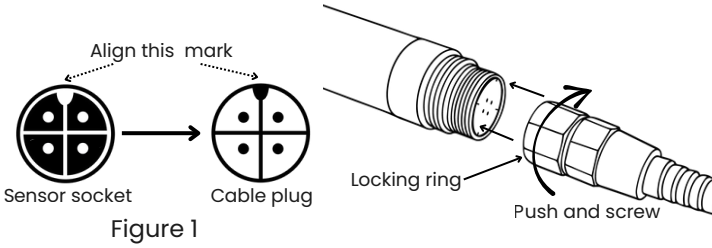
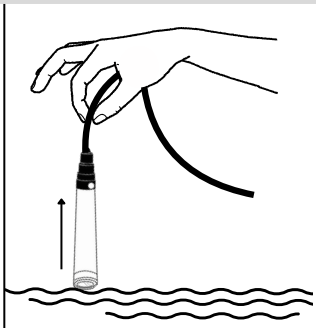
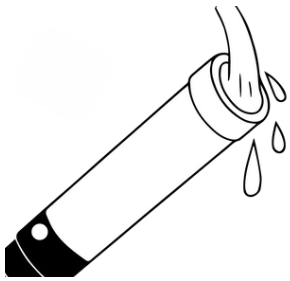


Figure 1

DO Sensor cleaning



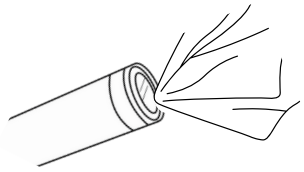


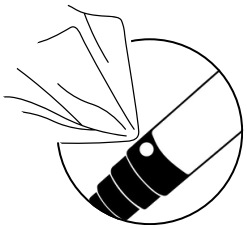
1 Remove Sensor from the water.

2 Rinse the membrane with clean water.

Avoid harsh chemicals that may damage the membrane.

Be gentle—do not use fingernails, sharp objects, or excessive pressure to avoid damaging the membrane.





3 Use a microfiber cloth or soft, damp cloth to gently wipe the membrane and the sensor body, and the temperature sensor.

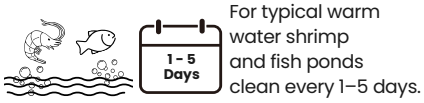
If deeper cleaning is needed, use a mild dish soap containing Benzalkonium Chloride (BKC).

Recommended for deep cleaning

Don't use these

Recommended cleaning frequency

Uncleaned sensors may report lower DO value. The frequency of cleaning required depends on your water conditions:



For typical warm water shrimp and fish ponds clean every 1–5 days.

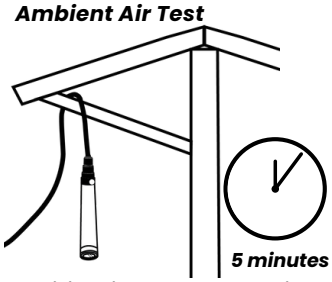
High bio-load water may require daily cleaning.

Recommended weekly check

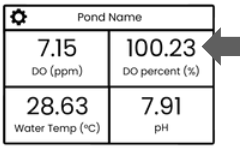
Weekly ambient air testing helps identify whether calibration or maintenance is needed.

After cleaning, hang the sensor in shaded, well-ventilated area and allow it to fully adjust to the outside air temperature. This may take around 5 minutes, depending on the temperature difference between the water and air. The DO saturation should measure around 100% (±5%)

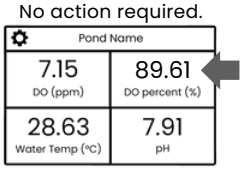
Ambient Air Test



or until it adjusted to the ambient air temperature.



Sensor in good condition.
No action required.

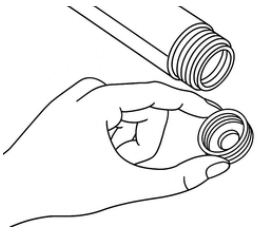


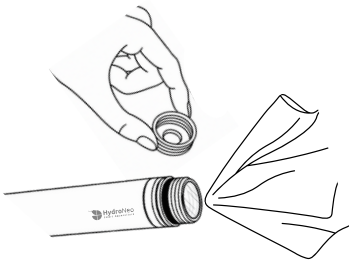
Maintenance required:
Check sensor glass and calibrate!

If the DO Saturation value deviates further than 5% after weekly check, inspect and clean the sensor glass by:

- Unscrew the sensor cap carefully.
- Wipe the sensor glass and the inside of the sensor cap with a soft, dry cloth to remove dust, moisture, and stains.
- Tightly screw the sensor cap back on the sensor.

Afterwards, perform a calibration.

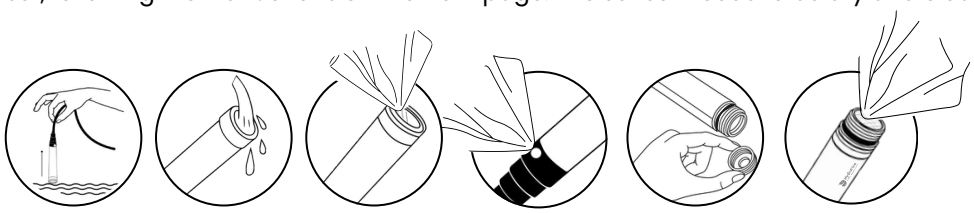




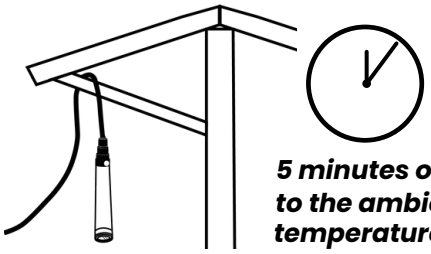
If water is found inside, check for potential leaks and consider replacing the rubber o-ring or sensor cap.

DO Sensor calibration instruction

1 Clean the sensor, following the instructions on the front page. The sensor needs to be dry and clean before calibration.

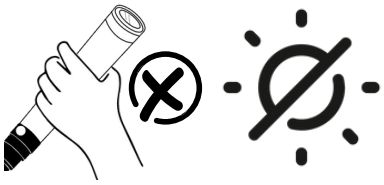


2 Hang the sensor in a shaded, well-ventilated area and allow it to fully adjust to the outside air temperature. This may take around 5 minutes, depending on the temperature difference between the water and air. Avoid rushing the process for accurate calibration.



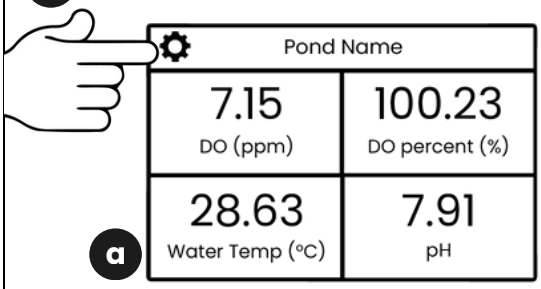
5 minutes or until it adjust to the ambient air temperature.

⚠ *Avoid holding the sensor in your hands, exposing it to direct sunlight, or placing it on hot surfaces, as heat can distort the temperature reading and cause inaccurate dissolved oxygen measurements.*

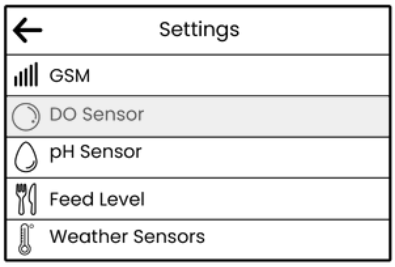


⚠ *We recommend calibration in the morning or evening when the temperature is lower and the sun less intense.*

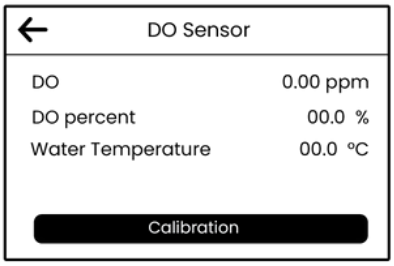
3 Afterward, access the Mini Controller display and follow these steps:



a Tab ⚙ on Mini Controller display.

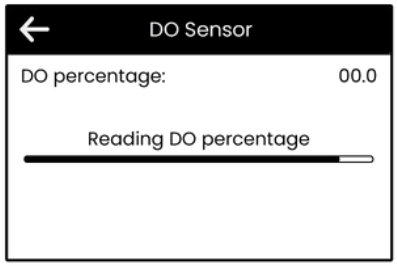


b Tab "DO Sensor"

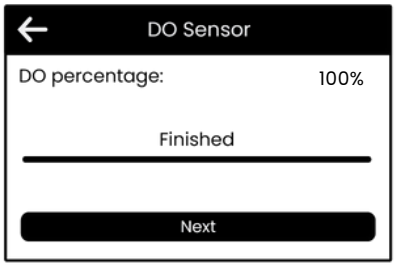


c Tab "Calibration"

d Follow the instructions and start.



e In progress.



f Calibration Success!

4 After finished the calibration

- Keep the sensor hanging in the shaded areas and allow several minutes for the sensor data to refresh on the Mini Controller's display. It should show 100% DO saturation (±5%)
- Check that all cables/ locking rings are tightly screwed before placing the sensor back into the water.
- Check the pond's salinity level and update it in your app, as salinity and temperature are used in the DO calculation.

When to calibrate

- At the start of each production cycle.
- Once a month.
- When the ambient air test result is not between 95-105 % DO saturation. (See the ambient air test on the front page)
- When there are many new scratches on the membrane.

When to change the Sensor Cap

- When calibration fails after extended cleaning.
- Once a year.
- When the membrane is visibly damaged (e.g., deep/large scratches) or if strong blue light is flashing through it.

Good condition Need to change

⚠ *Increased abrasion on the membrane head or failed calibration due to a sensor measurement error may indicate that the sensor cap is worn out. You will see a lot of blue light coming through the sensor glass, which shouldn't happen; it's a sign that you need to change the sensor cap.*

When sensor not in use

When not in use, moisten the sponge in the plastic cover with clean water and put it on the sensor to keep it moist and prevent damage from drying out.