



# Technical Note 101

## Chlorine Dioxide Probe

### Maintenance

#### Maintenance Intervals

Change the electrolyte every 3-6 months.

Change the membrane cap once a year.

#### Cleaning the Sensor

Do not wipe or scrub the membrane. Flush the membrane with flowing water. If this is insufficient to clean the membrane, simply replace the membrane.

#### Maintaining the Sensor



Unscrew the membrane cap and remove from the sensor.



The gold tip of the sensor should be bright and shiny. If it is not, clean the gold tip with the blue plastic abrasive sheet supplied. With a minimum amount of force, slide the probe along the dull side of the paper.

**Caution:** Never touch, clean, or polish any part of the probe normally covered by the membrane cap. The only physical contact should be to clean the gold electrode tip with the blue abrasive sheet.



Fill the membrane cap to the top with the electrolyte. Be careful to ensure that there are no bubbles - pouring at an angle reduces the chance of this happening.



Vertically lower the probe into the filled membrane. Screw the membrane onto the sensor until there is no gap.

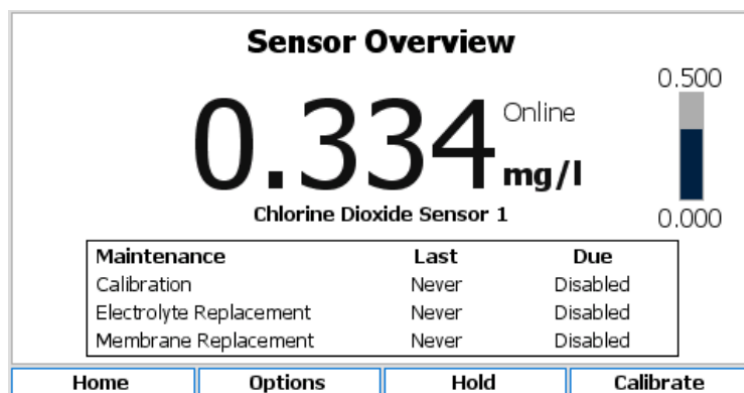


Carefully remove excess electrolyte solution from the sensor and check the membrane for bubbles. Do not rub or wipe the membrane. Wash off the excess electrolyte with water. Initial polarisation is up to 2 hours prior to calibration. Calibration should be repeated after 24 hours.

For a video demonstration, please view on YouTube:

[https://youtu.be/Ti0yIeNxzsc?si=ATB6Iml0nR5E\\_YmX](https://youtu.be/Ti0yIeNxzsc?si=ATB6Iml0nR5E_YmX)



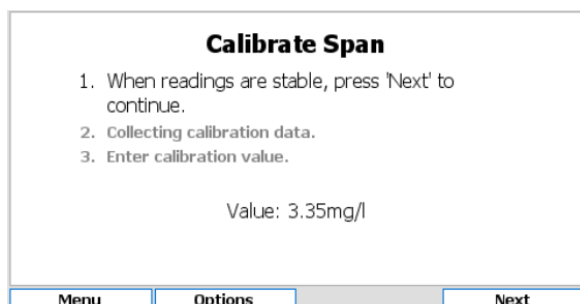


*DioSense Screen Overview*

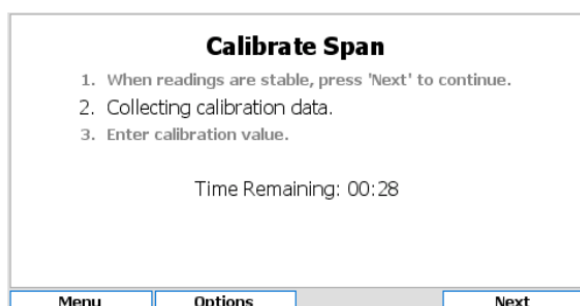
## Calibrating the Sensor—CRIUS/CRONOS Operation

The calibration function can be accessed either from sensor overview page via the “Calibrate” shortcut button or by selecting:

*Options → Maintenance → Calibrate Span*

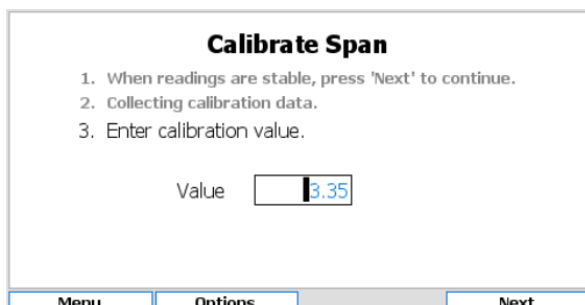


1. This screen displays the current chlorine dioxide value. Wait until the chlorine dioxide value is stable i.e. the chlorine dioxide value is not changing (or changing very little), then press “Next” to begin the calibration process.



2. The controller will count down from 30 seconds. During this time, the controller is monitoring the chlorine dioxide levels for stability. If the chlorine dioxide level is not stable enough, calibrating the sensor could be inaccurate and even make the current calibration worse, so if this stage fails you will need to repeat the process when the chlorine dioxide levels have stabilized; for example, if monitoring a batch process (like salad washing) you may need to wait for a period between batches and the chlorine dioxide level is less variable.

3. The countdown period is a good time to collect your sample for secondary testing. The water should be taken from the same sample point at the sensor, and you will need to use a secondary form of chlorine dioxide measurement to work out the chlorine dioxide level in the sample. This is commonly a DPD meter, but other technologies are available e.g. portable electrochemical products.



4. At the end of the countdown the current value being read will be displayed. To calibrate the sensor, change the value on the screen to match the one given by your secondary device. To do this press the “Select/Enter” button and using the Up, Down, Left and Right arrows to change each digit to the new number. Then press “Next”.

5. If the calibration is successful, the analyser may ask certain maintenance questions (for example, if you have replaced the membrane with a new one). Select “Yes” or “No” to answer these maintenance questions. Your calibration should now be complete.

6. However, the controller examines the new value for validity, and if it falls outside of expected parameters it will not calibrate automatically. Instead, it will ask ‘Are you sure you want to continue?’. It is possible to complete the calibration with the current value, but in this situation it is recommended that the calibration process is repeated to ensure accuracy.

More details on maintenance, calibration and operation can be found within the manual supplied with your Process Instruments controller/analyser.