



Self Cleaning Turbidity Two Point Calibration Video Transcript

Function

The Hydrolab Self Cleaning Turbidity sensor measures the intensity of light scattered by particles in the water sample at 90 degrees from an infrared light source and reports that value in NTUs. In order to take an accurate measurement of the scattered light, the sensor requires an unobstructed view of the water extending approximately 1 inch (25.4mm) from the end of the sensor.

To keep the optics clean there is a motorized pad that can be set to wipe from 1 to 9 times before taking a measurement depending on the degree of sensor fouling expected. The 'X' version also features an extended brush for removing debris from the other sensors.

Maintenance

The Self Cleaning Turbidity sensor is almost completely maintenance free. When the cleaning pad becomes fouled, simply replace it using the hex wrench provided. The cleaning pad set screw should be tightened against the flat side of the shaft.

DO NOT rotate the wiper by hand or operate the wiper when the sensor is dry. Both of these actions can damage the gear assembly inside the motor.

Calibration

The Self Clean Turbidity sensor uses scattered light to report the concentration of suspended particles in water, so it is important to clean the instrument as thoroughly as possible prior to calibration. Use a soft brush and mild soap to remove dirt and debris from all of the sensors and the inside of the storage cup. Rinse the storage cup and sensors until they are free of soap and dirt, then dry with lint free towels.

Establish a connection to Hydras3 LT and click the '**Operate Sonde**' button. Wait for the sensors to initialize (less than one minute).

Zero Point Calibration – With the sensors pointed upwards, fill the storage cup approximately 75% with De-ionized Water or <0.1 NTU StablCal and screw the storage cap on tightly. Slowly turn the sonde over so the sensors point downwards.

In Hydras3 LT, click on the '**Calibration**' tab, then click on the '**Turbidity [rev]**' tab. You should see a picture of the Self Cleaning Turbidity sensor. Verify that the value in the box is '1' and click the '**Calibrate**' button. The wiper should make one complete revolution, removing any air bubbles from the optics.





Click the **'OK'** button in the "Calibration Successful" window.

Now click on the **'Turbidity [NTU]'** tab. There are two boxes on this page.

In the box labeled **'Turbidity [Point]'** enter a '1'.

In the box labeled **'Turbidity [NTU]'** enter a value of 0.3 to 0.6 depending on the cleanliness of the sensors.

When the readings at the top of the page are stable, click **'Calibrate'**.

Click the **'OK'** button in the "Calibration Successful" window.

High-End Calibration – The high-end calibration point should be a value higher than the highest value anticipated at the deployment site. The standard factory high point is 100 NTU.

Pour the de-ionized water out of the storage cup and dry the sensors again.

Gently swirl or invert the bottle of 100NTU StablCal for two to three minutes to mix the suspension.

DO NOT shake the bottle of StablCal! This will suspend air bubbles in the solution and change the turbidity of the standard.

Pour the StablCal into the storage cup until it is about 25% filled. Screw the cap on tightly and shake the sonde. Remove the cap and pour the solution out.

Gently pour StablCal into the storage cup again, this time filling the cup to 75%. Screw the cap on and gently turn the sonde over so the sensors are pointing downward. The end of the Self Cleaning Turbidity sensor should be fully submerged.

Again, in Hydras3 LT, click on the **'Calibration'** tab, then click on the **'Turbidity [rev]'** tab. Verify that the value in the box is '1' and click the **'Calibrate'** button. The wiper should make one complete revolution, removing any air bubbles from the optics.

Click the **'OK'** button in the "Calibration Successful" window.

Now click on the **'Turbidity [NTU]'** tab.

In the box labeled **'Turbidity [Point]'** enter a '2'.

In the box labeled **'Turbidity [NTU]'** enter a value of '100'.

When the readings at the top of the page are stable, click **'Calibrate'**.





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Click the 'OK' button in the "Calibration Successful" window.

The Self Cleaning Turbidity sensor is now calibrated.

