

System description:

The Turbidity system comprises of a Solitax sensor that is immersed into the effluent (and a transmitter that is mounted on handrail, or in a cabinet (Sc200)). The measurement principle is based on combined infrared absorption scattered light for colour independent turbidity measurement. An LED light source in the sensor transmits a beam of infrared light into the effluent, at an angle of 45 degrees to the sensor face, and a pair of photoreceptors, in the sensor face, detect light that is scattered by the particles in the effluent, at 90 degrees to the transmitted beam.

Sensor Mounting:

The sensor is either mounted directly into the effluent stream, by means of a stainless steel pole and support bracket, or alternatively (when the sample is too shallow or turbulent) is mounted into a flow cell. The photographs below show the two mounting variations.



Direct immersion hardware

Flow cell hardware

Exterior fouling

Sensor Maintenance:

The sensor incorporates an automatic wiper assembly that cleans the faces of the light source and detectors on a regular interval (user programmable). This mechanism is designed to keep the face of sensor clean, however it will not remove soiling and matter from the outer body of the sensor which may, if allowed to build up, cause erratic readings from the sensor when installed directly into the effluent. To prevent this type of build up the sensor must be removed from the effluent on a weekly basis (possibly less frequently dependent on the quality of the effluent) and cleaned using an appropriate cloth or soft brush, the optic windows are quartz so should not scratch but we do not recommend using anything abrasive to clean the sensor. An example of the type of fouling that could cause erratic readings, and should therefore be removed, is shown above right.

Sensor removal from effluent or flow cell:

When mounted directly into the effluent with the manufacturer supplied mounting hardware, removal of the sensor is achieved by simply lifting the pole in a vertical plane, until the pole support brackets are above the bracket mounting plate, and then tilting the sensor and pole over the handrail, keeping both hands in contact with the pole, before placing the pole and sensor in a safe position to allow for cleaning. The sensors have been installed in such a way that the sensor pole is easily accessible from the side of the chamber and can be grasped from over the top of the handrail. Where extension poles have been used, and the sensor and pole are therefore a little heavier than the standard, there will be sufficient excess pole to grasp with both hands to remove the sensor. Care should be taken when extracting the sensor to ensure the sensor is not allowed to drop to the floor, and also to ensure there is sufficient clearance around the operator for the sensor pole.

To put the sensor back into the effluent reverse the above procedure, taking care that the sensor mounting brackets are aligned correctly with the mounting plate, and that no item of clothing, or body part, are likely to be trapped, keep hold of the sensor pole and gently slide the brackets down the plate until the lower bracket reaches the bottom of the plate.

DO NOT DROP THE SENSOR

When mounted in a flow cell the sample feed to the cell should be turned off via the small sample tap on the flow cell, and the sensor should then be rotated and pulled to remove it from the cell. Flow cell mounted sensors should not suffer from the same amount of external soiling due to the sample being pumped to the cell, so the cleaning interval will be less frequent, and will normally be performed by Servitech personnel.

To refit the sensor into the flow cell simply push it back in until it reaches the stop, and turn the sample back on

WHEN REMOVING, CLEANING AND REPLACING THE SENSOR, ENSURE, AS ALWAYS, THAT GLOVES AND ALL OTHER APPROPRIATE PPE IS USED, AND THAT YOU HAVE STABLE FOOTING.

This document is for reference purposes only and is to be used in conjunction with the training session and appropriate site and activity risk assessment and method statements.