

SONATAX sc Sludge Blanket Level Probe

Sludge Level

Features and Benefits

Reduced Maintenance with Innovative Wiper Design

The Hach SONATAX sc Sludge Blanket Level Probe features a magnetic coupled wiper that effectively cleans the probe. The wiper functions with a magnetic connection and without a shaft so there are no o-rings to replace and no need to open the probe housing. Tools are not needed to replace the wiper blades—simply turn the dial by hand. Feet on the bottom of the probe protect the wiper from damage when the probe face is placed on a surface.

Superior Accuracy with Automatic Frequency Adjustment

The SONATAX sc probe automatically scans a range of frequencies to find the ideal settings for the solids concentration for the application. Built-in software can disregard signals reflected from tank structures such as pipes, rods, etc.

Unique Features

Reliable Digitized Probe—the fully digitized SONATAX sc probe means there are no electromagnetic interferences.

Position Sensor—instantly resume measurements after skimmer passes with the built-in position sensor that also compensates for angle when the probe is not mounted exactly vertically.

Temperature Compensation for Seasonal Changes

Automatic temperature compensation assures ultrasonic measurement is unaffected by seasonal changes in water temperature—seasonal calibration becomes unnecessary.

Visual Performance Indicator Enhances Troubleshooting

A visual performance LED indicator light on the SONATAX sc probe provides quick glance assurance of proper performance. Green light indicates OK, red indicates warning. Troubleshooting, particularly in applications with multiple sludge blanket level probes connected to one controller, is quick and easy.



The Hach SONATAX sc Sludge Blanket Level Probe is an ideal tool to optimize sludge extraction, manage recirculation, warn of potential solids washouts, or process upset by continuously measuring the depth from the surface or height from the tank floor. Maintenance is reduced with the probe's innovative wiper design. Automatic frequency adjustment provides superior accuracy.

Multi-probe, Multi-parameter Capability

Expand systems as needed without additional controller investment—the Hach sc100 Controller can accept up to two probes while the Hach sc1000 Universal Controller can accept up to eight probes. Both controllers can accommodate any combination of parameters with Hach's line of digital probes including suspended solids, pH, dissolved oxygen, turbidity, nitrate, phosphate, ammonia, and more.

Increased Efficiency Saves Time and Money

The Hach SONATAX sc Sludge Blanket Level Probe is designed for use in primary and secondary clarifiers, thickeners in wastewater treatment, raw water clarifiers, sludge settling basins in water treatment, and special industrial applications. Continuous blanket level measurement can increase efficiency by providing early warning of solids wash-out potential at the outlet that may result in costly permit violations. Other benefits include:

- Reduction in labor cost associated with time consuming manual measurements.
- The ability to actuate pumps automatically with the probe can decrease power costs by controlling pump rates for WAS/RAS with the blanket level instead of using a constant speed.
- Optimize sludge extraction from sedimentation tanks to minimize dewatering and final disposal cost.

DW = drinking water WW = wastewater municipal PW = pure water / power
IW = industrial water E = environmental C = collections FB = food and beverage



Be Right™

DW

WW

IW

Specifications*

Measuring Principle

Ultrasonic measurement

Range

0.2 to 12 m (0.6 to 40 ft.)

Resolution

0.03 m (0.09 ft.)

Accuracy

±0.1 m (±0.33 ft.)

Operating Temperature

2 to 50°C (35 to 122°F)

Power Requirement

12 V, 2.4 W

Measurement Interval

10 to 600 seconds (adjustable)

Probe Mounting

Fixed location or pivot assembly

Calibration

Factory calibrated

Probe Construction

Wiper: Silicon

Body: Stainless steel

Face: Polyoxymethylene

Certifications

CE certified to EN 61326-1:1998 /A1/A2/A3
& EN 61010-1:2001

Dimensions

130 x 185 mm (5 x 7.3 in.)

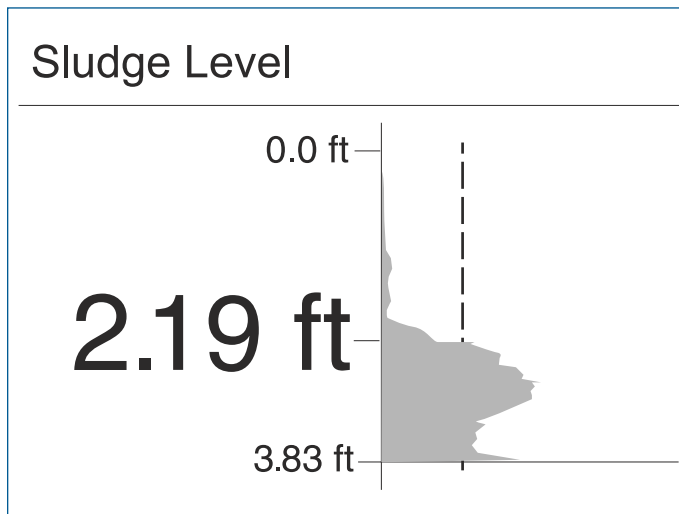
Weight

3.5 kg (7.7 lbs.)

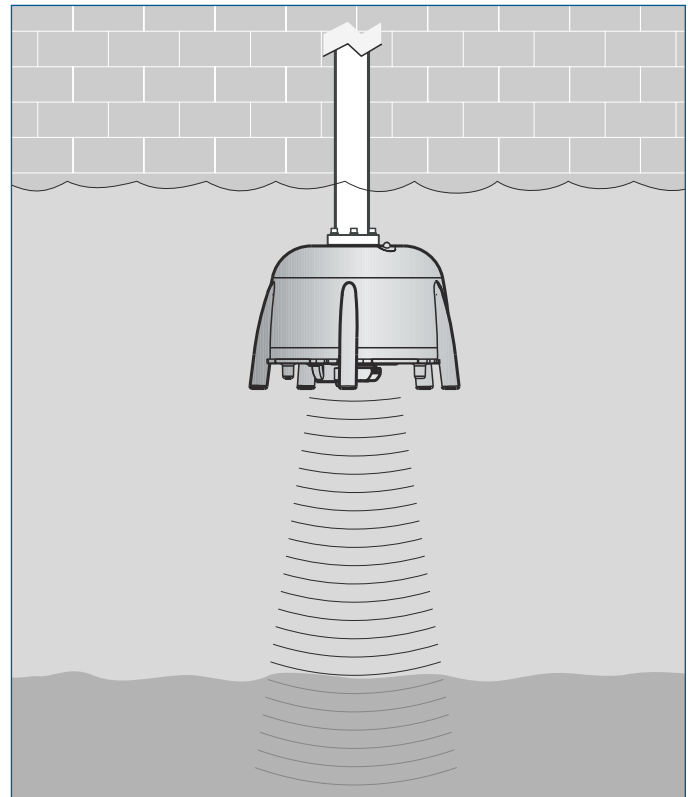
*Specifications subject to change without notice.

Principle of Operation

The Hach SONATAX sc Sludge Level Probe uses an ultrasonic pulse to accurately measure the sludge level. An ultrasonic signal sent from the probe is directed towards the sludge blanket in the tank (figure at right). Height and depth measurements are based on the time it takes for the ultrasonic echo to return to the probe and are displayed on the controller (figure below).



NOTE: Graphical display of sludge profile is available only with the sc1000 controller.

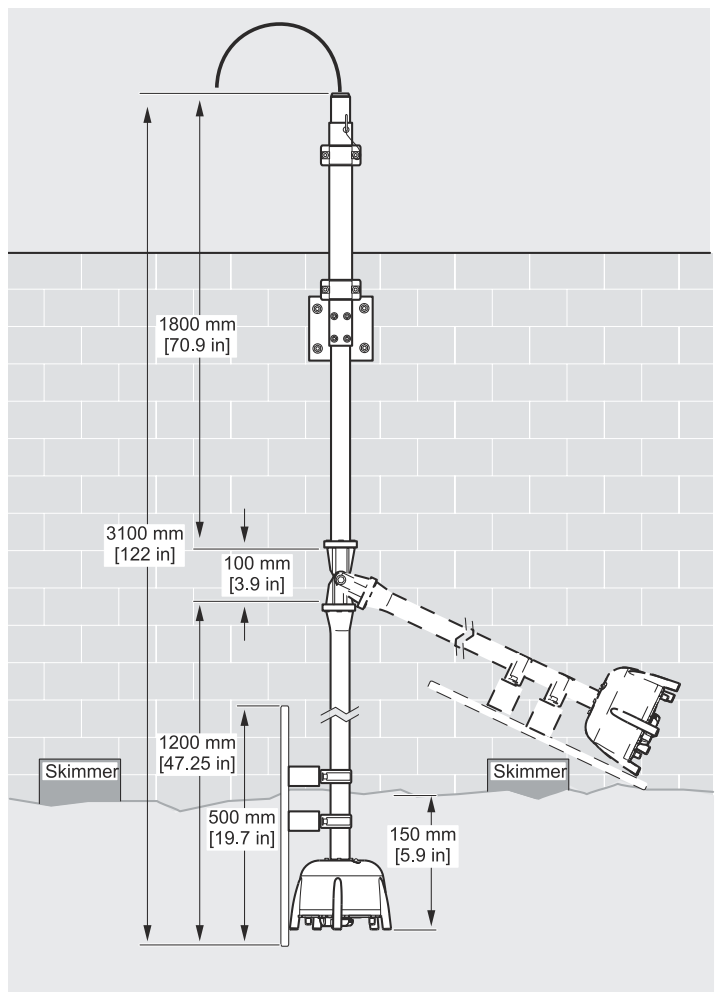
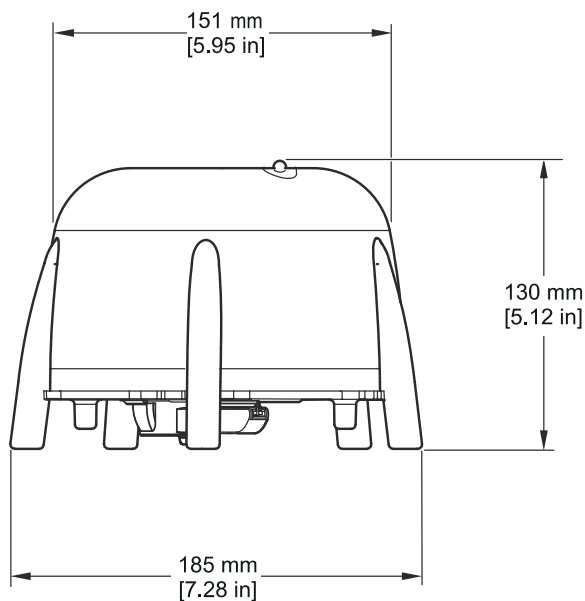


Engineering Specifications

1. The sludge level probe shall consist of a self-cleaning stainless steel immersion probe.
2. The probe shall utilize ultrasonic echo time to measure depth from the water surface or the height from the tank floor, dependent on user settings.
3. The probe shall have a self-cleaning wiper to prevent erroneous values.
4. The probe shall operate with a user-selected measurement range of 0.6 to 40 feet from surface.
5. The probe shall be able to define the sludge blanket based on the user-selected sludge concentration of sludge in the clarifier or "Blanket Threshold."
6. Response time shall be 10 seconds and user adjustable up to 600 seconds.
7. The probe shall be factory calibrated. Users may also enter correction factor.
8. The probe shall automatically detect the deterioration of disrupted sedimentation. It will sense the ultrasonic echo return with the information of the separation layer independent of density.
9. The sludge level probe shall be digital designed to connect to a universal controller.
10. The probe shall include a one-year warranty from the date of shipment.
11. The probe shall be the SONATAX sc Sludge Level Probe manufactured by Hach Company.

Dimensions

The Hach SONATAX sc Sludge Level Probe must be installed with the ultrasonic head submerged at least 20 cm (8 in.). Protect it against larger objects in the sewage flow such as branches or ice. Slight rocking of the mounting links of the ultrasound head will not affect measurements.



Ordering Information

Single Probe Systems

5770400 SONATAX sc System; includes one SONATAX sc probe, pivot mount hardware, and sc100 standard controller

Single Probe Systems with Digital Communication

5770600 SONATAX sc System; includes one SONATAX sc probe, pivot mount hardware, and sc100 controller with RS-232 MODBUS® output

5771100 SONATAX sc System; includes one SONATAX sc probe, pivot mount hardware, and sc100 controller with RS-485 MODBUS® output

5771300 SONATAX sc System; includes one SONATAX sc probe, pivot mount hardware, and sc100 controller with Profibus DP

Note: Power cords must be ordered separately.

Two Probe Systems

5771400 SONATAX sc System; includes two SONATAX sc probes, two pivot mount hardware, and one sc100 standard controller

Two Probe Systems with Digital Communication

5771500 SONATAX sc System; includes two SONATAX sc probes, two pivot mount hardware, and one sc100 controller with RS-232 MODBUS® output

5771900 SONATAX sc System; includes two SONATAX sc probes, two pivot mount hardware, and one sc100 controller with RS-485 MODBUS® output

5772500 SONATAX sc System; includes two SONATAX sc probes, two pivot mount hardware, and one sc100 controller with Profibus DP

SONATAX sc Probes

Each probe is equipped with 10 m (33 ft.) cable

LXV431.99.00002

One SONATAX sc Sludge Level Probe

5773000 One SONATAX sc Sludge Level Probe with one pivot mount hardware

5773100 Two SONATAX sc Sludge Level Probes with two pivot mount hardware

5773400 Four SONATAX sc Sludge Level Probes with four pivot mount hardware

Note: For information about the Hach sc1000 Controller, please see lit #2403.

Cable Accessories

5867000 Junction Box for extension cables (required when the length of the cable between the probe and sc100 or sc1000 controller is between 100 and 1000 m (328 and 3280 ft.))

5796000 7.6 m (25 ft.) Extension Cable

5796100 15.2 m (50 ft.) Extension Cable

5796200 30.5 m (100 ft.) Extension Cable

Accessories

5448800 125V Power Cord with Strain Relief

5448900 230V Power Cord with Strain Relief

LZX414.00.70000

Fixed Point Mount for probe (for mounting probe at a fixed location)

LZX414.00.71000

Pivot Mount for probe
(for mounting probe on a pivot assembly for clarifiers with skimmers)

LZX961.54 Sun Shield for sc100 controller

LZX328 Wiper Blades for Probe, replacement only, pkg. of 5

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In the interest of improving and updating its equipment, Hach Company reserves the right to alter specifications to equipment at any time.

At Hach, it's about learning from our customers and providing the right answers. It's more than ensuring the quality of water—it's about ensuring the quality of life. When it comes to the things that touch our lives...

Keep it pure.

Make it simple.

Be right.

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