

## PART 1 GENERAL

### 1.1 Section includes

- A. Probe for monitoring the level (height from the tank floor or depth of the water surface) of a sludge blanket in a tank.
- B. Includes the capability to remotely monitor sensors on any browser-enabled device and present diagnostics on the overall health of the measurements (on Predictive Diagnostics-enabled sensors), as well as upcoming and required maintenance - reducing user risk and downtime.

### 1.2 Measurement Procedures

- A. The method of measuring sludge level will be by ultrasonic pulse directed toward the sludge blanket in the tank.
  - 1. Height and depth measurements are based on the time it takes for the ultrasonic echo to return to the probe.

### 1.3 Alternates

- A. Other instruments that do not use an ultrasonic pulse are not acceptable.

### 1.4 System Description

- A. Performance Requirements
  - 1. Measurement range: 0.2 to 12 meters (0.6 to 40 feet)
  - 2. Measurement interval: 10 to 1800 seconds (adjustable)
  - 3. Accuracy:  $\pm 0.1$  meters ( $\pm 0.33$  feet)
  - 4. Resolution: 0.03 meters (0.09 feet)

### 1.5 Certifications

- A. CE certified to EN 61326-1:1998 /A1/A2/A3
- B. EN 61010-1:2001

### 1.6 Environmental Requirements

- A. Operational Criteria
  - 1. Operating temperature: 2 to 50 °C (35 to 122 °F)

### 1.7 Warranty

- A. The product includes a one-year warranty from date of shipment.

### 1.8 Maintenance Service

- A. Scheduled maintenance:
  - 1. Monthly: visual inspection, if necessary, clean
  - 2. Annually: change wiper blade, or after 20,000 wiping cycles

## PART 2 PRODUCTS

### 2.1 Manufacturer

- A. Hach Company, Loveland, CO
  - 1. SONATAX sc Sludge Blanket Level Probe

### 2.2 Manufactured Unit

- A. The SONATAX sc Sludge Blanket Level Probe consists of:
  - 1. Self-cleaning stainless steel immersion probe.

### 2.3 Equipment

- A. The probe is equipped with a magnetic coupled wiper that cleans the probe.
- B. The probe is equipped with a position sensor that also compensates for angle when the probe is not mounted exactly vertically.
- C. The probe automatically compensates for temperature.
- D. The probe is equipped with a visual performance LED indicator light for assurance of proper performance.
- E. The probe defines the sludge blanket based on user-selected sludge concentration or "blanket threshold."
- F. The probe is factory calibrated. Users may also enter a correction factor.
- G. The probe automatically detects deterioration of disrupted sedimentation. It senses the ultrasonic echo return with the information of the separation layer independent of density.
- H. The probe is designed to connect to a universal digital controller.

### 2.4 Components

- A. Standard equipment:
  - 1. Probe:
    - a. Body: stainless steel
    - b. Wiper: silicon
    - c. Face: polyoxymethylene
  - B. Dimensions: 5.1 x 7.3 inches (130 x 185 mm)
  - C. Weight: 7.7 pounds (3.5 kg)

### 2.5 Accessories

- A. Digital controller
- B. Cables and power cord
- C. Mounting Hardware
  - a. Tank rim fixing, made of stainless steel
  - b. Pivot mounting
  - c. Rail mounting assembly, made of stainless steel
  - d. Chain mounting
- D. Sun shield

### PART 3 EXECUTION

#### 3.1 Preparation

- A. The probe must be installed with the ultrasonic head submerged at least 20 cm (8 inches).
- B. Protect the probe against larger objects in the sewage flow such as branches or ice.
- C. Slight rocking of the mounting links of the ultrasound head will not affect measurements.

#### 3.2 Installation

- A. Contractor will install the probe in strict accordance with the manufacturer's instructions and recommendation.
- B. Manufacturer's representative will include a half-day of start-up service by a factory-trained technician, if requested.
  - 1. Contractor will schedule a date and time for start-up.
  - 2. Contractor will require the following people to be present during the start-up procedure.
    - a. General contractor
    - b. Electrical contractor
    - c. Hach Company factory trained representative
    - d. Owner's personnel
    - e. Engineer

#### 3.3 Manufacturer's Service and Start-Up

- A. Contractor will include the manufacturer's services to perform start-up on instrument to include basic operational training and certification of performance of the instrument.
- B. Contractor will include a manufacturer's Service Agreement that covers all the manufacturer's recommended preventative maintenance, regularly scheduled calibration and any necessary repairs beginning from the time of equipment startup through to end user acceptance / plant turnover and the first 12 months of end-user operation post turnover.
- C. Items A and B are to be performed by manufacturer's factory-trained service personnel. Field service and factory repair by personnel not employed by the manufacturer is not allowed.
- D. Use of manufacturer's service parts and reagents is required. Third-party parts and reagents are not approved for use.

END OF SECTION

Date  
Project Number  
Project Name

SECTION 13400  
MEASUREMENT AND CONTROL INSTRUMENTATION  
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