PART 1 GENERAL

1.1 Section includes:

A. Sensor that continuously measures pH in aqueous solutions.

1.2 Measurement Procedures

A. The method of measurement will be a two-electrode system whereby a combined glass and reference electrode compares the potential of the electrical energy of the sample to the internal reference solution and produces a voltage value per the Nernst equation. This value is converted to pH by the controller that is required to operate the sensor.

1.3 Alternates

A. Probes or sensors that do not communicate with Hach model sc200 or Polymetron 9500 controllers will not be acceptable.

1.4 System Description

A. Performance Requirements for 8350.3 Sensor
   1. Measurement Range: 0-12 pH
   2. Offset: ± 20 mV
   3. Slope: 56-61 mV/pH
   4. Glass Impedance at 25°C: 150-500 Mohm
B. Performance Requirements for 8350.4 Sensor
   1. Measurement Range: 0-14 pH
   2. Offset: ± 20 mV
   3. Slope: 56-61 mV/pH
   4. Glass Impedance at 25°C: 150-500 Mohm
C. Performance Requirements for 8350.5 Sensor
   1. Measurement Range: 0-12 pH
   2. Offset: ± 20 mV
   3. Slope: 56-61 mV/pH
   4. Glass Impedance at 25°C: 150-500 Mohm

1.5 Certifications

A. EMC: CE compliant for conducted and radiated emissions CISPR 11 (Class A limits), EMC Immunity EN 61326-1 (Industrial limits) when part of an approved system
B. Safety: General Purpose UL/CSA 61010-1 with cETLus safety mark when part of an approved system
C. Australian C-TICK and Korean KC Markings when part of an approved system

1.6 Environmental Requirements

A. Operational Criteria
   1. Maximum Operating Temperature:
      a. 8350.3: 110 °C (230 °F)
      b. 8350.4: 110 °C (230 °F)
      c. 8350.5: 80 °C (176 °F)
   2. Maximum Pressure: 10 bar at 80 °C (145 psi at 176 °F)
   3. Relative humidity: 10 to 95%, non-condensing

1.7 Maintenance Service

A. Scheduled Maintenance
   1. Monthly
      a. Calibrate Sensor
   2. Each 6 months
      a. Evaluate Sensor for Replacement
B. Unscheduled Maintenance
   1. Clean sensor with appropriate cleaning solution at appropriate intervals depending on the sample tested.

PART 2 PRODUCTS

2.1 Manufacturer
A. Hach Lange Sárl, Geneva, Switzerland

2.2 Manufactured Unit
A. The 8350 pH sensor consists of:
   1. A pH sensor composed of PTFE and PPS or CPVC
   2. Integral Cable
   3. The sensor is individually factory-tested to determine its individual slope offset.

2.3 Equipment
A. The Polymetron 8350/8351 pH and ORP Sensors work with Hach model sc200 or Polymetron 9500 controllers only.
B. The probe has a built in Pt 100 temperature sensor.
C. Wetted materials as follows:
   1. 8350.3 Sensor:
      a. PTFE
      b. Guarded Glass
      c. PPS
   2. 8350.4 Sensor
      a. PTFE
      b. Guarded Glass
      c. Stainless Steel
      d. PPS
   3. 8350.5 Sensor
      a. PTFE
      b. Guarded Glass
      c. Stainless Steel
      d. CPVC

2.4 Components

A. Standard equipment
   1. Sensor
   2. Integral Cable
B. Dimensions:
   1. 8350 sensors: 150 mm x 26.5 mm (5.68 in x 1.04 in)
C. Weight:
   1. 8350 sensors: 0.9 kg (1.98 lbs)

2.5 Optional Accessories

A. Cables
   1. 5m (16 ft)
   2. 10 m (33 ft)
   3. 20 m (66 ft)
B. Application specific mounting hardware
C. Flow-through chamber

PART 3 EXECUTION

3.1 Preparation

A. The sensor must be mounted to a Hach mounting assembly directly in the solution to be measured.

3.2 Installation

A. Contractor will install the analyzer 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