PART 1 GENERAL

1.1.1 Section includes

A. Analyzer for monitoring of turbidity in water.

1.1.2 Measurement Procedures

A. The method of measuring turbidity will be by detection of 90-degree scattered light from particles in the sample.
    1. The light source is directed to the surface of the water sample making the need for a glass window or flow cell unnecessary.

1.1.3 Alternates

A. Other instruments that do not detect light scattered at a 90-degree angle are not acceptable.
B. Instruments that use 90-degree scatter for turbidity measurement that use a glass window or flow cell are not acceptable.

1.4 System Description

A. Performance Requirements
    1. Measurement range: 0 to 9999 Nephelometric Turbidity Units (NTU)
    2. Accuracy:
        a. From 0 to 2000 NTU: ±5% of reading or ±0.1 NTU (whichever is greater)
        b. From 2000 to 9999 NTU: ±10% of reading
    3. Resolution:
        a. Below 100 NTU: 0.01 NTU
        b. Between 100 to 9999.9 NTU: 0.1 NTU
    4. Repeatability: 1.0% or ±0.04 NTU, whichever is greater
    5. Response time: Initial response in 45 seconds

1.5 Certifications

A. UL 61010A-1
B. CSA C22.2 No. 1010.1 (ETLc Certification # 65454)
C. Certified by Hach Co. to EN 61010-1 Amds. 1 & 2 (IEC1010-1) per 73/23/EEC
D. Immunity:
    1. EN 61326 (EMC Requirements for Electrical Equipment for Measurement, Control and Laboratory Use) per 89/336/EEC
    2. EMC
E. Emissions: Per 89/336/EEC EMC: EN 61326:1998 (Electrical Equipment for measurement, control and laboratory use—EMC requirements) Class “A” emission limits.

1.6 Environmental Requirements

A. Operational Criteria
    1. Sample temperature:
        a. Standard model: 0 to 50 °C (32 to 122 °F)
        b. High temperature model: 0 to 70°C (32 to 158°F), intermittent 70 to 80°C (158 to 176°F)
    2. Sample flow required: 1.0 to 2.0 L/min (15 to 30 gal/hr)
    3. Operating temperature: 0 to 50 °C (32 to 122 °F)
    4. Operating humidity: 5 to 95% relative humidity, non condensing

1.7 Warranty

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

1.8 Maintenance Service

A. Scheduled maintenance:
    1. Calibration
B. Unscheduled maintenance:
    1. Replace lamp as required

PART 2 PRODUCTS

2.1 Manufacturer

A. Hach Company, Loveland, CO
    1. Model Surface Scatter 7 sc Turbidimeter

2.2 Manufactured Unit

A. The Surface Scatter 7 sc (SS7) Turbidimeter consists of:
    1. Turbidimeter
    2. Hach sc200 Controller

2.3 Equipment

A. The turbidimeter is continuous-reading instrument.
B. All optical and hydraulic components are housed in the sampling unit.
C. The sampling unit is housed in a NEMA-12 industrial plastic enclosure.
D. The optics of the turbidimeter never touches the sample.
E. The sampling unit is constructed of corrosion-resistant structural plastic.
F. Power to the sampling unit is supplied from the control unit and requires no separate power source.
G. Calibration of the turbidimeter is based on formazin.
H. Control unit:
    1. The control unit is equipped with linear output signal that can be programmed to span all or any portion of the 0 to 9999 NTU range.
    2. Turbidity alarm set points are adjustable over the entire range of the instrument with a SPDT relay with unpowered contacts rated for 6 A.
    3. The control unit is housed in a NEMA-4X industrial enclosure.

2.4 Components

A. Standard equipment:
    1. Turbidimeter
    2. Controller
    3. Manual
    4. Calibration cup
    5. Formazin calibration standard
    6. Installation accessories
B. Dimensions: 25.3 x 26.6 x 7.5 inches (64.2 x 67.5 x 19.0 cm)
C. Weight: 35 pounds (16 kg)

2.5 Accessories

A. Cables and power cord
B. Sample conditioning:
    1. Auto flush kit
    2. Bubble trap
    3. Flow meter
C. Cylinder brush
D. Verification Plates
E. Sun Shield
F. Standardization Plate Kit

PART 3 EXECUTION

3.1 Preparation

A. Wall- or bench-mount away from direct sunlight
B. Locate unit as close to the sampling point as possible.

3.2 Installation

A. Contractor will install the sensor 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