

Instrumentation Northwest, Inc.

Typical Specification for *AquiStar*[®] *SDI-12* Submersible Pressure/Temperature Sensor

1.0 Scope

- 1.1 The system shall measure pressure and temperature.
- 1.2 The system shall communicate via a standard SDI-12 vl. 3 interface.
- 1.3 The sensor shall fit inside 1-inch, schedule 40 and schedule 80 PVC casing or larger.
- 1.4 The system shall be delivered fully assembled and custom-sized for each well.
- 1.5 The system shall be an *AquiStar*[®] *SDI-12 Submersible Pressure/Temperature Sensor*, manufactured by Instrumentation Northwest.

2.0 Sensor Design

- 2.1 The sensor shall measure pressure and temperature.
- 2.2 Pressure measurements shall be accurate to $\pm 0.1\%$ FSO at 25° C (typical).
- 2.3 The sensor shall be available in absolute or gauge pressure versions.
- 2.4 The sensor shall be no larger than .75" in diameter.

3.0 Cable Assembly Design

- 3.1 The cable shall be polyurethane, Teflon[®], or polyethylene jacketed.
- 3.2 The cable shall be vented to atmosphere, with a dessicant assembly at the well-head to prevent buildup of moisture in the vent tube, for gauge version sensors.
- 3.3 The cable shall be continuous with no splices.
- 3.4 The cable shall terminate with either
 - a) 2 wires plus shield
 - or
 - b) an M6 connector
- 3.5 The cable connection to the sensor shall be waterproof up to a pressure of at least 325 psi to prevent leakage of fluid inside the sensor housing.
- 3.6 The cable shall have a breaking strength of at least 138 lbs.
- 3.7 All connecting fittings shall be capable of supporting a working tensile load of 50 lbs.

4.0 Well Seal Design

- 4.1 The well seal shall provide a water-tight barrier at the top of the monitoring well casing.
- 4.2 The well seal shall be capable of installation without the use of special tools.
- 4.3 When installed in two-inch or four-inch PVC casing, no component of the well seal shall protrude more than 3.5" inches above the top of the monitoring well. A low-profile option shall also be available.
- 4.4 The well seal shall have one port to allow access to the well.
- 4.5 The port on the well seal shall have a water-tight cable seal providing a barrier against water infiltration to the well.
- 4.6 The well seal design shall provide an eye-bolt or equivalent method for load transfer from the cable assembly to the top of the monitoring well casing and some method for suspending the cable from the eye-bolt to provide strain relief.
- 4.7 The well seal shall have a non-corrosive identification tag bearing at least the following information: well I.D., installation depth, system serial number, and model number.

Instrumentation Northwest: Sales and Service Locations

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