Use of Universal Bushing with DolpHin™ pH or ORP Sensors

Introduction

The DolpHin sensor can be inserted directly into the process vessel using its 3/4 NPT thread. However, additional insertion depth can be achieved by using a Universal Bushing Assembly consisting of a 1 NPT adapter bushing, split ring, O-ring, backup ring, and locking cap. The split ring can be positioned in one of two grooves in the sensor body. See Figure 1. The result is adjustment of the insertion depth of:

- PH10-1: 2.5 or 3.5 in (63 or 88 mm)
- PH10-2: 2.3 or 3.3 in (58 or 84 mm)
- PH10-3, ORP10-1, ORP10-2: 2.1 or 3.1 in (54 or 80 mm)
- PH10-4: 2.2 or 3.2 in (56 or 81 mm)

The pressure/temperature ratings of the universal bushing assemblies are shown in Table 1.

<table>
<thead>
<tr>
<th>Material</th>
<th>Part Number</th>
<th>Pressure/Temperature Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>316 ss</td>
<td>BS810XC</td>
<td>1.4 MPa at 121°C 200 psi at 250°F</td>
</tr>
<tr>
<td>PVDF</td>
<td>BS810XB</td>
<td>0.7 MPa at 90°C 0.35 MPa at 121°C 100 psi at 194°F 50 psi at 250°F</td>
</tr>
</tbody>
</table>

Installation

**CAUTION**

There are two grooves in the sensor. The split ring goes in the groove of your choice depending on the desired insertion depth. The O-ring does not go in either groove. Refer to Figure 1.

1. Position the split ring in the desired groove. Make sure the ring is fully seated in the groove.
2. Lubricate the O-ring and then position the O-ring and backup ring next to the split ring.
3. Insert the sensor into the adapter bushing.
4. Screw the locking cap into the adapter bushing and tighten.

*Figure 1. Sensor With Universal Bushing Assembly*