

Dissolved Oxygen and Ozone Sensor Membrane Installation Tips

Proper membrane installation is critical for the operation of METTLER TOLEDO Thornton's dissolved oxygen (DO) and ozone sensors. If a membrane is incorrectly installed, sensor performance may be greatly reduced. The membrane and cathode/anode assemblies are constructed with precise tolerances. Installation errors can compromise these tolerances to affect sensor lifetime, response and accuracy. A few tips are outlined below to help avoid common sensor assembly mistakes.

1. Carefully remove the replacement membrane from its container.

It is important when removing the replacement membrane from its container to extract it such that the membrane does not touch the side wall of the container it is supplied in. If the membrane catches the side wall of the container while being extracted there is the possibility that the head of the membrane may partially or fully detach from the body. If the head of the membrane becomes detached from the body the replacement part cannot be used.

2. Check for bubbles in the membrane electrolyte

Any bubbles present in the membrane electrolyte can decrease sensor response. Bubbles can be seen by holding the membrane up to a light source and then looking through it from underneath. To remove any bubbles present, hold the membrane vertically with one hand and gently tap it with a finger (see Figure 1), or place it against a solid surface and gently tap it (see Figure 2).



Figure 1



Figure 2

3. Carefully attach the membrane onto the cathode/anode

Slowly slide the membrane body over the cathode to avoid trapping air in the electrolyte. It's helpful to fill the membrane with just enough electrolyte (about half full) so that a small amount is pushed out before the cathode/anode is fully inserted into the body (see Figure 3). This will prevent any large air bubbles which could affect sensor stability and response, from being trapped along the sides of the cathode/anode assembly.



Figure 3

4. Wipe away excess electrolyte

Wipe the outside of the membrane body before installing the sensor's metal sleeve (see Figure 4). If any electrolyte is present when the sensor is sealed, it may slowly dry up and its residue will cause mechanical problems within the sensor. The membrane body and metal sleeve can both be damaged if this occurs (see Figure 5), reducing sensor accuracy and lifetime.



Figure 4



Figure 5