

## Dissolved Oxygen Sensor

### (Mettler-Toledo Thornton High Performance DO Sensor)

The dissolved oxygen sensor for ppb level measurements shall use a sealed flow chamber to prevent atmospheric contamination of the sample. The flow chamber shall have a volume of less than 10 mL to assure high sample flow velocity for reliable response and to carry any corrosion particles through to the outlet, eliminating the need for sample filters and their maintenance.

The dissolved oxygen sensor shall include a guard ring electrode to enable rapid downscale response of 98% in 90 seconds for rapid recovery from calibration and to track rapid deaeration accurately. It shall provide measurement accuracy of  $\pm 1\%$  of reading or  $\pm 1$  ppb, whichever is greater.

Maintenance of the dissolved oxygen sensor shall be simple and rapid with a drop-in modular membrane body and electrolyte that can be replaced in 2 minutes on site. No tools or chemicals other than the electrolyte shall be required.

The associated indicating transmitter shall measure from 2 or 4 dissolved oxygen sensors, as specified, with indication, alarm and output signals available for both dissolved oxygen and temperature. It shall be possible for other parameters (pH, ORP, conductivity, TOC) to be measured on the other channel(s) along with dissolved oxygen. The transmitter shall provide temperature compensation for the solubility of oxygen in water and for the oxygen permeability of the membrane.

The dissolved oxygen sensor shall be Mettler-Toledo Thornton model 357-210 High Performance DO Sensor for 4-channel 770MAX Transmitters or model 5803720X High Performance DO Sensor for 2-channel M300 Transmitters.

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