

DISSOLVED OXYGEN ELECTRODES

Basic Principle of Dissolved Oxygen (DO) Electrodes

There are three types of commonly used oxygen sensors: polarographic, galvanic and optical (luminescence) sensors.

STDO11 is a galvanic DO electrode and the simplest among the three electrodes. It produces its own electric current.

The cathode is silver and the anode is zinc. Oxygen passes through the membrane and is reduced at the cathode to increase the electrical signal (current) read by the electrode. As oxygen increases, the signal increases.

Galvanic sensors are active at all times and will degrade in storage as well as during use. They do not need to polarize (warm up) before calibration or measurement while polarographic electrodes take 15 minutes to several hours to warm up.

The STDO21 optical dissolved oxygen sensors measure the interaction between oxygen and certain luminescent dyes. These sensors are ideal for long-term monitoring applications due to their minimal maintenance requirements. STDO21 also does not require any warm-up time or stirring when taking a measurement. Over a long period of time, the dye degrades and the sensing element and membrane will need to be replaced, but this replacement is very infrequent compared to electrochemical sensor membrane replacement.

Storage and Maintenance

Carefully remove the protective bottle from the tip of the electrode by unscrewing the lid and removing the bottle. Remove the shorting plug from the connector and store in a safe place. Be careful because the protective bottle lid is tightly fit on the electrode.

STDO11 should be stored in a moist environment to keep the membrane from drying out, but do not store directly in water.



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Model	STDO11	STDO21-1	STDO21-5
Item Number	30031639	30378544	30378545
Connection	BNC	Mini-DIN	Mini-DIN
Cable Length	1.1 m	1 m	5 m
Shaft Length	120 mm	120 mm	120 mm
Shaft Diameter	12 mm	16 mm	16 mm
Shaft Material	Plastic	Plastic	Plastic
Temperature Range	0-50 °C	0 °C – 60 °C	0 °C – 60 °C
Measurement Range	0-200%	0.00 – 20.0 mg/L(ppm)	0.00 – 20.0 mg/L(ppm)