AdvantEDGE Optical Dissolved Oxygen

The AdvantEDGE sensor uses the latest technology to measure dissolved oxygen (DO) in demanding environments. The AdvantEDGE series™ Optical Dissolved Oxygen RDO® sensor offers several advantages for monitoring DO in process applications:

- Robust
- Cost Effective Options
- No Calibration Hassles
- Low Maintenance
- Accurate

The AdvantEDGE sensor measures dissolved oxygen (DO) using the principle of "dynamic luminescence quenching." The sensor (Figure 1) uses lifetime-based optical fluorescent technology to provide an extremely stable, accurate, low-maintenance DO sensor.

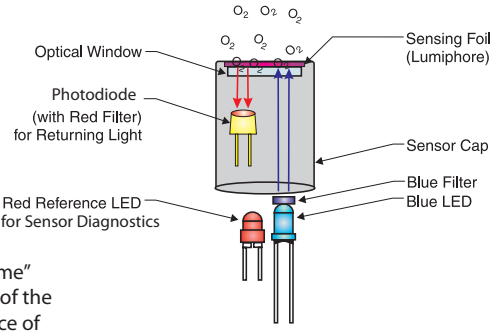

Figure 1: AdvantEDGE sensor design

The sensor measures the "phase" (or delay) of the returned signal compared to the excitation signal, and is thus based on the "lifetime" rather than the "intensity" of the luminescence. The presence of oxygen in the foil quenches the luminescence and causes a phase shift in the returned signal, detected by the photodiode. The phase difference between the blue excitation light and the return red light is measured, and the result is used to quantify DO.

Specifications

Sensor Type	Luminescent dissolved oxygen sensor
Transmitter/local display	Optional, not required
Range	0 to 20 mg/L concentration 0 to 200% saturation
Accuracy (DO)	±0.1 mg/L, 0 to 8 mg/L ±0.2 mg/L, 8 to 20 mg/L
Response time, cap	T90: 30 sec T95: 37 sec @ 25°C
Resolution	0.01 mg/L
Usage life of cap	1 year from the first instrument reading
Shelf life of cap	2 years from date of manufacture (install within 1 year from date of manufacture)
Operating temperature	0° to 50° (32° to 122°F)
IP rating	IP-67 with cap off, IP-68 with cap installed
Compliance	Heavy industrial, IEC 61000-6-2:2005
Storage conditions, cap	1° to 60° (33° to 140°F), in factory container
Storage conditions, sensor	-5° to 60° (23° to 140°F)
Salinity range	0 to 42 PSU, fixed or real-time capable
pH range	2-10 pH
Barometric range	507-1115 mbar, fixed or real-time capable
Internal mounting thread	1¼-11½ NPT
Communications options	Modbus RTU (RS485), 4-20mA, SDI-12
Maximum cable length	Up to 4000 ft (Modbus and 4-20 mA) or up to 200 ft (SDI-12)
Warranty	Sensor: 3 years from date of manufacture Cap: 2 years from date of manufacture