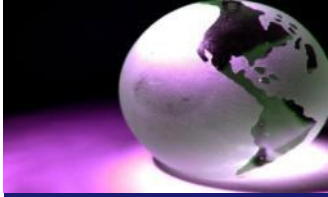


Triton DO8– Dissolved Oxygen Sensors



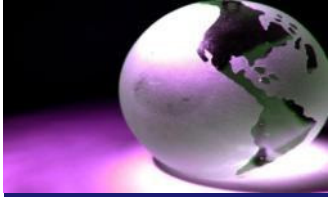
ELECTRO-CHEMICAL DEVICES



What is the Triton DO8?

- ❖ The Triton DO8 is an Optical Dissolved Oxygen Analyzer
 - DO8 Sensor & DO8 Instrument
 - Measures the Partial Pressure of oxygen in the water or air
 - mg/l, % saturation, or mBar
 - The same O₂ measurement with an improved technology
- ❖ Uses the optical property “**Fluorescence**” to determine the amount of oxygen dissolved in the water
- ❖ Not Amperometric, Polarographic or Galvanic





What is the Triton DO8?

❖ The Triton DO8 Sensor is a smart sensor

- Digital Communication
- All signal processing is internal
- Factory Calibration is stored in the sensor memory
- Integral Temperature measurement
- Self diagnostics
- Easily replaceable sensor cap with typically a two year life

❖ The Triton DO8 Analyzer has all the features of the C22 and can be ordered as a single or dual channel instrument.

- (1) 4-20 mA output and 2 relays per channel
- The digital communication of the Triton DO8 limits the sensor choices to the DO8 sensors only.





What is the Triton DO8?

❖ Specifications

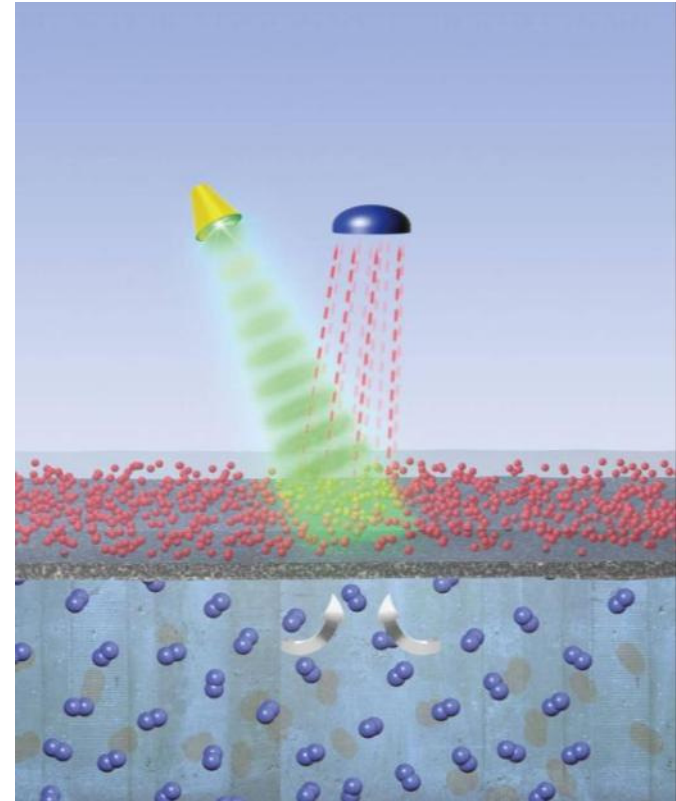
- Measuring Range
 - 0 - 20 mg/l (0 - 20 ppm)
 - 0 - 200 % Saturation
 - 0 - 400 hPa (0 - 6 psi)
- Maximum Pressure
 - 10 bar (145 psi)
- Temperature Range
 - -5; - 50;C (20; - 120;F)
- Response Time
 - T90 in 60 seconds
- Accuracy
 - Max. error < 2% of measurement range
- Resolution
 - 0.01 mg/l or 0.01% SAT





How does it Work?

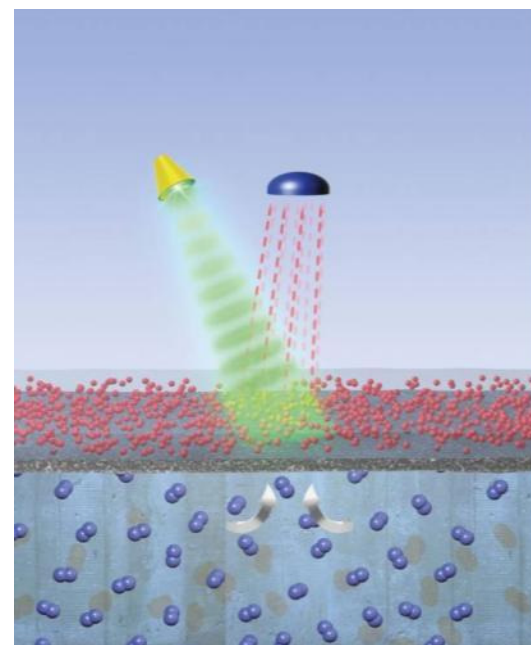
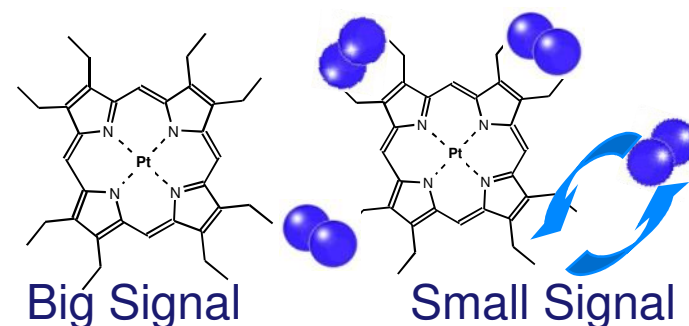
- ❖ Inside the sensor there is a **Green LED** light source that flashes rapidly.
- ❖ It Shines down on the end cap of the DO8 sensor that contains organo-metallic (OG) molecules that **Fluoresce** red light when excited by a green light.
- ❖ A detector measures the intensity and response time (decay) of the **Fluorescence**.





How does it Work?

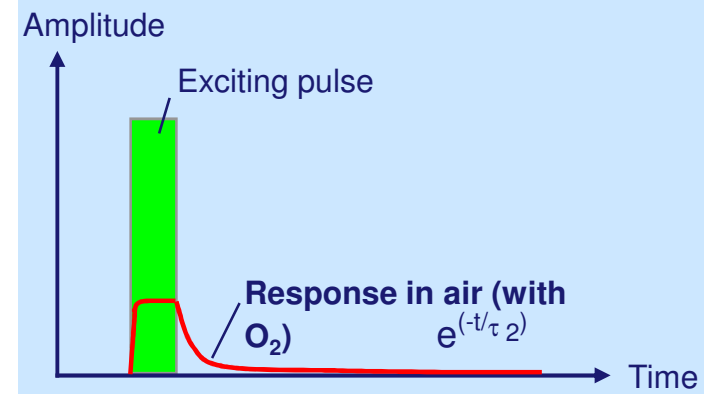
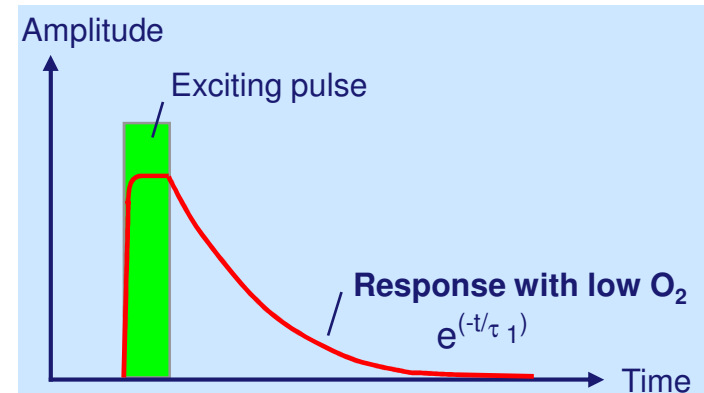
- ❖ Oxygen exchanges freely between the media and the OG molecules in the cap.
- ❖ The Special OG Molecules can grab onto the O_2
- ❖ When oxygen binds to the molecule, it fluoresces less.
- ❖ Hence the name of the technology **Fluorescence Quenching**.
- ❖ No O_2 = High Fluorescence
- ❖ High O_2 = Low Fluorescence
- ❖ The amount of quenching depends on the overall concentration of the O_2 in the system.

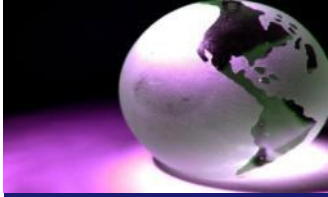




How does it Work?

- ❖ The amplitude of the signal, its intensity, is large and the response time of the decaying signal is long in low oxygen environments.
- ❖ The amplitude is lower and the response time is shorter for higher oxygen environments.
- ❖ The amplitude and response time are independent of each other
 - Response time is used to determine Oxygen concentration
 - Amplitude infers lifetime of the cap and the sensors dynamic range

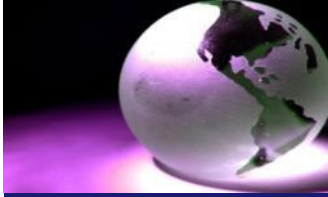




Where is it Used?

- ❖ Aeration Ponds at Municipal WWTP
 - secondary treatment, bacteria neutralize the waste and consume oxygen which must be added or they die.
- ❖ Fish Farming
 - High density requires aeration
- ❖ Monitoring of Aerobic or Anaerobic Chemical Processes
 - Food processing WWT
 - Chemical/Petro WWT
- ❖ Drinking water





Why use an Optical DO?

- ❖ Lower Maintenance
 - Just Wipe the sensing end of with a wet rag and it is ready to go.
 - Use the Air Blaster Cleaner for even less maintenance.
 - No membranes to replace
 - No Solutions to refill
- ❖ Fast, Accurate, Easy to Use
- ❖ Greater Stability
 - Less Drift
 - Bi monthly (every two months) calibration check
- ❖ Not Flow sensitive



Air Blast
Cleaner
PN 1000226



Quick Start Up Guide

❖ What's Needed (one from each group needed)

- Single Channel Analyzer (PN 16F01221.F000)
- Dual Channel Analyzer (PN 16FF2421.FF00)
- Triton DO8 Sensor, 7 m cable (PN 1397000-1)
- Triton DO8 Sensor, 15 m cable (PN 1397001-1)
- Flow Through Cell (PN 1000219)
- Immersion Pipe Assembly (PN 1000223)

❖ Spare Parts (recommended)

- Replacement Cap (PN 2500207)
- O-ring set for Cap (PN 1000225)





Quick Start Up Guide

- ❖ Wire the Analyzer
 - 2 wires for the 4-20 mA
 - Configured 0-20 mg/l
 - 2 wires each for the relays
 - Configure, if used
 - 3 wires for the Power
- ❖ Install the sensor in the flow cell or Immersion pipe
- ❖ Connect the Sensor (4 wires)
- ❖ Power the Analyzer
- ❖ The Factory Calibrated Sensor is measuring
- ❖ That's all that's required!





Electro-Chemical Devices

Electro-Chemical Devices has multiple offerings of DO sensors - the right sensor for your application!

Amperometric and Optical Sensors:

Contact ECD for all of your liquid analytical measurement requirements

Electro-Chemical Devices

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