

MODEL 20

DATA SHEET

DISSOLVED OXYGEN SENSOR

No Membranes—No Fill Solution—No Sensor Caps—Five Year Sensor Warranty

WIRELESS COMMUNICATIONS WITH THE ANALYZER

The Insite Instrumentation Group Model 20 dissolved oxygen sensor is a unique product that combines advanced electronics with solid-state, optical sensing technology. The sensor is based on the field proven design of the Model 10 family of sensors with over 10,000 units shipped. To this proven design, the Model 20 adds the ability to mount the sensors throughout the plant without having to deal with running conduit between the sensor and analyzer. This allows for significant savings on installation costs while also allowing maximum flexibility in sensor placement. No other dissolved oxygen sensor can compare with the features and benefits of this revolutionary design.

UP TO SIXTEEN SENSORS CONNECTED TO ONE ANALYZER



**MODEL 20 DISSOLVED OXYGEN SENSOR
With MODEL ST2 TRANSMITTER**

The Model 20 sensor connects to the Sensor Transmitter junction box (p/n ST2). The ST2 then communicates with the parent analyzer via a ZIGBEE compliant Rf module. There is an embedded antenna with an outdoor line of sight range up to one mile. When several sensor/ST2 pairs are installed they form a self-healing mesh network that increases reliability

FLUORESCENCE DISSOLVED OXYGEN —THEORY OF OPERATION

A very specific energy wavelength is transmitted to a ruthenium compound immobilized in a sol-gel matrix. The ruthenium will absorb this energy, changing the outer electron's energy level. The electron will then collapse back to its original energy state, emitting the energy as a photon with a different specific wavelength. This is called fluorescing. If the intensity of the transmitted wavelength is tightly controlled, the amount of fluorescing is both predictable and repeatable. If oxygen molecules are present the amount of fluorescing is reduced, referred to as fluorescence quenching. By measuring the amount of quenching it is possible to determine the amount of oxygen present.



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MODEL 20 SPECIFICATIONS

Measuring Range	0 to 25 ppm or 0 to 200% percent saturation
Accuracy	1% of reading or .05 ppm, whichever is greater
Sensitivity / Resolution	.01 ppm below 4.00, .1 ppm above 4.0
Stability	.02 ppm
Repeatability	.02 ppm
Sensor Drift	Less than 2% per year
Temperature Range	0 to 60 degrees C
Response Time	95% in less than 60 seconds
Sensor Check	Automatic self diagnostics
Sensor Cable Length	33 feet (10 meters) standard
Ambient Temperature	minus 20 degrees C to 70 degrees C
Ambient Humidity	0 to 100 percent
Wetted Materials	Epoxy, polyurethane, and PVC



MODEL 20 SUBMERSIBLE SENSOR

The Model 20 sensor was designed to measure the dissolved oxygen levels in open basins or channels.



MODEL 20HT SENSOR

The Model 20HT sensor was designed to be inserted into a pipe. The sensor is epoxy, polyurethane, and 316 SS.



MODEL 20PI SENSOR

The Model 25PI sensor was designed to be inserted into a pipe. The sensor is epoxy, polyurethane, and 316 SS.



MODEL 20T SENSOR

The Model 20T sensor was designed for sample bypass lines of mixed liquor.

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OR CONTACT YOUR LOCAL TECHNICAL REPRESENTATIVE AT:

