

ST 6115 Optical dissolved oxygen 2-wire 4/20 mA transmitter



This unique submersible probe has been designed to measure dissolved oxygen based on fluorescent technology.

The measuring system consists of:

- optical device complete with a layer of fluorescent material,
- electronic circuit with an exciting beam for the fluorescence detection,
- built-in 2-wire 4/20 mA transmitter;
- digital input for calibration and configuration
- nozzle for the autoclean by external pressure air

The automatic temperature compensation is done internally by means of a built-in sensor.

Thanks to its 4/20 mA isolated output, the probe can be directly connected to a PLC or data logger, without using amplifiers or other devices.

The probe can be connected to B&C Electronics controller BC7635, which provides the power to the probe, the measuring readout, 2 set-points and an alarm, the hold during the cleaning cycle.

The most common applications of this probe include: water quality monitoring, municipal and industrial water treatment and aquaculture.

Principle of operation

A light beam of a specific wavelength is sent to a special fluorescent layer in contact with the sample. The absorbed light energy is partially released as a light pulse with an higher wavelength. This phenomena is called fluorescence.

If oxygen molecules are in contact with the sensing layer, the fluorescing is reduced (quenching).

By measuring the amount of quenching it is possible to determine the oxygen concentration.

The advantages of this measuring method are the absence of electrolyte and membrane, the possibility to measure the oxygen concentration in water or in air, and a good sensitivity in a low oxygen concentration.

Specifications

Measuring method: optical

Scale: 0-20 ppm

Sensitivity: +/- 0,5 % of the scale

Response time: 95% in < 60 seconds

Power supply: 9/36 Vdc

Isolated output: 4/20 mA current Loop

Load: 600 Ω max. at 24 Vdc

Temperature compensation: automatic

Room temperature: -5/50 °C

Max. pressure: 10 Bar at 25 °C

Length: 180 mm

Diameter: 62.5 mm

Body: PVC

Cable: 10 m (100 m max.)

Installation: submersible

Autoclean: by pressure air 3 bar max

Protection: IP 68

Sensing element life: 1 year, protected from light replaceable by customer



example of application with BC 7635 controller



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