OxyGuard Model 420

Dissolved Oxygen Probe with Built-in Transmitter

The Model 420 is a membrane covered galvanic oxygen probe with built-in two-wire 4-20 mA transmitter. The probe is connected to a DC supply and draws a current of between 4 and 20 mA corresponding to the oxygen concentration.

There are only two wires to connect, and there is no limit to cable length. The output signal is galvanically isolated from the built-in electronics and the process fluid. Interference between the Model 420 and other equipment can never occur!

The OxyGuard Model 420 can therefore be connected directly to a wide range of equipment that can accept a 4-20 mA input, such as alarms, indicators, controllers, recorders, PLC's, PC systems with A/D input etc.

The Model 420 can also be used to measure gaseous oxygen concentration.

Technical Advantages

*** Extremely high stability - zero adjustment is never needed, calibration seldom.**
*** No regular maintenance needs. The robust membrane, 50 µ thick, is easily cleaned, but if damaged can be replaced by anyone - at negligible cost.**
*** Correct measurements with flow as low as 1 cm/s.**
*** Based on a chemical principle superior to that of traditional DO probes.**
*** Galvanic type - True zero.**
*** Built-in temperature compensation.**
*** No practical limit to cable length - extension can be made with any type of cable.**
*** Wide range of armatures and fixtures - e.g. the AirAlarm for worker safety in areas where fluctuating oxygen levels could occur in the air, a Flow Cell for measuring gases etc. Ask for details.**
*** Wide range of accessories - e.g. the EasyCal calibrator, OxyClean compressed air cleaner etc.**

Technical Information

Specifications

Dimensions:	Dia. = 58 mm, h = 92 mm + 22mm cable gland. Standard cable length = 7m.
Weight:	Approx. 600 g incl. cable.
Measurement Principle:	Galvanic cell, self polarizing, self temperature compensating.
Operating Conditions:	0 to 50°C, submersible to 5.0 meter.
Flow Requirements, water:	Minimum flow dependent on DO and temperature, typically 1 cm/sec.
Loop Power Supply:	Depends on loop impedance. 24 volt DC recommended. Minimum supply with 50 ohm loop impedance 12 volt DC. Abs. max. supply voltage 35 volt DC. This permits total loop resistance 1200 ohm.
Input/Output Isolation:	1000 volt RMS input-output.
Range:	Please see ordering information. Contact OxyGuard for other ranges.
Accuracy:	Error less than +/- 2% of actual value when measuring temperature is the same as calibrating temperature (barometric pressure unchanged) and calibrated with the EasyCal. Zero Drift less than 0.1 ppm (mg/l) per month.
Warm-up Time:	Typically 1 second. Depends on actual conditions of use. The Model 420 is usually operated continuously.
Supplied With:	50 ml electrolyte, spare membranes and O-rings, cleaning pad.

Ordering Information

The Model 420 is found in a standard version and a high range version. Model 420 is delivered adjusted to the range it is ordered for, but must be calibrated before use. The user can also perform range adjustment within the ranges possible for that version. Tables are found in the manual.

The following uses and measuring ranges are the most common:
Waste water treatment etc:

D033M: 4-20 mA = 0-10 mg/l

Aquaculture, the environment and similar:

D033M: 4-20 mA = 0-20 mg/l
D033SV: 4-20 mA = 0-200 %sat

Super-saturated water (high range versions):

D033MH: 4-20 mA = 0-40 mg/l or 0-100 mg/l
D033SVH: 4-20 mA = 0-400 %sat
D033MSH: 420 mA, for mg/l, 2-wire, 4-20 mA, 7 m cable + spares. Range: 0–100 / 0–400 mg/l
D033SVSH: 420 mA, for %sat/%vol, 2-wire, 4-20 mA, 7 m cable + spares. Range: 0–1000 / 0–2000 %sat

For measuring in air or low levels of oxygen in gas:

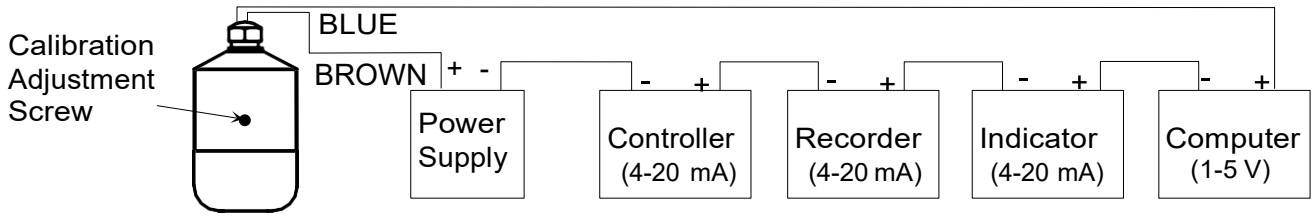
D033SV: 4-20 mA = 0-25 %vol

For measuring pure oxygen (high range version):

D033SVH: 4-20 mA = 0-100 %vol

All of these can be ordered with an M18 threaded part at the top for screwing into a flange: add the suffix **M18** for this option. Contact OxyGuard for special versions or measurement ranges.

Connection Example



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