



OPTICAL DISSOLVED OXYGEN

# OptDOSys: M



Networked sensors



Liquid or air cleaned sensor

### Features:

- Optical sensor technology.
- Automatic optional Air/Liquid cleaning
- No replacement parts required
- 5 yr Warranty on sensors
- Backlit LCD display
- Analogue, digital, modbus outputs
- Real time graphics + logging

### Benefits:

- Low cost of ownership
- No frequent calibrations needed
- Minimal maintenance
- Accurate in low DO environments
- Automatic error detection
- No regular sensor refurbishment



Typical application scenario

### Applications:

- Activated sludge monitoring & control
- Final effluent monitoring
- Process monitoring
- River monitoring stations

Floating ball mounting



**OptoDOSys-M** is an optical Dissolved Oxygen sensing system from MJK & InsiteIG, ideal for use in wastewater treatment works. The technology is based on the quenching of Ruthenium salt fluorescence by the presence of D.O. It is "Non consumptive" and therefore does not require movement of the medium past the sensor. It is also very accurate at low DO levels enabling use in anoxic and anaerobic sections. The sensor design together with optional air/liquid cleaning reduces maintenance to a very low level, and the 5 yr sensor warranty guarantees low cost of ownership. No end caps, membranes or chemicals are required. The sensor is not affected by ambient light and is not harmed by drying out. The transmitter/display includes data logging for up to 30000 time stamped readings and has a real time graphic display. Data download to PC is via a USB connection or Bluetooth. Other outputs include 4-20 mA analogue signal, 2 off alarm relays and modbus for direct Scada link (profibus converter available on request). There is one digital input for activation of cleaning cycle. Multiple units, including other instruments in the range (magflux and DO), may be networked together for common display.



## System Specification

<b>Operational Principle:</b>	Based on an optical sensor utilising the measurement of fluorescence and quenching reactions of a Ruthenium complex immobilised in a sol gel matrix
<b>Range:</b>	0 25 mg/l D.O., 0 50 °C
<b>Resolution:</b>	0.01 mg/l
<b>Repeatability:</b>	0.02 mg/l
<b>Accuracy:</b>	1% of reading or 0.02 mg/l DO whichever is greater
<b>Response Time:</b>	95% in < 60 secs

## Transmitter/Controller Specification

<b>Mechanical Construction:</b>	<b>Dimensions l x h x d</b>	162x150x89 mm
	<b>Weight:</b>	1 kg (approx)
	<b>Materials:</b>	Polycarbonate, glass reinforced
	<b>Ambient conditions:</b>	20 to +60 °C
	<b>Weather Protection:</b>	IP67
	<b>CE:</b>	Compliant
<b>Outputs:</b>	<b>Display:</b>	5 line LCD(64 128 pixel), soft keys + graphics
	<b>Analogue:</b>	1 off 0/4–20 mA galvanic isolated (max 800 )
	<b>Relays:</b>	1 off volt free electromechanical relay (50VDC/1A) 1 off optically isolated MOFSET relay (50VVAC/VDC/120mA)
<b>Power requirements:</b>	<b>Data interface:</b>	RS 232serial and RS485 modbus
	<b>Supply voltage:</b>	24 VAC, 50/60Hz +/- 10%, 115VAC, 50/60Hz +/- 10%, 230VAC, 50/60Hz +/- 10%, 10Watts max
	<b>Load:</b>	

## Sensor assembly Specification

<b>Mechanical Construction:</b>	<b>Materials:</b>	Epoxy, silicone and PU, PVC 316 SS
	<b>Dimensions:</b>	50 mm (diameter) × 130 mm
	<b>Weight:</b>	<1 Kg excluding support pole + bracket
	<b>Standard cable length:</b>	10m (4 x 0, 34 mm 2, Ø 5, 0 mm)
<b>Process conditions:</b>	<b>Medium Temp</b>	0 60°C
	<b>Medium Pressure</b>	max 100PSI
	<b>Quality:</b>	Must be free of abrasives

## Ordering Information

When placing an order it is important to indicate the following requirements to our sales staff:

1. What is the medium you wish to measure and what are the temperature and pressure
2. Is the sensor to be rail mounted? What is the distance from mounting point to water level
3. Do you require pole mounting? If so what pole length is required? The standard length is 3m.
4. What is the rail diameter to which the pole support bracket is to attach
5. Is the transmitter to be wall mount, rail mount or panel mount?
6. How far is the transmitter to be mounted from the sensor
7. What operating voltage is required?
8. What units are to be displayed, what range is to be covered
9. What outputs are required and what alarm levels and analogue range is to be set up?
10. Is a compressor to be provided for air cleaning?
11. Is this unit to be used in isolation or is it to be networked with other MJK sensors with a common display?

**Supplied by:** Envitech Ltd. Unit S7, Capital Business Park, Parkway, Cardiff, CF3 2PU  
Tel: 02920 364252, Fax 02920 369876, E-mail: sales@envitech.co.uk

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