# EOLUM - Dissolved Oxygen Probe

Data Sheet

## FEATURES

- Dissolved Oxygen probe based on fluorenscence quenching principle measurement
- Optical technology: low maintenance and high efficiency
- PT100 Temperature compensation
- No flow needed - measurement possible in still water
- Response time: $T_{90}$: 60 sec. approx.

**Dissolved Oxygen measurement is based on optical measurement (fluorescence) of the oxygen concentration.**

*How does it work?*

A chemical film is glued to the tip of an optical cable and the fluorescence properties of this film depend on the oxygen concentration. Fluorescence is at a maximum when there is no oxygen present. When an O2 molecule comes along it collides with the film and this quenches the photoluminescence. In a given oxygen concentration there will be a specific number of O2 molecules colliding with the film at any given time, and the fluorescence properties will be stable.

The signal (fluorescence) to oxygen ratio is not linear, and an optode is most sensitive at low oxygen concentration. That is, the sensitivity decreases as oxygen concentration increases.

The optode sensors can, however, work in the whole region 0% to 100% oxygen saturation in water. No oxygen is consumed and hence the sensor is insensitive to stirring, but the signal will stabilize more quickly if the sensor is stirred after being put in the sample. These type of electrode sensors can be used for on-site and realtime monitoring of Oxygen production in water splitting reactions.

## EOLUM

| | | |
|---|---|---|
| Working range: | 0-20 mg/l $O_2$ (0-20ppm) | Resolution: ± 0.01 |
| Max measured error | ± 2% full scale value | |
| Repeatability | ± 0.5% full scale value | |
| Analysis system: | fluorescence | |
| Temperature working range: | -5 / +50° C (23/122°F) | |
| Maximum pressure: | 10 bar (145 PSI) | |
| Installation Diameter: | G1 | |
| Connector cable: | G1 | |
| Cable length | 15 mt | |
| Materials: | sensor shaft: POM | |
| | sensor cap: Stainless Steel | |
| | fluorescence layer: Silicone | |
| Probe holder: | NPED-E; PEL-E; PEC-E | |



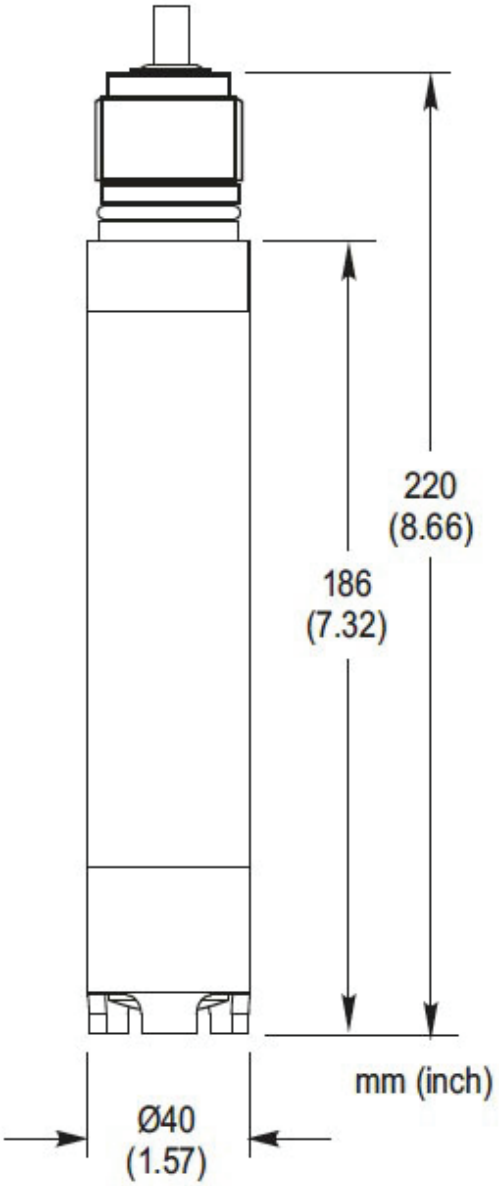
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Specifications subject to change without notice | R2025

emec SIMPLE AS WATER

IQNET CERTIFIED MANAGEMENT SYSTEM
qualityaustria SYSTEM CERTIFIED
ISO 9001:2015 No.07728/0
ISO 14001:2015 No.00997/0
ISO 45001:2018 No.01121/0

## DIMENSION



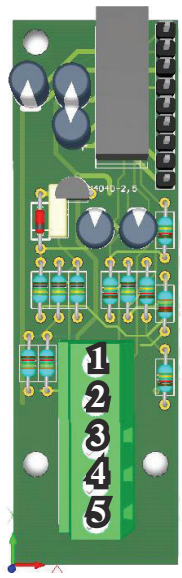

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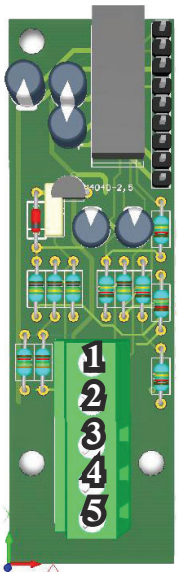
## OXYGEN MODULE CONNECTION




1 Pink
2 Blue
3 Brown
4 Grey
5 Yellow

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## OXYGEN MODULE CONNECTION WITH CABLE > 15M




1 Pink
2 White
3 Brown
4 Grey / Black
5 Yellow
Blue non connected (shield)