

*Next Generation:*

# **FDO 700 IQ**

Optical D.O. measurement  
with IQ

**F  
D**



**2**

$O_2$



- Highest accuracy from the first moment on
- High stability
- Low maintenance

## Next Generation...

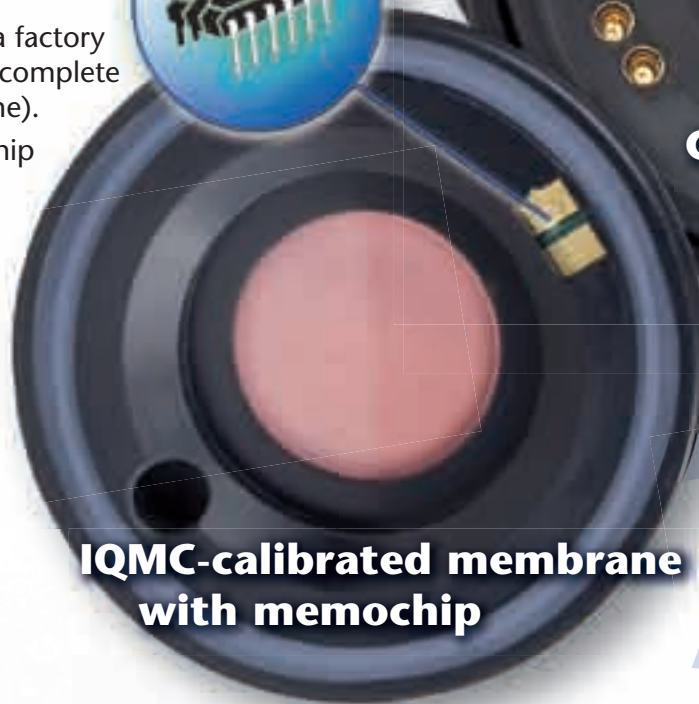
### Highest accuracy from the first moment on



#### ...through intelligent membrane with IQMC-technology

- Each membrane is individually calibrated.
- The values are determined at a factory calibration (which defines the complete characteristics of the membrane).
- All data is stored in a memo chip which is permanently fixed to the membrane.
- Data is automatically transmitted when the membrane is fitted to the sensors.

This means **highest accuracy through the whole lifetime** (even after a replacement of the membrane).

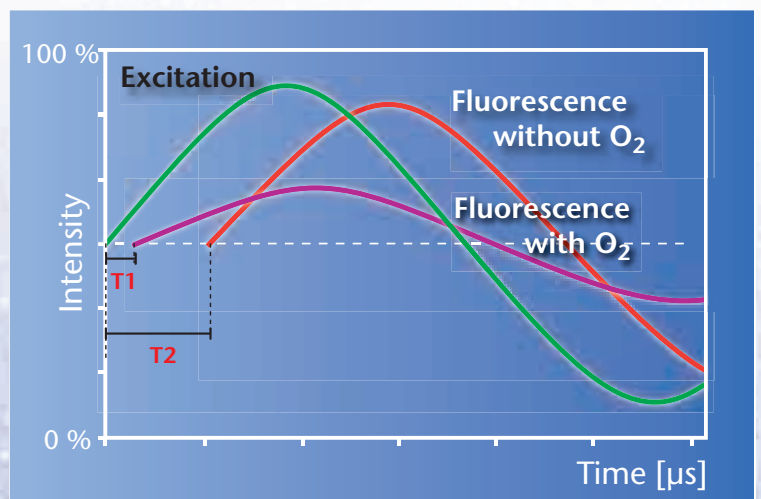


#### ...through C<sup>2</sup>-calibrated optics

Calibration of light beam run-time against the speed of light  $c$  as a natural constant

- The optics of each sensor is factory calibrated to the **Coherent Calibration (C<sup>2</sup>)** method.
- The data is permanently stored in the sensor.
- The speed of light is used as a reference for calibrating the optics.

The accuracy achieved is superior to other methods.



## Next Generation...

### High stability – Low maintenance



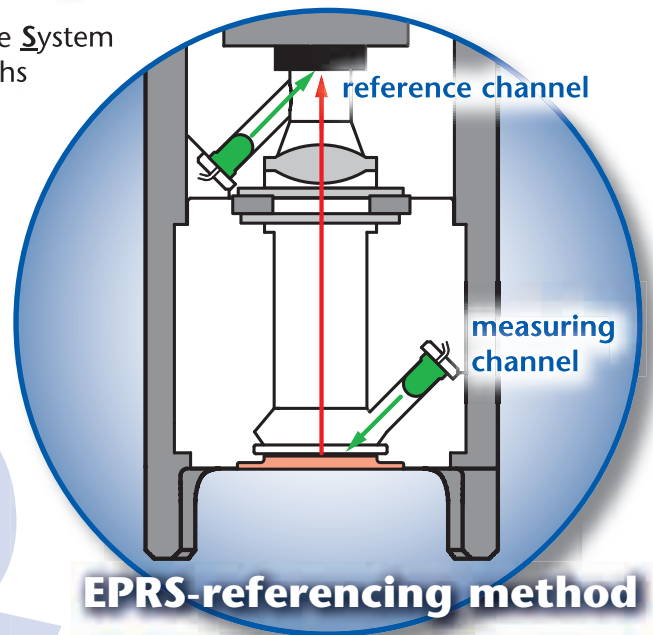
#### ...through EPRS-referencing method

EPRS stands for Equal Path Reference System  
= Equal excitation and reference paths

- Identical optical paths for measuring and reference channel
- Identical components for measuring and reference channel
- Same wavelength

This means:

**Minimum of drift** for the optical system through the whole life-time.



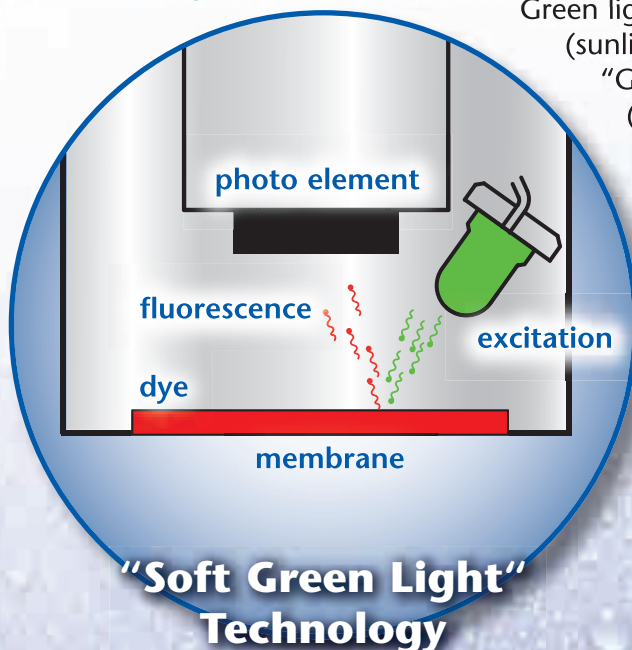
optics



#### ...through "Soft Green Light" Technology

Green light is in comparison with UV light (sunlight / blue light) a "soft" light.

"Green light technology" prevents early bleaching (aging) of the dye.



Thus extreme long-life stability is achieved which provides high accuracy and low drift over a very long period of time.

## Technical Data FDO 700 IQ

Measuring Ranges (25°C) O <sub>2</sub> concentration O <sub>2</sub> saturation	0 ... 20.00 mg/l (0 ... 20.00 ppm) 0 ... 200.0 %
Resolution O <sub>2</sub> concentration O <sub>2</sub> saturation	0.01 mg/l (0.01 ppm) 0.1 %
Accuracy	± 0.05 mg/l (± 0.05 ppm) at O <sub>2</sub> concentrations < 1 mg/l ± 0.1 mg/l (± 0.1 ppm) at O <sub>2</sub> concentrations > 1 mg/l
Reproducibility	0.05 mg/l (0.05 ppm)
Response time at 25 °C t <sub>90</sub> t <sub>95</sub>	< 30 s < 60 s
Minimum flow rate	No flow required
Interferences	Insensitive against - H <sub>2</sub> S, - Chlorine - ionogenic agents
SensCheck	Monitoring of membrane function
Calibration	Factory calibration by IQMC technique
Signal output	Digital
Power consumption	0.75 Watt
Temperature measurement	-5 °C ... +60 °C / ± 0.5 °C
Temperature compensation	-5 °C ... +50 °C
Maximum pressure	Max. 10 bar
Ambient conditions	Operating temperature: -5 °C ... +50 °C Storage temperature: -25 °C ... +60 °C
Electrical connections	2-wire shielded cable with quick fastener to sensor
Input power	Powered by IQ SENSOR NET
Transient voltage protection	Yes
EMI/RFI Conformance	EN 61326 class B, FCC Class A Intended for indispensable operation
Mechanical	Membrane head-/sensor head assembly, locking cap: POM, PVC, Silicone Sensor body: 316 Ti stainless steel
Dimensions	338 x 40 mm (length x diameter) without sensor connection cable 428 x 40 mm (length x diameter) incl. connection thread of SACIQ sensor connection cable
Weight (without cable)	Approx. 900 g
Guaranty	2 years for sensor / 2 years for cap

## Order Information

		Order No.
FDO 700 IQ	Optical D.O. measurement for water/waste water applications; special suitable for industrial applications due to low interference – also suitable in low-/no-flow applications	201 650
FDO 700 IQ SW	Like FDO 700 IQ, special suitable for salt water applications e.g. fishfarming	201 651
SC-FDO 700	Sensor cap	201 654
SACIQ-7,0	Sensor connection cable for all IQ sensors, cable length 23 ft. (7.0 m)	480 042