

# CONTROS HydroFlash



KONGSBERG



## ACCURATE, FAST AND VERSATILE OXYGEN OPTODE

The CONTROS HydroFlash<sup>®</sup> O<sub>2</sub> optode is a versatile shallow and deep-water oxygen sensor which can be used for autonomous deployments as well as integrated into sensor systems. The CONTROS HydroFlash<sup>®</sup> O<sub>2</sub> is designed for a wide variety of deployment schemes and platforms including but not limited to AUVs, gliders, floats, water sampling rosettes, buoys, and moorings.

### Individual 'in-situ' calibration

The optode head has a unique design featuring an anti-fouling head, a fast response temperature probe and a curved glass substrate coated with the sensing membrane. All sensors are individually calibrated in a water tank over a wide range of temperatures and oxygen concentrations. An established laboratory method ('Winkler test') is used to ensure the quality of the calibration.

### Operating principle

The advanced, optical sensor is based on the principle of fluorescence quenching. Dissolved oxygen (O<sub>2</sub>) molecules diffuse into a membrane in which a fluorescent dye is embedded. Oxygen is capable of quenching this fluorescence by transferring the excitation energy from the dye to the O<sub>2</sub> molecule. The sensor repeatedly excites the dye in the membrane and measures the intensity and phase shift of the fluorescence light. The more O<sub>2</sub> is present in the water, the smaller is the measured fluorescence signal and the higher is the phase shift.

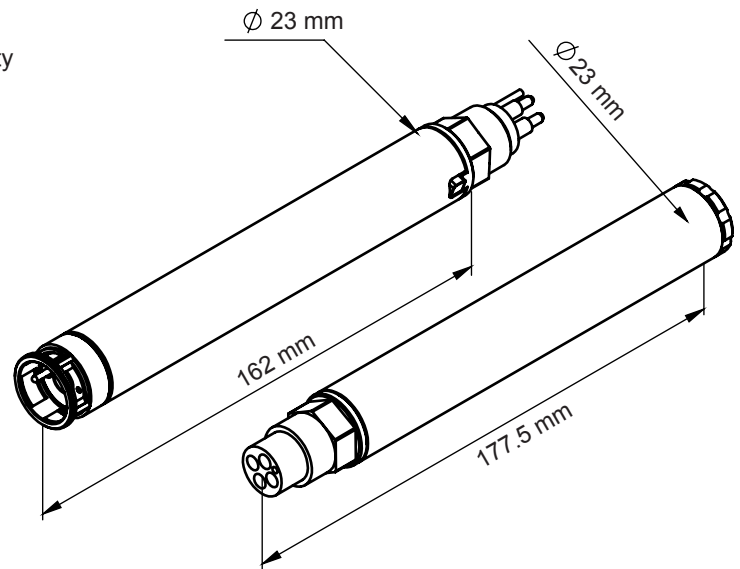
### Accessories

KONGSBERG provides a dedicated power solution for the CONTROS HydroFlash<sup>®</sup> O<sub>2</sub> optode, the CONTROS HydroB<sup>®</sup> Flash. Its simple yet efficient "plug-and-play" design allows for autonomous deployments of up to three months.



## FEATURES

- Highly efficient fluorescent dye embedded on a curved, solid substrate to enhance light yield
- Very fast response time ( $t_{63} < 3$  s) combined with high stability and accuracy
- Versatile - easy integration into almost every oceanographic measurement system and platform
- Robust - can be used in water depths up to 6000 meters
- Titanium housing with small dimensions
- Very low power consumption
- Programmable sleep mode extends battery life time during autonomous deployment
- Comprehensive software for programming, data download and visualization included
- Non-consumptive  $O_2$  measurement



## TECHNICAL SPECIFICATIONS

### CONTROS HydroFlash O<sub>2</sub>

- Measuring range 0 - 400 mbar  $pO_2$
- Weight 0.11 kg in water  
0.17 kg in air
- Dimensions 23 x 162 mm (without connector)  
23 x 197 mm (with connector)
- Operational depth up to 6000 m
- Temperature range 5°C - 35°C
- Response time  $t_{63} < 3$  s
- Resolution  $< 0.1$  %
- Initial accuracy  $\pm 1$  %
- Memory 2 million sets of data
- Connector SubConn MCBH-4M Titanium 4-pin  
(other connectors on request)
- Supply voltage 6 V - 32 V
- Data interface RS-232C
- Data format ASCII

### SOFTWARE

CONTROS DETECT® incl. real time data visualization, setting of sensor parameters (e.g. measuring intervals, internal data logger settings, sleep mode function) supported by a mission planning tool and data download from internal logger

### HARDWARE REQUIREMENTS

Win 7 32 Bit, 200 MB free disk space,  
Dual Core CPU with 2GB RAM

### OPTIONS

- Flow head
- Autonomous deployment with CONTROS HydroB® Flash (attachable battery) possible
- Easy deployments together with CO<sub>2</sub> and CH<sub>4</sub> sensors
- ROV and AUV installation packages
- Profiling and mooring frames

Specifications subject to change without any further notice.

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