

# CONTROS HydroFlash



KONGSBERG



## ACCURATE, FAST AND VERSATILE OXYGEN OPTODE

The CONTROS HydroFlash® 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® 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.

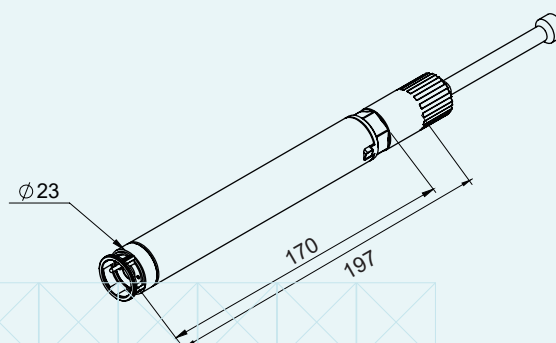
### Accessories

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



## FEATURES

- Highly efficient fluorescent dye embedded on a curved, solid substrate to enhance light yield
- Very fast response time ( $t_{63} < 3$  s)
- Very low power consumption
- 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
- Programmable sleep mode extends battery lifetime during autonomous deployment
- Comprehensive software for programming, data download and visualization included
- Non-consumptive  $O_2$  measurement



## TECHNICAL SPECIFICATIONS

### CONTROS HydroFlash $O_2$

Measuring range	0 - 300 mbar $pO_2$
Weight	
▪ in water	0.11 kg
▪ in air	0.17 kg
Dimensions	
▪ housing body	23 x 170 mm
▪ with connector	23 x 197 mm
Operational depth	6000 m
Temperature range	2°C - 35°C
Response time	$t_{63} < 3$ s
Resolution	$< 0.1$ %
Initial accuracy	$\pm 1$ %
Memory	2 million sets of data
Connector <sup>(1)</sup>	SubConn MCBH-4M Titanium
	4-pin
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

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

### OPTIONS

- Flow head
- Autonomous deployment with CONTROS HydroB® Flash (attachable battery)
- Easy deployments together with  $CO_2$  and  $CH_4$  sensors
- ROV and AUV installation packages
- Profiling and mooring frames

Front page image: CONTROS HydroFlash®  $O_2$  optode

1) other connectors on request

Specifications subject to change without any further notice.

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