

CONTROS HydroFlash



KONGSBERG



ACCURATE, FAST AND VERSATILE OXYGEN OPTODE

The CONTROS HydroFlash® O₂ 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® O₂ 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 (O₂) 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 O₂ molecule. The sensor repeatedly excites the dye in the membrane and measures the intensity and phase shift of the fluorescence light. The more O₂ is present in the water, the smaller is the measured fluorescence signal and the higher is the phase shift.

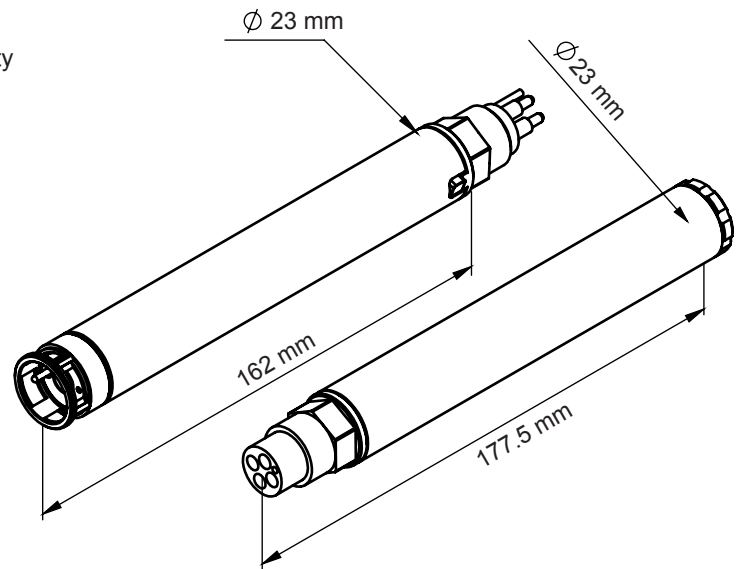
Accessories

KONGSBERG provides a dedicated power solution for the CONTROS HydroFlash® O₂ optode, the CONTROS HydroB® 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 lifetime during autonomous deployment
- Comprehensive software for programming, data download and visualization included
- Non-consumptive O_2 measurement



TECHNICAL SPECIFICATIONS

CONTROS HydroFlash O₂

- 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 ± 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 CO₂ and CH₄ sensors
- ROV and AUV installation packages
- Profiling and mooring frames

Specifications subject to change without any further notice.

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