

OceanLine™ Radioactivity Detector

for subsea applications



Photo with optional input connectors and signal indicator

Applications:

- ROV and AUV integration
- Water quality monitoring
- Buoy equipment
- Profiling
- Long-time deployments
- Harbour and seaways security

Options:

- Optionally FAST detector
- Optionally data logger 32GB SD-Card
- Optionally Li-Ion rechargeable battery

Features:

- Sensitive gamma detector
- High precision
- Fast response time
- Maintenance free
- Roughest environmental
- Corrosion-free
- Low power
- Low temperature drift
- Low-cost

The SubCtech radioactivity detector is a high quality, high reliable probe for oceanographic, limnologic, industrial and off-shore measurement of gamma radiation in any water. With its innovative gamma radiation detector the sensor needs no maintenance or calibration. The power consumption is extreme low, and with the optional included MicroDI™ data logger long-time observations are realized.

With the optionally FAST detector the sensitivity is 12 times higher, therefore the detection window can be reduced 12 times (typ. 5 minutes instead of 1 hour for events close to the radiation background).

The additional build-in Li-Ion battery allows a long-time autonomous monitoring up to one year. The sensor system with Li-Ion battery is approved for air cargo.



Specification	Standard sensor	FAST detector
Detection range	0.1 $\mu\text{Sv/h}$ to 100 mSv/h	0.01 $\mu\text{Sv/h}$ to 10 mSv/h
Sensitivity	5.8 cpm $\pm 15\%$ for 1 $\mu\text{Sv/h}$ radiation dose	60 cpm $\pm 15\%$ for 1 $\mu\text{Sv/h}$ radiation dose
Detection time	Typ. seconds for high radiation events. 1 hour to detect events close to the background radiation.	Typ. seconds for high radiation events. 5 minutes only to detect events close to the background radiation.
Sample rate	1 Hz, configurable in counting windows between e.g. 1s and 1day	
Calibration	Dose equivalent calibrated to Cesium-137	
Depth range	Shallow water 100m (buoys), 1000m (ROV), 3000m (Offshore), 6000m (Science)	
Data interface	RS-232, optional RS-485; ASCII NMEA-0183 data protocol	
Signal output	Optional analogue output 0-10V, 0-5V	
Housing	POM and titanium, \varnothing 50mm length 240mm, 2.5 kg (100m, with datalogger without battery) POM and titanium, \varnothing 68mm length 280mm, 4.0 kg (6000m, with datalogger, without battery)	
Power	7V ... 30V, 25mA @12V operating (300mW)	
Temp. range	-30°C ... +50°C	
Option: Data logger	Optional MicroDI™ build in with up to 32 GB micro-SD card, power management. With the optional analogue data acquisition board additional external sensor inputs can be measured.	
Option: Battery	Optional Li-Ion battery up to 100Wh build-in, 12 days continuously operating time. The power manager with auto-shutdown allows up to 1 year operating time. External batteries are available up to 2000Wh.	

