SEAWATCH Midi 185 Buoy





Metocean data collection in coastal environments requires robust and easily deployable metocean buoys to ensure reliable real-time data is accessible remotely when needed.

The SEAWATCH Midi 185 is a medium size discus shaped general purpose monitoring buoy suitable for measuring oceanographic and meteorological (metocean) parameters in harbours, lakes, reservoirs and coastal areas.

Features

- Multi-parameter and multi-application real-time monitoring
- Long-term unattended operation due to large solar charging and battery capacity
- High visibility reducing the risk of being run into and damaged by boats
- Extremely robust construction
- Suitable for measuring oceanographic parameters, waves, currents, water quality and meteorology
- Subsurface sensors easily accessible without having to lift the buoy out of the water

Applications

- Harbour and coastal monitoring
- Monitoring estuaries and large rivers
- Lake/reservoir monitoring
- Offshore design and operations
- Wave energy studies
- Maritime traffic
- Water quality studies



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The Hull

SEAWATCH Midi 185 Buoy is made of foam filled high flexibility polyethylene. Such material is normally used in fenders.

The choice of material ensures no risk of corrosion and sulphation as well as excellent resistance to impacts. The solar panels are mounted in recesses in the buoy hull.

Data Communication

SEAWATCH Midi 185 Buoy allows two-way communication via radio link or GSM/GPRS.

For long distance data transfer, Inmarsat-C or Iridium satellite communication may be used. The buoy's position can also be monitored by means of satellite position tracking.

Power Supply

Maintenance free marine grade solar panels and sealed lead-acid batteries enable long-term unattended operation.

Accumulated charge and load current are transmitted to shore for control of the power consumption. For low sun radiation conditions (winter use), additional lithium batteries can be supplied.

Directional Wave Measurements

The buoy hull design is based on the dynamic response and stability requirements from comprehensive wave tank testing.

The optional directional wave sensor is a complete solid-state design with no moving parts. The integrated wave sensor and data logger means one less power consuming processor, decreased system complexity and hence increased system reliability.



Topp view





Meteorological Measurement

SEAWATCH MIDI 185 is equipped with a Tri-pod mast made of composite, making it suitable for meteorological parameters that require measurements a certain height above the water surface (air temperature, humidity, wind).

Buoy For Near Coast Applications

Seawatch Midi can be used as marking/navigation buoy consist of high visibility red, green or yellow as per IALA recommendations or as well link station providing power/communication to subsea modules.

Water Quality Measurements

Water quality sensors require frequent service, maintenance and calibration even more because of valves, pumps and refill of chemicals.

SEAWATCH Midi 185 is equipped with 4 wells making the submerged sensors accessible without having to lift the buoy out of the water. This reduces the operation cost because work can be done without large boats and heavy lifting equipment. The wells can also be used for current sensors. In the wells the sensors are well protected during handling as well as theft and vandalism.







Technical Specifications

General					
Material	Polyethylene				
Flash light	LED based, 3-4 nautical miles range				
	IALA recommended characteristic				
Positioning GPS (Inm	arsat-C, Iridium, Standalone Receiver)				
Buoy Dimensions					
Weight (approx)	600 kg				
Height (hull)	1.18 m				
Overall height	3.4 m				
Diameter	1.85m				
Net Buoyancy	800 kg				
Mast height (above water)	2.5 m				
Power Supply					
Solar panels	108 W (18W x 6)				
Solar panel angle	40° (to horizontal)				
Lead-acid battery bank	248 Ah (standard)				
	312 Ah (large)				
Optional lithium batteries	up to 1088 Ah				
Processing					
32-bit microprocessor					

512MB flash memory, approx 10 years of raw data Real-time operating system (Linux) Low power consumption Large number of serial and analogue inputs Flexible data acquisition software

Data Communication

Short range	GSM/GPRS
	UHF/VHF radio (two-way)
Long range	Inmarsat-C and Iridium (two-way)
	ARGOS (one-way)

Directional Wave Data Sensor

Parameter		I	Accuracy					
Heave, Sur	ge, Sway	± 25	< 10 cm					
Direction		0	0 - 360°			0.3°		
Wave Peric	d	2 - 30 sec		< 2% of value				
Full wave	directional	analysis	on-board	based	on	spectral		
analysis and user-friendly configuration tools.								

Oceanographic Sensors

Current velocity Current direction Water temperature Conductivity/Salinity

Meteorological Sensors

Wind speed/direction Air pressure Air temperature Humidity Precipitation Solar radiation

Water Quality Sensors

CTD profile Dissolved oxygen Light attenuation Chlorophyll-a Hydrocarbon Turbidity

Subsea Sensor Wells

- 1 large size for analyzers up to Ø215 mm
- 2 medium size for sensors up to Ø120 mm
- 1 small for surface sensors up to Ø63 mm

* Various additional sensors can be delivered on request.

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