OFFSHORE TECHNOLOGIES

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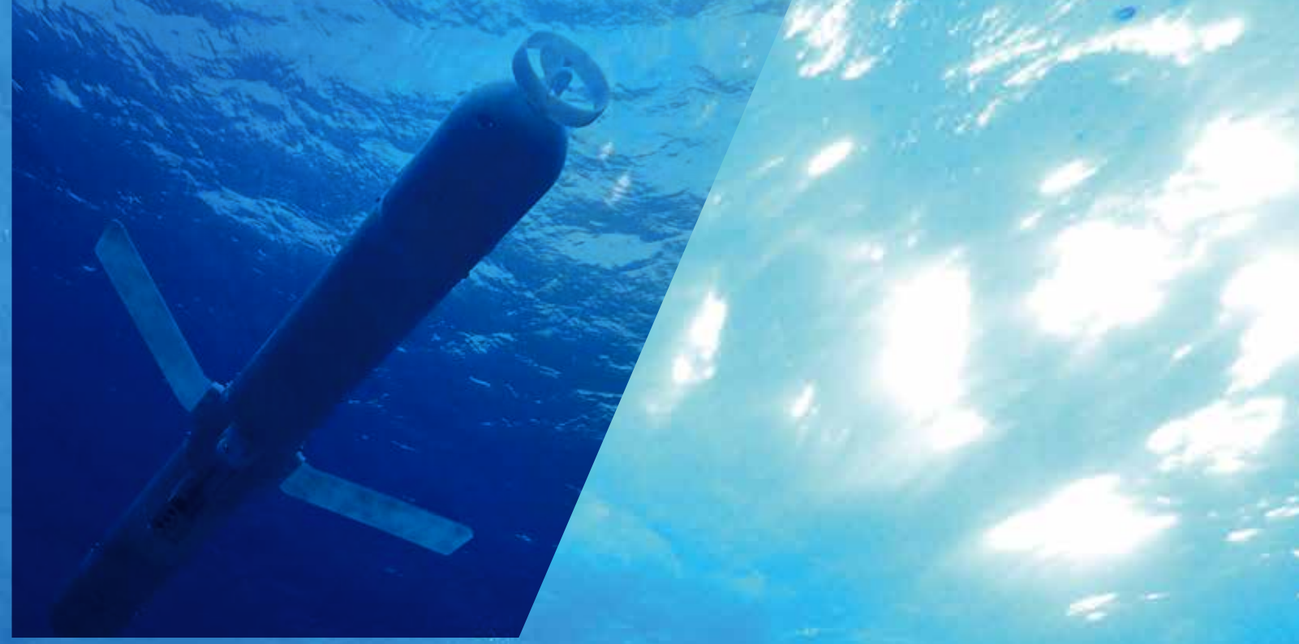

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Understand the drastic change of the global environment
with the power of technology

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70% of the earth's surface is the ocean.
Understanding the ocean essentially leads to the understanding of our planet.
We aim to use the power of technology to capture environmental changes and change people's lives for the better.

OFFSHORE TECHNOLOGIES develops and manufactures oceanographic instruments and provides consulting services for the development of observation equipment.
The company was founded by members of the Japan Agency for Marine-Earth Science and Technology (JAMSTEC), a national institute for marine research and technology development.
We will promote the automatic observation of the oceans by utilizing the technical assets developed at JAMSTEC, such as small multipurpose observation floats, underwater gliders, and their onboard devices, to develop equipment that is more versatile, easy to use, and can be introduced and operated at the lowest cost.
Our goal is to have these devices used not only for academic observations, but also in a wide range of fields such as fishery, agriculture, and manufacturing industries

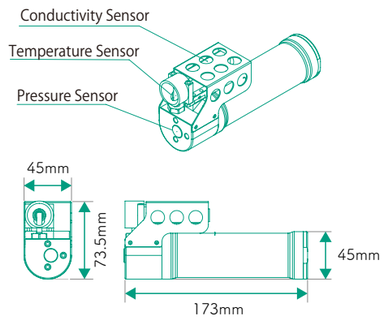
〈Our Business〉

(1) Development, manufacturing, and sales of observation instruments
(2) Consulting for the development of observation instruments
(3) Development, manufacture, and sales of other related instruments on consignment





Compact CTD Sensor “JES10mini”



JES10mini is a small CTD sensor for observing salinity, temperature and depth in the sea. It is compact and lightweight, and can be cast simply using a fishing tackle. It can be activated, set up, and read out data via Bluetooth communication. Furthermore, it has low power consumption and can be moored for up to one year.

TECHNICAL SPECIFICATIONS

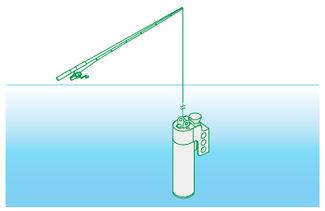
Pressure-resistant depth:	200m (plastic) / 500m & 1,000m (SUS)
Observation items:	conductivity, temperature,depth
Communication method:	Bluetooth RS232 / 485 (optional)
Battery:	Lithium primary battery x 2
Size:	Overall Length 173mm x Diameter 45mm
Weight:	480g (plastic) / 800g (SUS)

OBSERVATION ITEMS

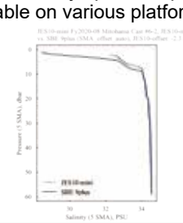
Conductivity:	0-7 S/m	
	Initial accuracy	±0.005 S/m
	Resolution	0.00001 S/m
Temperature:	Initial accuracy	±0.005 ℃
	Resolution	0.0001℃
Depth:	Observable depth	500m
	Initial accuracy	±0.1% Full scale

Example of use

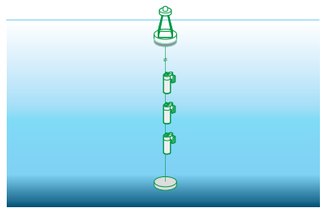
● Casting



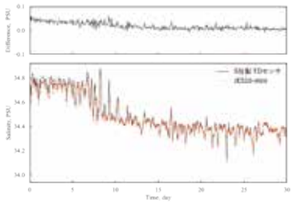
Compact, lightweight, and can be cast with a fishing tackle. Easy to use without any special equipment. Mountable on various platforms.



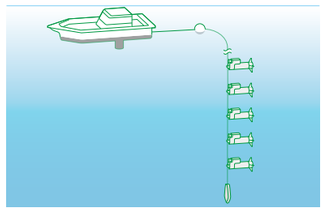
● Mooring



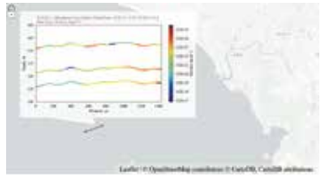
Mooring can be used for long-term observations.



● Cross Section Survey

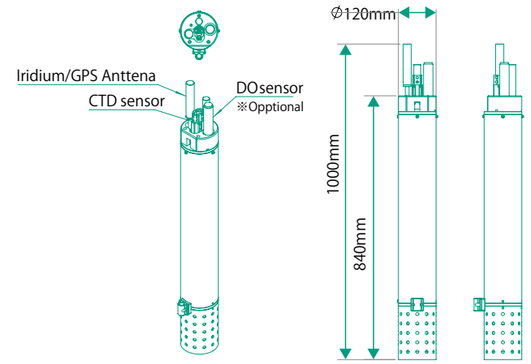


Different water depths can be observed at once by towing multiple units connected vertically.



Multipurpose Observation Float “MOF”

MOF is a float equipped with a CTD sensor that can automatically ascend and descend in the sea to observe salinity, water temperature, and water depth. MOF is relatively small, lightweight, and easy to handle. Observation data is automatically transmitted when the float is raised to the surface, and can be received on land. The optimum observation sequence can be constructed for various purposes, such as observation depth and data acquisition frequency. The onboard sensors can be customized according to the application.In addition to drifting observation, it can be moored for simple fixed-point observation in shallow water. The product can also be reused upon recovery.

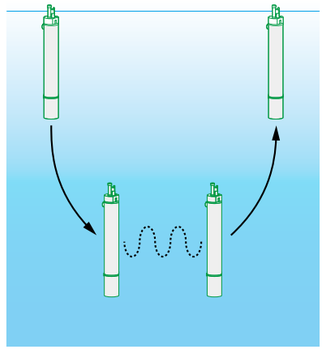


TECHNICAL SPECIFICATIONS

Observable depth:	500m
Observation items:	Electrical conductivity, water temperature, water depth (standard)
Other observations in the past:	Illuminance, dissolved oxygen, waves, FRRF
Communication method:	2.4GHz wireless communication,Iridium SBD,4G LTE communication
Battery:	Lithium ion battery (for recharging) or Lithium primary battery (for long-term observation)
Size / Weight Overall:	Length 940mm / Weight 7.8kg
Continuous operation time:	More then 1 year

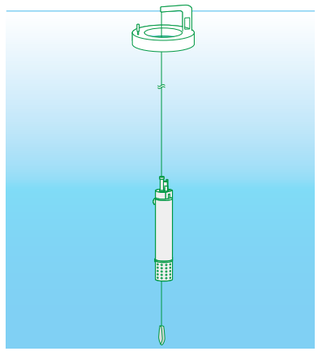
Example of use

● Deploy



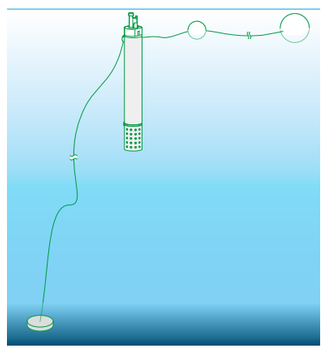
The float automatically dives and when the desired water depth is reached, it continues to ascend as it acquires observation data. The float continues to observe while drifting. The observation sequence can be set according to the objectives.

● Drift



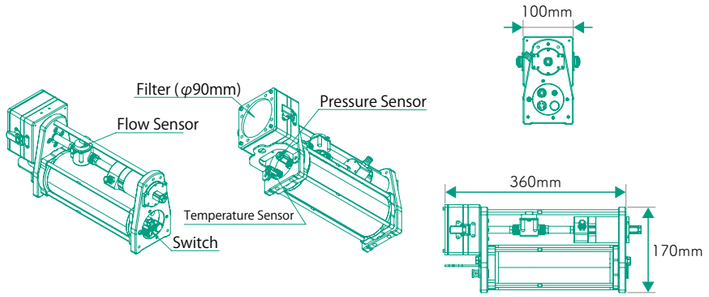
The float is made to dive/surface along a rope hanging from a buoy floating on the sea surface. The buoy can be equipped with sensors for marine observation, enabling simultaneous observation on and under the sea surface.

● Mooring



An anchor is attached to the bottom of the buoy, and the buoy dives and surfaces along a rope extended from the anchor to the sea surface. This allows for simple mooring and fixed-point observation. The float can be recovered and used repeatedly.

Compact Plankton Sampler "Plafilt"



Plafilt is an underwater particle sampler which collect plankton, microplastics and other particles in the water by suctioning and filtering them with an underwater pump. It is lightweight, with an aerial weight of approximately 5 kg, and easy to maneuver on small vessels or by hand on the wharf. It can be operated via a web application using a smartphone, tablet, or PC connected via Wi-Fi.

TECHNICAL SPECIFICATIONS

Size	:	L 360mm×W 100mm×H 170mm
Filter Size	:	90mm diameter *Filters not included
Weight in air	:	5kg
Observable depth	:	250m
Communications	:	Wi-Fi
Battery	:	Lithium-ion rechargeable battery
Observable time: Max 24 hours *depend on the environment (Flow rate 11,520Lequate)		

Underwater Pump : Discharge rate: 0-8L/min
Can be set in 4 steps (100%, 75%, 50%, 25% equate)

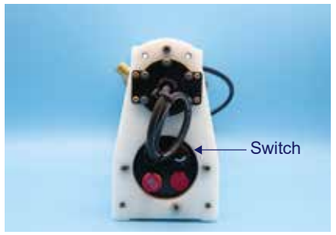
Accessories: Battery charger / Charging cable / Carrying case

Optional accessory	:	Wire clamps for multiple clamping
Others	:	with Leak Check Port

OBSERVATION ITEMS

Temperature	:	Initial accuracy: ±0.1°C, Resolution: 0.01°C, TEMPERATURE RATING: -40 to +125°C
Depth	:	Maximum depth: 250m, Initial accuracy: 1%FS
Flow Rate	:	0-30L/min

Each Part



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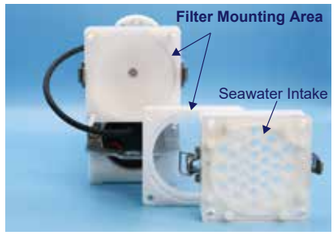
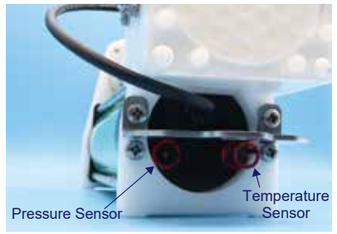
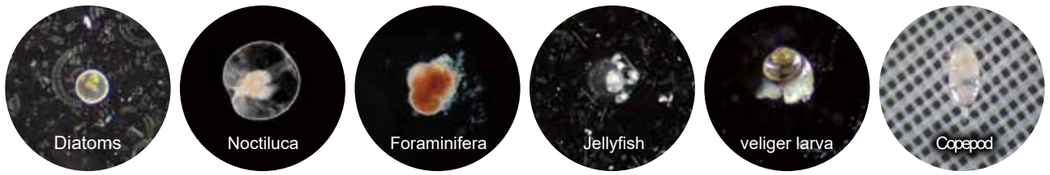


Filter Mounting Area

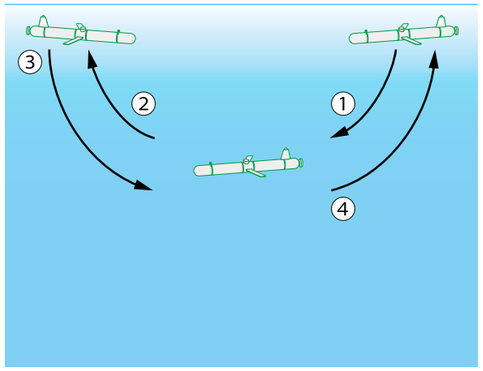


Pressure Sensor, Temperature Sensor

Examples of Plankton Samples



Multipurpose Observation Glider "MOG"



MOG is a compact, user-friendly float that can automatically ascend and descend in the sea during observation. Equipped with a CTD sensor, it observes salinity, water temperature, and depth in the sea. The observation data is automatically transmitted when the float is raised to the surface, and can be received on land. An optimal observation sequence can be constructed based on various purposes, such as observation depth and data acquisition frequency. Further, the onboard sensors can be customized according to the application.

TECHNICAL SPECIFICATIONS

Observable depth	:	300m
Sensors	:	Electrical conductivity, water temperature, water depth
		Other observations in the past: Illuminance, dissolved oxygen, waves, FRRF, etc.
Communication method: 2.4GHz wireless communication (for setting) / Iridium SBD communication (pelagic) / SSBL (optional)		
Battery	:	Lithium ion battery (for recharging) or Lithium primary battery (for long-term observation)
Size / Weight	:	Length 1200mm / Weight 12kg

Accessories

LED Light Panel

Lighting equipment for underwater photography. It illuminates every corner even at a wide angle. Dimming by PWM is possible, and it can be installed in ROVs. Compatible with BlueROV2 is also possible.

- Maxmum Depth: 6,000m
- Brightness: 5,000 lumens
- Power supply voltage: 9V to 20V
- Power consumption: Maxmum 40W
- Dimension: 105mm x 93mm x 31mm (excluding protrusions)

Deep-sea Laser Scale

It is used to measure the size of an object by irradiating a parallel laser 10 cm apart in water. The size of the object can be measured from the camera image. It does not require an external power supply and can be used immediately.

- Maxmum Depth : 2,500m
- Laser : Class 3a(FDA) Green dot
- Dimension : 114mm×128mm×28mm

Optical-magnetic sensor

A sensor unit that can be used to detect light and magnetism in water.
It can be used for position detection of moving parts, switching, etc.

- Maxmum Depth : 3,500m
- Magnetic sensor interface : 3.3V I2C(10bit)
- Optical sensor interface : 3.3V Analog (Max 5000lx)
- Dimension : 60mm×60mm×25mm

We can also sell the power supply boards, motor driver boards, CPU boards, and other components used in our devices on a component-by-component basis. Please see our website for details.