



ARB 6000 Argos Radio Beacon

The **ARB** remotely monitors the surfacing of underwater moorings, deep-sea landers, remotely operated vehicles (ROVs), autonomous underwater vehicles (AUVs) or other marine platforms operational under water.

If this happens inadvertently the device is an alert instrument similar to the standard SMM (Subsurface Mooring Monitoring Beacon) and one may use the SMM Service of CLS Collecte Localisation Satellites for monitoring the status and the surface position of the "underwater" platform. Compared with the SMM, the ARB is more flexible, smaller, and cheaper in price than a SMM 6000. Use of a three battery power supply produces a medium term transmission time, rather than the long term of the SM M 6000 powered by 10 D-type Lithium cells. However, transmission time reduction is not as great as that for power because a more efficient, lower power PTT is used.

Typical applications are research work in a limited area of a few hundred miles radius and of some weeks duration. On the one hand, instruments can be far enough away for an alert not to be detected by line of sight communications (VHF/UHF radio or optical) and on the other, planned recovery can be thwarted by instrument drift. With location data from the ARB and the CLS service, both aspects are known. With additional equipment of the Marine Recovery Beacon series of products, one has the means to recover one's instruments at any time under any environmental circumstances.

Features:

- Member the of Marine Recovery Beacon family
- Titanium housing
- Up to 10 years long term deployment time with Kantseals
- 2 years deployment time with O-rings
- All mechanics calculated with 50% extra safety
- Small housing (60 mm diameter, 530 mm length)
- Powered by 3 D-type cells of any chemistry
- Integrated power switch
- Transmission time 4 to 12 weeks depending on battery type
- Water depth up to 6000 m
- Triggered by pressure switch
- Trigger threshold variable (standard 30 metres)
- Double axial Kantseals or O-ring seals
- Antenna construction waterproof up to 6000 m
- Separate antenna as an option
- Low power ARGOS PTT

Specifications:

(Preliminary)

Mooring depth	6000 m
Pressure switch threshold	30 m standard; other depths on request
Dimensions (l x d)	530 mm (case) + 210 mm (antenna) x 60 mm
Mass without batteries	5.2 kg
Displacement	1.6 dm ³
Power supply	3 D cells of any chemistry - NC, Alkaline, Lithium, peak current 500 mA
Mooring life	2 years with O-rings, up to 10 years with Kantseals, not allowing for battery self discharge
Transmission life	4 to 12 weeks at mean current 3 mA when surfaced

How ARB works:

What happens if the mooring line of a subsurface mooring inadvertently breaks? Normally the equipment and, more importantly, the data are lost. Ship and work time are also wasted because it is not until recovery is attempted that it is discovered that the mooring has broken loose. But things have been changing. The concept of dedicated satellite-based subsurface mooring monitoring is taking shape at CLS Argos - this service and the hardware required are available now!

A reliable system:

Argos is two satellites in orbit, two processing centers offering full redundancy, 2500 beacons located every day, megabytes of data processed around the clock. And Argos has been fully operational for twenty years.

Worldwide operation:

The Argos satellites cover the entire surface of the earth, the system having capabilities to locate platforms to within 350 m. Ideal for active monitoring of equipment moored close to the coast or offshore.

Active monitoring:

The ARB-6000 subsurface mooring monitoring beacon goes down with the mooring up to 6000 m with the PTT held off by a pressure switch. If the mooring line should break, or when the mooring is being recovered, the PTT will switch on as it approaches the surface. In the first case, the beacon will transmit for the lifetime of the batteries in the second, the beacon is manually switched off after recovery.

The signal is received by the orbiting Argos satellites and location of the PTT determined at the processing centre. A warning message is sent at once by facsimile, or any other pre-arranged communication channel. Thereafter, the PTT is re-located on every satellite pass and a message sent giving its updated position, or this can be made available in a mailbox at the processing centre.

Underwater unit:

During development, the long term aspect of mooring was born in mind resulting in the use of titanium for the housing because this material suffers absolutely no corrosion in seawater, even around the sealing areas. Double O-ring seals are used throughout.

Rapid Payback:

With hours of sea search time saved, Argos subsurface mooring monitoring will pay for itself the first time a mooring breaks loose.

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