

## SMM 500 SUBSURFACE MOORING MONITORING BEACON



### Features:

- Titanium housing
- Up to 6 months mooring life in euphotic zone, up to two years below
- Up to 3 months transmission life
- Powered by 5 D-type Lithium batteries
- CEIS UHF 88 platform terminal transmitter
- Water depth up to 500 metres
- Trigger threshold 4 metres
- Double O-ring seals
- Antenna protected by Delrin dome
- Triggered by pressure switch

**Sub-surface Mooring Monitoring** remotely monitors underwater moorings that may accidentally rise to the surface. If the mooring breaks, the platform floats to the surface and starts transmitting.

CLS Service Argos has developed a special service for monitoring the status of the moorings. Normally a submerged Platform Transmitter Terminal (PTT) remains silent and undetected by the Argos satellites. Should the mooring break loose however, and the PTT rise to within a few metres of the surface, it will begin to transmit. An alarm state is set upon reception of the signal by an orbiting satellite and recognition and processing at a ground centre. A warning that the mooring line has surfaced, with its position, will be sent to the user by facsimile. Thereafter each satellite pass will result in another location. This will continue until cancelled by the user.

# SUBSURFACE MOORING MONITORING BEACON

## SMM 500

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### HOW SMM 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 centres 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, and the system is able to locate platforms to within 350 m. Ideal for active monitoring of equipment moored close to the coast or offshore.

### ACTIVE MONITORING

The SMM 500 subsurface mooring monitoring beacon goes down with the mooring up to 500 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 (typically 3 months with lithium 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 PAYOFF

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

### Specification:

Mooring depth	500 m	Power supply (without option X)	5 pcs. Lithium D cells
Pressure switch threshold	3 - 5 m	Mooring life	up to 2 years
Dimensions (l x d)	853 x 60.3 mm	Mooring life in euphotic zone	up to 6 months
Mass without batteries	3.8 kg	Transmission life	3 months
Displacement	2.4 dm <sup>3</sup>		

### Options:

Option X switch mode power supply for extended battery range from NiCd batteries via Alkaline to Lithium batteries. The X-option may be installed in all systems retrospectively.

SiS reserves the right to change specifications without prior notice



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