



# Communication & Safety at Sea



# Introducing Ocean Signal

Ocean Signal® specialises in the development and manufacture of advanced communication and safety products for the marine market.

With one of the most experienced research and development teams in marine communications, the Ocean Signal engineering team have individually been responsible for the development of many market-leading products and now within Ocean Signal, bring a fresh and groundbreaking approach to communication and safety at sea.

Ocean Signal has one of the finest marine communication R&D facilities in Europe. Each new product is the result of meticulous research and extreme testing procedures to ensure outstanding performance. This process ensures fully

focused product functionality while providing total confidence in their effectiveness.

Offering exceptional value, the Ocean Signal range of products give commercial, fishing and recreational users the confidence that their equipment will work to, and beyond their expectations, in the harshest of conditions, when it is needed most.



Well equipped testing facilities



RF Anechoic testing chamber

## The SafeSea® range of products from Ocean Signal provide all essential handheld communication devices required in an emergency situation.

All products comply with international requirements of the IMO (International Maritime Organisation) which lay down essential requirements for products operating in the GMDSS (Global Maritime Distress Safety System).

The SafeSea E100 & E100G are EPIRBs (Emergency Position Indicating Radio Beacons) which, when activated, transmit a distress signal and position directly to the emergency services via satellites. The accuracy of this information is enhanced by a built in GPS within the model E100G.

The SafeSea S100 is a SART (Search And Rescue Transponder), which assists in the location of survival craft by providing a series of indicating marks on all ships operating X-band radar in the vicinity.

The SafeSea V100 is a handheld VHF designed to rigorous standards. The V100 can be relied upon to provide local communication with rescuers in an emergency situation. The unit is supplied with a special battery, which is only to be activated in an emergency. At other times an optional rechargeable battery can be used for general day-to-day communication.



## Ocean Signal has developed the SafeSea E100 and E100G to meet the needs of all commercial, fishing and leisure vessels.

The SafeSea EPIRBs operate in the 406MHz satellite band. This is constantly monitored by Cospas-Sarsat, the international search and rescue satellite operator, who ensuring a rapid response when a signal is received, no matter where it is in the world.

The products have been designed for maximum efficiency resulting in superb operating life from the battery, keeping rescue services updated with your location for longer.

All models are fitted with a 121.5MHz homing beacon used by rescue services for close-in location of vessels in distress. In addition all models are fitted with a high brightness LED strobe light for additional impact, especially at night.

All models can be fitted within an Automatic Release Housing (commonly referred to as 'float free').

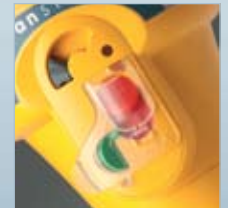


- Choice of models with and without GPS
  - SafeSea E100G is identical to the SafeSea E100 and in addition has a state of art built-in 50 channel GPS receiver providing fast and accurate position acquisition (typically within 30 seconds)
  - SafeSea E100 fulfils all mandatory requirements of an EPIRB. A high precision internal oscillator allows the satellite to calculate position using Doppler shift
- Superb battery life even at low temperatures, typically providing an operating time in excess of 96 hours
- Easy release mounting bracket provided as standard
- Optional manual and automatic release housings available
- Intuitive operating controls (protected from inadvertent activation)
- User replaceable battery
  - Battery is non-hazardous for shipping purposes

1 Strobe Light



2 Mounting bracket



3 Operating controls

Two optional housings for the SafeSea EPIRB are available. Both are manufactured in a durable and highly UV stable plastic and provide excellent protection of the unit until it is required.

The EPIRB can be easily removed from either housing.

- MRH100 manual release housing
- ARH100 automatic release housing, containing a hydrostatic release mechanism which automatically deploys the EPIRB if the vessel is sinking

*Note: IMO regulations require an automatic release housing to be provided for mandatory fitted EPIRB's.*

**Specifications:**

Frequency  
406.037MHz

Temperature range (class 2)  
-20°C to +55°C

Standards (Meets or exceeds requirements of the following)

IMO A.662(16), A.694(17); A.810(19), A.814(19); MSC.56(66); MSC.120(74)

C/S T.001, T.007; IEC61097-2, IEC60945; RTCM SC110

See Web Site for further details of specification



ARH100 Automatic release housing



EPIRB Mounted with hydrostatic release

## The Ocean Signal SafeSea S100 is an X-band radar transponder which complies with IMO SOLAS regulations.

- Superb battery operating life, even at low temperatures
  - Provides 12 hours operating use even after 96 hours in standby
  - User replaceable battery
- Battery is non-hazardous for shipping purposes
  - Compact size – ideal for packing within a life raft canister
- Supplied with telescopic pole and easy to release mounting bracket
- Intuitive operating controls – identical to operation of the SafeSea EPIRB – reducing stress in times of emergency

The SafeSea S100 SART assists in rescue and recovery providing an enhanced target in response to radars operating in the vicinity. When switched on the S100 remains in standby mode until automatically activated by a ship's X-band radar. It then transmits a series of pulses which are displayed on the radar as a line of dots proving range and bearing to the emergency.

### Specifications

**Temperature range** -20°C to +55°C

**Standards** (Meets or exceeds requirements of the following)

IMO A.694(17), MSC.247(83); IEC61907-1, IEC60945  
See Web Site for further details of specification



Location of  
SART

Typical radar display showing a line  
of dots emitted from SART

# safe SEA V100 VHF Handheld Radio

The Ocean Signal SafeSea V100 handheld VHF is designed to provide voice communication when it is needed most – in an emergency.

It meets or exceeds requirements of rigorous specifications intended to ensure reliability in arduous conditions.

Ease of use is provided by large keys with simple ergonomic layout supported by a large high contrast LCD to confirm operation.

The V100 is provided with a lithium primary battery which is protected from inadvertent use by a unique protection tab. The battery is non-hazardous for shipping purposes. Battery life is maximised by utilisation of high efficiency circuitry, especially in transmit.

For general everyday use the V100 can be fitted with an optional lithium polymer rechargeable battery which can be replenished using a rapid charger (this can be desk or bulkhead mounted).

The SafeSea V100 is available both with and without an extremely rugged accessory socket. The socket provides connection to accessories if required (e.g. helmets, headsets, extension microphones etc).





- Complies with IMO requirements for survival craft radio
- Superb battery life: provides over 16 hours typical operation even at low temperatures (10% Tx, 10% Rx & 80% squelched)
- User replaceable battery
- Battery is non-hazardous for shipping purposes
- Fully waterproof, even with 40°C thermal shock
- Fitted with 21 simplex channels as standard (according to IMO SOLAS regulations)
- Antenna connection via 50ohm waterproof socket
- 4 scanning modes are provided – dual watch, triple watch, scan all and memory scan

**Specifications:**

**Transmit power**  
2.5W

**Receiver Sensitivity** (for 20dB SINAD)  
-117dBm

**Temperature range**  
-20°C to + 55°C

**Standards** (Meets or exceeds requirements of the following)

IMO A.694(17); MSC.14(77)

IEC61097-12, IEC60945

See Web Site for further details of specification



Emergency Battery

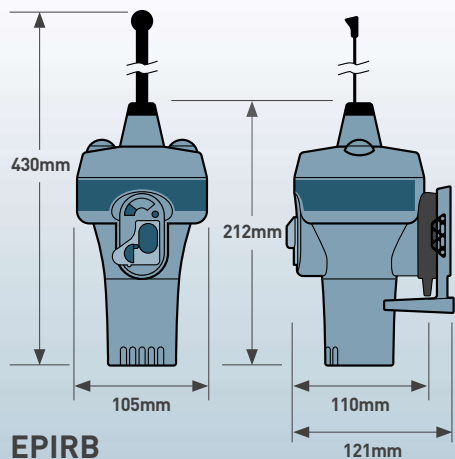


Accessory Socket

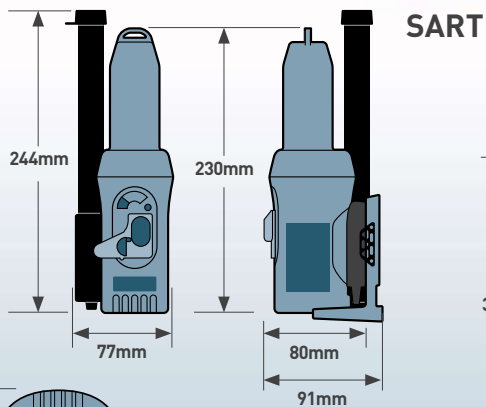


Charger

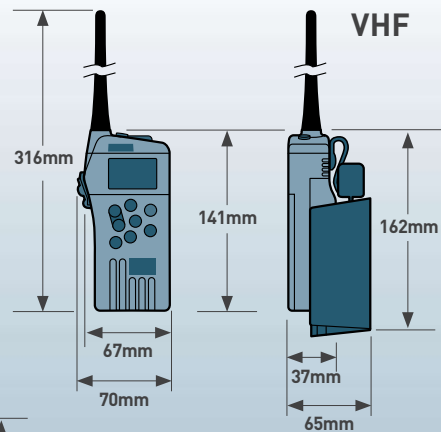
# Product Outlines



**EPIRB**

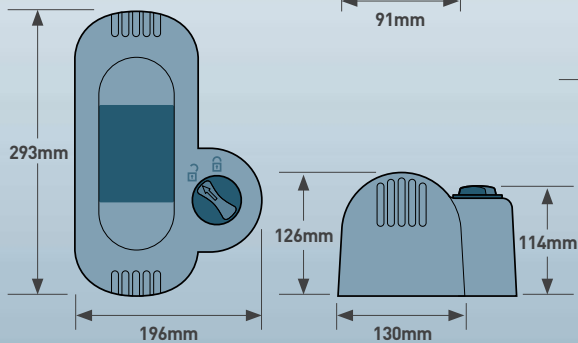


**SART**



**VHF**

**Housings**



# GMDSS

GMDSS is an internationally operated system for Safety of Life at Sea (SOLAS). Developed by the International Maritime Organisation, the GMDSS was originally conceived for commercial shipping, but the systems used are equally applicable to all maritime users. The underlying principle is that ships should have at least two means of transmission of a distress alert to both shore infrastructure and to other ships. Additional equipment is carried to provide location and communication aids for use during the search and rescue phase. The SafeSea range of products from Ocean Signal provides a total solution for this class of equipment.

## EPIRB – how it works

Ocean Signal EPIRBs operate in the 406MHz satellite band monitored by Cospas-Sarsat, ensuring a signal can be located wherever it is activated around the globe.

On activation, the EPIRB commences transmission of a distress alert, which is picked up by two groups of satellites. The geostationary (GEOSAR) satellites will typically receive the alert first, but these satellites do not have the ability to generate location information and do not cover the Polar Regions.



The second group of low earth orbiting (LEOSAR) satellites give complete global coverage, including the Polar Regions. As each satellite passes over an active EPIRB, it can calculate the approximate location (typically within 5Nm) of the beacon, using Doppler processing of the signal.

The satellites pass the received alerts to Cospas-Sarsat headquarters, where it is then passed to the relevant National Rescue Coordination Centre.

**EPIRB without GPS:** The SafeSea E100 EPIRB will have initiated a rescue attempt almost immediately after activation, but because of the nature of the satellite location process your position may not be known for some time afterwards as it depends on the orbit of the LEOSAR satellites which can take up to an hour to come into view.

**EPIRB with GPS:** The SafeSea E100G EPIRB will transmit its known location as soon as a position fix has been obtained by the built-in GPS. These transmissions will be picked up by both types of satellite. This provides two significant advantages.

- Immediate location of the vessel in distress
- Excellent positional accuracy of the distress

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