

Ocean Signal

User Manual

for the


SafeSea S100


Search and Rescue Transponder

Exposure to RF Electromagnetic Energy

This product has been evaluated for compliance with the FCC RF exposure limits given in CFR 47 part 2.1093 at a distance of **2.5cm for "Occupational Use Only"**

Warnings


 Do not operate this product without the antenna attached or with a damaged antenna.

 Always operate the SART with the antenna at least **2.5cm (1inch)** away from you. The pulsed nature of a SART transmission will ensure that the duty cycle is below 50%.

Approvals

The SafeSea S100 SART complies with the requirements of Annex A.1/4.18 of European Directive 98/85/EC as amended by 2009/26/EC, for use onboard ships registered in the European Union.

The SafeSea S100 SART complies with the GMDSS provisions of part 80 of the FCC rules.

 The S100 is designed for use in emergency only. Only operate it in situations of grave and imminent danger. Minimise the time the unit is on for when testing.

The S100 incorporates a protective tab over the operating controls to avoid accidental activation and indicate that the unit has been used.

After any period of operation, the battery should be replaced and the unit returned to your local service dealer for replacement of the protective tab.

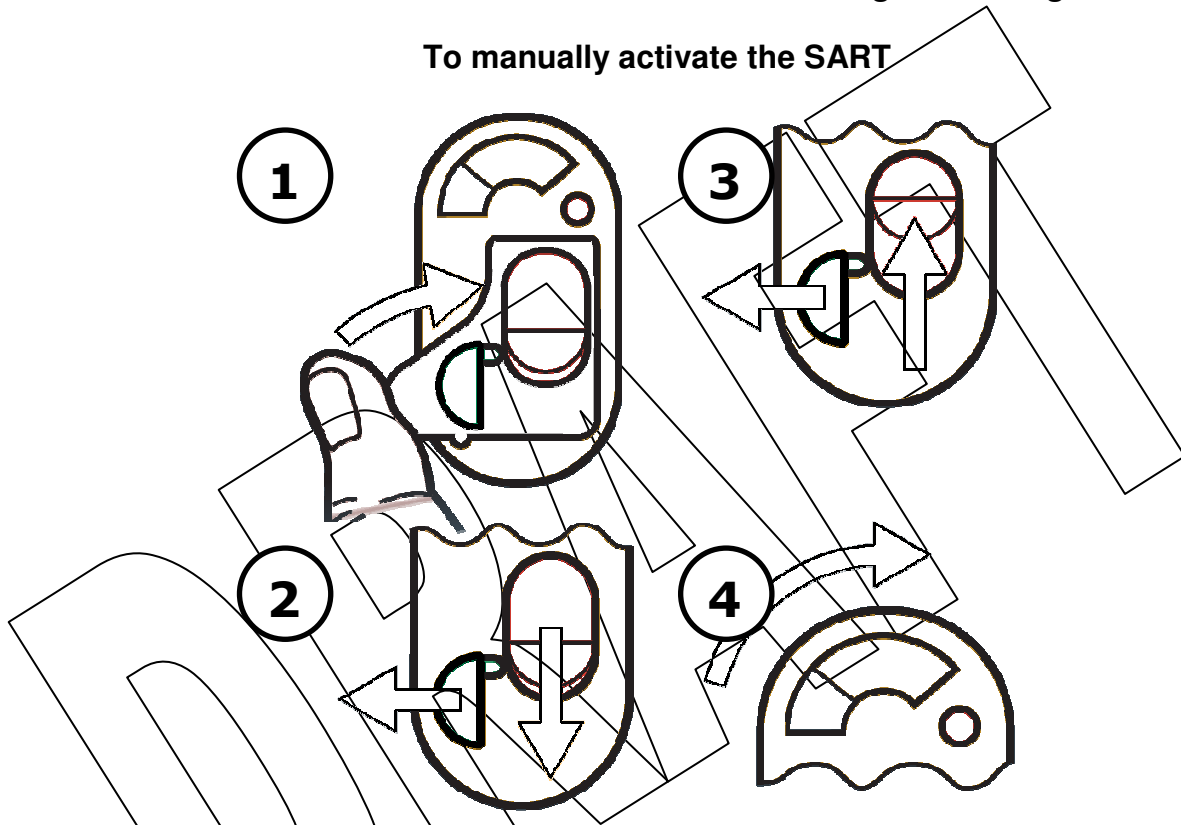
Always replace the battery before the expiry date is exceeded to ensure full operating capacity in case of emergency.

Please ensure you follow local regulations before disposing of this item. Ensure the battery is removed from the unit before disposal.

In Case of Emergency

Remove the S100 SART from its mounting or housing

To manually activate the SART



ACTIVATION

- 1 - Break the switch cover
- 2 - Slide and hold the **Green** switch to the left, then slide the **Red** switch into the down position and release the **Green** switch.

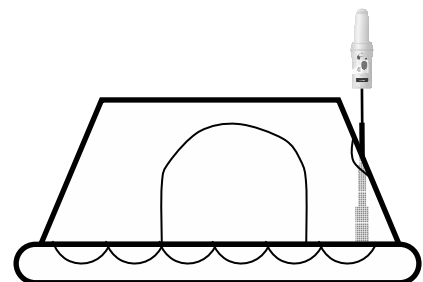
DEACTIVATION

- 3 Slide and hold the **Green** switch to the left, then slide the **Red** switch back into the up position and release the **Green** switch.

TEST

- Rotate the **Grey** Switch clockwise and hold.

Following activation the SART should be tethered to the liferaft using the lanyard and mounted on the attached telescopic pole so that the SART at least 1metre above the water. Alternatively the SART may be attached to the roof or the life raft, using the tie provide by the liferaft manufacturer.



Contents

Exposure to RF Electromagnetic Energy	2
Approvals	2
In Case of Emergency	3
Contents.....	4
Controls and Indicators.....	5
Installation	6
Operation	6
Activation	7
Deactivation	7
Testing	8
Batteries	9
Battery Replacement	9
Maintenance and Troubleshooting.....	10
Specifications	11
Accessories	12

Controls and Indicators


1. Test switch
2. Operating switch
3. Interlock
4. Tear off tag
5. Indicator LED
6. Battery compartment in base




Installation

The S100 is supplied with a quick release mounting bracket. This bracket should be mounted on a suitable wall or bulkhead in a position where it can easily be retrieved in an emergency.

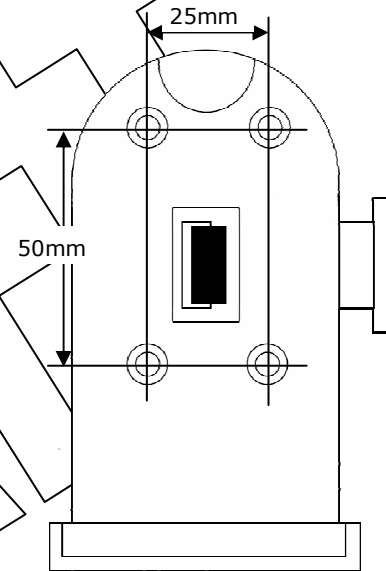
Although the S100 is rugged and waterproof, Ocean Signal recommends mounting the SART in a protected position whenever possible.

 Do not mount the SART closer than 1metre to any steering compass as this may affect the accuracy of the compass.

 Keep the S100 away from any strong magnetic sources such as loudspeakers, compass compensation magnets, etc.

Mark the location of the four screw holes onto the mounting position. Pre-drill the holes if required then screw the mounting bracket to the surface using the four N°6 x 5/8" screws supplied.

The SART simply clips onto the mounting bracket.



Operation

Ensure the S100 SART is always fitted with an unused battery that is within the marked expiry date.

Remember that a SART is not intended as a primary distress alerting device. At least one of the following should also be carried onboard your vessel to alert the authorities to your situation: an EPIRB; a DSC radio; an Inmarsat satellite terminal.

Once the SART is activated it will help guide the Search and Rescue authorities to your position.

Mounting

It is important to mount and operate the SART as high as possible in the liferaft. The SafeSea S100 is provided with a telescopic pole which will keep the SART at a height of 1metre above sea level.

Remove the pole from the back of the SART. The lanyard is stowed under the rubber pole retainer. The lanyard should be unwound at this stage and tied firmly to the Liferaft to ensure it is not



lost overboard.

Remove the cap from the top of the pole and then pull out the sections until fully extended. Make sure the sections are tight by pulling on them.


Fit the smallest section into the hole in the bottom of the SART as shown, again making sure it is pushed in tightly.

Raise the SART up vertically and attach the pole to the liferaft. Most liferafts will be fitted with suitable attachments to accommodate the SART pole.

Alternatively, the SART may be attached directly to the liferaft canopy.



Activation

 The S100 SART should only be activated if there is grave and imminent danger to the vessel and its crew.

To activate the SART, remove the unit from its mounting bracket.

Break off the clear protective cover over the green and red controls.

Push the Red button down, while holding the Green interlock button to the left.

Release the Green button first to lock the Red button in the active position.

During operation, the Red LED next to the Test button will flash once every 2-3 seconds to indication the SART is operational.

When activated by a received radar pulse the Red LED will start flashing rapidly as indicated diagrammatically below.

Operational: 

Activated: 

Deactivation

If the SART has been inadvertently activated, it can be turned of by reversing the activation process.

Slide the Green button to the left and return the Red button to the off position. Release the Green button.

It is not possible for the user to replace the clear protective cover. Return the SART to an Ocean Signal authorised service centre for replacement.

Testing

Periodic testing of the S100 SART is recommended. A full test should be carried out in conjunction with an X-band radar on a nearby ship if at all possible. A full test should always be carried out at the annual service, with short inspections every two months.

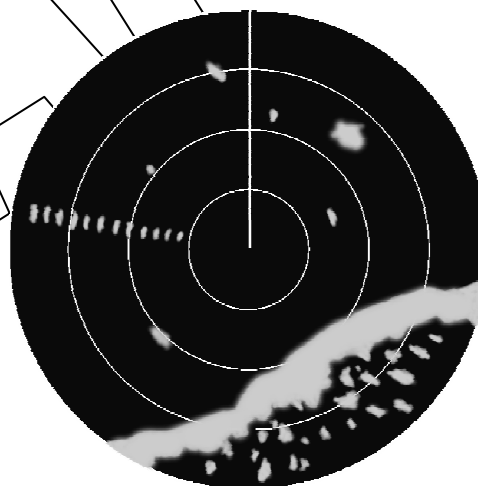
Activate the test mode by rotating the grey test switch clockwise and holding.

If there is radar activity in the area then the Red LED will start to flash intermittently, indicating that the radars are being received.

If you are able to contact another vessel with radar, then the radar will now be showing the return from the SART.

Depending on the distance of the vessel to the SART and the tuning of the radar, the display will vary between a set of concentric rings to a line of twelve blips in a straight line on a bearing between the vessel and the SART.

The SART test mode is the same as the operational mode, so keep the time of the test to a minimum to avoid falsely indicating to other ships that you may be in distress and to minimise the battery drain.



Batteries

The S100 SART uses a Lithium Iron Disulfide battery pack to power the device.

These batteries have a five year storage life before any significant reduction in capacity. Each battery is marked with an expiry date, which is located at the base of the unit.

The battery should be replaced before the expiry date has passed to ensure reliable operation and full capacity in emergency situations.

The battery may be changed by the user, although commercial vessels may be subject to local regulations relating to Shore Based Maintenance that prevent this.

Battery Replacement

Remove the SART from its mounting bracket and turn it over. The battery pack is retained by a single crosshead screw.

Undo the screw using the 3mm Allen (Hex) key provided

Remove the pack from the main body.

Replace with a new battery pack, ensuring the rubber seal is correctly in position and the pack is pushed home fully. Tighten the screw up.

Ensure that any maintenance records onboard are updated with the new battery expiry date.

Warnings

Always use batteries manufactured by Ocean Signal. Failure to do so will invalidate the type approval and may mean the unit does not operate correctly in a distress situation.



Replace battery before the expiry date



Never dispose of batteries in a fire



Never puncture the battery or attempt to dismantle it.



Never attempt to charge the battery

Extreme temperature caused by failure to observe the above warnings may cause the battery to explode or catch fire, which may result in injury or damage to surrounding personnel or property.

Dispose of batteries in a responsible manner. National or local regulations on battery disposal may apply including restricting the disposal of batteries in domestic refuse.

For the Product Safety Data Sheet and advice on battery transportation, please see the Ocean Signal web site at www.oceansignal.com.

Maintenance and Troubleshooting

The S100 SART should not need servicing during its lifetime, with the exception of changing the battery before the marked expiry date.

Regular cleaning, inspection and testing are advised.

Clean any salt or grime residue off the unit with a weak solution of detergent in warm water. Never use solvents as this may affect the structural integrity of the plastics used. Rinse well with fresh water after washing.

Inspect the unit for signs of case damage or cracks, check the labels are intact and the battery expiry is still in date. Make sure the telescopic pole (if provided) is still present and is free to extend.

Check for correct SART operation by visually inspecting the indicator LED on the unit. If the unit appears to fail testing, then the following points should be checked.

- Are there any vessels in the vicinity that would have radar on to trigger the SART?
- Is the SART being shielded from the view of other vessels?

Specifications

Transmitter

Frequency	9.2-9.5GHz
Output Power (EIRP)	>400mW
Number of pulses	12
Sweep Rate	5 μ s

Supply

Battery	Lithium Iron Disulfide (LiFeS ₂)
Standby current	TBD
Active current	TBD
Operating life (standby/active)	120/16hours at -20°C

Test Standards

IEC61097-2, IEC60945,

Environmental

IEC60945 Category	Portable
Temperature Range (operating)	-20°C to +55°C
Temperature Range (storage)	-30°C to +65°C
Waterproof	10metres for 1hour
Drop proof (on water)	20m
Compass safe distance	1metre

Accessories

Lithium Battery

LB3S

Replacement battery for S100

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