kannad marine

SEAS OF SOLUTIONS BRAND

SafePro + AIS EPIRB

USER MANUAL

This manual is applicable to the SafePro + AIS EPIRB.

ONLY IN EMERGENCY
FALSE ALERTS
ENDANGER LIVES.

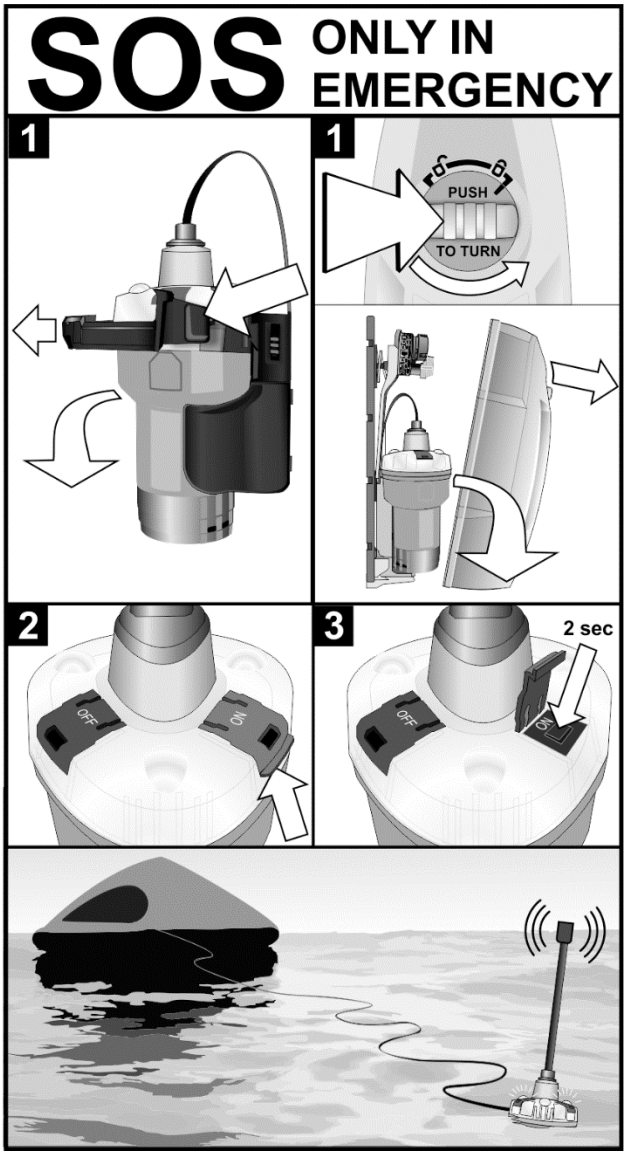
1. Remove the EPIRB completely from its bracket (left) or enclosure (right).

The enclosure is spring loaded to automatically release the EPIRB if your vessel sinks.

Before activating, remove the EPIRB completely from its bracket (left) or enclosed (right)

2. If time permits, lift the red "ON" cover, then press the activation button for 2 seconds.

3. Uncoil the EPIRB's lanyard and tie it to the life raft. Throw the EPIRB into the water (it will self-activate if you did not have time to press the activation button).



CONTENTS

1 SAFETY NOTICES

1.1 Use

An EPIRB (Emergency Position Indicating Radio Beacon) is for use in maritime emergencies and is approved for these contingencies. It is not designed or recommended for use on land or in the air.

Use the EPIRB only in situations of grave and imminent danger. False alerts endanger lives. Help to prevent them; understand how to activate and deactivate your equipment. Intentional false alerts may involve penalties.
Read the complete manual before installing, testing, or using the EPIRB.

Ensure the EPIRB is registered with your local authorities (Flag State nation) – see section 2.2: How to register

1.2 Testing, maintenance, and disposal

Ensure you test the EPIRB monthly – see section 7.1: Servicing schedule

The EPIRB contains no user serviceable parts. The battery pack contains lithium metal batteries. Do not incinerate, puncture, deform or short-circuit. If you need to dispose of batteries or the complete EPIRB – see section 8: End of life statement

Return to your dealer for service – see section 7.1: Servicing schedule

1.3 Hazards

This EPIRB emits radio frequency radiation when activated. It is advisable not to handle the antenna while the EPIRB is activated.

It is not advisable to stare directly at the strobe lights.

1.4 Storage

Prolonged periods of storage above room temperature may degrade the battery capacity. Either the battery should be replaced before the expiry date is reached, or the operating lifetime might be less than 48 Hours. Reduction of battery capacity is more pronounced at higher storage temperatures.

1.5 EU Declaration of Conformity

McMurdo Ltd declares that this EPIRB is in compliance with the essential requirements and other relevant provisions of the EU Marine Equipment Directive (MED). A Declaration of Conformity can be obtained online from: https://www.seasofsolutions.com/downloads/

1.6 UK Ensign Mark Declaration of Conformity

McMurdo Ltd declares that this EPIRB is in compliance with requirements of the Marine Equipment Regulations (MER), MSN 1874 as amended.

A Declaration of Conformity can be obtained online from:
https://www.seasofsolutions.com/downloads/

1.7 FCC Compliance

GMDSS provisions of FCC 47 CFR Part 80, FCC and USCG.

Note. This device has not yet been authorized as required by the rules of the Federal Communications Commission. This device is not, and may not be, offered for sale or lease, or sold or leased, until authorization is obtained.

1.8 Industry Canada Compliance

ISED RSS GEN and RSS182

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

1.9 Response time

The function of the EPIRB is to send an alert to COSPAS-SARSAT satellites as described on COSPAS-SARSAT satellite system. How soon an alert is received depends on the positions of the satellites at the time and can be influenced by overhead obstructions aboard the vessel. Rescue time following an alert depends on the overall performance of the Search and Rescue organisations which is outside the control of McMurdo Ltd.

1.10 Disclaimer and copyright

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2 MANDATORY REGISTRATION

WARNING!
You must register your EPIRB with the appropriate authorities.
Failure to register may slow the rescue and lead to loss of life.
Mandatory User Registration is often a national legal requirement.

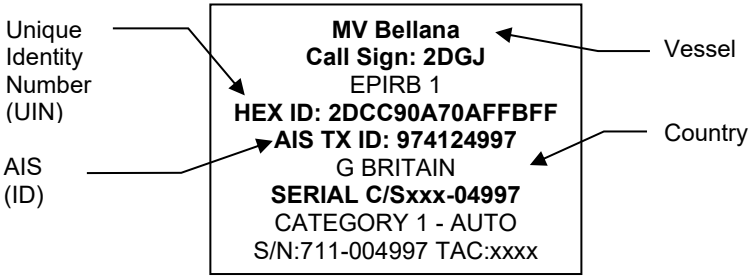
Important information

Cospas-Sarsat strongly recommends that you appropriately register your beacon. It only is possible to register a beacon in the registry operated by the country matching the "country code" electronically programmed into the beacon (or the International Beacon Registration Database https://www.406registration.com/) if the country uses the IBRD for their registrations.

Visit the web page Beacon Registration Contacts to see where you can register your beacon. (https://www.406registration.com/countriessupported.aspx)

2.1 Overview

Every EPIRB is pre-programmed with a unique identity before it reaches the customer. This is performed by the manufacturer or, in some cases, the distributor. The identity includes a 3-digit country code. This is the country that takes responsibility for storing that particular EPIRB's registration details. In most cases, this is the country to which the vessel is flagged. The country programmed into your EPIRB can be found from its rear identity label. You **must** register with this country.



When you activate your EPIRB in an emergency, the nearest maritime search and rescue coordination centre (MRCC) will receive the message and decode the country code. They will then access the registration database for that country and expect to find details of your vessel, its radio equipment and who to contact. If they fail to find this information, this may slow down any rescue.

2.2 How to register

Please refer to section: 13. How to register YOUR EPIRB for detailed information about the registration process.

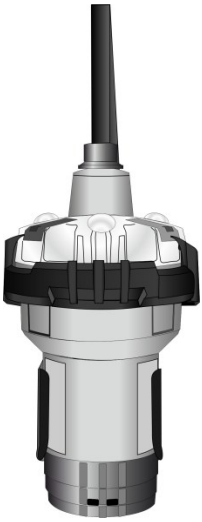
3 DESCRIPTION

This EPIRB is a powerful self-contained distress transmitter and once activated it will operate for at least 48 hours. It operates best while floating in water. Although it can be operated on board a vessel or in a life raft, it is not recommended to do so.

The EPIRB can be mounted to the vessel using one of two options:

- Manual bracket, or
- Float-free enclosure

EPIRB

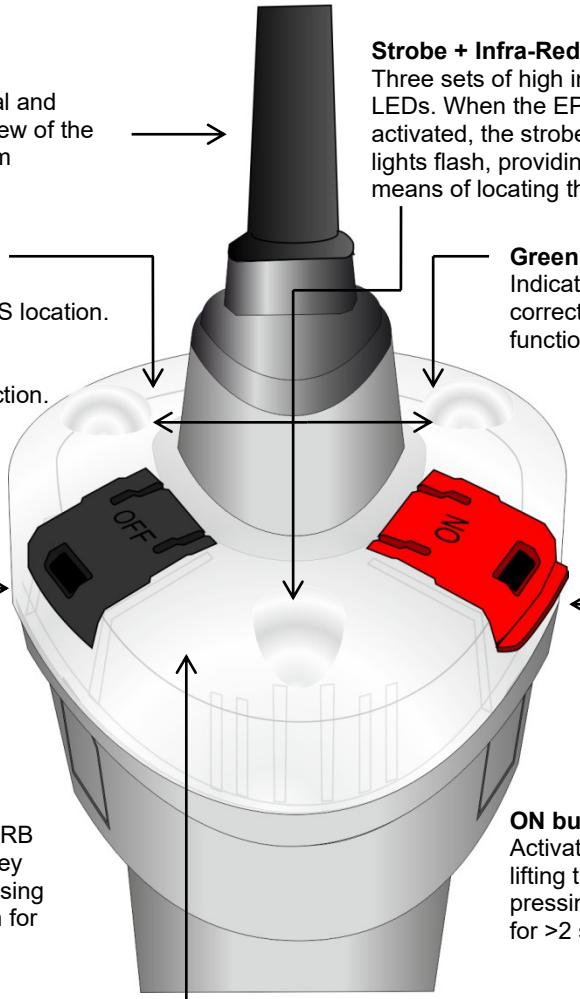


EPIRB in manual bracket

Float-free enclosure

3.1 EPIRB controls and indicators

3.1.1 Top view



Antenna
Must be vertical and have a clear view of the sky for optimum performance.

Strobe + Infra-Red lights
Three sets of high intensity LEDs. When the EPIRB is activated, the strobe and IR lights flash, providing a visual means of locating the EPIRB.

Red LED
Slow flash:
acquiring GNSS location.

Rapid flash:
EPIRB malfunction.

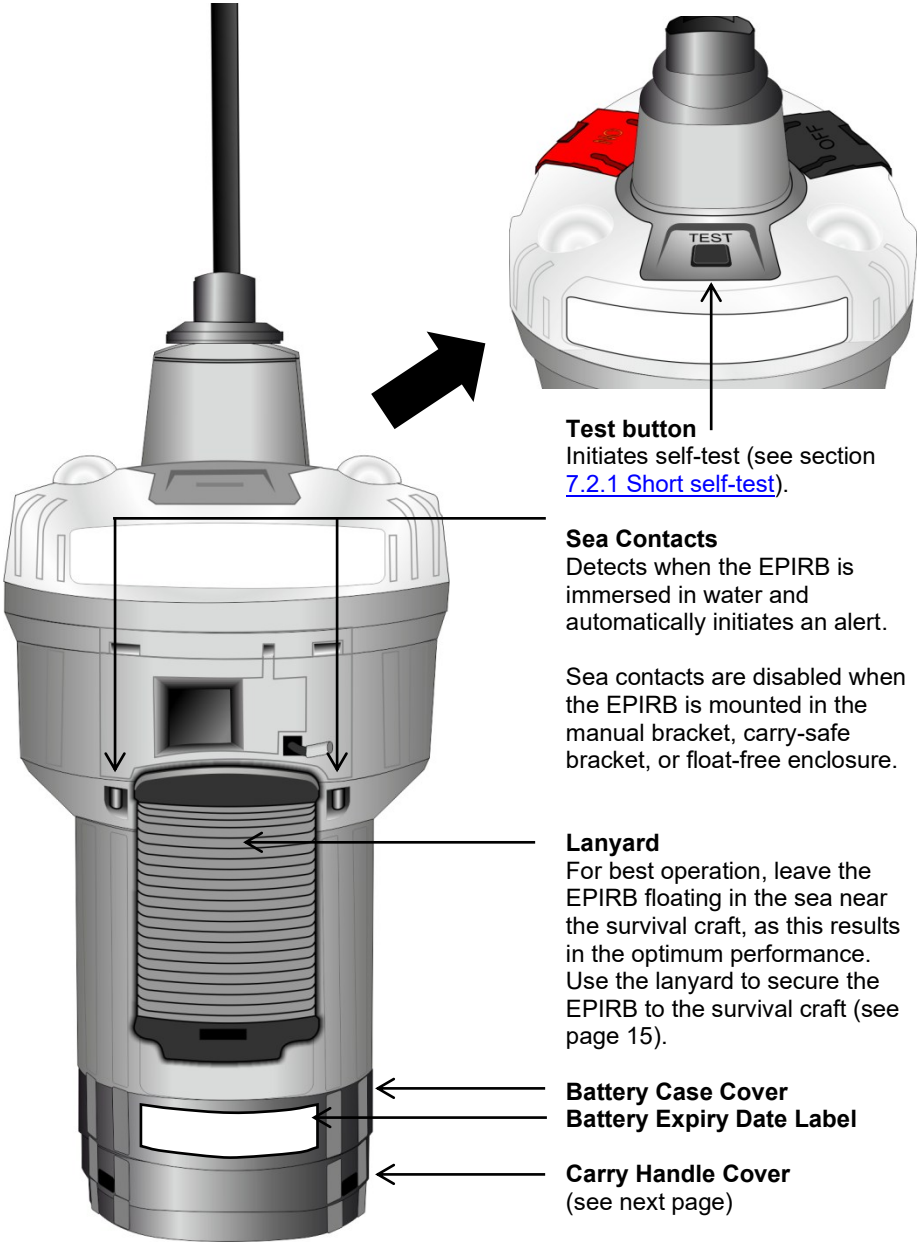
Green LED
Indicates correct/normal function.

OFF button
Deactivate EPIRB by lifting the grey cover and pressing the OFF button for >2 seconds.

ON button
Activate EPIRB by lifting the red cover and pressing the ON button for >2 seconds.

GNSS Antenna (under dome)
Must have a clear view of the sky for optimum performance.

3.1.2 Back view



Test button
Initiates self-test (see section 7.2.1 Short self-test).

Sea Contacts
Detects when the EPIRB is immersed in water and automatically initiates an alert.

Sea contacts are disabled when the EPIRB is mounted in the manual bracket, carry-safe bracket, or float-free enclosure.

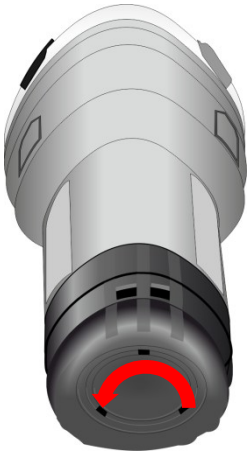
Lanyard
For best operation, leave the EPIRB floating in the sea near the survival craft, as this results in the optimum performance. Use the lanyard to secure the EPIRB to the survival craft (see page 15).

Battery Case Cover
Battery Expiry Date Label

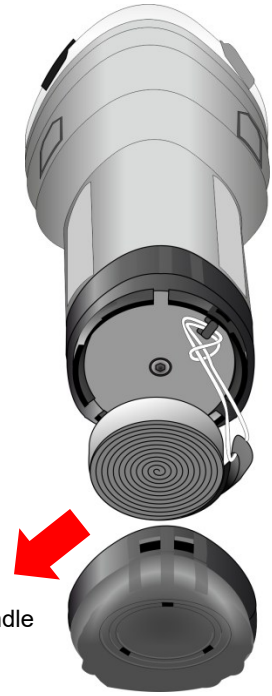
Carry Handle Cover
(see next page)

3.2 Carry handle

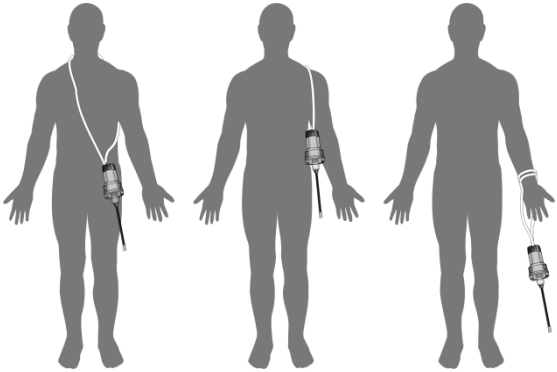
The carry handle (if fitted) allows hands-free carrying of the EPIRB in an emergency situation.



1. Twist the base of the EPIRB anti-clockwise to remove the cover.



2. Remove handle from base.



3. Adjust the carry handle to secure the EPIRB across the body, around a shoulder, arm, or wrist during emergency evacuation prior to activation.

3.3 Manual bracket

The manually activated EPIRB variant is supplied with a bulkhead-mounting manual bracket.

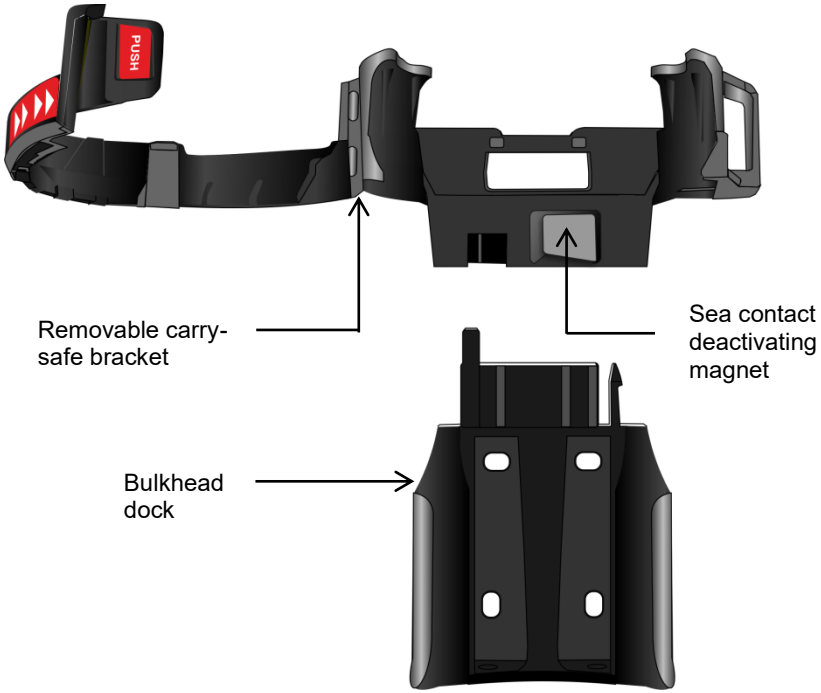
The manual bracket should be located in plain view near an emergency exit (see section: 6.1 Manual bracket).

To prevent accidental activation due to contact with water, the manual bracket contains a magnet which deactivates the sea contacts.

The manual bracket is formed of two parts: a carry-safe bracket which contains the deactivating magnet and a bulkhead dock, which is permanently fixed to the bulkhead of the vessel.

The carry-safe bracket allows the EPIRB to be detached and transported in, for example, a wet grab bag.

WARNING – The EPIRB will NOT be activated by water while it is in the manual bracket or in its carry-safe bracket. The EPIRB must be removed from all parts of the manual bracket before it will activate in water.

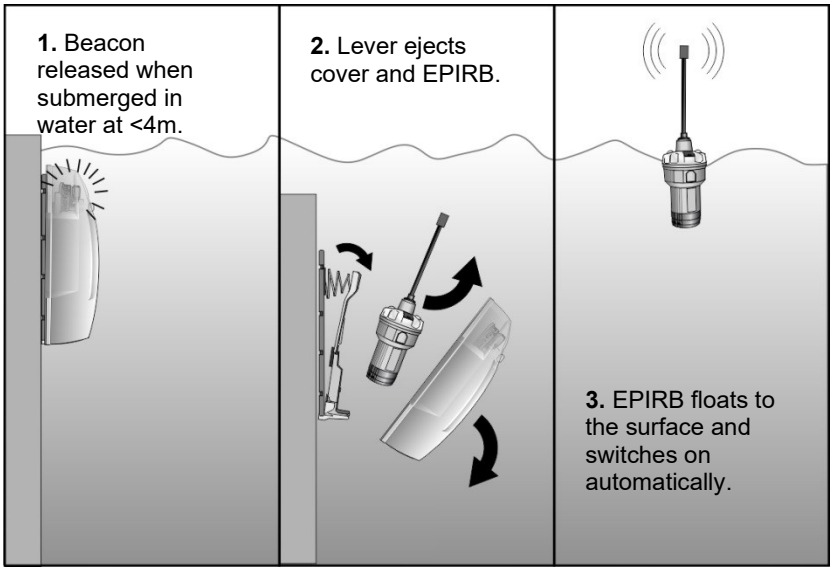


3.4 Float-free enclosure

The automatically activated variant, also known as the “float-free” version, is supplied in a fully protective enclosure.

3.4.1 Automatic activation

The float-free enclosure is spring loaded to automatically release the EPIRB if your vessel sinks. This automatic release is controlled by a device called a Hydrostatic Release Unit (HRU) fitted inside the enclosure (see below).



3.4.2 Manual activation

If you need to activate your EPIRB manually, then first it must be released from the enclosure (see section 4.3 Release from float-free enclosure)

To prevent accidental activation due to contact with water, the float-free enclosure contains a magnet which deactivates the sea contacts.

4 EMERGENCY PROCEDURE

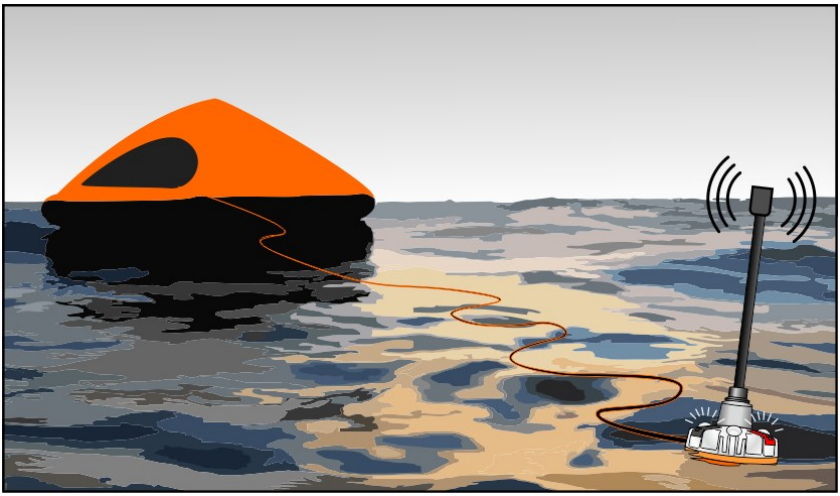
An EPIRB is a piece of life saving equipment. Its sole purpose is to call for help.

It must only be used in situations of grave and imminent danger.

Misuse can involve a severe penalty.

4.1 Abandon ship!

1. If it is safe to do so, first release the EPIRB from its mounting bracket or float-free enclosure then activate the EPIRB as described on the following pages in this section.
2. If your EPIRB is fitted with a carry handle, use it to secure the EPIRB around your shoulder, arm, or wrist during the evacuation (see section: 3.2 Carry handle
3. Take the EPIRB to your life raft.
4. Once the life raft is in the water and clear of the sinking vessel, uncoil the EPIRB's lanyard and tie it to the life raft.
5. Throw the EPIRB overboard so that it floats several metres away from the life raft. The EPIRB will operate automatically.
6. For best operation, leave the EPIRB floating in the sea near the survival craft for optimum performance.



4.1.1 Float-free enclosure

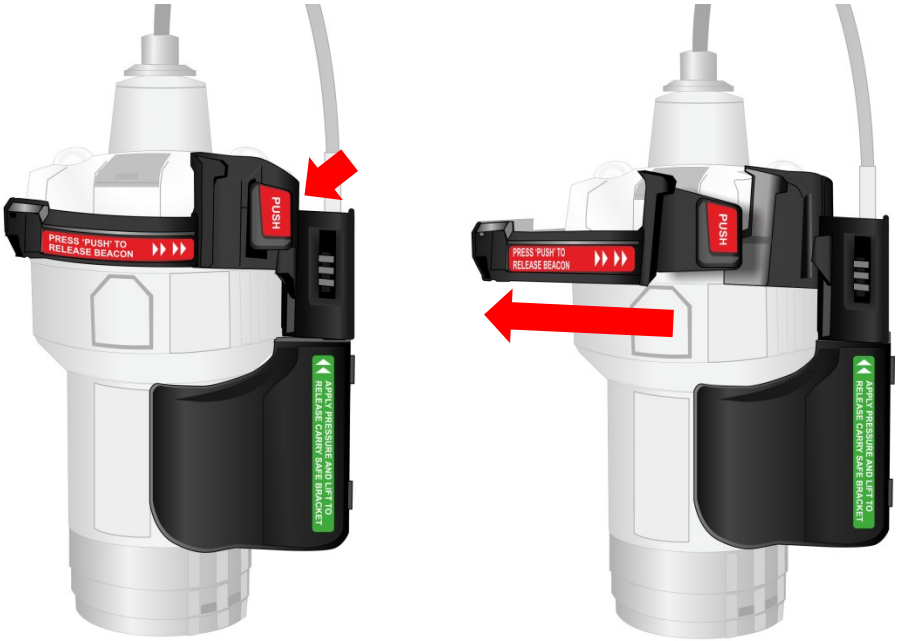
If there has been no time to retrieve the EPIRB from the float-free enclosure during evacuation, it will automatically release itself as the vessel sinks. The EPIRB will float to the surface and start to operate automatically.

The EPIRB is best used to mark the location of survivors, not the accident scene. If possible, and only if it is safe to do so, recover the EPIRB and tie to the survival craft using the lanyard.

4.2 Release from manual bracket

1. Locate the end of the retaining strap on the right-hand side of the manual bracket.

2. Push the end of the strap towards the EPIRB and then forwards to release the strap.



3. Open the strap fully.

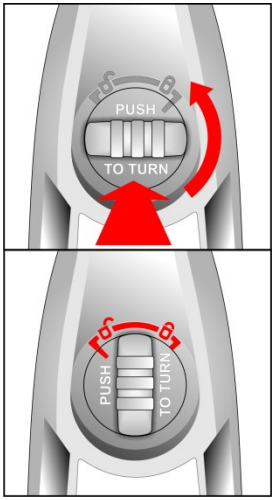
4. Firmly pull the EPIRB out of the bracket.

WARNING – The antenna will spring up when the EPIRB is released. Be careful to avoid eye injury.

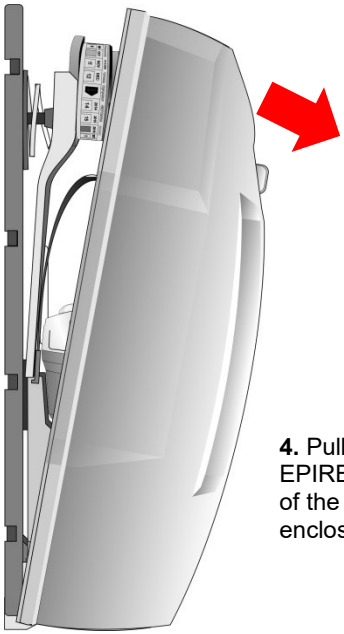
4.3 Release from float-free enclosure

1. Locate the locking dial at the top of the enclosure cover.

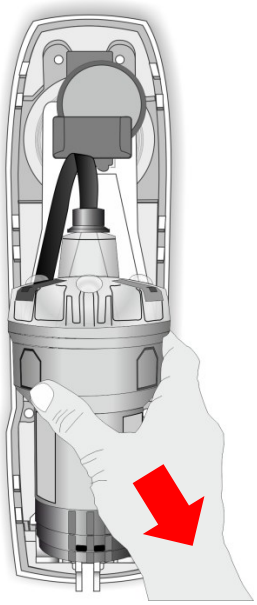
2. Push the dial in and turn anti-clockwise to the unlocked position.



3. Remove the cover by pulling the top away from the bulkhead.



4. Pull the EPIRB out of the enclosure.

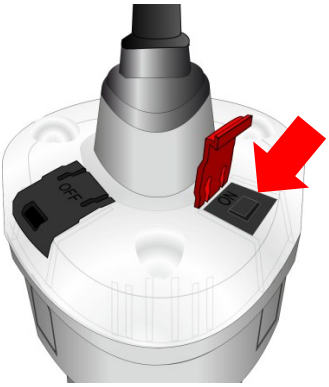


WARNING – The antenna will spring up when the EPIRB is released. Be careful to avoid eye injury.

4.4 Manual activation

1. Locate the ON button on the top dome under the red cover.

2. Lift the cover, press the ON button for >2 seconds and release.

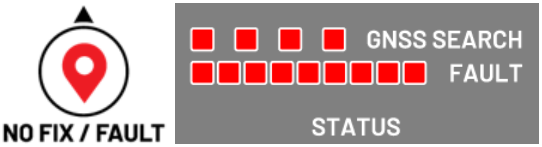


WARNING – There is a tamper-evident seal over the red cover which will be broken when lifting the cover. If the tamper-evident seal is not intact, the EPIRB may have been activated previously.

The strobe and infra-red lights will start to flash immediately; however, the EPIRB will not make any distress transmissions for approximately 50 seconds. This allows time to turn off the EPIRB if it has been activated accidentally. When the green indicator starts to flash, distress transmissions have started.

Transmission active GREEN indicator, flash pattern and meanings

The EPIRB will also attempt to determine its position using a GNSS satellite constellation. During this process, the RED indicator will flash. Once the position has been determined, the RED indicator will stop flashing.



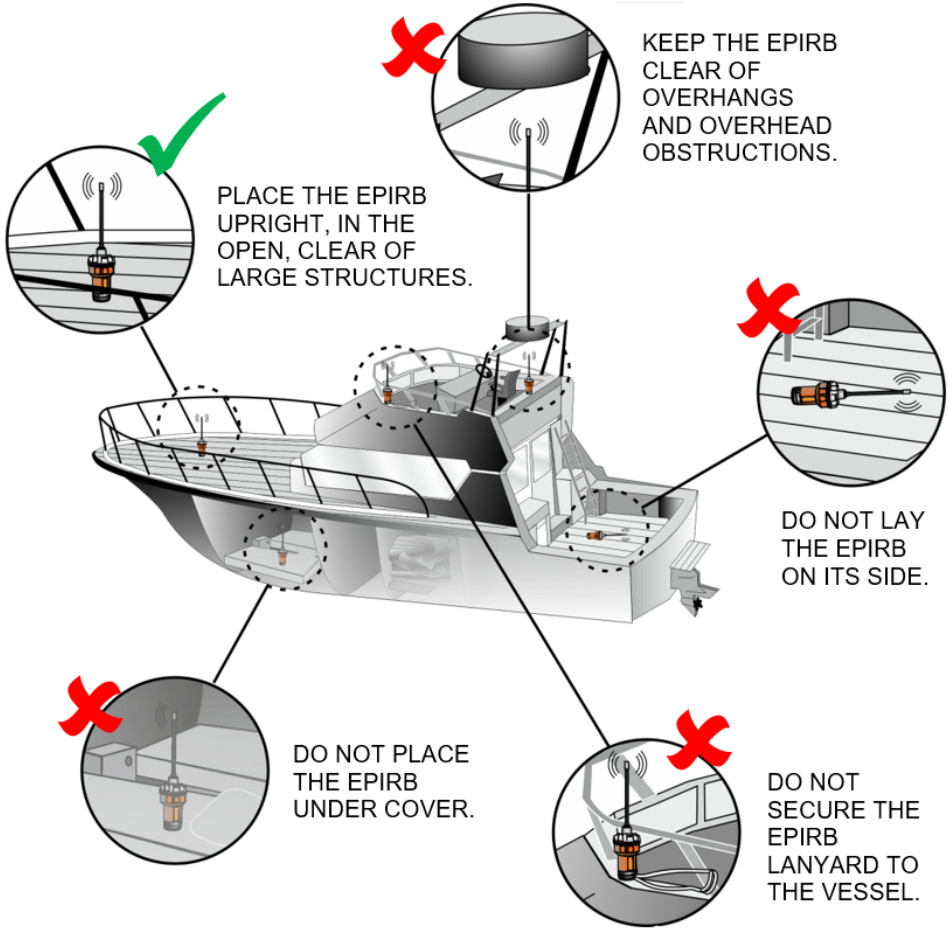
Even RED flashing indicates that the GNSS is searching for a position fix.

Rapid flashing of the RED indicator may indicate a fault condition has occurred.

4.5 Optimising onboard performance

The EPIRB is designed and optimised to be used floating in the sea. However, in emergencies when it is not necessary to evacuate the vessel, you may want to deploy the EPIRB onboard.

Find a suitable position for the EPIRB according to the following guidelines:



NOTE: Failure to observe these guidelines may affect whether and how soon an alert is received by the satellite system. Keep the EPIRB upright at all times (hold it if necessary but do not touch the antenna). The high intensity strobe lights may cause discomfort if viewed for long periods.

4.6 Deactivation

Once the EPIRB has been activated for a distress situation, it should not be switched off until the SAR agency directs this.

1. Locate the OFF button on the top dome under the grey cover.

2. Lift the cover, press the OFF button for >2 seconds and release.

3. The strobe light and green indicator will stop flashing. If any light continues to flash, then check that the sea contacts are dry.

It is important to realise that the only time the EPIRB is completely off, is when it is fitted in the manual bracket, carry-safe bracket, or float-free enclosure. As soon as it is removed, the EPIRB will turn on automatically if the sea contacts are immersed in water.

Although you can control the EPIRB manually with the ON and OFF buttons, the sea contacts override any manual settings. For the OFF switch to operate properly, the EPIRB must first be dry so that the sea switch is de-activated.

4.7 Stowage

4.7.1 Manual bracket

1. Locate the right-hand end of the manual bracket strap and push it in and forwards to open the strap.

2. Swing the strap open.

3. Slide the EPIRB into the bracket with the lanyard positioned towards the rear until it is held securely.

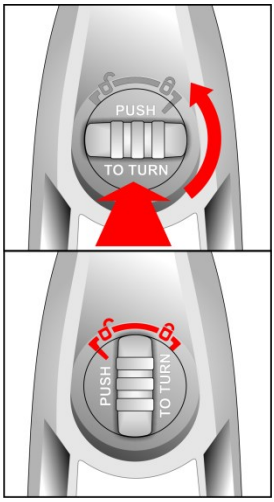
4. Swing the strap closed and secure the end tab in the retaining slot.

5. Fold over the antenna and locate the tip in the retaining slot behind the EPIRB.

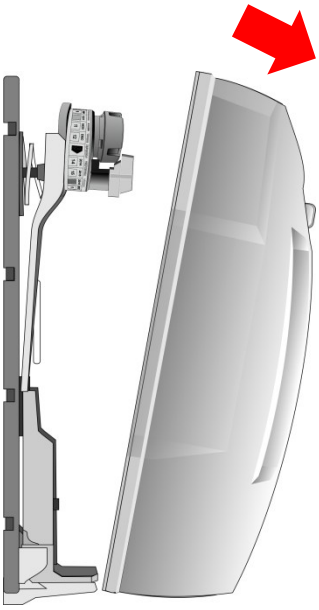
4.7.2 Float-free enclosure

1. Locate the locking dial.

2. Push the dial in and turn anti-clockwise to the unlocked position.



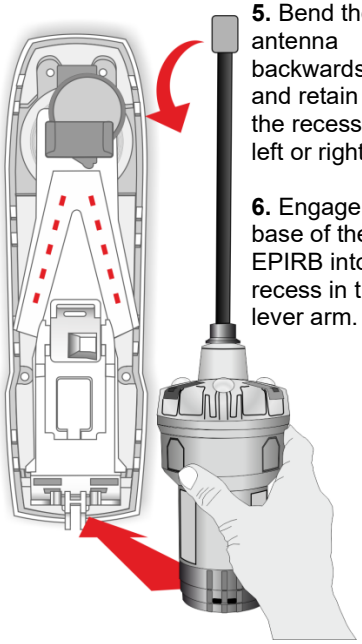
3. Remove the cover by pulling the top away from the bulkhead.



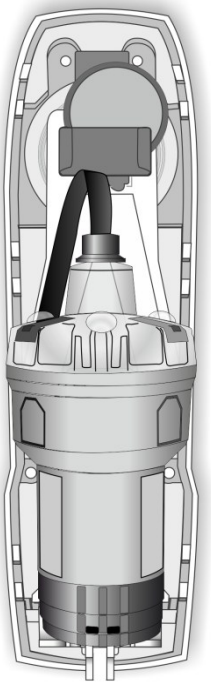
4. Position the EPIRB in the enclosure with the lanyard towards the rear.

5. Bend the antenna backwards and retain it in the recess to left or right.

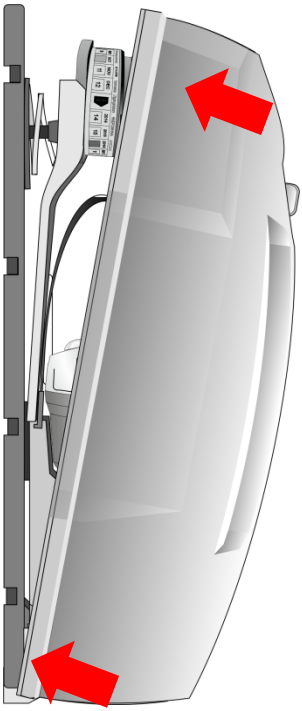
6. Engage the base of the EPIRB into the recess in the lever arm.



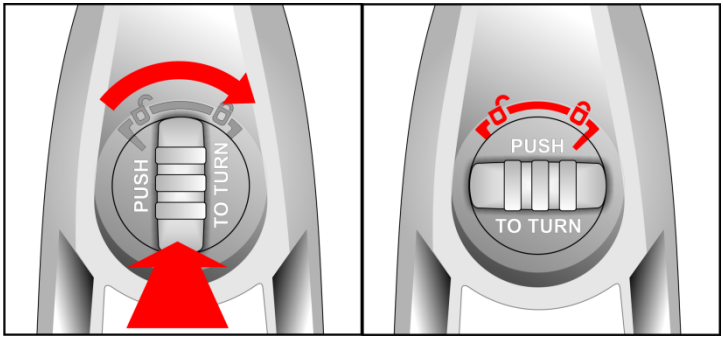
7. Push the EPIRB into the enclosure to engage the retaining clip.



8. Refit cover squarely onto back plate, engaging the guides at the lower end first.



9. Push and rotate dial clockwise to locked position.



CAUTION: Failure to fit EPIRB correctly may impair its ability to float free in an emergency.

5 FALSE ALERTS

False alerts are a serious problem for the rescue services. About 90% of EPIRB-initiated distress alerts turn out to be false alerts. If your EPIRB should cause a false alert, follow the instructions below.

5.1 Notify rescue services

It is highly important that you contact the nearest search, rescue authorities, and tell them it was a false alert, so that they can stand down any rescue services. Use any means at your disposal to make contact. Often this can be by VHF radio to the local coastguard or mobile phone if you are within coastal range, but MF/HF DSC and Inmarsat or satellite phone may also be used.

Useful contacts:

Country	Region	Telephone	What to report
USA	Atlantic / Gulf of Mexico	(757) 398-6390	EPIRB Unique ID (UIN) Vessel name/ID Date, time & duration Cause of activation Location when activated
	Pacific	(510) 437 3700	
	From any location	(800) 323 7233	
UK	From any location	01326 317 575	

5.2 Deactivate the EPIRB

Deactivate the EPIRB following the procedure in section 4.6 Deactivation

5.3 Faulty EPIRB

In the unlikely event that your EPIRB develops a fault and will not turn off remove the battery pack from the EPIRB (see section: 7.5.2 Battery removal)

If this is not possible, cut off or fold down the antenna and then wrap the EPIRB in metal, take it below decks or place in a metal container or locker. Leave the EPIRB in this condition for 3 days until its battery is dead, then refer to page 35 for instructions on returning the EPIRB for servicing.

WARNING – Take care when handling the antenna. Handle as little as possible.

6 INSTALLATION

6.1 Manual bracket

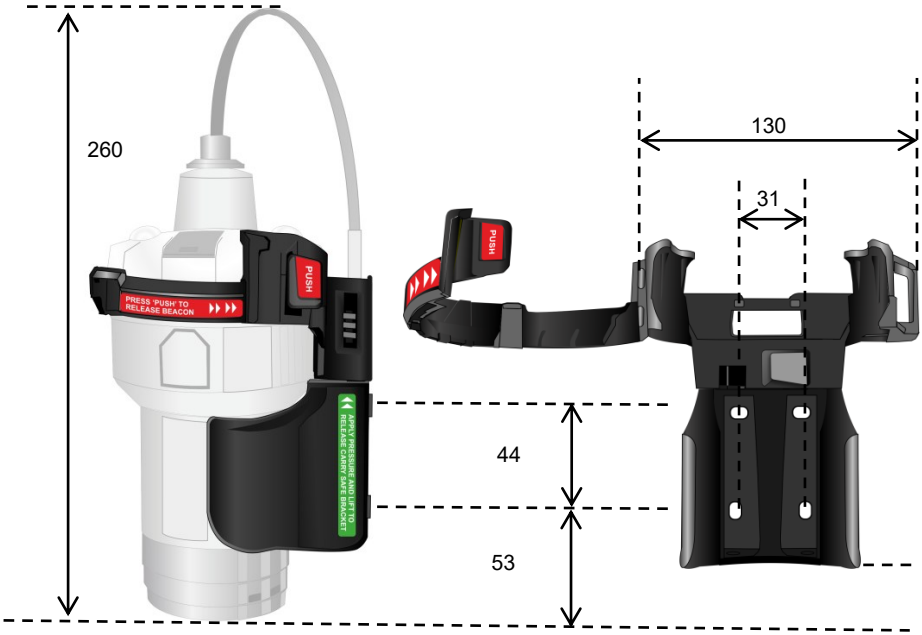
6.1.1 Siting

The manual bracket should ideally be sited on a bulkhead in plain view near an emergency exit. When choosing a suitable mounting position, you should also consider:

- Ease of access in an emergency, and
- Mount at least 1m from any compass equipment.

6.1.2 Mounting procedure

The manual bracket is supplied with four stainless steel screws. The bracket mounts against a flat surface using four fixing points. Offer the bracket into the chosen position and mark through the mounting slots and drill four 3mm diameter holes.



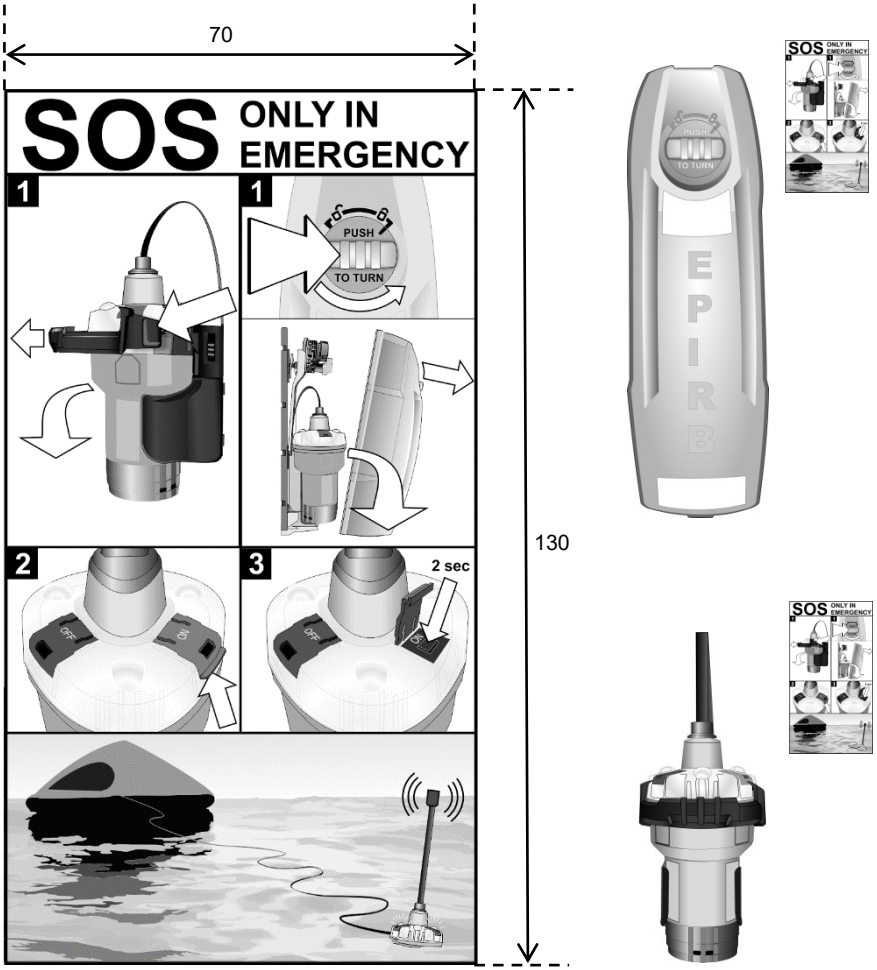
All dimensions in mm

6.1.3 Mounting instruction plate

The EPIRB is supplied with a self-adhesive instruction plate which has basic visual instructions showing how to operate the EPIRB in an emergency.

Mount the instruction plate next to the EPIRB so that it is easily visible in an emergency.

During vessel maintenance, ensure the plate does not get painted over or cleaned down with strong degreasing solvents.

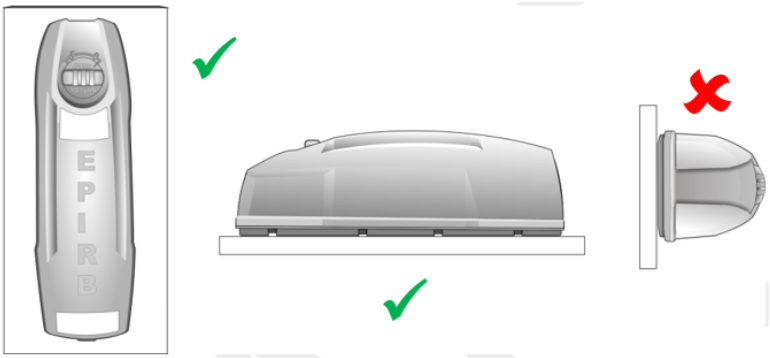


All dimensions in mm

6.2 Float-free enclosure

6.2.1 Siting

The enclosure should be mounted upright against a vertical bulkhead. Alternatively, it may be mounted horizontally on a flat surface such as a free draining cabin roof. No other orientations are recommended.



It is critical that you choose a location suitable for automatic deployment. The EPIRB should be sited so that it can float free regardless of the attitude of the vessel during or following capsize. An expanse of flat surface is required to allow the enclosure lid to eject. The wheelhouse top is a favoured position, although an alternative location should be found if rigging, masts, or existing equipment could affect automatic activation. The EPIRB should also be accessible so that it can be taken to the life raft if it becomes necessary to abandon ship.

If the EPIRB is placed on one side of the vessel, or immediately behind the wheelhouse then the likelihood of correct deployment is much reduced.

Use the recommendations below to choose a suitable mounting position:

DO:

- Mount on the outside of the vessel's structure as high as possible.
- Mount close to the vessel's navigation position.
- Position EPIRB in a self-draining location.
- Consider ease of access in an emergency.

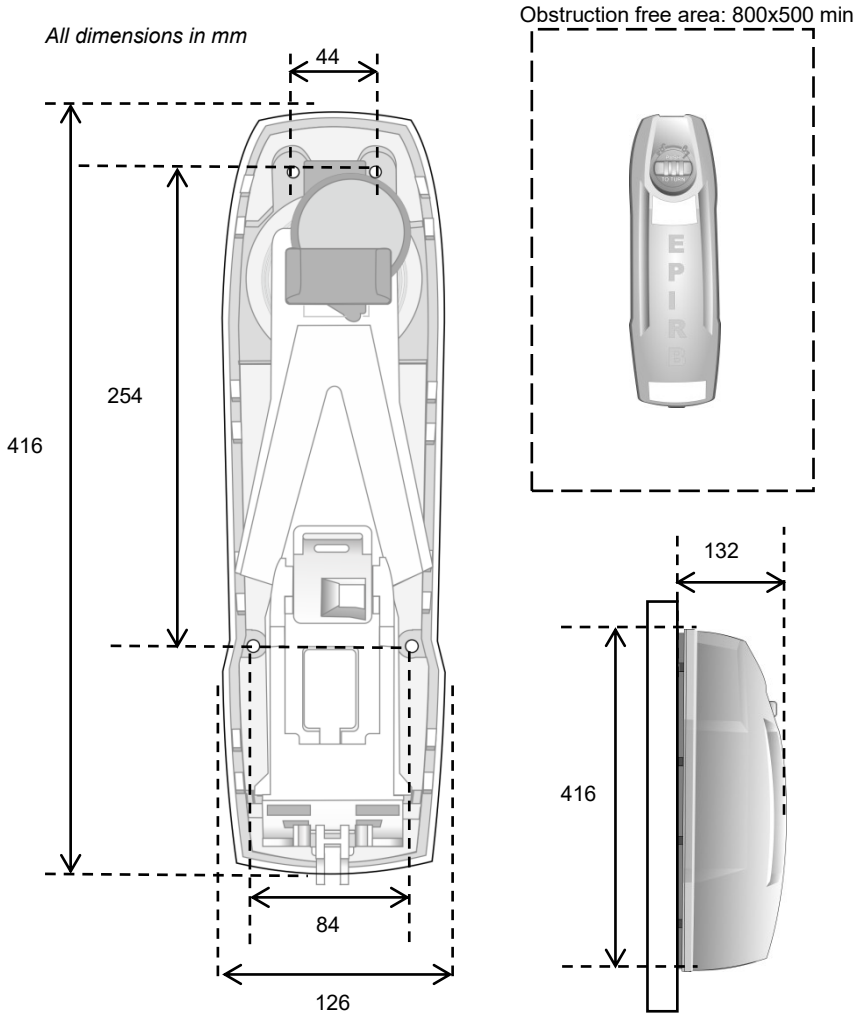
AVOID:

- Positions with insufficient space for lid ejection and maintenance.
- Positions within 1 m of any compass equipment.
- Positions within 2 m of any antenna.
- Positions with high levels of vibration.
- Direct impact from waves.
- Siting where damage is likely.
- Siting close to exhaust fumes, chemical and oil sources.

6.2.2 Mounting procedure

Mount the back plate on a flat surface using four fixing points. Refer to the illustration for fixing point dimensions or, alternatively, use the back plate of the enclosure as a marking guide. To do this, push down and turn the cover dial anti-clockwise then remove the enclosure cover. Note how the EPIRB fits then remove it to a safe and dry location.

WARNING – The sea contacts are enabled when the EPIRB is removed from the enclosure.



The enclosure is supplied with a set of stainless-steel fixings. If the rear of the mounting surface is inaccessible, use self-tapping screws. Offer the back plate into the chosen position and mark through the mounting holes. Drill appropriately sized holes where you have marked. You will need a 4mm hex key to tighten the bolts. Always fit washers under the heads of the bolts to avoid damaging the plastic.

6.2.3 Mounting instruction plate

The EPIRB is supplied with a self-adhesive instruction plate giving visual instructions on how to operate the EPIRB in an emergency. Mount this next to your EPIRB so that it is easily visible in an emergency.

6.2.4 HRU expiry date

It is essential to mark the outside of the enclosure with the expiry date of the Hydrostatic Release Unit (HRU). The HRU has a limited in-service life which starts as soon as it is installed on a vessel. Refer to the HRU documentation to determine the in-service life of the HRU supplied with the enclosure. The expiry date should be marked on the HRU body and copied onto the label on the side of the enclosure. The HRU is marked by cutting out the corresponding dates on its label, as shown on the separate leaflet.

The enclosure should be marked using the alpha-numeric stickers provided, then covered with the clear adhesive label provided. The preferred date format is month and year, for example: JUN 2025.

6.2.5 Marking vessel name

In many countries, it is usual to have your EPIRB programmed by your supplier. Your supplier will then mark all the EPIRB labels accordingly.

However, if your EPIRB was purchased in the USA, Canada, or UK then your EPIRB will have all the necessary markings except for vessel name. In these countries, it is usually left to the customer to mark the vessel name during installation.

It is strongly recommended (and is mandatory in some countries) that the vessel name is marked on the rear of the EPIRB itself and on the enclosure if you have one. Use the alpha-numeric stickers provided to mark the vessel name (or its abbreviation) on the top line of the EPIRB's rear label and again on the enclosure label. Protect the markings with a section of the clear adhesive label provided.

1. Pick off required letter (a small knife blade works well),
2. Apply letter to label – repeat until name is complete, and
3. Cover letters with clear label.

7 MAINTENANCE

7.1 Servicing schedule

As an important item of safety equipment, your EPIRB should be checked regularly according to the following schedule:

Vessel type	Service Interval		
	2 years	5 years	10 years
Leisure voluntary fit	HRU replacement (if fitted) – see section: 7.4 HRU replacement	Dealer Safety Check	Dealer Battery replacement
Commercial mandated fit	HRU replacement –see section: 7.4 HRU replacement	1st SBM service	2nd SBM service

NOTE – Shore-based maintenance (SBM) should be conducted in accordance with intervals specified by the flag Administration and not exceeding 5 years. (Please refer to section 7.5 Battery maintenance)

All servicing must be conducted by an Approved Service Agent. Always call your nearest Approved Service Agent and talk to their customer service department before returning equipment. You can find your nearest Approved Service Agent from:

- The website: https://www.seasofsolutions.com
- Contacting Seas of Solutions directly
- Contacting a distributor of Kannad Marine products

If the EPIRB has to be returned, the original packaging should be used if possible.

Check your beacon for any damage or wear and tear according to the manufacturer's instructions (please refer to https://www.seasofsolutions.com for further details).

7.2 Self-test & inspection

The EPIRB has a built-in self-test capability that can be used as a confidence check.

Self-test confirms that the battery is healthy, that the GNSS receiver and distress transmitters are functional and that the strobe light is operational.
It is recommended to make the short self-test monthly and not more than twelve times per year. It should be performed during the first 5 minutes of the hour to minimise disturbance on the emergency channel.

7.2.1 Short self-test

1. Press and hold the TEST button, the green LED will flash once, continue to hold the button down for 3 seconds and then release.
2. The green LED will flash once to confirm the short self-test procedure has started.
3. The EPIRB performs internal checks, green LED will flash 3 more times.
4. The result of the self-test is indicated by the flashing of the white strobe lights or the red LED according to the following table. The number of times the strobe lights flash is an indication of the accumulated time the battery has been in use.

Indicator	# flashes	Meaning
Strobe	3	Self-test passed – minimal battery usage EPIRB is OK to use
Strobe	2	Self-test passed – medium battery usage EPIRB is OK to use; 48 hours operation remaining
Strobe	1	Self-test passed – but battery usage exceeds recommended limit. Change the battery to ensure 48 hours of operation in an emergency.
Red LED	1	Self-test failed. Arrange service by an Approved Service Agent

7.2.2 Long self-test

A long self-test consumes battery life and can only be performed twenty times per battery replacement. You should only run a long self-test if you suspect the GNSS receiver is faulty. Choose a location where the EPIRB may be expected to acquire a GNSS satellite signal – see section: 4.5 Optimising onboard performance

The long self-test sequence proceeds as follows:

1. Press the TEST button for 10 seconds until the green LED lights for 2 seconds and then release. If the green LED is followed by a long flash from the red LED, the maximum number of long self-tests has been exceeded and self-test is immediately terminated.

WARNING – Depressing the TEST button for more than 20 seconds will cause the Long self-test to terminate early and the beacon to turn off.

Release the TEST button and wait 5 seconds before repeating the long self-test procedure.

2. A short flash of the red LED indicates that the GNSS receiver is searching for satellite signals and calculating a valid position fix.
3. Once a valid position has been determined, a 406 MHz test transmission containing the position is sent out and an AIS TEST message transmission.
4. The result of the self-test is indicated by the flashing of the white strobe lights or the red LED according to the following table. The number of times the strobe lights flash is an indication of the number of long self-tests remaining.

Indicator	# flashes	Meaning
Strobe	3	Long self-test passed – less than 10 tests performed.
Strobe	2	Long self-test passed –10 or more tests performed
Strobe	1	Long self-test passed – no more tests available (20 tests performed)
Red LED	1	Self-test failed – no position found

If the EPIRB passes short self-test but fails the long self-test, it is advisable to have it serviced by an Approved Service Agent. It will still generate an alert in an emergency, but it may not provide precise position information. This may delay a rescue as the possible search area is much larger.

WARNING – While the EPIRB is running this self-test it cannot generate a distress alert. It is therefore recommended that this self-test is performed only under conditions where an emergency is unlikely to arise.

If necessary, the self-test may be terminated at any time by holding down the TEST button for 10 seconds.

7.3 Mechanical inspection

It is recommended that a monthly check is conducted to inspect the EPIRB and its mountings visually for deterioration or damage.

On the EPIRB itself check the following:

- Inspect the EPIRB for any obvious damage
- Check that the lanyard is not tied to the vessel structure
- Check the battery is within its expiry date
- Check that the sea contacts are clean and free from paint or grease
- Check that the antenna has not been damaged or creased and that it erects to a vertical position when released.
- Check that the beacon is stored such that no pressure can be applied to the TEST button, and that the covers on the ON and OFF buttons are closed to ensure the beacon cannot be activated inadvertently.

If you have a manual bracket:

- Check the EPIRB is correctly fitted and is secure in its bracket
- Check that the two halves of the bracket are securely clipped together

If you have a float-free enclosure:

- Check the HRU is within its expiry date
- Confirm the cover can be easily removed
- Ensure the EPIRB base is correctly fitted into the shaped recess and that the antenna is correctly stowed

If the EPIRB or its mounting needs cleaning, then this should be done using warm soapy water and a damp (not wet) cloth. Do not use strong detergents or solvents.

Due to the impact of the marine environment on vessel equipment stored or regularly exposed to often harsh climate conditions, Kannad Marine strongly recommends owners obtain a five- year external health check at an authorised Kannad Marine Service Centre. Locations of authorised service dealers can be found at https://www.seasofsolutions.com.

WARNING – Do not paint the EPIRB or its mounting. Do not clean with detergents or solvents. It is recommended that the EPIRB and its mounting are removed during vessel cleansing or painting operations.

7.4 HRU replacement

If you have an EPIRB mounted in a float-free enclosure, then it contains a Hydrostatic Release Unit (HRU). This has a replacement interval which is marked on the HRU and on the float-free enclosure (typically every 2 years).

WARNING – Failure to replace the HRU at the required replacement interval may result in it not actuating correctly and failing to release the EPIRB in an emergency.

You can obtain a replacement HRU at a local marine store; ask for Kannad Marine HRU Replacement Kit (23-145A). The kit is complete with HRU and all required accessories including an instruction sheet.

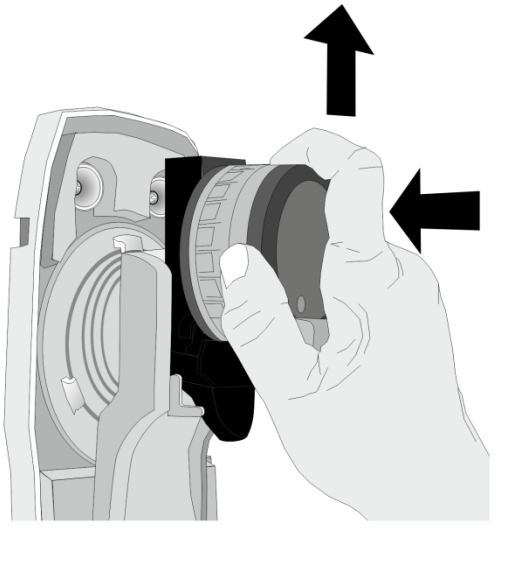
The HRU replacement procedure is as follows:

1. Locate the dial on the enclosure cover, press in and turn dial anti-clockwise to the unlocked position and remove the cover.
2. Remove the EPIRB from the lever arm and stow it in a dry place.

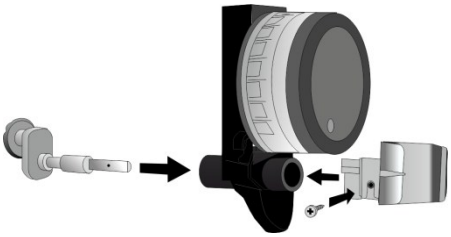
   (see section: 4.3 Release from float-free enclosure

WARNING – The EPIRB will activate if the sea contacts come into contact with water.

3. While holding down the lever arm to take up the force of the spring, push the HRU back then slide upwards out of the slot in the lever arm. Remove the HRU and slowly release the lever arm.

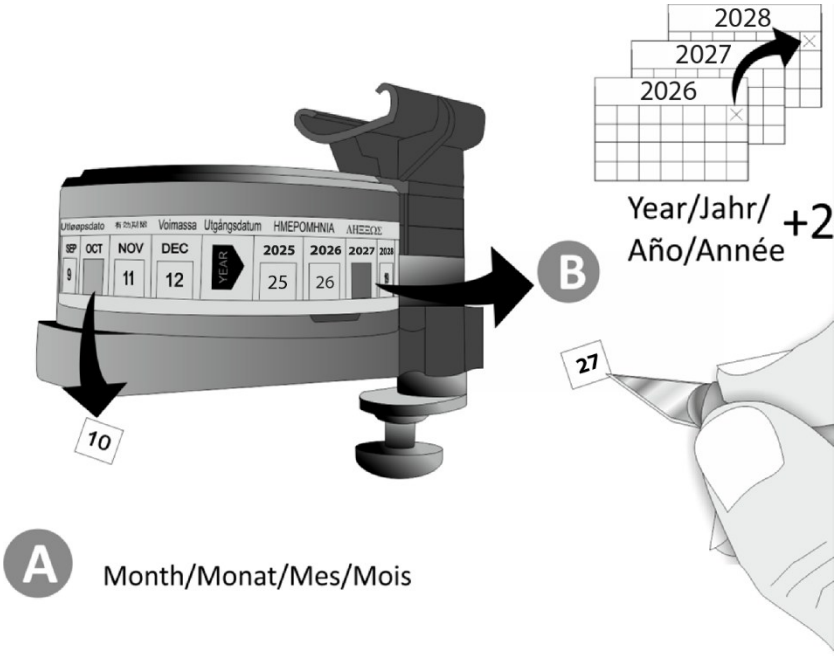


4. Assemble the HRU:

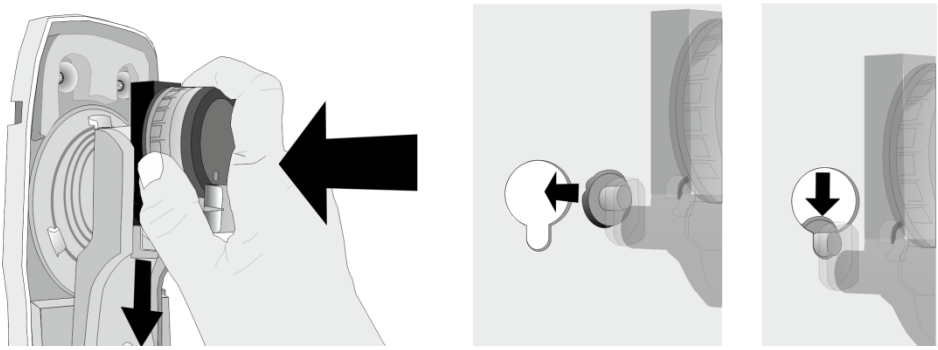


HRU Replacement Kit (23-145A)

5. Mark the HRU and enclosure cover with the new expiry date.



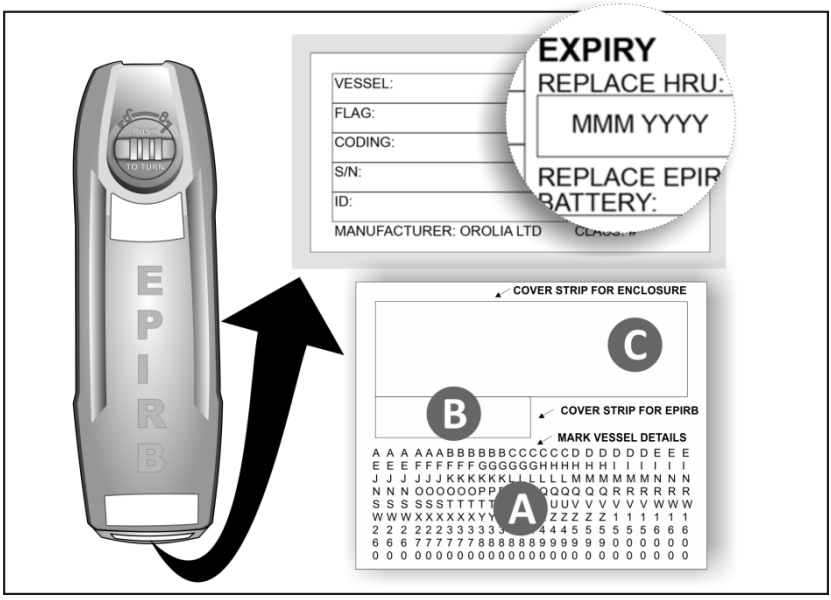
6. Position the HRU in the hole in the lever arm and push lever arm down. Engage the HRU flange into the enclosure back plate by pushing back and sliding down. Look under the spring and check that the flange is correctly seated.



7. Re-fit the EPIRB as shown in section: [4.7.2 Float-free enclosure]

8. Refit the cover and secure by turning the dial clockwise to the locked position. Check that the cover is seated correctly and is secure.

9. Update expiry date on auto-housing label. Remove or cover existing HRU expiry date. Use sheet (A) to apply new expiry date (as in Step 5) and then protect new date with clear media (B or C).



7.5 Battery maintenance

The EPIRB is powered by a replaceable battery pack (Part No. 23-270A). This is a non-rechargeable sealed unit containing three 3V battery packs with each pack containing two 1.5V lithium iron disulphide cells.

The battery pack needs to be replaced if the beacon has been activated or every 10 years or before the end of the month and year printed on the battery pack expiry label. If the EPIRB is covered by SOLAS regulations, then it will need to be changed **before the expiry date** or as required by any local or ship registration requirements.

The battery pack expiry date is marked on the battery pack cover (under the lanyard) and, if you have a float-free enclosure, it is also marked on the base of the enclosure cover. The battery expiry date should be checked regularly. You should also replace the battery:

- If the EPIRB has been used in an emergency situation, **or**
- When a false activation has occurred, and a self-test indicates that less than 48 hours operating time remains. It is recommended to replace the battery after any false activation.

Lithium batteries have special disposal requirements. Never incinerate a lithium battery. Never dispose of one at sea. Your Approved Service Agent will be able to deal with battery disposal.

NOTE – Regardless of the battery state, the EPIRB should always be activated in an emergency – it may still be capable of generating an alert.

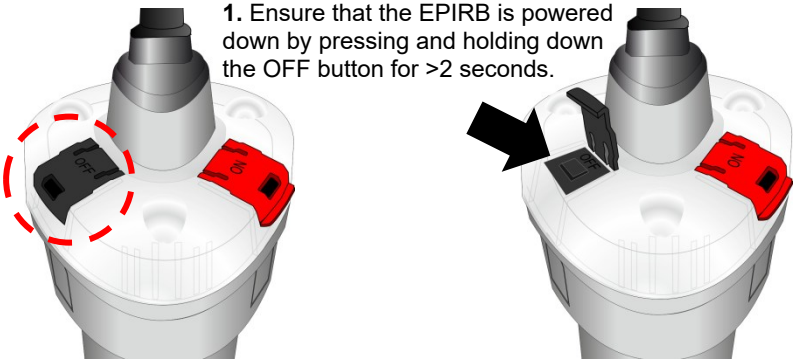
7.5.1 Battery replacement

It is required that the battery replacement maintenance procedure is carried out by a manufacturer authorised service agent.

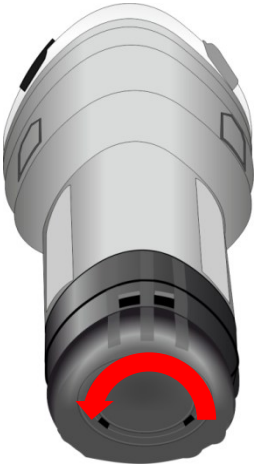
7.5.2 Battery removal

To remove the battery pack:

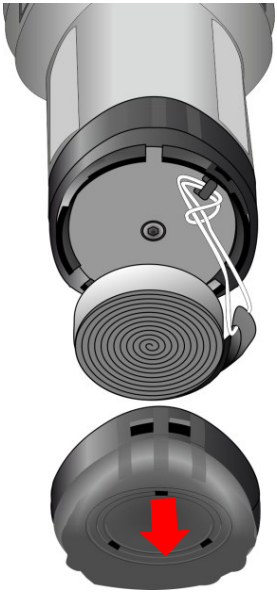
1. Ensure that the EPIRB is powered down by pressing and holding down the OFF button for >2 seconds.



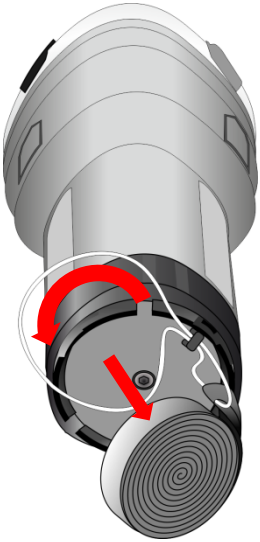
2. Twist base of EPIRB anti-clockwise.



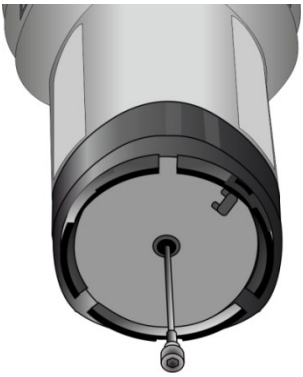
3. Remove cover.



4. Untie and remove carry handle (if fitted).

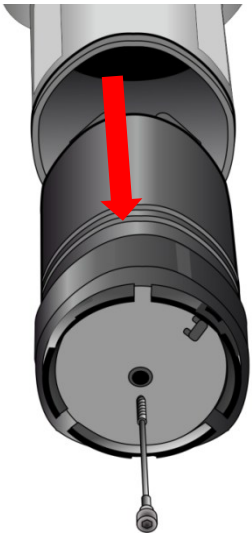


5. Using a 4mm hex key, unscrew retaining bolt until loose. Do not remove at this stage.



6. The battery pack is held in place by two waterproof seals. To release the battery, pull the cover or screw firmly.

7. Remove the screw completely and dispose of the battery.



NOTE – These instructions are provided to allow you to disable a faulty or end of life EPIRB prior to disposal. To replace a battery pack, please contact your local Approved Service Agent.

7.6 Transportation

For transportation purposes, the hazardous materials classification of EPIRB units and batteries is as follows:

Package contents	Classification
EPIRB without battery pack	Non-hazardous
EPIRB with installed battery pack	Class 9 hazardous
Battery pack only	Class 9 hazardous

For further information, please refer to the website:
https://www.seasofsolutions.com/products/ .

7.7 GMDSS inspections

If your vessel is subject to GMDSS regulations, then you can expect to get regular visits from ship surveyors enforcing national legislation. They will check the expiry dates and activate the EPIRB to prove that it is operational, and they will read the identity message stored inside the EPIRB to check that you have registered it properly.

Leisure vessels are not subject to these inspections. However, in some countries, passenger and fishing vessels are covered by the legislation.

8 END OF LIFE STATEMENT

At the end of the EPIRB's useful life, it is vital that the battery pack be removed from the main unit to prevent false alarms. False alarms cause expensive disruption to Search and Rescue services and may endanger lives as a consequence. It is also necessary that the EPIRB and its battery pack be disposed of in a manner that does not present a threat of environmental damage.

8.1 Safe operational EPIRB lifetime

The EPIRB should be considered for decommissioning after 12-15 years in service on board, as this then reduces the risk of environmental impact on beacon performance and ensures end users have beacons with the latest technology. The EPIRB is normally supplied with a ten-year battery, but battery replacement kits normally limited to a further five-year term, this is to encourage regular professional checks of the EPIRB and reduce the likelihood of it remaining on board vessels beyond the recommended operational life of 12-15 years in total.

8.2 Disposal

The Waste Electrical and Electronic Equipment (WEEE) Directive aims to minimise any adverse impact of electronic equipment on the environment, both during the product lifetime and when it becomes waste. Within the European Union this legislation is mandated by Directive 2012/19/EU, and there is similar legislation in most other continents. The directive applies to all electronic products such as IT, household appliances, portable electronics etc., and imposes requirements to collect, treat, recover, and recycle each product at its end of life. Electronic end-user products must also carry a WEEE label (as below), and recovery and recycling information has to be provided to the recycler.

This EPIRB product contains traces of lithium in the battery pack. In addition, it may contain lead and brominated flame retardants (BFRs), both in the housing material and circuit boards.

In keeping with the directive, it is strongly recommended that this EPIRB product and its battery pack be disposed of in a sensible and considerate manner. For example, do not simply discard the product in the domestic waste. Instead take it to a civil recycling facility or contact a Kannad Marine agent for advice.

9 TECHNICAL SPECIFICATION

406 MHz transmitter	**Frequency**	**406.040 MHz**
	Power output	**5 W nominal**
	Modulation	**BPSK (16K0G1D)**
121.5 MHz transmitter	**Frequency**	**121.5 MHz**
	Power output	**70 mW nominal**
	Modulation	**AM Swept tone (3K20A3X)**
AIS transmitter	**Frequencies**	**161.975 MHz (AIS1) 162.025 MHz (AIS2)**
	Power output	**1 W EIRP**
	Modulation	**GMSK/FM (16K0GXW)**
GNSS receiver	**Constellations**	**GPS, GLONASS, Galileo**
	Frequencies	**1575.42 MHz (GPS, Galileo) 1602.00 MHz (GLONASS)**
	Sensitivity	**-167 dBm minimum**
	Satellites tracked	**92 channels**
Optical Homer	**Day and night vision strobe**	**3 points of high intensity LEDs**
	Light output	**0.75 cd / 2.5 mW/sr minimum**
	Flash rate	**23 flashes per minute**
Battery	**Type**	**Lithium iron disulphide**
	Operating life	**48 hours minimum**
	Shelf life	**10 years from date of manufacture**
Environment	**Operating temperature**	**-20 °C to +55 °C (-4° F to +131° F)**
	Storage temperature	**-30 °C to +70 °C (-22° F to +158° F)**
	Automatic release depth	**4 m maximum**
Dimensions (EPIRB)	**Weight**	**710g**
	Height/Width/Depth	**425 x 105 x 105 mm (incl. antenna)**
	Length of antenna	**225 mm**
Dimensions (Manual bracket)	**Weight**	**110 g**
	Height/Width/Depth	**135 x 125 x 125 mm**
Dimensions (Float-free enclosure)	**Weight**	**1075 g**
	Height/Width/Depth	**415 x 135 x 135 mm**
Standards	**COSPAS-SARSAT**	**C/S T.001 C/S T.007**
	Europe / UK (MCA)	**MED / MER**
	USA	**USCG & FCC**
	International standards	**IEC 61097-2 ED4 IEC 60945 incl. Corrigendum1 (Portable) IEC 61108-1 (GNSS variant) RTCM 11000.5 (Group 3) ITU-R M.1371-5 Industry Canada RSS-287 AS/NZS 4280.1**
	IMO regulations	**MSC.471(101): A.662(16); A.694(17); A.814(19)**

10 PRODUCT WARRANTY

Warranty Registration

Congratulations on purchasing your beacon. As standard, your unit has a one year (12 months) warranty from the date of purchase shown on your invoice, however, this can be extended by a further four years by simply registering your unit on-line within 90 days of purchase at: https://www.seasofsolutions.com/contact-us/warranty-registration/

All enquiries relating to this warranty or Approved Service Agents should be sent to:

McMurdo Ltd

Holbrook Court

E1 Cumberland Business Centre

Northumberland Road

Southsea PO5 1DS

United Kingdom

Phone: +44 (0)23 9262 3900
Email: info@seasofsolutions.com
Website: www.seasofsolutions.com

11 HOW DOES IT WORK?

When you activate the EPIRB, it's on-board transmitters start broadcasting distress signals at several frequencies:

- A 406 MHz alert signal can be received by the Cospas-Sarsat satellite system. Ground stations track these satellites and process the distress signals to obtain a location using Doppler location techniques (see https://www.cospas-sarsat.int/en/21-embedded-articles/230-doppler-processing).
- A 121.5 MHz transmission can be detected by overflying aircraft and Search & Rescue (SAR) homing receivers.
- An additional transmission operates at 162 MHz for the AIS message that includes the unit ID, GNSS position and a simple text message and is repeated eight times per minute using an 'Impolite AIS Protocol' giving it priority over other AIS signals in the vicinity. This signal will typically be received by vessels with VHF AIS antennae out to a four-mile range (typical).
- The current GNSS position is transmitted as part of the distress signal. GNSS systems require a clear view of the sky in order to work effectively, because the receiver needs signals from several satellites to calculate its position. If the GNSS receiver within the EPIRB cannot determine its position, it "fails safe" - it does not transmit an inaccurate position - but instead sends information to indicate that no position is available. Position information is then dependent on the orbiting satellite system.

The transmissions will continue for a minimum of 48 hours and continue until the battery is exhausted.

12 COSPAS-SARSAT SATELLITE SYSTEM

The International Cospas-Sarsat Programme is a satellite-based search and rescue distress alert detection and information distribution system, best known for detecting and locating emergency beacons activated by aircraft, ships and hikers in distress. Since its launch in 1982, Cospas-Sarsat has helped to save over 40,000 lives.

12.1 The Search and Rescue (SAR) process

The following diagram of the Cospas-Sarsat Ecosystem shows the five critical stages to the search and rescue process.

1. The process begins with the activation of a distress beacon (EPIRBs for maritime use, PLBs for personal use and ELTs for aviation use) in an emergency situation, sending out a 406 MHz signal.
2. The Cospas-Sarsat satellite system picks up the signal and transmits it back to a ground receiving station on Earth. These are called Local User Terminals or LUTs.
3. The LUT processes the signal to generate a distress alert and relays it to a Mission Control Center.

4. The Mission Control Center receives the alert and relays this with location information to a Rescue Coordination Center, often looking up the unique beacon ID number to gather information about the registered owner.

5. The Rescue Coordination Center alerts the appropriate emergency response teams to deploy a rescue effort.

The Cospas-Sarsat System today includes two types of satellites: Low-altitude Earth orbit (LEOSAR) and Geostationary Earth orbit (GEOSAR), each contributing respective advantages to detection and location of distress beacons that have been activated.

The LEOSAR system can locate a beacon without the aid of a GNSS, but the LEOSAR satellites only view a small part of the Earth at any given time and may require multiple passes of a satellite resulting in delay to the search and rescue process.

The GEOSAR system constantly covers the entire Earth except the high-latitude (e.g., polar) regions receiving distress alerts across most of the globe. However, it cannot locate the beacon unless the location is encoded in the beacon's message from a local navigation receiver such as a GNSS.

MEOSAR is an advanced next generation satellite-based technology that is revolutionising the Cospas-Sarsat ecosystem. Once complete, MEOSAR will put over six times the number of existing Cospas-Sarsat satellites into orbit, resulting in greater global coverage and more position accuracy.

12.2 Global Navigation Satellite System (GNSS)

GNSS systems such as GPS, Galileo and GLONASS can be used by the GNSS equipped EPIRB to determine its position with high accuracy. Advanced GNSS data processing results in fast detection of positioning coordinates and enhances the accuracy of the emergency location.

12.3 MEOSAR Compatibility Explained

This EPIRB is fully compatible with the Early Operation Capability (EOC) and Full Operating Capability (FOC) MEOSAR systems and will benefit from the improved detection and location capabilities of this new infrastructure.

The International Cospas-Sarsat Programme initiated the development and deployment of a Medium-altitude Earth Orbiting Satellite Search and Rescue (MEOSAR) System in 2004 to complement and eventually replace the Low-altitude Earth Orbit SAR Satellites (LEOSAR) deployed from the 1980s.

The MEOSAR system employs SAR repeaters on Global Navigation Satellite Systems (e.g., GPS, Galileo, and Glonass) and provides improved detection, and independent position locating capability for emergency position indicating radio beacons (EPIRBs), emergency locator transmitters (ELTs) and personal locator beacons (PLBs).

Further information on MEOSAR and the Cospas-Sarsat network is available at the website https://cospas-sarsat.int/en/.

13 HOW TO REGISTER YOUR EPIRB

EPIRB registration is now available on-line. This is the preferred method of registration. The website address for various countries is given below:

Country	Website address
Australia	www.amsa.gov.au/beacons
New Zealand	www.beacons.org.nz
UK	forms.dft.gov.uk/mca-sar-epirb
USA	www.beaconregistration.noaa.gov
Other (COSPAS-SARSAT)	www.406registration.com

Go to the registration website for your country/flag state and follow the instructions.

The COSPAS-SARSAT website provides registration details for many countries: www.cospas-sarsat.int

In case on-line registration is not available, a registration form is normally provided. Forms are pre-printed with your EPIRB's identity; all you have to do is complete details of your vessel and provide contact numbers. Wherever possible the forms are pre-printed with the relevant postal mail address and contact details for inquiries.

It is usual to receive confirmation when you register. In Australia, the UK and USA you will also receive a "Decal" sticker which you must fit to the EPIRB itself. The Decal is proof of registration - not having a Decal is an offence.

Useful registration contacts are:

USA Sarsat Beacon Registration
NOAA/Sarsat Beacon Registration,
NSOF, E/SP053,
1315 East West Highway,
Silver Spring,
MD 20910-9684.
Tel 888 212 7283
Fax 301 817 4565

UK EPIRB Registry
HM Coastguard (Southern),
Pendennis Point,
Castle Drive,
Falmouth,
TR11 4WZ.
Tel 01326 211569
Fax 01326 319264

13.1 Emergency contact

It is VITAL that the emergency contact information is accurate, particularly regarding the telephone number, as this will be used to validate an alert. Only if the beacon registration and approximate location details can be confirmed will USCG (United States Coast Guard) launch an immediate rescue, otherwise there will be a delay whilst further alerts from the same source are received and verified.

13.2 Registration Information for Australia & New Zealand

For Australia and New Zealand, the preferred method of registration is online at www.amsa.gov.au/beacons and www.beacons.org.nz respectively.

13.2.1 Advice for EPIRB purchase or transfer

Registration of 406 MHz satellite EPIRBs with the EPIRB Registration Section of the national authority* is mandatory because of the global alerting nature of the COSPAS-SARSAT system. In New Zealand, registration is mandatory for commercial vessels.

The information provided in the registration is used only for search and rescue purposes.

Fill in the owner registration card immediately upon completion of the sales transaction. Mail, fax or email the registration card to the national authority* immediately. Registration cards are also available online.

If the beacon is to enter service immediately, complete the registration card and fax or email the information to the relevant national authority*.

If the beacon is being transferred to a new owner, the current owner is to inform the national authority* by email, facsimile, letter or telephone of the name and address of the new owner.

The new owner of the beacon is required to provide the national authority* with the information as shown on the registration card.

This obligation transfers to all subsequent owners.

*The national authority is the Australian Maritime Safety Authority or the Rescue Co-ordination Centre New Zealand, as appropriate. Contact details are:

Australian Maritime Safety Authority (AMSA)	Beacon Registration Section, Australian Maritime Safety Authority, GPO Box 2181, Canberra City, ACT 2601 Online registration: www.amsa.gov.au/beacons Fax: +61 2 9332 6323 Local 1800 406 329 Email: ausbeacon@amsa.gov.au Phone: +61 2 6279 5766 or 1800 406 406
Rescue Co-ordination Centre New Zealand (RCCNZ)	Rescue Co-ordination Centre New Zealand PO Box 30050, Lower Hutt 5040 Online registration: www.beacons.org.nz Fax : +64 4 577 8041 Email : 406registry@maritimenz.govt.nz Phone: +64 4 577 8042

13.3 Radio licence

An EPIRB is a radio transmitter and must therefore be added to your radio licence. If you have been allocated a radio call sign, then you already have a radio licence for your VHF or MF radio set. You should update your licence to include your EPIRB. For further details refer to your vessels radio licence.

13.4 Sale or transfer

EPIRBs registered in Australia, Canada, UK, and USA do not normally need to be re-programmed when transferred to a different vessel in the same country. Visit the national registration website to file a change of ownership detail or contact the relevant authorities to inform of the transfer.

For most other countries or a change of country, the EPIRB must be re-programmed. Since the EPIRB identity contains a country code, it follows that changing the flag state of the vessel also means the EPIRB must be re-programmed. Programming can be conducted by any Kannad Marine approved Service agents. You can find your nearest approved service agent via the website:

www.seasofsolutions.com/where-to-buy

Document Revisions

Date	Rev/Issue	Changes
2024-10-18	1	First issue
2025-02-19	2	Page 23, Removed text “Radar” from Antenna
		Page 33, Section 7.5, Added end of month to battery expiry date

McMurdo Ltd

Holbrook Court

E1 Cumberland Business Centre

Northumberland Road

Southsea PO5 1DS

United Kingdom

Phone: +44 (0)23 9262 3900
Email: info@seasofsolutions.com
Website: www.seasofsolutions.com

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