

# mcmurdo

safety for professionals



## McMurdo the Brand

McMurdo is a brand of marine safety and emergency location beacon products, manufactured by Orolia Ltd. The brand originated in the 1940's, and since that date has been involved in designing and manufacturing marine safety products.

The first McMurdo COSPAS-SARSAT approved EPIRB was produced in 1989, and McMurdo further galvanised its position as a leading brand in safety equipment technology in 1992, with the release of the first McMurdo GMDSS approved Search And Rescue Transponder (SART). McMurdo products have continually led the way in the functionality and accuracy of emergency location beacons, launching a PLB (Personal Locator Beacon) for use on land and sea in 2000. In that same year, GPS technology was introduced to both the EPIRB and the PLB.

2009 saw the launch of the groundbreaking, ultra compact Fast Find 200 range of PLBs, 2010 the cutting edge technology of the Smartfind S5 AIS SART, and 2011 the introduction of the innovative Smartfind S10 AIS Beacon.

The McMurdo brand name stands for high quality products, which utilise the latest technology. Organisations such as the Royal Navy, the US Coastguard and countless commercial organisations around the world understand the importance of ultra-reliable high quality equipment, which is why they have chosen McMurdo products for their vessels and their crew.

McMurdo products are used globally, on land and at sea. Where safety is important you will find McMurdo.



## Service and Spares

Orolia Ltd has a complete customer service operation that handles the repair and servicing of our full range of products. From scheduled beacon battery changes, to the service and repair of McMurdo products, our team is here to help.

Our in-house service department operates in support of our worldwide service agents, who are fully trained and certified to service and repair McMurdo equipment. For your nearest service agent please visit [www.mcmurdomarine.com](http://www.mcmurdomarine.com).

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## How does an EPIRB work?

An Emergency Position Indicating Radio Beacon (EPIRB) or Personal Locator Beacon (PLB) is used to alert search and rescue services in the event of an emergency. They do this by transmitting a coded message on the 406 MHz distress frequency. This message is relayed via satellite and earth stations to the nearest rescue co-ordination centre.

406 MHz EPIRBs and PLBs work with the Cospas-Sarsat satellite system which provides true global coverage.



The GPS enabled EPIRBs and PLBs have built-in transmitters that will typically alert the rescue services within 3 minutes. These models are capable of providing positional accuracy of +/- 62 metres and position updates every 20 minutes, given a clear view skyward.

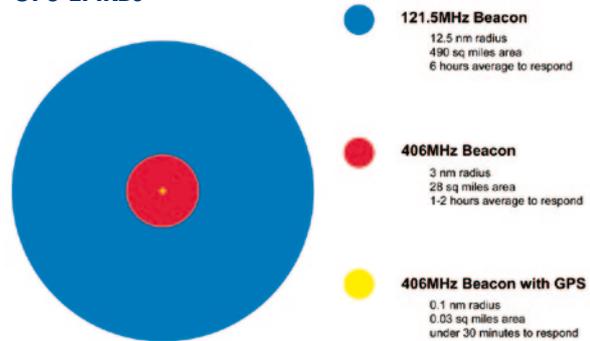
Standard EPIRB and PLBs can be located to within

5km (3 miles). The coded message identifies the exact vessel to which the EPIRB is registered, or the person the PLB is registered to. This information allows the rescue services to eliminate false alerts and launch an appropriate rescue.

All McMurdo EPIRBs and PLBs also have a secondary distress transmitter. This transmits on 121.5 MHz and is used for "homing" purposes. When the rescue services get close, this allows them to direction find on the signal. To cater for searches at night, EPIRBs have a high brightness LED flashing light that aids final visual location.

Since its inception in 1982 the Cospas-Sarsat System has provided distress alert information which has assisted in the rescue of over 30,713 persons in over 8,387 distress situations. The Cospas-Sarsat programme assists search and rescue (SAR) activities on a worldwide basis by providing accurate, timely and reliable distress alert and location data to the International community on a non-discriminatory basis.

## GPS EPIRBs



The GPS EPIRB and PLBs have been designed to further enhance the lifesaving capabilities of conventional beacons. The standard Global Positioning System (GPS) uses an array of 27 satellites and provides continuous positional information, with a typical accuracy of around 62m. A 406MHz EPIRB such as the Smartfind Plus, or PLB such as the Fast Find 220 and MaxG have a built in GPS. When the beacon is activated in an emergency, positional information is incorporated into the distress message which it transmits.

This incorporation of positional information overcomes the difficulties with location when using geostationary satellites, and can greatly reduce the time it takes for the SAR authorities to arrive on the scene. When speed of response and accuracy of location are important considerations, then the GPS EPIRB/PLB offers the best performance.

## Smartfind

Available with a manual bracket or an automatic deployment housing, the Smartfind range meets the demands of recreational boaters and all classes of Commercial vessels alike. This stylish unit is available as a standard 406 MHz EPIRB or, for enhanced position location, with a built in high accuracy GPS.

### Key Features

- Internationally Approved
- Transmits on 406 and 121.5 MHz
- Integrated GPS (G5 PLUS version)
- Non hazardous battery for safe and easy transportation
- Unique CARRYSAFE bracket available for safe transportation
- High brightness LED flashing locator light
- 60 comprehensive diagnostic and self-tests during battery life
- Once activated, will transmit for a minimum of 48 hours
- 5 year battery life
- 5 year warranty



SMARTFIND Manual EPIRB

### The SMARTFIND Series consists of two models:

E5 SMARTFIND is a 406 MHz EPIRB designed to operate with the COSPAS-SARSAT international search and rescue system. Once removed from its CARRYSAFE mounting bracket the unit can be activated automatically by immersion in water, or manually by following the activation instructions printed on the unit.

The G5 SMARTFIND PLUS has all the advanced features of the standard E5 SMARTFIND with the addition of an integral multi-channel GPS receiver. The addition of a GPS receiver ensures that an accurate position of a casualty is relayed to the rescue services. This can in turn improve the speed of recovery by updating the position of the beacon at regular intervals.

A float free automatic housing is available for both versions of the SMARTFIND.



GMDSS

GPS

406MHz

121.5MHz

5yr

48hr

## McMurdo PLB Range

The McMurdo range of PLBs are designed to be carried by individuals as a last resort safeguard against any life threatening incidents that may occur anywhere in the world. Whether alone or within a group, on holiday, at work, carrying out your sport or hobby, if you ever find yourself in a remote area, land or sea, without any other form of communication, a Fastfind PLB comes into its own. Once activated it transmits a unique identification signal via the international search and rescue satellite system operated by COSPAS SARSAT on 406 MHz. The signal is then quickly passed to regional search and rescue authorities who can rapidly get to the scene.

The PLBs both use a discreet antenna deployment system with a simple three-stage manual operation technique to prevent any risk of accidental or false activation. In its stored state, the antenna is completely hidden from view and fully protected against rough handling. Once deployed, the antenna automatically springs into the optimum position ready for use.

Fastfind PLB's use the same advanced technology as McMurdo EPRIBs, miniaturised into a compact and rugged, palm sized unit. They are designed to withstand the harshest of environments while still being extremely easy to operate and small enough to carry with you at all times.

## Fast Find 220 PLB

The FAST FIND 220 PLB uses advanced technology packed into a simple, lightweight, palm sized unit. Using the dedicated 406MHz frequency, Fast Find 220 transmits your unique ID and precise GPS location to the global network of search and rescue satellites within minutes. Rescuers are alerted to your situation, and Fast Find 220 sends them regular updates on your position. Finally, emergency services can home in on your beacon's 121.5MHz transmission to find you.

- Mini size, MIGHTY 406MHz emergency signal with GPS
- Minimum of 24 hours continuous operation
- Simple design, easy to use
- 6 year battery life
- No subscription or call charges
- Floats with buoyancy pouch
- Waterproof to 10m
- SOS morse LED
- Safe-stow antenna
- Self test both the battery and GPS



Fastfind 220  
with integral  
50 channel GPS



Flotation pouch, lanyard  
and universal pouch  
included



## Fastfind MaxG PLB

The Fastfind MaxG brings added endurance to safety with 48 hour operational battery life at temperatures as low as -20°C.

The battery packs have a five year storage life and are easily user replaceable.

The Fastfind MaxG's integral state-of-the-art multi-channel GPS receiver gives search and rescue services your precise co-ordinates with regular updates. A green LED will start to flash, showing that a GPS position fix has been acquired. The MaxG PLB is waterproof to 10m and floats on water. It is supplied complete with lanyard and carry pouch.

- Internationally approved
- Compact and lightweight
- Waterproof to 10 metres
- Buoyant
- Transmits on 406 and 121.5 MHz
- Global emergency alerting via COSPAS-SARSAT satellites
- Integral state-of-the-art multi-channel GPS
- Minimum of 48 hours continuous operation
- Simple three stage activation
- Carry pouch and lanyard included
- 60 comprehensive diagnostic and self-tests during battery life
- 5 year battery life
- User replaceable battery
- 5 year warranty



## Fast Find 220 PLB Accessories

A range of accessories are available to personalise the usage and carriage of the Fast Find 220 PLB, these include:

- Belt Pouch (black)
- Neck Lanyard (430mm – 470mm)
- Wrist Lanyard (160mm – 190mm)



## The Fastfind PLB Dive Canister

This waterproof aluminium housing enables a diver to carry the Fastfind PLB to depths of 150m (500ft), with the assurance that once they have returned to the surface they have the security of having access to the Fastfind PLB if there are any threats to their safety.

- Dimensions – 162mm x 93.5mm
- Weight – 900g



## Accessories



### Grab Bag

Designed for marine and land use, this waterproof and buoyant Grab Bag is perfect for holding emergency equipment.

- High visibility
- Buoyant
- Splashproof
- Dimensions – 35cm x 15cm x 24cm

### Grab Bag XL

Made from high quality material the Grab Bag XL has an external EPIRB pouch and flare stowage pockets.

- Buoyant
- Splashproof
- Heavy duty zip and velcro closure
- Carry handles and shoulder strap
- Large capacity – 44cm x 22cm x 30cm



Carrying the MaxG could not be simpler. Supplied with a strong but flexible lanyard cord and a smart carry pouch, the PLB is easy and convenient to carry with you at all times.



## AIS Beacon

An AIS beacon is a new, innovative personal safety device that incorporates both AIS (Automatic Identification System) and GPS technology. The AIS beacon has been designed to aid the speedy local retrieval of personnel/crew members who find themselves in difficulty at sea.

An AIS beacon transmits target survival information, GPS position information and a serialised identity number. AIS beacon target information can be viewed using standard ships AIS equipment such as Class A and Class B transponders and a wide variety of receive only AIS units. AIS equipped vessels and land based VTS stations within the local vicinity will also have visibility of the AIS-beacon signal. Whether displayed on the AIS itself or on a companion plotter or ECDIS screen, the message will clearly indicate the exact location, distance and bearing to person(s) in need of assistance.



AIS equipment\* displays the icon (pictured above). Precise target survivor information becomes viewable when the chart plotter/ECDIS\* cursor is positioned over the alert icon.

*\*For use with AIS enabled chart plotters, contact your chart plotter manufacturer for further info. As AIS Beacons are still very new, not all small-craft chart plotters with AIS show the correct icon as recommended by the IMO. At the very least, they will show the same icon as used for other craft – normally an arrow. In addition, user settings generally allow you to configure the display to show the MMSI number, which in the S10 begins with 972. This way you can differentiate the S10 from other vessels. If in doubt, check with your plotter manufacturer how they display AIS Beacons on screen. All new ECDIS plotters (on ships over 300 tonnes) will display the icon correctly.*

## SMARTFIND S10 Personal AIS Beacon

The SMARTFIND S10 AIS Beacon transmits a message to all AIS enabled equipment within a 4 mile radius (typical). An inbuilt high precision GPS receiver provides accurate position information which is frequently updated to assist quick retrieval of persons in difficulty. The SMARTFIND S10 AIS Beacon is intended for carriage by divers, crew and anyone who carries out activities on water.

- Simple, manual activation
- Transmits GPS target tracking information over AIS
- Serialised TX ID
- Small and light for unobtrusive carriage
- Waterproof, buoyant and fully submersible to 60m
- Flashing LED light
- Minimum 24 hour continuous operation
- 5 year battery storage life



## R5 GMDSS VHF Handheld Radio

The R5 is a fully featured GMDSS survival craft radio with user friendly design and features. It is built to meet the latest stringent IMO, GMDSS and ETSI standards. Reliable and easy to use, it is 100% waterproof and drop tested to cope with the toughest marine environments. The large tactile buttons can easily be operated with gloves without unintended activation of buttons. A ribbed design ensures a solid grip even in wet conditions.

- 23 GMDSS channels
- Easy to use, with large buttons
- Waterproof to 1/2 m for 1/2 hour
- Dimming and backlight control
- Battery indicator and battery saving function
- Quick channel select button
- Keypad lock
- Rotary volume control
- Dual-/Tri watch
- MED (Wheelmark) & FCC approved
- Pack A - full featured option
- Pack B - Survival craft option
- Battery storage and charger base options



## R5 GMDSS VHF Handheld Radio - PACK A – full featured option

McMurdo R5 VHF body

- Lithium Battery - Primary
- Belt clip
- Lanyard
- Test report
- User manual
- Antenna whip
- Storage base

Single Charger kit:

- Li-ion rechargeable battery
- Single Charger base
- AC/DC converter/adaptor
- DC connector cables
- AC/DC converter instruction sheet

## R5 GMDSS VHF Handheld Radio - PACK B – Survival craft option

McMurdo R5 VHF body

- Lithium Battery - Primary
- Belt clip
- Lanyard
- Test report
- User manual
- Antenna whip
- Storage base



# SART

**A SART is a 'search and rescue locating device' designed to assist in survivor craft location during search and rescue operations.**

The SART is primarily intended for fitment by SOLAS vessels under carriage requirement rules. SOLAS fitting rules differ depending on type and size of vessel and survival craft. In general, at least one search and rescue locating device is carried on each side of every passenger and cargo ship over 500 gross tons. Smaller SOLAS classified vessels are required to carry at least one search and rescue locating device.

The SART should be stowed on board in a location where it can be rapidly placed in any survival craft. Once activated, the SART may be suspended inside the survival craft or mounted in an elevated position using the integrated extending pole.



## S4 Rescue Radar SART

The S4 Rescue Radar SART is a 9GHz X-band radar transponder which offers proven reliability. Extremely simple to use, the S4 Rescue can be operated even with gloved or wet hands. Its compact design makes it suitable for packing in liferafts or as a carry off device.

When a radar signal is received from a ship or aircraft, the S4 Rescue automatically transmits a response signal, which clearly identifies the survival craft on the radar screen by means of a stream of 12 in-line dots. Once activated, the S4 will remain in standby mode for over 96 hours.

The S4 Rescue has been designed for reliable operation in the toughest of marine environments.

- Ship or survival craft options
- Waterproof to 10m
- Buoyant
- Compact and lightweight
- Replaceable, 5 year battery pack
- Audio/visual indication of operation
- Built-in test facility
- Integral lanyard
- Mounting options - internal/external



## Smartfind S5 AIS SART

The Smartfind S5 AIS SART is a manual deployment survivor location device intended for use on life rafts or survival craft. It meets IMO SOLAS requirements and is an alternative to a Radar SART. Compact, easy to operate and deploy, the Smartfind S5 AIS SART is a portable device packed inside a quick release carry off bag for quick evacuation.

Smartfind S5 AIS SART transmits target survivor information including structured alert messages, GPS position information and serialised identity number. Once activated the Smartfind S5 AIS SART transmits continually for a minimum of 96 hours. An inbuilt high precision GPS provides accurate position information to assist in quick recovery of survivors.

Whether wall mounted in the ships bridge or packed inside a survival craft, the highly visible and buoyant carry case affords maximum protection.



### Key Features

- Internationally approved
- Ship or Survival craft options
- Waterproof to 10m
- Buoyant/floats
- Rugged, compact and lightweight
- Non-hazardous battery for safe and easy transportation
- Minimum 96 hour operational battery life
- 6 year battery life
- Visual indication of operation
- Built-in test facility
- Integral lanyard
- Mounting options – Internal/External
- Comes complete in its own carry case



NAVTEX is a system for broadcast and automatic reception of maritime safety and weather information. NAVTEX provides ships with navigational and meteorological warnings and urgent information through either on-screen display or automatic printouts from a dedicated receiver. NAVTEX is a component of the IMO/IHO Worldwide Navigational Warning Service (WWNWS) defined by IMO. It is also included as an element of the Global Maritime Distress and Safety System (GMDSS).

NAVTEX messages are transmitted worldwide from local stations that provide services targeted at local users and passing ships. Users can set their NAVTEX Receiver to pick up specific message types and reject others. Messages such as navigational and meteorological warnings and search and rescue information are non-rejectable, to ensure that ships are always updated with the most vital information. Users can choose to receive information from the single transmitter that serves the sea area around their position, or from a number of different transmitters. A full listing of all Worldwide NAVTEX services is published in the Admiralty List of Radio Signals Volume 5 and regularly updated through the notice to mariners update service.

## GMDSS NAVTEX Receiver

Tri Channel Professional Colour NAVTEX Receiver

The SMARTFIND Global Maritime Distress and Safety System (GMDSS) NAVTEX provides clear and up-to date NAVTEX maritime safety information. Three parallel digital receivers simultaneously provide tri-channel monitoring of the international 518 KHz English language service, 490 KHz national language and the 4209.5 KHz long range NAVTEX services. It can either be operated as a stand-alone unit or as part of an integrated navigation or bridge system. SMARTFIND GMDSS NAVTEX is suitable for use on all types of commercial vessel.

- Large 6" colour display
- Simple and intuitive to use
- Easy to read extra large font
- Tri-channel simultaneous reception
- ESM® Enhanced Signal Monitoring
- Printer output
- GPS interface capability
- INS and ECDIS interface capability
- Range of antennas available



# mcmurdo

systems for professionals

McMurdo has expanded its product portfolio to include complete professional maritime and land-based tracking and monitoring systems, with the launch of McMurdo Marine Systems. Whether you require an off-the-shelf system or a bespoke solution, McMurdo Marine Systems can fulfil your requirements.

### Tracking & Monitoring

McMurdo provides web-based tracking and monitoring of mobile assets, whether on land, sea, or in the air, using GPS for positioning to provide the exact position of your assets in real time anywhere in the world.

Our fleet management systems ensure vehicles/vessels are monitored so that they are used most efficiently and can be tracked in the event they are stolen. Our environmental OCEANIA Monitoring System consists of any number of OCEANIA buoys combined with a versatile tracking and monitoring package that can be tailored to suit any application where free-floating assets need to be tracked. We are also able to customise client software in order to meet the precise requirements of the users.



### Navigation Infrastructure

Our AIS Aids to Navigation AToNs are used at sea to electronically mark hazards to navigation using VHF transmissions. McMurdo Marine Systems AIS AtoNs are fully IALA compliant and comprise two main types of AIS station; the Kanaton 1 (AIS transmitter) and the Kanaton 3 (AIS transmitter/receiver) which can support various other equipment interfaces.

RACON devices are used at sea to mark navigational hazards as RADAR targets for presentation on a ship navigational radar display. The McMurdo Marine Systems HEKLEO-SX RACON is a frequency agile all-weather radar transponder that works on both "X" band (3cm wavelength), and "S" Band (10cm wavelength) frequencies.



### Vessel Monitoring System (VMS)

McMurdo Marine Systems' VLINK is a complete VMS solution (product and service), it allows national authorities to enhance surveillance of their and enforcement capabilities.

#### VLINK VMS Solution

The VLINK beacon is specially designed to withstand the harshest of environments and navigation conditions and complies international regulations. McMurdo Marine Systems performs the function of a service provider by using a dedicated infrastructure platform to ensure secure data communication between the VLink beacon transponders and the relevant client fleet managers and governmental Fisheries Monitoring Centres.



Visit our dedicated website [www.mcmurdomarinesystems.com](http://www.mcmurdomarinesystems.com) or contact us for more information.

# Technical Specifications

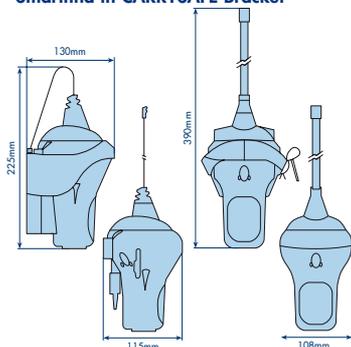
## Smartfind & Smartfind Plus

<b>Approvals</b>	Satellite system	Cospas-Sarsat T.001/T.007
	Europe	IEC 61097-2 Marine Equipment Directive
	USA	USCG/FCC approved (Part 80) FCC ID : KLS-E5-1
	Worldwide	IEC 61097-2
	Meets IMO resolution	A.662(16); A.694(17); A.810(19); A.696(17)
<b>406 MHz Transmitter</b>	Operating frequency	406.040 MHz ±1 kHz
	Power output	5 W typical
	Modulation	Phase (16KOGID)
<b>121.5 MHz Homer</b>	Operating frequency	121.5 MHz ±3.5 kHz
	Power output	50 mW radiated typical
	Modulation	Swept tone AM (3K20A3X)
<b>GPS Receiver (Smartfind Plus only)</b>	Centre frequency	1.57542 GHz
	Sensitivity	-175 dBW minimum
	Type	High intensity LED
<b>Strobe light Battery</b>	Type	Lithium manganese dioxide
	Operating life	48 hours minimum
	Shelf life	5 years storage
<b>Environment</b>	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 metres max. (13 feet)
	Weight	770 grams (1.7 lb)
<b>Physical</b>	Height of body	21 cm (8.2 inches)
	Length of antenna	18 cm (7 inches)

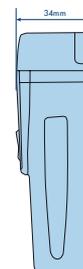
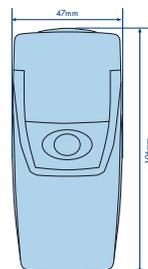
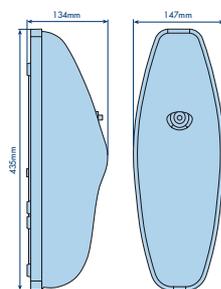
## Fast Find 220

<b>Standards</b>	COSPAS-SARSAT T.001/T.007 class2, RTCM SC110 STD 11010.2, ETSI EN 302-152-1, AS/NZS 4280.2, NSS-PLB06
<b>Sealing depth</b>	Immersion to 10m (30ft) for 5 mins
<b>Operating temperature</b>	-20 to +55°C (-4 to +131°F)
<b>Storage temperature</b>	-30 to +70°C (-22 to +158°F)
<b>Altitude</b>	12,192m (40,000ft)
<b>Buoyancy</b>	Category 2, will not float (keep in buoyancy pouch provided)
<b>Battery type</b>	Lithium Manganese
<b>Transmit duration</b>	> 35 hours @ +10°C (50°F), > 24 hours @ -20°C (-4°F)
<b>Battery life (storage)</b>	6 years
<b>Battery replacement</b>	Service centre
<b>Battery Use</b>	Logged by microprocessor
<b>Frequency</b>	406.037MHz (alert) / 121.5MHz (homer)
<b>Power</b>	> 5W (alert) / > 50mW (homer) nominal
<b>Unique ID Number</b>	Factory or dealer programmed
<b>GPS Type</b>	50 channel, ceramic patch antenna
<b>Size (D x W x L)</b>	34 x 47 x 106mm (1.34 x 1.85 x 4.17in)
<b>Weight</b>	152g (5.4oz)
<b>Indicator Light</b>	High brightness LED signal light
<b>SOS flash light</b>	Morse code SOS flash pattern, 30 operations
<b>Activation</b>	Manual, three stage
<b>Self-test</b>	Tests transmitters, battery and light

Smartfind in CARRYSAFE Bracket



Auto FLOAT FREE housing for Smartfind



## Fastfind MaxG

### General

Approved to

COSPAS-SARSAT T.007  
Class 2

Internationally type approved, a list of current type approvals is held in the Fastfind Max section of the McMurdo web site; [www.mcmurdomarine.com](http://www.mcmurdomarine.com)

Complies with relevant clauses

EN 60945  
RTCM 76-2002/SC110-  
STD V1.1

Operating temperature range

-20 °C to +55 °C

Storage temperature range

-30 °C to +70 °C

Operational life, Class 2

48 hours minimum at  
-20 °C

Category

2, manual activation

Weight

300 g

Buoyancy

Buoyant

Sealing

Waterproof to  
5 m immersion

Temporary immersion

10 m

Battery type, Class 2

11 V lithium iron disulphide

Battery expiry

5 year storage life

Battery change

User replaceable

### 406MHz transmitter

Frequency

406.040 MHz ±1 kHz

Output power

5 W±2 dB

Data encoding

Bi-phase L

Modulation

Phase modulation; 1.1 rads ±0.1 rads

### 121.5 MHz transmitter

Frequency

121.5 MHz +3 kHz

Output power

50 mW ±3 dB PERP

Sweep direction

Programmable UP or DOWN

GPS

Integral 50 channel

Indication of GPS position

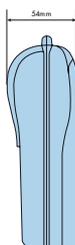
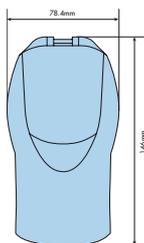
Visual

GPS Antenna

Ceramic dielectric patch

Programming interface

Infra-red diode



## Smartfind S10 Personal AIS Beacon

### Standards Applied

IEC 61097-14, 60945 (environmental/EMC),  
61108 parts 1, ITU-R M.1371

### Environmental

buoyant

Exterior finish

Hi impact ABS/PC Translucent opal

Sealing depth

Immersion to 60m (196 ft)

Operating temperature

-20°C to +55°C (-4°F to +131°F)

Storage temperature

-30°C to +70°C (-22°F to +158°F)

### Battery

Type

6V Lithium Metal

Replacement

By service centre

Use

Logged by microcontroller

Life (storage)

5 years

### Operation

Activation

Manual two stage

Self test (short)

Battery use indication

GPS Self test (long)

TEST transmission with GPS position

### Electrical

AIS Transmitter

Frequency

AIS channel 1- 161.975 MHz, AIS channel 2 - 162.025 MHz

Power

2W nominal

Transmit antenna

Integrated PCB

AIS messages

Message 1 (ID, GPS position, SOG, COG, UTC)

transmitted

Message 14 (MOB-ACTIVE or MOB TEST)

TX ID number

Factory programmed

GPS receiver

GPS type

50 channel

Antenna type

Ceramic patch

GPS position update

Every minute

### Physical

Length

199mm (7.8")

Diameter at widest point

51mm (2.0")

Weight

186g (6.5oz)

Deployment

Hands free

Belt or arm pouch with head band strap included Hand held

Wrist lanyard included

Security lanyard fixing point

### Functional

First transmission

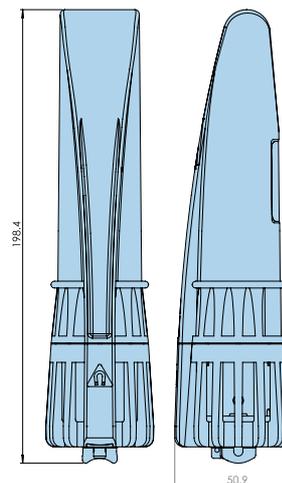
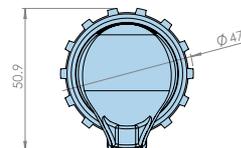
After 15 seconds (no GPS)

Range 4 nautical miles

(typical) Secondary location

device Flashing white LED

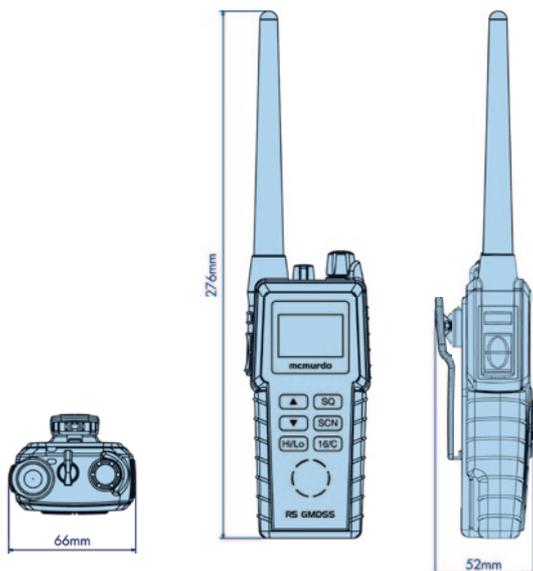
and status indicator



## Technical Specifications

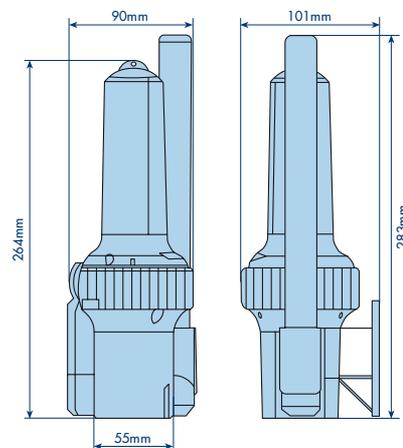
### R5 GMDSS VHF Handheld Radio

	R5 GMDSS Pack A	R5 GMDSS Pack B
Approvals	MED, FCC	Med, FCC
Frequency Range	149.3-174MHz	149.3-174MHz
Channel separation	25kHz	25kHz
Dual watch, Tri-watch	✓	✓
Transmitter power (Hi/L0)	2/1W	2/1W
Red back light with dimming	✓	✓
Keypad lock	✓	✓
Keypad beep On/Off	✓	✓
Volume rotary control	✓	✓
Waterproof	Submersible to 1/2 metre for 1/2 hour	IP67
Temperature Operating	-20°C to +55°C	-20°C to +55°C
Temperature Storage	-30°C to +70°C	-30°C to +70°C
Weight With GMDSS battery	340g	340g
Lanyard & belt clip	✓	✓
Battery save function	✓	✓
Battery level indicator	✓	✓
Standard battery	180mAh rechargeable Li-Ion	✓
GMDSS battery	6 year lithium	✓
AC/DC charger base	✓	✓
Storage base	✓	✓



### S4 SART

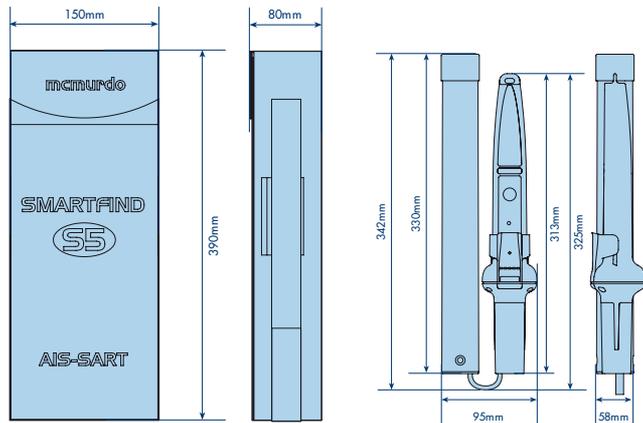
Receiver Response:	9.2-9.5 GHz, sensitivity better than -50 dBm
Transmitter Response:	12 forward and return sweeps through the range 9.2-9.5 GHz. Nominal sweep times 7.5_s forward and 0.4_s return.
Radiated Power (ERP):	Not less than 400 mW (+26 dBm)
Duration of Operation:	96 hours in standby condition followed by a minimum 8 hours of transmission while being continually interrogated with a pulse repetition frequency of 1 kHz.
Temperature Range:	-20°C to +55°C operational -30°C to +65°C storage
Effective Antenna Height:	1 metre or greater
Weight:	360g (without mast or bracket) 510g (with mast) 530g (with mast & bracket)
Dimensions:	264mm long x 90mm diameter
Battery replacement interval:	5 years



## Smartfind S5 AIS SART

### Beacon Specification Standards applied

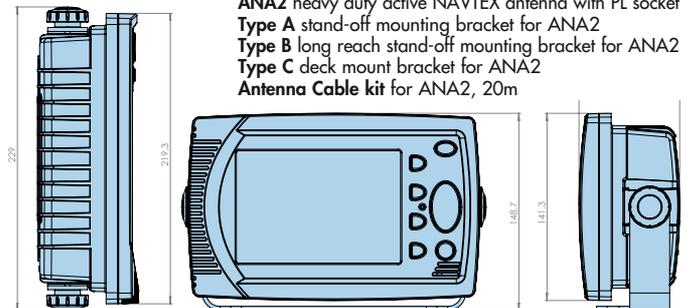
AIS SART	IEC 61097-14, IEC 60945	M.1371
Radio	ITU-R	
GNSS / GPS	IEC 61108-1	
IMO	MSC.246(83)	
<b>Type</b>	IMO AIS SART	Non float free
<b>Operation</b>	Manual activation switch	Protected by anti tamper cover.
	Self test	Checks transmitter, battery, GPS and indicators.
<b>AIS Transmitter</b>	Operating frequency	AIS1, 161.975 MHz AIS2, 162.025 MHz
	Power output	2W nominal
	AIS message type	1, 14
	Modulation	GMSK
	Antenna	Integrated vertical element
<b>Battery</b>	Type	Lithium metal
	Operating life	96 hours minimum
	Storage	6 years
	Service	Replaceable
<b>GNSS</b>	GPS	20 channel
<b>Environment</b>	Operating temperature	-20 °C to +55 °C
	Storage temperature	-30 °C to +70 °C
	Waterproof	Immersion to 10m
	Buoyancy	Floats
	Exterior Finish	Highly visible orange
	Compass safe distance	0.2m
<b>Physical</b>	Weight (main unit )	160 grams
	Weight, (including pole)	450 grams
	Length including pole extended	155 cm
	Lanyard	10 m, 50Kg breaking strain
<b>Mounting</b>	Storage case (packed)	940g H390 x D80 x W150 (mm)
	Bulkhead bracket	230g



## GMDSS Navtex Receiver

<b>Display</b>	6 inch, ½ VGA (480 x 320 pixels) Daylight viewable colour STN with adjustable backlight and screensaver
<b>Controls</b>	Backlight/contrast key, Enter key, four soft menu keys, Tracker pad
<b>Receivers</b>	<b>Receiver A</b> , Frequency 518kHz <b>Receiver B</b> , Frequency 490kHz <b>Receiver C</b> , Frequency 4209.5kHz <b>Sensitivity</b> <2 microvolts <b>Frequency stability</b> +/- 10Hz
<b>Connectors</b>	<b>15 way D-type</b> , Power, Alarm & COM 1 data (2m cable supplied with connector pre-wired) <b>9 way D-type</b> , Printer/COM 2 <b>Antenna connector</b> , 50 ohm TNC <b>Ground connector</b> , 1/8" Spade terminal
<b>Data interface</b>	<b>COM 1</b> , RS422 (NMEA 0183) IEC 61162-2 serial port <b>COM 2</b> , RS422 (NMEA 0183) IEC 61162-1 serial/printer <b>Baud rate</b> , 4800, 38400, 115200 <b>NMEA sentences supported</b> (in priority order) RMC, GLL, ZDA for UTC and NRX, NRQ, NNM, ACK, ALR for NAVTEX functions
<b>Alarms</b>	Vital/SAR message receipt (internal buzzer) Alarm state NMEA message data output COM1/COM2 Remote alarm relay contact 1A @ 120VAC/ 24VDC
<b>Antenna voltage output</b>	12 V DC @ 100mA (selectable)
<b>Antenna type (option)</b>	50 ohm, dual band 490 -4209.5kHz active or passive
<b>NAVTEX message memory</b>	300 x 500 character messages per receiver (minimum)
<b>Dimensions</b>	219W x 151H x 76D mm (excluding connectors) <b>Weight</b> 1100g (including bracket)
<b>Environmental</b>	<b>Operating Temperature Range</b> -15° to +55°c <b>Storage Temperature Range</b> -20° to +55°c <b>Humidity</b> 0 to 95%, non-condensing <b>Compass safe distance</b> 0.87m
<b>Mounting</b>	Desk-top or bulkhead (flush panel fixing kit included)
<b>Power</b>	<b>Voltage range</b> 12/24 V DC nominal (10.8 V to 31.2 V) <b>Consumption</b> , with backlight on 8.6 W @ 24 V DC Internal auto resettable fuse @ 1.8 A DC
<b>Technical Standards</b>	IMO Resolutions, MSC.148(77) A.2.1 (17), SOLAS Regulation IV/7.1.4, ITU-R M.540-2, ITU-R M.625-3, IEC 60945-4, IEC 61162-1, -2, IEC 61162-2, IEC 61097-6

<b>Additional Sales Options</b>	<b>ANA1</b> light duty active NAVTEX antenna with 20m cable and stand-off bracket <b>ANA2</b> heavy duty active NAVTEX antenna with PL socket <b>Type A</b> stand-off mounting bracket for ANA2 <b>Type B</b> long reach stand-off mounting bracket for ANA2 <b>Type C</b> deck mount bracket for ANA2 <b>Antenna Cable kit</b> for ANA2, 20m
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## Glossary



**24 hr Battery**  
Operational battery life.



**48 hr Battery**  
Operational battery life.



**121.5 MHz Homing Signal**  
Transmits homing signal on 121.5 MHz frequency.



**406 MHz Distress Signal**  
Transmits a unique ID/coded message on the dedicated 406 MHz distress frequency.



**AIS**  
Maritime VHF Automatic Identification System.



**Battery life**  
Shown in years.



**Boyant**  
This product will float.



**EPIRB**  
Emergency Position Indicating Radio Beacon.



**FCC**  
Federal Communications Commission (USA).



**Float Accessory**  
This product will float in accompanying bouyancy pouch.



**GMDSS**  
Global Maritime Distress and Safety System.



**Land**  
This product can be used on land.



**MED (WheelMark)**  
Marine Equipment Directive. European certification for equipment that meets the standards required by the IMO and SOLAS.



**PLB**  
Personal Locator Beacon.



**RADAR SART**  
Radar Search And Rescue Transponder.



**Safe-Stow Antenna**  
Antenna stored under tamper-proof cap to protect against damage and false activation.



**SOS Light**  
SOS LED flash light to aid recovery.



**No Subscription**  
No subscription fee to pay.



**User Replaceable Battery**  
Replacement battery packs can be bought from stockists worldwide and installed by the user.

### AIS Beacon

An AIS Beacon is a personal safety device which incorporates both AIS (Automatic Identification System) and GPS technology.

### AIS SART

Automatic Identification System Search And Rescue Transmitter.

### AToN

Aids to Navigation.

### Automatic Activation

An EPIRB that is activated when it comes in contact with water.

### Automatic Deployment

An EPIRB that is automatically released from its housing when the integral HRU is submerged.

### Category 1 EPIRB

A manually deployed EPIRB that is automatically deployed and activated when in contact with water. The EPIRB may also be manually deployed and activated.

### Category 2 EPIRB

A manually deployed EPIRB. Once removed from its bracket this EPIRB will be automatically activated when in contact with water, or can be manually activated.

### Class 1 EPIRB or PLB

Rated to operate down to  $-40^{\circ}\text{C}$ .

### Class 2 EPIRB or PLB

Rated to operate down to  $-20^{\circ}\text{C}$ .

### COSPAS-SARSAT

International satellite system for search and rescue. A joint operation between France, Canada, Russia and the USA who monitor the 406 MHz satellite system.

### ECDIS

Electronic Chart Display and Information Systems.

### GEOSAR

Geostationary Search And Rescue system. Part of the COSPAS-SARSAT satellite system.

### HRU

Hydrostatic Release Unit. A release mechanism activated by water pressure.

### IALA

The International Association of Marine Aids to Navigation and Lighthouse Authorities.

### IMO

International Maritime Organisation.

### LEOSAR

Low-altitude Earth Orbiting Search And Rescue System.

### LUT

Local User Terminal. A ground receiving station that picks up the initial EPIRB signal and relays it to the Mission Control Centre. The LUT also calculates the position the signal was transmitted from.

### Manual Activation

An EPIRB that is activated by the user.

### Manual Deployment

An EPIRB that is released from its bracket by hand. McMurdo EPIRBs are available with either a manual "Carrysafe" bracket or an Auto Housing.

## Glossary

### **MCA**

Maritime and Coastguard Agency (UK).

### **MCC**

Mission Control Centre. The MCC manages satellite information from the LUT and sends an alert to the Rescue Coordination Centre for the region.

### **MOB**

Man Overboard.

### **MMSI**

Maritime Mobile Service Identity number.

### **NAVTEX**

NAVTEX (Navigational Telex) is an international automated frequency service for delivery of navigational warnings, meteorological forecasts and other urgent marine safety information to ships.

### **NOAA**

National Oceanic and Atmospheric Administration (USA).

### **RACON**

RAadar beaCON.

### **RDF**

Radio Direction Finder.

### **RNLI**

Royal National Lifeboat Institute.

### **SAR**

Search And Rescue.

### **SART**

Search And Rescue Transponder

### **SOLAS**

Safety Of Life At Sea. Minimum standards of safety set out by the International Maritime Organisation.

### **S-VDR**

Simplified Voyage Data Recorder.

### **UIN**

Unique Identifier Number programmed into an EPIRB or PLB.

### **USCG**

United States Coast Guard.

### **RACON**

RAadar beaCON.

### **VMS**

Vessel Monitoring Solution.

### **Wheelmark**

Awarded to products that conform to International Maritime Organisation (IMO) type approval.

# mcmurdo

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