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## **PRODUCT USER MANUAL**









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## **INTRODUCTION**

This user manual provides all the information required to operate and test the sMRT ALERT. The following symbols and conventions are used to indicate important information. Always observe these instructions. Ensure you read the 'Warnings & safety information' section of this manual before first use of the device.



**WARNINGS:** Instructions that, if ignored, could result in death or serious personal injury caused by incorrect operation of the equipment. These must be observed for safe operation.



**CAUTIONS:** Instructions that, if ignored, could result in personal injury or material damage caused by incorrect operation of the equipment. These must be observed for safe operation.



**IMPORTANT NOTES:** Important instructions that should be adhered to during system operation.

#### **TYPOGRAPHIC CONVENTIONS**

- 1. sMRT ALERT hardware features are displayed in bold upper case letters e.g. **ARMING SWITCH.**
- 2. Operation status are displayed in bold upper case letters with square brackets, e.g. **[OFF]**.

#### USING YOUR SMRT ALERT FOR THE FIRST TIME

Prior to first use, please ensure that you have fully read and understand the user manual and that you perform a full system test, detailed on Page 18.



**WARNING:** sMRT ALERT record of ownership. As a responsible manufacturer of life saving man overboard devices, the manufacturer maintains an ownership registration database to provide contact details to Government Search and Rescue (SAR) authorities in the event of an emergency.



**CAUTION:** The sMRT ALERT should only be used in an emergency. **DELIBERATE MISUSE MAY INCUR A SEVERE PENALTY.** 



## Aa

**AIS** – Automatic Identification System

Ack – Acknowledgment

## Cc

**Class-M** – Man Overboard Class of DSC

## Dd

**DSC** – Digital Selective Calling

## Ee

**ECDIS** – Electronic Chart Display and Information System

**EPIRB** – Emergency Position Indicating Radio Beacon

## Ff

**FCC** – Federal Communications Commission

## Gg

**GNSS** – Global navigation satellite system

**GPS** – Global Positioning System

### Ī

IS – Intrinsically Safe

### LI

**LED** – Light-emitting diode

## Mm

**MAYDAY –** Voice distress priority message

**MMSI** – Maritime Mobile Service Identity

**MRT –** Marine Rescue Technologies

**MSLD** – Maritime Survivor Locating Device

**mW –** Milliwatt

## Rr

**RTCM –** Radio Technical Commission for Maritime Services

Rx – Radio Receiver

## Рр

**PFD** – Personal Flotation Device

## Ss

SAR - Search & Rescue

**Serial Number –** manufacturer's identification number

**SOLAS** – International Convention for the Safety of Life At Sea

## Tt

Tx – Radio Transmitter

## Vv

**VHF** – Very High Frequency radio band

Ww w – Watt

## **WARNINGS & SAFETY INFORMATION**

#### **WARNINGS**:

- The sMRT ALERT is a local area Maritime Survivor Locating Device (MSLD), that transmits emergency messages via VHF DSC and the wearer's GNSS position via AIS.
- Before first use ensure antenna is fully attached and perform a full system test to confirm that the device functions correctly.
- Once fitted into a PDF, a full system test of the sMRT ALERT should be performed every 3 months. Do not test the device more than once per month to avoid affecting battery performance in an emergency.
- The sMRT ALERT should only be used in marine environments and is **NOT** for use on land.
- The sMRT ALERT should ONLY be used in an emergency. DELIBERATE MISUSE MAY INCUR A SEVERE PENALTY.
- Annual inspection and recertification of the sMRT ALERT by an authorised service partner is recommended every 12 months to ensure optimum performance.
- The sMRT ALERT must be serviced by an authorised service partner every 5 years.
- Do not dismantle the sMRT ALERT as it contains no user serviceable parts. Authorised service partners offer a full and comprehensive service and repair facility for recertification of units and battery replacement.
- The high intensity strobe light on the unit may cause discomfort if it is viewed for long periods. Avoid staring directly at it when operational.
- The sMRT ALERT uses positional data derived from its internal GNSS antenna to define the location of a man overboard. A clear view of the sky is required to obtain a GNSS position.
- Please note that the device is only as accurate as the positional data it receives.
- The sMRT ALERT contains lithium batteries; do not puncture, deform, short circuit, recharge or incinerate the sMRT ALERT. Doing so will VOID the product warranty.
- Avoid handling the antenna unnecessarily when activated.



- The sMRT ALERT must only be fitted to PFDs approved by the manufacturer. A full list of these can be found online.
- Only manufacturer approved and supplied attachment kits and pouches are to be used to fix the unit to the PFD.
- It is the user's responsibility to ensure that any ancillary equipment, such as survival suits/harnesses, PPE, clothing etc., does not interfere with the operation of the sMRT ALERT.
- The device will not float, so please attach a lanyard restraint when near water to prevent loss.
- To avoid damaging or losing the device, please ensure that it is attached to a lanyard through the eye hole on the rear of the unit.

### 

- Do not paint the sMRT ALERT or clean it with aggressive detergents or solvents. Some cleaning materials may damage the seals and affect the integrity of the device. This will VOID the product warranty.
- To ensure the sMRT ALERT operates as intended in an emergency:
  - Avoid dropping the unit
  - Avoid leaving the unit in direct sunlight, or in an environment where it will be exposed to high temperatures.
  - Inspect the device periodically for signs of wear and tear, visible cracks or other damage.

If any damage is found, **DO NOT USE** and contact an authorised service partner.

## INTRODUCTION

The sMRT ALERT is a multi-system Personal Locating Device designed to RTCM Standard 11901.1 and EU standard EN 303 132 for use during a man overboard (MOB) emergency.

The integration of VHF DSC and AIS technologies equips mariners in distress with life-saving technology to vastly improve the likelihood of rapid location and recovery by a vessel or Search and Rescue (SAR) authorities.

### HOW THE SMRT ALERT WORKS

The sMRT ALERT uses the marine VHF radio band to transmit DSC distress alerts and updated GPS positions regularly from the casualty in the water to VHF DSC radios, as well as AIS equipped vessels within range. A 20-second delay period prior to activation is designed to avoid the device being activated accidentally.

The sMRT ALERT transmits AIS and emergency VHF DSC transmissions during activation. The sMRT ALERT uses an internal GPS receiver to acquire a position within one minute of activation. The device then sends VHF DSC and AIS transmissions containing the device's current position.



#### **Audible Alarm**

The audible alarm notifies when the unit is alerting and raises awareness in case of false activation



**Test Functionality** 

Test functionality ensures that the device is in good working order and highlights any faults



#### Visual DSC Acknowledgement

LEDs indicate that the DSC distress signal has been received and acknowledged by a third party



#### Water Proof

Designed to withstand submersion up to 10 meters, for 5 minutes to protect against water damage



#### **MOB Location via AIS**

The location of the MOB is regularly updated and displayed on an AIS enabled device.



#### **Dual Activation Methods**

The device can be activated manually or automatically upon immersion in water for more than 2 seconds



#### **Dual GNSS Receivers**

Dual GPS and Galileo GNSS receivers for accelerated location detection



#### Alert Signal via VHF DSC

All nearby vessels are automatically alerted to the man overboard situation via VHF DSC



## WHAT'S IN THE BOX?



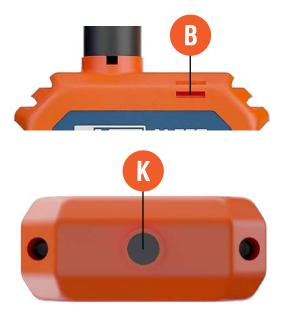


#### **sMRT ALERT OVERVIEW**

## **FEATURES**

- A AntennaB Eyelet
- C Strobe light
- D TEST button
- E Arming Switch
- 📔 Left LED
- G Right LED
- H ON/OFF button
- GNSS receiver
- J NFC Zone
- K Water sensor





#### EYELET

The eyelet on the rear of the device allows for the cord of the lanyard to be passed through and tied securely.

#### WATER SENSOR

The water sensor for the device is located on the bottom of the unit. It must be immersed in water for a minimum of 2 seconds to activate.



### **DEVICE LABEL**

The rear of the unit features a label indicating all relevant device and safety information as well as compliances. Please make sure you are familiar with the information displayed.





## HOW TO ARM THE DEVICE



**NOTE:** Before first use make sure that the antenna is securely attached to the device



- 1. Begin by opening the **DOOR COVER**, which is located on the side of the beacon.
- 2. Then slide the **ARMING SWITCH** down to the **[ARMED]** position.
- 3. Finally, close the **DOOR COVER** to keep the switch securely in position.



**WARNING:** After arming the unit it can remain in the PFD until the PFD requires annual servicing and recertification.

We recommend that when not in use that the device is [OFF].



## HOW TO ACTIVATE THE DEVICE



To activate the sMRT ALERT please follow the steps below.

- 1. Ensure the device is [ARMED]
- 2. Press the **ON BUTTON** for 1 second
- 3. -OR- Immerse in water for 2 seconds

### **DEVICE INDICATIONS AFTER ACTIVATION**

- Purple flashing (activated but no GNSS lock)
- White flashing (activated with GNSS lock)
- Green flashing (DCK ack received)

When activated, the sMRT ALERT features a 20 second warning period, during which:

- 1. The device beeps initially 3 times, and
- 2. The LEFT LED flashes purple, 3 times.

After the 20 second warning period the sMRT ALERT will commence AIS and emergency VHF DSC transmissions. The internal GPS receiver will acquire a position within approximately one minute of activation and the device can then send VHF DSC and AIS transmissions containing the casualty's current position.

The **STROBE LIGHT** on the front of the device flashes once every 5 seconds to assist with visual homing at night or in poor weather conditions.



## **HOW TO DE-ACTIVATE THE DEVICE**



- 1. Press and hold the ON BUTTON down for 3 seconds. -OR-
- 2. Open the **ARMING DOOR** and slide the **ARMING SWITCH** from **[ARMED]** to the **[OFF]** position.
- 3. Simply acknowledge the VHF DSC alert on any radio that has received it. This will cancel the emergency but the beacon will continue to broadcast its position on AIS until it is manually de-activated.
- 4. Contact the Coast Guard or Search and Rescue Coordination Centre serving your region at the earliest possible opportunity to advise them that you have cancelled the alert.



**IMPORTANT NOTE:** If you do not have access to a VHF marine radio, contact your search and rescue authority by telephone and AIS transmissions containing the casualty's current position.



### **PREVENTION OF ACCIDENTAL ACTIVATION**

The sMRT ALERT features an **ARMING DOOR** to prevent the device from being accidentally activated. In addition, manual activation is a two-stage process, requiring the user to open the **ARMING DOOR** and slide the **ARMING SWITCH** to the **[ARMED]** position to arm the device. The user must then press the **ON BUTTON** to activate the device.

If the device is accidentally activated, the user can slide the **ARMING SWITCH** to **[OFF]** before transmissions commence.

#### HOW TO HELP PREVENT FALSE ALARMS

- Keep the device away from young children and educate all users in device operation and the ramifications of false alarms.
- Ensure that the device is stored in a dry and cool environment.



## **sMRT ALERT LED INDICATIONS**

During operation, the **LEFT LED** indicates device status and the **RIGHT LED** indicates GPS status. The **LEDs** may display the following indications:

STATE	LEFT LED	RIGHT LED
Arming	Purple 3 flashes 🛛 🌑	Off
Return to idle	Off	Red 1 flash 🛛 🔴
Alerting (no GNSS)	Purple slow flash 🔵	Off
Alerting (GNSS lock)	White slow flash 🔘	Off
Alerting (DSC rx'd)	Green slow flash 🌘	Blue solid 🔵
Alert cancelling	Off	Blue solid 🔵
STATE	LEFT LED	RIGHT LED
Fault: tamper	Red fast flash 🔴	Red solid 🔴
Fault: service interval	Red fast flash 🛛 🔴	Purple slow flash 🔵
Fault: battery critical	Red fast flash 🔴	White slow flash 🔘
Fault: internal fault	Red fast flash 🔴	Red slow flash 🔴



**IMPORTANT NOTE:** If you receive a fault during the test procedure. DO NOT USE and contact an authorised service partner



## TESTING

A full system test is performed on the sMRT alert, at the point of manufacture. Before first use, we recommend carrying out a full self-test on the product.

After deployment into active service, it is recommended that a full system test of the sMRT ALERT should be performed every 3 months. DO NOT test the device more than once per month as this could affect battery performance in an emergency.

For optimum performance, it is recommended that the device be returned to an authorised service agent for annual service and recertification.

#### **WARNINGS**:

- 1. Ensure the device has a clear view of the sky during testing to receive a GPS signal.
- 2. If the sMRT ALERT fails any element of a self-test or any full system test, take it out of service immediately.



### **SYSTEM TEST**

To perform a test of the sMRT ALERT ensure the **ARMING SWITCH** is **[OFF]** and the hold the **[TEST]** button for more than 3 seconds.

Self-test **LED** indications are displayed for several seconds at this point and may display as follows: Short beeps (approx every 15-20 seconds).

The **LEFT LED** indicates device test status and the **RIGHT LED** indicates GPS test status.

STATE	LEFT LED	RIGHT LED
Test start (good battery)	Green flash alt	Green flash alt
Test start (bad battery)	Red flash alt 🛛 🔴	Red flash alt 🛛 🔴
Test txing (AIS burst)	Purple flash alt 🛛 🌑	Purple flash alt
Test txing (DSC)	Purple flash alt 🌘	Purple flash alt
Test (waiting for DSC ack)	White slow flash $\bigcirc$	Off
Test (DSC ack rx'd)*	Green 3 flashes 🌘	Green solid 🌘
Test time out	Red 5 flashes 🛛 🔴	Red solid 🔴



**IMPORTANT NOTE:** During any test, if a **RED LED** is displayed, the device should be removed from service and returned to MRT or an authorised MRT service agent. If the **LEDs** do not show **[RED]**, the unit has passed the VHF DSC & AIS test and is fit for purpose.

\*DSC ack rx'd = DSC acknowledgment received



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### **FULL SYSTEM TEST**

- 1. The **LED** indicators shows battery condition **[GREEN]** is good, **[RED]** means replace the battery. During stage 1 the GNSS is activated to look for satellites.
- 2. The AIS test burst is transmitted **LED** indicator is purple.
- 3. The DSC test message is transmitted LED indicator changes to white.
- 4. The beacon waits for a DSC acknowledgement for up to 2 minutes **LED** indicator is white
- 5. When a DSC acknowledgement is received the **LED** indicator turns green indicating **[SUCCESS]**.



**IMPORTANT NOTE**: During any test, if a **RED LED** is displayed, the device should be removed from service and returned to the manufacturer or an authorised service agent. If the **LEDs** do not show **[RED]**, the unit has passed the VHF DSC & AIS test and is fit for purpose.

During the test procedure a single burst AIS and VHF DSC message is transmitted in accordance with the international standards. Depending on conditions during testing, it is possible that an AIS and/or VHF DSC transmission may not be picked up by the receiving equipment.

If an AIS message and/or VHF DSC transmission is not displayed on the receiver this does not indicate that the device is faulty. Only when and if a **RED LED** is displayed, should the device be removed from service and returned to the manufacturer or an authorised service agent.

### **CANCEL A FULL SYSTEM TEST**

Press and hold the **TEST BUTTON**.



## **RECERTIFICATION AND SERVICING**

We recommend annual recertification to ensure the sMRT ALERT operates effectively in a lifesaving situation. Do not use your sMRT ALERT if there are any signs of damage, or if any functional tests fail – **RED LED**. The manufacturer and authorised service agents provide a comprehensive service and repair facility for recertification of units.

### **RETURN UNITS FOR RECERTIFICATION & SERVICING**

Please contact the manufacturer at mrtcustomerservice@wescom-group.com, or your authorised service agent, to obtain an RMA tracking number for any units being returned for recertification and servicing. Record the RMA number and include it when returning units as it is used to track the device during the servicing and recertification process.

### **OPERATIONAL LIFE**

The sMRT ALERT has an operational battery life of 5 years from the first use. When not in use, the product should be disarmed. We recommend annual recertification to ensure optimum performance.

### **END OF LIFE STATEMENT**

The manufacturer hereby declares that all materials, components and products supplied are in full compliance with RoHS & WEEE directives. At the end of the products operational life it must be returned to the manufacturer for safe disposal. If you are unable to return the unit then it must be disposed of according to local laws and regulations.

### **CHANGING CONTACT DETAILS OR OWNERSHIP**

Factory assigned device MMSI numbers are allocated to sMRT ALERT units prior to shipping. It is the owner's responsibility to advise MRT of any change of contact details or ownership of a sMRT ALERT.

If ownership is transferred, you should contact the manufacturer or an authorised service partner to register the device in your name.



## **sMRT MOBILE APP**



The 'sMRT Beacon Management' app can assist you in managing your sMRT device. Please refer below for instructions on some of the key features.

### **CHECK BEACON STATUS**

Quickly check the arming status of your device.

- 1. Press the **BEACON STATUS BUTTON** on the app home screen.
- 2. Press the **SCAN DEVICE BUTTON** on the NFC screen. When prompted, hold your phone up to the device and wait for the scan to complete.
- 3. Once complete, you will be shown a screen that will display the status of your beacon, which will either say **[ARMED]** or **[OFF]**.

This feature only applies to the sMRT ALERT and may not work with other devices.

### **SELF-TEST DEVICE**

Perform a test and view the historical results of your device.

- 1. Inside the product screen, press the **TEST STATUS BUTTON**.
- 2. Press the **SCAN DEVICE BUTTON** on the NFC screen. When prompted, hold your phone up to the device and wait for the scan to complete.
- 3. You will be prompted to complete the NFC process again; please repeat step 2.
- 4. Once completed, your most recent test will appear at the top of the list, with all your previous results below. It will display a colour-coded summary, with red indicating **[FAILURE]** and green indicating a **[PASS]**.
- 5. You can inspect each test individually by pressing the arrow on the right of the tabs. This will provide you with a more detailed report of your test.



### **CHECK BATTERY LEVEL**

View and understand your device's current battery levels.

- 1. Inside the product screen, press the **BATTERY STATUS BUTTON**.
- 2. Press the **SCAN DEVICE BUTTON** on the NFC screen. When prompted, hold your phone up to the device and wait for the scan to complete.
- 3. You will be prompted to complete the NFC process again; please repeat step 2.
- 4. You will then be shown a screen, which will display the battery level of your device. The status shown will either say **[GOOD]** or **[SERVICE REQUIRED]**, at which point you should **NOT** use the device.

If the battery test indicates less than 12 hours of battery life remaining, return the device to the manufacturer or an authorised service agent for battery replacement.

**DO NOT** ignore a low battery warning as the device may not operate to full capacity in a man overboard emergency.

### **INPUT MMSI NUMBERS**

Pair your vessels MMSI number with your device.

- 1. Inside the product menu screen, press the **PAIRED MMSI BUTTON**.
- 2. Press the **SCAN DEVICE BUTTON** on the NFC screen. When prompted, hold your phone up to the device and wait for the scan to complete.
- Once completed, you will be directed to the Add Vessel MMSI screen. On first use, you will be prompted to type in your MMSI number and press the ADD BUTTON to pair your MMSI number.
- 4. The NFC screen will re-open and you will need to repeat step 2 twice. Once completed, your new MMSI number will show on screen and say **[PAIRED]**.
- 5. If you wish to remove a paired number, simply press the **BIN ICON** and repeat step 2 twice. Please note you can only add 1 MMSI number to your device.



## WARRANTY

Your sMRT ALERT is covered by a warranty against manufacturing defects in materials and workmanship for a period of 1 year from the date of purchase and an additional 4 years upon registration of the extended warranty, in accordance with the following conditions:

- Marine Rescue Technologies Ltd reserves the right to repair or replace a faulty product at its discretion, free of charge, excluding shipping costs.
- A valid proof of purchase from the original buyer is required for warranty claims.
- Claims must be submitted in writing to Wescom Group or an approved service dealer.

Marine Rescue Technologies Ltd is not liable under the warranty for:

- Repairs or modifications performed on the MSLD using non-approved parts, including batteries, or by entities other than Marine Rescue Technologies Ltd or approved service dealers, a full list of approved dealers can be found on the sMRT website, smrtsos.com.
- Parts, materials, or accessories not manufactured by Marine Rescue Technologies Ltd; in such cases, the consumer will be covered by the guarantee/warranty offered to Marine Rescue Technologies Ltd by the manufacturer or supplier.
- Unpaid products or those under alternative warranty agreements

The battery is warranted until the expiry date, provided the unit is tested according to the information in the user manual

### **EXCLUDED ITEMS**

The following item is excluded from the warranty;

- The arming door
- The water sensor pin



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This warranty does not impact your statutory rights. The interpretation of this warranty is under English law. Please ensure you have fully read and understand the User Manual.

For further assistance, please reach out to our service department. Email: smrt@wescom-group.com

## DISCLAIMER

The sMRT ALERT is an emergency rescue transmission device that should only be activated as a last resort. Misuse or false activation is unlawful and irresponsible, and could result in prosecution or penalty.

The sMRT ALERT should not be relied on as the only source of man overboard notification and the vessel owner, operator or master must exercise common prudence and good seamanship at all times. Use of the sMRT ALERT in no way reduces liability of the vessel's master and crew who have the primary responsibility for safety on board. No device is 100% fail safe, nor can it guarantee safe rescue in an emergency. When activated, the sMRT ALERT is designed to transmit distress alerts to VHF DSC and AIS equipped vessels or stations within range, but requires subsequent human interaction to acknowledge and respond to the distress alert.

Satellite GPS lock and in-water tracking is dependent on the extent of satellite system coverage and reception at the time and location of the emergency. The actual time and success of rescue is therefore dependent on all these contributing factors and as such, is outside the control of the manufacturer.

This user manual contains important information that must be adhered to for reliable use and operation of the product. It is the owner's sole responsibility to make the effort to read this manual and to ensure that the equipment's operation and limitations are understood. Visit the manufacturer's website www.mrtsos.com to download the latest user manuals for all products. The manufacturer reserves the right to change specifications, equipment, installation and maintenance instructions without notice as part of the company's policy of continuous product development and improvement.



## **TRADEMARK NOTICE**

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## **TERMS & CONDITIONS**

Please visit https://www.mrtsos.com/terms-conditions to view our terms & conditions.



## **SPECIFICATION**

GENERAL	
BATTERY TYPE	9.0V 1650mAh Lithium Manganese Dioxide (LiMnO2)
MINIMUM ALERTING PERIOD	Minimum of 12 hours at -20°C.
BATTERY SHELF LIFE AT +20°C	5 years
OPERATING TEMPERATURE	-20° to +55°C (-4° to +131°F) as per IEC 60945
STORAGE TEMPERATURE	-30° to +70°C (-22° to +158°F) as per IEC 60945
DIMENSIONS	207mm (H) (including antenna) x 59mm (W) x 23mm (D)
WEIGHT	180g
ENVIRONMENTAL	IEC 60945
STROBE LIGHT	30 candela, 170 degree dispersion, flash rate 12 /minute
ENVIRONMENTAL RATING	IP68 up to 10 metres depth
MOUNTING OPTIONS	Designed to integrate with a SOLAS approved life jacket
SELF ID	ITU-R M.585 Compliant factory programmed freeform Maritime Identity with 972 prefix
COMPASS SAFE DISTANCE	0.5m (1.5ft)
ALERTING RADIUS	Typically 5 NM
AIS/VHF TRANSMITTER PACKAGES	
ANTENNA TYPE	Vertically polarised
AIS TX POWER OUTPUT	Nominal 1W EIRP
VHF TRANSMISSION FREQUENCIES	VHF DSC Channel 70: 156.525 MHz, AIS Channel 1: 161.975 MHz, AIS Channel 2: 162.025 MHz
VHF DSC TX POWER OUTPUT	Nominal radiated power 500mW
SIGNALLING TYPE	AIS and VHF-DSC
CONTROLS AND OPERATION	
AUTOMATIC WATER ACTIVATION	After 2 seconds of water sensor immersion
MANUAL ACTIVATION	Once armed, press activate button
GPS RECEIVER	
GNSS RECEIVER TYPE	GPS and Galileo
TTFF (TIME TO FIRST FIX)	15 seconds (typical) with nominal GPS signal levels -130dBm
GNSS UPDATE RATE	Every minute
VHF DSC AND AIS ALERTS	
AIS	Within 30 seconds of GNSS position acquisition
INITIAL OPEN LOOP DSC ALERT	Within 30 seconds after activation
SUBSEQUENT OPEN LOOP DSC ALERTS	Every 5 minutes for the first 30 minutes, every 10 minutes thereafter until VHF-DSC acknowledgement or the battery expires.
FIRST DSC GPS DATA ALERT SENT	Immediately after GNSS position acquired
APPROVALS	
EUROPEAN APPROVALS	EN 303 132 V2.1.1
US APPROVALS	RTCM 11901.1



## **PRODUCT ATTACHMENTS**







Oral Tube Mounting Clip P/N: 713020301



**Lanyard** P/N: 713020321



P/N: 713020322







Velcro Fixing Strap P/N: 713020323

sMRT ALERT Antenna P/N: 712000089

**sMRT ALERT** P/N: MOA-50070











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