



AIS Man Overboard Beacon

MO520



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QUICK START GUIDE

Overview

The MO520 is a man overboard beacon that uses AIS (automatic identification system) technology. It greatly increases the likelihood of man overboard rescue by alerting nearby vessels equipped with AIS.

When activated in an emergency situation, the beacon transmits alert messages including the GPS position and a unique ID, using either water sensor or manual activation.

The MO520 is built using state-of-the-art technology, it is small and lightweight, easy to use and is reliable in emergency situations.

| Item | Description |
|------|-------------------------|
| 1 | Antenna cap |
| 2 | Antenna |
| 3 | Battery LED (Green/Red) |
| 4 | Strobe LED |
| 5 | GPS LED (Green/Red) |
| 6 | Lanyard |
| 7 | Test Area |
| 8 | Water sensor |
| 9 | Test tab with magnet |
| 10 | Activation tab |



In The Box

| Item | Description |
|------|-------------------|
| 1 | MO520 Beacon |
| 2 | Carry Case |
| 3 | Quick Start Guide |
| 4 | Oral Tube Clip |
| 5 | Test Tab |



Fitting on Life Jacket

Strap Clip

The MO520 is supplied with a clip that can be used to attach the device to a lifejacket strap.



Oral Tube Clip

The MO520 is supplied with a clip that can be attached to a life jacket's oral tube. The clip can be attached on the left or right side of the oral tube.



Activation

The MO520 can be activated manually or by water sensor. Caution: Avoid eye injury when deploying the antenna by pointing the device away from you. To activate the MO520 manually:

1. Pull off the red tab antenna cap to release the antenna.
2. Pull off the activation tab to start transmission of messages.



To activate the MO520 using the water sensor:

1. Pull off the red tab antenna cap to release the antenna.



2. The water sensor is located at the bottom of the device. The device will activate and begin transmission when the sensor has been immersed in water for more than three seconds.



Note:

- The high brightness LED on the device flashes the SOS signal in Morse code every minute when the device is activated.
- The device transmits the MOB ACTIVE signal every minute with the latitude and longitude position. If the GPS location cannot be updated due to weather conditions, the last obtained latitude and longitude GPS position is transmitted.
- The MO520 is new to the market and not all chart plotters with AIS show the correct ☒ icon as recommended by the IMO and may instead show the same icon as used for other craft, the ✓. The MMSI number dedicated for AIS MOB begins with 972 which will differentiate AIS MOB from other AIS targets. Please contact your plotter manufacturer to ascertain how the icon displays on the screen.
- Ensure that the MO520 remains out of water when attached to a life jacket as water may cause difficulties for the GPS receiver to obtain coordinates.
- Ensure that the blue area marked “GPS Area” is not covered in any way and it is directed towards the sky when the device is activated.
- The device emits low levels of radio frequency energy when activated. Avoid handling the antenna when the device is activated.

Battery Life Test

Start the battery life test by using the magnet on the back of the test tab to touch the test area for one second. The high brightness LED flashes and the device beeps once indicating that the device is in battery life test mode. A green flash indicates that the battery has passed the test. A red flash indicates that the battery has low power and needs to be replaced. The device flashes three times and beeps once to end the test.

Full Function Test

Start the full function test by using the magnet on the back of the test tab to touch the test area. The high Brightness LED flashes once and the device beeps once. Hold the magnet next to the test area for three seconds. A second beep indicates that the device is in full function test mode. The battery LED and the GPS LED flashes every three seconds to indicate the battery and GPS locating status:

- A green battery LED indicates that the battery has passed the test. A red battery LED flashing indicates that the battery has low power and needs to be replaced.
- A green GPS LED flashing next to the antenna indicates that a GPS fix is obtained. A red flashing GPS LED next to the antenna indicates that a GPS fix cannot be obtained.

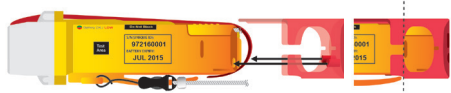


Turning off the MO520

To stop the MO520 from transmitting, reinsert the activation tab into the device. If the device was activated by the water sensor, pull the tab off and reinsert it to stop transmission.



Wrap the antenna around the unit back to its original position. Align the antenna cap with the longer side on the front of the unit and the shorter side on the back of the unit. Push the antenna cap all the way until the antenna cap clips back in. Fitting the antenna cap properly ensures that the water sensors are properly sealed from the elements preventing the device from activating accidentally when wet.



Testing the MO520

Two different tests can be performed to ensure that the device is working properly:

- The battery life test.
- The GPS self-test that includes GPS activation and live test message transmission.

The device starts sending MOB test messages as soon as a GPS fix is obtained displaying the ☒ icon on all AIS systems within range. The full function test completes with a beep after eight bursts of test messages are successfully transmitted. The full function test is regarded as failed if no valid GPS data is obtained within five minutes.



If the full function test fails, make sure that the antenna is pointed towards the sky and the GPS area marked on the device is not obstructed by your hand or any other object before running the test again. Return the device to your service centre if the full function test fails a second time.

Note:

- The test mode can be interrupted at any time by pulling off the activation tab and reinserting it. The device does not transmit distress messages while in test mode with the activation tab removed. There is no risk of activating distress transmissions if the activation tab is pulled off to abort the test mode.
- The test messages generated by a full function test appear on all chart plotters in range, with AIS plotters displaying SRMs (safe related messages) as “MOB TEST” with the device’s MMSI number as the sender’s identity.
- It is recommended that the short test is performed monthly.
- Confirm that battery expiration date has not been reached. Return the MO520 to a service centre for battery replacement if the battery level is low.

Specifications

| APPLICABLE STANDARDS | | ENVIRONMENTAL | |
|------------------------------|--------------------|----------------------------|------------------------|
| IEC 60945 (2002) | EN 303098 V2.1.1 | Operating Temperature | -20°C~55°C |
| IEC 61108-1 (2003-07) | EN 50385: 2002 | Storage Temperature | -30°C~70°C |
| EN 50383: 2010 | EN 62311: 2008 | Waterproof | IP68 |
| EN 62368-1: 2014 + A11: 2017 | | Immersion Depth (optional) | 50m |
| GPS PERFORMANCE | | Compass Safe Distance | 0.8m |
| Receiving Channels | 72 | Explosion Proof (optional) | Ex ec mc IIC T6 Gc |
| Frequency | L1, 1575.42 MHz | GENERAL/PHYSICAL | |
| Tracking Sensitivity | (-)>163 dBm | Model No. | MO520 |
| Reacquisition | (-)>159 dBm | Size | 129x52x40mm (L*W*D) |
| Position Accuracy | < 2.0 m SBAS | Weight | 160 g (main unit only) |
| | < 2.5 m Autonomous | | |

| VHF PERFORMANCE | |
|--|--|
| Frequency | AIS 1, 161.975MHz AIS 2, 162.025 MHz |
| Data Rate | 9,600bps |
| Tx Power | 2W (1W EIRP) |
| Bandwidth | 25 KHz |
| Modulation | GMSK |
| Range | 4nm typical with receiver antenna > 5m above sea level |
| AIS Message Type | Message 1 (UID, GPS position, SOG, COG) |
| | Message 14 (MOB ACTIVE or MOB TEST) |
| BATTERY | |
| Type | Primary Lithium (not rechargeable) |
| Operating Time | 36 hours at -10°C, typical |
| Storage (battery life) | 5 years, replacement due after emergency use |
| ACTIVATION METHOD | |
| Manual activation or automatic activation with water sensor by immersion | |

Note: Specifications are subject to change without prior notice.