M200 Class M MSLD

Man-Overboard Maritime Survivor Locating Device incorporating AIS and DSC

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GET THE MOBILE APP TO SEE YOUR M200'S TEST INFORMATION

Android iOS

GET IT ON Google Play | Download on the App Store

NFC Communication Enabled

DOWNLOAD THE FULL USER GUIDE
https://www.oceansignal.com/manuals

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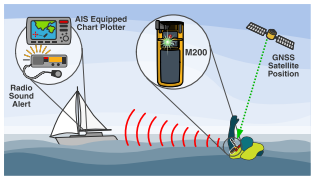
1. ABOUT YOUR M200

1.1 AIS

The AIS system operates on the VHF band. Transceivers are fitted to all commercial ships and an ever-growing number of recreational vessels globally. Shortly after activation an AIS location device, such as the M200, will activate a MOB target and message on all plotters in AIS equipped vessels within the VHF range, alerting them to the fact that emergency assistance is required. Often it is a vessel in the close vicinity of an incident that is able to react and effect a rescue quicker than the emergency services. Emergency service craft are fitted with AIS receivers allowing them to pinpoint emergencies in the water more precisely than any other system.



Interface diagram showing typical usage

The method in which an AIS message is displayed will depend on the reception equipment being used. AIS enabled plotters will display a ship or Man Overboard target with the M200 preprogrammed AIS unique ID, that identifies it as a Man Overboard device.

1.2 DSC

Your M200 is supplied with open loop* DSC enabled. In the event of a man-overboard emergency situation, the M200 will continue to transmit the AIS distress messages as well as a DSC distress alert that is sent to all ships and stations within range that have a DSC VHF Radio. This distress alert will contain the current GNSS position of the casualty in the water (once a GNSS fix is obtained) and is sent via VHF channel 70, maximising the chances of rescue from a nearby vessel in the event that your own vessel is unable to assist.

The originating MMSI displayed on the DSC receiving radio will be the unique self-identification number pre-programmed into the M200 which cannot be changed. This number will always start with '972' irrespective of the country it was purchased in and will allow the DSC receiver to immediately identify a man-overboard situation requiring immediate assistance.

If your own vessel has a DSC enabled VHF radio, it is strongly recommended to programme your vessel's MMSI number into your M200 for testing purposes only. This is achieved using NFC and the Ocean Signal Mobile App. Once the app is downloaded, follow the on-screen instructions to add your vessel MMSI to the M200.

It is also possible using the mobile app to restrict the DSC functionality of your M200 to closed loop* DSC. If restricted to closed loop DSC, the M200 will only transmit a DSC distress alert to your vessel's MMSI that has been programmed within the M200, for the first twelve minutes of activation. It will not immediately transmit to all ships and stations within range. However, if the DSC transmission from the M200 is not acknowledged by your vessel within these first twelve minutes, the M200 will then revert to open loop DSC and will begin to transmit to all ships within range.

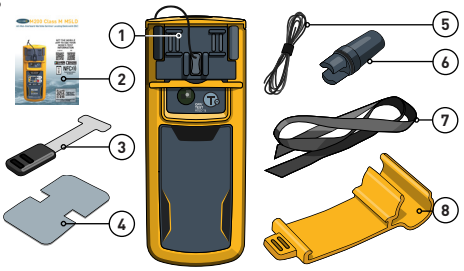
It is not recommended to switch to a closed loop function unless your personal circumstances dictates it to be necessary.

*** NOTE:** **DSC Closed Loop** refers to the transmission of an addressed message to a closed user group, specifically the vessel's MMSI that you have programmed into your M200 as described above. The distress alert from the M200 is sent only to your vessel's DSC VHF radio, also known as the mothership.

DSC Open Loop refers to an "all-ships" call that alerts all ships with a DSC VHF radio within range.

1.3 M200 Box Contents

1	M200
2	Quick Start Guide
3	Fixing Buckle
4	Adhesive Buckle Patch
5	Cord
6	Antenna Winder
7	Activation Tape
8	Oral Tube Bracket



⚠ IN CASE OF EMERGENCY ⚠

Use only in situations of grave or imminent danger

If the M200 is correctly fitted to the life jacket, it will automatically activate when the life jacket inflates. For life jacket fitting see full user manual, available at www.oceansignal.com.

⚠ **Only activate your M200 in emergency situations requiring assistance. Deliberate misuse of your M200 may result in a fine.**

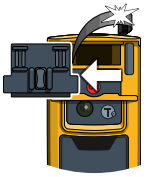
This guide shows how to manually activate the M200.

1. Press either of the grey arming retainers down.

2. Slide the grey Activation Slide sideways to remove it. This will release the antenna and activate the M200.

3. If the strobe light does not start flashing, manually activate the M200 by pressing the ON Key.

PUSH DOWN ARMING RETAINER



REMOVE GREY ACTIVATION SLIDER

IF LED FAILS TO FLASH, PRESS 'ON' KEY

The strobe light will start flashing. The M200 will automatically start to transmit after approximately 25 seconds.

Hold your device with the antenna standing vertically. Keep the area marked 'DO NOT OBSTRUCT' free and clear whilst in use. Obstruction or covering of this area may interfere with GNSS reception.

Upon activation, the indicator LED will show eight double flashes during AIS transmission, with one long flash or four rapid flashes during DSC transmission. The table in section 1.5 details the flash sequence that can be seen during activation of the M200.

⚠ **Take great care to keep well clear of eyes and face as the antenna will be released very quickly. Keep at least 30cm (12") clear to avoid possible injury.**

⚠ **When operating the M200, tether the device to your body or life jacket to avoid accidental loss.**

1.4 Deactivation

To deactivate your M200 after use or if it is accidentally activated, press and hold the TEST/OFF Key until the red LED flashes twice, then release.

1.5 LED Indications on activation

TYPE		STATUS	WHEN
Visual Aid to Location	1x strobe & infra-red* flash	These flashes will aid Search and Rescue to pin-point your precise location when in range.	Once every 2.5 seconds >10% battery
Visual Aid & Low Battery Warning	1x amber, strobe and infra-red* flash	An amber flash will precede the strobe and infra-red flash every 2.5s when the M200 has less than 10% battery life remaining.	Once every 2.5 seconds <10% battery
Receiver Status Indicator	DSC receiver: 2x amber flashes **121.5MHz: 1x green or amber	Two amber flashes indicate the DSC receiver is in standby mode while DSC transmissions are being sent. The third flash denotes the 121.5MHz homing transmission status: green indicates active, amber indicates standby mode.	Once every 5 seconds
	DSC receiver: 2x green flashes **121.5MHz: 1x amber flash	Two green flashes indicate the DSC receiver is on and awaiting a DSC acknowledgement after a DSC transmission is sent. The third flash indicates that the 121.5MHz homing transmitter is in standby mode.	
	DSC receiver: 2x blue flashes **121.5MHz: 1x green flash	Two blue flashes indicate a DSC acknowledgement has been received. No further DSC transmissions will be sent. The third flash denotes the 121.5MHz homing transmitter is active.	
GNSS Search/Fix	1x cyan flash	A cyan flash will occur every 5 seconds whilst the M200 is searching for a GNSS location fix.	Once every 5 seconds
	3x cyan flashes	Three cyan flashes will occur when a new or updated GNSS location has been obtained.	Once at GNSS Fix
AIS Transmit	2x green flashes	Two green flashes will occur during each AIS transmission that includes a GNSS location fix	8 times every minute
	2x red flashes	Two red flashes will occur during each AIS transmission that does not include a GNSS location fix.	
DSC Transmit Open Loop	4x green flashes	Four green flashes will occur during a DSC open loop transmission (to all ships) that includes a GNSS location fix.	Once every 5 minutes for first 30 mins then once every 10 minutes***
	4x red flashes	Four red flashes will occur during a DSC open loop transmission (to all ships) that does not include a GNSS location fix.	
DSC Transmit Closed Loop	1x long green flash	One long green flash will occur during a DSC closed loop transmission (to own vessel only) that includes a GNSS location fix.	Once every 5 mins for first 12 minutes then reverts to Open Loop****
	1x long red flash	One long red flash will occur during a DSC closed loop transmission (to own vessel only) that does not include a GNSS location fix.	

*Infra-red light is not visible by sight.

**Class M DSC devices are required to turn on and monitor the DSC channel for acknowledgements for five (5) minutes after each DSC transmission. The 121.5MHz Homer transmitter cannot operate during this period.

***DSC transmissions will continue until DSC acknowledgement received, the unit is deactivated or the battery depleted.

****Closed Loop DSC transmissions will automatically revert to Open Loop DSC transmissions after 12 minutes if no DSC acknowledgment is received from own vessel (the manually programmed MMSI number).

2. DSC SELF-CANCELLATION

Once activated, the M200 will continue to transmit DSC distress alerts until it receives an acknowledgment. If the M200 is deactivated before an acknowledgement is received, the M200 will transmit a final self-cancellation message via DSC advising that the distress alert has been cancelled.

3. NFC

The M200 is capable of connection to devices using near field communication (NFC). NFC technology allows communication between two electronic devices over a distance of a few centimetres.

The benefit of using NFC in the M200 is that the power used for communication comes from the mobile device and not the MSLD. The Ocean Signal mobile app allows a user to access the M200 for viewing the latest test results and battery health, as well as providing a means to configure the M200 with a vessel MMSI.

To use the app simply align your mobile device NFC antenna to the front of the M200 where you see "NFC". Once connected, details about your M200 will be displayed on your mobile device including the product name and serial number, the unique AIS ID and any previous test results that have been stored.

The battery information is also available through the app, including the current battery expiry date and how long the battery has been in use so far.

Android

iOS

4. APPROVALS

4.1 European Declaration of Conformity

Ocean Signal Ltd. declares equipment type M200 is in compliance with Dir. 2014/53/EU.
www.oceansignal.com/products/M200/RED-DofC

The M200 is compliant with regulation ECC/DEC/(22)02 regarding the use of Class M MOB devices.

⚠ **The following statement is for US customers only: This device has not 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.**

5. LICENSING (US ONLY)

Under the rules of 47 C.F.R Part 95, licensing or registration of MSLD devices is not required. MSLDs are not authorised to be used on Land.

6. TESTING

⚠ **In the event of test failure, contact Ocean Signal for advice at help@oceansignal.com.**

Routine testing of your M200 is recommended to ensure it is in good working order. Please follow the guidance on the frequency that tests should be carried out. Each test will reduce the battery capacity slightly and reduce the operation time of your M200 during an emergency.

The M200 will automatically shut down at the end of each test, indicated by the red LED flashing twice.

6.1 Functional, Homer and DSC Test

⚠ **This test should be carried out once a month during the life of an installed battery.**

⚠ **An MMSI number must be programmed into the M200 before commencing this test, and the target radio must be within range.**

To test your M200 is functioning correctly, press and hold the TEST/OFF Key. After one second the red LED will start to flash indicating that the Function and DSC Test Mode is activated. The key may now be released.

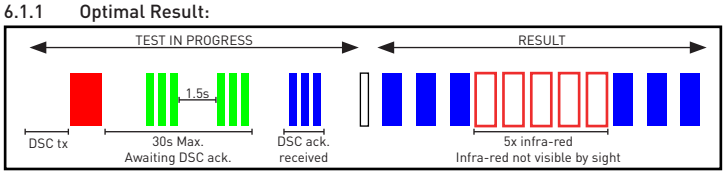
After the TEST/OFF key is released the M200 will send out three homer 121.5MHz swept tone transmissions at a reduced power level. These audible tones may be heard on a compatible radio receiver if positioned in close proximity.

The 121.5MHz test transmission is sent at a reduced power level in order to comply with European regulations. To test the 121.5MHz at a high power level outside of Europe, refer to the full M200 User Manual at www.oceansignal.com

Following the 121.5MHz transmissions, a DSC test transmission will be sent to the MMSI number programmed into your M200, see section 1.2. This test DSC transmission will be indicated by a long red flash and then followed by three green flashes every two seconds until an acknowledgement is received.

At the end of the test, the strobe will flash and the indicator LED will produce a flash sequence. This flash sequence indicates the pass/fail result. The following image shows the desired LED response following commencement of the Functional and DSC test. If any alternative test result is witnessed refer to the M200 User Manual at www.oceansignal.com.

6.1.1 Optimal Result:



6.2 AIS and GNSS Test

⚠ **This test should be carried out once a year during the life of an installed battery.**

⚠ **This test should only be performed where the M200 has a clear and unobstructed view of the sky. This is required to obtain a GNSS location fix. Keep area marked 'DO NOT OBSTRUCT' free and clear.**

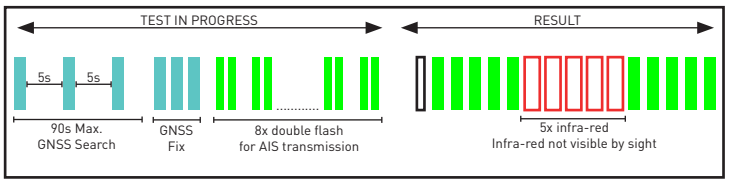
⚠ **The M200 is limited to 10x AIS and GNSS tests over the lifetime of the installed battery. If all tests have been used previously, the red LED will flash repeatedly upon release of the TEST/OFF key, then shut down.**

To initiate an AIS transmission and GNSS test, press and hold the TEST/OFF Key. After one second the red LED will start to flash. After a short while (approx. 5 seconds), the red LED will remain on and steady, indicating that the AIS and GNSS Test Mode is activated. The key can now be released.

After the TEST/OFF key is released the LED will produce a cyan flash every five seconds whilst the M200 is searching for a GNSS location fix.

Once a GNSS location fix is obtained, the strobe will flash and the indicator LED will produce a flash sequence. This flash sequence indicates the pass/fail result. The following image shows the desired LED response following commencement of the AIS and GNSS test. If any alternative test result is witnessed refer to the M200 User Manual at www.oceansignal.com.

6.2.1 Optimal result:



7. BATTERIES

The M200 uses a lithium manganese dioxide battery pack to power the device. These batteries have a five year storage life before any significant reduction in capacity. Each M200 product is marked with a battery expiry date, located on the base of the unit.

The battery must be replaced either prior to the expiry date or after the M200 has been used, even if only activated for a short period of time. Battery replacement must be carried out at an Ocean Signal authorised battery replacement centre.

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

⚠ **Always use an Ocean Signal authorised battery replacement centre when a battery change is required. Failure to do so will invalidate type approval and warranty and may also mean that the unit does not operate correctly in a distress situation.**

⚠ **Never dispose of the M200 or its batteries in a fire.**

⚠ **Never attempt to remove, puncture of dismantle the battery.**

⚠ **Never attempt to charge the battery.**

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

⚠ **Dispose of used products and its included batteries in a responsible manner, national and local regulations on battery disposal may apply including restricting the disposal of the batteries within this product in domestic refuse.**

8. SPECIFICATIONS

For product specifications please see full M200 product user manual which can be downloaded from, or viewed online at, www.oceansignal.com/manuals.