



**12-25-0000
EMERGENCY
MONITORING RECEIVER**

USER'S MANUAL

12-25 EMERGENCY MONITORING RECEIVER

1.0 DESCRIPTION

The 12-25 Emergency monitoring receiver monitors the International Distress frequency of 121.5Mhz. Its primary application is the monitoring of Man Over Board (MOB) transmissions from devices such as the Salcom 12-24 Electronic Locator Beacon (ELB).

When used in conjunction with the 12-24 ELB, it will not only detect the emergency transmission but will also display identification and message data.

A Liquid Crystal Display (LCD) indicates frequency of operation (an alternative test frequency may also be monitored), signal strength, muting status, and message data (which includes the transmitter serial number) as well as any pre-programmed identification data such as an operators name. Provision has been made for an external GPS interface which displays the co-ordinates of the vessel at the time of receiving an alarm signal, making it possible to return to the exact position where the transmission was first detected.

Sophisticated microprocessor control provides other features such as the monitoring of an alternative frequency and automatic timeout to the emergency channel.

The device is powered by an internal rechargeable battery allowing the receiver to be removed from its bracket so simple direction finding techniques can be performed.

The supplied 12-28 Interface provides a link between the 12-25 receiver and external connections such as a charging supply and other control functions. It accepts 12 to 28 volt input as an external supply source to maintain battery charge levels.

In addition to the above features, a relay output is available which may be used for sounding an external alarm or disabling the motor or self steering equipment.

The 12-25 Receiver can be used for monitoring Man Overboard transmitters on fishing vessels, motor launches and yachts. It can also be used to monitor Divers who may surface some distance from their tender and need to attract attention. Under such circumstances, with a fully charged battery, the 12-25 Receiver will operate for over 4 hours without a re-charge being necessary.

2.0 INSTALLATION

The 12-25 Receiver is supplied with a simple mounting bracket and plug-in Helical aerial. For maximum range an external aerial is recommended which should be mounted as high as practical on the vessel. The helical aerial can be detached to allow an external aerial (such as a directional Yagi) to be connected via a standard BNC connector. If a power supply of 12-28 volts DC is available then this may be wired to the supplied 12-28 interface block. Mount the receiver bracket in as high a position as is practical and connect the charging cable.

In very small vessels the same conditions apply but it is recommended that the receiver only be left in exposed conditions when required as it is not fully watertight. If there is no external battery power supply available then the unit should be left on charge overnight before use.

There are a number of other connections available if required – refer to the diagram on the next page. The RJ45 connector pinouts are shown below for reference.

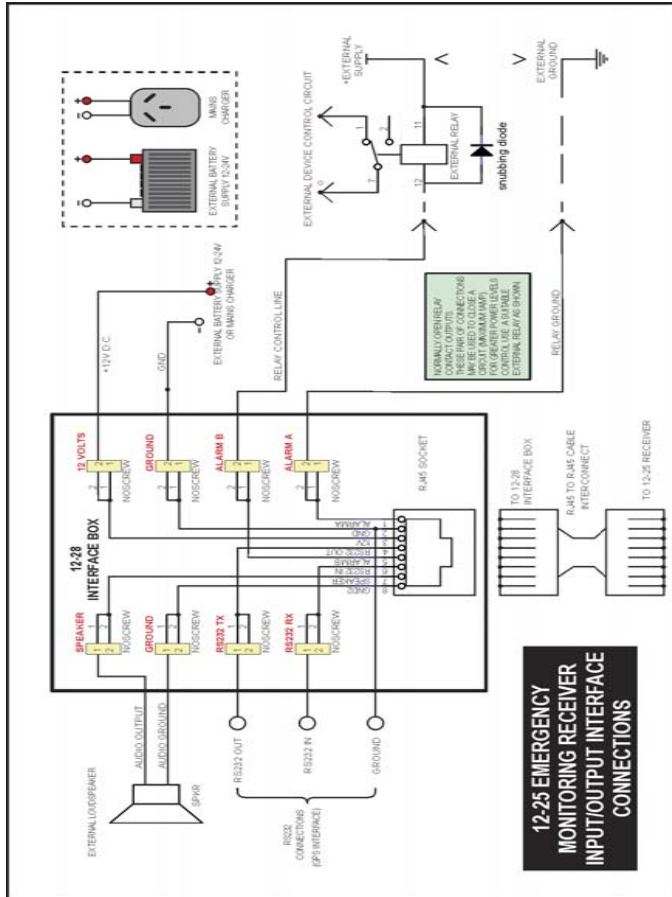
RJ 45 CONNECTOR PINOUTS

Pin 1.	Alarm relay contact A
Pin 2.	Ground
Pin 3.	+12 -28 Volt charge DC
Pin 4.	RS232 out
Pin 5.	Alarm relay contact B
Pin 6.	RS232 in
Pin 7.	External speaker output connection
Pin 8.	Ground

3.0 OPERATION

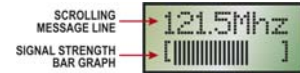
When a continuous external power supply is available and connected the receiver may be left in the "on" position. If no external power supply is available for charging the internal battery, then the receiver should be removed from its bracket for overnight charging from a suitable source before prolonged use.

Power Switch: The unit is switched on or off using the toggle switch at the top left-hand side of the unit. It is independent of the external charging connection.



Frequency switch: Toggles between the 121.5Mhz channel and the alternative channel, automatically returning to 121.5Mhz after 4 minutes if left on the other channel. The switch-on setting is 121.5Mhz.

Display: Once switched on, the display will indicate the frequency being monitored (121.5Mhz). To monitor the alternative frequency (usually 121.65Mhz), press the "frequency" button and the new channel will display. This will time-out after 4 minutes and revert to the distress frequency. When an alarm signal from a 12-24 ELB is received, the display will scroll "SOS" and the transmitter serial number. If a message has been programmed into the ELB, 10 to 15 seconds later (depending upon the message length message), the message will scroll. A bar graph indicating the received signal strength will also display.



Mute Button: This button will open the receiver channel so that any background noise or weak signal may be monitored. When muted the receiver will remain silent until a correctly decoded emergency signal is received. When muted it will not respond to noise or incorrectly coded signals.

Alarm Reset. Pressing the alarm reset button will result in the following:

- (1) **Reset the current alarm:** If the receiver is in the full alarm condition, the receiver is muted and the alarm relay contact is opened.
- (2) **Display the last alert:** If no alarm is currently being received, the last alert received will display. Depending on the transmitter type, the information may include any of the following:
 - User message
 - Identification
 - The time the ELB transmitter has been activated
 - Latitude and longitude

Audible Sounder: When an alarm signal is being decoded an audible "beep" will commence and after a few seconds the transmitted siren signal will be heard. If the signal fades the mute button should be operated so that weak levels may be monitored.

4.0 DIRECTION FINDING

Simple direction finding may be performed using the supplied helical aerial. However, in the event of a man overboard situation it is important that all crew members are aware that a visual sighting should be made as soon as possible.

In general terms it is only necessary to determine broadly the direction of an alarm signal. In a moving vessel it is obvious that the general direction will be directly behind the vessel. Care should be taken in maneuvering under such circumstances with an observer appointed to keep visual contact with the person in distress. In cases where the vessel may be stationary, such as a diving tender, the general direction may be determined as follows:

1. Unplug any external connection and remove the receiver from its mounting bracket.
2. Unmute the receiver by pressing the mute button.
3. Move to a clear position on the vessel. Hold the receiver at arm's length in a semi-vertical position but in a position such that you can observe the LCD bar graph which indicates signal strength.
4. With the receiver held in this position rotate your body slowly 360 degrees observing the signal strength indicator.
5. Maximum bar line indication shows that you are facing in the direction of the signal. Note that it may take several attempts to determine the maximum signal direction – particularly if the signal strength is varying.
6. Motor towards the indicated signal source until a sighting is made. If the signal fades reverse your path as you may be proceeding in the wrong direction.
7. Always move to the highest point available to ensure the best possible reception. Make sure that there is an observer who can attempt a visual sighting based upon the indicated radio position.

5.0 SPECIFICATIONS

Frequency	2 channel MOB Receiver – 121.5Mhz and 121.65Mhz (121.4Mhz. optional)
Default freq	121.5Mhz
Sensitivity	-110dBm
Image & spurious responses	-70db (unmuted)
Alarm Activation (muted response)	Swept tone downwards between 300Hz-1600Hz rate 2-4hz
Data & Identification	Decodes identification (serial number and message) from 12-24 MOB transmitter. Displays NMEA GPS co-ordinates from external source.
Supply	9v Internal battery with external charger input 12-28volt Current (muted) average. 15mAh (Automatic battery saver internally built in.
Aerial	BNC connector – Helical option
Audio	"beep" alarm. Internal Speaker plus external output.
LCD	Automatic backlighting. Signal strength bar graph. Identification number and message capability. Provision for GPS input NMEA co-ordinates and directional information.
Inputs/outputs: RJ12 (8 pin connector)	RS232 input/output. Accepts NMEA GPS co-ordinates. External speaker audio output. Relay contact output normally open (1 amp) External supply charging input (12-28v)
Enclosure	ABS Plastic semi sealed – portable
Dimensions:	150x73x33mm
Weight	273 gms (excluding antenna)
Accessories	Cradle: Wall mount cradle Connector Interface: 12-28 I/O interface cable breakout Optional: 230v/12v wall mount charger

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