„easyRESCUE-DivePro" - Transponder Manual

easyRESCUE-DivePro
Diver Locating System
Product No.: A040-DP
Rev. 1.1

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PLEASE READ THIS FIRST!

Safety Precautions

The easyRESCUE-DiveProtransponder contains Li-Ion batteries. When the device is used at temperatures outside the limits of -20°C and +55°C, the useful battery capacity is reduced. Keep the device away from hot environments, because at temperatures of more than +70°C the batteries inside the easyRESCUE-DiveProcould cause damage. Li-Ion batteries shall be given to the recycling process and should not be given to the home garbage. The easyRESCUE-DiveProproduces electromagnetic fields, which could interfere medical devices. For safety reasons store this device so that children cannot reach it. The manufacturer is not responsible for damages or failures that are caused by the easyDIVEPOS, damaged battery pack or misuse by the user. Use this device only together with certified equipment. Other equipment could damage the easyDIVEPOS. Clean this device with a clean, dry and soft blanket. Do not use aggressive or acid liquids and chemicals for cleaning. Do not open the device on your own. Unpermitted opening of the easyRESCUE-DiveProcould damage the device and the warranty is lost.

LICENSING

IMPORTANT:

In most countries the operation of a VHF unit unsing the marine band is included under the vessels marine VHF license provisions. Please contact the relevant authority in your country for more information. In accordance with a policy of continual development and product improvement the easyRESCUE-DiveProhardware and software may be upgraded

from time to time and future versions of the easyRESCUE-DivePromay therefore not correspond exactly with this manual. When necessary upgrades to the product will be accompanied by updates or addenda to this manual. Please take time to read this manual carefully and to understand its contents fully so that you can install and operate your system correctly.
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ATTENTION:

PLEASE USE THE easyRESCUE-DivePro CAREFULLY AND NOT UNINTENDED. ALSO THE easyRESCUE-DivePro WILL NOT OPERATE AUTOMATICALLY. IT MUST BE INITIALISED BY THE USER IN CASE OF EMERGENCY

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Revision of the operation manual

Rev. 1.0 Author: Jürgen Zimmermann, 08. February 2012

Rev. 1.1 Author: Max Schuster, 4th December 2014

Congratulations!

Thanks to purchase a unit from the Weatherdock AG. This testifies your high technical competence

1. SHORT DESCRIPTION



Figure 1

The easyRESCUE-DivePro is a portable battery powered AIS-Position transmitter with an integrated GPS-receiver.
The device is intended for the use in locating operations.
The easyRESCUE-DivePro operates as a VHF-Transmitter and it can be activated in two situations by pressing two different buttons:

(A) The locating object wants to inform the searching ship about its position. So the ship, it belongs to, can search and find the locating object. This happens on a frequency in the marine VHF band, which is assigned by the authority of the country.

(B) Alerting in case of emergency the units operates as an AIS-SART (AIS - Search-and-Rescue-Transmitter).

The range depends on the height of the transmitters' antenna over sea level. The range is approx. 10-15 nautical miles, if the height of easyRESCUE-DivePro´s antenna 1m and up above sea level assumed that the receiving antenna is at a height of 5m and up (ship's VHF antenna). The Li-Ion battery pack provides a capacity that ensures an operation time of more than 120h, when activated.
This device maintains water tightness down to 10m depth, not unduly affected by seawater or oil and is resistant to sunlight. It withstands drops from a height of 20 m into water.
The Li-Ion batteries can be recharged easily using the charging station that can be purchased by an authorized distributor.

2. ACTIVATORS AND INDICATORS



Figure 2

2.1. Activating elements

2.1.1. Button "ON"

Pressing the button „ON“ the easyRESCUE-DivePro enters the 'Identification" mode (transmitting locating object's position).
If this button is pressed again for 3 seconds, the normal mode will be terminated and the device is turned off.

2.1.2. Button "ALERT"

With the button "ALERT“ the device can be activated in case of emergency. AIS-SART messages cause an alarm at the receiver side (i.e. shore base station or mobile ship station). The “ALERT” mode can be terminated by pressing the BOTH button for 3 seconds. The easyRESCUE-DivePro switches totally off then.

2.2. Indicators

2.2.1. GPS LED

The green LED with the marking „GPS“ is blinking, when the device receives GPS signals and is able to get a position fix. If the GPS LED does not blink, there is not GPS reception possible.

2.2.2. ON LED

The yellow LED with the marking „ON" is blinking, when the easyRESCUE-DivePro is activated in case of identification (transmitting locating object's position and additional status information).

2.2.3. ALERT LED

The green LED with the marking "ALERT" is blinking, when the easyRESCUE-DivePro is in alert mode.

2.2.4. White Flash LED

The bright white flash LED is used for visual locating purpose, especially at night times.

3. OPERATION INSTRUCTION

3.1. Activation "ON"



Figure 4

- Press the button „ON".
- The ON-LED starts flashing every 2 seconds. As soon as a GPS position is available the GPS-LED start flashing

too. The easyRESCUE-DivePro starts transmitting a burst of VHF messages.
The reporting interval can be selected by the easyRESCUE-DivePro Programming Tool (see later). The reporting interval can be 3 minutes, 1 minutes, 30, 10 and 6 seconds.

- The yellow LED also indicates the charge status of the battery. If the battery is full, the LED would flash once. If it is half full, then twice and in case it is becoming empty three times.



- Transmitted information:

  - ***Unit-ID**: (9 digits)*
  - ***Position** : Latitude & Longitude with a resolution of 1/10.000 of a minute,*
  - ***Speed over ground (SOG)** : drift due to currents,*
  - ***Course over ground (COG),***
  - ***Diving Vessel / Divers name**: (20 characters)*
  - ***Vessels destination or area of activity**: (20 characters)*

3.2. Activation "ALERT"



Figure 3

- Press the button "ALERT" and take care that the easyRESCUE-DivePro has got line of sight to the sky. This ensures best GPS reception conditions.

- The ALERT-LED starts flashing every 2 seconds. As soon as a GPS position is available the GPS-LED starts

flashing too. The easyRESCUE-DivePro starts transmitting a position report every minute. The unit is transmitting into the international AIS, which ensures most effective help from other ships in vicinity.
If the unit loses a GPS position fix, then the GPS-LED stops flashing but the easyRESCUE-DivePro will transmit the last known position.

- The status of the battery is the same as described above.

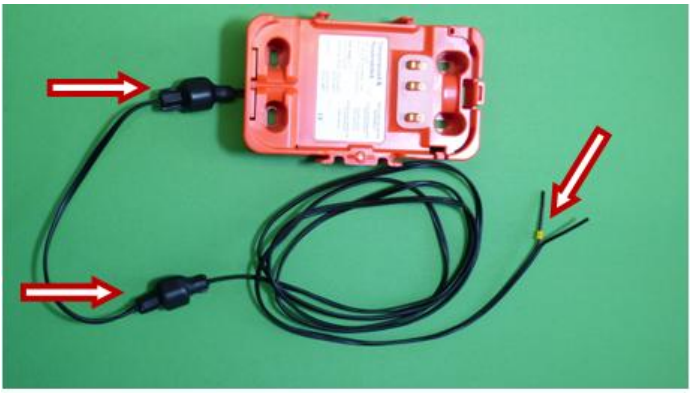
- Transmitted information :

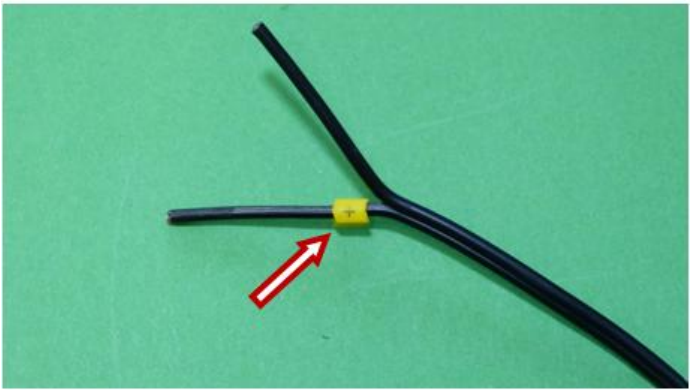
  - ***Unit-ID**: (9 digits)*
  - ***Position** : Latitude & Longitude with a resolution of 1/10.000 of a minute,*
  - ***Speed over ground (SOG)** : drift due to currents,*
  - ***Course over ground (COG),***
  - ***Diving Vessel / Divers name**: (20 characters)*
  - ***Vessels destination or area of operation**: (20 characters)*
  - ***Search-And-Rescue ALERT***

- The ALERT-mode can be terminated by pressing both buttons for more than 3 seconds. The unit goes back to normal operation (ON-Mode).

4. INSTALLATION TIPS

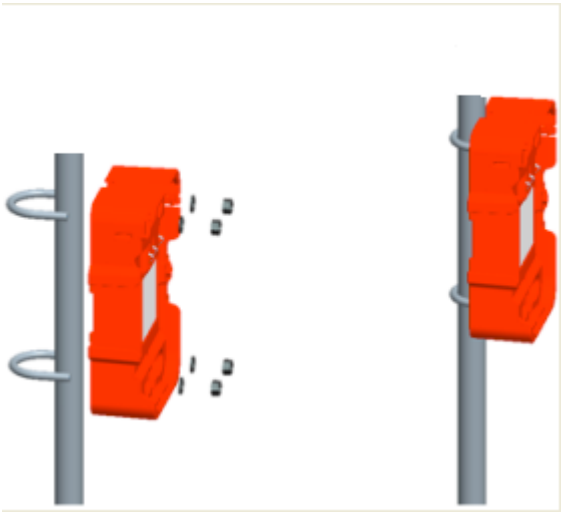
To install the easyRESCUE-DivePro the unit holder as you can see in picture below.





You can mount these on the pole of your buoy. So you can use it for a variety of poles.
If you have access to board supply voltage, you can connect the cable to 12V / 24V. So the unit will be powered through

this power supply. In case of power supply outage the unit will continue operation using the integrated rechargeable batteries without any interrupt.









ATTENTION: Do not have a pole close to the antenna (left figure). This would significantly reduce the radiated power of the VHF signal.
The right figure is perfect.

5. CHARGING THE BATTERIES

The easyRESCUE-DivePro can be recharged in the Battery-Charger.
The Battery-Charger is an accessory with the product number **A121** and can be purchased by your distributor.
Inside the easyRESCUE-DivePro there are Li-Ion batteries, which have got a capacity of around 120 h operation time. These batteries are high quality batteries with very low self discharge. So you can store the fully charged easyRESCUE-DivePro for more than three month without a significant loss in capacity.





Put it into the charging station as picture above.
The nose on the upper end of the station will fix the device.

Place the easyRESCUE-DivePro into the Battery-Charger. The battery charger must be connected to DC power supply (12V / 24V, 1A).
When charging, the yellow LED is on continuously.
The green LED is on, when the batteries are full charged.
When the batteries are almost empty, the full charge process lasts approximately 4 hours.

6. PROGRAMMING

The easyRESCUE-DivePrOcan be configured with information, that is included in the VHF messages and different settings. The Unit-ID is a 9-digit figure like the MMSI, known from the AIS system. It is a unique number, programmed by an authorized body!

In order to program the easyRESCUE-DivePro you need the USB-Programmer device **A124**. The USB-cable shall be connected to a PC or laptop.



With the Programmer device comes a CD-ROM with the installation software for the PC.
Insert the CD-ROM into your PC or Laptop and start the setup program.
On the Windows-Desktop you will see the icon of the easyRESCUE-DivePro programming software.
When you double-click that icon the following program window will open:

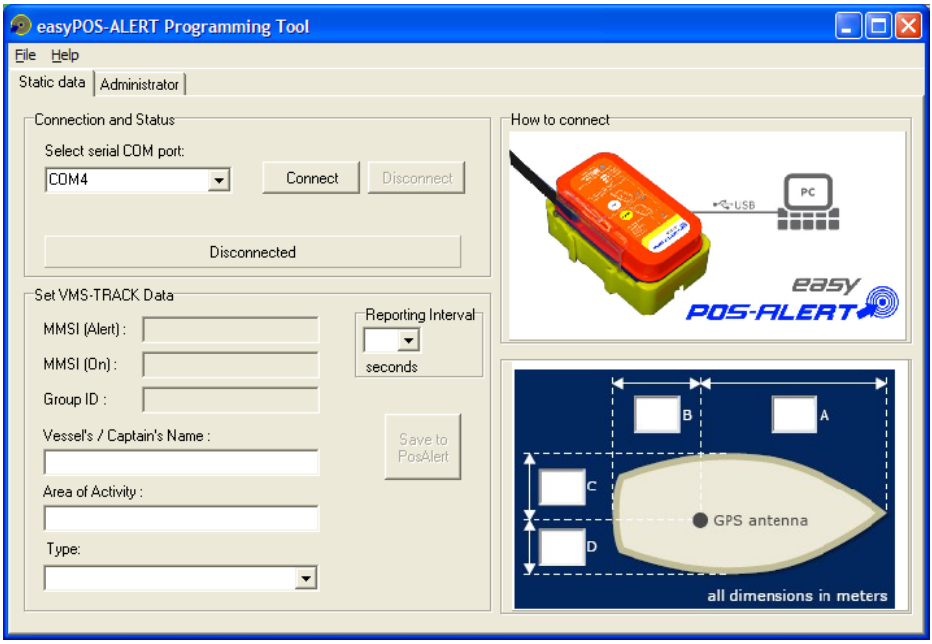


Figure 4

6.1. Programming Static Data

Now you have to insert the easyRESCUE-DivePro into the programmer socket, which is connected to the USB port of

the PC. You see all LEDs are turning on until only the white LED remains on. Now the unit is ready for connecting with the PC software. Please select the right COM-Port and press "Connect". After that the following picture will occur:

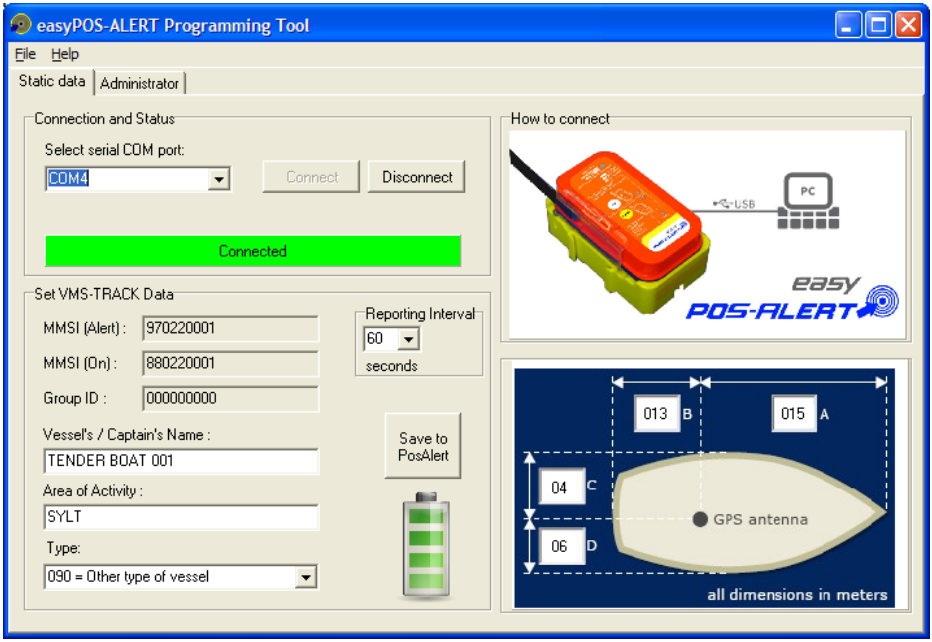


Figure 5

The contents shown above are just an example. The MMSI can only programmed by an administrator. In case of changing the VHF frequency channels, which might be necessary in some countries, contact you distributor. He is authorized to change the frequencies.

You can enter a name, which could be the name of the captain or vessel. You can also enter the area of activity of the vessel, which could be the home area.

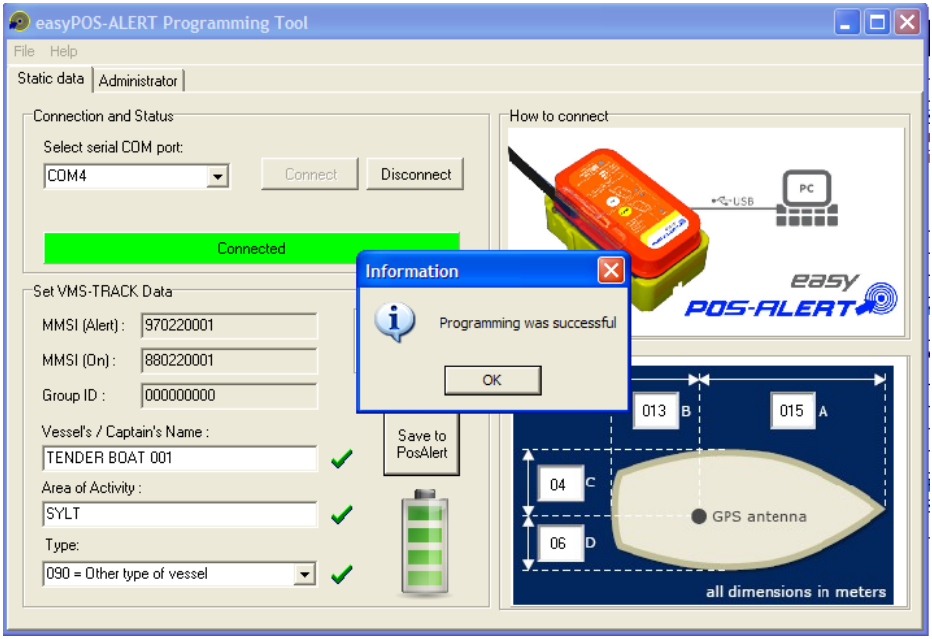
You also have the possibility to change the reporting rate to following values : 3 minutes, 1 minute, 30, 10 and 6 seconds.

ATTENTION:
The reporting rate has effect on the battery operation time:

3 minutes	=>	180 hours,
1 minute	=>	120 hours,
< 1 minute	=>	24 - 36 hours

To store all the data and settings press "Save to DivePro ".

After successful programming the following window occurs:

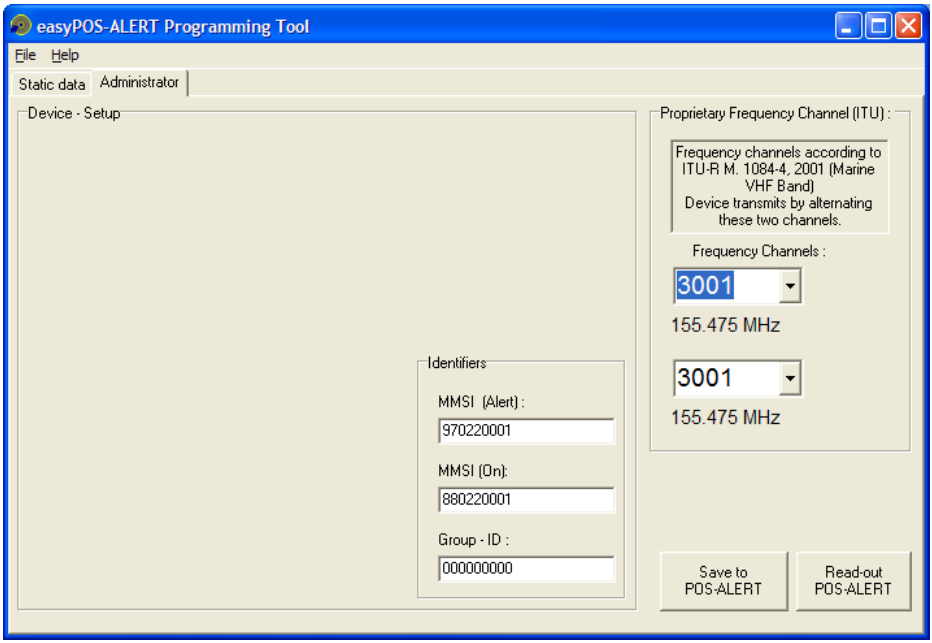


Now you can press on "Disconnect" and remove the unit out of the socket. The unit will turn off automatically after 10 sec.

The previously programmed data are stored in a non-volatile memory. So the easyRESCUE-DivePro need not to be programmed again and again.
The data remain even, if the device is powered off.
But you can change the contents later by repeating this process.

6.2. Administrator settings

When you are administrator, that means you are authorized to do frequency changes, then you have got a "dongle" (blue USB-stick).
The dongle has to be in USB port before starting the Programming-Tool.
Now you can go to the administrator tab:



Here you can change the unit identifiers and the frequencies.

6.2.1. MMSI (Alert)

This identifier is sent out, when you have pressed the "Alert" button. The unit is transmitting on international AIS

frequencies. All AIS-vessels will get an alert message on their plotters together with your position. It should always start with "97022.....", because this is the official numbering of AIS-SART. We strongly recommend not changing this number. The manufacturer has provided a unique number here.

6.2.2. MMSI (ON)

This is the MMSI, which is sent in normal operation. You can choose any 9-figure number you want, because the unit is sending on proprietary frequencies (NOT on AIS).

6.2.3. Frequencies

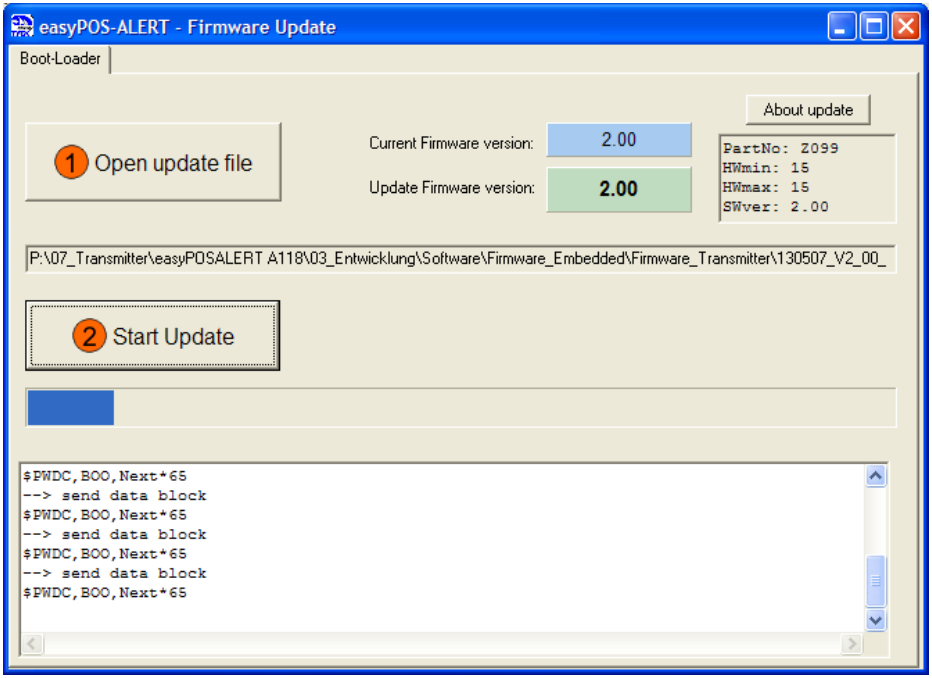
Here you should enter the frequency you have got a license for.
It could be a a single frequency, so both channels have the same value.
Or you have got two frequencies, which are used in an alternating way, as known from the AIS.

6.3. Firmware Update

With the Programming Tool you have the possibility for updating the internal software of the easyPOSALERT (called firmware). So you can keep the unit always up to date.

For updating press on "File => Update", then the Update window occurs.

You select the new update file (extension *.wdc) by clicking on (1).
For starting the update process just click on (2). See following window.



7. TECHNICAL DATA

Parameter	Value
Dimension	130 x 30 x 70 mm
Weight	380 g
DC supply	rechargeable Li-Ion-batteries
Frequency	Locating object locating: Marine band programmable by distributor : 155.450 ... 162.025 MHz (contact local authority for frequency assignment)
Radiated Power	> 2 W (typ.) (min. 500 mW)
GPS receiver	Approved to IEC 61108-1
VHF-Antenna	extended, vertical polarized
Operating time	min. 120 hours with fully charged batteries
Battery storage (fully charged)	min. 3 month without significant loss of charge
Operation temperature range	-10°C to +55°C
Storage temperature range	-30°C to +70°C
Display	3 LEDs and a "Flash"-LED
Activators	2 buttons
Standards	IEC 61097-14, IEC 60945, ITU-R M.1371-3, IMO Res. MSC.246(83), IEC 61108-1
Supported AIS messages	Msg. 1: AIS Positions Report. Msg. 5: AIS Static Report. Msg. 14: AIS Alerting Message.

Parameter	Value
Environment	Waterproof: Down to 10m water level Exterior Finish: Highly visible yellow Compass safe distance: 80cm Mechanical shock Drop into water: 20 m Drop on concrete surface: 1m Thermal shock Temperature difference: 45 K Resistance Oil, seawater and sun light resistant

8. DECALARATION OF CONFORMITY

easyPOSALERT (portable position transmitter)
Identifing and Alerting transmitter

Part No. **A040-DP**
Manufacturer: **Weatherdock AG**

1) Proved performance:

- Up to 8-12nm by a ship with VHF receiver and an receiving antenna height of approximately 5 m height
- Up to 40 nm (from a helicopter (altitude 1000 ft)
- Very compact and rigid.
- 10m water depth level approved

2) Standards:

easyPOSALERT is based on AIS SOTDMA technology.
The **easyPOSALERT** is is approved by the following standards:

ITU-R M.1371
EN 60945 (2002)
IEC 61097-14 (2010)
IEC 61108-1 (2003)
MSC.246 (83) (IMO Resolution)
R&TTE Directive 1999/5/EC
BSH-Type Approval No.: BSH/4615/4361565/10

easyPOSALERT's technical specification is according to above standards, with the exception of the "ON" feature and its functionality.

9. BOX CONTAINS

- easyPOSALERT transmitter, fully functional
- Manual

10. AVAILABLE ACCESSORY

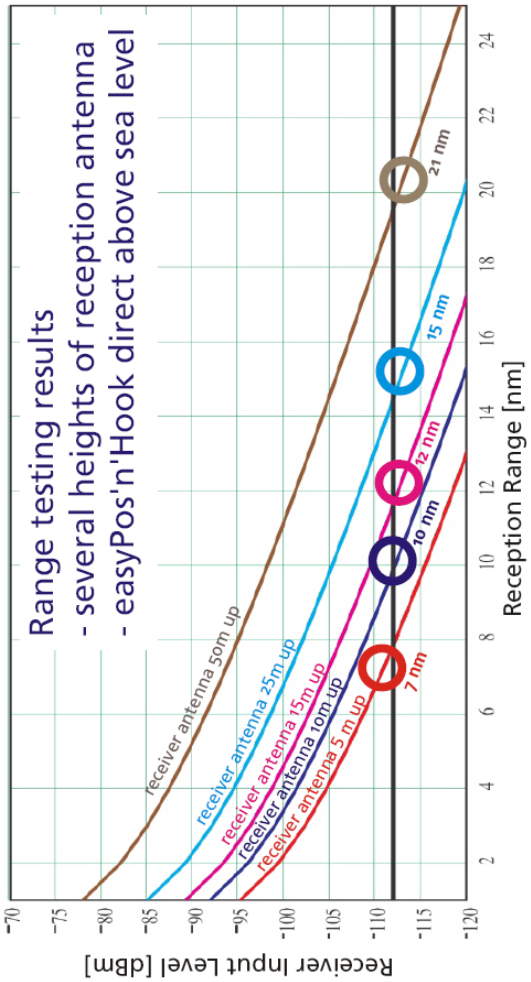
- Battery charger A121
- Programmer A124 with programming software
- easyRESCUE- DivePro VHF receiver
- VHF antenna

Please contact specialized distributors.

11. FAQ

Problem	Reason	Solution
Cannot activate the device.	Battery is empty	**Recharge the Li-Ion batteries only with the charger station for the easyRESCUE-DivePro**
Battery change		**The unit is fully potted and so there is no possibility to change the batteries.**

12. ANNEX RANGE TEST RESULTS



13. SUPPORT

14. WARRANTY

This Weatherdock AG product is warranted to be free from defects in materials or workmanship for 24month from the date of purchase. Within this period, Weatherdock AG will at its sole option repair or replace any components that fail in normal use Such repairs or replacement will be made at no charge to the customer for parts or labor, provided that the customer shall be responsible for any transportation cost. This warranty does not cover failures due to abuse, misuse, accident or unauthorized alteration or repairs.
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