

# Receiver Technical Data Sheet



## SECTION 1: IDENTIFICATION

<b>Product Name</b>	Mobilarm Crewguard Base Unit Plastic Mobilarm Crewguard Base Unit Metal Mobilarm SARfinder Base Unit Mobilarm SARfinder Transportable Unit
<b>Manufacturers Name</b>	Marine Rescue Technologies Ltd
<b>Address</b>	Marshall House, Zarya Court, Grovehill Road, Beverley, HU17 0JG, United Kingdom.
<b>Telephone Number</b>	+44 (0)1482 679300
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<b>E-mail</b>	sales@mrtsos.com
<b>Date of Issue</b>	February 2017
<b>Issue Number</b>	1
<b>Description</b>	Available in portable or fixed mounted units, the sMRT base station range includes 121.5MHz receiving equipment to enable you to quickly alert, track and recover your crew in the event of a man overboard situation.

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## Technical Data - SARFinder MKIII

<b>Control box dimensions:</b>	165x95x65mm - Aluminium Box (excluding antenna & connectors)
<b>Control box weight:</b>	1000gms
<b>Mounting options:</b>	Surface 210mm x 146mm (Opt 1) Bracket 260mm (Opt 2) weight 1000gms
<b>Antenna base dimensions:</b>	550 mm H x350mm W - PVC Plastic
<b>Antenna base weight:</b>	950gms
<b>Antenna pole mounting bkt:</b>	50mm Internal Dia
<b>Temperature range:</b>	-20°C + 55°C (Operational)
<b>Bandwidth:</b>	25KHz
<b>Modulation:</b>	AM
<b>Ports:</b>	DC12V Power Cable (1m) Antenna Cable (20m)
<b>Waterproofing:</b>	IPX67
<b>Sensitivity:</b>	3 dBuV/m (threshold of target bearing resolution)
<b>Frequencies:</b>	121.5MHz, 121.65MHz (Test 1), 121.775 (Test 2)
<b>Criteria of ELT/PLB recognition:</b>	Audible AM down-swept tone (compliant to ITU-R M.690-2)
<b>Audio output:</b>	max. 8Vss (speaker > 8 Ohm)
<b>Relay contact:</b>	Floating, carrying capacity max. 0.5 A/10W
<b>Current consumption:</b>	Standby = 300mA – Tracking = 850mA – Alarming 1300 mA If alarm + ext. speaker (8 Ohm) = 400mA
<b>Operating voltage:</b>	12V DC (with transient compliance to ISO 7637-2)
<b>Antenna gain:</b>	1.4 dBi nominal
<b>Bearing detection method:</b>	Triangular phase delta
<b>Bearing resolution accuracy:</b>	±15° @ 10 dBuV/m maximum
<b>Antenna triple coax cable:</b>	Impedance: 75 Ω Capacitance 60pF / m Attenuation / 10m: 0.28dB @ 1.5MHz, 2dB @ 100MHz, 4.7dB @ 500MHz Attenuation / 100m: 20dB @ 100MHz Diameter: 7.2 mm Operating temperature: -20° +70°C Coaxial Type : Triple RG179B/U
<b>Standards Tested to:</b>	ETSI EN 301 489-1 V1.5.1 (2004-11) ETSI EN 301 489-22 V1.3.1 (2003-11)

## COMPOSITION/INFORMATION on INGREDIENTS

Units comprise of either an enclosed outer metallic or plastic casing, depending on the model IP65 rating Internal PCB and cable connectors fitted conform to current EEC regulations.

## FIRE-FIGHTING MEASURES

**Suitable extinguishing media:** Metal fire extinction powder, rock salt or dry sand or Carbon Dioxide (CO<sub>2</sub>) shall be used.

**Extinguishing media with limited suitability:** Water must be avoided.

**Special protection equipment during fire-fighting:** Contamination cloth including breathing apparatus.

**Attention:** Do not let used extinguished media penetrate surface water or ground water, dispose of properly.

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## PHYSICAL and CHEMICAL PROPERTIES

<b>Appearance:</b>	Device is housed in a sealed IP67-plastic or metallic housing.
<b>Stability in water:</b>	Product is waterproof - IP67.
<b>Reaction with water:</b>	N/A.
<b>Boiling point:</b>	N/A.
<b>Vapour pressure mm:</b>	N/A.
<b>HG:</b>	N/A.
<b>Vapour density:</b>	Not soluble in water.
<b>Solubility in water:</b>	N/A.
<b>Appearance &amp; odour:</b>	N/A.
<b>Specific gravity:</b>	N/A.
<b>Melting point:</b>	N/A.
<b>Evaporation rate:</b>	N/A.

## STABILITY and REACTIVITY

This product is stable under ordinary conditions of use and storage.

## TOXICOLOGICAL INFORMATION

<b>Irritancy:</b>	N/A.
<b>Sensitization:</b>	N/A.
<b>Carcinogenicity:</b>	N/A.
<b>Reproductive toxicity:</b>	N/A.
<b>Teratogenicity:</b>	N/A.
<b>Mutagenicity:</b>	N/A.

## ECOLOGICAL INFORMATION

<b>Mammalian effects:</b>	N/A.
<b>Eco-toxicity:</b>	N/A.
<b>Bioaccumulation potential:</b>	N/A.
<b>Environmental fate:</b>	N/A.

## DISPOSAL CONSIDERATIONS

<b>Disposal:</b>	Only through a recognised disposer of PCB's. Do not attempt to dismantle this product.
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## TRANSPORT INFORMATION

No hazardous materials.

## REGULATORY INFORMATION

<b>Classification:</b>	N/A.
<b>Hazard symbol:</b>	Miscellaneous.
<b>Safety phrases:</b>	S2, keep out of the reach of children. S8, keep away from moisture.

## OTHER INFORMATION

The information contained herein is furnished without warranty of any kind. Users should consider this data only as a supplement to other information gathered by them and must make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers.

# Receiver Technical Data Sheet

## Mobilarm SARfinder Transportable Unit MOA-20303

### Sealed Lead-Acid Battery General Purpose

537-5488(12V7.0Ah)

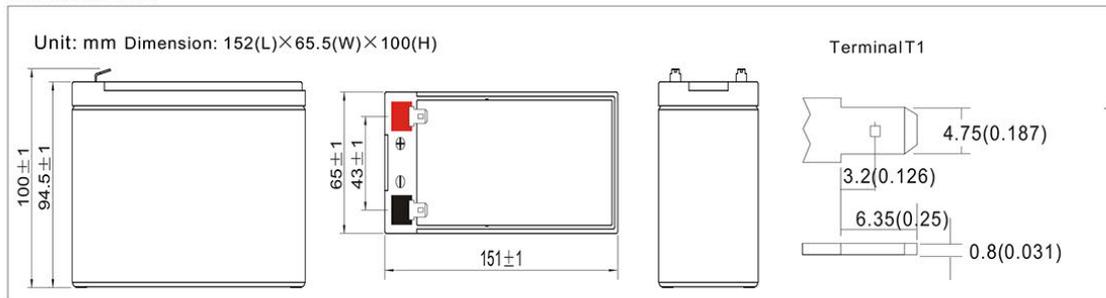
#### Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	7.0Ah@20hr-rate to 1.80V per cell @25°C
Weight	Approx 2.18 kg
Max. Discharge Current	105A (5 sec)
Internal Resistance	Approx 23mΩ
Operating Temp. Range	Discharge : -15~50°C (5~122°F) Charge : 0~40°C (32~104°F) Storage : -15~40°C (5~104°F)
Nominal Operating Temp. Range	25±3°C (77±5°F)
Float charging Voltage	13.5 to 13.8 VDC/unit Average at 25°C
Recommended Maximum Charging Current Limit	2.1A
Equalization and Cycle Service	14.4 to 15.0 VDC/unit Average at 25°C
Self Discharge	The batteries can be stored for more than 6 months at 25°C. Self-discharge ratio less than 3% per month at 25°C. Please charge batteries before using.
Terminal	T1
Container Material	A.B.S. (UL94-HB) , Flammability resistance of UL94-V0 can be available upon request.

#### Applications

- ◆ All purpose
- ◆ Uninterruptable Power Supply (UPS)
- ◆ Electric Power System (EPS)
- ◆ Emergency backup power supply
- ◆ Emergency light
- ◆ Railway signal
- ◆ Aircraft signal
- ◆ Alarm and security system
- ◆ Electronic apparatus and equipment
- ◆ Communication power supply
- ◆ DC power supply
- ◆ Auto control system

#### Dimensions



#### Constant Current Discharge Characteristics : A (25 °C)

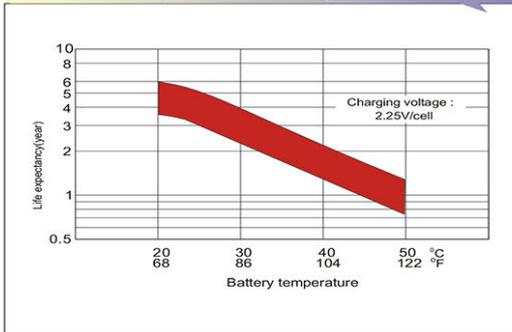
F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
11.1V	13.3	8.86	7.31	6.43	5.26	4.11	3.40	2.09	1.57	1.29	1.10	0.951	0.756	0.631	0.347
10.8V	16.0	10.6	8.60	7.35	5.88	4.51	3.68	2.24	1.68	1.38	1.15	0.993	0.784	0.651	0.350
10.5V	19.2	12.2	9.55	8.13	6.30	4.83	3.89	2.33	1.74	1.41	1.19	1.02	0.805	0.667	0.354
10.2V	22.2	13.6	10.5	8.80	6.72	5.06	4.06	2.42	1.78	1.44	1.21	1.04	0.817	0.678	0.360
9.9V	24.5	14.7	11.3	9.43	7.07	5.28	4.20	2.49	1.83	1.48	1.24	1.06	0.830	0.686	0.365
9.6V	27.0	16.0	12.1	9.95	7.45	5.50	4.37	2.56	1.87	1.52	1.27	1.09	0.848	0.698	0.367

#### Constant Power Discharge Characteristics : W (25 °C)

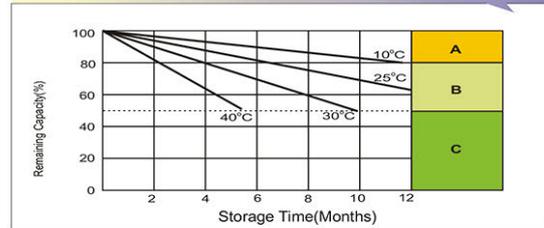
F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
11.1V	149.2	99.5	82.4	72.7	60.0	47.3	39.4	24.3	18.4	15.2	12.9	11.2	8.95	7.50	4.12
10.8V	173.2	116.8	95.4	82.5	66.6	51.5	42.4	25.9	19.5	16.0	13.5	11.7	9.26	7.72	4.15
10.5V	205.8	132.5	105.0	90.4	70.8	54.8	44.6	26.9	20.1	16.4	13.8	12.0	9.49	7.90	4.19
10.2V	235.4	146.1	114.6	97.2	75.0	57.1	46.4	27.8	20.6	16.7	14.1	12.2	9.62	8.02	4.26
9.9V	255.9	155.9	121.3	103.1	78.4	59.3	47.7	28.6	21.1	17.1	14.4	12.4	9.75	8.10	4.32
9.6V	277.1	166.4	128.2	107.0	81.5	61.2	49.3	29.2	21.5	17.5	14.6	12.6	9.94	8.23	4.33

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## Effect of Temperature on Long Term Float Life

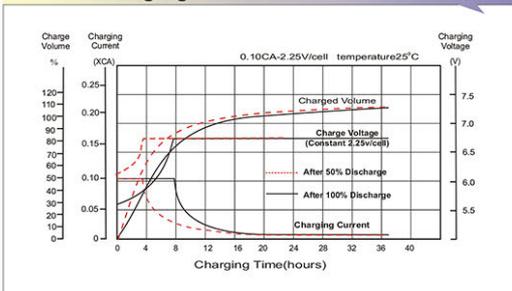


## Self Discharge Characteristics

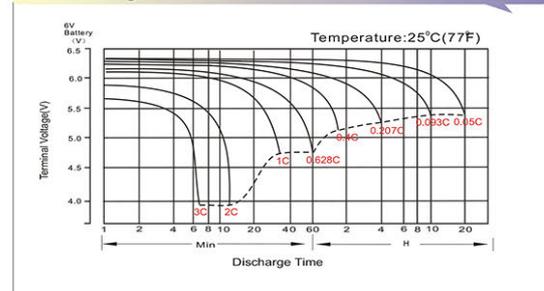


- A** No supplementary charge required (Carry out supplementary charge before use if 100% capacity is required.)  
Supplementary charge required before use. Optional charging way as below:
- B** 1. Charged for above 3 days at limited current 0.25CA and constant voltage 2.25V/cell.  
2. Charged for above 20 hours at limited current 0.25CA and constant voltage 2.45V/cell.  
3. Charged for 8-10 hours at limited current 0.05CA.
- C** Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this is reached.

## Float Charging Characteristics



## Discharge Characteristics



## Capacity Factors With Different Temperature

Battery Type	-20°C	-10°C	0°C	5°C	10°C	20°C	25°C	30°C	40°C	45°C
AGM Battery 6V&12V	46%	66%	76%	83%	90%	98%	100%	103%	107%	109%

## Discharge Current VS. Discharge Voltage

Final Discharge Voltage V/cell	1.80V	1.75V	1.60V
Discharge Current (A)	(A) ≤ 0.2C	0.2C < (A) < 1.0C	(A) ≥ 1.0C

**Charge the batteries at least once every six months, if they are stored at 25°C.**

### Charging Method:

Constant Voltage	-0.2Cx2h+2.4~2.45V/Cellx24h, Max. Current 0.3CA
Constant Current	-0.2Cx2h+0.1CAx 12h
Fast	-0.2Cx2h+0.3CAx4.0h

## Maintenance & Cautions

<b>Float Service:</b>
◆very month, recommend inspection every battery voltage.
◆Every three months, recommend equalization charge for one time.
<b>Equalization charge method:</b>
Discharge: 100% rate capacity discharge.
Charge: Max. current 0.3CA, constant voltage 2.35V/Cell charge 24h.
◆Effect of temperature on float charge voltage: -3mV/°C/Cell.
◆Length of service life will be directly affected by the number of discharge cycles, depth of discharge, ambient temperature and charging voltage.





Manufacturer and distributor of global leading Man Overboard Solutions from



# Receiver Technical Data Sheet

## Declaration of Conformity

Name of Manufacturer/Eu Importer:

Marine Rescue Technologies Limited  
Marshall House | Zarya Court  
Grovehill Road | Beverley  
East Yorkshire | HU17 0JG  
United Kingdom  
sales@mrtsos.com  
www.mrtsos.com

### Declares that products: SARfinder® Man Overboard Safety System

Conforms to the EMC Directive 2004/108/EC and the R&TTE Directive 1999/5/EC as attested by conformity with the following harmonized standards with the following harmonized standards:

**ETSI EN 301 489-22 V1.3.1 (2003-11):**

Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 22: Specific conditions for ground based VHF aeronautical mobile and fixed radio equipment.

**ETSI EN 301 489-1 V1.5.1 (2004-11):**

Electromagnetic compatibility and Radio spectrum Matters (ERM); Electro Magnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements

CREWFIX® EN55022:2006 & EN55024:1998 /A1:2001 /A2:2003

Signed: 

Name: Ken Gaunt

Position: CEO

Place: Beverley

Date: February 2014