

Tron SART20

RADAR TRANSPONDER





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Tron SART20 is designed for use in search and rescue (SAR) operations. A radar transponder gives the location for any nearby vessel and aircraft with X-band radar. Radar transponder is designed for use in lifeboats and liferafts. Easy mounting in bulkhead bracket onboard the vessel, easy to release and activate in an emergency situation. Various installation devices available as options. MED and other approvals available. Mandatory carriage equipment for all ships of 300 gross tonnage and upwards, according to SOLAS III/6.2.2, III/26.2.5 and IV/7.1.3.



SPECIFICATIONS	
TECHNICAL	
Weight	482 g
Height:	251 mm (9 7/8")
Material housing:	Glass-reinforced Polycarbonate
Frequency	X-band (3 cm) (9.2 - 9.5 GHz)
Radiated power	> 400 mW e.i.r.p (+26 dBm)
Sweep type	12 sweep sawtooth type Forward 7.5 μ s \pm 1 μ s Return 0.4 μ s \pm 0.1 μ s starts with return sweep
Receive sensitivity	Better than -50 dBm e.r.s
Response delay	Max 0.5 μ s
Antenna pattern	Horizontal polarisation Omnidirectional radiation in the horizontal plane Greater than \pm 2.5 degrees elevation angle in the vertical plane
Antenna height	Place at least 1m (3.3 ft) above sea/ground level
Indication	Visual and audible alarm
Temperature range	Operating: -20°C to +55°C Storage: -30°C to +65°C
Battery	Lithium, non hazardous battery for safe and unrestricted transportation 5 year maintenance kit, serviceable on board
Operating life	96 hours standby + 8 hours continuous operation when activated by a radar with 1 kHz prf at -20°C.
Standards	IEC 61097-1 IEC 60945 IMO A.802 (19) IMO A.694 (17) MSC.247(83)
ACCESSORIES	
Brackets	Bulkhead bracket Lifeboat bracket
For life raft	Life raft mounting pole Neoprene bag and strengthened lanyard Life raft mounting strap
WARRANTY	
	5 years





TECHNICAL BULLETIN TB06-2009

Regarding: Tron SART20 and compliance with SOLAS ammendments to chapter III, regulation 6, MSC .247(83) and MSC.256(84)



A) Regarding SOLAS chapter III, regulation 6 which will be changed from 1.7.2010:

Old text:

2.2 Radar transponders

At least one **Radar transponder** shall be carried on each side of every passenger ship and of every cargo ship of 500 gross tonnage and upwards. At least **Radar transponder** shall be carried on every cargo ship of 300 gross tonnage and upwards but less than 500 gross tonnage. Such **Radar transponder** shall conform to the applicable performance standards not inferior to those adopted by the Organization*. The **Radar transponder** shall be stowed in such location that they can be rapidly placed in any survival craft other than the liferaft or liferafts required by regulation 31.1.4. Alternatively one **Radar transponder** shall be stowed in each survival craft other than those required by regulation 31.1.4. On ships carrying at least two **Radar transponders** and equipped with free-fall lifeboats one of the **Radar transponders** shall be stowed in a free-fall lifeboat and the other located in the immediate vicinity of the navigation bridge so that it can be utilized on board and ready for transfer to any of the other survival craft

New Text (As amended by MSC. 256(84)):

2.2 Search and rescue locating devices

At least one **search and rescue locating device** shall be carried on each side of every passenger ship and of every cargo ship of 500 gross tonnage and upwards. At least one **search and rescue locating device** shall be carried on every cargo ship of 300 gross tonnage and upwards but less than 500 gross tonnage. Such **search and rescue locating devices** shall conform to the applicable performance standards not inferior to those adopted by the Organization*. The **search and rescue locating devices**** shall be stowed in such location that they can be rapidly placed in any survival craft other than the liferaft or liferafts required by regulation 31.1.4. Alternatively one **search and rescue locating device** shall be stowed in each survival craft other than those required by regulation 31.1.4. On ships carrying at least two **search and rescue locating devices** and equipped with free-fall lifeboats one of the **search and rescue locating devices** shall be stowed in a free-fall lifeboat and the other located in the immediate vicinity of the navigation bridge so that it can be utilized on board and ready for transfer to any of the other survival craft

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B) Regarding MSC.256(84):

The Amendment described in [MSC.256 \(84\)](#) regarding SART has nothing to do with performance standard of SART. It is only an amendment to open for the possibility to use [AIS-SART](#) as alternative to (Radar) SART from 1.January 2010:

Record of Equipment for Passenger Ship Safety Certificate (Form P)

9 In the Record of Equipment for Passenger Ship Safety Certificate (Form P), in section 2, the existing item 11.1 is replaced by the following:

- “11.1 Number of search and rescue locating devices*
- 11.1.1 Radar search and rescue transponders (SART)*
- 11.1.2 AIS search and rescue transmitters (AIS-SART)”,*

C) Regarding MSC.247(83):

Tron SART20 is compliant with SOLAS Res. A.802(19) as described in MED certificate Module B (attached). To be able to get European approval (MED) you need to be compliant with SOLAS resolutions as listed in second attachment.

[MSC.247\(83\)](#) says:

AMENDMENTS TO PERFORMANCE STANDARDS FOR SURVIVAL CRAFT RADAR TRANSPONDERS FOR USE IN SEARCH AND RESCUE OPERATIONS (RESOLUTION A.802(19))

Amend section 2, paragraph 2.5 to read as follows:

“2.5 Horizontal polarization or circular polarization should be used for transmission and reception.”

While the Original [A.802.\(19\)](#) says:

“2.5 The vertical polar diagram of the antenna and hydrodynamic characteristics of the device should permit the SART to respond to search radars under heavy swell conditions. The polar diagram of the antenna should be substantially omnidirectional in the horizontal plane. Horizontal polarization should be used for transmission and reception.

Conclusion:

The new Amendment give you a choice to select if you want to use horizontal or circular polarization. And as we comply with the old A.802(19) we will also comply with the amendment in MSC.247(83).



TECHNICAL BULLETIN TB07-2011

Marking of battery production date and product authenticity.



From February 2011 Jotron AS are implementing a new labeling system for primary lithium and rechargeable batteries.

This new system is designed to ensure the battery manufacture date and battery authenticity is clear to distributors, end users and surveyors. This new label does not replace the battery expiry date label.

Details of shelf life and service life of Jotron batteries are detailed in TB03-2010.

Remember use of counterfeit batteries could result in loss of life in distress situations.

Below is an example of the label to be used.

- Production month –in text
- Water mark - Jotron logo



Below are some examples of label fitted to different products:



Tron SART20



Tron 40s mkII



Tron TR20



TECHNICAL BULLETIN TB09-2015 (Rev. 7)

BATTERY LIFETIME ON BATTERY POWERED GMDSS PRODUCTS




We are a manufacturer that produces more than 25.000 EPIRB and SART battery packs (Lithium) every year. So batteries are never old in Jotron Stock. The battery types we use have less than 3% self-discharge per year,


Below is a list of shelf life and service life on our products

Definitions:

- Shelf life: The time the product may be in stock from manufacturing date until installed on a vessel
- Service life: The maximum lifetime the product can be labeled to (According to SOLAS req. of SBM)

Product	Shelf life (months)	Service life (years)	Total (years)	
EPIRB	Tron 30s	12	4	5
	Tron 40s/ Tron 40GPS	12	5	6
	Tron 40s mkII/ Tron 40 GPS mkII	12	5	6
	Tron 60S / Tron 60 GPS	24	5	7
	Tron 45 SX	12	5	6
	Tron S-VDR	12	5	6
	Tron 40VDR	30	5	7,5
	SART	Tron SART	12	4
Tron SART20		18	5	6,5
Tron AIS-SART		18	5	6,5
VHF	Tron VHF	12	4	5
	Tron TR20 GMDSS	18	5	6,5
	Tron TR30 GMDSS	30	5	7,5

 Products with grey background are obsolete products

 Updated with extended shelf life

UN 38.3 Test Summary Report

Lithium Cell or Battery Test Summary in Accordance with Section 2.9.4 UN Model Regulations and Sub-section 38.3 of the UN Manual of Tests and Criteria, Part III, subsection 38.3.5

[a] Cell Battery Product
 Tested Type Part # Jotron p/n 82615
 Same Type Part # see list

[d] Unique report ID: 1236208 Rev.1

[e] Report date: 2003-04-04

[b] **Manufacturer**

Jotron AS,

[c] **Test Laboratory**

Soft Civil Electronics Division Soft SAS
 Rue Georges Leclanche

Same Type Part Numbers # (all): 83010 (Tron Sart 20), 85037 (Tron AIS-Sart), 82615 (Battery SART20/AIS-SART 5 Year maint.kit),

[f] (i) Li-ion Li-metal.

(iv) **Description:** Assembled from two C-sized LSH14 Light cells in series(2s1p)

(ii) Mass: 125g

(iii) Watt hour rating or Lithium content: 1.98g

(v) Cell Battery Product. Model number/Part number: 82615

[g] **List of Tests Conducted**

Result (Pass / Fail / N.A.)

Test record reference

[g] List of Tests Conducted	Result (Pass / Fail / N.A.)	Test record reference
38.3.4.1 T.1: Altitude simulation	Pass	P0170-03
38.3.4.2 T.2: Thermal test	Pass	P0170-03
38.3.4.3 T.3: Vibration	Pass	P0170-03
38.3.4.4 T.4: Shock	Pass	P0170-03
38.3.4.5 T.5: External short circuit	Pass	P0170-03
38.3.4.6 T.6: Impact/Crush (cell only test)	Pass	P0152-03
38.3.4.7 T.7: Overcharge (N.A for Li-metal only)	N/A	N/A
38.3.4.8 T.8: Forced discharge (cell only test)	Pass	P0152-03

[h] Battery assembly: Not Applicable. UN38.3.3 (f) UN38.3.3 (g)


[i] Test Reference: UN Manual of Tests and Criteria, Part III, sub-section 38.3 ST/SG/AC.10/27/Add.2/ Annexe 4,

[j] Signatory A. Date: Nov.2019

Name: Jan Erik Sæter

Title: Product Manager, GMDSS & AIS

Signature:




Important; The above signatory/signatories affirm that this document is a true and correct summary of the original Individual tests and test data. Please note that any counterfeit batteries under Jotron product name and/or Jotron p/n do NOT comply to this document!