

➤ INCREASE YOUR SAFETY ON BOARD WITH INNOVATIVE TECHNOLOGY



Tron AIS-SART

SEARCH AND RESCUE TRANSMITTER





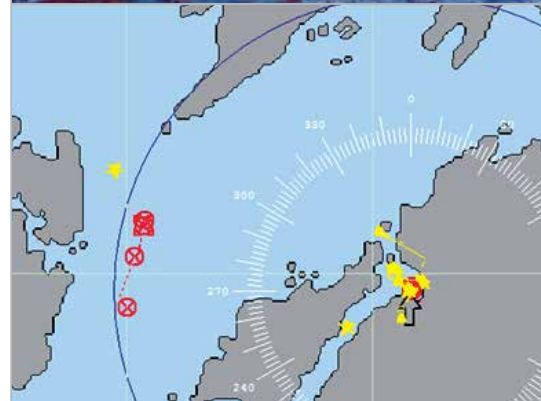
▶ Tron AIS-SART

GMDSS SEARCH AND RESCUE TRANSMITTER

- Adopted by IMO RES MSC. 256 (84) as an alternative to 9GHz SART
- Unique AIS technology contribute to a more effective and less time consuming SAR operation, due to superior position accuracy
- The AIS-SART is detected on both AIS Class A and B
- Small and compact
- Jotron Tron AIS-SART use the same accessories as the Tron SART20 (Bulkhead bracket, pole, life-boat bracket and neoprene protection bag)

Proved performance:

- Up to 10 nm from a SOLAS ship with AIS class A transponder
- Up to 40 nm from a SAR helicopter (altitude 1000 ft)
- Up to 130 nm from a SAR aircraft (altitude 20000 ft)



SPECIFICATIONS	
TECHNICAL	
Weight:	450g (16 oz)
Height:	251 mm (9 7/8")
Material housing:	Glass-reinforced Polycarbonate
Frequency:	161.975 and 162.025 MHz (AIS 1 and 2)
Radiated power:	Minimum 1W ERP (+30 dBm)
Time to GPS fix:	Typically less than 2 min when operated in an area with good satellite coverage.
Signaling:	Broadcasts position message, 8 bursts every minute. Broadcast safety message; "SART ACTIVE"
Position update:	Every minute
Antenna pattern:	Vertical polarization
Antenna height:	Place at least 1m (3.3 ft) above sea/ground level
Indicators:	Transmitter and GPS system operating
Temperature range:	Operating: -20°C to +55°C (-4°F to +131°F) Storage: -30°C to +65°C (-22°F to +149°F)
Battery:	Lithium, non hazardous battery for safe and unrestricted transportation
Operating life:	Minimum 96 hours
Standards:	MSC.246(83), ITU-R M.1371, IEC 61097-14, IEC 60945, SOLAS convention
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 TB07-2009

Regarding: Tron AIS-SART Test Procedure, rev.14.03.2011

To do a successful test of Tron AIS-SART, do the following

1. Test must be conducted outdoors with a clear view to the sky to maximize GPS location.

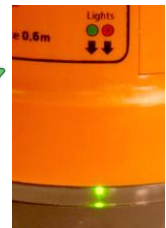
2. Move the switch to “TEST” position until the LEDs start flashing.

Tron AIS-SART will now run through a self test procedure. If a **Red LED flashes**, it is indication of critical faults. See table below for error codes.



3. Release the switch when both LEDs start flashing. The unit will now search for GPS position for maximum 15 minutes.

4. A successful test is indicated by 15 second beep and **Green LED** . See next page for description of indication on a AIS transponder/ Electronic chart etc



5. An unsuccessful test is indicated by 15 second beep and **Red LED**. Please relocate the unit and restart test.



6. To cancel ongoing test, hold the switch on the Tron AIS-SART in the “TEST” position until the buzzer starts to beep.

Number of Red LED flashes	Fault indication
2	Transmitter Power failure
3	Low battery
4	Transmitter Frequency Failure
5	ID Code not programmed
6	Undefined: Contact Jotron
7	Internal communication failure

Error codes if **RED flash** in “2.”



7. To conduct a complete test of a Tron AIS-SART, reception on the ships AIS transponder should also be checked. Today (March 2011), most AIS transponders installed are not compliant with AIS-SART, but will still receive them as another ship, both with ID code, Position, Range, Bearing, and Text message

- **Reception an a non AIS-SART compliant AIS transponder:**

- will be shown as a ship without name, with MMSI (here "ID code"), range, bearing and position:

			1/2
	RNG	BRG	Name
>	0.01	222	
	15	150	Havhesten

		1/14
>	MMSI: 970010001	
	Call: ---	
	ETA: --/-- 00:00n	

- Some AIS transponders will show MMSI (here "ID code") when no vessel name is received
- In addition, a text message will be received:

	Menu Message	1/2
>	97001001:SART TEST	

- **Reception an a non AIS-SART compliant electronic chart (ECS/ECDIS):**

- will be shown as a ship



- With the same text message received: **SART TEST**



- **Reception on a AIS-SART compliant AIS transponder/AIS receiver:**

The requirement of reception/ visibility on an AIS-SART compliant AIS transponder:

There **shall be** a separate menu item in the AIS to activate reception of AIS-SART in “TEST”

- Furuno FA-150 implementation: [USER SETTINGS] -> DISP SART TEST = ON

When this function is activated:

- AIS-SART will be shown on top of the list with vessel name **SART TEST** since this is an emergency product to show ships/people in Distress. (Normally this list is sorted on range, but AIS-SART has higher priority than normal vessels)
 AIS-SART will be shown with ID, Range, Bearing and Position:

			1/2
	RNG	BRG	Name
>	0.01	222	SART TEST
	15	150	Havhesten

		1/14
>	MMSI: 970010001	
	Call: ---	
	ETA: --/-- 00:00n	

- In addition, a text message will be received:

	Menu Message	1/2
>	97001001:SART TEST	

- AIS will forward message received from AIS-SART to ECDIS/ ARPA Radar or other chart plotter

- **Reception on a AIS-SART compliant electronic chart (ECS/ECDIS):**

Even though the AIS transponder is not AIS-SART compliant, the electronic chart may show the correct symbol when receiving an AIS-SART in “TEST” or “ON” if it is updated to the latest revisions defined below:

- will be shown with this special symbol as defined here:



NB!

The symbol for TEST is not internationally agreed and may be implemented differently

An AIS Search And Rescue Transponder (SART) shall be presented as a circle with an “X” inscribed inside it. The circle shall be 5 millimetres in diameter. The symbol shall be drawn using a thick dashed line style with the colour red.

The symbol shall flash until acknowledged by the user.

Once acknowledged, the symbol shall cease flashing.

- With the same text message received: **SART TEST**



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!