TYPE APPROVAL CERTIFICATE

For a 406 Megahertz Distress Beacon for use with the Cospas-Sarsat Satellite System

Certificate Number: 390

Manufacturer: Jotron AS, Norway

Beacon Type(s): PLB

Beacon Models: Tron SA20

Test Laboratory: TÜV SÜD Product Service, United Kingdom

Date of Test: December 2022 – May 2023

Details of the beacon features and battery type are provided overleaf.

The Cospas-Sarsat Council hereby certifies that the 406 MHz Distress Beacon Model identified above is compatible with the Cospas-Sarsat System as defined in documents:

C/S T.001 Specification for Cospas-Sarsat 406 MHz Distress Beacon, Issue 4 – Rev. 10, November 2022
C/S T.007 Cospas-Sarsat 406 MHz Distress Beacon Type Approval Standard, Issue 5 – Rev. 9, November 2020

Original TAC 390 issued on: **1 December 2023**
RLS TACs 1390 and 3390 issued on: **1 December 2023**

Steven W. Lett
Head of Cospas-Sarsat Secretariat

NOTE, HOWEVER:

1. This certificate does not authorize the operation or sale of any 406 MHz distress beacon. Such authorization may require type acceptance by national administrations in countries where the beacon will be distributed and may also be subject to national licensing requirements.

2. This certificate is intended only as a formal notification to the above identified manufacturer that the Cospas-Sarsat Council has determined, on the basis of test data of a beacon submitted by the manufacturer, that 406 MHz distress beacons of the type identified herein meet the standards for use with the Cospas-Sarsat System.

3. Although the manufacturer has formally stated that all beacons identified with the above model name(s) will meet the Cospas-Sarsat specification referenced above, this certificate is not a warranty and Cospas-Sarsat hereby expressly disclaims any and all liability arising out of or in connection with the issuance, use or misuse of the certificate.

4. This certificate is subject to revocation by the Cospas-Sarsat Council should the beacon type for which it is issued cease to meet the Cospas-Sarsat specification. A new certificate may be issued after satisfactory corrective action has been taken and correct performance demonstrated in accordance with the Cospas-Sarsat Type Approval Standard.

5. Cospas-Sarsat type approval testing requirements only address the electrical performance of the beacon at 406 MHz. Conformance of the beacon to operational and environmental requirements is the responsibility of national administrations.

6. This certificate authorizes the use of the registered name mark “Cospas-Sarsat” and of registered trademarks for the Programme’s logos, for labelling, instruction materials, and marketing of the 406-MHz beacon model identified, but not for other marketing or sales purposes (i.e., not for general uses beyond this specific beacon model).

Certificate Number: 390 Dated: 1 December 2023

Beacon Models: Tron SA20

Manufacturer: Jotron AS, Norway

Operating temperature range: -20°C to +55°C (Class 2)

Battery Details: Lithium/Iron Disulfide ($LiFeS_2$), Energizer, type L91, 8 x AA-size cells

Operating Lifetime: 24 hours

Transmit Frequency: 406.031 MHz

Beacon Model Features:

- 121.5 MHz auxiliary radio locating device (power: 17 ±3 dBm, duty cycle: 50%)
- Strobe light (brightness: > 0.75 cd, duty cycle: 21 flashes/minute)
- Internal GPS receiver, manufacturer: uBlox, model MAX-M10, (GPS, Galileo, GLONASS)
- GNSS update rate: 4:45 to 6:00 minutes
- Format of operational messages: long
- Self-test mode and GNSS self-test, one burst of 520 ms
- Integral antenna
- Manual beacon activation
- Beacons were tested in PLB configurations only (not approved for attachment to PFDs).

Approved Beacon Message Protocols: Beacon is approved for encoding with the message protocols indicated with "Yes" and black text below:

USER PROTOCOLS	
No	Maritime with MMSI
No	Maritime with Radio Call Sign
No	EPIRB Float Free with Serial Number
No	EPIRB Non Float Free with Serial Number
No	Radio Call Sign
No	Aviation
No	ELT with Serial Number
No	ELT with Aircraft Operator and Serial Number
No	ELT with Aircraft 24-bit Address
No	PLB with Serial Number
No	National (Short Format Message)
No	National (Long Format Message)

USER-LOCATION PROTOCOLS	
No	Maritime with MMSI
No	Maritime with Radio Call Sign
No	EPIRB Float Free with Serial Number
No	EPIRB Non Float Free with Serial Number
No	Radio Call Sign
No	Aviation
No	ELT with Serial Number
No	ELT with Aircraft Operator and Serial Number
No	ELT with Aircraft 24-bit Address
No	PLB with Serial Number

LOCATION PROTOCOLS	
Yes	**Standard Location: EPIRB with MMSI**
Yes	**Standard Location: EPIRB with Serial Number**
No	Standard Location: ELT with 24-bit Address
No	Standard Location: ELT with Aircraft Operator Designator
No	Standard Location: ELT with Serial Number
Yes	**Standard Location: PLB with Serial Number**
No	National Location: EPIRB
No	National Location: ELT
Yes	**National Location: PLB**
No[1]	RLS Location: EPIRB
No	RLS Location: ELT
No[2]	RLS Location: PLB
No[1,2]	RLS Location: MMSI
No	ELT(DT) Location: ELT with Serial Number
No	ELT(DT) Location: ELT with Aircraft Operator and Serial Number
No	ELT(DT) Location: ELT with Aircraft 24-bit Address

[1] See TAC 1390
[2] See TAC 3390