SAFETY
NAVIGATION
AWARENESS

Saab R4 AIS

Transponder System

- Fourth generation transponder technology with an extensive installed base. Selected OEM product by some of the most prominent systems integrators in the Marine Industry
- Unprecedented reliability through joint development and shared technology with Airborne products from Saab TransponderTech
- AIS solutions such as base stations and infrastructure from SAAB have been selected by the vast majority of maritime administrations and VTS operators worldwide. Interoperability guaranteed
- Developed to satisfy the most stringent usability requirements, featuring a user-friendly multi-purpose display unit Outstanding interfacing capability and data validation ensure safe operation when connected to navigation sensors, radars and electronic chart systems

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The mariner's preferred choice

AIS products from SAAB are specifically designed to support the mariner in mission-critical decision making. The R4 Class A transponder will satisfy all carriage requirements, but more importantly it will provide better situation awareness to the officer on watch. In the smaller vessel, the unique simplicity and versatility of the man-machine interface will allow the operator to carry out all important tasks required to operate the AIS system, using the multi-purpose display unit only. In the integrated bridge system, the R4 will feed reliable data to virtually any electronic chart system and/or radar, and thus vastly improve the quality of the information presented. Predefined safety-related text messages will assist in quickly notifying other ships and VTS stations in distress situations. Furthermore, the R4 vessel transponder offers unprecedented VHF radio coverage, thus allowing the mariner to see further ahead.

Users of SAAB AIS products have been providing us with feedback for years. This feedback is constantly used to further enhance our world-leading solutions.

The ship owner's preferred choice

When making a vendor selection for AIS, product reliability is a key decision criterion. There have already been cases where authorities have forced ships to stay moored due to a malfunctioning AIS Transponder, resulting in tremendous cost to the operator.

At Saab, we are well aware of this fact and have designed our products to the same principal qualities as the corresponding airborne systems manufactured by our company. Those systems have to fulfill the more stringent test specifications of the aviation industry. The result? AIS products that will exceed your expectations on reliability and maintainability. In the unlikely event of a system failure, all users of SAAB AIS technology supplied by SAAB or one of our OEM partners will have access to our comprehensive network of support partners worldwide.

In summary, we offer you the best solutions, featuring type approved technology, sold under all applicable licenses.

Applications and key features

- Standard AIS features fully implemented in accordance with relevant specifications and recommendations
- Highly versatile multifunctional display unit
- Integrates with external differential GPS receiver, gyro compass, speed log, chart systems and radars
- Large number of input and output ports to support highly complex and integrated bridge systems
- Channel management capability (regional AIS frequencies)
- Identifies and validates position data from older GPS receivers
- Easy access to standardized and proprietary safety-related text messages
- Fully upgradable to support future features
- Pilot plug integrated in display unit
- 1 W output power option when handling hazardous cargo
- Interoperable with Saab airborne AIS

Optional

- Stand-alone navigation DGPS in accordance with latest standards
- Internal GPS compliant with latest standard
- Silent mode and encrypted communication for coast guards, blue forces and military applications
- GLONASS receiver
- Precabled low cost junction box
- Gimble or flush mounting

Physical
Transponder:
Size WxHxD 144x85x226 mm, Weight: 2.3 kg
Display
Size WxHxD 270x207x102 mm, Weight: 1.1 kg

Power
Input 24V DC (230/110 vac with converter)
Power consumption
Transponder 15W (50W peak)
Display 7.5W

GPS Receiver (AIS internal)
Receiver 12ch (Ready for DGPS)
Frequency L1(1575.42 MHz)
Update rate: 1Hz
Position accuracy (SA off)
Position <1 m DGPS (CEP)
Position <16 m GPS (CEP)

Electrical Interfaces
8 data ports RS422

Port	Default speed (bps)1	
Pilot	In/Out	38400
ECDIS	In/Out	38400
Long Range	In/Out	9600
Sensor 1	In	4800
Sensor 2	In	4800
Sensor 3	In	4800
Aux	In	9600
Display	In/Out	57600

Connectors
Transponder data port: 50 pin D-sub (M)
Transponder power: 9 pin D-sub (M)
GPS antenna connector TNC female (50?)
VHF antenna connector BNC female (50?)
Display data port: 18 pole Conxall Maxi-Con-X
Display power: 3-pole Mini-Con-X
Power and data interfaces to be connected on rail terminals or in junction box

Cables (recommended)
Antenna,VHF and GPS RG214/U
For sensors e.g. Gyro RFE-HFI 2x2x0.75 mm2
Transponder to Display RFE-HFI 4x2x0.75 mm2
Power cables Transponder LKM-HF 3x2.5 mm2 and display

VHF Transceiver

Frequency	156–163MHz
Output power	2/12.5W (±1,5dB)
Channel bandwidth	25/12.5kHz
Channel step	12,5kHz
Bit rate	9600bps
Intervals between position reports	1–180s
Modulation	FM-GMSK/GFSK
Transmitter	1
Receivers	3

DSP Based Transceiver Sensitivity < -107dBm

Environmental
Protected environment (IEC 60945)
Operating temperature : -15°C to +55°C

Compliant with the following Standards
IMO Performance Standard for AIS (MSC 74(69) Annex 3)
ITU-R M. 1371-1
IEC 61993-2 (Standard for Class A mobiles)
IEC 61162-1/2 Edition 2 (NMEA 0183,Version 3.0)
IEC 61108-1 Edition 2 (Option)
IEC 60945 (ed 4)
IALA Technical clarifications on ITU R M.1371-1
IALA Guidelines on AIS

Type approvals
Wheelmark
FCC
USCG

For current national approvals, see www.transpondertech.com

ISO 9001 TickIT

Membership Organizations

Specifications subject to change without notice

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