

R4 Navigation System

IMO require SOLAS class ships to carry type approved GPS equipment. Saab TransponderTech can offer a number of IMO-compliant GPS and DGPS solutions, either as stand-alone Navigation Systems or as a additions to existing Saab AIS systems.



The navigation products from Saab are self-monitoring and extremely user friendly. They perform continuous RAIM (Receiver Autonomous Integrity Monitoring) calculations. This allows the Officer Of the Watch (OOW) to set the required navigation accuracy for any stage of the journey. The R4 Navigation System from Saab will give continuous feedback and alarm if the accuracy limit is exceeded.

R4 GPS Navigation Sensor

The R4 GPS Navigation Sensor is a high-precision GPS receiver, capable of receiving SBAS (e.g. WAAS and EGNOS) differential corrections. The unit performs continuous RAIM calculations, which enhance the integrity of the position data.

R4 DGPS Navigation Sensor

The R4 DGPS Navigation Sensor is the ultimate sensor for any Commercial Marine application. This product has all the features of the GPS Sensor and a dual channel beacon receiver for reception of IALA beacon DGPS corrections.

R4 Control and Display unit

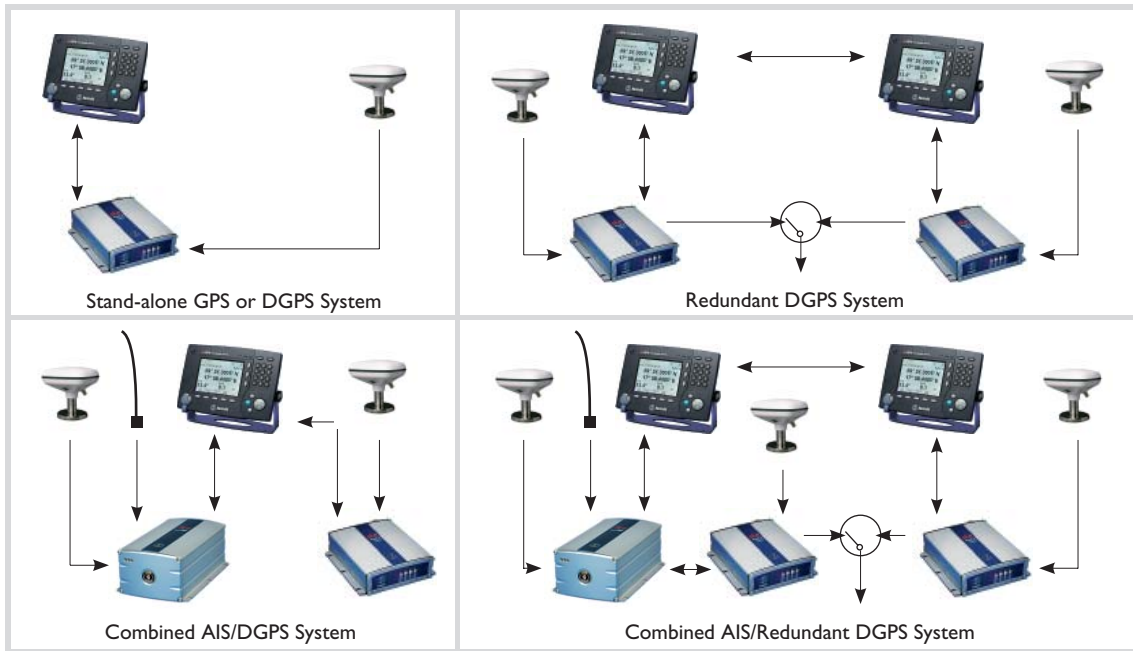
The R4 Control and Display Unit performs a multitude of navigation functions. The traffic-light LEDs are used to continuously indicate the status of the RAIM calculations. Green light tells the OOW that the position accuracy is within the required value.

In combined DGPS/AIS configurations, the R4 Control and Display Unit will display and control Navigation data, in addition to the AIS information. Saab's R4 GPS/DGPS products will of course be ideal to connect to existing or future AIS systems, ensuring that the ship operates in full compliance with all relevant regulations. GPS information is becoming extremely vital for many systems onboard and hence critical to overall safety.



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System Configurations



<p>General</p> <p>Waypoints 2000 waypoint memory</p> <p>Routes 100 routes, using a total of 2000 points</p> <p>Functions Navigation (rhumb line and great circle), Position, Route, Waypoint, Event Mark, Plot, Sail To, MOB, GPS/DGPS, Alarms, Time Alerts, Trip Logs, Anchor Watch Alarm, Configuration</p> <p>Integrity The product performs RAIM calculations in accordance with IEC 61108-1 Ed. 2</p> <p>Supply 22 - 30 V DC, 12.5 W</p> <p>Display High Resolution 6 inch, ¼ VGA monochrome, Sunlight Readable</p> <p>LEDs 1 Power and 3 RAIM status (R/Y/G) Yoke or flush mounting of Display Unit</p> <p>GPS Receiver L1, C/A-code with carrier phase smoothing 12 channels (2 channels dedicated to SBAS) DGPS by SBAS or externally input RTCM corrections</p> <p>Update rate 1 Hz default, 5 Hz max</p> <p>Position accuracy GPS*: 5 m, DGPS** 1 m (2D RMS)</p> <p>Cold start 1 min typical</p> <p>DGPS Beacon Receiver Dual receiver: Manual or Automatic tuning</p> <p>Frequency 283.5 to 325.0 kHz</p> <p>MSK Bit Rates 50, 100, and 200 bps</p> <p>Cold Start Time <1 minute typical</p> <p>Reacquisition <2 seconds typical</p> <p>Sensitivity 25 µV/m for 6 dB SNR @ 200 bps</p>	<p>Interface 2 bi-directional user ports RS422 1 output port RS422 Ports are configurable 4,800 - 38,400 bps Alarm output for relay activation Alarm acknowledge input discrete Log pulse output</p> <p>Dimensions (WxHxD) Control and Display unit 270 x 207 x 102 mm Navigation Sensor 128 x 39 x 137 mm</p> <p>Weight Control and Display unit 1.1 kg (2.4 lb) Navigation Sensor 0.5 kg (1lb)</p> <p>Cables Power/Data Cable to Navigation Sensor 2 m (7 ft). 18 pin MaxiCon - pigtail Data Cable to Control and Display Unit 2 m (7 ft). 18 pin MaxiCon - pigtail Power Cable to Control and Display Unit 2 m (7 ft). 3 pin MaxiCon - pigtail GPS Antenna Cable (recommended) RG214 and RG213: Max length 45 m TNC connector</p> <p>NMEA Messages APB, BOD, BWC, DBT, DPT, DTM, GBS, GGA, GLL, GNS, GSV, HDG, HDT, HSC, RMB, RMC, Rnn, RTE, VHW, VTG, WPPL, XTE, ZDA</p>	<p>Proprietary Messages For RAIM control and display</p> <p>Environmental data Protected environment (IEC 60945) Operating temperature -15 °C to +55 °C</p> <p>Compliance with the following Standards IMO Performance Standard for GPS IEC 61108-1 Ed2, GPS IEC 61162-1/2 Ed.2, NMEA 0183, version 2.0 through 3.0</p> <p>* Dependent upon ionospheric activity and multipath ** SVs >5, HDOP <2, RTCM SC-104 correction data from a dual frequency reference station, short baseline, and low multipatch environment</p> <p>Type approvals Wheelmark USCG</p>
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Specification subject to change without notice



SAAB SYSTEMS

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