PRECISION IN POSITION

R5 Supreme NAV MkIII

Market leading performance with the R5 navigation sensor

Saab's IMO-compliant navigation systems have been the top choice for professional mariners for over a decade.

Saab now proudly offers the **R5 Supreme NAV MkIII** system featuring the R5 Navigation sensor providing reliability, performance and flexibility like no other type approved system on the market.

The R5 NAV products are self-monitoring and extremely user friendly. The R5 SUPREME NAV MkIII system utilizes the highly versatile R5 CDU (Control and Display Unit) and, with an option of R5 Sensors and antennas, it represents one of the most flexible systems on the market.

The PRO version gives access to centimeter level navigation with RTK data from either external input or L-Band satellite, offering unparalleled performance in the familiar R5 NAV format.

R5 Supreme system in use

The large colour touch-screen display and intuitive graphical user interface makes operation both visually appealing and easy. Receiver Autonomous Integrity Monitoring and options of redundant configurations gives maximum reliability, with the possibility to integrate as many R5 CDU units as needed.

R5 Sensor features

- GPS type approval with support for GLONASS, GALILEO and BeiDou
- 8 output and 5 input ports independently configurable for serial or digital signals
- Dual 1 Gbps network ports
- Dedicated 1PPS timing output port
- Web server
- Integrated Junction Box
- Integrated IALA Beacon receiver option

R5 NAV PRO additional features

- Multi frequency operation
- Centimeter level accuracy
- Increased multi path resilience
- Satellite based correction subscription service
- RTK support license option

R5 CDU features

- Bright 7" display with touch and keypad control
- Route Navigation
- Route Logging to SD card memory
- Supports combined R5 Supreme AIS & Navigation operation

Technical specification

General

Waypoints:	4000
Routes:	128 (max 512 waypoints in each route)
Setup options:	Stand Alone, Redundant Multi-Displays, Extra Read-Only Displays and AIS/NAV Combined
Integrity:	RAIM and Heartbeat Monitoring
Power supply:	Sensor; 12/24 VDC CDU; 12/24 VDC
Power Consumption:	Sensor: 5 W (GPS L1) 8 W (All options enabled) Display: 13 W

GNSS Receiver

Type:	Multi-DGNSS receiver (GPS/GLONASS/ GALILEO/ BeiDou)
Differential modes:	SBAS, RTCM-104 input, IALA Beacon (DGNSS version)
Minimum GNSS signal:	GPS L1, GLONASS G1, BeiDou B1, GALILEO E1 types supported
Sensitivity:	-142 dBm
Channels:	800+
Update rate:	Up to 10 Hz
Accuracy* (RMS 67% / 95%) :	Uncorrected: 1.2 m / 2.5 m SBAS (WAAS): 0.3 m / 0.6 m
Timing (1PPS) accuracy:	20 ns
Cold start:	1 min typical

R5 NAV PRO additions

License options:	Multi frequency RTK (L1,L2,L5,G1,G2,E1,E5,B1,B2) L-Band correction subscriptions (can be combined with RTK)
Antenna:	Precise Multi Frequency DGNSS
Accuracy* (RMS 67% / 95%) :	RTK: 1 cm / 1.7 cm L-Band correction: 4 cm / 8 cm
Vertical accuracy* : L-Band correction:	RTK: 1.6 cm, (RMS 67%) 16 cm
RTK protocols supported	ROX, RTCM v3.1, CMR, CMR+
Raw data output	Yes

* Accuracy depends on multipath environment, number of satellites in view, satellite geometry baseline length (for local services) and ionospheric activity.

IALA Beacon Receiver (HW option)

Dual receiver:	Manual or Automatic tuning
Frequency:	283.5 to 325.0 kHz
MSK Bit Rates:	50, 100, 200 bps
Cold Start Time:	< 1 minute typical
Reacquisition:	< 2 seconds typical
Sensitivity:	25 µV/m for 6 dB SNR @ 200 bps

Applicable standards

IMO Resolution MSC.112(73)	IEC 61108-1
IMO Resolution MSC.113(73)	IEC 61108-2
IMO Resolution MSC.114(73)	IEC 61108-4
IMO Resolution MSC.191(79)	IEC 61162-1
IMO Resolution MSC.302(73)	IEC 61162-2
IMO Resolution A.694 (17)	IEC 61162-450
IEC 62923-1	IEC 62288
IEC 62923-2	IEC 60945

Dimensions

Control & Display Unit:	255x140x84 mm / 1.6 kg
Control & Display Unit:	295x170x84 mm / 1.8 kg (incl. gimbal mount):
R5 Navigation Sensor:	261x53x177 mm / 1.9 kg

Cables

R5 Power Cable (for R5 CDU)
R5 Ethernet Cable

Electrical interfaces, R5 Sensor

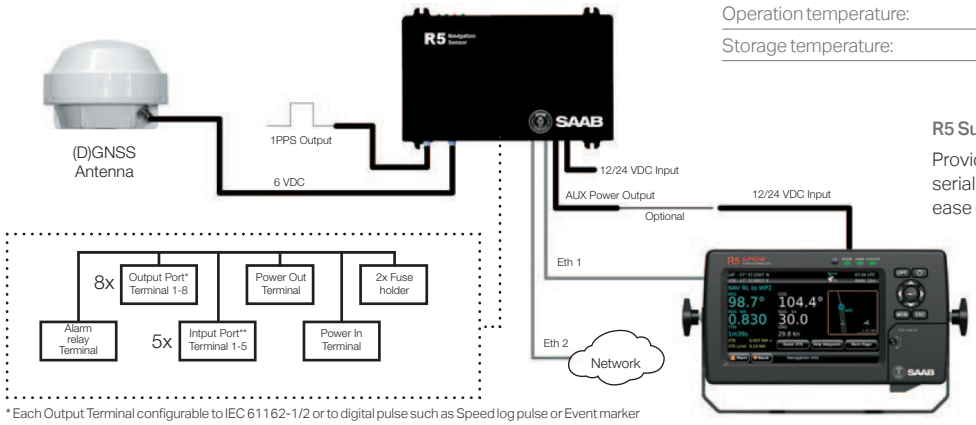
2x Ethernet 1 Gbps - (LWE IEC 61162-450)
8x User configurable output - (NMEA/IEC 61162-1 Ed. 4/ Digital out)
Alarm Relay – (0.1-5A, 30VDC, 150W)
5x User configurable input - (NMEA/IEC 61162-1 Ed. 4 / RTK / Digital in)
Sensor Power input terminal - (12/24 VDC, 2A Fuse)
CDU Power output terminal - (Input VDC, 5A Fuse)

Electrical interfaces, R5 CDU

USB Host 2.0 – Service Port
SDHC Card Reader – Route Track Logging / Service
Ethernet 100 Mbit (LWE IEC 61162-450 type)
R5 Power Cable port (12/24 VDC)

Environmental data

IEC 60945 (Protected)	
Operation temperature:	–15 °C to +55 °C
Storage temperature:	–30°C to +80°C



* Each Output Terminal configurable to IEC 61162-1/2 or to digital pulse such as Speed log pulse or Event marker
** Each Input Terminal configurable to IEC 61162-1/2 or to digital switch such as ALR Ack, MOB Button and more

R5 Supreme NAV Mk III system

Providing dual network interfaces and a multitude of serial I/O ports, the R5 Navigation Sensor will ensure ease of installation on any bridge, in any configuration.

saab.com

Saab AB (publ.) TransponderTech
Låsblecksgatan 3, SE-589 41 Linköping, Sweden
order.transpondertech@saabgroup.com

Specifications subject to change without notice.
R5 Supreme NAV MkIII data sheet – EN – ver. 1
Doc. ID. 7000 110-030 D1 2022