



SAAB

TransponderTech



NAVIGATE WITH CONFIDENCE

R6 NAV PRO Compass

High-Accuracy Position and Motion Monitoring with Inertial Support

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The R6 NAV PRO Compass system redefines maritime navigation, delivering cutting-edge accuracy and navigational safety for professional mariners.



- Top-tier accuracy for position, speed, course, heading, and rate of turn.
- IMO type-approved DGNSS and THD for enhanced navigation.
- Advanced jamming and spoofing detection and mitigation for robust integrity.
- Dual 61162-450 networks interfaces for easy integration and redundancy.
- Multi-function display for combined installation with R6 Supreme AIS system.
- MED B (Wheelmark), UKCA, CCS.



A powerful DGNSS Compass

The powerful DGNSS sensor/compass delivers exceptional precision navigation required for ports and docking operations, while its advanced integrity protection ensures resilience against jamming and spoofing interference, providing secure and uninterrupted positioning.

The built-in web interface can be used for optional configuration and control.

INTUITIVE USER INTERFACE AND SEAMLESS INTEGRATION

The R6 CDU (Control and Display Unit) combines the high quality display with a user-friendly design to simplify operations with intuitive controls. Its 7-inch sunlight-readable touch display presents clear, precise data, and supports central dimming.

Precise ship position and movements displayed on the R6 CDU as well as distributed to ECDIS, ARPA or other systems onboard the ship over standardized network and serial interfaces.

It supports up to 4000 waypoints and 128 routes, each accommodating a maximum of 128 waypoints.

ROBUST AND PRECISE POSITIONING

- Multi-GNSS Reception, supporting GPS, Galileo, Glonass, BeiDou, QZSS and NavIC (IRNSS) for global coverage and redundancy.
- Multi-Frequency Capability, operating across L1, L2, and L5 bands for improved accuracy and reliability.
- Corrections supported: SBAS, IALA Beacon, Atlas L-band, Galileo HAS, and local RTK services to ensure precise positioning.

DYNAMIC MOTION MONITORING:

Provides high accuracy data on position, speed, heading, course, rate of turn, roll/pitch, and heave for reliable navigation, with an optional Inertial Measurement Unit (IMU) for enhanced motion tracking and certified as Transmitting Heading Device, THD.



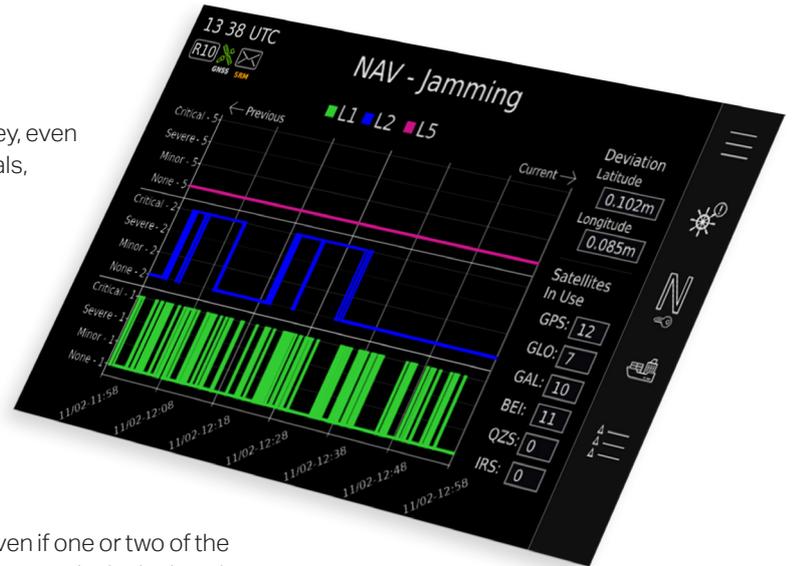


Protection against GNSS Jamming and Spoofing

Assured PNT in the primary type-approved DGNSS system is key, even under interference. While GNSS jamming disrupts satellite signals, spoofing delivers deceptive positions and is harder to detect.

JAMMING DETECTION

The R6 NAV PRO Compass actively monitors and mitigates interference to ensure navigation integrity under all conditions. It detects jamming in the L1, L2, and L5 frequency bands separately in four levels: None, Minor, Severe, and Critical. Severe levels will trigger an alarm.



MITIGATION AND NAVIGATION CONTINUITY

With the R6 NAV PRO Compass, a valid position is maintained even if one or two of the frequency bands L1, L2 or L5 are jammed. While most jamming occurs in the L1 band leaving single-band receivers more vulnerable, jamming on all frequency bands are highly unlikely.

SPOOFING DETECTION

The R6 NAV PRO Compass utilizes the fixed baseline of the two antennas to detect spoofing attempts when fake signals indicate that both antennas occupy an identical position. A deviation from the expected baseline triggers an alert, ensuring the system flags the spoofing interference.



Combined AIS and GNSS installation

The multi-function R6 CDU supports combined installation with both R6 Supreme AIS and R6 NAV systems, reducing the number of displays on the bridge. Any combination of R6 AIS and R6 NAV systems is fully type-approved.

Position and Motion Accuracy

	POSITION (RMS)						MOTION (RMS)			
	Default	SBAS	IALA Beacon	Galileo HAS	Atlas H10	RTK	ROT	HDG	Roll/pitch	Heave
R6 NAV PRO Compass	1.2 m	0.3 m	0.3 m	0.1 m	0.04 m	1 cm		0.02°		
R6 NAV PRO Compass + IMU	1.2 m	0.3 m	0.3 m	0.1 m	0.04 m	1 cm	0.1°/min	0.02°	0.5°	5 cm

Technical Specifications

Positioning / Dynamic Motion Monitoring

Supported systems	GPS*: L1, L2, L5 GLONASS: G1, G2, G3 BeiDou: B1i, B1C, B2a, B2b, B2i, B3i Galileo: E1, E5a, E5b, E6 QZSS: L1, L2, L5, L6 NavIC (IRNSS): L5
Corrections supported	SBAS, IALA Beacon, Galileo HAS, Atlas subscription, RTK
Position Accuracy (RMS 67% / 2DRMS 95%)	Uncorrected: 1.2 m / 2.5 m SBAS/IALA Beacon: 0.3 m / 0.6 m Galileo HAS: 0.1 m / 0.2 m Atlas subscription: 4 cm / 8 cm RTK: 8 mm + 1 ppm / 15 mm + 2 ppm
Speed Accuracy (RMS)	1 cm/sec
Rate of Turn accuracy (RMS)	0.1°/min
Heading* (RMS)	< 0.02° @ 5.0 m antenna separation < 0.01° @ 10.0 m antenna separation
Channels	1.100+
Sensitivity	-142 dBm
Update rate	Up to 10 Hz
GNSS Fix	60s/30s typical (Cold/Warm)
Heading Fix	10s typical (Hot Start)
Timing (1PPS) accuracy	20 ns

IALA Beacon Receiver

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

Inertial Measurement Unit, IMU

Pitch/Roll (RMS)	< 0.5°
Heave (RMS)	< 5 cm
Gyro Bias Instability	≤ 1.2°/hr
Angular Random Walk	≤ 0.08°/hr

Data interfaces

IEC 61162-1/2	RS-422 Input output
IEC 61162-450	Dual Ethernet RJ45
Alert Relay	0.1-5A, 30VDC, 150W
Bridge alert management	IEC 62923-1/-2
GNSS	2x 50 Ohm (TNC), 5 VDC
1PPS Out	5 VDC (BNC)
RTK protocols supported	ROX, RTCM v3.1, CMR, CMR+

Environmental

Operation temperature	-15°C to +55°C
Storage temperature	-30°C to +80°C

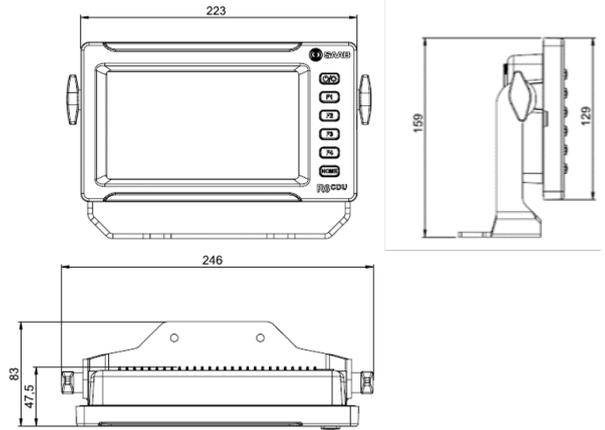
Power supply

Input Voltage	12-24VDC
Power consumption, system	18 W, with IMU

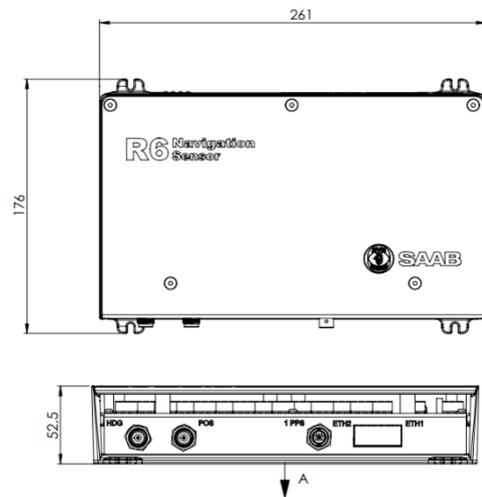
Dimensions/Weight

Navigation Sensor	261x53x176 mm / 1900 g
CDU	223x129x48 mm / 1500 g
IMU Unit	205x135x53 mm / 1100g

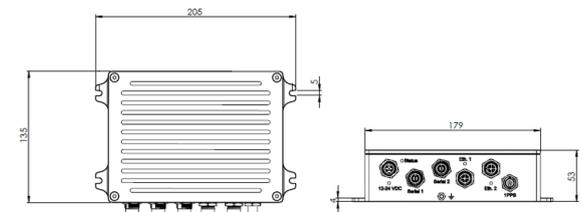
R6 CDU



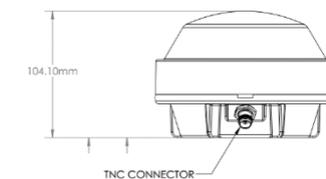
R6 NAV PRO Compass sensor



I6 IMU



A43 DGNSS Antenna



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Specifications subject to change without notice.
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