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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.

Powerful Multi-GNSS and Multi-Frequency DGNSS Compass receiver for exceptional precision in any waters.

Inertial enhanced motion monitoring with top-tier accuracy for position, speed, course, heading, and rate of turn with type-approved THD.

Advanced jamming and spoofing detection and mitigation for robust integrity

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. It supports up to 4000 waypoints and 128 routes.

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.

Verified Jamming and Spoofing Protection

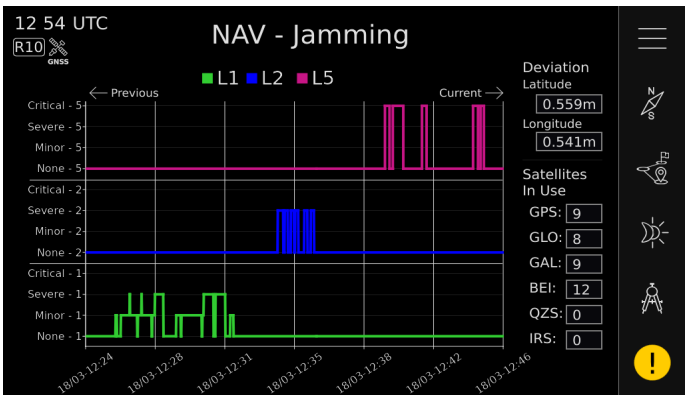
Maintaining a secure and accurate position is critical in GNSS-compromised environments. The R6 NAV PRO Compass ensures continuous reliability through advanced digital signal filtering and suppression, verified by third-party testing for maximum resilience against interference.

Jamming detection

The R6 NAV PRO Compass provides real-time monitoring and logging of GNSS jamming levels across L1, L2, and L5 frequency bands. It analyses position deviations under interference conditions and triggers BAM-compliant alerts when severe jamming is detected.

Spoofing detection

The dual-antenna R6 NAV PRO Compass uses signal analysis and fixed antenna baseline monitoring to detect spoofing attempts. Any deviation from the expected baseline or anomalies in signal properties will trigger BAM-compliant alerts, ensuring navigational integrity.



Jamming detection view

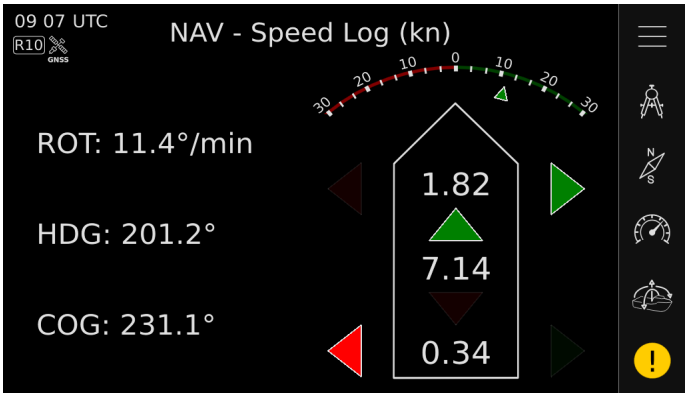
Jamming resilience

Designed to maintain valid positioning even under jamming, the system can operate effectively when one or two frequencies (L1, L2, or L5) are interfered. Since L1-band jamming is most prevalent, older single-band GNSS receivers are significantly more vulnerable – while R6 NAV PRO ensures continued accuracy.

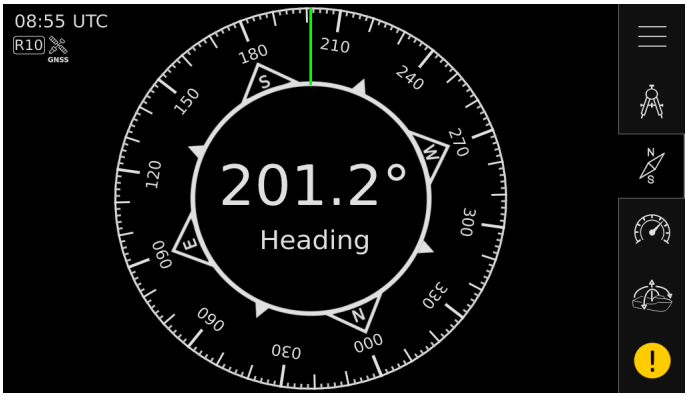
Precise Motion Monitoring

The R6 CDU displays real-time ship position and movement data with high accuracy, as well as distributed to ECDIS, ARPA, and other onboard systems via standardized network and serial interfaces.

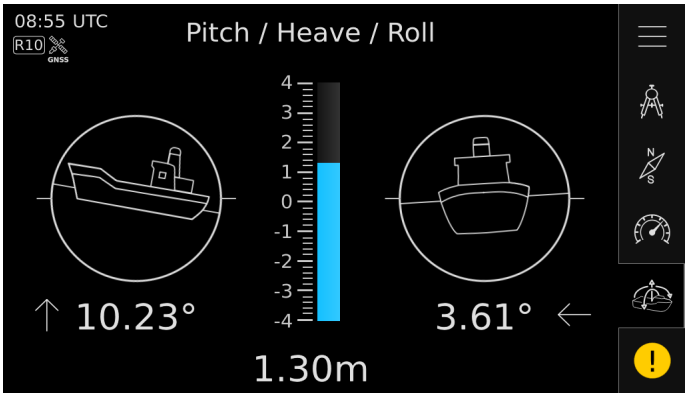
The integrated I6 IMU (Inertial Measurement Unit) delivers precise vessel orientation and motion tracking, enhancing navigation reliability.



Transversal and Longitudinal Speed Log view



Heading view

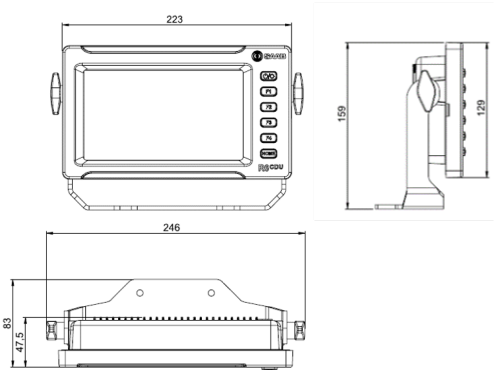


Pitch / Heave / Roll view

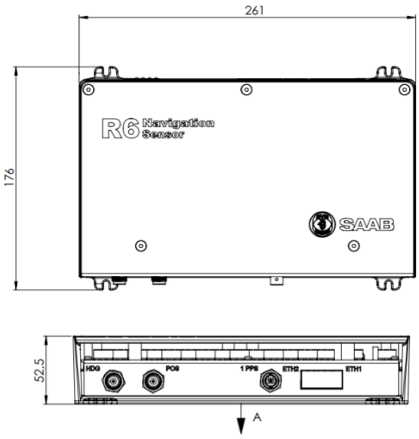
Accuracy

	POSITION (RMS)						MOTION (RMS)			
	Default	SBAS	IALA Beacon	Galileo HAS	Atlas H10	RTK	HDG	ROT	Roll, Pitch	Heave
R6 NAV PRO Compass	1.2 m	0.3 m	0.3 m	0.1 m	0.04 m	0,01 m	0.01°			
R6 NAV PRO Compass + IMU	1.2 m	0.3 m	0.3 m	0.1 m	0.04 m	0,01 m	0.01°	0.1°/min	0.05°	0,1 m

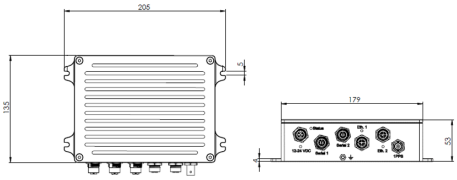
R6 CDU



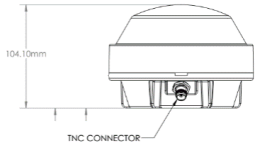
R6 NAV PRO Compass sensor



I6 IMU



A43 DGNSS Antenna



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)	< 0.05°
Heave (RMS)	< 0.1 m
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, Compass system	18 Watts

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

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Specifications subject to change without notice.
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