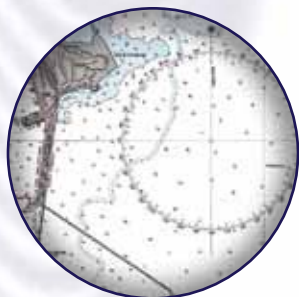


## V101 and V111 GPS Compass Professional Heading and Positioning Smart Antenna



V101™

V111™

Powered by  
**Crescent**

Experience superior navigation from the accurate heading and positioning performance available with the V101™ Series GPS compass. The Crescent® Vector™ II technology brings a series of new features to the V101 series including heave, pitch and roll output and more robust performance. The rugged enclosure combines Hemisphere GPS' Crescent Vector II board and two multipath-resistant antennas for portability and simple installation. The half-meter length smart antenna mounts easily to a flat surface or pole. The stability and maintenance-free design of the V101 replaces traditional gyrocompasses at a fraction of the cost.

The V101 uses SBAS (WAAS, EGNOS, MSAS, etc.) for differential GPS positioning. The V111™ includes both SBAS and radio beacon differential GPS positioning options.

### Key V101 Series GPS Compass Advantages

- Affordable solution delivers 2D GPS heading accuracy better than 0.3 degree rms
- Differential positioning accuracy of less than 60 cm, 95% of the time
- Smart antenna design ensures simple installation into finished product
- Integrated gyro and tilt sensors deliver fast start-up times and provide heading updates during temporary loss of GPS
- Fast heading and positioning output rates up to 20 Hz
- SBAS compatible (WAAS, EGNOS, etc.), integrated beacon (V111 only), and optional external differential input
- COAST™ technology maintains differentially-corrected positioning for 40 minutes or more after loss of differential signal

# V101 and V111 GPS Compass

## GPS Sensor Specifications

Receiver Type:	L1, C/A code, with carrier phase smoothing
Channels:	Two 12-channel, parallel tracking (Two 10-channel when tracking SBAS)
SBAS Tracking:	2-channel, parallel tracking
Update Rate:	Standard 10 Hz, optional 20 Hz (position and heading)
Horizontal Accuracy:	< 0.6 m 95% confidence (DGPS <sup>1</sup> ) < 2.5 m 95% confidence (autonomous, no SA <sup>2</sup> )
Heading Accuracy:	< 0.30° rms
Pitch / Roll Accuracy:	< 1° rms
Heave Accuracy:	30 cm
Timing (1PPS) Accuracy:	50 ns
Rate of Turn:	90°/s max
Cold Start:	< 60 s typical (no almanac or RTC)
Warm Start:	< 20 s typical (almanac and RTC)
Hot Start:	< 1 s typical (almanac, RTC and position)
Heading Fix:	< 10 s typical (valid position)
Maximum Speed:	1,607 kph (999 mph)
Maximum Altitude:	18,288 m (60,000 ft)

## Beacon Sensor Specifications (V111 version)

Channels:	2-channel, parallel tracking
Frequency Range:	283.5 to 325 kHz
Operating Modes:	Manual, automatic and database
Compliance:	IEC 61108-4 beacon standard

## Communications

Serial ports:	2 full-duplex RS-232 and 2 half-duplex RS-422
Baud Rates:	4800 - 115200
Correction I/O Protocol:	RTCM SC-104, L-Dif <sup>3</sup>
Data I/O Protocol:	NMEA 0183, Crescent binary <sup>3</sup> , L-Dif <sup>3</sup>
Timing Output:	1PPS (HCMOS, active high, rising edge sync, 10 kΩ, 10 pF load)
Heading Warning I/O:	Open relay system indicates invalid heading

## Certifications

BSH/4612/4411398/10



## Environmental

Operating Temperature:	-30°C to +70°C (-22°F to +158°F)
Storage Temperature:	-40°C to +85°C (-40°F to +185°F)
Humidity:	95% non-condensing
Shock and Vibration:	IEC 60945
EMC:	FCC Part 15, Subpart B, Class B CISPR22, CE
IMO Wheelmark Certification:	Yes

## Power

Input Voltage:	9 to 36 VDC
Power Consumption:	~ 5 W nominal
Current Consumption:	~ 360 mA @ 12 VDC
Power Isolation:	Isolated power supply
Reverse Polarity Protection:	Yes

## Mechanical

Dimensions:	60 L x 16 W x 18 H cm <sup>4</sup> (23.6" L x 6.3" W x 7.1" H) <sup>4</sup>
Weight:	~ 1.5 kg (~ 3.3 lb)
Power/Data Connector:	18-pin, environmentally sealed

## Aiding Devices

Gyro:	Provides smooth heading, fast heading reacquisition and reliable < 1° heading for periods up to 3 minutes when loss of GPS lock has occurred
Tilt Sensor:	Assists in fast start-up of RTK solution

- 1 Depends on multipath environment, number of satellites in view, satellite geometry, baseline length (for local services), and ionospheric activity
- 2 Depends on multipath environment, number of satellites in view, and satellite geometry
- 3 Hemisphere GPS proprietary
- 4 Not including mounts

## Authorized Distributor:



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