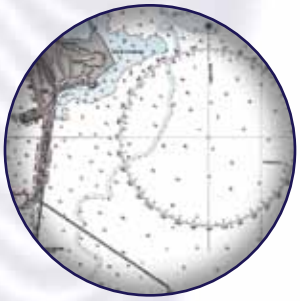
# V100 Series GPS Compass

## Professional Heading and Positioning Smart Antenna




V100™

Experience superior navigation from the accurate heading and positioning performance available with the V100™ Series GPS Compass. The rugged enclosure combines Hemisphere GPS' Crescent® Vector 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 V100 replaces traditional gyrocompasses at a fraction of the cost.

Powered by Crescent

Hemisphere GPS products are powered by Crescent Receiver Technology, today's standard in precision GPS.

### Key V100 Series 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 and portability
- Integrated gyro and tilt sensor deliver fast start-up times and provide heading updates during temporary loss of GPS
- Fast heading and positioning output rates up to 20 Hz
- Differential options including SBAS (WAAS, EGNOS, etc.) and optional beacon differential
- COAST™ technology maintains accurate solutions for 40 minutes or more after loss of differential signal

# V100 Series 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) |
| Update Rate: | Standard 20 Hz (position and heading) |
| Horizontal Accuracy: | < 0.6 m 95% confidence (DGPS)*<br>< 2.5 m 95% confidence (autonomous, no SA)** |
| Heading Accuracy: | < 0.3° rms |
| Pitch / Roll Accuracy: | < 1° rms |
| Rate of Turn: | 90°/s max |
| Start up Time: | < 60s typical |
| Heading Fix: | < 20s |
| Satellite Reacquisition: | < 1s |

### Beacon Sensor Specifications (V110 version)

| | |
|---|---|
| Channels: | 2-channel, parallel tracking |
| Frequency Range: | 283.5 to 325 kHz |
| Operating Modes: | Automatic (signal strength or range) and manual |
| Compliance: | IEC 61108-4 beacon standard |

### Communications

| | |
|---|---|
| Serial ports: | 2 full duplex RS-232 and 2 half-duplex RS-422 |
| Baud Rates: | 4800 - 57600 |
| Correction I/O Protocol: | RTCM SC-104, L-Dif (Hemisphere GPS proprietary) |
| Data I/O Protocol: | NMEA 0183, Crescent binary, L-Dif (Hemisphere GPS proprietary) |
| Heading Warning I/O: | Open relay system indicates invalid heading |

### Certifications

BSH/4612/4411140/09

0735/09

### 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: | 100% non-condensing |
| EMC: | FCC Part 15, Subpart B, Class B CISPR22, CE |

### Power

| | |
|---|---|
| Input Voltage: | 9 to 36 VDC |
| Power Consumption: | < 5 W |
| Current Consumption: | < 360 mA @ 12 VDC |
| Isolation: | Power supply isolated from serial ports |
| Reverse Polarity Protection: | Yes |

### Mechanical

| | |
|---|---|
| Dimensions (not including mounts): | 60 cm L x 16 cm W x 18 cm H (23.6" L x 6.3" W x 7.1" H) |
| Weight: | 1.5 kg (3.3 lb) |
| Power/Data Connector: | 18-pin, Environmentally sealed |

### Aiding Devices

| | |
|---|---|
| Gyro: | Single axis gyro provides 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 |

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

** Depends on multipath environment, number of satellites in view, and satellite geometry

Authorized Distributor:



HEMISPHERE GPS
4110 - 9th Street S.E.
Calgary, AB T2G 3C4
Canada

Phone: 403.259.3311
Fax: 403.259.8866
precision@hemispheregps.com
www.hemispheregps.com