Crescent® VS100 Series GPS Compass

Professional Heading and Positioning Receiver

Precise applications demand the heading and positioning performance of the Crescent VS100 Series GPS Compass. Ideal for professional machine control and navigation applications, the Crescent VS100 delivers reliable accuracy at significantly less cost than competitors products or traditional methods. The Crescent VS100 receiver with its display and user interface can be conveniently installed near the operator. The two antennas are mounted separately and with a distance between them to meet the desired accuracy.

Powered by Crescent

The latest Hemisphere GPS products are powered by Crescent Receiver Technology, the future of precision GPS.

Key Crescent VS100 Series Advantages

- Affordable solution delivers 2D GPS heading accuracy better than 0.1 degree rms
- Differential positioning accuracy of less than 60 cm, 95% of the time
- 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
- The status lights and menu system make the VS100 Series easy to monitor and configure

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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: Up to 20 Hz position and heading

Horizontal Accuracy:
< 0.6 m 95% confidence (DGPS)*
< 2.5 m 95% confidence (autonomous, no SA)**

Heading Accuracy:
< 0.25° rms @ 0.5 m antenna separation
< 0.15° rms @ 1.0 m antenna separation
< 0.10° rms @ 2.0 m antenna separation

Pitch / Roll Accuracy:
< 1 ° rms @ 0.5 m antenna separation

Rate of Turn: 90° / s max
Start up Time: < 60 s typical
Heading Fix: < 20 s
Satellite Reacquisition: < 1 s
Antenna Input Impedance: 50Ω

Beacon Sensor Specifications (VS110 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
Interface Level: RS-232C
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)
Timing Output: 1 PPS (HCMOS, active high, rising edge sync, 10 kΩ, 10 pF load)
1 PPS Accuracy: 50 ns

Power

Input Voltage: 9 to 36 VDC
Power Consumption: < 4 W
Current Consumption: < 360 mA @ 12 VDC
Antenna Voltage Output: 5 VDC
Antenna Short Circuit Protection: Yes

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

Mechanical

Dimensions: 189 mm L x 114 mm W x 71 mm H
(7.4" L x 4.5" W x 2.8" H)
Weight: 0.86 kg (1.9 lb)
Status Indication: Power, primary GPS lock, secondary GPS lock, differential lock, and heading lock
Power Switch: Miniature push-button
Power Connector: 2-pin, micro-Conxall
Data Connectors: DB9-female
Antenna Connectors: TNC-male

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
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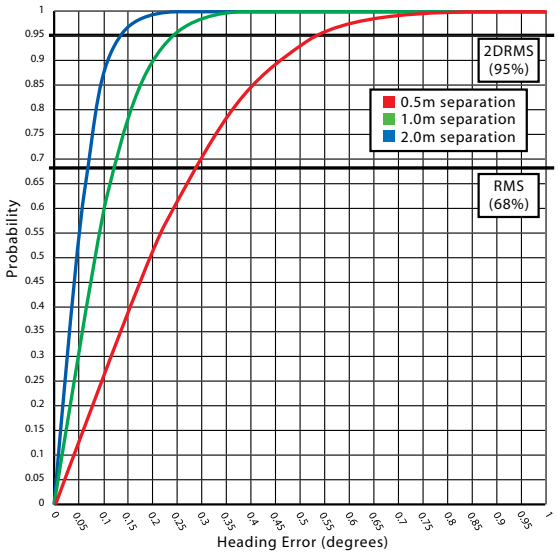
Crescent® VS100 Series Heading Performance vs. Antenna Separation



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