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.

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
Crescent VS100 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 10 Hz, optional 20 Hz (position and heading)

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

Heading Accuracy:
   < 0.3° 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
Cold Start: 60 s (No almanac or RTC)
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),
                 Database 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, LDiff
Data I/O Protocol: NMEA 0183, Crescent binary, LDiff
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: < 5 W
Current Consumption: < 360 mA @ 12 VDC
Antenna Voltage Output: 5 VDC
Antenna Short Circuit Protection: Yes

Environmental
Operating Temperature: -32°C to +74°C (-25°F to +165°F)
Storage Temperature: -40°C to +85°C (-40°F to +185°F)
Humidity: 95% non-condensing
Shock and Vibration: EP 455
EMC: FCC Part 15, Subpart B, Class B,
     CISPR22, CE

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

Crescent® VS100 Series Heading Performance vs. Antenna Separation

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