

Crescent® R100 Series DGPS Receiver High Accuracy, Multipurpose Receivers



Complete your work quickly and accurately with the Crescent R100 series DGPS receiver. Rely on consistent sub-meter performance with standard SBAS differential and Hemisphere GPS' exclusive COAST technology that maintains accuracy during temporary loss of differential signal. The Crescent R100 offers many differential correction options for various environments and worldwide coverage. The simple user interface and extensive software features make the Crescent R100 the ideal solution for professional mapping, guidance and navigation applications.



Powered by **Crescent**

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

Key Crescent R100 Series Advantages

- Feature-packed sub-60 cm DGPS Positioning
- Differential options including SBAS (WAAS, EGNOS, etc.), Radio Beacon, OmniSTAR®
- Exclusive e-Dif® option where other differential correction signals are not practical
- COAST™ technology maintains accurate solutions for 40 minutes or more after loss of differential signal
- Fast update rates of up to 20 times per second provide the best guidance and machine control
- Compatible with RTK and our exclusive L-Dif™ technology, for applications requiring higher accuracy
- The status lights and menu system make the R100 series easy to monitor and configure



Crescent® R100 Series DGPS Receiver

GPS Sensor Specifications

Receiver Type: L1, C/A code, with carrier phase smoothing (Patented COAST™ technology during differential signal outage)

Channels: 12-channel, parallel tracking (10-channel when tracking SBAS)

WAAS Tracking: 2-channel, parallel tracking

Update Rate: Up to 20 Hz position

Horizontal Accuracy: <0.02 m 95% confidence (RTK^{1,2})
<0.28 m 95% confidence (L-Dif™^{1,2})
<0.6 m 95% confidence (DGPS^{1,3})
<2.5 m 95% confidence (autonomous, no SA*)

Cold Start: 60 s (no almanac or RTC)

L-Band Sensor Specifications

Channels: Single channel

Frequency Range: 1530 to 1560 MHz

Satellite Selection: Manual or Automatic (based on location)

Startup and Satellite

Reacquisition Time: 15 seconds, typical

Beacon Sensor Specifications

Channels: 2-channel, parallel tracking

Frequency Range: 283.5 to 325 kHz

MSK Bit Rates: 50, 100, and 200 bps

Communications

Serial Ports: 2 full duplex

Interface Level: RS-232C

Baud Rates: 4800, 9600, 19200, 38400, 57600

Correction Input /

Output Protocol: RTCM SC-104

Data Input / Output

Protocol: NMEA 0183

Raw Data: Proprietary binary (RINEX utility available)

Timing Output: 1 PPS (HCMOS, active high, rising edge sync, 10 kΩ, 10 pF load)

Event Marker: Yes

¹ Depends on multipath environment, antenna selection, number of satellites in view, satellite geometry, baseline length (for local services) and ionospheric activity

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³ Depends on baseline length

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
CISPR 22
CE

Power

Input Voltage Range: 8 to 36 VDC

Reverse Polarity

Protection: Yes

Power Consumption: 3 W

Current Consumption: < 250 mA @ 12 VDC

Antenna Voltage Output: 5.0 VDC

Antenna Short Circuit

Protection: Yes

Mechanical

Enclosure: Powder-coated aluminum

Dimensions: 160 mm L x 114 mm W x 45 mm H (6.3" L x 4.5" W x 1.8" H)

Weight: 0.54 kg (1.20 lb)

LED Indicators: Power, GPS lock, DGPS position

Power Connector: 2-pin micro-Conxall

Data Connectors: DB9-female

Antenna Connector: TNC-male

R100 Series Configuration Options

	R100	R110	R120	R130
GPS	●	●	●	●
SBAS	●	●	●	●
Beacon		●		●
OmniSTAR®			●	●



CT SYSTEMS

www.ctsystems.eu info@ctsystems.eu +31 (0)227 - 591295
De Wieken 6 1777 HT Hippolytushoef The Netherlands

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

Phone: 403.259.3311
Fax: 403.259.8866
Toll Free: 800.274.9190
precision@hemispheregps.com
www.hemispheregps.com