Vector™ V104 GPS Smart Antenna

Compact GPS Positioning and Heading Smart Antenna

key features

- **Provides position, heading, pitch, roll, and heave**
- **Excellent in-band and out-of-band interference rejection**
- **2° (RMS) heading accuracy in an amazingly small form factor**
- **Integrated gyro and tilt sensors deliver fast start-up times and provide heading updates during temporary loss of GPS and satellites**
- **Differential position accuracy of 1m, 95% of the time**
- **Accurate heading for up to 3 minutes during GNSS outages**
- **COAST technology maintains differentiallycorrected positioning for 40 minutes or more after loss of differential signal**
- **Offered as a Serial or NMEA 2000 version**

Vector V104 GPS Smart Antenna offers superior navigation including accurate positioning and heading performance. V104 uses SBAS (WAAS, EGNOS, MSAS, etc.) for differential GPS position allowing Hemisphere GNSS to provide a low cost and highly effective positioning and heading based smart antenna.

The rugged and low-profile enclosure combines Hemisphere GNSS' Crescent® Vector technology and two multi-path resistant antennas for accuracy, portability and simple installation. The smart antenna, measuring less than a half meter in length, mounts easily to a flat surface or pole. The stability and maintenance-free design of V104 provides traditional GPS position and heading at a low cost, replacing the combination of low-accuracy GPS and fluxgate compass.

Hemisphere®

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Vector V104 GPS Smart Antenna

GPS Receiver Specifications

Receiver Type:	Vector GPS L1 Compass
Signals Received:	GPS
Channels:	24
GPS Sensitivity:	-142 dBm
SBAS Tracking:	2-channel, parallel tracking
Update Rate:	10 Hz standard (position and heading)
Rate of Turn:	90˚/s maximum
Compass Safe Distance:	30 cm (11.8 in)
Cold Start:	< 60 s (no almanac or RTC)
Warm Start:	< 20 s typical (almanac and RTC)
Hot Start:	< 5 s typical (almanac, RTC and position)
Heading Fix:	< 20 s typical (valid position)
Maximum Speed:	1,850 kph (999 kts)
Maximum Altitude:	18,288 m (60,000 ft)

Positioning and Heading Accuracy

Position:	
Single Point [1]:	3 m (95%)
SBAS [2]:	1 m (95%)
Heading:	2˚ (RMS)
Pitch/Roll:	2˚ (RMS)
Heave:	30 cm [3]

Communications

Ports:	2 full-duplex RS232 [4] or 1 NMEA 2000 [5]
Baud Rates:	4800, 9600, 19200, 38400, 57600, 115200
Correction I/O Protocol:	RTCM SC-104
Data I/O Protocol:	NMEA 0183[5], NMEA 2000[5], Hemisphere Crescent binary [6]

Power

Input Voltage:	8-36 VDC
Power Consumption:	~ 2.0 W nominal
Current Consumption:	0.16 A @ 12 VDC
Power Isolation:	Isolated to enclosure
Reverse Polarity 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:	100% non-condensing
Shock and Vibration:	IEC 60945
EMC:	CE (IEC 60945 Emissions and Immunity), FCC Part 15 Subpart B, CISPR22
IP Rating:	IP69
Enclosure:	UV resistant, white plastic, Geloy CR7520 (ASA)

Mechanical

Dimensions	
Not including mount:	25.9 L x 12.9 W x 4.5 H (cm) 10.2 L x 5.1 W x 1.8 H (in)
Including mount:	25.9 L x 12.9 W x 12.8 H (cm) 10.2 L x 5.1 W x 5.0 H (in)
Weight	
Not including mount:	0.42 kg (0.9 lb)
Including mount:	0.51 kg (1.1 lb)
Power/Data Connector:	8-pin Male for Serial or 5 Pin Male NMEA 2000 Micro connector

Aiding Devices

Gyro:	Provides smooth heading, fast heading reacquisition and reliable 2˚ per minute heading for periods up to 3 minutes when loss of GPS has occurred
Tilt Sensors:	Provide pitch and roll data, assist in fast start-up and reacquisition of heading solution

1 Depends on multipath environment, number of satellites in view, satellite geometry, no SA, and ionospheric activity
2 Depends on multipath environment, number of satellites in view, SBAS coverage and satellite geometry
3 Based on a 40-second time constant
4 Serial model only
5 NMEA 2000 model only
6 Hemisphere GNSS proprietary

Authorized Distributor:

Rev. 09/15

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