Vector™ V200 GNSS Compass

General Navigation Heading and Positioning Compass

atlas

key features

- **L1 GPS, GLONASS, Galileo, BeiDou, QZSS**
- **30 cm RMS world-wide positioning accuracy with Atlas corrections**
- **0.75 degree heading accuracy in an amazingly small form factor**
- **Excellent in-band and out-of-band interference rejection**
- **Integrated gyro and tilt sensors help deliver fast start-up times and provide heading updates during temporary loss of satellites**
- **Provides heading, positioning, heave, roll, and pitch**

Experience superior navigation from the accurate heading and positioning performance available with the Vector™ V200 GNSS compass. The multi-GNSS Vector V200 supports GPS, GLONASS, BeiDou, Galileo, and QZSS and offers an amazing world-wide 30 cm (RMS) accuracy via Hemisphere's Atlas GNSS global correction service.

The Vector V200 offers an incredible combination of simple installation, small form factor, and amazing performance. The compass - measuring only 35 cm in length - mounts easily to a flat surface or pole. The stability and maintenance-free design of the Vector V200 provides simple integration into autopilots, chart plotters, and AIS systems.

Hemisphere®

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Vector V200 GNSS Compass

GNSS Sensor Specifications

Receiver Type:	Vector GNSS L1 Receiver
Signals Received:	GPS, GLONASS, BeiDou, Galileo, QZSS [7], and Atlas
Channels:	424
GPS Sensitivity:	-142 dBm
SBAS Tracking:	2-channel, parallel tracking
Update Rate:	10 Hz standard, 20 Hz optional
Timing (1PPS)	
Accuracy:	20 ns [6]
Rate of Turn:	100°/s maximum
Compass Safe Distance:	50 cm [4]
Cold Start:	60 s (no almanac or RTC)
Warm Start:	30 s typical (almanac and RTC)
Hot Start:	10 s typical (almanac, RTC and position)
Heading Fix:	10 s typical (valid position)
Maximum Speed:	1,850 mph (999 kts)
Maximum Altitude:	18,288 m (60,000 ft)
Differential Options:	SBAS, Atlas (L-band)

Accuracy

Positioning:	Default (RMS)	Optional (RMS)
Autonomous, no SA:[1]	1.5 m	1.2 m
SBAS: [2]	0.5 m	0.3 m
Atlas (L-band): [6]	-	0.3 m
Heading (RMS):	1.5°	0.75°
Pitch/Roll (RMS):	1.5°	
Heave (RMS):	30 cm [3]	

L-Band Receiver Specifications

Receiver Type:	Single Channel
Channels:	1525 to 1560 MHz
Sensitivity:	-130 dBm
Channel Spacing:	5 kHz
Satellite Selection:	Manual or Automatic
Reacquisition Time:	15 sec (typical)

Communications

Ports:	
5-pin	NMEA2000 or RS-232 (1 Tx, 1 Rx)
12-pin	RS-232 (2 Tx, 2 Rx), RS-422 (1 Tx), 1PPS or RS-422 (2 Tx, 1 Rx), 1PPS
Baud Rates:	4800 - 115200
Correction I/O Protocol:	RTCM SC-104
Data I/O Protocol:	
5-pin	NMEA 0183, NMEA 2000, Crescent binary [5]
12-pin	NMEA 0183, Crescent binary [5]
Timing Output:	1PPS (CMOS, rising edge sync [6])

Power

Input Voltage:	6 to 36 VDC
Power Consumption:	(multi-GNSS, typical continuous draw @ 12V)
SBAS	3.6 W
Atlas	4.0 W
Current Consumption:	(multi-GNSS, typical continuous draw @ 12V)
SBAS	0.30 A
Atlas	0.33 A
Power Isolation:	Isolated to enclosure
Reverse Polarity Protection:	Yes

Environmental

Operating Temperature:	-40°C to + 70°C (-40°F to + 158°F)
Storage Temperature:	-40°C to + 85°C (-40°F to + 185°F)
Humidity:	95% non-condensing
Enclosure:	ISO 60529:2013 for IPx6/IPx7/IPx9
Vibration:	IEC 60945:2002 Section 8.7 Vibration
EMC:	IEC60945:2002 EN 301 489-1 V2.1.1 EN 301 489-5 V2.1.1 EN 301 489-19 V2.1.0 EN 303 413 V1.1.1

Mechanical

Dimensions:	
No Mount:	34.8 L x 15.8 W x 7.5 H (cm)
LP Flat Mount:	34.8 L x 15.8 W x 7.6 H (cm)
HP Flat Mount:	34.8 L x 15.8 W x 10.7 H (cm)
Pole Mount:	34.8 L x 15.8 W x 16.8 H (cm)
Weight:	
Not including Mount:	0.75 kg (1.7 lb)
Including Mount:	0.94 kg (2.1 lb)
Power/Data Connector:	5-pin or 12-pin

Aiding Devices

Gyro:	Provides smooth heading, fast heading reacquisition and reliable 1° per minute heading for periods up to 3 minutes when loss of GPS has occurred [4]
Tilt Sensors:	Provide pitch and roll data and 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, WAAS coverage and satellite geometry
3 Based on a 40 second time constant
4 This is the minimum safe distance measured when the product is placed in the vicinity of the steering magnetic compass. The ISO 694 defines "vicinity" relative to the compass as within 5 m (16.4 ft) separation
5 Hemisphere GNSS proprietary
6 V200s only
7 With future firmware upgrade and activation

Authorized Distributor:

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