# **VECTOR LITE/PRO (MKII)** Professional, robust and high performance GPS Compass





Experience the Vector (MK II) GPS Compass series for its superb heading and positioning performance. The new, rugged IP69K design housing is sealed for the harshest environments. It incorporates fixed and pole mounting capability for both marine and land applications. The Vector Series is suitable for both commercial and professional marine, as well as for machine mounting in open pit mining, construction and other applications.

The Vector Lite and Pro utilize all of the recent innovations in Crescent® and Vector technology. New CrossDipole low-multipath antennas are separated by 50 cm between phase centers, resulting in better than 0.3° rms heading performance while delivering position accuracy of better than 60 cm 95% of the time when using SBAS (EGNOS, MSAS & WAAS) or Beacon corrections.

The Vector Lite and Pro support both NMEA 0183 and NMEA 2000 interfacing, enabling a seamless choice of communication protocols. Crescent Vector technology delivers accurate and continuous performance, including position, heading, heave, pitch and roll. The stability and maintenance-free design of the Vector Series replaces traditional gyrocompasses and stand-alone GPS at a fraction of the cost.

## **YOUR GPS PARTNER**



### **Technical specifications**

#### **GPS Sensor Specifications**

| Receiver Type:       | L1, C/A code, with carrier phase              |
|----------------------|---|
|                      | smoothing                                     |
| Signal Tracking:     | Dual L1 GPS receiver design, parallell        |
| 5 5                  | tracking                                      |
| GPS Sensitivity:     | -142 dBm                                      |
|                      | 2-channel, parallel tracking                  |
| Update Rate:         | 20 Hz standard                                |
| Horizontal Accuracy  | < 0,6  m  95% confidence (DGPS <sup>1</sup> ) |
| ,                    | < 2.5 m 95% confidence (autonomous,           |
|                      | no SA <sup>2</sup> )                          |
| Heading Accuracy:    | < 0.30° rms                                   |
| Pitch/Roll Accuracy: |   |
| Heave Accuracy:      |   |
| Timing (1PPS) Accura |   |
| Rate of Turn:        | 90°/s maximum                                 |
| Compass Safe Distan  | ce:0,75 cm (with enclosure) <sup>4</sup>      |
| Cold Start:          | < 60 s (no almanac or RTC)                    |
| Warm Start:          | < 20 s typical (almanac and RTC)              |
| Hot Start:           | < 1 s typical (almanac, RTC and               |
|                      | position)                                     |
| Heading Fix:         | < 10 s typical (valid position)               |
|                      | 1,850 mph (999 kts)                           |
| Maximum Altitude:    | 18,288 m (60,0000 ft)                         |
|                      | 10,200 m (00,0000 m)                          |
|                      |   |

#### **Beacon Sensor Specifications (Vector PRO version)**

| Channels:        | 2-channel, parallel tracking    |
|------------------|---------------------------------|
| Frequency Range: | 283.5 to 325 kHz                |
| Operating Modes: | Manual, automatic, and database |
| Compliance:      | IEC 61108-4 beacon standard     |

#### Communications

| Serial Ports:          | 1 full-duplex RS-232, 1 full-duplex |
|------------------------|-------------------------------------|
|                        | RS-422 and 1 half-duplex RS-422 (Tx |
|                        | only)                               |
| Baud Rates:            | 4800 - 38400                        |
| Correction I/O Protoco | ol:RTCM v2.3 (DGPS), RTCM SC-104,   |
|                        | L-Dif <sup>™ 3</sup>                |
| Data I/O Protocol:     | NMEA 0183, NMEA 2000, Crescent      |
|                        | binary <sup>3</sup> , L-Dif         |
| Timing Output:         | 1PPS CMOS, active low, falling edge |
|                        | sync, 10 kΩ, 10pF load              |
| Heading Warning I/C    | Onen relay system indicates invalid |

Heading Warning I/O:Open relay system indicates invalid heading

#### 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:90% non-condensingVibration:IEC 60945EMC:CE (IEC 60945 Emissions and Immu<br/>nity) FCC Part 15, Subpart BIMO Wheelmark Certification: Yes<sup>6</sup>

#### Electrical

Input Voltage: 6 to 36 VDC Power Consumption:Vector Lite ~3 W nominal Vector PRO ~3.3 W nominal Current Consumption:Vector Lite: ~320mA@9 VDC ~240 mA@12 VDC ~180 mA@16 VDC Vector PRO: ~350 mA@9 VDC ~265 mA@12 VDC ~200 mA@16 VDC Power Isolation: Isolated to enclosure Reverse Polarity Protection: Yes

#### Physical

| Dimensions:      | 66,3 L x 20,9 W x 14,6 H cm           |
|------------------|---------------------------------------|
|                  | (26.1" L x 8.3" W x 5.8" H)           |
| Weight:          | Vector Lite 2,1 kg (4.6 lb)           |
| -                | Vector PRO 2,4 kg (5.4 lb)            |
| Power/Data Conne | ector: 18-pin, environmentally sealed |

Power/Data Connector: 18-pin, environmentally sealed Status Indications (LED):Power

#### **Aiding Devices**

| Gyro:         | Provides smooth heading, fast<br>heading reacquisition and reliable<br><1° heading for periods up to 3 mi-<br>nutes when loss of GPS has oc<br>curred <sup>4</sup> |
|---------------|--|
| Tilt Sensors: | Assists in fast startup of heading solution  |

- <sup>1</sup> Depends on multipath environment, number of satellites in view, satellite geometry, ionospheric activity and use of SBAS
- <sup>2</sup> Depends on multipath environment, number of satellites in
- view, satellite geometry and ionospheric activity <sup>3</sup> True Heading GPS proprietary
- <sup>4</sup> IEC 60945 Standard
- <sup>5</sup> This is the minimum safe distance measured when the prouct 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.

TRUE HEADING

- <sup>6</sup> Based on a 40 second time constant (pending)
- <sup>7</sup> NMEA 0183 only

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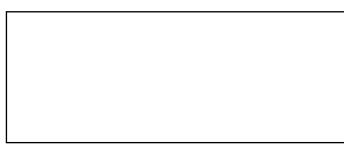
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