

Specifications

GPS Sensor Specifications

- Receiver Type: 1575.42±1 MHz L1, C/A code with carrier phase smoothing
- Channels: Two 12–channel parallel tracking without SBAS tracking or
Two 10–channel parallel tracking with SBAS tracking
- SBAS: 2–channel parallel tracking, WAAS, EGNOS, MSAS and GAGAN
- Data Update Rate: 10 Hz (standard), 20 Hz (option, position and heading)
- Accuracies:
 - Horizontal: Better than 1.0m, 95% confidence (with DGPS*¹)
Better than 2.5m, 95% confidence (autonomous, no SA*²)
 - Heading: Better than 0.75° rms (Normal Operation: GPS, coasting: gyro)
 - Heave: Better than 30 cm (Normal Operation: GPS, Coasting: gyro)
 - Pitch: Better than 1.5° rms (Normal Operation: GPS, Coasting: gyro)
 - Roll: Better than 1.5° rms using accelerometer
(Normal Operation: inertial sensor, Coasting: inertial sensor)
- Rate of Turn: 90°/second maximum
- Times to First Position Fix:
 - Cold Start: Less than 60 seconds typical (no almanac or RTC)
 - Warm Start: Less than 20 seconds typical (almanac and RTC)
 - Hot Start: Less than 1 second typical (almanac, RTC and position)
- Time to Heading Fix: Less than 10 seconds typical (valid position)
- Tracking Velocity: 999 knots (1,850 km/h) maximum
- Altitude: 18,288m (60,000 ft) maximum

*¹: Depends on multipath environment, number of satellites in view, satellite geometry, ionospheric condition and use of SBAS service.

*²: Depends on multipath environment, number of satellites in view, satellite geometry and ionospheric condition

Communication Specifications

- Serial Ports: RS–232C (fduplex), RS–422 (output) and NMEA–2000 (duplex)
- Baud Rates: 4800, 9600, 19200, 38400, 57600, 115200
- Beacon DGPS Interface: RTCM SC–104
- Data I/O Interface: NMEA–0183, Crescent binary*³, NMEA–2000 (CAN)

*³: Hemisphere proprietary format

Power Requirements

- Input Voltage: 6 (minimum) to 36 (maximum) VDC
- Current Drain: 320 mA/9V, 240 mA/12V, 180 mA/16V, typical
- Input Line: Isolated from enclosure, polarity–protected

Physical Specifications

- Enclosure (Housing): UV–resistant white plastic, AES HW 600G, self–extinguishing
- Dimensions: 41.7(L) X 15.8(W) X 6.9(H) cm, without mounting base
- Weight: Approx. 1.5 kg

Environmental Specifications

- Ambient Temperatures: –30 to 70° C (operating), –40 to 85° C (storage)
- Humidity: 100% RH, non–condensing
- Vibration: Compliant IEC 60945
- EMC: Compliant with FCC Part 15 (subpart B), CISPR 22, IEC 60945
- Compass Safe Distance: 30 cm, IEC 60945 standard