

## GPS1240 Rugged Sensor

**Integrated GPS receiver with antenna for vehicle-based navigation**



Where precision navigation is required in rugged environments, the GPS1240 Rugged Sensor is the ideal solution for many types of vehicles. The sensor provides a 12-channel GPS receiver and patch antenna contained within a compact waterproof housing, which can be mounted externally on the vehicle. (Pole and surface mounting options are included.)

Based on the SiRFstarIIe navigation engine, the GPS1240 is specifically optimised to tackle the challenges of dense urban environments. Using enhanced filtering and operating with quick re-acquisition times, even where buildings can block satellite signals or cell phones can jam receivers, the unit provides fast reliable position information.

Communication is in the industry standard NMEA-0183 version 2.01 format. This enables GPS1240 to communicate with most digital map applications. SiRF binary protocol is also supported.

The GPS1240 Rugged Sensor is a modular device communicating via an RS-232 interface with a 10 m cable.

### Features

- 12-channel GPS receiver for an all-in-view solution of the highest possible accuracy
- IP67 waterproof housing
- standard NMEA 0183 (v2) data output
- optimised for the best performance in dense urban environments
- battery-backed memory for faster acquisition
- compact, high-temperature and UV-resistant rugged case
- input power range of 7 to 32 VDC
- minimal power requirement, only 30 mA at 12 VDC (typical)
- RS-232 serial interface
- versatile mounting options



(Pole mounting)

## Product specifications

### Receiver architecture

- 12-channel, L1 band, 1575.42 MHz
- C/A code (1.023 MHz chip rate)
- code-plus-carrier tracking (carrier-aided tracking)
- velocity, up to 500 m/s
- acceleration, up to 4 G

### Tracking capability

- 12 satellites simultaneously

### Accuracy

- horizontal accuracy: better than 5.0 m (CEP)
- vertical accuracy: better than 10 m (VEP)

### Acquisition/re-acquisition performance

- hot start: 8 s (with valid almanac, time, position and ephemeris)
- warm start: 38 s (with valid almanac, time and position)
- cold start: 45 s (with valid almanac only)
- re-acquisition times: 2 s (< 10 s blockage)
- update rate: once per second, continuous

### Antenna

- integrated patch antenna within enclosure

### Datums

- 189 standard datums, 5 user defined, default: WGS-84

### Electrical

- input power range of 7 VDC to 32 VDC
- power consumption of 30 mA at 12 VDC (typical)

### Serial interface

- RS-232
- programmable baud rates
- latitude, longitude, elevation, velocity, heading, time, satellite tracking status, command/control messages, raw data via SiRF binary interface
- selected NMEA-0183 messages (configurable), standard: GGA, GLL, GSA, GSV, RMC, VTG, ZDA

### Physical

- UV-stable rugged plastic radome

### Dimensions

- 97.4 mm (dia), 26.0 mm (h) (radome)
- cable length 10 m

### Weight

- 165 grams without cable
- 490 grams with cable

### Connectors

- LTW 8-pin connector
- 10 m cable

### Environmental

- waterproof: IP67
- operating temperature: 0 °C to +60 °C
- humidity: up to 95% (non-condensing)
- altitude: -300 m to 18000 m

### Mounting

- surface (kit supplied with sticky gasket and fasteners)
- pole (25.4 mm dia with 14TPI UNB thread)

### Ordering information

- AA006300R GPS1240 Sensor (standard)

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