

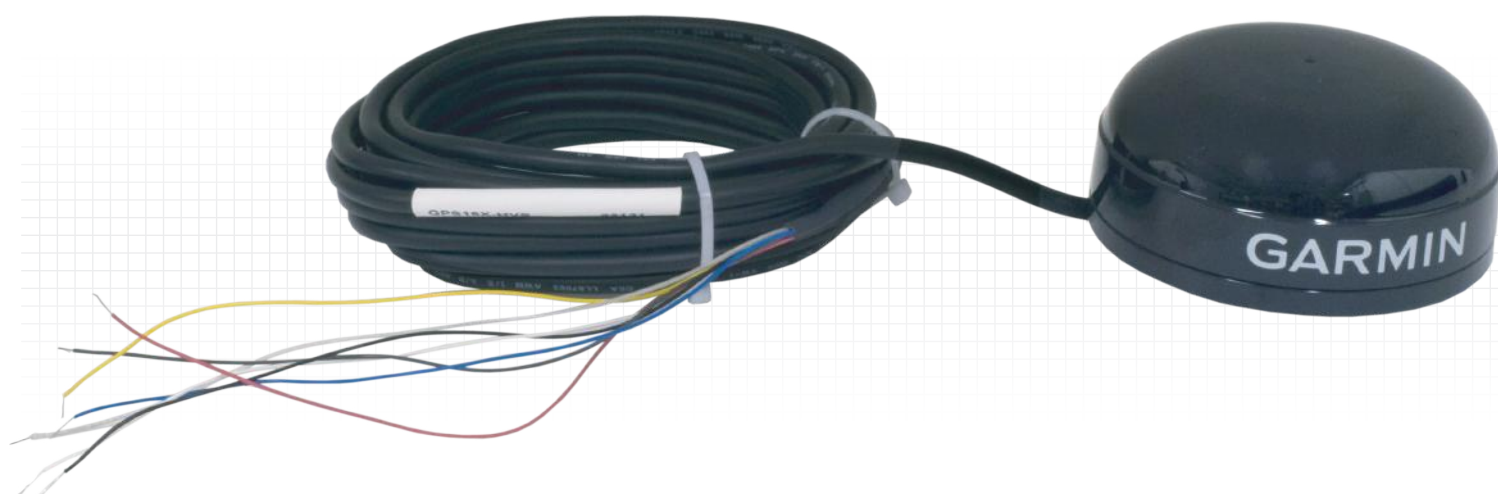


GPS16X-HVS

GPS Receiver

Position and Time

Precision time synchronization



Overview

The GPS16X-HVS is a global positioning system (GPS) receiver that provides position, velocity, and timing information. Campbell Scientific

configures the GPS16X-HVS and modifies its cable so that the receiver can more easily interface with our dataloggers.

Benefits and Features

- Supports real-time WAAS or RTCM corrections for accuracy of 3 to 5 m
- Attaches directly to a CR6, regardless of functionality
- Connects directly to a CR800, CR850, CR1000, or CR3000 datalogger when PPP time-synchronizing functionality is not used.
- Processes data from up to 12 satellites depending on the number of satellites viewable above the horizon
- Allows the datalogger clock to be set to the highly accurate GPS time
- Configured by Campbell Scientific to output RMC and GGA data strings at 38400 bps
- Extremely accurate timing pulse (PPS) can be used to synchronize time between the datalogger and other instruments

Technical Description

The GPS16X-HVS consists of a receiver and an integrated antenna. It receives signals from orbiting Global Positioning System (GPS) satellites, and then uses the signals to calculate position and velocity. The GPS16X-HVS also provides a highly accurate one-pulse-per-second (PPS) output for precise timing measurements.

Default settings are typically used. The default settings and options are changed using GPS16 software, which is available, at no charge, from the Garmin website (www.garmin.com). Additional hardware is required to connect the GPS16X-HVS to the PC running the GPS16 software (see Ordering Information for more information).



More info: 780.454.2505

www.campbellsci.ca/gps16x



Ordering Information

Geographic Position Receiver

GPS16X-HVS GPS Receiver with antenna and 15-ft cable. Must choose a cable termination option.

Cable Termination Options (choose one)

- PT** Cable terminates in stripped and tinned leads that connects to the datalogger or A300.
- PW** Cable terminates in connector that attaches to a prewired enclosure.



Both the 17212 Magnetic Mount and the CM235 Magnetic Mount Stand are used to attach the GPS sensor to a mast or crossarm.

Accessories

- 17212** Magnetic Mount that allows the sensor to be attached to a magnetically susceptible metallic surface, typically the CM235 Magnetic Stand (see below).
- CM235** Magnetic Mounting Stand for attaching the receiver to a cross-arm or a tripod or tower mast. The 17212 is required (see above).
- A300** Power and signal converter is needed to connect the pulse-per-second (PPS) output of a GPS16X-HVS to a CR800-series, CR1000, or CR3000 datalogger. It is not needed with a CR6 or CR300.
- 28840** DB9 Female to Terminal Block with Hood and Hardware Kit allows the sensor to be connected to a PC's RS-232 port. The sensor needs to be connected to a PC to change its default settings and options.
- A200** Sensor-to-PC Interface allows the sensor to be connected to a PC's USB port. The sensor needs to be connected to a PC to change its default settings and options.

Specifications

- Receiver: WAAS enabled; 12 parallel channel GPS receiver continuously tracks and uses up to 12 satellites (up to 11 with PPS active) to compute and update the position
- Update Rate: Factory set to 1 s between updates; programmable from 1 to 900 s
- PPS Output: 1 Hz pulse; 1 μ s accuracy; width factory set to 100 ms
- Baud Rate: Factory set to 38400 bps
- Operating Temperature Range: -30° to 80°C
- Storage Temperature Range: -40° to 80°C
- Operating Voltage Range: 8 to 40 Vdc
- Current Drain @ 12 Vdc: 65 mA active
- Velocity Accuracy: 0.1 knot RMS steady state
- Diameter: 9.1 cm (3.58 in)

- Height: 4.2 cm (1.65 in)
- Weight: 332 g (12 oz)

Acquisition Times

- Reacquisition: < 2 s
- Hot: ~1 s (all data known)
- Warm: ~38 s (initial position, time and almanac known, ephemeris unknown)
- Cold: ~45 s

Position Accuracy (95% typical)

- GPS Standard Positioning Service (SPS): < 15 m
- DGPS (USCG/ RTCM) Correction: 3 to 5 m
- DGPS (WAAS) Correction: < 3 m

