

GPS16X-HVS

Garmin Geographic Position Receiver



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

The GPS16X-HVS receiver is manufactured by Garmin® International. Campbell Scientific configures the receiver and modifies its cable. The GPS16X-HVS is typically used with our CR800, CR850, CR1000, and CR3000 dataloggers.

Features

- Connects directly to the datalogger or prewired enclosure (adapter not required)
- Processes data from up to 12 satellites depending on the number of satellites viewable above the horizon
- Supports real-time WAAS or RTCM corrections that provide a 3 to 5 m position accuracy
- Configured by Campbell Scientific to output RMC and GGA data strings at 38400 bps
- Allows the datalogger clock to be set to the highly accurate GPS time
- Provides a timing pulse (PPS) at one second intervals. The timing pulses are extremely accurate and can be used to synchronize time between the datalogger and other instruments

Ordering Information

Geographic Position Receivers

GPS16X-HVS GPS Receiver with antenna and 15-ft cable that terminates in pigtails. The pigtails connect directly to the control ports of a CR800, CR850, CR1000, or CR3000.

GPS16X-HVS-PW GPS Receiver with antenna and 15-ft cable that terminates in a connector. The connector attaches to a prewired enclosure.

Accessories

17212 Magnetic Mount that allows the sensor to be attached to a magnetically susceptible metallic surface, typically the CM235 Magnetic Stand.

CM235 Magnetic Mounting Stand for attaching the receiver to a crossarm such as the CM202, CM204, or CM206, or a tripod or tower mast. The 17212 is required (see above).

SC110 Two RS-232 to Datalogger Control Port Cables that attach the sensor to a computer for changing settings. Cable lengths are 2 ft.



The GPS16X-HVS is a high-sensitivity, 12-channel receiver that continuously tracks satellites and reports your precise position.



The GPS16X-HVS connects directly to COM port pairs of a CR800, CR850, CR1000 (shown), or CR3000 datalogger.



The CM235 Magnetic Mounting Stand attaches the GPS16X-HVS to a mast or a crossarm such as the CM202, CM204, or CM206.

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 second between updates; programmable from 1 to 900 seconds*
PPS Output	
Pulse:	1 Hz,
Accuracy:	1 microsecond
Width:	factory set to 80 ms
Baud Rate:	Factory set to 38400 bps; 4800, 9600, and 19200 bps also available*
Temperature Range	
Operating:	-30° to 80°C
Storage:	-40° to 80°C
Operating Voltage:	8 to 40 Vdc
Current Drain:	65 mA active @ 12 Vdc

Accuracy

Position (95% typical):	<15 m with GPS Standard Positioning Service (SPS); 3 to 5 m with DGPS (USCG/RTCM) correction; <3 m with DGPS (WAAS) correction
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Velocity:	0.1 knot RMS steady state
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Acquisition Times

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

Physical

Dimensions	
Diameter:	3.58 in. (9.1 cm)
Height:	1.65 in. (4.2 cm)
Weight:	12 oz. (332 g) with 15 ft (5 m) cable

*Changing the default settings or options requires the SC110 cable and a PC running GPS16 software. The software can be downloaded, at no charge, from the Garmin website (www.garmin.com).

