SpeedPuck Manual

Firmware Version v1

Revision Date July 6, 2023

Contents

Introduction

The SpeedPuck is a large format GPS speedometer designed for sailing and motor sports.

Features

- Speed Over Ground and Course Over Ground updated at 4 Hz (4 times per second)
- Header/Lift indicator updated at 4 Hz (4 times per second)
- 72 channel, 18Hz multi-constellation GPS receiver
- Maximum speed recall
- 1000 hours of GPS data storage at 4 Hz record rate
- 30 hour rechargeable battery
- Waterproof to 3m (IPX8)
- Two year warranty

Basics

Batteries

The SpeedPuck is powered by an onboard rechargeable battery.

Battery Life

The battery indicator is located on the bottom of the LCD screen. When the battery is fully charged, the device will last 30 hours in normal operation. When the battery is empty the device will go into low battery mode and flash the battery outline.

When the battery is exhausted, connect the SpeedPuck to a USB port or a phone charger using the supplied cable. From low battery the SpeedPuck takes approximately 10 hours to charge completely using a 5 volt, 1 amp wall adapter (iPhone or similar) or 50 hours to charge completely via a USB port on a computer.

Battery Indicator

Full | Half Remaining | Recharge Battery

The battery indicator on the SpeedPuck is located on the bottom right of the LCD screen.

Signal Acquisition

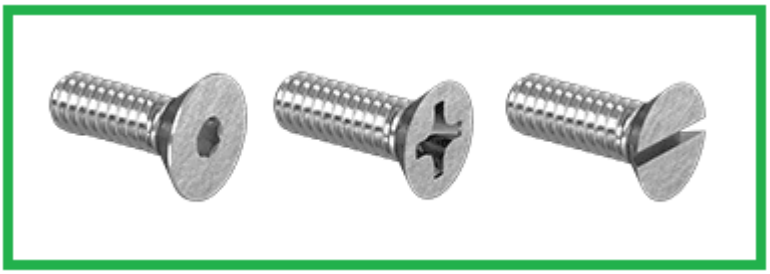
The operation of the SpeedPuck relies on low-power radio signals from GPS satellites that orbit the earth at an altitude of approximately 20,000 km. As a result, the SpeedPuck must be outdoors with a clear view of the sky to function properly.

When the SpeedPuck is first turned on, it must download information from GPS satellites before it can acquire a GPS solution. The data download process can take up to 5 minutes.

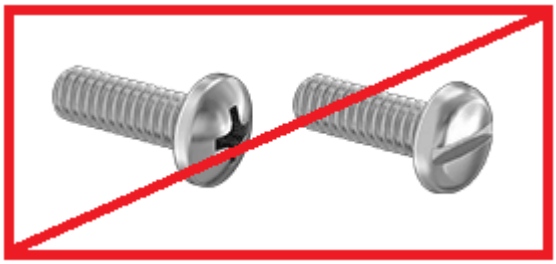
Installation Guide

The SpeedPuck can be installed anywhere on the boat with a view of the sky. The SpeedPuck comes with an injection molded plastic clip in cradle for easy installation. Install the cradle permanently on your boat. Press the tab on the cradle to release the SpeedPuck from it.

The SpeedPuck Cradle works with M4 Metric flat head countersunk machine screws. Alternatively, you can use Imperial No. 6 flat head countersunk machine screws in place of M4 fasteners. Always use Marine Grade fasteners when mounting the SpeedPuck Cradle and/or Mounting Brackets.



Do not use rounded head screws with the SpeedPuck cradle. Non-countersunk screw heads will interfere with mounting the SpeedPuck in its cradle.



Since the introduction of the SpeedPuck Cradle, the SpeedPuck no longer comes with the 3M Dual Lock on the back of the battery compartment lid. Several alternative mounting options are available, including 3M Dual Lock. For details, go to https://www.velocitek.com/collections/accessories.

GPS Data Storage

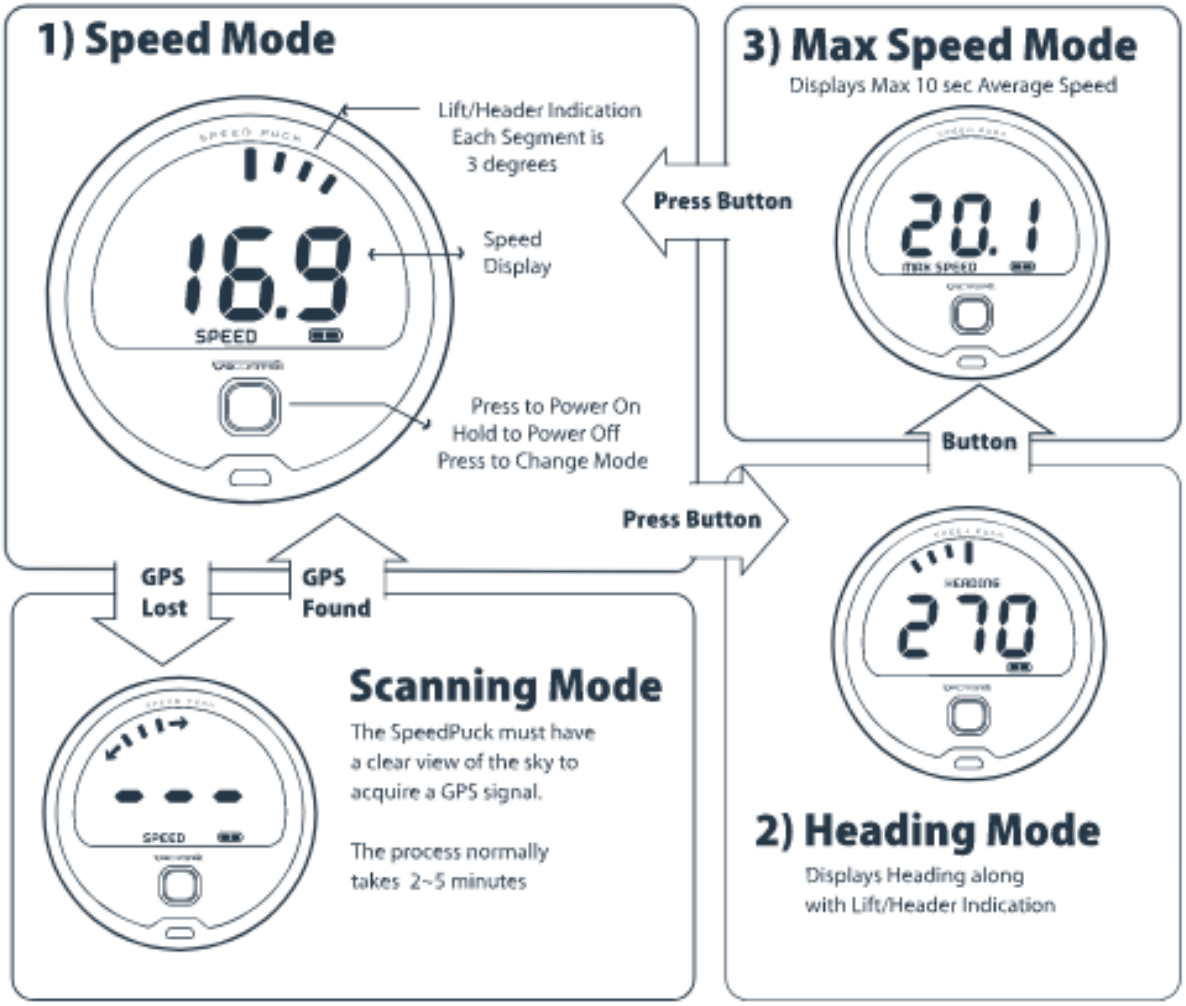
The SpeedPuck records GPS data whenever the device is on and GPS signal is detected. The device records data four times per second (4Hz). The SpeedPuck can store 1000 hours of data when recording GPS data at 4 Hz.

If the memory is full, the oldest data will be overwritten.

Operation

In firmware version 1 of the SpeedPuck, Sailing Operation is the only operation of the SpeedPuck.

Sailing Operation



The sailing operation is for those racing dinghy boats. All modes are enabled for maximum performance.

Displays

Following are details on the various displays.

Speed

Speed is calculated by the GPS unit by measuring the Doppler shift in GPS signals. Speed is displayed in Knots (Nautical Miles per Hour).

Heading

Course Over Ground (COG), or GPS Heading, is calculated by the GPS unit by measuring the Doppler shift in GPS signals.

In firmware version 1, your COG is displayed in degrees True. Degrees True is referenced to true north.

The SpeedPuck displays heading only when your speed is greater than 0.5 knot, otherwise it will show a heading of "- - -" degrees regardless of which direction you are actually moving.

The difference of the SpeedPuck to a conventional magnetic compass is that the SpeedPuck measures the direction the device is moving in rather than the direction it is pointed in. A major benefit of the SpeedPuck over a conventional magnetic compass is that it will give you accurate heading information, regardless of the orientation in which it is mounted on your boat. SpeedPuck 's compass reading depends only on the direction you are moving, not the direction the device is pointing.

Max Speed

Instantaneous max speed displayed is a best two second average. Using the SpeedPuck's high-speed, 18 Hz, GPS module.

The max speed is stored on a session-by-session basis and it is reset when the SpeedPuck is turned off.

Lift/Header Bar Graph Indicator

The SpeedPuck automatically detects when a sailor is trimmed to a heading then provides the header/lift indication. When the device detects that the sailor is trimmed at a heading the trim angle is set. Then header/lift indication is given off of that trim angle. Once a tack or a jibe is detected the indicator resets and nothing is indicated until another trim angle is set. Each bar segment represents 3 degrees of wind shift.

Configuration

In firmware version 1 the SpeedPuck has no user configurable settings. User configurable settings are planned in future firmware versions.

Software

The SpeedPuck works like a USB thumb drive and does not require any software to communicate with your computer.

Velocitek Control Center

The SpeedPuck no longer requires you to use Velocitek Control Center for the SpeedPuck to communicate with your computer.

Replays

To replay the data downloaded from a Velocitek device we recommend www.chartedsails.com and www.sailnjord.com

Maintenance

To ensure your SpeedPuck's enclosure remains watertight and the electronics are not destroyed by corrosion, please take the following precautions:

- Dry case with a towel before opening.
- Wipe away sand or debris on the gasket before screwing the back case on.
- Once the case is open wipe away any loose water droplets.
- If you ever see signs that water is leaking inside the enclosure please contact Velocitek immediately at (866)-498-6737 or support@velocitek.com to arrange for your device to be repaired and made watertight again.

Warranty

Velocitek products are intended for use exclusively as tactical aids for inshore sailboat and SUP racing. Velocitek products should never be used for navigation.

Velocitek products and accessories are guaranteed against manufacturing defects for two years from the original date of purchase. This warranty is non-transferable and only applies to the original purchaser for new devices purchased from Velocitek or an authorized Velocitek reseller. Velocitek's sole obligation in the event of such defects during this period is to repair or replace the defective part or product with a comparable part or product at Velocitek's sole discretion. Except for such repair or replacement, the sale, processing or other handling of this product is without warranty, condition or other liability even though the defect or loss is caused by negligence or other fault. Velocitek is not responsible for shipping costs associated with warranty returns. Velocitek assumes no liability for any accident, injury, death, loss, or other claim related to or resulting from the use of this product. In no event shall Velocitek be liable for incidental or consequential damages relating to or resulting from the use of this product or any of its parts.

Damage resulting from abuse, misuse, accident, or normal wear and tear is not covered by this or any warranty. The types of damage not covered by this warranty include, without limitation:

- Smashed LCD screen(s).
- Damage caused by a product being struck by a person or object.
- Damage caused by a product being dropped onto any surface from any height.
- Damage caused by line rubbing across the surface of a product.
- Damage caused by a product being incorrectly mounted in or removed from its cradle.
- Water damage to electronics that occurs as a result of any of the above types of damage having compromised a product's waterproofness.

Contact

Mail: Velocitek, Inc.
126 N B Street
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USA

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Phone: Calls will be answered 9AM ~ 5PM, US Eastern Time (UTC-4 Summer, UTC-5 Winter)
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Email: support@velocitek.com

Website: http://www.velocitek.com

Support: http://www.velocitek.com/support

Compliance

FCC Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Canadian Compliance Statement

This Class B digital apparatus complies with Canadian ICES-003.

European Community Compliance Statement

The equipment complies with The EMC Directive 2004/108/EC.

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