

RollBy™ OnBoard Speedometer

For HO and Larger Scales
For N Scale

Model No. RB-21
Model No. RB-21-N

-2-

THIS PRODUCT IS NOT A TOY. Intended for hobbyists ages 14 & older.

Train Speed & Distance Sensor for Smartphones & Tablets

- Transmits speed and distance with Bluetooth Low Energy (BLE) radio
- Displays with Free Android or iPhone App on Smartphone and Tablet mobile devices
- Continuously measures speed and distance while train is in motion
- Installs quickly in the railcar of your choice
- Requires Android version 4.3 or iOS 9.0 or greater with BLE capability
- Smartphone App can track more than one **Speedometer** at the same time
- Perfect for measuring distances on your layout
- Idle battery life is over one year for HO Scale; over 9 months for N Scale
- Battery can be disconnected with circuit board jumper to extend battery life

Important: Before You Install

- Download and install the **RollBy™ Train Speedometer App** first!
 - Run the App to check your device software version and BLE compatibility.
 - Upgrade your mobile device software if necessary.
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- Your **RollBy™ OnBoard Speedometer** can be damaged by static electricity. Before removing the circuit board from its packaging, discharge static electricity by touching a bare metal surface.
 - Read through the rest of these instructions before beginning.
 - Visit www.bouldercreekengineering.com for additional information.

Please visit www.bouldercreekengineering.com to see all of our Model Railroad products:

- **TrainBoss™** Talking Defect Detectors
- **WeighStation™** Track Scales
- **HotShot™** TrackSide Speedometers
- **RollBy™** OnBoard Speedometers
- **BrassHat™** Recordable Sound Modules
- **BrassHat™** Announcers
- **NightScope™** Infrared Detectors



(Photo courtesy of John Parker)

BATTERY WARNING:

- (1) **KEEP OUT OF REACH OF CHILDREN.** *Swallowing the battery may lead to serious injury or death in as little as 2 hours due to chemical burns and the potential perforation of the esophagus. Immediately see a doctor; have doctor phone (202) 625-3333. Keep the battery installed at all times. Dispose of used batteries immediately.*
- (2) **Risk of injury due to fire, explosion or leakage.** *Do not disassemble, charge, crush or expose the battery to fire or high temperatures.*

Installation Instructions

1. Install the **RollBy™ Train Speedometer App** on your Smartphone or Tablet mobile device.
 - a. Download and install the App from the Android Play Store (Google Play) or iTunes App Store.
 - b. Run the App to check your device software version and Bluetooth compatibility.
 - c. Upgrade your mobile device software if necessary.
2. Select the railcar or engine for your **RollBy™ OnBoard Speedometer**. The OnBoard Speedometer's battery can power it for 9 – 12 months, so the interior of a boxcar is a reasonable location.
3. Install the provided Rotation Wheelset as shown in **Figure 1**.

Warning: *The Rotation Wheelset magnet is extremely strong and can damage magnetic media such as credit cards, computer storage drives and other similar items. Keep it away from these items.*

Warning: *Do not allow the Rotation Wheelset magnet near a person with a pacemaker or similar medical device. The strong magnetic field can affect operation of such devices.*

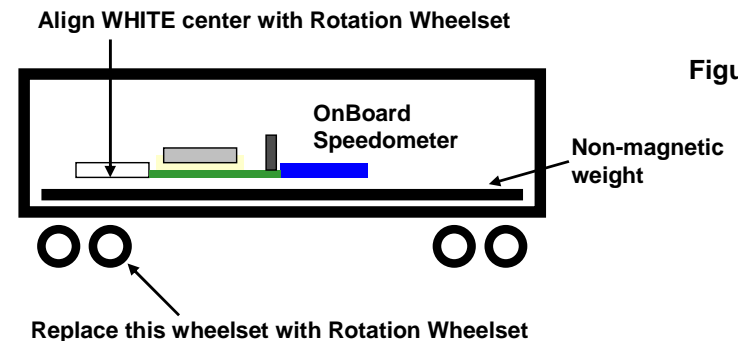


Figure 1

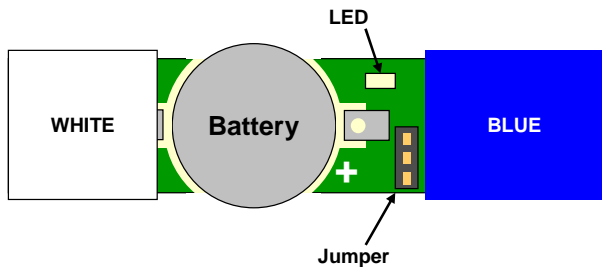
4. Steel, iron or other magnetic material must be kept away from the installed Rotation Wheelset axle. Replace the car weight and other wheelset if necessary. (K&S brass strip works well for weight.)
5. Substitute brass, stainless steel, or nylon screws for coupler and truck screws on the Rotation Wheelset end of the railcar.
6. Ensure the Rotation Wheelset turns freely with **NO** mechanical or magnetic interference. Interference will cause the Rotation Wheelset to slide instead of rotating – resulting in faulty performance of your OnBoard Speedometer.

Note: Clean attracted debris from your Rotation Wheelset magnet with a piece of sticky tape.

7. Align the center of the WHITE end of the OnBoard Speedometer above the Rotation Wheelset and fasten it to the floor of the railcar with tape or a spot of glue. Double sided tape works well. See **Figure 1**.
8. Turn on your OnBoard Speedometer by connecting the gold pins with the Jumper. The LED will flash once. See **Figure 2**.

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Figure 2



9. Test your installation:
 - a. Launch the **RollBy™ Train Speedometer App** on your mobile device and turn on Bluetooth if prompted.
 - b. Roll your railcar down the track and speed and distance data will display in your App. Congratulations!
10. To turn off the OnBoard Speedometer, remove the Jumper and attach it to just one pin for safekeeping.

Replacing the Battery

Use your fingers to pull up on the edge of the battery to pop it free from its holder. Replace the battery in its holder by installing **positive (+)** up.

Warning: Do not use any metal to free the battery as this could cause a short circuit and damage the battery or your OnBoard Speedometer.

Support & Service

If you have problems with your **RollBy™ OnBoard Speedometer**, please consult our website www.bouldercreekengineering.com. If you need additional help, please contact us at support@bouldercreekengineering.com.

Your OnBoard Speedometer can be repaired with a charge for parts and labor. Please contact support@bouldercreekengineering.com for a cost estimate on non-warranty repairs before sending product to us.

Limited Warranty

Boulder Creek Engineering, LLC warrants its products to be free of defects in materials and workmanship for a period of **one (1) year** from the purchase date. Defective product received by Boulder Creek Engineering during the warranty period will be repaired or replaced at our option. You must pay shipping to and from Boulder Creek Engineering.

This warranty does not cover damage resulting from negligent installation, improper operation, or unauthorized repair or modification. Removal of the heat shrink voids this warranty. Boulder Creek Engineering makes no other warranty of any kind, expressed or implied. In no event shall Boulder Creek Engineering be liable for incidental or consequential damages.

For warranty service, please contact Boulder Creek Engineering for a Return Merchandise Authorization (RMA) number. Product must be shipped to Boulder Creek Engineering with dated proof of purchase (your receipt).



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FCC Information

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 interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Consult the dealer or an experienced radio/TV technician for help.

Any modifications to the equipment not expressly approved by Boulder Creek Engineering LLC voids the user's authority to operate under and be in compliance with FCC Rules.

Industry Canada ICES-003 Compliance Label: *CAN ICES-3 (B)/NMB-3(B)*.

FCC ID: WAP2001
IC ID: 7922A-2001

Certified for "unlicensed" operations within the US and Canada.