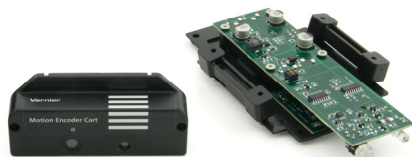

Motion Encoder Transmitter Parts

(Order Code: MECT)



The Motion Encoder Transmitter Parts kit is an add-on product to be used with an existing Vernier Dynamics System, which is part of the Vernier Motion Encoder System*. It cannot be used on its own. The parts allow you to convert a Vernier Dynamics Cart to a Motion Encoder Cart. Either a Standard Cart or Plunger Cart can be converted.

For basic information about the Motion Encoder System, see vernier.com/vds-ec

Parts Included with Motion Encoder Transmitter Parts

- Motion Encoder Transmitter Assembly
- Replacement Cart End Cap
- Allen wrench 3/32 inch

Motion Encoder Transmitter Installation

Motion Encoder Transmitter parts are used to convert an existing dynamics cart to a Motion Encoder Cart. Either a Standard Cart (CART-S) or a Plunger Cart (CART-P) can be converted.

1. Remove the four end cap screws using the 3/32-inch Allen wrench.
2. Remove the end cap.
3. Place the cart upside down and press the wheels down towards the body to compress the springs. Remove the pins holding the axle in place.
4. Lift out the axle and wheels.
5. Slide the encoder transmitter assembly into the cart body, battery end first, so the power button and LED will be at the open end of the cart.
6. Replace the axle and pins.
7. Tighten the four bottom screws holding the encoder assembly, but leave them a bit loose for now to allow it to align properly with the end cap.
8. Take note of the LED. It will be parallel to the circuit board. The tip projects about 2–3 mm past the circuit board.
9. Install the end cap, being careful to allow the LED and power button to find their places in the end cap. There should be no force required at all.
10. Replace two of the screws from the original end cap into the new cap using the Allen wrench.
11. Tighten the four bottom screws the rest of the way so everything is held tightly in place.
12. Insert two AAA batteries as indicated on the circuit board.

* Patent Pending

Power

The Motion Encoder Cart requires two AAA batteries. Either NiMH rechargeable batteries or alkaline disposable batteries can be used.

Turn on the cart by pressing the clear power button on the cart endcap. It will glow blue when power is on. Press again to turn off. The cart will turn itself off after 20 minutes of inactivity. Any motion on the track will cause the timer to be reset.

Battery life depends on use and the range setting. Low battery level may cause erratic detection of the cart motion, including incorrect velocity signs. Replace the batteries if this is seen.

Range Setting of the Motion Encoder Cart

The IR transmitter on the cart has two power levels available. The default 1 m setting conserves battery power. If the cart is used on a 2.2 m track, set the cart to the higher 2 m power level. If this setting is not used, the receiver will not reliably sense the position of the cart at the far end of the track. The switch is located inside the battery compartment.

Products Related to the Vernier Motion Encoder System

Vernier Dynamics System (order code: VDS)

Vernier Dynamics System is a low-friction black anodized 1.2 m track and optics bench combination designed for kinematics, dynamics, and optics experiments. It includes two carts.

Vernier Dynamics System with Long Track (order code: VDS-LONG)

The long version of the Vernier Dynamics System includes a 2.2 m track instead of the 1.2 standard track.

Track (order code: TRACK)

The Combination 1.2 m Track/Optics Bench comes with the Encoder System Strip installed.

Bumper Launcher Kit (order code: BLK)

The Bumper Launcher Kit includes accessories to integrate the Dual-Range Force Sensor with the Vernier Dynamics System or Vernier Motion Encoder System, allowing for many interesting experiments in momentum-impulse study.

Dual-Range Force Sensor (order code: DFS-BTA)

The Dual-Range Force Sensor measures pushes and pulls up to 50 N.

Wireless Dynamics Sensor System (order code: WDSS)

The WDSS is a wireless force sensor and accelerometer.

Replacement Parts

Motion Encoder Receiver (order code: MEC-BTD)

The receiver attaches to the end of the track and connects to an interface, such as a LabQuest 2.

Motion Encoder Cart (order code: CART-MEC)

This is the complete Motion Encoder Cart, with no assembly required.

Motion Encoder Track Strip (order code: METS)

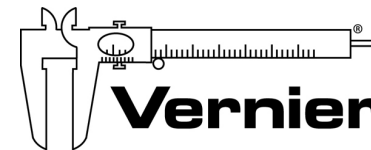
The strip can be attached to an existing track without an encoder strip, or it can be attached as a second strip for use with two encoder systems. For 1.2 m track.

Motion Encoder Track Strip - Long (order code: METS-LONG)

The strip can be attached to an existing track without an encoder strip, or it can be attached as a second strip for use with two encoder systems. For 2.2 m track.

Warranty

Vernier warrants this product to be free from defects in materials and workmanship for a period of five years from the date of shipment to the customer. This warranty does not cover damage to the product caused by abuse or improper use.



Measure. Analyze. Learn.™
Vernier Software & Technology

13979 S.W. Millikan Way • Beaverton, OR 97005-2886
Toll Free (888) 837-6437 • (503) 277-2299 • FAX (503) 277-2440
info@vernier.com • www.vernier.com

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