

Motion Encoder Cart

(Order Code DTS-CART-MEC)

The Motion Encoder Cart is a replacement part to be used with a Vernier Dynamics Cart and Track System with Motion Encoder*. The cart cannot be used on its own.

For a full description of the Motion Encoder System, including use instructions, see www.vernier.com/dts-ec

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 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.

Use of Two Vernier Motion Encoder Systems on the Same Track

Some experiments require measuring the motion of two carts. This can be done by purchasing the Motion Encoder Cart and Receiver (order code: DTS-MEC) to add a second encoder cart, receiver, and strip to your Vernier Dynamics Cart and Track System with Motion Encoder. A Motion Encoder Receiver is placed at either end of the track, and two Motion Encoder Carts are used on the track, each with its transmitter facing the unobstructed receiver. A second encoder strip must be applied to the track, one on either side of the center slot.

Consider reversing the direction of one receiver so that the same direction is positive for each system. Put the carts together, and zero both systems. This will put the carts on the same coordinate system. If they move together in contact, their position readings will be the same.



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 Long Track Strip (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.

Motion Encoder Transmitter Parts (order code: MECT)

The transmitter assembly is used to upgrade an existing cart to a Motion Encoder Cart.

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 falls, abuse, or improper use.



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* Patent Pending

