ME4
USB -or- PS/2
Mouse Interface
Reference Card
for use with Trackballs and Spinners

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The ME4 is designed to interface a Trackball and/or Spinner to the computer's USB port or PS/2 mouse port. Signals from the Trackball and Spinner are converted into mouse protocol. The Spinner may be jumpered for the Z axis to have it act as a scroll wheel. The Spinner may alternately be merged with X or Y mouse movement based on jumper settings.
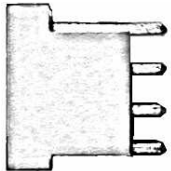
The ME4 also features inputs which allow for the emulation of the Left, Right, and Middle mouse buttons. To use these inputs, connect the normally open side of a switch to the desired input (Left, Right, or Middle), and the common side of the switch to the Ground connection provided on the Mouse Button Input header.

The ME4 is jumper configurable. USB or PS/2 operation may be set by using the USB or PS/2 Selection Jumper (see diagram). The Spinner signal may be jumpered to appear as X, Y or Z (scroll wheel) axis mouse movement using the Spinner Axis Jumper. The direction of the X, Y and Z axis may be independantly reversed using the Axis Reversal Jumpers provided on the ME4. In addition, both the Spinner and Trackball inputs may be separately configured for active low or active high operation.

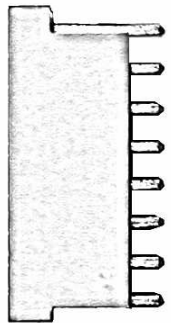**ME4 Jumper Selectable Configurations:**
USB or PS/2 Selection Jumper - Selects between the USB or PS/2 interface. This selection must be made prior to power up. When making a connection between the PC and the ME4 be sure to use only the cable corresponding to the selection made. If USB is required leave the jumper open and use a USB cable. If PS/2 is required close the jumper and use a PS/2 cable. Do not use both a PS/2 and USB cable.
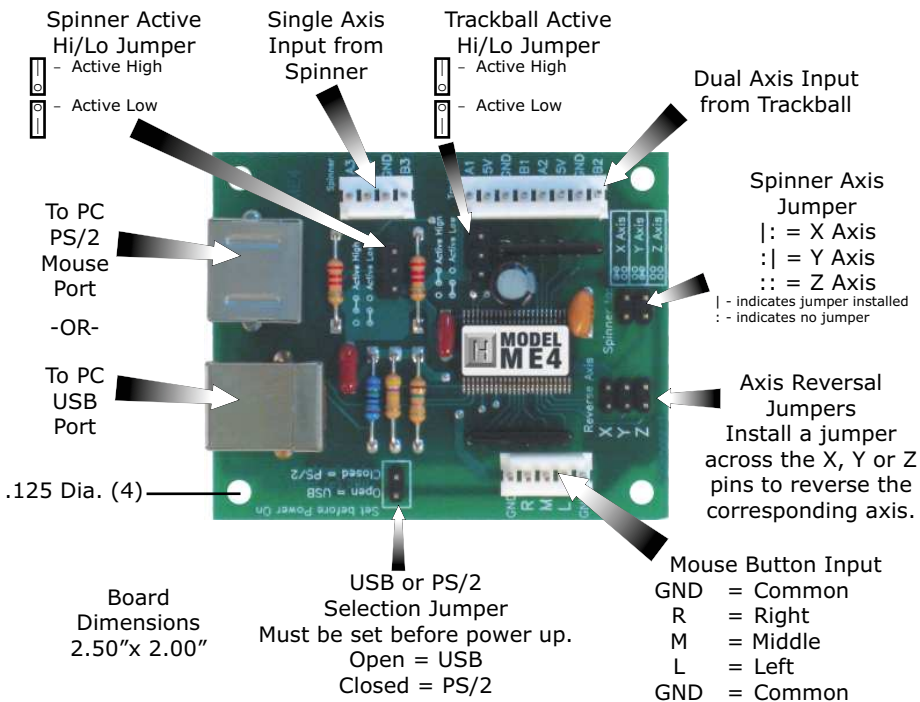
ME4 Spinner Connector

A3	Spinner Signal	(White)
5V	Spinner Power	(Red)
GND	Spinner Ground	(Black)
B3	Spinner Signal	(Green)

ME4 Trackball Connector

A1	Y Axis Signal	(Yellow)
5V	Y Axis Power	(Red)
GND	Y Axis Ground	(Black)
B1	Y Axis Signal	(Green)
A2	X Axis Signal	(White)
5V	X Axis Power	(Orange)
GND	X Axis Ground	(Brown)
B2	X Axis Signal	(Blue)

Spinner Active
Hi/Lo Jumper
– Active High
– Active Low

Single Axis
Input from
Spinner

Trackball Active
Hi/Lo Jumper
– Active High
– Active Low

Dual Axis Input
from Trackball

Spinner Axis
Jumper
|: = X Axis
:| = Y Axis
:: = Z Axis
| - indicates jumper installed
: - indicates no jumper

To PC
PS/2
Mouse
Port

-OR-

To PC
USB
Port

MODEL
ME4

Axis Reversal
Jumpers
Install a jumper
across the X, Y or Z
pins to reverse the
corresponding axis.

.125 Dia. (4)

Board
Dimensions
2.50"x 2.00"

USB or PS/2
Selection Jumper
Must be set before power up.
Open = USB
Closed = PS/2

***NOTE: Connect only the USB -or-
PS/2 cable, but not both.***

Mouse Button Input
GND = Common
R = Right
M = Middle
L = Left
GND = Common

Activate Input for Left, Right, or
Middle by shorting to the common
ground through an external switch.

Spinner Axis Jumper - Selects where the Spinner input will be sent, to X-mouse, Y-mouse or Z-mouse scroll wheel.

Axis Reversal Jumper - Reverses the response from either the X, Y or Z (spinner) axis in any combination, depending on which input pins are jumpered.

Spinner Active High/Low Jumper -AND- **Trackball Active High/Low Jumper**
There are separate headers for Spinner and Trackball Active High/Low jumper selections. Spinner and/or Trackball devices that require outputs to be pulled up may be accommodated by placing the appropriate jumper in the active low position as labeled on the board. Devices that require outputs to be pulled down may be accommodated by placing the appropriate jumper in the active high position as labeled on the board.

Default jumper locations:
    Spinner - active low
    Trackball - active high.

Accessories for the ME4
KE-USBMM6   USB type A-B (from ME4 to USB port), six feet
KE-MM6-mini   Male/Male PS/2 cable (from ME4 to PS/2 mouse port), six feet
KE-TBH3   ME4 to Trackball cable, three feet
KE-SP3   ME4 to Spinner cable, three feet

Warranty

HAGSTROM ELECTRONICS, INC. warrants this product against defects in material or workmanship for a period of ONE YEAR from the original purchase date. We will repair or replace (at our option) the returned defective unit at no charge during this warranty period.

No responsibility is assumed for any special, incidental, or consequential damage resulting from the use of or inability to use this product. In no case is **HAGSTROM ELECTRONICS, INC.** to be liable for any amount which exceeds the purchase price of the unit, regardless of the claim.

No other warranty, written or verbal, is authorized. This warranty is applicable only to units sold in the United States. Units sold outside the United States are covered by a similar warranty.

Depending on the state in which you live, you may have additional rights.

Great care has been taken during the assembly, testing, and burn-in of your ME4 to ensure its performance. If you have any questions, help is available Monday through Friday, 8:00 am to 5:00 pm (EST). Call Toll Free **888-690-9080**, or **(540) 465-4677**.

NOTICE The ME4 product is designed to be used by technically oriented computer users. When the ME4 is in use, your computer's signals and voltages are present on the unit. Prudent handling and packaging is necessary to prevent damage to your computer.

This product is designed for OEM use, and is not FCC part 15 approved. Because the packaging and use of the product will directly affect the characteristics of the unit, it is the responsibility of the purchaser to obtain final approval of their application, if required.

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