



External Accelerometer (+/-)5g

The new, Black Diamond ultra small, lightweight external accelerometer is a wonderful tool for measuring inline or vertical acceleration and even vibrations.

Range: +/-5g

Sensitivity: 380mV/g (at 4.54v supply)

Response: 100-300Hz. (Tested with EVO3 at 1000Hz logging rate.)

Temperature Range: -40 to 185°F

Linear Accuracy: 0.2% of FS; +0.02g over (+/-)5g

Max Shock Load: 2000g

For use with AIM loggers using RaceStudio2 software:

- Select Sensor Type: Linear Potentiometer Distance
- Specify Range: (user preference, though we recommend starting with -5 to +5)
- Select Units: use inch (.01) within Race Studio2
- Set Distance Parameter: use 11.85"
- Transmit configuration to logger
- Be sure to ZERO CALIBRATE after installation

The arrow on the sensor should be pointed in the direction of travel for which you wish to measure acceleration. To monitor **in-line** (or linear) acceleration, point the arrow of the sensor in the direction of vehicle travel (facing rearward or forward). For **lateral** acceleration, point the arrow of the sensor towards one side of the vehicle. For **vertical** acceleration, point the arrow of the sensor directly upward or downward.

To see accurate "real time" readings, access the ONLINE view from within the System Manager screen of RaceStudio2. Be sure to calibrate the sensors after installation.

To test the operation of the sensor, lay the sensor flat and calibrate in that position as the "zero" point. Then turn the unit to point the arrow upwards. The online value should read 1.0. Turning the sensor arrow downwards, the sensor should read -1.0. When reviewing/analyzing data, make sure the sensor reads 0.00 with the vehicle stationary. Make corrections if necessary within RaceStudio2 Analysis so you are working with corrected data!

If you intend to use the sensor in a vertical direction, and wish to see variations from the force of gravity, zero calibrate with the arrow of the accelerometer facing upward. **This will calibrate the steady state (static) value as a zero reading (even though it really sees 1g due to the force of gravity).** Vertical movements will be read as positive or negative values.

As always, product technical support is readily available from *Precision Auto Research*. If you have any questions, do not hesitate to call. We're here to help!

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