



CAUTION: CAREFULLY READ INSTRUCTIONS BEFORE PROCEEDING

OVERVIEW

The Hall Effect sensor harness P/N HALL-SENSOR is designed to be used with Daytona Sensors systems with vehicle speed sensor inputs including the CD-1, NC-1, NC-2, and SL-1. It allows vehicle speed data logging on race vehicles without an existing vehicle speed sensor. The Hall Effect sensor harness is intended to be used with a driveshaft mounted split collar magnet assembly such as the 800-CL-2M series available from Racepak (www.racepak.com).

Figure 1 – Hall Effect Sensor Harness and Typical Split Collar Magnet Assembly (Not Supplied)



MOUNTING

The Racepak split collar magnet assembly is typically installed on the rear yoke or coupler. Follow the instructions supplied by the vendor. The Hall Effect sensor should be mounted on an aluminum bracket (do not use steel material) and requires a 14 mm hole. Adjust the two nuts supplied with the sensor for a nominal .050 inch air gap. Route the cable to the Daytona Sensors system and secure with nylon tie wraps. Avoid bending the cable section marked with yellow heat shrink. In order to avoid electrical noise issues, keep the cable as far away as possible from

the ignition coil, ignition coil wires, and spark plug wires.

WIRING HOOKUP

Strip the end of the Hall Effect sensor cable and connect as follows:

Clear wire to switched +12V power (this can be the same power connection used for the Daytona Sensors system)

Black wire to VSS input on Daytona Sensors system

Shield wire to ground (this must be the same ground point use for the Daytona Sensors system signal ground).

The Hall Effect sensor harness uses a Honeywell SR3F-A1 unipolar sensor. The harness has an internal 4.7K ohm pull up resistor to provide a 0-12V square wave signal.

VSS FREQUENCY

You can use the following formula to approximate the VSS frequency scaling parameter required for controller setup:

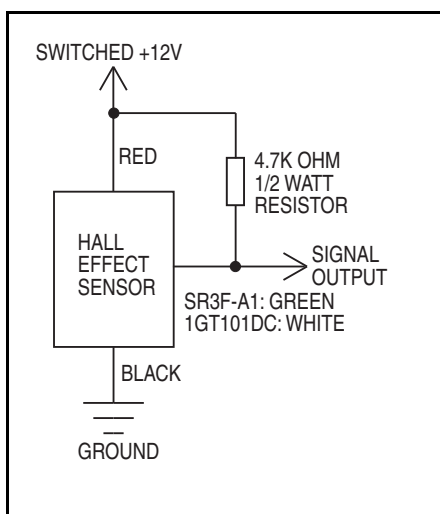
$$\text{VSS Freq} = 672.3 \times \text{Gear Ratio/Tire OD}$$

Where Gear Ratio is the rear end gear ratio and Tire OD is in inches. This formula is based on a magnet assembly with two magnets and gives the VSS frequency at 60 MPH.

HALL EFFECT SENSOR NOTES

Figure 2 shows the actual connections made to a typical Hall effect sensor. The 4.7K ohm pullup resistor is required in all Hall effect sensor applications. Note that the wire colors shown are the actual leads coming from the sensor (our prefabricated harness uses shielded cable with different color coding).

Figure 2 – Hall Effect Sensor Connections



The Honeywell SR3F-A1 Hall effect sensor requires a magnet wheel. In some cases, it may be more convenient to use a gear tooth type sensor. These include an internal magnet and allow sensing the passage of steel gear teeth. We recommend the Honeywell 1GT101DC. Both Honeywell parts are available from Digi-Key (www.digikey.com).