STACK STACK STACK

INSTALLATION GUIDE
ELECTRIC SPEEDOMETER

IMPORTANT
WEAR SAFETY GLASSES

2650-1503-00 Rev. B

General Information

This electric speedometer utilizes an LCD to display odometer and trip odometer mileage. Momentarily pressing the Trip/Reset button on the dial window cycles the odometer, trip 1, and trip 2 displays on the LCD. Pressing and holding the Trip/Reset button for more than two seconds while in either trip mode will reset the trip odometer currently being displayed. The odometer cannot be reset.

NOTE: The odometer on this speedometer will show some distance less than 8 km (5 miles). This is a result of factory testing to ensure optimum quality.

Speedometer Senders

The speedometer is designed to operate with an electrical speed sender. The speed sender signal range must be between 310 and 248,500 pulses/km (500 and 400,000 pulses/mile). Any speed sender or electronic module that meets the following two conditions can be used:

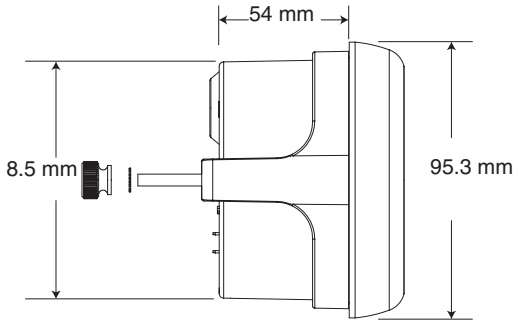
1. Pulse rate generated is proportional to vehicle speed.
2. Output voltage within the ranges listed below:
   - Hall effect sender, 3-wire (5 to 16V)
   - Sine wave generator, 2-wire (1.4 VAC min.)
   - 5V Square wave (CMOS)

Recommended Options Available from AutoMeter Products

5291 - Standard 7/8–18 thread. 16 PPR, Hall Effect
5292 - Ford, plug in. 16 PPR, Hall Effect Standard
5293 - Standard 7/8-18 thread, 2 wire, 8 PPR sine wave
5289 - GPS Interface Module
5290 - Universal Speed Sensor
3299 - Optional Tach/Speedo Gauge Connector

Mounting

1. Gauge in a 85.7 mm dia. hole. Be careful not to cut the hole too large.
2. Cut a 95 mm dia. hole in the firewall for the speedometer wires. Place a rubber grommet in the hole and route the wires through the grommet to the engine compartment.
3. Connect the speedometer wires as shown in the wiring sections.
4. Secure the speedometer to the dashboard using the provided bracket and hardware.



Testing

Once the speedometer is mounted and wired into the vehicle, the speedometer should be tested to verify that the electrical connections are working properly. First, watch the speedometer's pointer as the power is applied. The pointer should first move to a midrange position, then down to the 0 position on the dial. This action verifies that power is properly connected to the speedometer. The vehicle should be driven some distance to verify the Vehicle Speed Sender (VSS) is connected properly and that the pointer moves. If the pointer does not move off of the zero position, verify that the VSS is connected properly. In some cases calibration may be needed if the pointer does not register speed. Follow the calibration procedure and retest.

Calibration (Electric Speedometer calibration made easy!)

To calibrate your electric speedometer:

1. With the power off, push and hold the Trip/Reset button. While holding the button, start the vehicle and continue to hold the button until the pointer sweeps to full scale and stays at full scale. You may now release the button.
2. Drive to the beginning of a pre-marked 2 km (2 mile) distance and stop. It does not matter how far away it is to get to this pre-marked 2 km (2 miles) distance. DO NOT SHUT THE ENGINE OFF. Push and release the Trip/Reset button. The pointer will drop to half scale.
3. Drive the 2 km (2 miles) distance. The pointer will remain at the half scale position no matter what speed you drive. It will be normal to see the LCD odometer counting rapidly as it is receiving a speed signal. If you have to stop during the calibration, that is o.k. The speedometer will simply stop counting pulses during this time.
4. At the end of the 2 km (2 mile) distance, stop then press and release the Trip/Reset button. The pointer will drop to 0 and the calibration is stored. Calibration is now complete.

Note: If you purchased a MPH speedometer you must drive two (2) miles to complete calibration. If you purchased a km/h speedometer you must drive two (2) kilometers to complete calibration.

Remember the accuracy of your 2 km (2 miles) distance will directly affect the accuracy of your speedometer.

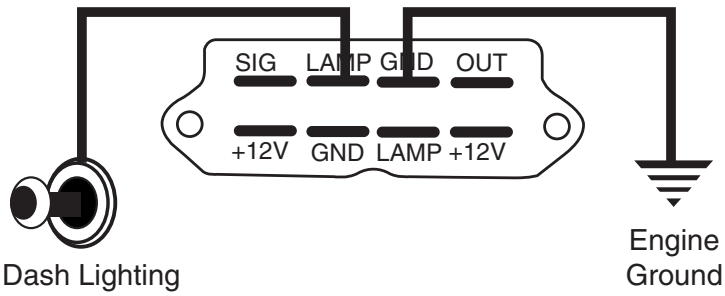
The following list contains factors that can affect speedometer accuracy and how to minimize them during calibration.

1. Tire diameter increases slightly as vehicle speed increases. To minimize this error drive at an average speed of 75 KPH (45 MPH) during calibration.
2. Tire diameter increases slightly as tire air pressure increases. To minimize this error, check the vehicle's tires to ensure correct air pressure.
3. Tire diameter changes with vehicle load. Minimize this error by having an average load in the vehicle during calibration.
4. Minimize tire slippage error by not breaking traction during calibration.

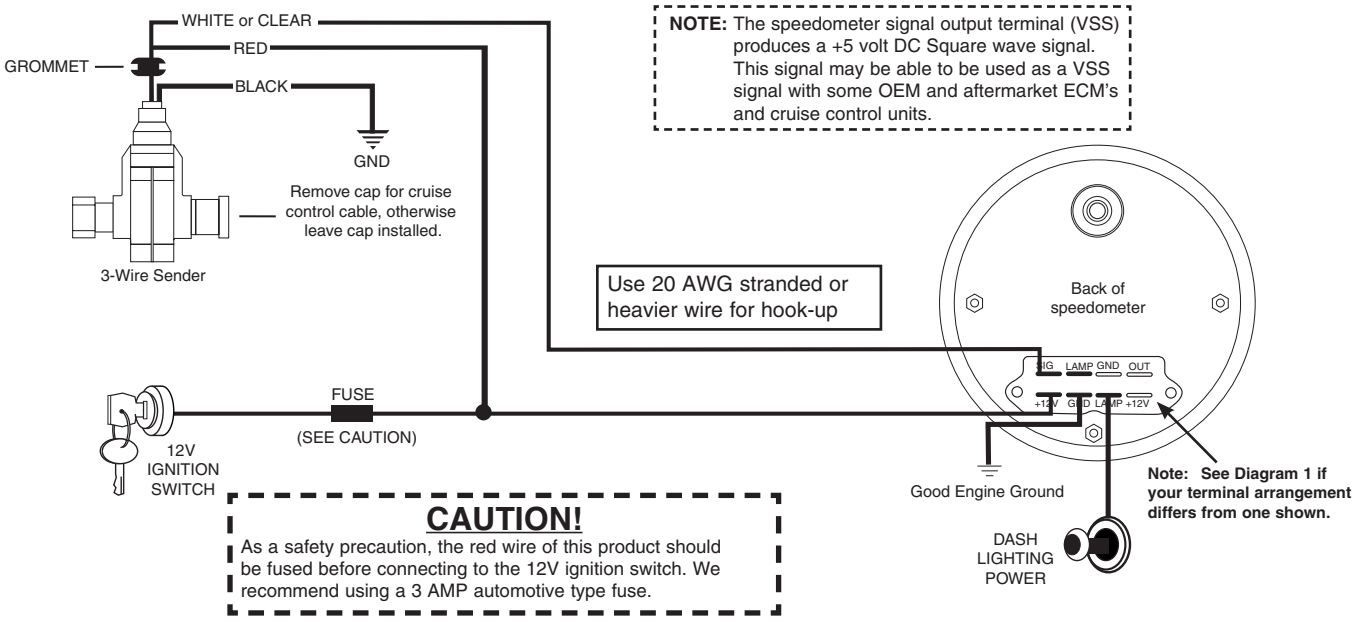
Note: Always recalibrate speedometer after any tire size or differential ratio change.

Wiring - Diagram 1

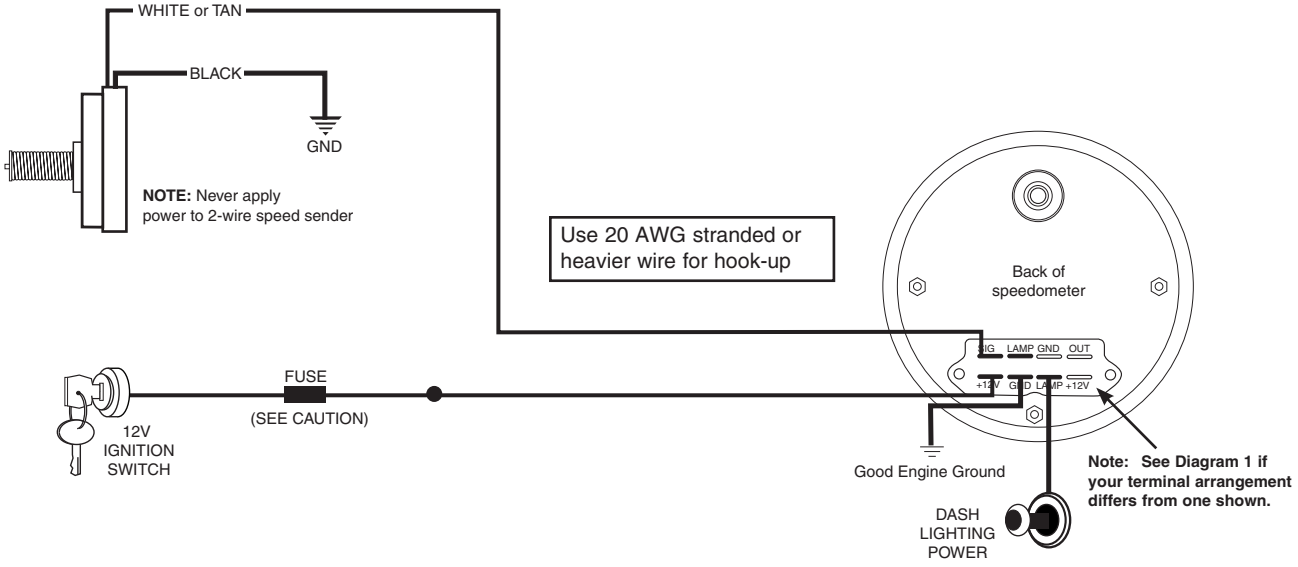
NOTE: Some models may have ground and lamp terminals on the upper row instead of lower row.



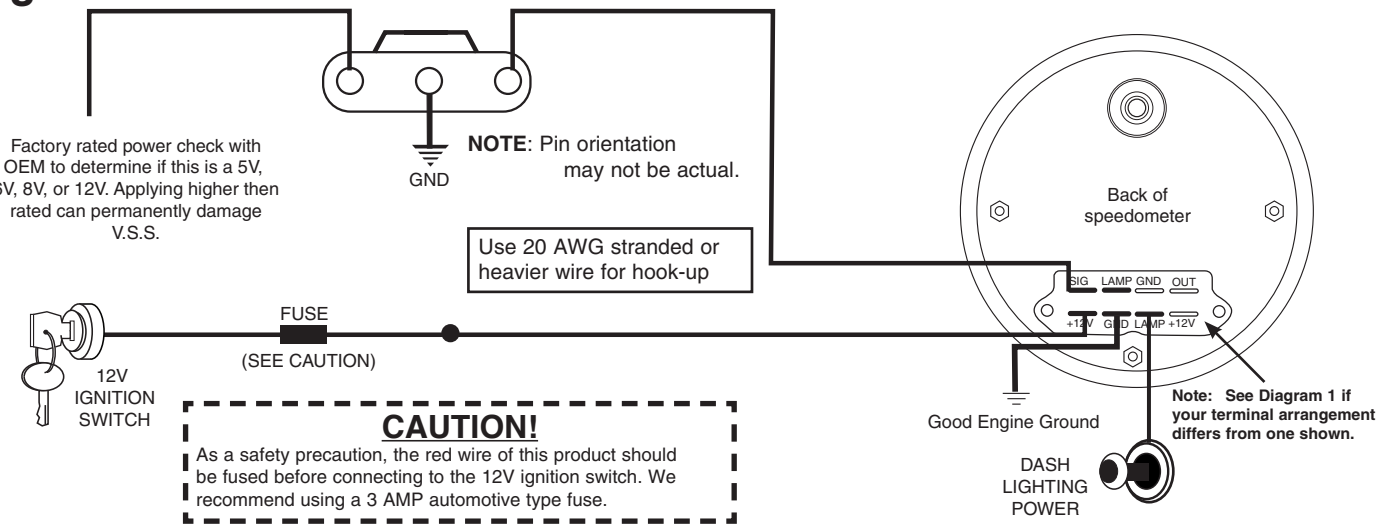
Wiring w/ typical aftermarket 3-wire sender



Wiring w/ typical aftermarket 2-wire sender (and no computer)

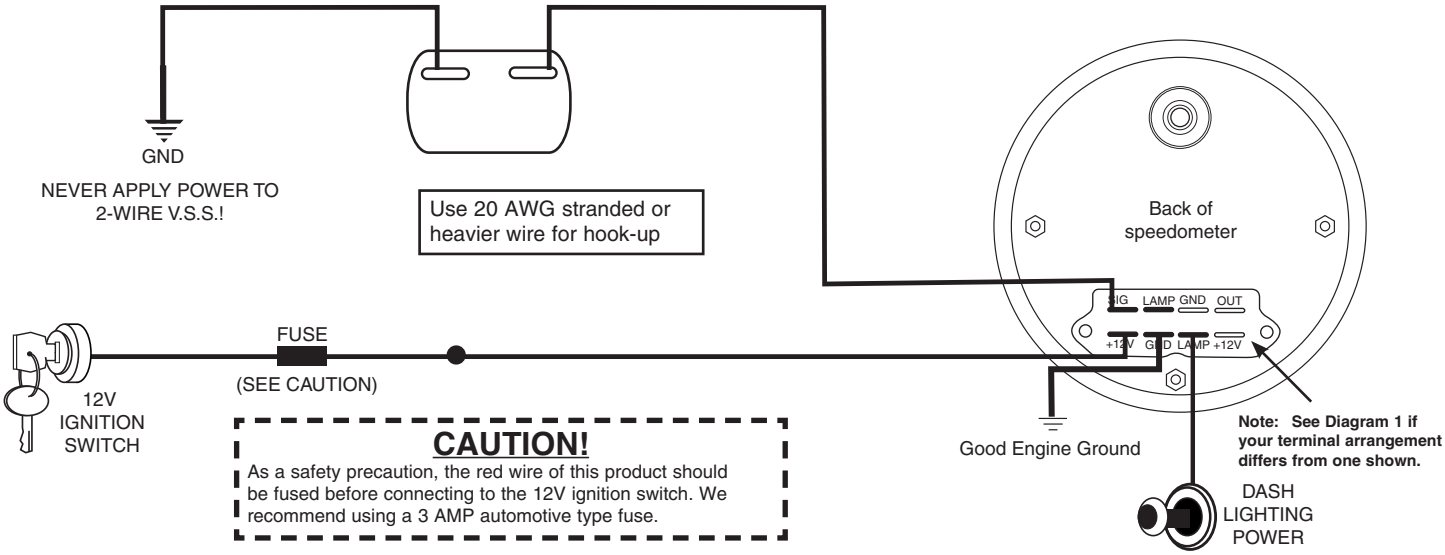


Wiring w/ most OEM 3-wire V.S.S (Vehicle Speed Sensor)



CAUTION!
As a safety precaution, the red wire of this product should be fused before connecting to the 12V ignition switch. We recommend using a 3 AMP automotive type fuse.

Wiring w/ most OEM 2-wire V.S.S (When no computer involved)



CAUTION!
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Wiring w/ most OEM 2-wire V.S.S. when using computer or trans controller

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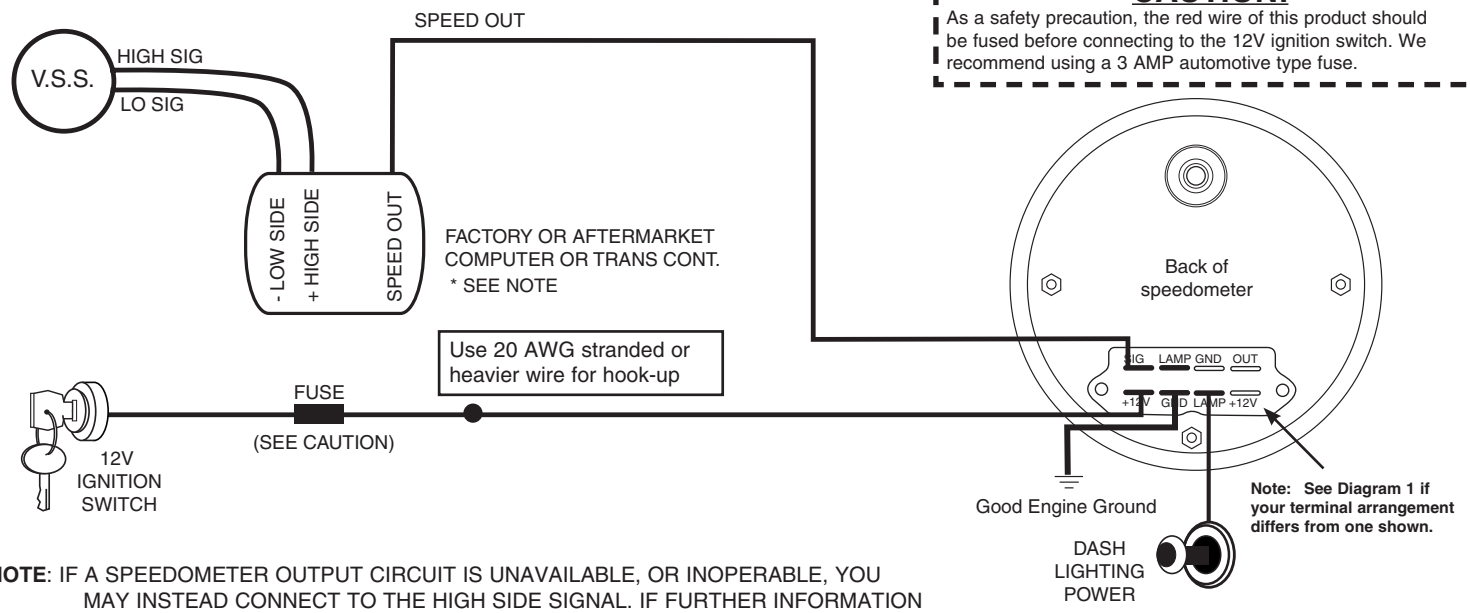
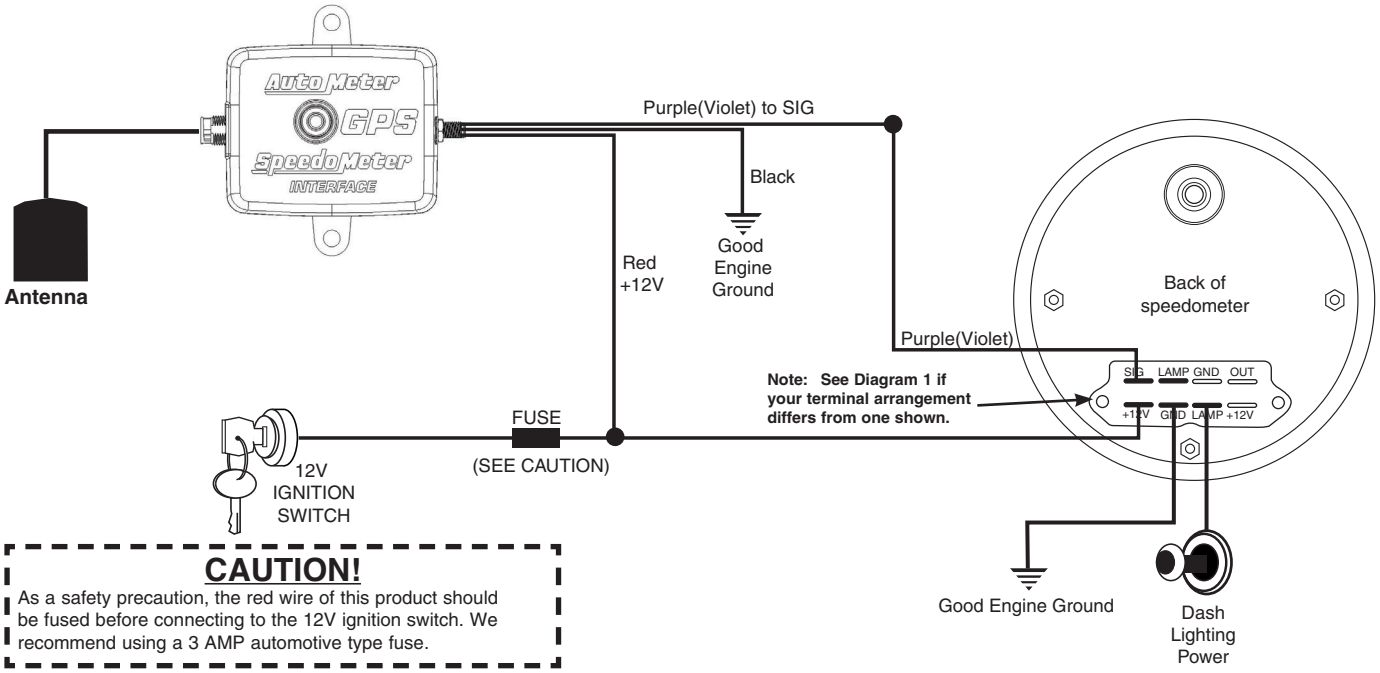


NOTE: IF A SPEEDOMETER OUTPUT CIRCUIT IS UNAVAILABLE, OR INOPERABLE, YOU MAY INSTEAD CONNECT TO THE HIGH SIDE SIGNAL. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT AUTOMETER TECH SUPPORT AT 866-248-6357.

Wiring w/ AutoMeter 5289 GPS Interface



CAUTION!

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12 MONTH LIMITED WARRANTY

STACK, Ltd. warrants to the consumer that all STACK products will be free from defects in material and workmanship for a period of twelve (12) months from date of the original purchase. Products that fail within this 12 month warranty period will be repaired or replaced at STACK's option to the consumer, when it is determined by STACK, Ltd. that the product failed due to defects in material or workmanship. This warranty is limited to the repair or replacement of parts in the STACK instruments. In no event shall this warranty exceed the original purchase price of the STACK instruments nor shall STACK, Ltd. be responsible for special, incidental or consequential damages or costs incurred due to the failure of this product. Warranty claims to STACK must be transportation prepaid and accompanied with dated proof of purchase. This warranty applies only to the original purchaser of product and is non-transferable. All implied warranties shall be limited in duration to the said 12 month warranty period. Breaking the instrument seal, improper use or installation, accident, water damage, abuse, unauthorized repairs or alterations voids this warranty. STACK, Ltd. disclaims any liability for consequential damages due to breach of any written or implied warranty on all products manufactured by STACK.

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