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OMEGA

2.0 GAUGES



OMEGA.INSTRUCT29

Omega 2.0 Gauges Installation Instructions

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3-3/8" or 5" Electric Speedometer

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SHORT SWEEP ELECTRIC GAUGES

CAUTION FOR ALL GAUGE INSTALLATION (AMMETERS EXCLUDED)

As a safety precaution, the +12V wire attached to the positive I (+) terminal of the gauge should be fused before connecting to the positive (+) output side of the ignition switch. We recommend using a 3 Amp, automotive type fuse inline between the power supply source and the I (+) terminal on the gauge.

NOTE: Some late model vehicles use electronic sensors in their pressure and temperature senders for engine control functions. Before removing the original sender, we recommend that you contact your automotive dealer to be sure no critical functions will be disrupted. With pressure gauges it is beneficial to add a T-fitting to install your new gauge and to keep the warning light operational. This allows you to monitor the pressure and still have a warning light to indicate emergency conditions.

NOTE: Disconnect negative (-) battery cable before installation.

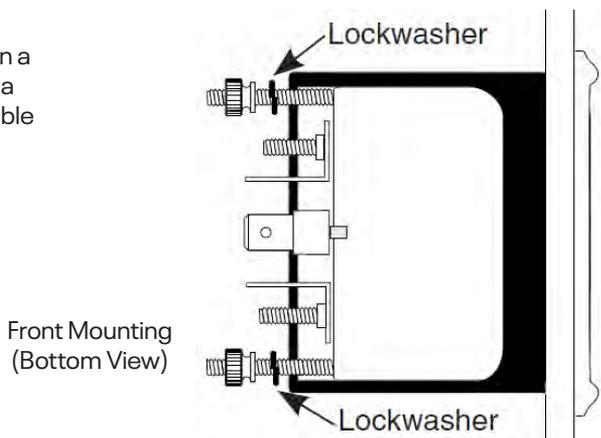
CAUTION: Do not touch ignition wire to the sender (S) terminal on back of gauge or the sender may be damaged.

Mounting

These gauges can be mounted in-dash or in panels, cups, pods, etc. 2-1/16" diameter gauges mount in 2-1/16" hole, 2-5/8" diameter gauges mount in 2-5/8" hole. Fasten with brackets supplied as shown. (Hookup wire is required.) To assure proper functioning of this instrument, please read instructions thoroughly before installing.

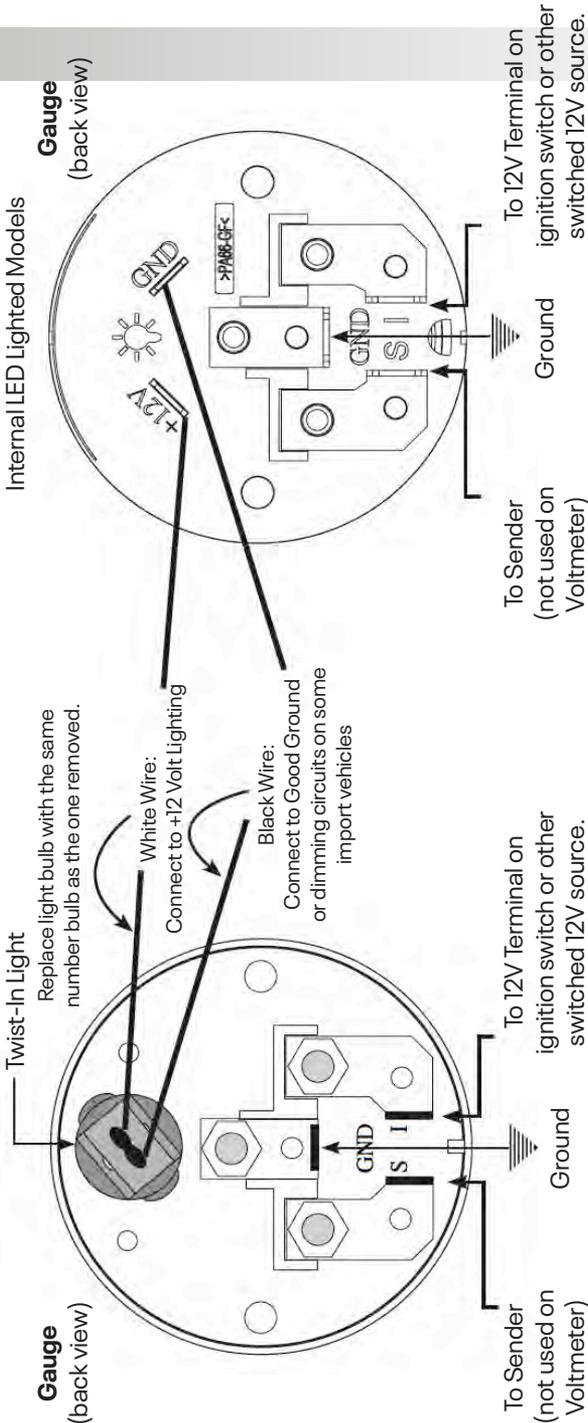
Metric Adapter

If this product is to be installed on a vehicle requiring metric fittings, a complete listing of fittings available can be found online.



Short Sweep Electric Gauges - Installation Instructions

Wiring

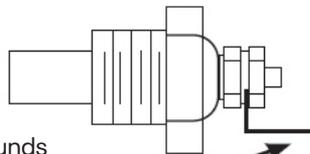


Temperature Gauges

1. Install temperature sender
 - A. Water Temp:** Install temperature sender (included). Purchase of additional fittings such as metric or hose adapters may be required.
 - B. Oil & Trans. Temp:** Hole may have to be drilled and adapter nut (included) welded or brazed in pan. Be sure there is adequate internal clearance for nut and sender. Sender should automatically be grounded when installed. If not, proper ground connections should be made. May use #2260 weld on bung on steel pans (not included).
 - C. Cylinder Head Temp:** Head must be drilled and tapped for 1/8" NPT hole. Sender should be grounded automatically when installed. If not, proper ground connections should be made. Be sure not to drill all the way through.
 - D. Diff. Temp:** Install temperature sender in 1/8" NPT sender port on cover if available. If cover does not have a port, remove cover and drill and tap a 1/8" NPT hole or, drill and weld, or braze, adapter nut (included) in cover. Proper ground connections should be made by running ground wire from bolt in cover to chassis, being sure to leave enough slack in wire for suspension travel.
2. Route 18-gauge wire through firewall. If a new hole is drilled in the firewall a grommet is recommended. Connect one end to terminal post on temperature sender, and opposite end to sender (S) terminal on back of gauge.
3. Route 18-gauge wire from center terminal GND (-) on back of gauge to good ground near sender.
4. Connect wire from ignition switch to ignition (I) terminal on back of gauge.
5. Reconnect negative (-) battery cable.

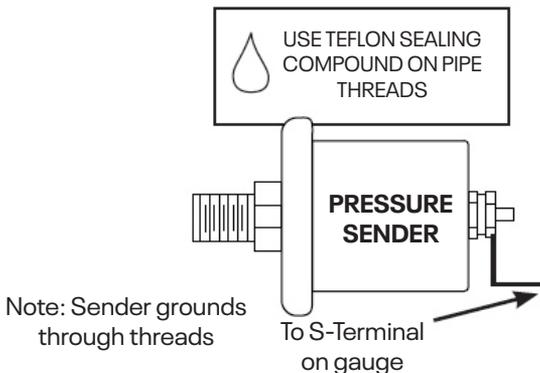


TEMPERATURE SENDER



Pressure Gauges

1. Install sender into pressure port of appropriate type. **If unit is to be installed on a high vibration application such as a full race engine or engine capable of high RPM, it is strongly recommended that the sender be remote mounted to either the fenderwell or firewall, to insulate from vibration. Failure to remote-locate pressure senders on such an application could result in gauge failure and potential damage to vehicle and/or operator injury.** Braided stainless steel lines are sold separately by Auto Meter, and can be used to accomplish this. Sender features 1/8" NPT male fitting and comes with 1/4" NPT adapter. Sender should automatically be grounded when installed. If not, or if remote relocation of sender is required, a ground connection to sender "body" may need to be made.
2. Route 18-gage wire through firewall. If a new hole is drilled in the firewall a grommet is recommended. Connect one end to terminal post on pressure sender, and opposite end to sender (S) terminal on back of gauge.
3. Connect wire from center terminal GND (-) on back of gauge to good engine ground near sender.
4. Connect wire from ignition switch to ignition (I) terminal on back of gauge.
5. Reconnect negative (-) battery cable.



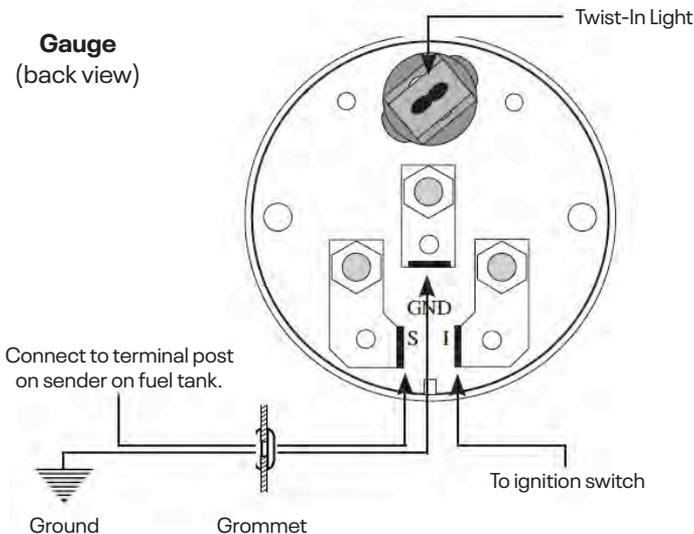
Short Sweep Electric Gauges - Installation Instructions

Fuel Level

NOTE: Before beginning installation, check to make sure stated resistance range for the gauge matches your sending unit value for proper operation. The chart below may be helpful in determining what resistance range of gauge to use.

1. Gauge connects to fuel sender on fuel tank. Existing wires may be used, or route proper length of 18 gage, wire from fuel tank to gauge. If a new hole is drilled in the firewall a grommet is recommended. Connect one end to terminal post on fuel level sender and the opposite end to the sender (S) terminal spade on back of gauge.
2. Connect ground wire from ground post on gauge to suitable chassis ground.
3. Connect wire from ignition switch to the positive I (+) terminal on the back of gauge. (See figure)
4. Reconnect negative (-) battery cable.
5. Be sure that body or mounting flange of sender is grounded to suitable chassis ground.

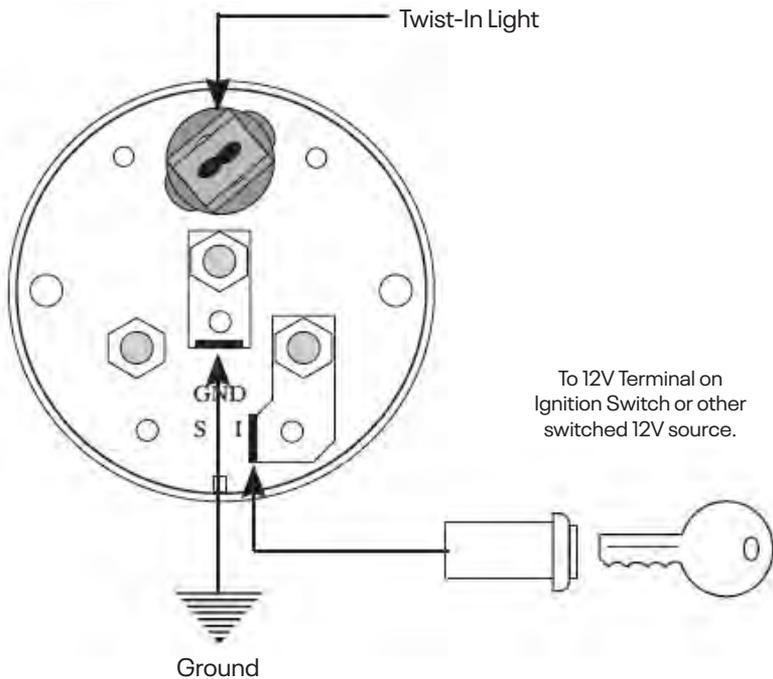
	Sender Resistance (OHMS)	
	Empty	Full
For most GM vehicles to 1997	0	90
For most Ford and Chrysler vehicles	73	8-12
Use 3262 Fuel level sender	240	33
For most GM vehicles before 1965	0	30
Most '89 and newer Fords	16	158



Note: Failure to ground sender as in Step 5 may result in inoperable gauge.

Voltmeter

1. Using 18 gage wire, route one length through firewall. If a new hole is drilled in the firewall a grommet is recommended. Attach one end to the negative GND (-) spade terminal on back of gauge, and the opposite end to a good engine ground. See illustration at right.
2. Attach one length of wire to the positive I (+) terminal on back of gauge and opposite end to 12V terminal on ignition switch or other 12V switched power source.
3. Reconnect negative (-) battery cable.



In-Dash Electric Tachometer - Installation Instructions

Calibration

IMPORTANT: This tachometer is factory calibrated to operate on 8 cylinder engines. For 4 or 6 cylinder engines, it is necessary to make the proper adjustments to adapt this tachometer to your cylinder range.

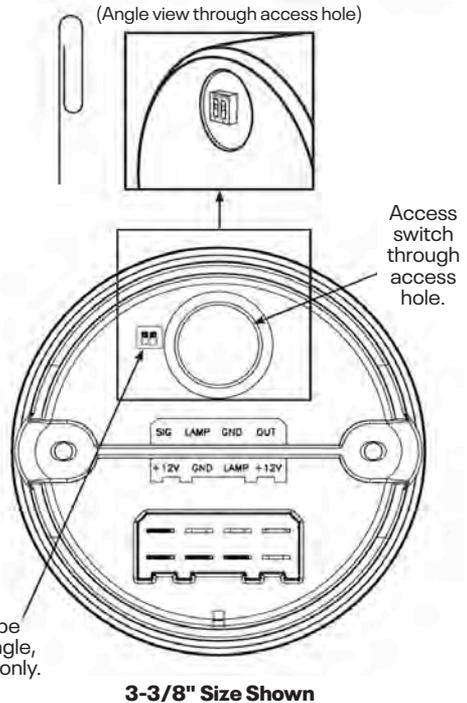
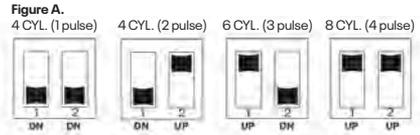
Locate the access hole on the back of the tachometer. Move each of the two switches to the proper cylinder selection according to the diagram illustration on the right. Use a small screwdriver or an unwound paper clip to change the switch settings.

NOTE: This tachometer has an air core meter. With power off, it is normal for the pointer to leave zero. When power is applied, the pointer will move to the correct position.

Figure A.

- 8 CYL. (4 pulse) - Both switches up.
- 6 CYL. (3 pulse) - Switch One up, Switch Two down.
- 4 CYL. (2 pulse) - Switch One down, Switch Two up.
- 4 CYL. (1 pulse) - Both switches down.

Switch may not be visible from this angle, shown for location only.



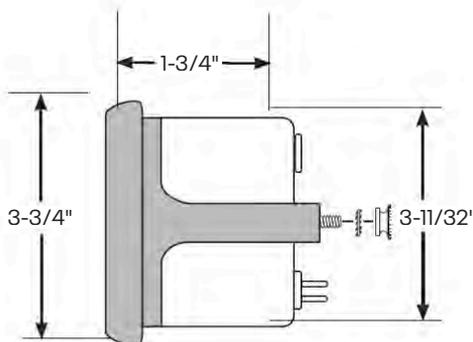
Lens Cleaning: To prevent scratching the lens when cleaning, use a mild, soapy solution to clean. Wipe lightly with a soft cloth.

NOTE: This tachometer operates on most early model ignitions, factory electronic and high performance electronic racing ignitions.

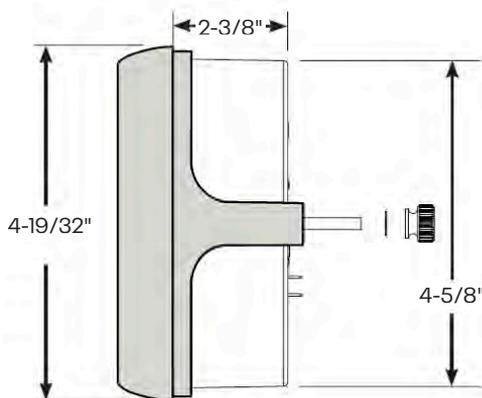
Mounting

1. Mount the 3-3/8" tachometer in a 3-3/8" diameter hole and a 5" tachometer in a 4-5/8" diameter hole in the dashboard. (Be careful not to cut the hole too large.)
2. Cut a 3/8" diameter hole in the firewall for the tachometer wires. Place a rubber grommet in the hole and route the connector wires through the grommet to the engine compartment.
3. Connect the tachometer wires as shown in the Wiring Section.
4. Secure the tachometer to the dashboard using the provided bracket and hardware.

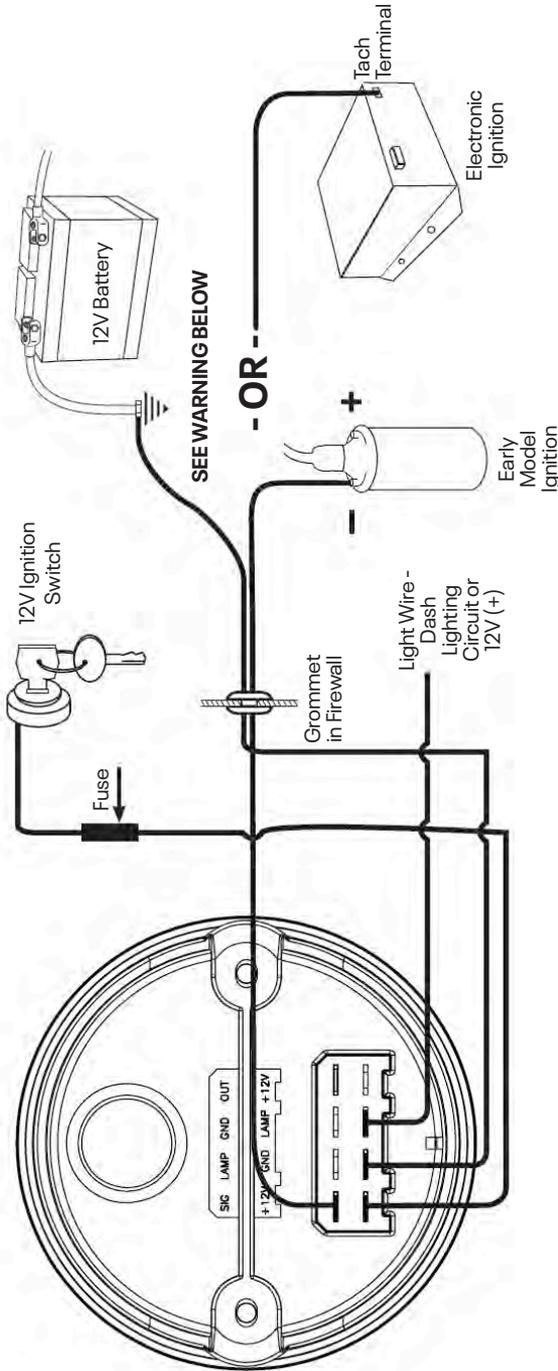
3-3/8" Models



5" Models



Wiring



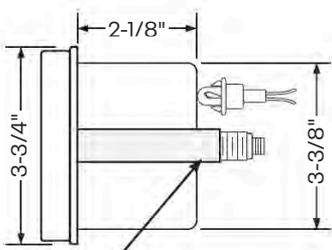
WARNING: Warranty will be void if connected to coil when using an aftermarket ignition box such as, but not limited to products from the following manufacturers: MSD, Crane, Jacobs, Mallory, Holley, Etc.. Prior to installation of your tachometer, check with the ignition box manufacturer for recommended tachometer signal location.

CAUTION: As a safety precaution, the +12 V terminal of this product should be fused before connecting it to the 12V ignition switch. We recommend using a 3 Amp, automotive fuse or equivalent to help protect this product.

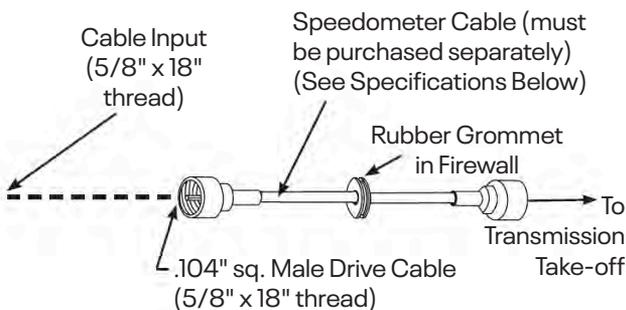
Mounting

MODELS:

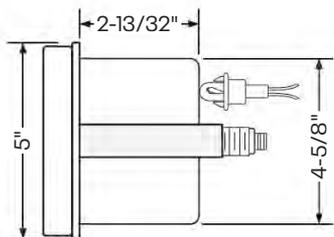
2490, 2492, 2494, 2690, 2692, 2694, 3992, 4492,
4493, 5152, 5153, 5692, 5693, 5892, 5893



Brackets, nuts and lock washers for securing in dash
(Included in all kits)



MODELS: 3994, 3995, 4495, 4496, 5154,
5156, 5695, 5696, 5895, 5896



3-3/8" or 5" Speedometers - Installation Instructions

Installation

1. Cut a hole in the dashboard for the location of the speedometer. Check page 12 for diameter dimensions for your speedometer.
2. To connect the speedometer cable:
 - A. If existing speedo cable in vehicle is being used, connect it to the cable input on back of speedo. Make sure cable fits properly into .104" sq. female cable input before tightening.
 - B. If a new speedo cable is required, purchase a "custom made" cable from an auto parts store or speedometer specialty shop. The cable input on back of speedometer accepts only .104" sq. male drive. Make sure connections fit properly before tightening.
3. Drill a 11/16" diameter hole in engine firewall where cable will be routed. Route cable from speedo through dash, through firewall and connect to transmission take-off. Use the rubber grommet provided (slit) to support the cable in the firewall. Make sure all connections fit properly before tightening.
4. Secure the speedometer in the dashboard by using the brackets, nuts and lock washers provided.
5. For lighting connect the light wire to dash lighting circuit (or +12 volts). If speedometer is mounted in a non-metal dashboard, a separate wire must be connected between one of the speedometer case mounting studs and an engine ground (- neg.)

Specifications: This speedometer is set up for a 1:1 drive ratio (60 MPH at 1,000 RPM input to speedometer head) and a 5/8" x 18 threaded cable input that requires a .104" sq. male drive. If vehicle tire size and/or rear-end differential are not stock (original), a different driven gear in the transmission may be required for speedo accuracy. If a change in the driven gear is made, you very likely will have to change the drive gear in the transmission to maintain the proper gear tooth engagement. Another approach is to use a "correcting ratio" drive joint to adjust the speedometer input to 60 MPH at 1,000 RPM. If one is needed, the appropriate ratio can be easily determined by comparing your speedometer reading against another car having an accurate speedometer and dividing the speeds.

(Accurate speed ÷ Your speed = Ratio needed) Auto parts stores or speedometer specialty shops carry "correcting ratio" drive joints.

NOTE: The clear lens on your speedometer may be made of acrylic. To prevent scratching use a mild, soapy solution and soft cloth to clean. Wipe lightly.

General Information

This electric speedometer utilizes a LCD to display odometer and trip odometer mileage. Momentarily pressing of the Trip/Reset button on the dial window toggles the odometer/trip odometer information displayed on the LCD. Pressing the button, while in trip mode, for more than two seconds will reset the trip odometer. The odometer cannot be reset.

(Speedometers are pre-calibrated for 16 pulse/revolution sender. Speedometers that include a 2-wire sender are pre-calibrated to 8 pulse/revolution to match sender. See Speedo Senders below for available Auto Meter Senders.) The speedometer should be calibrated to ensure accurate operation after installation.

NOTE: The odometer on this speedometer will read from 1 to 5 miles. This is done during factory testing to insure optimum quality.

Speedometer Senders

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

- Pulse range generated proportional to the vehicle speed
- Output within the voltage ranges listed below:
 - 2.0 to 16V peak (Square Wave), 3-wire
 - 2.0 to 120V peak to peak (Sine Wave), 2-wire

Recommended Hall-Effect (Square Wave), 3-wire, 16 Pulses Per Revolution senders:

5291 Standard 7/8-18 thread
5292 Ford, plug in

NOTE: All Auto Meter programmable speedometers are also compatible with the 5289 GPS module.

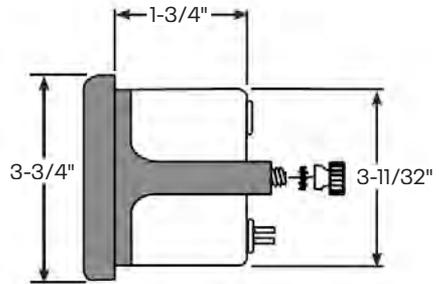
3-3/8" or 5" Electric Speedometers

Mounting

1. Mount a 3-3/8" speedometer in a 3-3/8" diameter hole and a 5" speedometer in a 4-5/8" diameter hole in the dashboard. (Be careful not to make the hole too large.)
2. Cut a 3/8" diameter hole in the firewall for the speedometer wires. Place a rubber grommet in the hole and route the connector wires through the grommet to the engine compartment.
3. Connect the speedometer wires as shown in the wiring section.
4. Secure the speedometer to the dashboard using the provided bracket and hardware.

NOTE: With the ignition switch off, the speedometer pointer may not always rest at zero. This is normal. When engine is started, the pointer will first move to half scale then will rest at zero.

3-3/8" Models



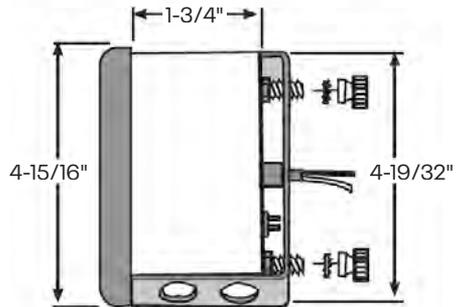
WARNING:

Incorrect hookup will damage the speedometer and void warranty. Please read these instructions carefully

CAUTION!

As a safety precaution, the power wire to this product should be fused before connecting it to the 12 VDC power source. We recommend using a 3 Amp automotive fuse inline with the power wire to our product.

5" Models



Once the speedometer is mounted and wired into the vehicle, the speedometer should be tested to verify 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 zero box on the dial. This action verifies that power is properly connected to the speedometer. The vehicle should be driven some distance to verify the Vehicles Speed Sender (VSS) is connected properly, and that the pointer moves. If the pointer does not move off the zero box, verify the VSS is connected properly.

Calibration

To calibrate your electronic speedometer:

1. With the power off, push and hold the calibration button (trip/reset button when equipped). 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 mile distance and come to a stop. It does not matter how far away it is to get to this pre-marked 2 mile distance. Do NOT shut the engine off. Push and release the button. The pointer will drop to half scale.
3. Drive the 2 mile distance. The pointer will remain at the half scale mark no matter what speed you drive. If the speedometer has a LCD display odometer, it will be normal to see it counting rapidly as it is receiving a speed signal. If you have to stop during the calibration, that is okay. The speedometer is simply counting pulses during this time.
4. At the end of the 2 mile distance, come to a complete stop and push and release the button. The pointer will drop to 0 and the calibration is stored.

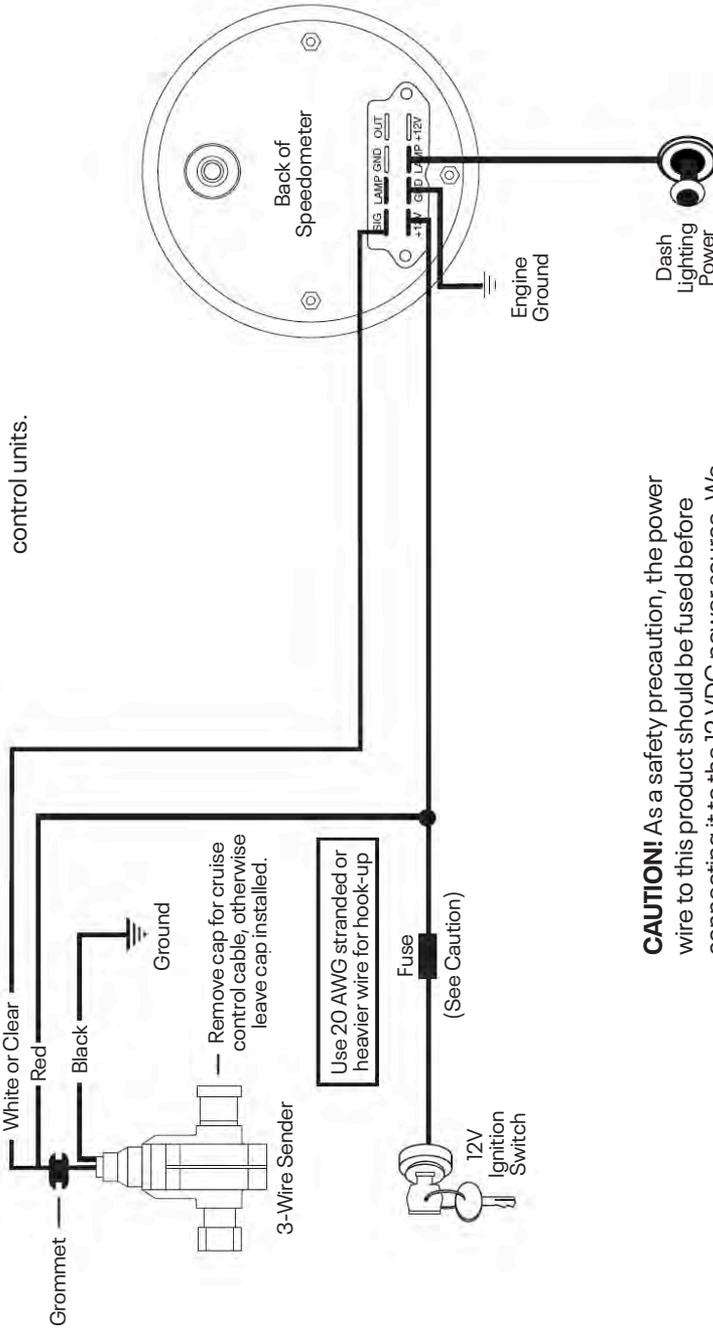
You are now finished calibrating.

Remember the accuracy of your 2 mile distance will directly affect the accuracy of your speedometer.

3-3/8" or 5" Electric Speedometers

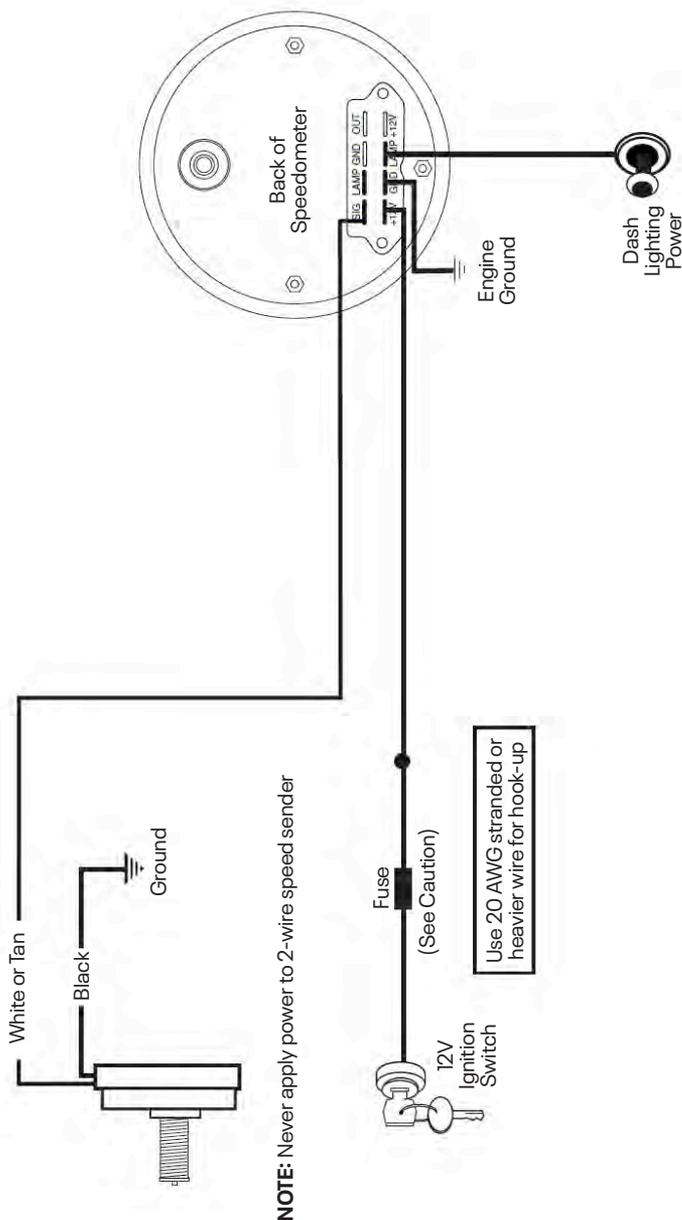
Wiring - With Typical Aftermarket 3-Wire Sender

NOTE: The speedometer signal output terminal (VSS) produces a +5 volt DC Square wave signal. This signal may be used as a VSS signal with some OEM and aftermarket ECM's and cruise control units.



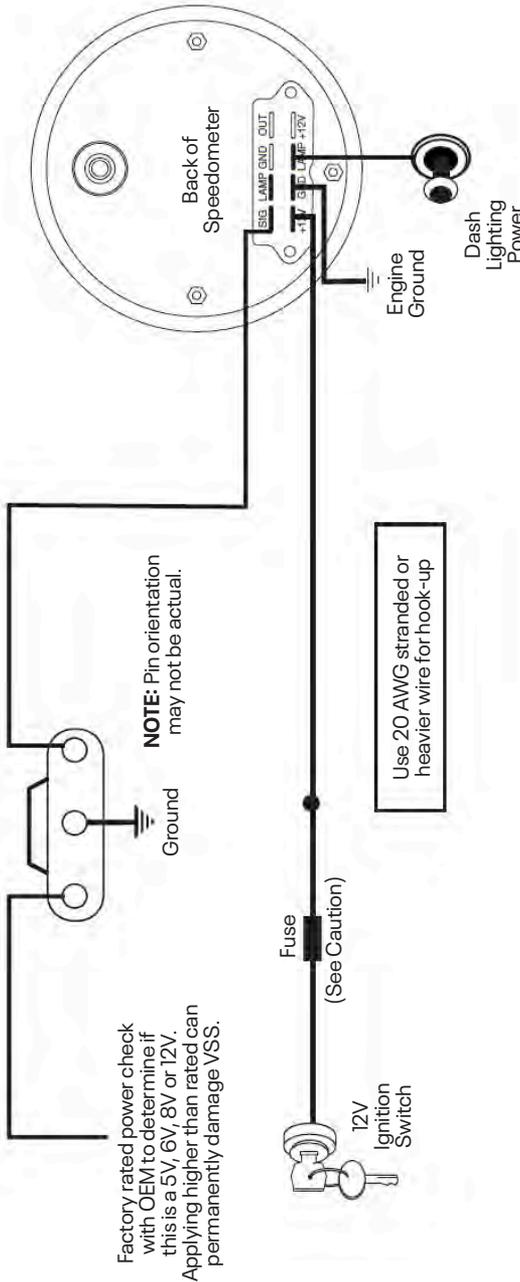
CAUTION! As a safety precaution, the power wire to this product should be fused before connecting it to the 12 VDC power source. We recommend using a 3 Amp automotive fuse inline with the power wire to our product.

Wiring - With Typical Aftermarket 2-Wire Sender (and no computer)

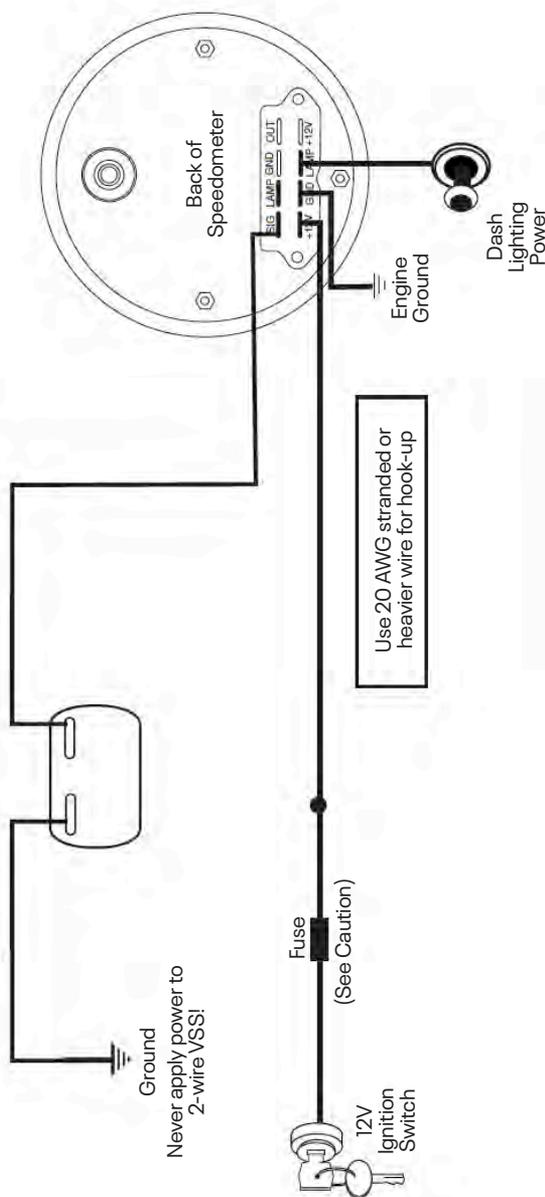


3-3/8" or 5" Electric Speedometers

Wiring - With Most OEM 3-Wire VSS (Vehicle Speed Sensor)

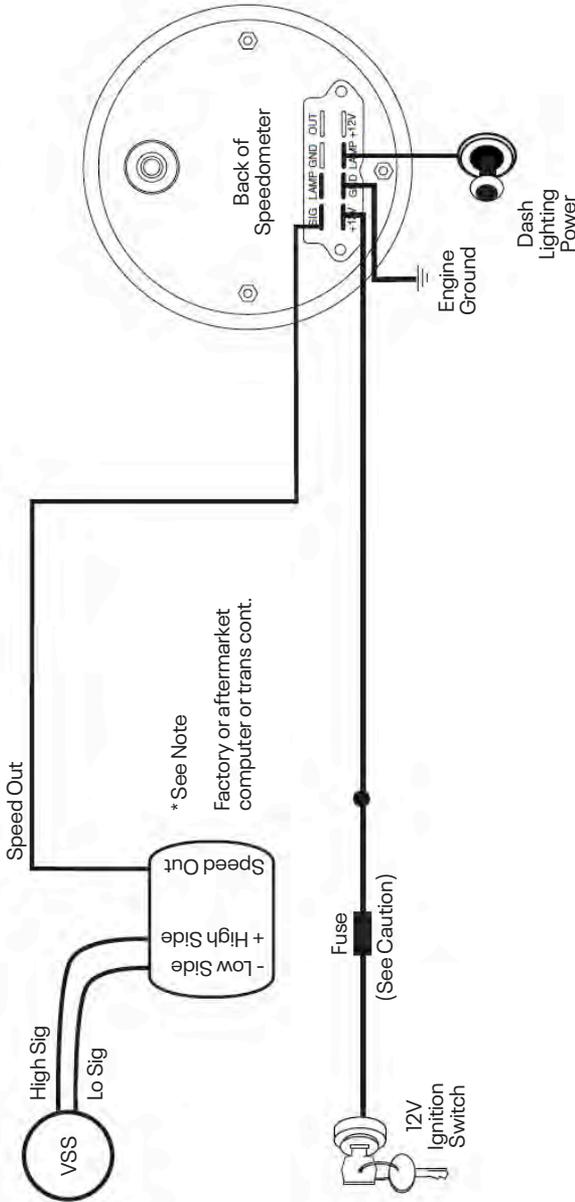


Wiring - With Most OEM 2-Wire VSS (When no computer involved)



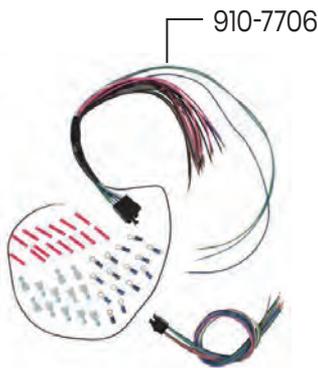
3-3/8" or 5" Electric Speedometers

Wiring - With Most OEM 2-Wire VSS (When using computer or trans controller)



NOTE: If a speedometer output circuit is unavailable, or inoperable, you may instead connect to the high side signal.

We have the wiring tools you need!



THE TOOLBOX

Find more tech tips
and videos online in
The Toolbox



READ. LEARN. BUILD.

