

# INSTALLATION INSTRUCTIONS

## SHORT SWEEP ELECTRIC GAUGES

2650-1079-00 Rev. C



### 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.

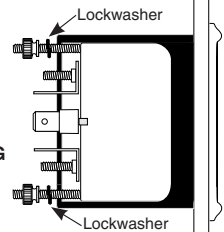
## Mounting

These gauges can be mounted in-dash or in Auto Meter mounting solutions (panels, cups, pods, etc.). 2 1/8" diameter gauges mount in 2 1/8" 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.

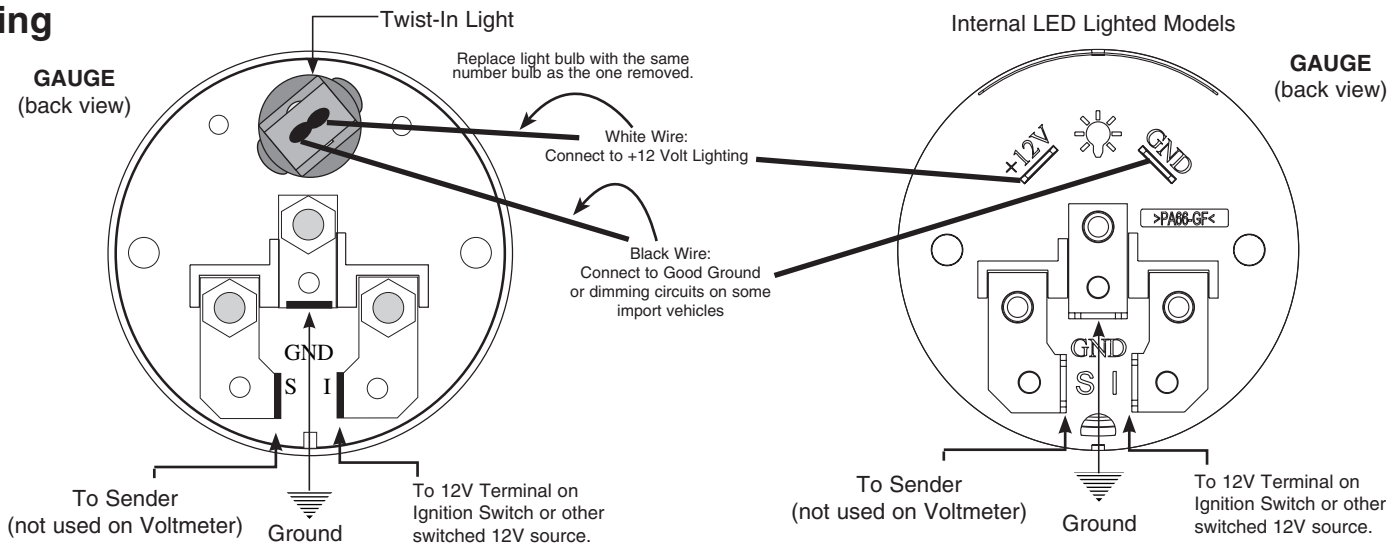
### Metric Adapters

If this product is to be installed on a vehicle requiring metric fittings, please contact your local Auto Meter dealer to purchase metric adapters. A complete listing of the fittings available can be found in our catalog or online at <http://www.autometer.com>

FRONT MOUNTING  
(BOTTOM VIEW)



## Wiring

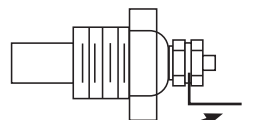


## Temperature Gauges

- Install temperature sender.
  - Water Temp:** Install temperature sender (included). Purchase of additional fittings such as metric or hose adapters may be required.
  - 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).
  - 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.
  - 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.
- 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 temperature sender, and opposite end to sender (S) terminal on back of gauge.
- Route 18-gage wire from center terminal GND (-) on back of gauge to good ground near sender.
- Connect wire from ignition switch to ignition (I) terminal on back of gauge.
- Reconnect negative (-) battery cable.

USE TEFLON SEALING COMPOUND ON PIPE THREADS

TEMPERATURE SENDER

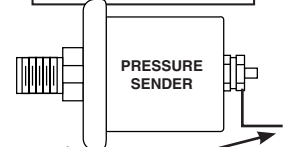


To S-Terminal on gauge  
Note: Sender grounds through threads

## Pressure Gauges

- 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.
- 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.
- Connect wire from center terminal GND (-) on back of gauge to good engine ground near sender.
- Connect wire from ignition switch to ignition (I) terminal on back of gauge.
- Reconnect negative (-) battery cable.

USE TEFLON SEALING COMPOUND ON PIPE THREADS



Note: Sender grounds through threads  
To S-Terminal on gauge

# Ammeter

Read **before** installing: **Must be installed by experienced technician.**

## WARNING

Have your maximum alternator output tested. Choice of improper ammeter rating and/or wire size, and any loose connections can cause dangerous overheating, which could lead to a fire in the vehicle. Ammeter and wire should have a capacity of at least 10 amps more than your vehicle's maximum alternator output.

- 10-gage wire or larger must be used.
- IMPORTANT:** Verify that base nuts on both meter terminals are tight. Tighten base nuts prior to installing terminal lugs and wires. Connect ammeter as shown.

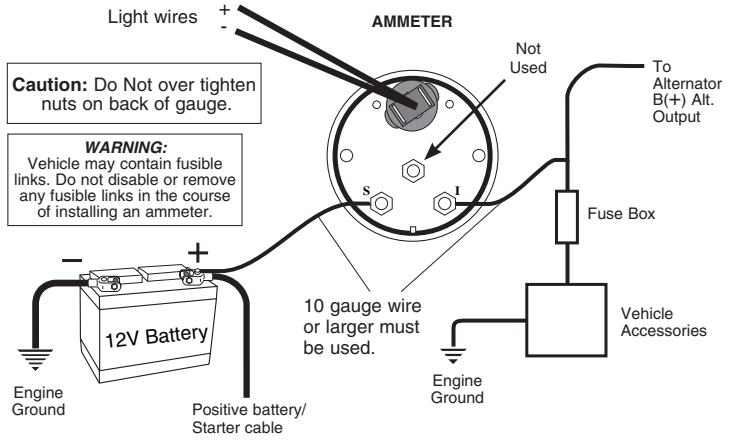
### CAUTION:

**DO NOT CONNECT THE AMMETER ACROSS THE BATTERY.**

- IMPORTANT:** Terminal lugs must be BOTH crimped and soldered to wire; star lockwashers must be used on both sides of terminal lugs.
- Tighten terminal nuts to compress star lockwashers into terminal lugs.
- Verify that **none** of the ammeter connections are to ground.
- Reconnect negative (-) battery cable.
- Leaving engine **off**, turn on lights. Indicator should read negative (-). If it reads positive (+), disconnect neg. battery terminal and reverse the wires on back of meter, then reconnect neg. battery terminal. **Before** starting engine, double check that all connections are tight. After starting engine, check wiring connections for hot spots. Be prepared to shut engine off **immediately** if hot spots are detected.

# Wiring

Example wiring of a typical Ammeter installation. Consult vehicle Mfr. for specific wiring details and safety considerations.



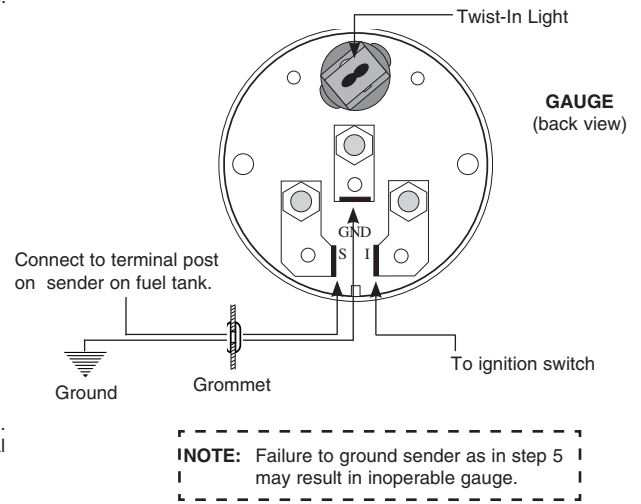
# Fuel Level

Contact Auto Meter service if help is needed in determining your sender resistance.

**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. For further assistance please contact Tech Support at 866-248-6357.

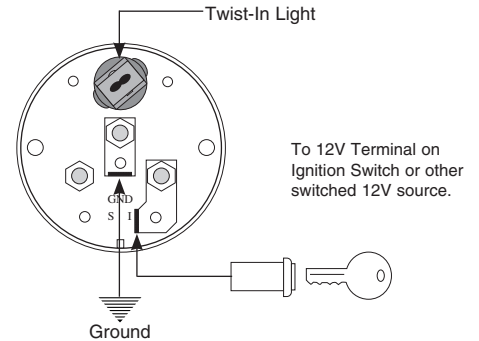
	SENDER RESISTANCE (OHMS)	
	EMPTY	FULL
For most GM vehicles to 1997	0	90
For most Ford and Chrysler vehicles	73	8-12
Use 3262 Fuel level sender	240	33
For most GM vehicles before 1965	0	30
Most '89 and newer Fords	16	158

- 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.
- Connect ground wire from ground post on gauge to suitable chassis ground.
- Connect wire from ignition switch to the positive I (+) terminal on the back of gauge. See figure right.
- Reconnect negative (-) battery cable.
- Be sure that body or mounting flange of sender is grounded to suitable chassis ground.



# Voltmeter

- 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.
- 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.
- Reconnect negative (-) battery cable.



If you have questions regarding the operation or installation of your instrument(s), please contact Auto Meter Technical Service at 866-248-6357. You may also email us at [service@autometer.com](mailto:service@autometer.com). Additional information can also be found at <http://www.autometer.com>

## SERVICE

For service send your product to Auto Meter in a well packed shipping carton. Please include a note explaining what the problem is along with your phone number. If you are sending product back for Warranty adjustment, you must include a copy (or original) of your sales receipt from the place of purchase.

## 12 MONTH LIMITED WARRANTY

Auto Meter warrants to the consumer that this product will be free from defects in materials and workmanship for a period of twelve (12) months from the date of the original purchase. Products that fail within this 12 month warranty period will be repaired or replaced at the manufacturer's option to the consumer, when determined by the manufacturer that the product failed because of defects in material or workmanship. This warranty is limited to the repair or replacement of parts in the instrument and the necessary labor done by the manufacturer to affect the repair or replacement of the instrument. In no event shall this warranty exceed the original purchase price of the instrument, nor shall the manufacturer be responsible for special, incidental or consequential damages or costs incurred due to failure of this product. Warranty claims to the manufacturer 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 meter seal, improper use or installation, accident, water damage, abuse, unauthorized repairs or alterations voids this warranty. The manufacturer disclaims any liability for consequential damages due to breach of any written or implied warranty on all products made by the manufacturer.

FOR SERVICE CONTACT: AUTO METER PRODUCTS Inc. 413 W. Elm St., Sycamore, IL 60178 USA (866)248-6357 or

Email us at [service@autometer.com](mailto:service@autometer.com)

# INSTALLATION INSTRUCTIONS ELECTRIC SPEEDOMETER

2650-1266-00



## QUESTIONS:

If after completely reading these instructions you have questions regarding the operation or installation of your instrument(s), please contact Auto Meter Technical Service at **815-899-0801**.

You may also email us at [service@autometer.com](mailto:service@autometer.com).

Additional information can also be found at [http://www.autometer.com/tech\\_faq.aspx](http://www.autometer.com/tech_faq.aspx)

## General Information

This electric speedometer utilizes a 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.

Auto Meter electric speedometers are pre-calibrated. When converting from a cable driven speedometer further calibration may not be needed if:

1. The transmission's speedometer cable take off is 1000 RPM at 60 MPH (97 km). Most vehicles meet this requirement.
2. The vehicle is equipped with a 16-pulse/revolution sender.
3. The speedometer that includes a 2-wire sender is pre-calibrated to 8 pulses/revolution to match this sender.

If the above conditions have not been met, the speedometer must be recalibrated (**see calibration section**). Also, if the vehicle's tire size and/or differential ratio has changed, the speedometer needs to be recalibrated.

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

### Speedometer Senders

The speedometer is designed to operate with an electrical speed sender. The speed sender signal range must be between 500 and 400,000 pulses/mile (310 and 248,500 pulses/km). 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 – Auto Meter Hall effect sender, 3-wire 16 pulses/revolution.

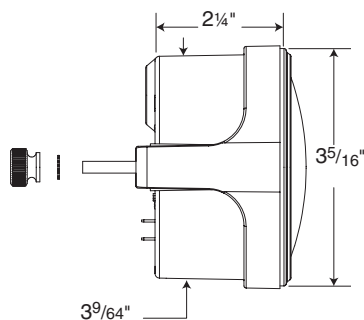
5291 Standard 7/8 – 18 thread

5292 Ford, plug in

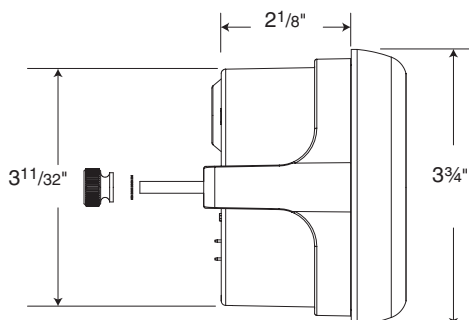
## Mounting

1. Mount a 3<sup>1</sup>/<sub>8</sub>" speedometer in a 3<sup>5</sup>/<sub>32</sub>" dia. hole, a 3<sup>3</sup>/<sub>8</sub>" speedometer in a 3<sup>3</sup>/<sub>8</sub>" dia. hole and a 5" speedometer in a 4<sup>5</sup>/<sub>8</sub>" dia. hole. Be careful not to cut the hole too large.
2. Cut a 3<sup>3</sup>/<sub>8</sub>" 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.

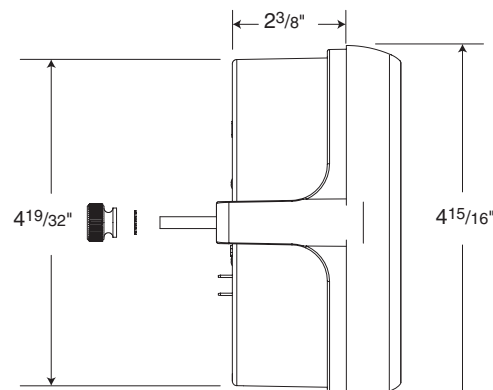
### 3<sup>1</sup>/<sub>8</sub>" Models



### 3<sup>3</sup>/<sub>8</sub>" Models



### 5" Models



## 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 mile (2 kilometer) distance and stop. It does not matter how far away it is to get to this pre-marked 2 mile (2 kilometer) mile 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 mile (2 kilometer) 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 mile (2 kilometer) distance, stop and press and release the Trip/Reset button. The pointer will drop to 0 and the calibration is stored. You are now finished.

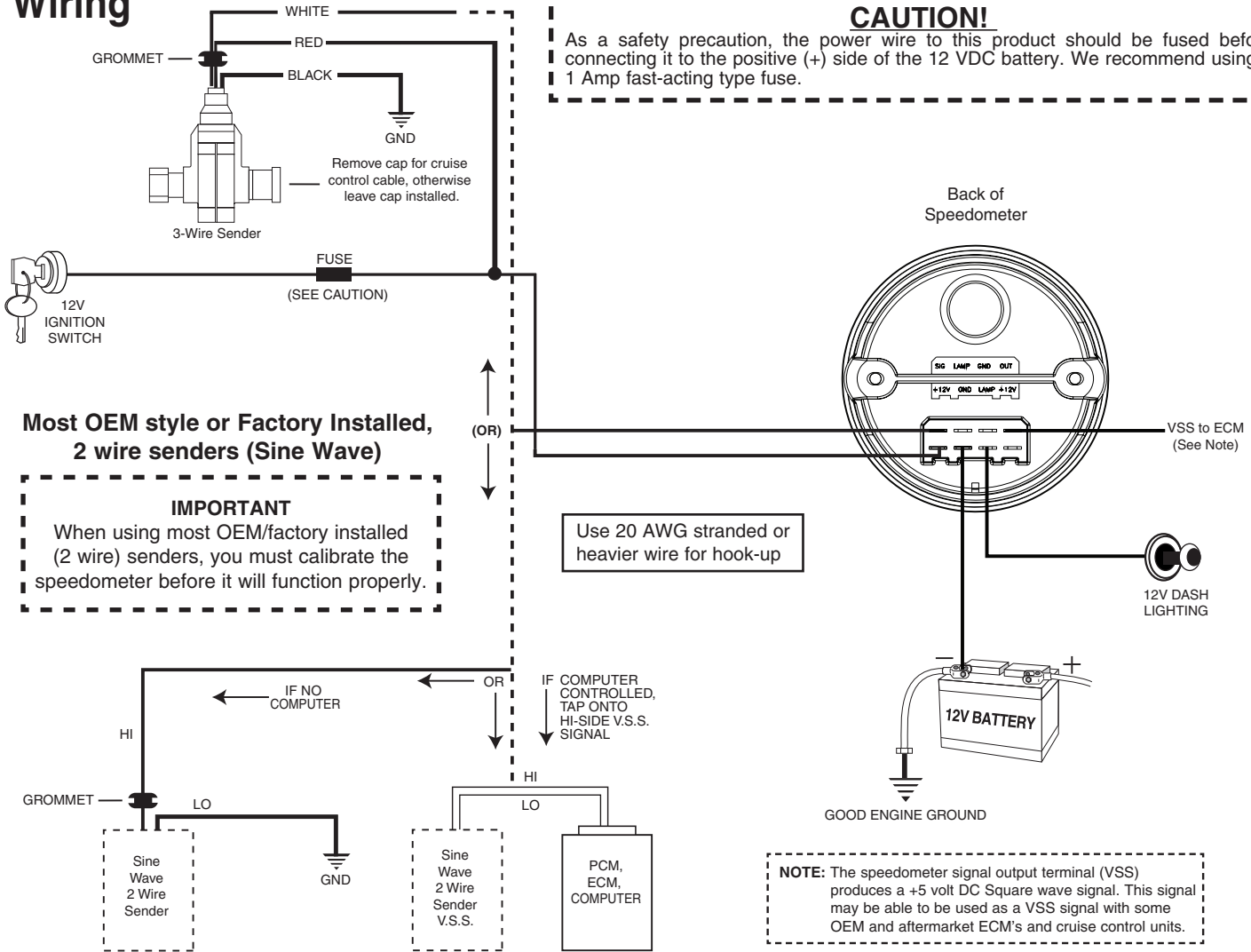
Remember the accuracy of your 2 mile (2 kilometer) distance will directly affect the accuracy of your speedometer.

**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 45 MPH (75 KPH) during calibration.
2. Tire diameter increases slightly as tire air pressure is 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



## Light Replacement (Models that have incandescent lighting only)

Remove the plastic cap on the back of the speedometer. Using needle nose pliers, rotate the twist-lock lamp socket counterclockwise to remove. Replace old bulb with GE 168 bulb.

## SERVICE

For service send your product to Auto Meter in a well packed shipping carton. Please include a note explaining what the problem is along with your phone number. Please specify when you need the product back. If you need it back immediately mark the outside of the box "RUSH REPAIR," and Auto Meter will service product within two days after receiving it. (\$10.00 charge will be added to the cost of "RUSH REPAIR.") If you are sending product back for Warranty adjustment, you must include a copy (or original) of your sales receipt from the place of purchase.

### 12 MONTH LIMITED WARRANTY

Auto Meter Products, Inc. warrants to the consumer that all Auto Meter High Performance 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 Auto Meter's option to the consumer, when it is determined by Auto Meter Products, Inc. that the product failed due to defects in material or workmanship. This warranty is limited to the repair or replacement of parts in the Auto Meter instruments. In no event shall this warranty exceed the original purchase price of the Auto Meter instruments nor shall Auto Meter Products, Inc. be responsible for special, incidental or consequential damages or costs incurred due to the failure of this product. Warranty claims to Auto Meter 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. Auto Meter Products, Inc. disclaims any liability for consequential damages due to breach of any written or implied warranty on all products manufactured by Auto Meter.

**FOR SERVICE SEND TO: AUTO METER PRODUCTS, INC. 413 W. Elm St., Sycamore, IL 60178 USA (815) 899-0801**



2650-1865-77

## 1955-56 CHEVY CAR BILLET ALUMINUM DASH INSERT

Model 7033

1. The bezel that this insert installs into will need to be removed from your vehicle.
2. Insert the high beam indicator light into the small hole at the bottom of the billet insert. You will not have room to install this light once the billet insert has been attached to the stock bezel.
3. Place the stock bezel face down & lay the billet aluminum dash insert into it.
4. Place the gauges into the desired locations.
5. Place the back panel over the gauges & secure to the front panel using the six provided 10-32 x 3/8" screws. Do not fully tighten until you are satisfied with the position of your gauges. Adjusting the gauges while fully tightened may damage the gauges.
6. Secure the billet insert to the stock bezel using the five provided brackets & 8-32 x 3/8" machine screws.
7. Install the 2 turn signal lights. The eraser end of a pencil works well to push these in.
8. Install the bezel into your vehicle.
9. Wire the gauges (refer to instructions provided by the gauge manufacturer).

866-248-6356

[www.autometer.com](http://www.autometer.com)

2650-1865-77 12/7/15



2650-1864-77

## 1955-56 CHEVY CAR BILLET ALUMINUM DASH INSERT

Model 7033

1. The bezel that this insert installs into will need to be removed from your vehicle.
2. Insert the high beam indicator light into the small hole at the bottom of the billet insert. You will not have room to install this light once the billet insert has been attached to the stock bezel.
3. Place the stock bezel face down & lay the billet aluminum dash insert into it.
4. Place the gauges into the desired locations.
5. Place the back panel over the gauges & secure to the front panel using the six provided 10-32 x 3/8" screws. Do not fully tighten until you are satisfied with the position of your gauges. Adjusting the gauges while fully tightened may damage the gauges.
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2650-1865-77 12/7/15