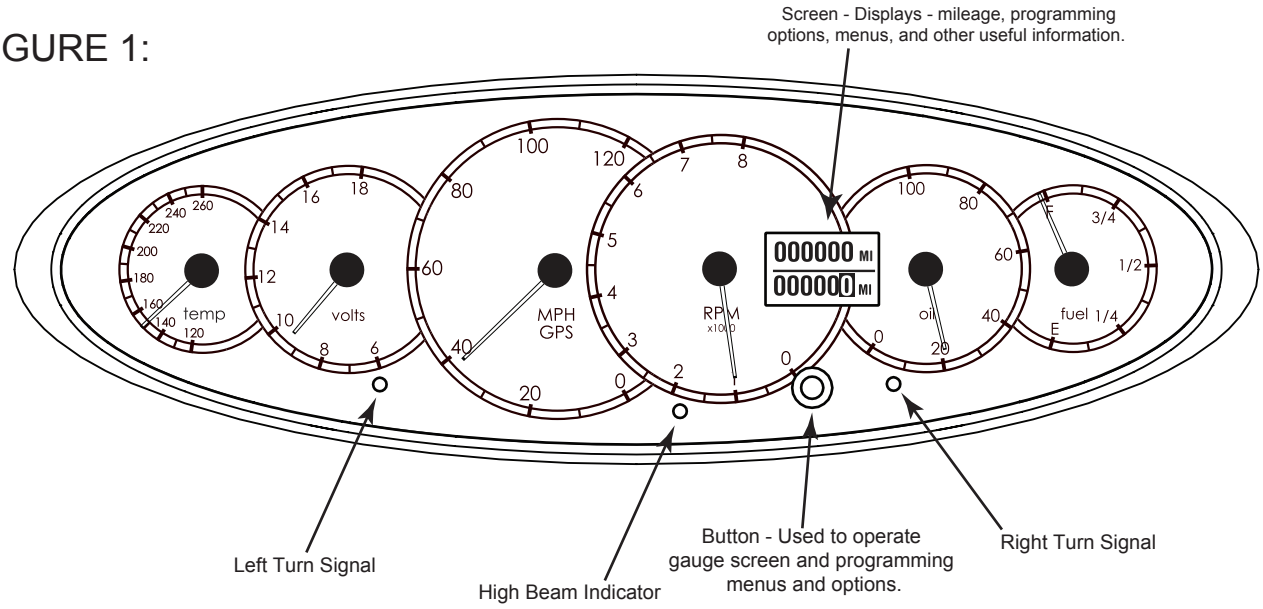
Legends Icon *6 in 1* Cluster

FIGURE 1:



Installation Instructions

1. Disconnect the vehicle battery.
2. Connect the gauge power requirements as shown in FIGURE 4.
3. Wire all the components to the proper signal sources and senders.
4. Reconnect the vehicle battery.
5. Power up the Gauge Cluster and program the various components (if needed).

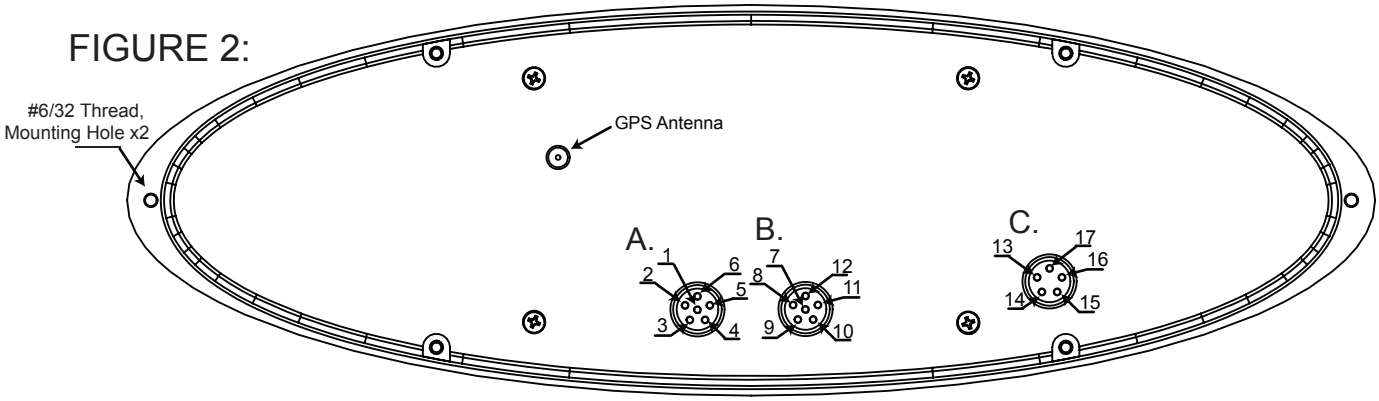
Wiring Guide

A1. Red wire with Black Stripe - **GPS Hot Start** - (Connect to +12VDC non-accessory power).
A2. Yellow wire with Red Stripe - **Temperature Signal**
A3. White - **Lighting Dimmer**
A4. Red - **+12VDC Switched**
A5. Black - **Ground**

Power Draw = 0.2 Amp
3A to 5A Inline Fuse Recommended for +12 Accessory Power

A6. Yellow wire with Black Stripe - **Temperature Ground**
B7. Black [White Striped] - **CAN Low -** (Double Pigtail paired with wire #10)
B8. Green wire with Red Stripe - **Right Turn Signal**
B9. Yellow wire - **Tachometer Signal**
B10. Black - **CAN High -** (Double Pigtail paired with wire #7)
B11. Green wire with Orange Stripe - **Left Turn Signal**
B12. Blue wire with White Stripe - **High Beam Indicator**
C13. Yellow wire with Green Stripe - **Oil Pressure Signal**
C14. Yellow wire with Black Stripe - **Oil Pressure Ground**
C15. Yellow wire with Black Stripe - **Fuel Level Ground**
C16. Yellow wire with Red Stripe - **Oil Pressure 5 Volt Reference**
C17. Pink wire - **Fuel Level Signal**

FIGURE 2:



Legends Icon *6 in 1* Cluster - Connection and Wiring Guide (Part 1)

FIGURE 3: Connection Guide

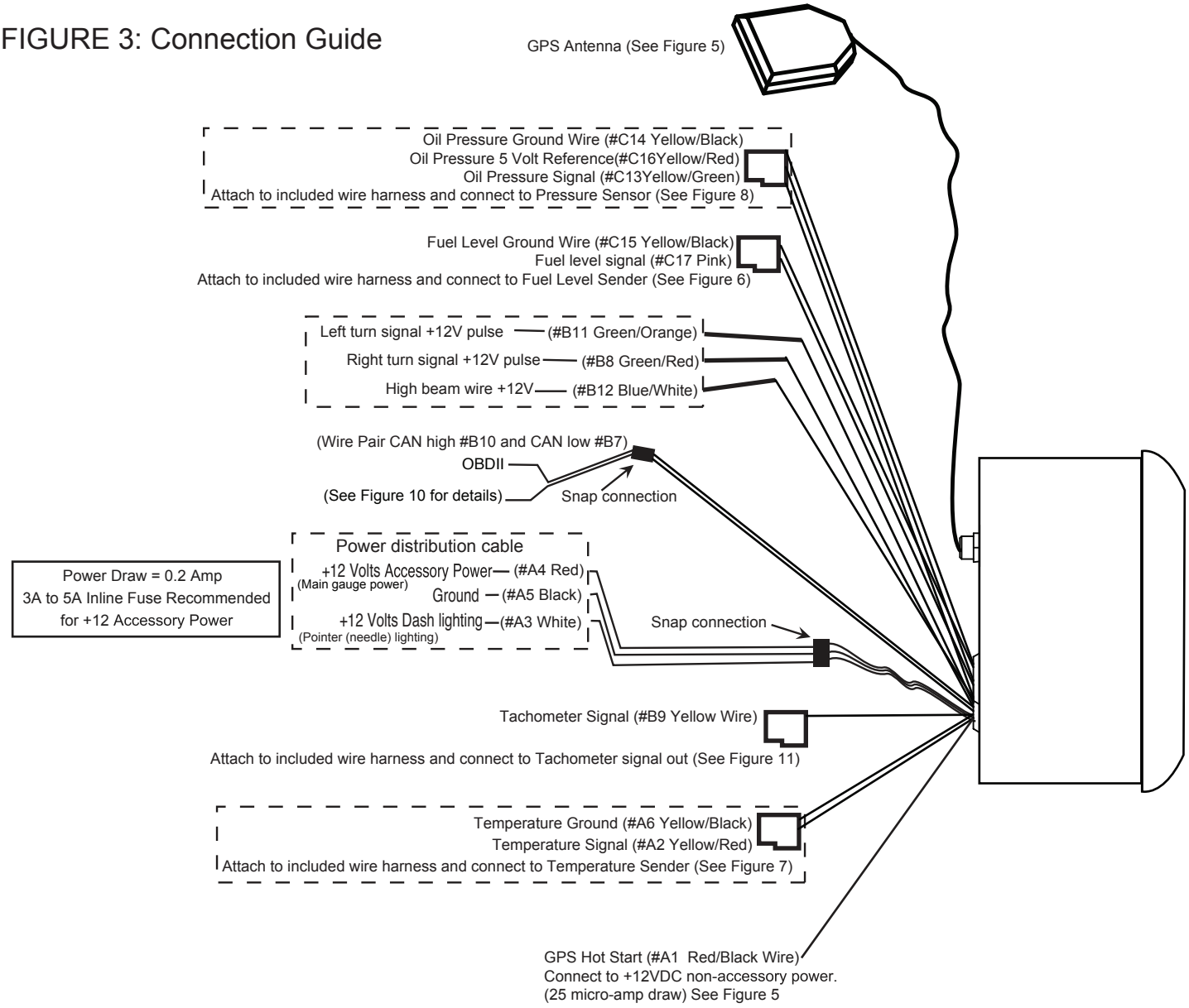


FIGURE 4: Power Distribution Connection

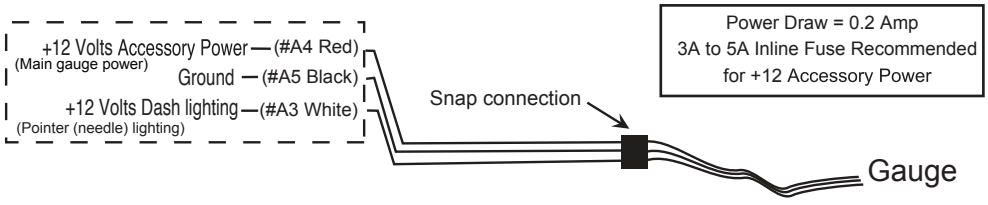
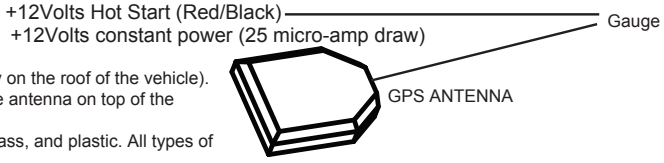


FIGURE 5: GPS Antenna and Hot Start Wire



1. Connect GPS receiver antenna into back of speedometer.
2. For best performance, mount GPS antenna with as much view of sky as possible (preferably on the roof of the vehicle). The GPS antenna is waterproof and magnetic. If the car's roof is not accessible then mount the antenna on top of the vehicle's dash with as much exposure as possible to the sky through the window.
   NOTE: Antenna is able to receive signal through some thin materials i.e. wood, glass, fiberglass, and plastic. All types of metal will block the signal.
3. Hot start feature is optional. Connecting the hot start wire to constant +12volts allows GPS to quickly acquire satellites in less than 2 seconds. This feature saves your current satellite position within the gauge cluster enabling it to quickly restore your position on power up when Gauge Cluster has been powered off.
   NOTE: Please note that if the Gauge Cluster has been powered off longer that 4 hours, it could take up to 1 minute to acquire signal due to satellites moving significantly from your location. This is normal.
   POWER DRAW NOTE: The hot start current draw is extremely low (25 micro-amp) and will have virtually zero impact on a vehicle's battery charge. Hot start wire should be connected directly to battery +12voltage and should remain powered 100% of the time.

Legends Icon *6 in 1* Cluster - Connection and Wiring Guide (Part 2)

FIGURE 6: Fuel Level Sender Connection

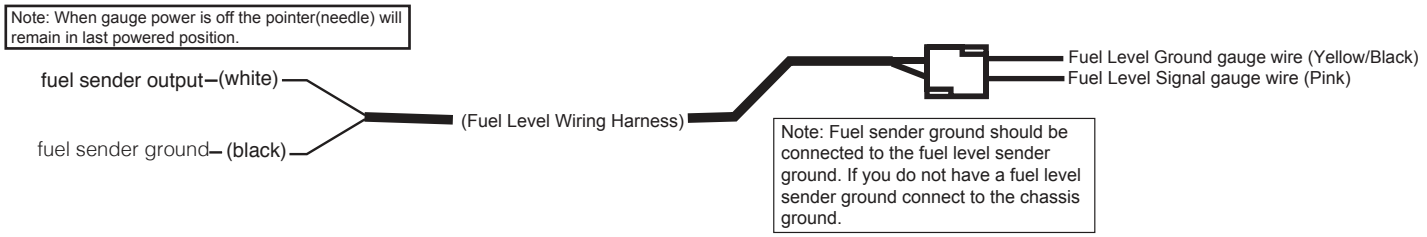


FIGURE 7: Temperature Sender Connection

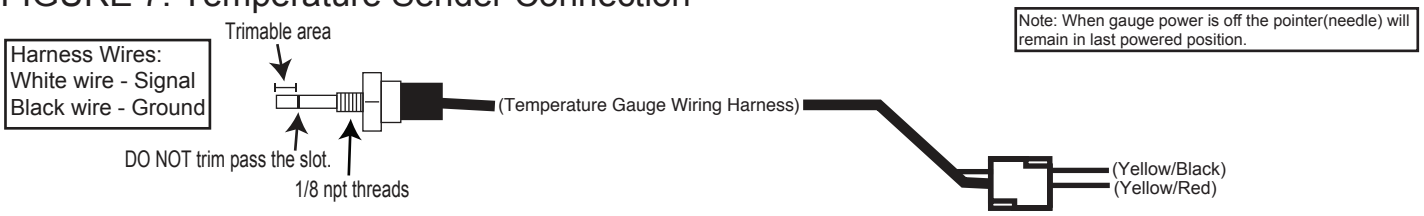


FIGURE 8: Pressure Sensor Connection

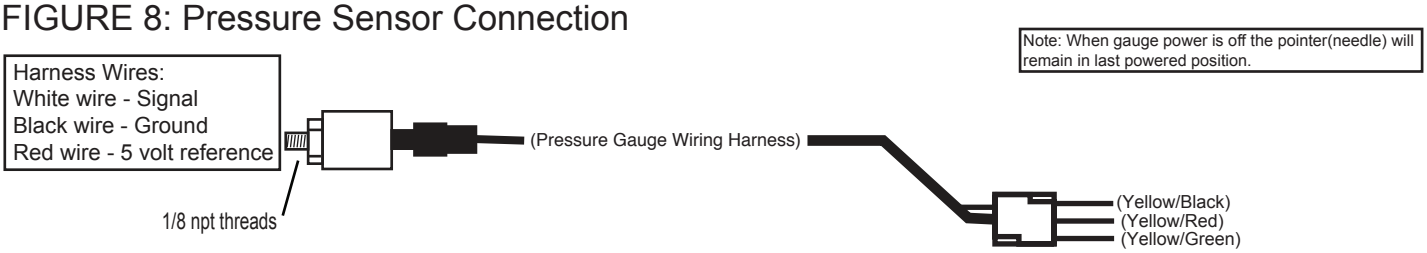


FIGURE 9: Turn Signals and High Beam Indicator Connection

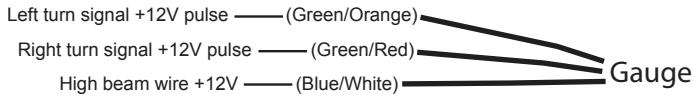
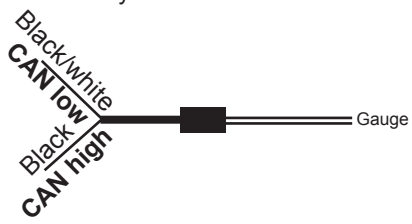


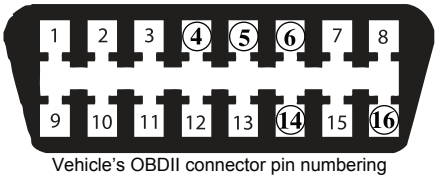
FIGURE 10: OBDII Setup

OBDII Note: Gauge Cluster will not function when used in conjunction with any other OBDII device. Cycle the gauge power to restore proper gauge function.

1. Connect power distribution requirements as previously shown. (Make sure that the vehicle battery is disconnected)
2. Connect the black CAN high wire (#4) to the OBDII pin 6, Connect the white striped black CAN low wire (#6) to the OBDII pin 14. [CAUTION: Do not connect to a powered OBDII system. Failure to do so will throw a check engine code.]
3. Mount gauge for easy viewing.



Does your vechicle support the CAN-BUS protocol?



Vehicle's OBDII connector pin numbering

OBDII CAN (J1979) protocol Pinout:

If the vehicle has wires that connect to pins 6 and 14 of the OBDII connector then the vehicle supports the CAN-BUS (J1979) protocol.
Pin 4 -- Chassis Ground
Pin 5 -- Signal Ground
Pin 6 -- CAN High (data)
Pin 14 -- CAN Low (data)
Pin 16 -- +12volt Battery power (NOT a source for gauge power)

Legends Icon *6 in 1* Cluster - Tachometer Guide

FIGURE 11:

Caution- HIgh voltage sometimes present on ignition coil wires. Engine must be off when connecting yellow wire.

Note: If you plan to operate the tachometer using OBDII CAN-BUS (J1979), then you do not need to connect the Tachometer signal wire.

Your vehicle ignition system will fall under one of these 4 ignition types. The type of ignition system will determine where the yellow tachometer signal wire (wire #B9) is connected and what the number of pulses per revolution the tachometer should be set to.

Type #1 (single coil) - Up until the 1990's tachometers picked up the signal from the (-) side on a single ignition coil, reading every pulse sent to all the cylinders. For example, an 8 cylinder (4 stroke) engine fires 4 spark plugs per revolution or all 8 spark in 2 revolutions. Connecting the yellow wire to the negative side of the single coil on an 8 cylinder results in picking up 4 sparks in 1 revolution (see diag. 1). This type of ignition was used pre-dominantly until the 1990's and distributes sparks to each spark plug. In some vehicles during the 90's the coil and distributer merged into one unit, but it is the same ignition system - one coil that distributes sparks to all cylinders. When connecting the yellow wire to this style of ignition you will be picking up all cylinder sparks (see diag. 5).

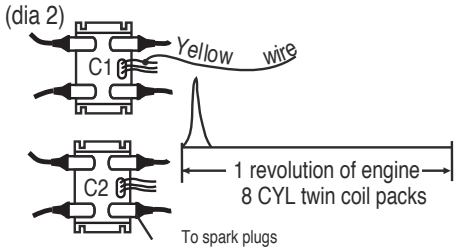
Type #2 (coil pack) - (diag. 2) is used in the 96 Mustang v8 with twin coil packs. Coil pack #1 (C1) controls the firing of 4 spark plugs and coil pack #2 (C2) controls the remaining 4 spark plugs. 2 or more separate coils are within each coil pack assembly. In this example each of the 2 coils within each coil pack sends sparks to 2 cylinders at the same time. When one cylinder is firing in the compression stroke, it's paired cylinder is "waste" firing in the exhaust stroke. Each separate coil within the pack is controlled by it's own trigger wire. In other words, if you hooked up the yellow wire to one coil trigger wire within one coil pack, it will see only a fraction of the total engine sparks (see diag. 5).

Type #3 (coil on plug) – An individual coil is placed directly on top of each spark plug eliminating the spark plug wires. The yellow wire , when hooked up to any coil, will pick up only 1 pulse per 2 revolutions or 1/2 pulse per 1 revolution (see dia 3). For this type of ignition the yellow wire from the tachometer will connect to the trigger wire on one of the coils. Typically there will be 3 or 4 colored wires coming off of them, but the fourth wire will be blue on one coil and green on the next coil.

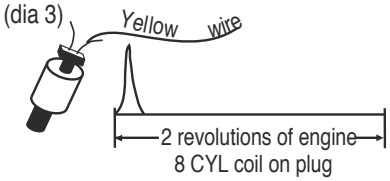
Type #4 (tach output from ECU) Some vehicles will have a tachometer output wire coming from the ECU. The yellow wire from our tachometer can receive signal from the ECU by following diagram 4. 4.7k Ω resistor and shrink tubing are included with gauge.

(dia 1)

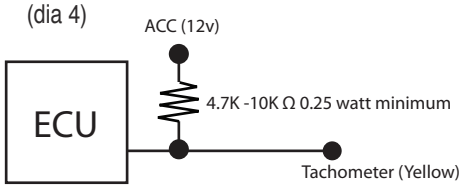
(dia 2)



(dia 3)



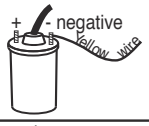
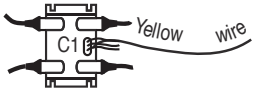
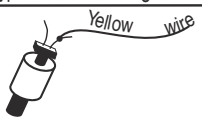
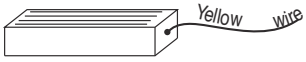
(dia 4)



Setup the Tachometer to run
2 pulses per rev when
connecting it to the engines' ECU.

Important note: Connecting the tachometer to the wrong wire will NOT damage the tachometer or your ignition.

Diag 5: Tachometer yellow wire connection options

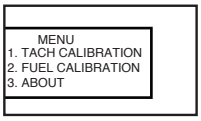
Type #1 ignitions	Type #2- Coil Packs	Type #3 - Coil on Plug	Aftermarket ignitions / tach output
			
Yellow wire connects to: negative side of coil. 12 cyl = 6 sparks / rev 10 cyl = 5 sparks / rev 8 cyl = 4 sparks / rev 6 cyl = 3 sparks / rev 4 cyl = 2 sparks / rev (see step #4)	Yellow wire connects to: • negative side of coil (some cars) or • coil control wire (some cars) or • coil trigger wire (some cars). 1 spark / rev. (as a good starting point) (see step #4)	Yellow wire connects to: • negative side of coil (some cars) or • coil control wire (some cars) or • coil trigger wire (some cars). 1/2 spark / rev. (as a good starting point) (see step #4)	Yellow wire connects to: tachometer output terminal 12 cyl = 6 sparks / rev 10 cyl = 5 sparks / rev 8 cyl = 4 sparks / rev 6 cyl = 3 sparks/ rev 4 cyl = 2 sparks / rev

Legends Icon *6 in 1* Cluster - Operation Instructions (Part 1)

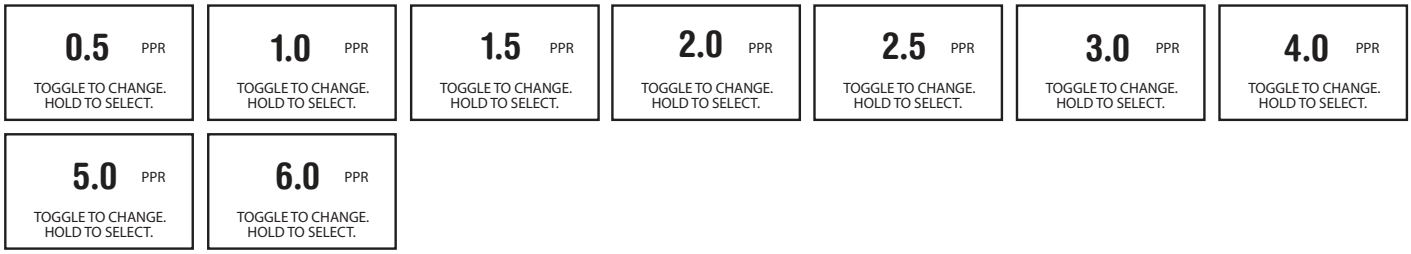
(Fuel Level Calibration, Tachometer Calibration, Set Odometer, and About Screen)

Follow these steps below for all menu items

1. Press and hold button down while turning on gauge power to enter the calibration menu.
2. A quick button press will toggle LCD screen through all the calibration menu items.
3. Press and hold to select the menu item (2-3 seconds).
4. Press and hold button to change setting.



Use the "TACH CALIBRATION" menu to calibrate the TACHOMETER Pulses Per Rev (PPR):
Repeatedly press the button to toggle through the following PPR options:
(Press and hold to set a selected PPR)



Use the "FUEL CALIBRATION" menu to calibrate the the ohm range for the FUEL LEVEL:
Repeatedly press the button to toggle through the following OHM ranges (E-F):
(Press and hold to set a selected Ohm range)

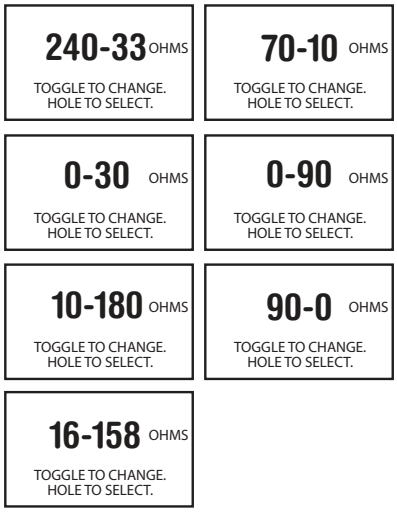
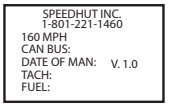


CHART 1: **Common Factory Ohm Ranges**

Empty	Full	Vehicle Application
0 ohms	30 ohms	Most pre-'65 GM
0 ohms	90 ohms	Most GM 65-present
16 ohms	158 ohms	Most '87-present Fords
73 ohms	8-12 ohms	Most Fords before '87 and most Chrysler
240 ohms	33 ohms	Use with 3262 sender
10 ohms	70 ohms	Ford Bi-Metalic Gauges (pre 1987 F-Series Trucks)
15 ohms	160 ohms	Ford Magnetic Gauges (1987 and later F-Series Trucks)

How to calibrate the FUEL LEVEL gauge to custom Ohm Range:
After toggling through the Ohm ranges there will be an "EMPTY" option and a "Full" option.
EMPTY option: While your fuel tank is empty press and hold to set.
FULL option: While your fuel tank is full press and hold to set.

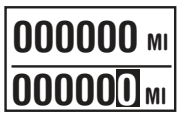
Use the "About" screen to view manufacturing date and other diagnostic information:



Legends Icon *6 in 1* Cluster - Operation Instructions (Part 2)

GPS Speedometer Features - Momentarily press button to select different menu items.

Odometer and trip

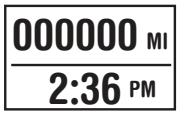


Odometer (shows up to 999,999 miles or kmh)

Trip Odometer (shows up to 99,999.9 miles or kmh)

Press and hold button to reset trip.

Clock



Clock feature. Time is acquired from GPS satellites. User only needs to adjust the hour setting for his/her time zone.

Press and hold button to set clock hours. (color will invert)
Toggle through am / pm hours until correct time is reached.
Release button for several seconds and time is stored. (color will return to normal)

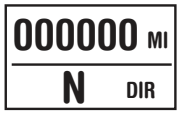
Elevation

Elevation feature is acquired from GPS satellites and shows the current elevation from sea level in feet or meters depending on model.

Speed (mph or kmh)

Speed feature shows mph or kmh in display

Direction



Shows the current direction

Note: Default direction is North(N). Correct direction is displayed only when moving.

Peak Recall

Shows the top speed reached.
Press and hold to clear peak.
