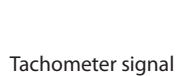
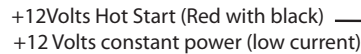
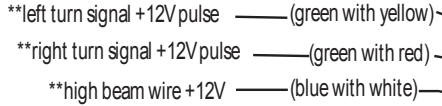
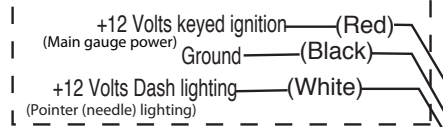


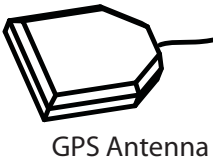
Note: Tie together the +12volt dash lighting white wire to the +12 volt inverter white wire and connect to the same dash lighting source.

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

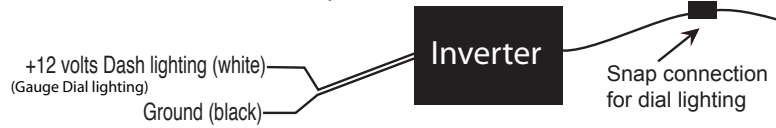
Power distribution cable to plug all gauges into



Note: fuel sender ground is optional. If your sender does not have a ground terminal, do not connect fuel level sensor ground wire.



INVERTER IS REQUIRED FOR GAUGE DIAL LIGHTING



Dial Lighting Inverter Note: Single EL dial lighting inverter included with individual gauge. Multi-gauge EL dial inverter included with gauge set of 3 to 8 gauges. \*\*\*Protect any unused connectors. Damage to an unused connector could cause inverter failure.\*\*\*

Your speedometer has either a button on front or plug in 3.5mm jack button on back for programming and entering menu options depending on speedometer model. If your speedometer has a 3.5mm jack with plug in button, mount button in convenient location for easy menu adjustments.

1. Hook up speedometer power requirements as shown above.
2. Plug GPS receiver antenna into back of speedometer.
3. 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. (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.)

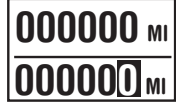
4. Hot start feature is optional. Hooking up the Hot start wire to constant +12volts allows GPS to quickly acquire satellites in less than 2 seconds. This feature saves your current satellite position within the speedometer enabling it to quickly restore your position on power up.

Please note that if the speedometer has been powered off longer than 4 hours, it could take up to 1 minute to acquire signal due to the satellites moving significantly from your location. This is normal.

The current draw is extremely low and will have virtually zero impact on a car battery's charge. Hotsart wire should be connected directly to battery +12voltage and should remain powered 100% of the time.

Menu Features - momentarily press button on speedometer to select different menu items.

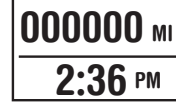
#### Odometer and trip



← 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

#### Peak



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

#### 0-60 mph time



Press and hold button to stage while car is stopped. Timer will start as soon as car starts to move. Drive through 60mph. Timer will stop once 60mph is reached and show the time to nearest 1/100th of second on screen and distance in feet traveled.

#### 1/4 mile time



Press and hold button to stage while car is stopped. Timer will start as soon as car starts to move. Drive through 1/4 mile. Timer will stop once 1/4 mile distance is reached and show the time to nearest 1/100th of second on screen and speed to nearest 1/10th mph.

## Tachometer Setup menu

Follow these steps below for all menu items

1. Press and hold button down while turning on GPS power to enter Tachometer setup menu.

Note: Antenna must be plugged into speedometer to Access this menu.

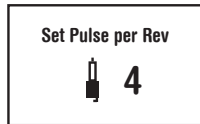
2. A quick button press will toggle LCD screen through all the available menu settings below.

3. Press and hold to select the menu item (2-3 seconds).

4. Press and hold button to change setting.

5. Release button and menu will be saved after 5 seconds.

#### Set pulse per rev



Note: Set how many pulse per revolution the tachometer will see.

#### Set shift point



Note: Move pointer to the desired shift point. At the desired shift point, release button and setting will be saved after 5 seconds.

#### Set day LED brightness



Note: Press and release button to toggle through the brightness settings. There are 4 brightness settings including off.

#### Set night LED brightness



Note: Press and release button to toggle through the brightness settings. There are 4 brightness settings including off.

# Tachometer Installation options

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

**Important note: connecting the tachometer to the wrong wire will NOT damage the tachometer or your ignition. It just won't work!**

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

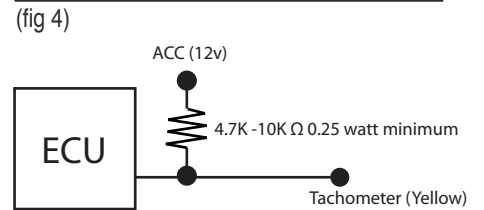
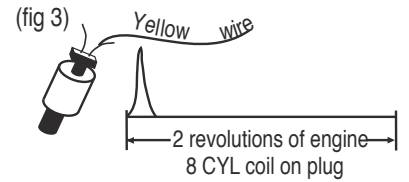
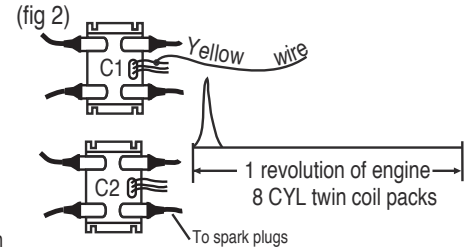
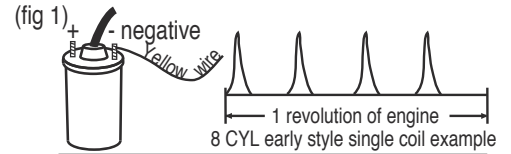
**Type #1 (single coil)** - Up until the 1990's tachometers picked up the signal from the (-) side on a single ignition coil, reading every pulse sent to all the cylinders. For example, an 8 cylinder (4 stroke) engine fires 4 spark plugs per revolution or all 8 spark plugs in 2 revolutions. Connecting the tachometer yellow signal wire to the negative side of the single coil on an 8 cylinder results in picking up 4 sparks in 1 revolution (see fig 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 distributor 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 fig 5).

**Type #2 (coil pack)** - (fig 2) is a 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 fig 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 fig 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 each coil. The trigger wire will be the wire that changes color from one coil to the next. For example, all coils may have red, gray and black 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 the diagram in fig 4. **4.7k  $\Omega$  resistor and shrink tubing are included with gauge.**

In summary, figure out how many cylinders you are picking up with the yellow wire and set the respective number of pulses per revolution (see step 4). The tachometer can be configured to work on .5 pulse (coil on plug) up to 6 pulses per revolution. Use Fig 5 as a starting point when hooking up the yellow wire.



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

**Fig 5: Tachometer yellow wire hook up 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