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### **INSTALLATION GUIDE**

**LED Digital/Bargraph Memory Speedometer**

**Part Number: M9222**

**\* Always disconnect the battery before attempting any electrical work on your vehicle. \***

**Parts included in this package:**

- 1) LED speedometer with mounting bracket**
- 2) Sending unit (if purchased)**

**PLEASE NOTE:** This speedometer requires a pulse generating electronic speed sending unit or a transmission with an electronic output. If a cable drives the current speedometer in your vehicle, please order our electronic sending unit (*S9013*) for GM and universal applications or (*S9024*) for Ford transmissions.

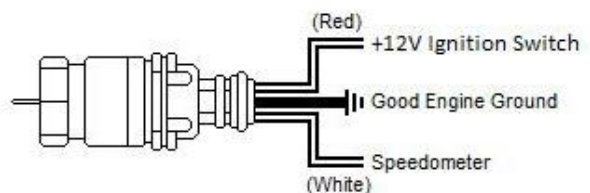
### **WIRING INSTRUCTIONS**

*Note: Automotive circuit connectors are the preferred method of connecting wires. However, you may solder if you prefer.*

#### **Sending Unit Installation**

Locate your current sender, which will be located on the rear of the transmission or on either side. It will resemble a small plug emerging from the transmission with an electrical cord or cable connected to it. Connect the wires as follows:

- Power - **Red** Connect to a +12V line.  
Ground - **Black** Connect to an engine ground such as the engine block.  
Speedometer - **White** Connect to the White LED Speedometer display wire.

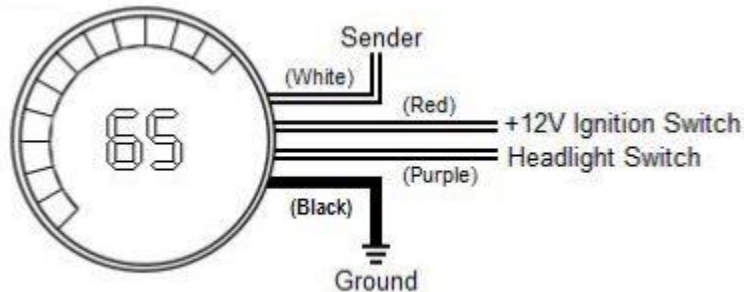


If replacing a cable: screw the provided sender onto the 7/8" male fitting you located previously for the existing electronic sender. If a two-wire sender, you should hook one of the two wires to the speedometer signal wire on the speedometer and the other wire to the ground.

If you have a three-wire sender, you will need to contact your vehicle manufacturer to ask exactly which wire is the signal wire, as the wire colors can vary between manufacturers.

## Speedometer

In order to isolate the signal wire from electrical noise, we recommend that you use a shielded cable to connect the speedometer to the sensor. Be sure to run the cable as far away as possible from the ignition system and any power wires to electric fuel pumps, motors, blowers, etc., particularly spark plug wires. For best results, we also recommend the use of resistor-type spark plugs and spark plug wires that are in good condition.



**Power – Red** Connect to a switched +12V source (such as the ignition switch)

**Ground – Black** Connect directly to the engine block, preferably the same ground source as the sensor. Make sure there is no grease or corrosion as this will cause erratic readings.

**Dimmer - Purple** Connect to the headlight switch to dim the LEDs by 50% when the headlights are on. **Do not** connect to the headlight rheostat control wire or the dimming feature will not work.

**Speedometer - White** Connect to the corresponding *White* wire on the sending unit or the output of your transmission.

## DIGITAL PERFORMANCE SPEEDOMETER

Your Digital Performance Speedometer displays speed, and also includes an odometer, trip meter, high speed recall, 0 - 60 time, and quarter-mile elapsed time. It can be calibrated with the push-button to adjust the speedometer for different tire, wheel sizes and/or gear ratios. The single push-button is used by a *quick tap* to toggle between odometer and trip meter. The microprocessor distinguishes between a *quick tap* and a *press and hold* which will reset the trip meter in trip mode or display performance data in odometer mode.

## CALIBRATION

**Note:** *If using the Intellitronix GPS Sending Unit, the speedometer does not need to be calibrated.* The speedometer leaves the factory with an industry standard pre-set setting of 8,000 pulses per mile. Chances are you may not need to recalibrate your speedometer, unless you have changed the original tire size or the rear end gear ratio.

**Note:** Do not attempt to recalibrate your speedometer until after it is working properly and you have determined that the speed is incorrect. The calibration procedure will NOT correct a faulty installation or improper wiring. If you attempt to recalibrate your speedometer without making sure the speedometer is receiving pulses from the sending unit, the speedometer will display 'Err' and default back to the factory settings.

To calibrate:

1. **Locate a measured mile where you can safely start and stop your vehicle.** By running the vehicle over this measured distance, the speedometer will learn the number of pulses outputted by the speedometer sensor during a specific measured distance. It will then use this acquired data to calibrate itself for accurate reading. There is a small recall push-button in the center of the panel used to calibrate and read all of the data stored in the speedometer. After installing your speedometer according to the wiring instructions, when the ignition is on it should immediately display the default screen of 0 MPH, if the vehicle is not moving.

**NOTE:** You will then need to drive your vehicle to the predetermined measured mile. During this trip, the speedometer should read something other than 0 MPH. If it does not change, return and locate the problem before continuing. Otherwise, proceed with the calibration.

2. Stop at the beginning of the measured mile with your vehicle running and in odometer mode (NOT trip mode), press and hold the push-button until the odometer displays 'HI-SP'. On its own, the gauge will then cycle through the recorded performance in the following order: '0 - 60', '1/4', 'ODO', and 'CAL'.
3. While 'CAL' is displayed, quickly *tap* the push-button once. This will put the speedometer in Program Mode. If you did not tap while 'CAL' is displayed, the pulses per mile will be displayed on the odometer and the display will go back to MPH mode. Otherwise, you will now see 'CAL' displayed along with the number '0'. This indicates that the microprocessor is now ready for calibration.
4. When you are ready, begin driving on the metered mile. You will notice that the reading will start counting up. The odometer will begin to display the incoming pulse count. Drive the vehicle through the measured mile (speed is not important, only the distance traveled).
5. At the end of the mile, stop and press the push-button again. The odometer will now display the new number of speedometer pulses that were registered over the distance. The odometer will continue to display the pulse reading for a few seconds. Once it reverts to the default mode, you have successfully calibrated your speedometer.

**Warning:** *If, while in 'CAL' mode, you do not move the vehicle and press the button again, the microprocessor will NOT have received any data and the unit will display 'Err' and will revert to the factory settings. At a minimum, drive some distance and return to the start if necessary. If you miss stopping the display at 'CAL', simply repeat the steps.*

## Trip Distance

A single *tap* of the recall button will activate the trip meter in the odometer display. A decimal point will appear to indicate that you are in trip meter mode.  *Holding* the recall button will clear out the trip distance. To return to the default odometer display,  *tap* the recall button again. The decimal point will disappear, indicating that you are back in the default odometer display.

## Setting the Odometer

While scrolling through 'CAL' mode you will see 'ODO' appear. Press the trip button again at this point and you will enter the odometer set up mode. Press quickly to change number of digit on the right. Press and hold to advance to next digit. Do this for all 5 digits. **For Example:** To enter the mileage reading 23456 into the odometer, at the 'ODO' prompt, tap the small black button (quickly) two times, until the number **2** is displayed. Then press and hold the button until the numbers **20** are displayed. Tap the button 3 times until **23** is displayed. Press and hold the button until **230** is displayed, and continue in this manner until **23456** is displayed. Five seconds after the last number is entered, the speedometer will advance to the home screen.

## Recording and Viewing Performance Data

Follow these steps to record and recall Performance Data (high speed,  $\frac{1}{4}$  mile ET, and 0-60 time):

1. Before each run, your car must be at a complete stop at the starting position.  *Press and hold* the push-button as it cycles through the performance data. At the end, the odometer will reset and all performance data will be cleared. This will not affect your stored calibration value or the odometer reading.
2. Press the push-button until 'HI-SP' is displayed. The gauge will automatically cycle through the performance data.
3. Start the run, pass, session, etc., as mentioned above.
4. When finished, repeat  *Step 2* to view the data gathered from the run. While stopped, you can view this data as often as you wish. However, once it finishes scrolling one time, the memory is ready to record new data and will begin recording again once the vehicle starts to move. The highest speed measured over multiple runs will be retained in memory.

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