



# CLASSIC INSTRUMENTS

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1967 – 1972 Chevy / GMC Truck

Installation Manual

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## **Remove the Stock / OEM Instrument Panel**

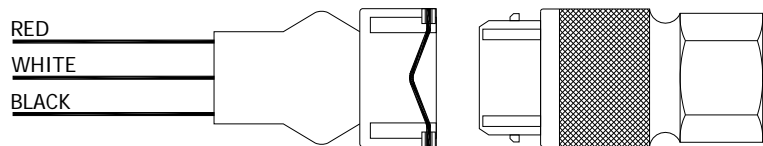
- 1) Make sure to disconnect the vehicle battery before you begin to remove the instrument panel.
- 2) Remove the two 5/16" screws which are holding the steering column tight to the base of the dash. This allows the steering column to drop down slightly.
- 3) Remove the six screws that are holding the panel to the dash.
- 4) Remove the light switch knob. To do this, push in the button at the top of the switch box housing (under the dash) and then pull out the light switch knob and shaft. Next, unthread the nut holding the light switch box to the instrument panel and remove the light switch box.
- 5) Remove the wiper knob. To do this, loosen the small set screw, pull the knob off and then unscrew the bezel.
- 6) Disconnect the speedometer cable from the back of the instrument panel.
- 7) Disconnect the oil pressure gauge tube (if equipped) from the back of the instrument panel using a 5/16" wrench. Be sure to protect your upholstery from any oil that may drip from the loosened oil pressure gauge tube.
- 8) Remove the large electrical connector on the back of the instrument panel by squeezing the lock tabs on the sides of the connector.
- 9) Remove throttle and choke controls from the instrument panel (if equipped).
- 10) The instrument panel can now be removed from the dash.
- 11) Please retain all screws, knobs and bezels to reuse when installing the new Classic Instruments panel.

## Determine Speedometer Signal

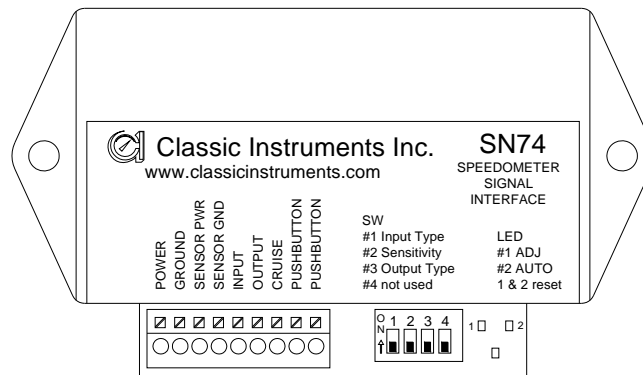
Determine where you are going to get the speed signal for your speedometer.

If your transmission has a port where a mechanical speedometer cable was attached, you will need a pulse signal generator. The GM style signal generator is shown below in figure 1. The pulse signal generator produces 16 pulses per revolution and has three connection wires. Typically, transmission speedometer cable gears produce 1000 revolutions per mile. Therefore; when using a pulse signal generator, you will need to calibrate the speedometer according to the 16,000 pulse per mile (ppm) chart on page 14 of this manual.

If your transmission has a built in vehicle speed sensor (VSS) or computer (ECM), you will need a SN74 signal interface box, shown below in figure 2.



**Figure 1:** GM style pulse signal generator (SN16)  
(For use with transmissions with mechanical speedometer cable hookup)

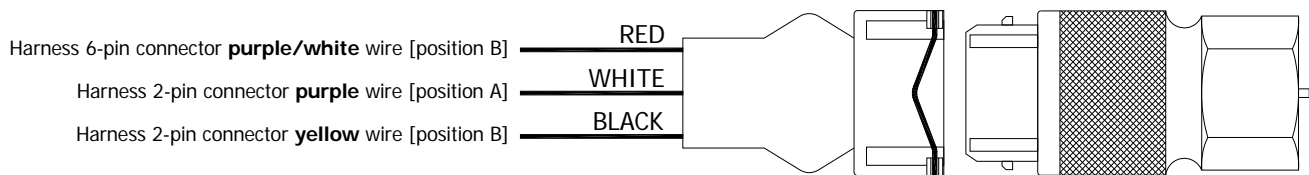


**Figure 2:** Speed signal interface box (SN74)  
(For use with vehicle speed sensor signals or ECM speed signals)

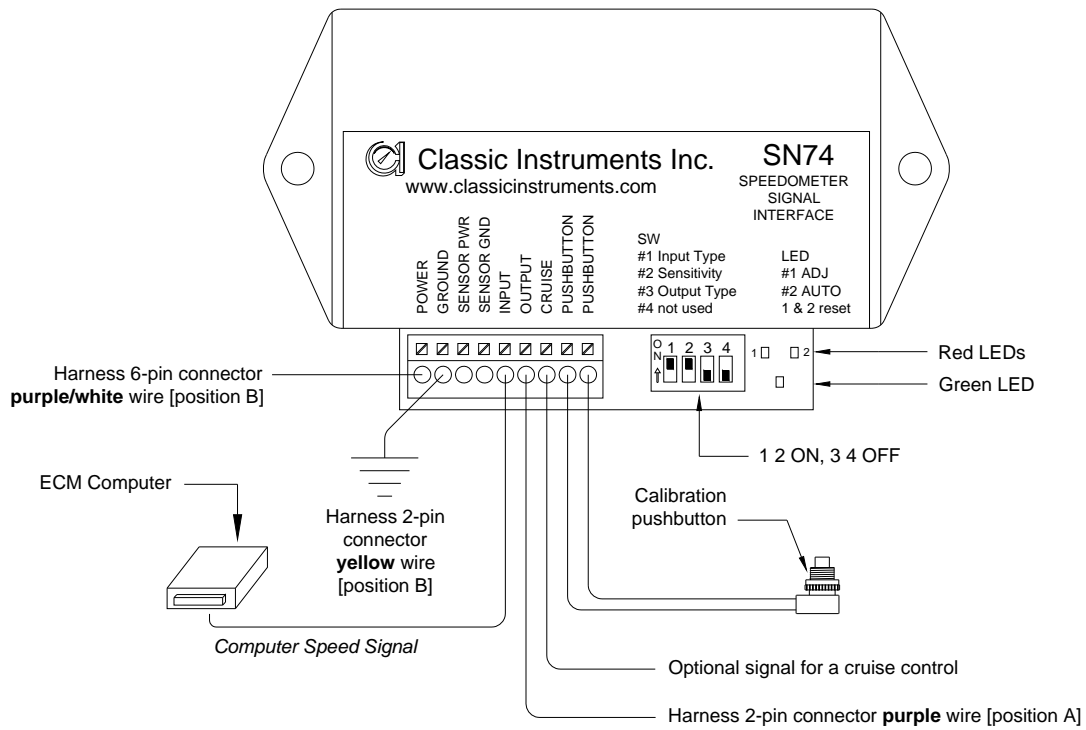
## Wiring the Speedometer

- Step 1:** Connect switched +12VDC from a dedicated source (we recommend the accessory side of the ignition switch) to the **pink/white** wire on the 6 pin connector [position B] of the instrument wire harness. If accessory of ignition is not available, connect to a switched and dedicated fuse on the fuse panel. This will help prevent interference to the speedometer from the power source.
- Step 2:** Connect the red wire from the pulse signal generator OR power wire from the SN74 to the **purple/white** wire on the 6 pin connector [position B] of the instrument wire harness.
- Step 3:** Connect a dedicated chassis ground (i.e. don't stack with any other ground wires) to the **black/white** wire on the 6 pin connector [position A] of the instrument wire harness. This will help prevent interference to the speedometer from the ground.
- Step 4:** Connect the black wire from the pulse signal generator OR ground wire from the SN74 to the **yellow** wire on the 2 pin connector [position B] of the instrument wire harness.
- Step 5:** Connect the white wire from the pulse signal generator OR output from the SN74 to the **purple** wire on the 2 pin connector [position A] of the instrument wire harness.
- Step 6:** If using the SN74 speedometer signal interface:  
Connect one wire of the transmission VSS to the SN74 sensor gnd and the other wire of the transmission VSS to the SN74 input.  
OR  
Connect the speed signal wire from the ECM to the SN74 input.
- Step 7:** If using the SN74 speedometer signal interface:  
Connect the two wires of the calibration pushbutton to the SN74 "pushbutton" positions.

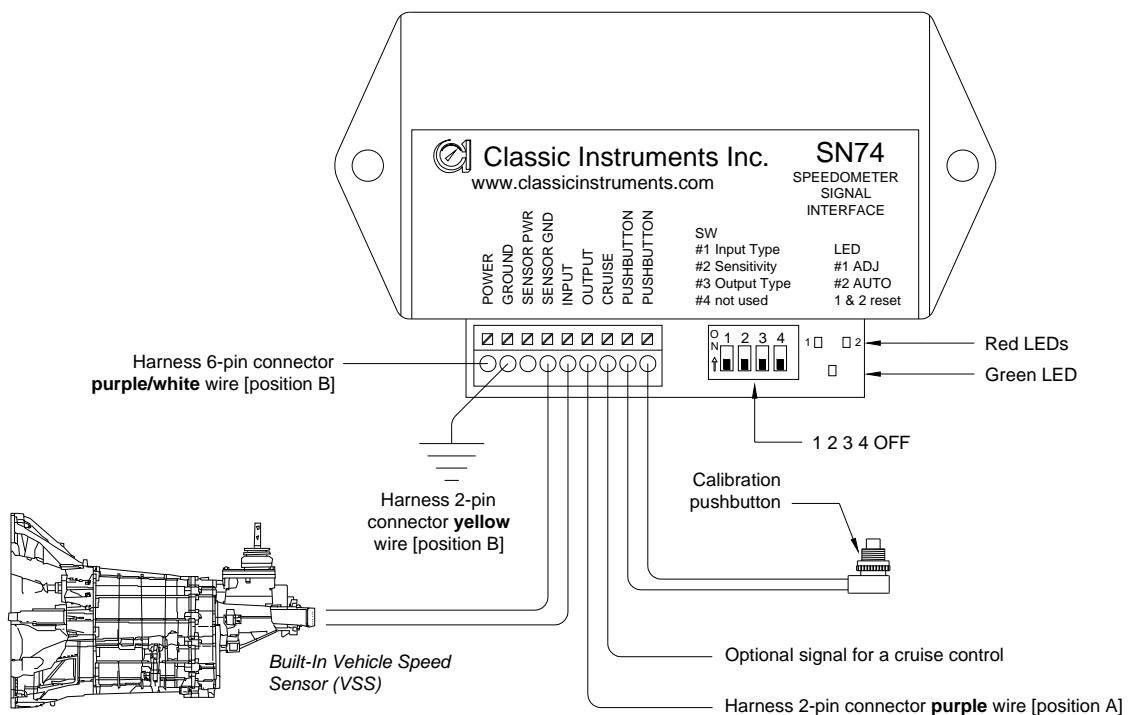
*See following wiring diagrams*



Pulse Signal Generator Wiring



### ECM Speed Signal Wiring



### Vehicle Speed Sensor (VSS) Wiring

## **Determine Tachometer Signal**

### ***STANDARD POINTS & CONDENSER SYSTEM***

Connect the negative side of the coil (usually marked as “-“) to the signal wire for the tachometer.

### ***GMC – HEI (High Energy Ignition System)***

Connect the “TACH” terminal on coil side of distributor cap to the signal wire for the tachometer.

### ***MSD (Multiple Spark Discharge System)***

Connect the Tach post on the MSD box to the signal wire for the tachometer. If the tachometer does not respond, your MSD system may require a MSD Tach adapter. Part No. 8910 or 8920.

### ***VERTEX MAGNETO SYSTEM***

Connect the “KILL” terminal on side the of Vertex magneto body to the signal wire for the tachometer. An external adapter such as an MSD “Pro Mag Tach Converter” #8132 may be required.

### ***ACCEL IGNITION COILS***

Connect the negative side of the coil to the signal wire for the tachometer. CAUTION! Some Accel ignition coils require the tach signal wire to be connected to the “+” terminal on the coil! PLEASE carefully read Accel’s instructions before connecting ignition coil.

### ***MALLORY IGNITION***

Connect the negative terminal side of coil (usually marked as “-“) to the signal wire for the tachometer.

**IMPORTANT!** Some Mallory ignition systems may require you to adjust the tachometer selector switch to be set at the 4-cylinder setting (rather than the 8-cylinder setting). The selector switch is located on the backside of the tachometer case.

### ***ECM TACHOMETER SIGNAL***

Signal comes from the computer. When using this type of signal, you may need to set the tachometer to a 4-cylinder setting regardless of the actual cylinders on the engine. Signals below 8V amplitude require the use of either the SN76 tach adapter or a 1K .25W pull-up resistor installed between the signal and power post of the tachometer.

### ***MULTIPLE COIL IGNITION SYSTEMS***

A tach adapter is required for these ignition systems. A tach signal driver such as the MSD #8913, which produces a 12V square wave signal, is recommended. Please check with manufacturer for your specific application.

**NOTICE:**     *For all other ignition systems please refer to the owner’s manual.*

## Wiring the Tachometer

- Step 1:** Connect switched +12VDC to the **pink** wire on the 6 pin connector [position F] of the instrument wire harness.
- Step 2:** Connect a ground to the **black** wire on the 6 pin connector [position D] of the instrument wire harness.
- Step 3:** Connect the tachometer signal to the **white** wire on the 9 pin connector [position J] of the instrument wire harness.
- Step 4:** Set the tachometer dip switches to the appropriate cylinder setting for your signal. Refer to Table 1 and Figure 3 below.

Note: Some ECM tachometer signals require the tachometer to be set at the 4-cylinder setting regardless of the actual cylinders on the engine.

Number of Cylinders / Poles	Tachometer Dip Switch Setting
4	1 & 2 OPEN
6	2 & 3 OPEN
8	2 OPEN
10-Pole Alternator Signal	4 & 5 OPEN
12-Pole Alternator Signal	4 OPEN
20-Pole Alternator Signal	6 OPEN

Table 1: Tachometer Setup  
(Set dip-switches from the table to OPEN, all others CLOSED)

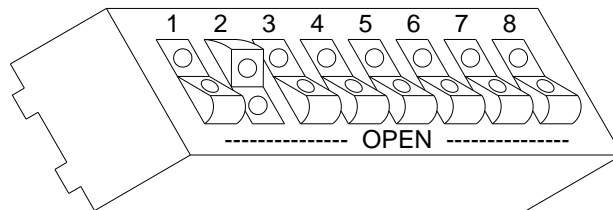


Figure 3: Dip switches on back of tachometer  
(Figure shows the factory preset 8 cylinder setting)

## Wiring the Temperature Gauge

- Step 1:** Install the Classic Instruments temperature sender in the intake manifold of the engine. The threads of the sender are tapered and should not require additional sealant. Do not use Teflon tape on the threads of the sender. If necessary, a small amount liquid Teflon pipe sealer may be used. A good ground is essential between the temperature sender and the engine block for proper gauge operation. Use of Teflon tape on the sender threads may degrade the ground contact between the sender and the engine.
- Step 2:** Connect the signal post of the temperature sender to the **dark green** wire on the 9 pin connector [position A] of the instrument wire harness. See Figure 4 below.
- Step 3:** The temperature gauge uses the same power and ground used for the tachometer. If you have already connected them, no other connections are necessary. Otherwise, see step 1 & 2 of wiring the tachometer section.

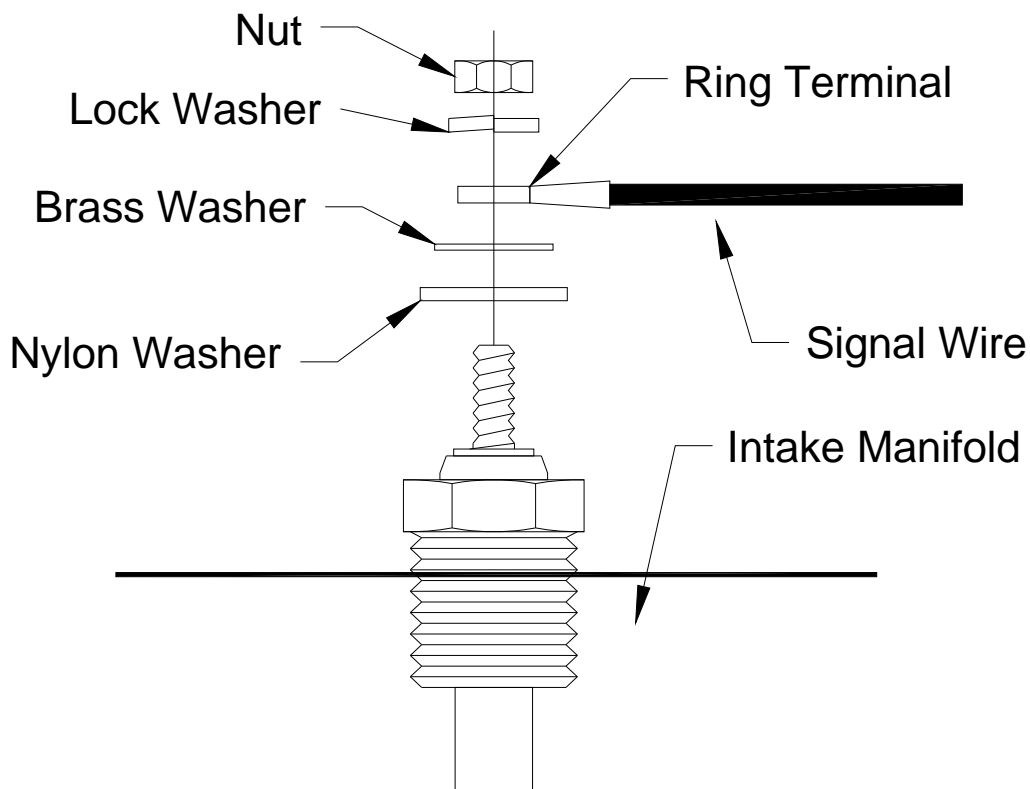


Figure 4: Connecting the temperature sender

## Wiring the Oil Pressure Gauge

- Step 1:** Install the Classic Instruments oil pressure sender in the engine block. GM engine installations require the use of the 2-piece brass bushing kit which includes a 45 degree elbow and 1 inch extension. The threads of the sender and bushing kit are tapered and should not require additional sealant. Do not use Teflon tape on the threads of any part of the sender. If necessary, a small amount liquid Teflon pipe sealer may be used. A good ground is essential between the oil pressure sender and the engine block for proper gauge operation. Use of sealants on the sender threads may degrade the ground contact between the sender and the engine.
- Step 2:** Connect the oil pressure sender to the **dark blue** wire on the 9 pin connector [position B] of the instrument wire harness. See Figure 5 below.
- Step 3:** The oil pressure gauge uses the same power and ground used for the tachometer. If you have already connected them, no other connections are necessary. Otherwise, see step 1 & 2 of wiring the tachometer section.

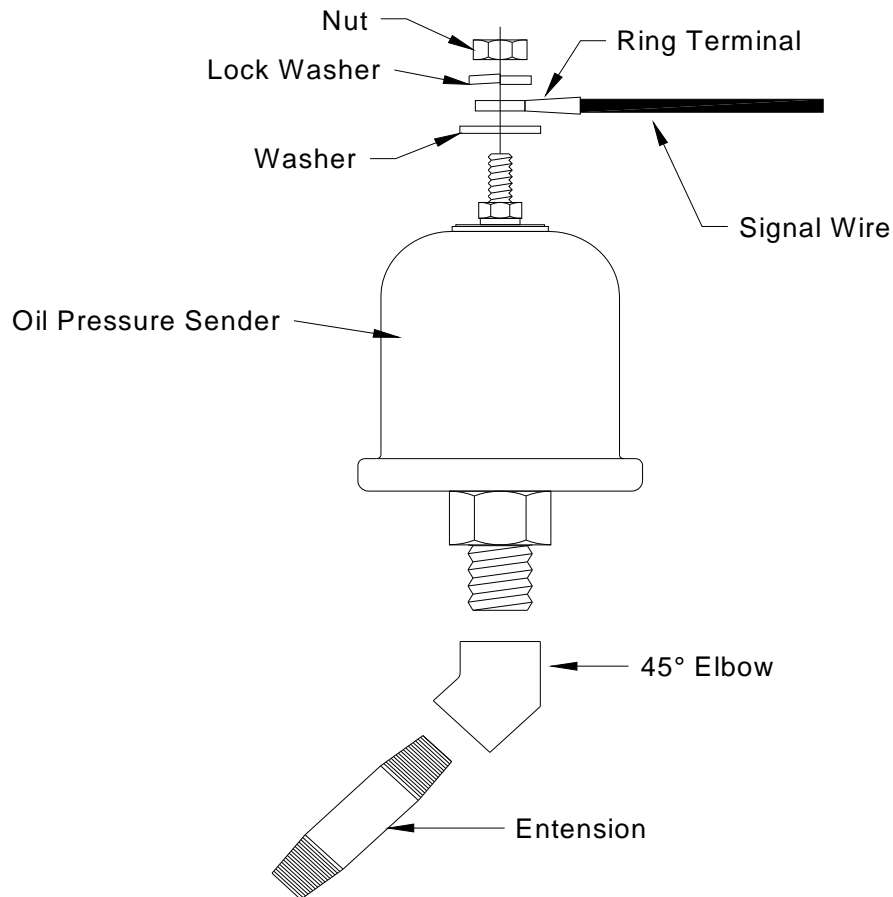


Figure 5: Connecting the oil pressure sender

## Wiring the Fuel Level Gauge

- Step 1:** The fuel level gauge in your instrument cluster is designed to work with the stock sending unit in your 1967 – 1972 GM truck. The stock fuel level sender generates an ohm range of 0 ohms at empty and 90 ohms at full. Connect the stock fuel level sender to the **tan** wire on the 9 pin connector [position D] of the instrument wire harness.
- Step 2:** The fuel level gauge uses the same power and ground used for the tachometer. If you have already connected them, no other connections are necessary. Otherwise, see step 1 & 2 of wiring the tachometer section.

## Wiring the Turn Signals

- Step 1:** Connect the vehicle's right turn signal wire to the **blue** wire on the 9 pin connector [position G] of the instrument wire harness.
- Step 2:** Connect the vehicle's left turn signal wire to the **light blue** wire on the 9 pin connector [position F] of the instrument wire harness.

## Wiring the High Beam Indicator

- Step 1:** Connect the vehicle's high beam indicator signal wire to the **light green** wire on the 9 pin connector [position E] of the instrument wire harness.

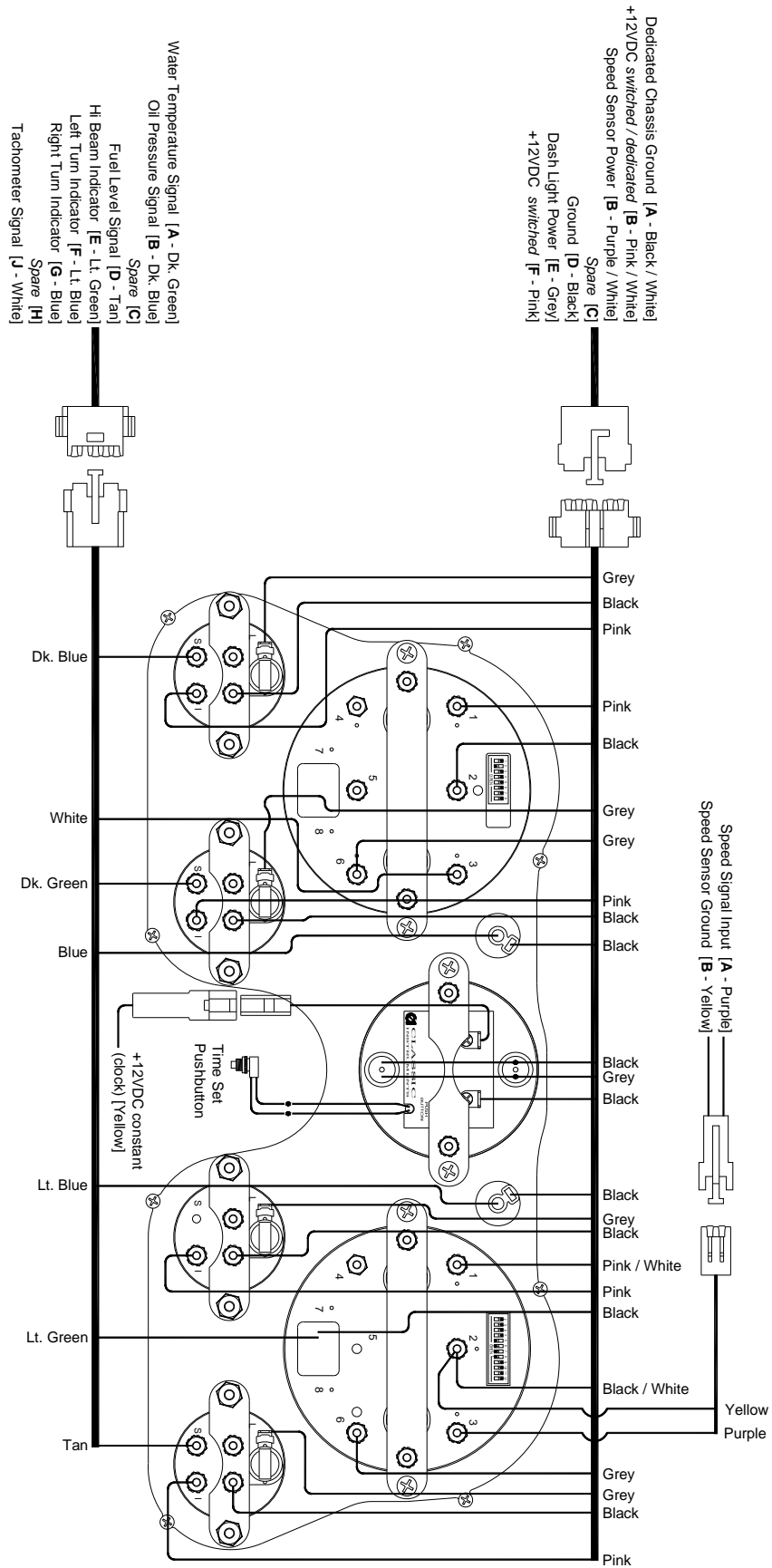
## Wiring the Clock

- Step 1:** Connect the **yellow** wire on the 1 pin connector of the instrument wire harness to a constant 12VDC source.
- Step 2:** The clock uses the same ground that is used for the tachometer. If you have already connected the tachometer ground, no other connections are necessary. Otherwise, see step 2 of wiring the tachometer section.
- Step 3:** Connect the two loose #22AWG yellow wires from the clock to the two black wires from the provided pushbutton.
- Step 4:** To set the correct time, simply press and hold the pushbutton to rapidly advance the minute hand of the clock. Release the pushbutton when you are close to the correct time. Push and quickly release the pushbutton to advance the pointer in one minute increments.

## Wiring the Dash Lights

- Step 1:** Connect the vehicle's dash light power wire to the **grey** wire on the 6 pin connector [position E] of the instrument wire harness.

# Instrument Panel Wire Harness



# **Calibrating the Speedometer**

## ***Using a Pulse Signal Generator***

We recommend that you calibrate your speedometer before completely mounting your instrument panel. (*You will need to adjust dip switches on the back of the speedometer to complete the calibration*) Be sure the 12 dip switches on the back of the gauge are set to the default setting (5, 6, 7, 8 OPEN) before performing the calibration road test.

- Step 1:** To check your speedometer reading, follow and pace another car (with an accurate speedometer) to a speed of 60 MPH true road speed. A GPS navigation system can also be utilized for this purpose.
- Step 2:** Determine the speed you are reading on your speedometer when the pace car is at 60 MPH or you register 60 MPH on your GPS.
- Step 3:** Refer to the calibration chart at the end of this manual for adjustments. Find the MPH you were reading while pacing the car with the accurate speedometer or GPS reading. Note the dip switch positions in the second column.
- Step 4:** Turn the ignition off. Set the dip switches identified in the second column of the calibration chart to OPEN (pushed in away from the numbered side). All other switches should be CLOSED (pushed in toward the numbered side).
- Step 5:** Your speedometer should now read the same as your pace car or GPS.

## Using a SN74 Speedometer Signal Interface

**Step 1:** Set the 12 dip switches on the back of the speedometer to the default setting [5, 6, 7, 8 OPEN]

**Step 2:** Set the SN74 dip switch settings:

- If using a 2-wire VSS signal, set switches 1, 2, 3, 4 OFF
- If using an ECM signal, set switches 1,2 ON and 3,4 OFF

**Step 3:** Follow the procedure below to put the SN74 into the calibration mode.

- 1) Start with the vehicle power / engine off. Push and hold the pushbutton then start the engine.
- 2) Once the engine is running, release the pushbutton.
- 3) The red LED labeled “1” on the module will be on solid (indicating real-time calibration mode).
- 4) Tapping the pushbutton will cause the red LED labeled “2” on the module to turn on (indicating marked mile calibration mode).
- 5) Tapping the pushbutton again will cause both red LEDs on the module to turn on (indicating reset mode).
- 6) Tapping the pushbutton once again will cause the red LED labeled “1” to turn on again. Continuing to tap the pushbutton will cycle LEDs on the module through the real-time, marked mile and reset modes.
- 7) Push and hold the pushbutton for approximately 5 seconds to enter the mode indicated by the red LED of the module.

**Step 4:** Follow the procedure below to calibrate the speedometer by driving a known mile.

- 1) Push and hold the pushbutton with red LED “2” lit until LED “2” starts blinking (*approximately 5 seconds*)
- 2) Begin driving a known mile. (*The green LED on the module should blink once you start moving indicating that it is getting a signal.*) When driving the known mile, the speedometer will not indicate any speed. This is normal.
- 3) At the end of the known mile, press and hold the pushbutton until the red LED “2” goes off (*approximately 5 seconds*)

**Step 5:** Follow the procedure below to fine tune the speedometer calibration (if necessary).

- 1) Enter the calibration mode selection as detailed in step 3.
- 2) Push and hold the pushbutton with red LED “1” lit until LED “1” starts blinking. (*approximately 5 seconds*)
- 3) Drive a known speed (use GPS or pace another car).
- 4) The first time the pushbutton is pressed, the speed shown on the speedometer will increase. The second time the pushbutton is pressed, the speed shown on the speedometer will decrease.
- 5) The pushbutton will alternate increasing or decreasing the speed shown on the speedometer each time it is pressed. Press and hold the pushbutton to fine tune the speed shown on the speedometer.

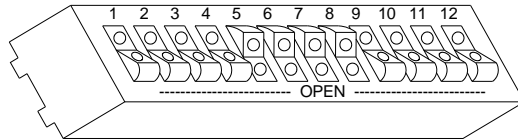
- 6) Once the correct speed on the speedometer has been achieved, wait 8 seconds without pushing the pushbutton in order to save the calibration.
- 7) The green LED below the red “1” and “2” LEDs indicates the module is getting power if on solid and indicates that the module is receiving a signal if blinking. (the green LED will not be on solid while selecting calibration modes, but will function when a calibration mode has been entered)

**Step 6:** The SN74 can be reset to the factory default settings by following the procedure below.

***Note: It is NOT necessary to perform this step!***

- 1) Enter the calibration mode selection as detailed in step 3.
- 2) Tap the pushbutton until the red LED “1” and “2” are both lit.
- 3) With both LED “1” & “2” lit, press and hold the pushbutton until both red LEDs turn off.  
*(approximately 5 seconds)*
- 4) The SN74 will now be reset to the factory settings.

# 16-Pulse Speedometer 16,000 PPM Calibration Chart



(Default Dip Switch Setting)

(Switch 5 6 7 8 OPEN)

Set speedometer switches **5 6 7 8 OPEN**, all others closed (*code for 16,000 PPM*). Drive vehicle at 60mph. If the speedometer reads other than 60, turn off power & set switches per chart below.

Speedometer Reading	OPEN SWITCH	Speedometer Reading	OPEN SWITCH
40 MPH	8 9 11 12	80 MPH	4 5 6 10 12
41 MPH	7 10 12	81 MPH	4 5 6 8
42 MPH	7 8	82 MPH	4 5 6 8 9 11 12
43 MPH	7 8 9 11 12	83 MPH	4 5 6 7 10
44 MPH	6 10	84 MPH	4 5 6 7 8
45 MPH	6 8	85 MPH	4 5 6 7 8 9 11 12
46 MPH	6 8 9 11 12	86 MPH	3 10 12
47 MPH	6 7 10 12	87 MPH	3 8
48 MPH	6 7 8	88 MPH	3 8 9 11 12
49 MPH	6 7 8 9 11 12	89 MPH	3 7 10 12
50 MPH	5 10	90 MPH	3 7 8
51 MPH	5 8	91 MPH	3 7 8 9 11 12
52 MPH	5 8 9 11 12	92 MPH	3 6 11 12
53 MPH	5 7 10 12	93 MPH	3 6 8
54 MPH	5 7 8	94 MPH	3 6 8 9 11 12
55 MPH	5 7 8 9 11 12	95 MPH	3 6 7 10 12
56 MPH	5 6 10 12	96 MPH	3 6 7 8
57 MPH	5 6 8	97 MPH	3 6 7 8 9 11 12
58 MPH	5 6 8 9 11 12	98 MPH	3 5 10 12
59 MPH	5 6 7 10 12	99 MPH	3 5 8
60 MPH	5 6 7 8	100 MPH	3 5 8 9 11 12
61 MPH	5 6 7 8 9 11 12	101 MPH	3 5 7 10 12
62 MPH	4 10 12	102 MPH	3 5 7 8
63 MPH	4 8	103 MPH	3 5 7 8 9 11 12
64 MPH	4 8 9 11 12	104 MPH	3 5 6 10 12
65 MPH	4 7 10	105 MPH	3 5 6 8
66 MPH	4 7 8	106 MPH	3 5 6 8 9 11 12
67 MPH	4 7 8 9 11 12	107 MPH	3 5 6 7 10 12
68 MPH	4 6 10 12	108 MPH	3 5 6 7 8
69 MPH	4 6 8	109 MPH	3 5 6 7 8 9 11 12
70 MPH	4 6 8 9 11 12	110 MPH	3 4 10 12
71 MPH	4 6 7 10 12	111 MPH	3 4 8
72 MPH	4 6 7 8	112 MPH	3 4 8 9 11 12
73 MPH	4 6 7 8 9 11 12	113 MPH	3 4 7 10 12
74 MPH	4 5 10 12	114 MPH	3 4 7 8
75 MPH	4 5 8	115 MPH	3 4 7 8 9 11 12
76 MPH	4 5 8 9 11 12	116 MPH	3 4 6 10 12
77 MPH	4 5 7 10 12	117 MPH	3 4 6 8
78 MPH	4 5 7 8	118 MPH	3 4 6 8 9 11 12
79 MPH	4 5 7 8 9 11 12	119 MPH	3 4 6 7 10 12