1967-1968

Camaro

Installation Manual

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Welcome to the Team of Classic Instruments!

Our congratulations and appreciation for your purchase of the finest quality set of specialty instruments ever produced! Your instrument set has been conceived, designed, and manufactured by Classic Instruments, Inc. in the U.S.A. Each instrument has been tested and certified for accuracy and quality before packaging and shipping.

For trouble-free installation and operation, follow the instructions exactly as outlined. Your instruments were assembled to precise specifications and although each has a five (5) year warranty covering defective parts and workmanship – this warranty will not cover instruments or sending units which have been installed incorrectly.

Follow our recommended procedures for installation and proper hookup to maintain the value and appearance of your instrument set during many future years of accurate and dependable service!

SPECIAL NOTES:

Due to rapid changes in technology, some instruments may not be included in this manual. In this situation please refer to special instruction sheets and stickers located on your instrument. Please call us at 1-800-575-0461 with any questions.

Follow our instructions to guarantee trouble-free installation and correct operation. Our installation instructions and procedures should take priority over instructions furnished by any other manufactures of ignition systems, wiring harnesses, gauges, etc.

TECHNICAL ASSISTANCE
1-800-575-0461
OR
Visit our new website for the latest in gauge design and updates to our installation manual at:

www.classicinstruments.com

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Remove Original Instrument Panel

Step1: Disconnect the battery before beginning the replacement of the old instrument panel.

Step 2: Remove the 7 screws holding the instrument panel to the dash. Three screws are located at the top of the instrument panel and four screws are located at the bottom of the instrument panel. Save these screws to use when installing the new instrument panel.

Step 3: Unplug the old instrument panel wire harness from the vehicle wire harness.

Step 4: Remove the two screws holding the high beam indicator light assembly and remove the assembly from the old instrument panel. Save the screws and light assembly to install on the new instrument panel.

Step 5: Remove the old instrument panel from the dash.

See Figure A Below

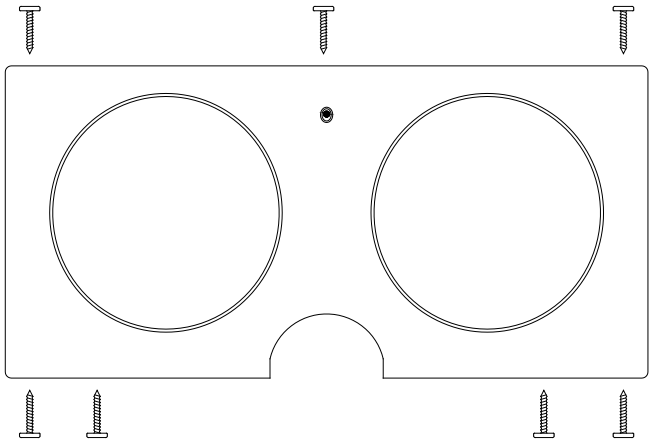

Figure A: Instrument panel dash mounting screw locations

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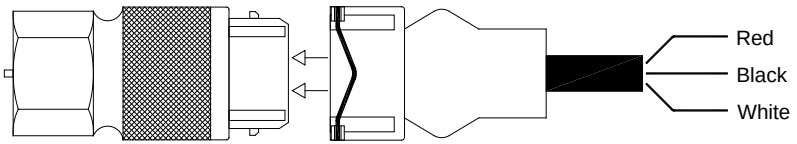
Determine Speedometer Signal

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

If your transmission has a fitting for a mechanical speedometer cable, you will need a pulse signal generator. The GM style pulse signal generator (part #SN16) is shown below in Figure B. The SN16 produces 16 pulses per revolution and a 12V square wave signal.

If your transmission has a built-in electric vehicle speed sensor (VSS) or computer (ECM), a speedometer signal interface is required, shown below in Figure C.



Red: +12VDC
Black: Ground
White: Signal

Figure B: GM style pulse signal generator [SN16]

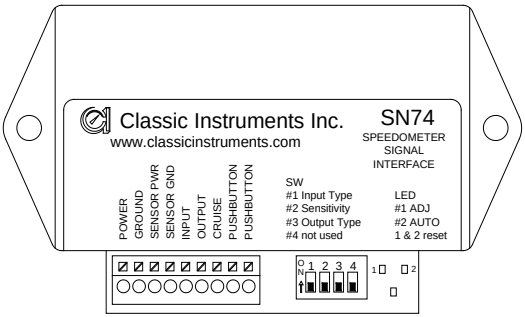


Figure C: Speedometer signal interface [SN74]

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Wiring the Speedometer

Step 1: Connect +12VDC from the accessory side of the ignition switch to the Pink/White wire on the speedometer connector (position F) 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" from the SN74 to the Purple/White wire on the speedometer connector (position C) 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 speedometer connector (position E) 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" from the SN74 to the Yellow wire on the speedometer connector (position A) of the instrument wire harness.

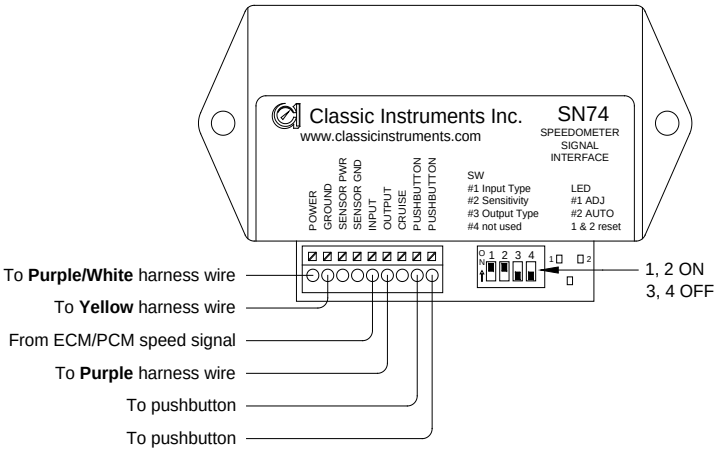
Step 5: Connect the white wire from the pulse signal generator OR "Output" from the SN74 to the Purple wire on the speedometer connector (position B) of the instrument wire harness.

Step 6: If using the SN74 speed signal interface:

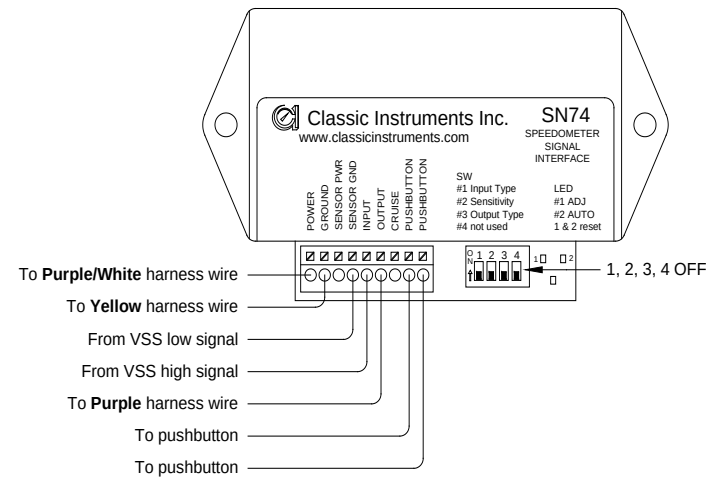
Connect one wire of the transmission VSS to the SN74 "Sensor Gnd" and the other wire of the transmission VSS to the SN74 "Input".

OR

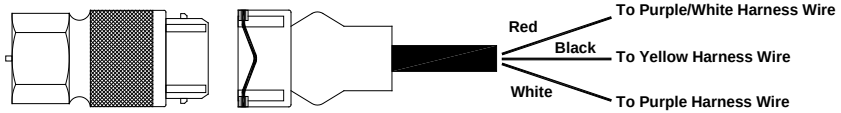
Connect the speed signal wire from the ECM/PCM to the SN74 "Input".



ECM/PCM Speed Signal Wiring



Electronic VSS Speed Signal Wiring



Pulse Signal Generator Wiring

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Determine Tachometer Signal

STANDARD POINTS & CONDENSER SYSTEM
Signal comes from the negative side of the coil (usually marked as "-").

GMC – HEI (High Energy Ignition System)
Signal comes from the "TACH" terminal on coil side of distributor cap.

MSD (Multiple Spark Discharge System)
Signal comes from the TACH post on the MSD box. If there isn't a MSD box, the signal comes from the negative side of the coil. If the tachometer does not respond correctly, your MSD system may require a MSD TACH adapter. Part No. 8910 or 8920. Contact MSD to find out which adapter you should use for your application.

VERTEX MAGNETO SYSTEM
Signal comes from the "KILL" terminal on side the of Vertex magneto body. An external adapter such as an MSD Pro Mag Tach Converter #8132 may be required.

ACCEL IGNITION COILS
Signal comes from the negative side of the coil. 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
Signal comes from the negative side of coil (usually marked as "-"). **IMPORTANT!** Some Mallory ignition systems produce a 4-cylinder tachometer signal (rather than an 8-cylinder signal) even if the engine is an 8-cylinder. This may require the use of a special tachometer interface (*contact Classic Instruments for details*).

ECM TACHOMETER SIGNAL
Signal comes from the computer. When using this type of signal, you may need to install a tachometer signal converter (part number SN76) to make the tachometer accurate.

NOTICE: *For all other ignition systems please look at the owner's manual for that system.*

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Wiring the Tachometer

Step 1: Connect a switched +12VDC source to the Pink wire on the power/lighting connector (position H) of the instrument wire harness.

Step 2: Connect a good chassis ground to the Black wire on the power/lighting connector (position J) of the instrument wire harness.

Step 3: If your tachometer signal does NOT come from a computer, connect the tachometer signal to the White wire on the signal connector (position J) of the instrument wire harness.

OR

If your tachometer signal comes from a computer, connect the tachometer signal from the computer to the white wire of the SN76, connect the red wire of the SN76 to the Pink wire on the power/lighting connector (position H), connect the black wire of the SN76 to the Black wire on the power/lighting connector (position J) and connect the yellow wire of the SN76 to the White wire on the signal connector (position J). See Figure D below for a SN76 wiring diagram.

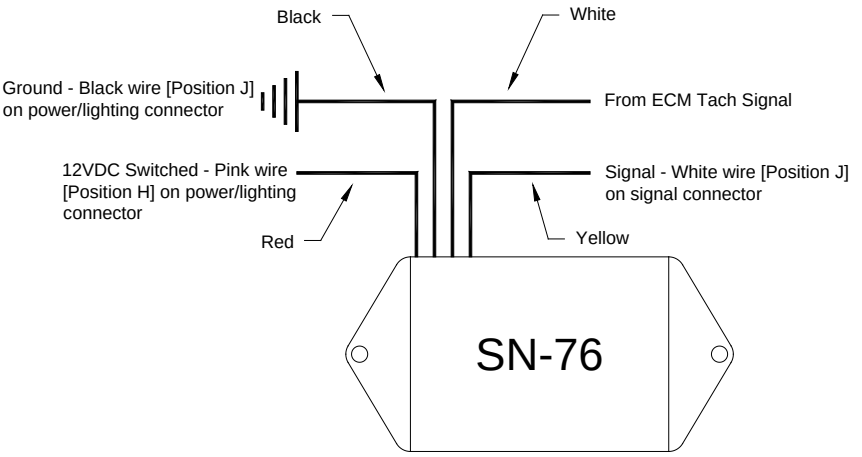

Figure D: Optional SN76 wire diagram

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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 of 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 temperature sender to the Dark Green wire on the signal connector (position A) of the instrument wire harness. See Figure E 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.

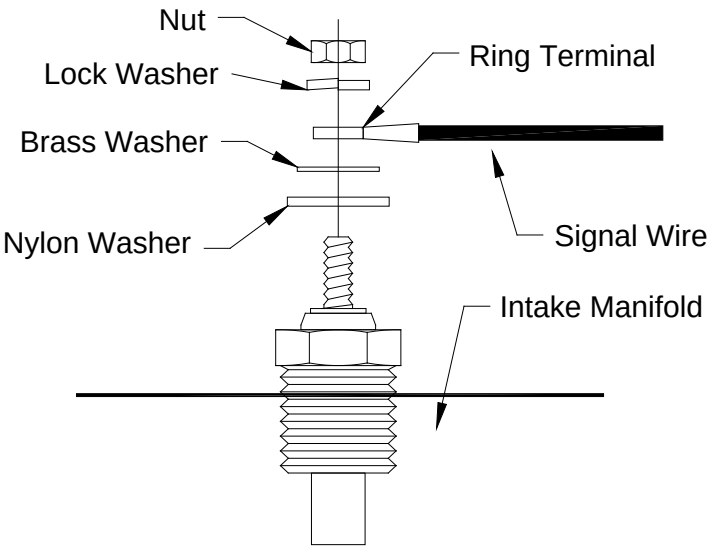

Figure E: Connecting the temperature sender

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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 of 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 signal connector (position B) of the instrument wire harness. See Figure F 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.

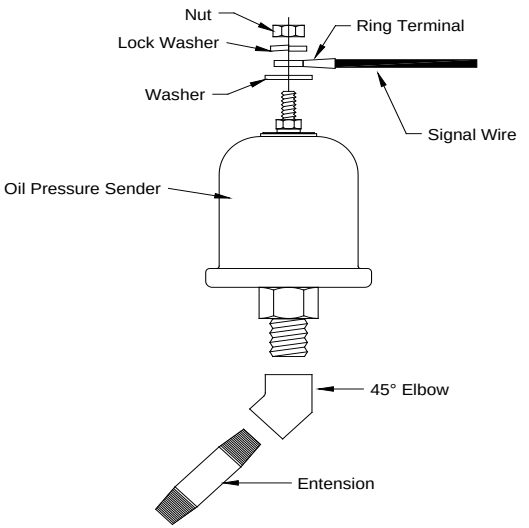

Figure F: Connecting the oil pressure sender

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Wiring the Fuel Level Gauge

Step 1: The fuel level gauge in your instrument cluster is designed to work with the stock fuel sending unit in your 1967 – 1968 Camaro. The stock fuel level sender generates a resistance range of 0 ohms at empty and 90 ohms at full. Connect the stock fuel level signal to the Tan wire on the signal 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 High Beam Indicator

Step 1: Mount the vehicle's high beam indicator assembly to the new instrument panel using the 2 screws removed from the assembly of the old instrument panel.

Step 2: Connect the Light Green wire on the signal connector (position E) of the instrument wire harness to the high beam indicator's 12 volt signal wire.

Wiring the Turn Signals

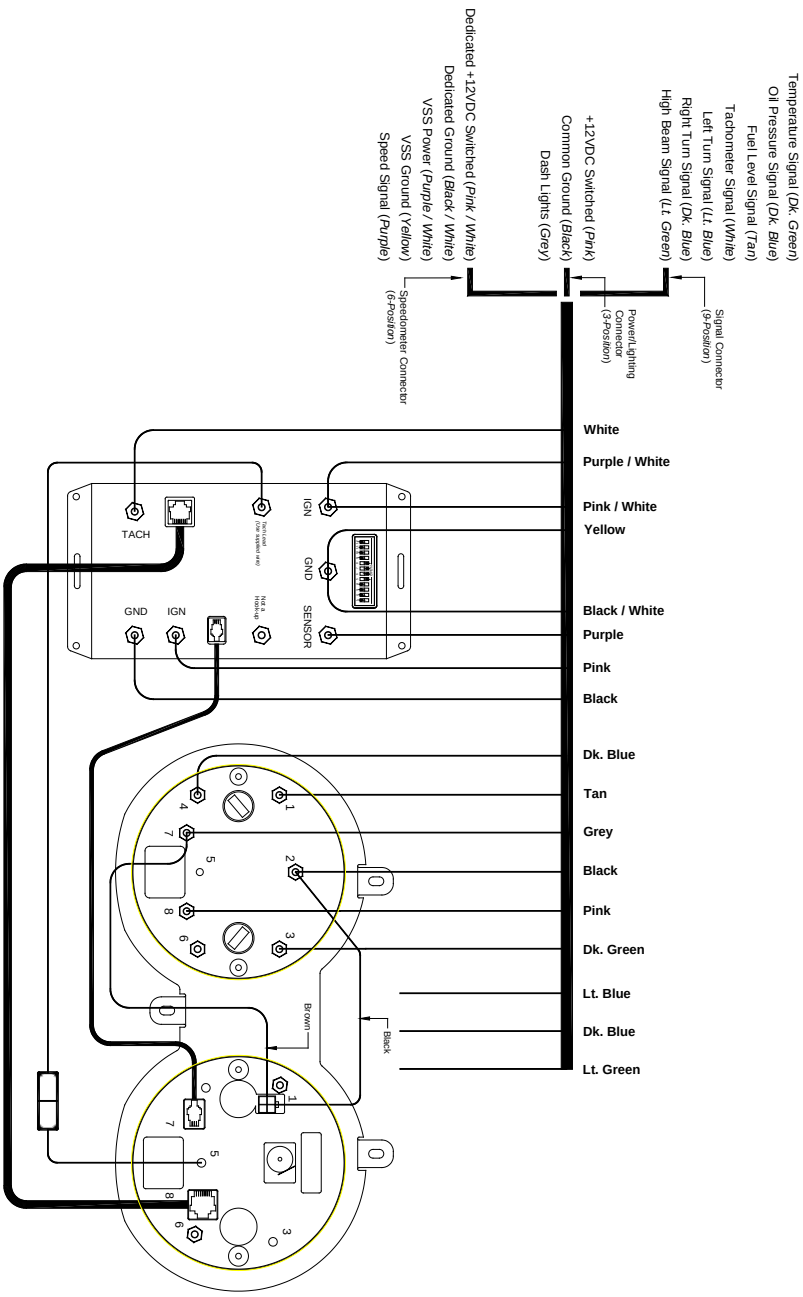
Step 1: Connect the vehicle's right turn signal wire to the Dark Blue wire on the signal connector (position G) of the instrument wire harness.

Step 2: Connect the vehicle's left turn signal wire to the Light Blue wire on the signal connector (position F) of the instrument wire harness.

Wiring the Dash Lights

Step 1: Connect the vehicle's dash light power wire to the Grey wire on the power / lighting connector (position K) of the instrument wire harness.

Instrument Panel Wire Harness



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Calibrating the Speedometer

SN16 Pulse Signal Generator Signal

IMPORTANT: Be sure the 12 dip switches on the black control box are set to the default setting (5, 6, 7, 8 OPEN) before performing the calibration road test.

1) To check your speedometer calibration, follow and pace another car (with an accurate speedometer) at a speed of 60 MPH true road speed. A GPS navigation system can also be utilized for this purpose.

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.

3) Refer to the "16-pulse speedometer 16,000ppm calibration chart" on page 15 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.

4) Turn the ignition off. Set the dip switches identified in the second column to OPEN (pushed in away from the numbered side). All other switches should be CLOSED (pushed in toward the numbered side).

5) Your speedometer will now indicate the same as your pace car or GPS.

SN74 Speedometer Signal Interface Signal

Signal Source	Switch Setting
SN16 pulse signal generator	1 2 ON – 3 4 OFF
VSS	1 2 3 4 OFF
ECM / PCM	1 2 ON – 3 4 OFF

Switch 1 – OFF = signal generator speed input, ON = ECM/PCM speed input
Switch 2 – OFF = high sensitivity, ON = low sensitivity
Switch 3 – OFF = 16,000ppm signal output, ON = 8,000ppm signal output
Switch 4 – *Not Used*

Entering Calibration Mode

1) Start with the vehicle power / engine off. Push and hold the pushbutton then start the engine.
2) When the engine is running, release the pushbutton.
3) The red LED labeled “1” on the module will be lit (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.

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Marked Mile Calibration Mode

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

Real-Time Calibration Mode

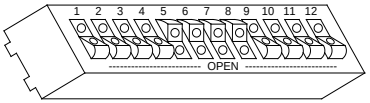
1) Enter the calibration mode as detailed in the “Entering Calibration Mode” section of the instructions.
2) Push and hold the pushbutton with red LED “1” lit until LED “1” starts blinking. *(approximately 5 seconds)*
3) Drive a known speed (use GPS or pace another car).
4) Press and hold the pushbutton to change the speed shown on the speedometer. The first time the pushbutton is pressed and held, the speed shown on the speedometer will increase. The second time the pushbutton is pressed and held, 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)

Module Reset

1) Enter the calibration mode as detailed in the “Entering Calibration Mode” section of the instructions.
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)*

The module 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, 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

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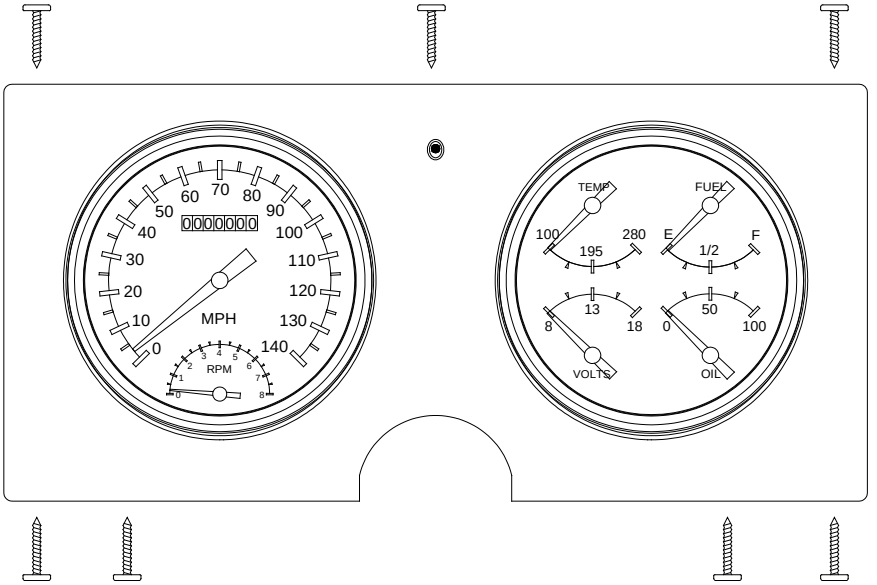
Mount New Instrument Panel

Step 1: Mount the new instrument panel in the dash using the 7 mounting screws that were removed from the original instrument panel.

See mounting diagram below



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