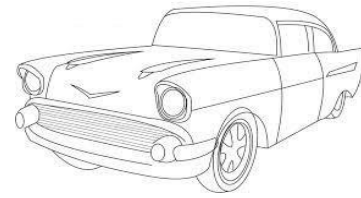


**Made in America**

**Lifetime Guarantee**



Thank you for purchasing this instrument from Intellitronix. We value our customers!

## **INSTALLATION GUIDE**

**Chevrolet Bel Air Dash**

**Part Number: DP1102**

**Year Series: 1957**



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

**\*Power up the unit before installing to ensure everything is working properly\***

## **KIT COMPONENTS**

**Three (3) Digital Circuit Boards** (one large with Speedo-Tach Combo, Voltmeter, Oil Pressure Gauges. Two smaller boards: one each for Water Temp and Fuel)

**\*Peel off protective covering from both sides of acrylic lenses\***

**Three (3) Front pieces of Smoked Acrylic Lenses** (to match boards as above)

**Three (3) Rear Pieces of Smoked Acrylic Lenses** (to match boards as above)

**Three (3) Gauge overlays**

**One (1) Temperature Sending Unit (S8013)** - 1/8" NPT, 0-255 Deg., 1/2" NPT Bushing

**One (1) Pressure Sending Unit (S8868)** - 1/8" NPT, 0-100 PSI Oil Pressure

**One (1) Universal Speedometer Sensor (S9013)** - 7/8" NPT Industry Standard threads

**One (1) Mounting Kit:**

Six (6) #6 - 6/32 X 2 1/2" Phillips Pan Head Screws

Six (6) #6 X 7/8" Nylon Spacers

Eight (8) #8-32 X 3/4" Phillips Pan Head Screws

Six (6) #6-32 Nylon Lock Nuts.

Two (2) 2 1/2" acrylic rings

Eight (8) #6 Nylon Washers

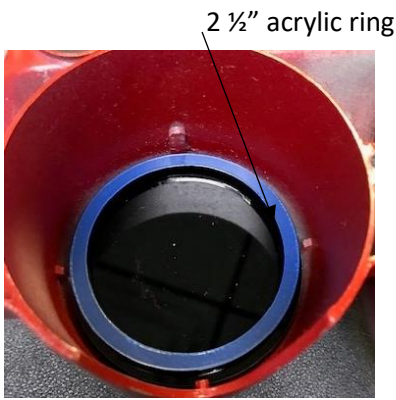
Two (2) #6-32 X 1/2" Phillips flat head machine screws

Six (6) #6 X 3/4" Nylon Spacer

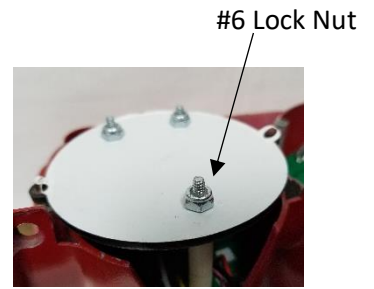
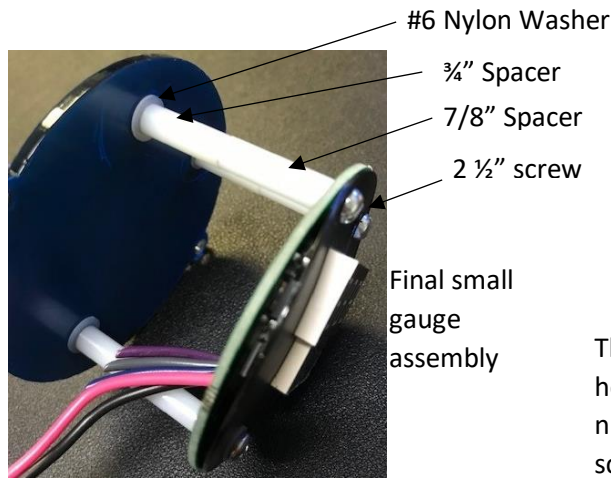
## **DASHBOARD REMOVAL AND INSTALLATION**

### **Disassembly**

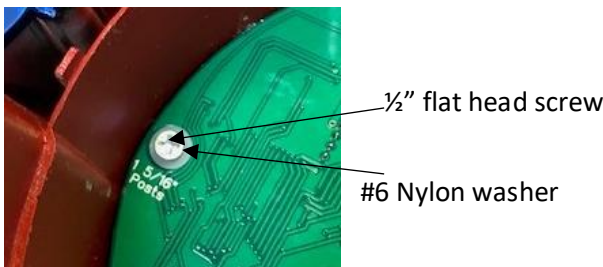
1. Remove the existing dash cluster from the vehicle. Separate the front bezel from the back housing and gauges. You will not need to re-use the back housing.
2. Remove the bezel from the old assembly.
3. Place the acrylic lens at the front of the panel.
4. Attach the new panel to the rear of the bezel, re-using the provided screws and other hardware.
5. Wire the gauges and sending units to the panel as indicated by the instructions below.



Insert acrylic lens followed by the acrylic spacer into the small side gauges, they will be held in by the gauge.



The final gauge assembly will be held together with the #6 lock nuts. You will use the #8 3/4 inch screws to secure the gauge assembly to the factory housing.



(Center board)

Place the acrylic lens into the center part of the housing, the notches in the lens will line up with the mounting holes of the factory housing. You will attach using the #6 1/2 inch screws, be sure to use a #6 flat washer between the screw and circuit board. The circuit board will hold in the smoked acrylic. The use the remaining #8 3/4 inch screws to attach the back plate, the horseshow cutout will beat the bottom.

## Standard Wiring Colors ALL COLORS MAY NOT APPLY

Color	Purpose	Color	Purpose
Red	12Volts Battery Constant	Black	Ground
Pink	Ignition 12 volts clock	Green/Yellow	Check Engine
White	Speedometer	Green	Tachometer
Yellow	Fuel	Black/Yellow	Fuel sender Ground
Orange	Oil pressure	Black/Orange	Oil sender Ground
Blue	Water Temperature	Black/Blue	Water Temperature Ground
Grey with White	Turn Signal (right)	Grey with Black	Turn Signal (left)
Red/White	12volt to speed sender	Black/White	Ground to speed sender
Brown	High Beam	Purple	Dimmer
Tan	Brake	Brown/Yellow	Boost or 4X4
Grey with push button	Speedometer/Tachometer		
Orange/White <u>Corvette</u> board only	Oil Temperature	Red/white <u>corvette</u> board only	Ground for oil temp

## WIRING INSTRUCTIONS

**Note: LS Engines or any other Computer based engine systems must use the provided sensors in conjunction with the factory sensors**

**Use 18 AWG or larger wire to ensure sufficient grounding and power feed**

**Black – Ground** This is the main ground for the display system. A wire should be run from this board to the vehicle **ENGINE BLOCK** for the best ground. Proper vehicle grounding is extremely important for any gauges (or electronics) to operate correctly. The engine block should have heavy ground cables connected to the battery, frame, and firewall.

**Pink – 12V Accessory** Connect the power terminal to accessory +12V power from the fuse panel or vehicle wiring harness. Using a 5-amp fuse or an inline 5-amp fuse holder. This terminal should have power when the key is on or in accessory position.

**Blue – Water Temperature** This gauge is incompatible with other sending units, so you must replace the existing water temperature sending unit with the included sender. Do not use Teflon tape or other sealer on the new sending unit's threads to avoid inaccurate readings. Connect the blue wire to the sending unit. For the best results we suggest running a new wire.

**Orange – Oil Pressure** Replace the existing oil pressure sending unit with the unit included with your gauge. The Orange wire will be wired to the S terminal on the sending unit. This gauge is incompatible with other sending units.

**Oil Pressure Ground** Run a ground wire from the G terminal on the sender to the engine block

**Purple – Dimmer** Connect to the parking lights to dim the LEDs 50% when the headlights are on. However, \*DO NOT\* connect to the headlight rheostat control wire, or the dimming feature will not work properly and may cause damage to Unit.

**Tan - Brake** Connect to the parking brake wire from the dash to negative side of parking brake light switch. NOTE: If you are using a one wire switch you may need to switch to a two-wire switch. This wire is an optional wire some vehicles may not require.

**Brown – High Beam** Connect the brown wire on the Dash unit to your high beam headlight circuit. This wire is powered on when the high beam is turned on and receives 12 volts.

**Grey with white stripe – Right turn Signal** 18-gauge wire is the - RIGHT turn signal

**Grey with black stripe – Left turn signal** 18-gauge wire is the – Left turn signal.



**Voltage Gauge** This Gauge Requires no wire hookup. Volt Gauge is built into the dash panel and is powered by the main power and ground connection of the dash. It does have an Adjuster to fine tune the voltage. Note: you will need to adjust it before fully installing the dash

**Fuel – Yellow** The fuel gauge sending unit is not normally supplied because the display system can use the existing fuel level sending unit in the tank in most cases. If your wiring harness already has a single wire routed through the vehicle for the fuel sender, then it may be used. If using a wire from an external harness, make sure that the wire does not have power. Fuel senders reference their ground from the sender mounting plate. Connect the yellow wire to the factory sending unit. Be sure the toggle settings on the switch match those displayed on the panel, as illustrated. **NOTE: If the switch is on the back of the circuit board the position is UPSIDE DOWN!**

### GM 1967 OLDER DIP SWITCH

**Both switches in the ON position 0-30 OHM**

All other position is **GM 0-90 OHM**

Fuel Selector Switch Position		
Manufacturer	Switch Position	Ohm Range (Empty to Full)
PRE-67 GM		0-30 OHM
POST-67 ALL OTHER POSITION		0-90 OHM
0-90 OHM		0-90 OHM
		0-90 OHM

**Note: Before installing or Setting up you must know your Fuel sender OHMS Range to properly set Gauge up.**

### FUEL GAUGE TEST

The most common problem with our Fuel Gauge not working is the circuit is not complete. The easiest way to test this is to use a voltmeter and test for continuity on wires going to fuel sender. With wire disconnected from Fuel Gauge check for continuity to ground. Without this the Gauge will not work.

**Note: If doing a LS engine swap, pick up the tach signal wire from the ECM/ECU and then set the tach switch to 4-cylinders. You may also need to order the Intellitronix LS Engine Swap Adapter Kit – for Series 1, 2 and 3 engines. The resistor in the adapter kit will help pull a stronger signal for the tachometer.**

### **Green – Tachometer**

If your vehicle has a **separate ignition coil**, connect the green wire to the **negative (-)** side of the coil – the wire that goes to the points or electronic ignition module.

To ensure that the ignition system does not interfere with any other dashboard functions, do not run the tachometer wire alongside any other sender or input wires. **Do not** use solid core spark plug wires with this dashboard system. Solid core ignition wires cause a large amount of electromagnetic and radio frequency interference which can disrupt the system's operation.

If your vehicle has a **GM HEI ignition**, connect to the terminal marked 'TACH', or, on some systems, a single white wire with a spade terminal.

If your vehicle has an **after-market ignition** – some systems will connect to the TACH output terminal.

If your vehicle has a **Computer controlled ignition** system, consult the service manual for the wire color and location.

If your vehicle has a **magneto** system, connect the tach signal wire to the negative side of the coil. **Do not** connect the tach terminal to the positive (+ or high voltage) side of the ignition coil. Many tachometers, shift lights or RPM-activated switches will not read directly from a Magneto, so your installation may need a Magneto Signal Converter to function properly.

**The default setting for the tachometer is for an 8-cylinder engine.**

### **White - SPEEDOMETER (you have three options for speedometer connection)**

#### **1.) Speedometer - White (Factory sender with Powertrain Control Module)**

All Computer-based engines will need to use to use the PCM/ECM to run the speed signal for the Speedometer. (Consult your factory Pinout Chart)

- When using a LS engine swap, you will need to pick up the Speedometer signal wire from the PCM Pin 50 on the red connector. (This pin may Differ. Refer to your vehicles Pinout Chart for accuracy).

**2.) Speedometer – White (Factory two wire sender no PCM) -** Most vehicles built after 1984 have an electronic transmission sender. If your vehicle is already equipped with an electronic transmission that does not have a PCM/ECM, then the electronic vehicle sender will usually have Two wires attached to it. One connects to the Signal wire on dash (we prefer this to be high output). The other wire (Low output) Ground at the Engine block. To find High and Low output wire color or pin location will need to be looked up by Vehicle vin or Model and year and Consult your factory Pinout Chart.

#### **3.) Speedometer - White (Intellitronix Speed Sender to replace factory cable drive) -**

Disconnect the mechanical speedometer cable from the transmission and insert the new electronic sensor into the transmission. This panel comes with a 3-wire sensor. If you are using this sensor, the **white wire** is the speed signal; connect this to the speed signal wire on your gauge. The **red wire** will be switched power (12vDC) and **black wire** will be grounded to the **ENGINE BLOCK**

**NOTE:**(Twist all Three wires together and this will provide an additional level of interference protection.) The speed signal wire should not be routed alongside the tachometer, ignition, or any other high-current or high-voltage wires



## Modes

By pushing the recall button in accordance with the chart below, you can set the S/T combo for various modes and programming functions.

Push	Mode
Once	Speed/Tach Combo – <i>tach will read out in the ODO and sweep</i>
Twice	Speed and Trip Odometer
Three	Speed and Odometer

**Note:** you will see the 0 move, or a decimal point appear when switching between modes, i.e. 0 will appear in the 5<sup>th</sup> number position to indicate speed/odometer mode, .0 will appear when in speed/trip odometer mode, and the 0 will appear in the 4<sup>th</sup> number position when in speed/tach combination mode

Note: 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.

**Programming/Recall Button – Grey** There are two long grey wires connected to the push-button on the board. Mount the recall button in a convenient location such as under the steering column so that you may easily have access to your programming functions.

## Accessing Functions

When in speed/odometer mode, press and hold the recall button until it starts to run through the various functions. A quick tap will allow you access to each function. The chart below shows what each display mode is and how to utilize that function.

Display	Function
Hi Spd	Displays Highest speed reached
0-60	Displays time to go from 0 to 60 MPH
¼	Displays Time over ¼ mile distance
8 Cylinder	Sets cylinder selection
Odo	Sets odometer display
Cal	Calibrates Speedometer

## Trip Distance

A single *tap* of the recall button will activate the trip meter in the odometer display. A decimal point will appear which will 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 the functions you will see 'ODO' appear. This will allow you to enter the vehicle's actual mileage. (Note that this display only allows 5 digits and will 'roll over' at 99,999). Press the recall button again when 'ODO' is displayed, at this point and you will enter the odometer set up mode. Press quickly to change the number of the digit on the right. Press and hold to advance to the 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 **2+0** 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. The speedometer will advance to the home screen, five seconds after the last number is entered.

## Recording and Viewing Performance Data

Follow these steps to record and recall Performance Data (high speed, ¼ 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 recall button as it cycles through the performance data. At the end, the display will reset and all performance data will be cleared. This will not affect your stored calibration value or the odometer reading.
2. Press the recall 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.

## **SPEEDOMETER CALIBRATION PROCEDURE**

The Digital Performance Speedometer leaves the factory with a factory pre-set industry standard setting of 8,000 pulses per mile. It can be calibrated with the push-button to adjust the speedometer when you have ***different tire sizes, wheel sizes, and gear ratios***. You should ***not have to recalibrate your speedometer unless you have changed the original tire size or the rear end gear ratio***. You will have to calibrate your speedometer if you are using km/h. You will follow the procedure using a measure kilometer.

**To enter calibration:** When the display is scrolling through the function menu you will press the button briefly one time when 'CAL' is being displayed. '8000' will appear in the odometer, this indicates the factory settings, when the button is pressed, this will change to '0'. When the '0' is displayed the gauge is ready to be calibrated. It is very important that you drive to the end of the measured mile and tap the button again. At a minimum, drive some distance and you can always go back and start again if need be. If you miss stopping the display at 'CAL', simply repeat the steps.

**Warning:** If the microprocessor does not receive any data, the unit will display 'Err' and will revert to the factory settings. This can be the result of not moving the vehicle while in 'CAL' mode or the dash is not receiving a proper speed signal from the vehicle.

### **To calibrate:**

1. **Locate a measured mile or KM 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 output 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 pushbutton in the center of the panel used to calibrate and read all 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. 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.