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

INSTALLATION GUIDE

84-89 Corvette Analog Direct Replacement Dash

Part # AP2003

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

KIT COMPONENTS

◊ **One (1) Assembled Analog Circuit Board** (with Speedometer, Tachometer, Voltmeter, Water Temp., Fuel Level and Oil Pressure Gauges – with lens and mounting hardware.

◊ **One (1) Temperature Sending Unit *(S8013)***

** 1/8" NPT, 0-255 Deg., 1/2" NPT Bushing*

One (1) Pressure Sending Unit *(S8434)*

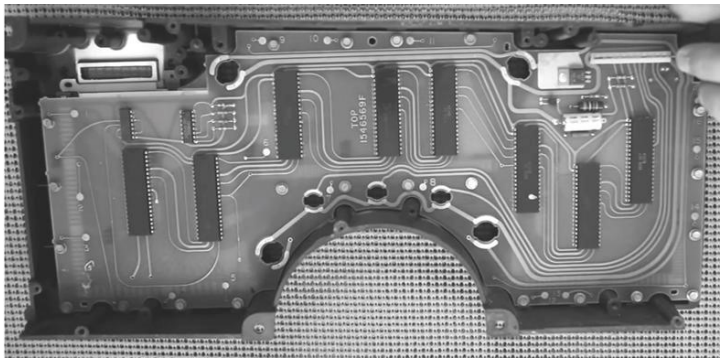
** 1/8" NPT, 0-100 PSI Oil Pressure*

REMOVAL INSTRUCTIONS

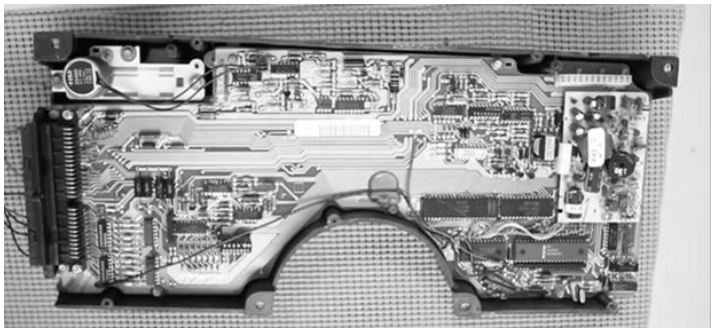
a. Remove the headlight switch
b. Position the steering wheel tilt all the way down
c. Remove the tilt leveler arm
d. Remove and retain the *seven (7)* screws from the side and front of the steering and gauge bezel
e. Remove and retain the *five (5)* screws holding the information and radio bezel
f. Remove and retain the *four (4)* screws holding the gauge cluster

1. Remove the factory LED gauge unit from the dash panel.

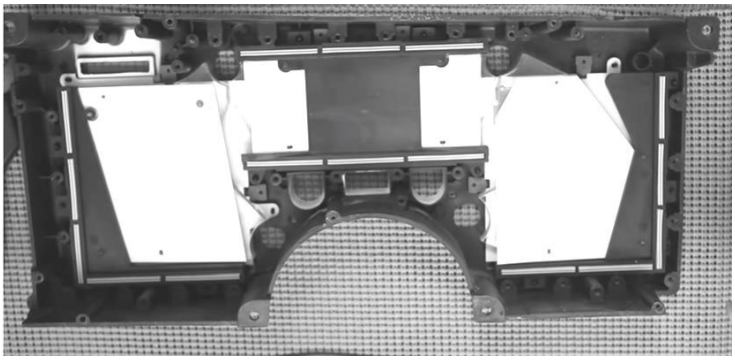
2. Remove the *six (6)* 7/32" screws securing the back panel.



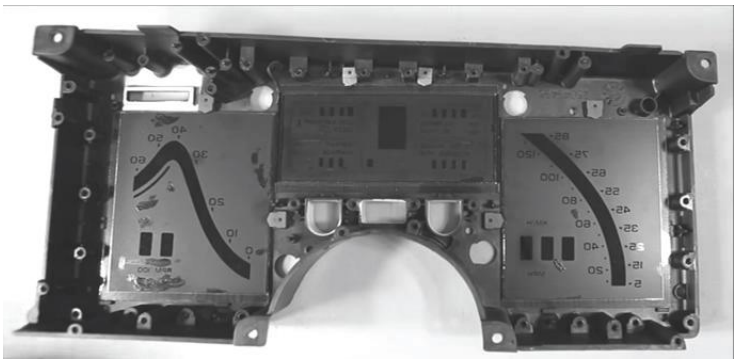
3. Remove the *seven (7)* 7/32" screws holding the Logic Board to the gauge unit.



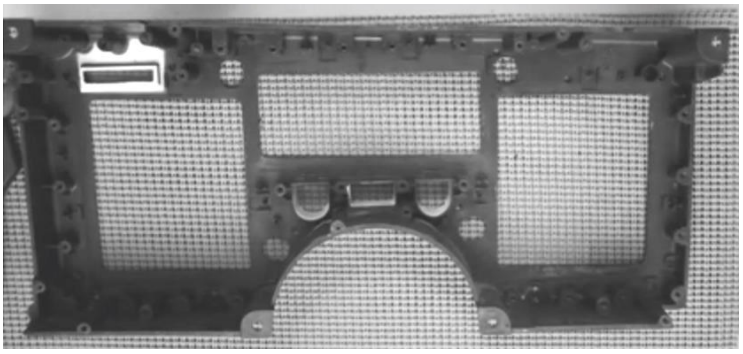
4. Remove the twenty-two (22) 7/32" screws securing the Display Driver Board of the gauge unit.



5. Remove the stencils and rubber blocks from the edges of the LED displays.



6. Remove the six (6) rubber clips securing the lenses.



MOUNTING INSTRUCTIONS

7. Mount the Gauge Panel into the housing using the stock screws.

8. Feed the wires through the back of the housing through the now vacant odometer cutout and reattach the back of the housing.

9. Wire the gauges and sending units as instructed in the next section.

WIRING INSTRUCTIONS

(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 part number is 8014LS. If you are getting the tach signal from the ECU, the resistor in the adapter kit will help pull a stronger signal for the tachometer.
If your engine is a 4 cylinder, please call Tech Support at Intellitronix, as you may need to send the gauge back to us to be reconfigured. There is no charge for this additional service.)

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

84-89 Corvette Wire Setup - Intellitronix #DP2003

DP2003 Wire Color	Function	Circuit #	Plug Number	OEM Wire Color
Black	Ground	Engine Block Ground		
Red	12V DC Switched	Ignition Switch		
Green	Tachometer	121	D5	White
Orange	Oil Pressure	135	D6	Dk Green w/ white stripe
Blue (works best if you run a new wire to the sender)	Water Temp	35	D4	Dark Green
Gray (left turn)	Left Turn Signal	14	C2	Light Blue
Gray (right turn)	Right Turn	15	C4	Dark Blue
White	Speedometer	401	C15 (must loop D11 to D3)	Pink w/Black Stripe
Yellow	Fuel Sender	30	C8	Pink
Brown	High Beam	11	C3	Light Green
Purple	Dimmer	9	C6	Brown

NOTE White wire you must be looped to get PCM to communicate. (example D11 Loop to D3) this may very Year to Year

Please note: Each automotive manufacturer sets their own wiring color/diagrams. We have found the above chart to be mostly accurate as to this particular model / year Corvette. Your vehicle may differ, however, so to be certain, it might be best to check with the manufacturer with vehicle serial number at hand.

WIRING INSTRUCTIONS

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

Ground - **Black** This is the main ground for the display system. A wire should be run from this board to the vehicle's main engine block ground. Use 18 AWG or larger wire to ensure sufficient grounding. Proper vehicle grounding is extremely important for any gauges (or electronics) to operate correctly. The engine block should have heavy ground cables to the battery, frame, and firewall. Failure to properly ground the engine block, senders, or digital dash can cause incorrect or erratic operation.

Power - **Pink** Connect the power terminal to accessory +12V power from the fuse panel or vehicle wiring harness. This terminal should have power when the key is on or in accessory position. Use 18 AWG wire to ensure the system receives a sufficient power feed.

Battery **Red** Connect the +12 Volt terminal to constant +12V power from the battery.

Dimmer **Purple** 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; the dimming feature will not work properly.

Turn Signals - **Grey** Two 18-gauge wires, one for each signal. Connect each wire to its corresponding indicator circuit.

High-Beam – **Brown** Connect the brown wire on the speedometer panel to your high beam headlight.

Brake – **Tan** Connect to the parking brake wire from the engine.

Oil Pressure - **Orange** Replace the existing oil pressure sending unit with the unit included. Do not use Teflon tape or other sealer on the new sending unit's threads to avoid inaccurate ground connections as the sending units get their ground from the threads. The oil sender gets its grounding from the threading into the engine block and it is crucial it is grounded properly. Connect to the sending unit.

Water - **Blue** Replace the existing water temperature sending unit with the unit included. The gauge is incompatible with other sending units. 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.

Fuel – **Yellow** The fuel gauge sending unit is not normally supplied because in most cases, the display system can use the existing fuel level sending unit in the tank. 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.

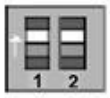
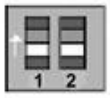
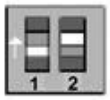
Both switches in the **up** position for Ford/Chrysler

For GM - #1 toggle is up, # 2 toggle is down.

Both switches in the **down** position for VDO

For Universal/Stewart Warner - #1 toggle is down, # 2 toggle is up.

Fuel Selector Switch Position

Manufacturer	Switch Position	Ohm Range (Empty to Full)
Ford/ Chrysler		73-10 OHM
GM		0-90 OHM
VDO		10-180 OHM
Universal/ Stewart Warner		240-33 OHM

Tachometer – **Green** – Connect the wire from the tachometer to the negative terminal of the coil or a direct tach output lead from your distributor or electronic control module. If you are using an aftermarket capacitive discharge ignition system, such as an MSD, you must use the designated 'tach output' connection on the electronic box. Do not make any connections directly to the coil with this type of system.

There are two recall buttons on this dash: one at the bottom of the speedometer, the other at the bottom of the tachometer. This tachometer is initially calibrated for use with 8-cylinder engines. If you are using it with a 4- or 6-cylinder engines, you must recalibrate it for your specific application by pushing the tach recall button in accordance with the programming modes shown below.

To set the cylinder selection: With the ignition off, hold in the right button and power the dash on. The tach will then enter a setup mode where the needle will move (between the zero and one on the face of the instrument) to indicate 400 (4 cylinder), 600 (6 cylinder) or 800 (8 Cylinder) continuously. When the needle gets to the desired setting, tap the right button once more. It is now set and will enter normal operating mode. To see the high RPM/tach setting, hold down the right button. It will reset after five seconds.

Intellitronix Digital Performance Speedometer

Speedometer – **White** Disconnect the mechanical speedometer cable from the transmission and thread the new electronic sensor onto the transmission. This unit 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** and **black** wires in the cable are switched power (12VDC) and ground, respectively. Twisting the ground and signal wires around each other 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. For vehicles which have a vehicle speed signal from a transmission -- one wire goes to the speedometer, and the other to the ground -- or **E**mission **C**ontrol **M**odule. Tap into the **V**ehicle **S**peed **S**ensor wire (consult a vehicle service manual or wiring diagram to determine the correct wire color) and connect it to the white speed sending wire on the dash.

The recall button on the speedometer operates as follows:
Once – cycles between Trip Mode and Odometer Mode.

While in Odometer Mode:
1. Hold LEFT to enter Recall/Setting Mode
2. ¼ Mile Recall
3. 60 Second Time Recall
4. Odometer Setting
5. Calibration

Your Intellitronix dash panel is equipped with our Digital Performance Speedometer, which has factory settings that are ***pre-set with the industry standard setting of 8,000 pulses per mile to match your vehicles factory settings***. This electronic speedometer displays speed and 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 when you have ***different tire sizes, wheel sizes,*** and ***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

The Digital Performance Speedometer leaves the factory with a factory pre-set industry standard setting of 8,000 pulses per mile. You should ***not have to recalibrate your speedometer, unless you have changed the original tire size or the rear end gear ratio***.

Also, if using the Intellitronix GPS Sending Unit, (S9021 – not included) the speedometer does not need to be calibrated.

NOTE: **DO NOT** attempt to recalibrate your speedometer until after it is working properly, and you have determined that the speed is consistently incorrect. The calibration procedure will NOT correct a faulty installation or improper wiring.

WARNING: If, while in 'CAL' mode, **you do not move the vehicle but 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.

To calibrate:

1. **Locate a measured mile or KPM 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 pushbutton in the center of the panel used to calibrate and read all of the data stored in the 3speedometer. 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. <u>If it does not change, return and locate the problem before continuing.</u> 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.

Setting the Odometer

While scrolling through 'CAL' mode you will see 'ODO' appear. This will allow you to enter the vehicle's actual mileage. Press the trip button again 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 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. 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 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.

Made in America Lifetime Guarantee

Technical Support

Monday – Friday

9am to 5 pm EST

(440) 359 7200

support@intellitronix.com

CHECK OUT THE **SUPPORT** PAGE AT

www.intellitronix.com

FOR QUICK ANSWERS (**Q&A**) TO YOUR QUESTIONS

This product carries a limited Lifetime Warranty.

This warranty is limited to replacement or repair of the unit at the discretion of Intellitronix.

RETURN POLICY PROCEDURES

Return Policy Instructions

1. Download the Intellitronix Return/Repair Form and fill in the information on the form about the product.

2. Place the product being returned in the original packaging that it came in and include a copy of the completed Intellitronix Return/Repair Form.

3. All packages must be accompanied with an RMA Number.

   Please call Technical Support at +1 440-359-7200 to receive an RMA Number.

4. Mail the product being returned with the completed Return/Repair Form and a copy of the original sales invoice.

Request for Product Refund

1. All returns for a refund must have a completed Intellitronix Return/Repair Form included in the package with the returned product.

2. If the return is for a product that is not defective a 20% restocking fee will be charged. The product must be in the same pristine condition that it was sent to you.

3. Proof of purchase is required. Please include a copy of the original sales order with the returned product.

4. All product must be returned undamaged and in working order in the original packaging including plexiglass, sending units, mounting hardware, or you will be subject to additional charges for product and accessories not returned.

5. All refunds will be reviewed by the Accounting Office.