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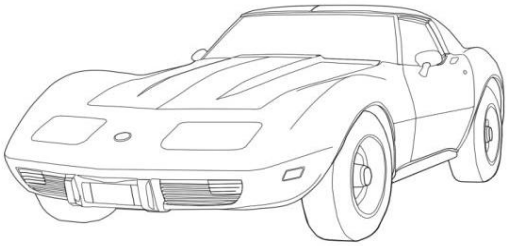


Thank you for purchasing this instrument from Intellitronix. We value our customers!

INSTALLATION GUIDE
Corvette Digital Dash Panel
Part Number: DP2002
Year Series: 1978 - 1982

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

KIT COMPONENTS

◊ Three (3) Digital Circuit Boards (speedometer, tachometer and 5-gauge cluster)
◊ Two (2) Smoked Acrylic Lenses (including horseshoe.)
  * *Peel off protective covering from both sides*
◊ Two (2) Temperature Sending units ***(S8013)***
◊ One (1) Oil Pressure Sending units ***(S8434)***
◊ One (1) Universal Speedometer Sensor ***(S9013)***
◊ One (1) Mounting Kit
  * 6 6/32" screws, 6 nylon spacers, 6 c-brackets, and 6 flat nylon washers

INSTRUMENT INSTALLATION:

Tools needed:
Phillips (cross-head) screwdrivers
Tiny jewelers/electronics flat screwdrivers
Allen key drivers
Small sockets
Nylon spud wedges (small pry bar)
Miscellaneous: wire, wire nut/splices, and nylon zip ties

Summary:
You will be reusing the original factory (OEM) bezels and fasteners, so work carefully and keep track of the parts upon disassembly. There are 2 phases to this installation: the main instrument bezel (Speedo and Tach) and the center console ancillary gauges. In each phase you will remove the factory housings, pull out and set aside the current existing gauges (whether OEM or aftermarket) and replace them with your new Intellitronix digital gauge boards. Finally, you will reassemble the bezel/housing back into the dash/console. If you are not comfortable performing auto electric work, seek professional installation. If you have done this or a similar procedure previously, you may want to advance to the WIRING INSTRUCTIONS on page 4.

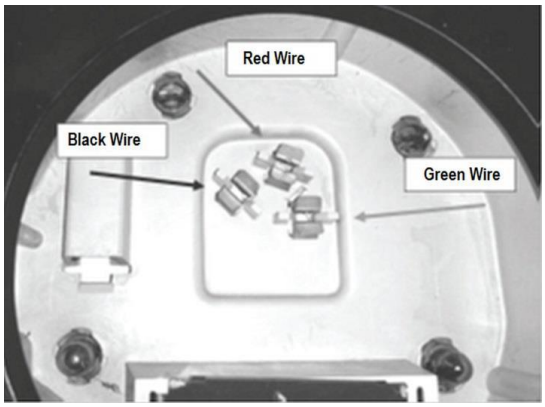
Be Advised: This process can take several hours the first time, depending upon your ability and experience.

Main Bezel

Removal:
Remove 5 Phillips screws from the Speedo panel to release the clear plastic lens. You may need nylon spuds for this. Repeat for Tach panel.
Remove 6 Allen head screws to release inner black frame.
Remove 3 Nut-head screws to unfasten the Speedo, and another 3 to unfasten the Tach.
Remove 3 Phillips screws to release the small kick panel beneath the steering column to ease under-dash access.
Remove the center section of the heater ducting by jiggling carefully, allowing for easier access.
Reach up behind the dash and depress the retaining clip on the Speedo cable while pulling the cable away from the gauge to release the Speedo.
Reach up behind the dash and pinch the Tach coupler, then pull away from the gauge to release the Tach.
Reach up behind the dash and twist out the factory bulbs behind the Speedo and Tach, but leave the bulbs in the center column for the turn signals and other warning lights.

Installation:
Install the new Speedo board by passing the wires through the empty cable hole, and press the board's tabs into the housing depressions, and fasten with OEM nut head screws. Prepare the Tach board for installation by fastening the included horseshoe adapter (you can peel off the protective film) to the outer edge of the board using the included Phillips screws and locking nuts.

Install the Tach board by clipping the black, red, and green alligator clips to the left, top, and bottom terminals respectively, as in figure 1, and pass the remaining leads through an empty bulb hole. Fasten the board with OEM nut head screws.



(figure 1)

Reach up behind the dash and re-attach the Tach coupler to the housing. It needs to be plugged in, to provide power to the Tach and the turn signal indicators and other warning lights.
Remove the protective film from both sides of the new smoke tinted acrylic lens, and mate it to the OEM black plastic housing such that the tabs align with the slots. (You may want to clear away any dust.)
Install the new smoked lens and OEM housing over the gauge boards and fasten with 6 OEM Allen head screws.
Re-Install the OEM clear plastic lens using the OEM Phillips screws.

Center Console

Console Removal:
Remove the car radio from the console. Procedure will vary depending on what unit has been installed.
Remove 4 Phillips screws from the black plastic console faceplate to release it.
Pull the entire vertical section out, jiggling around the upper dash edge, being careful not to damage the heater control switches.
Reach behind and pinch the ancillary gauge coupler to disconnect.
Disconnect the upper accent light coupler.
Remove this upper console from the car and take it to your workbench.

Gauge Removal:
You will be removing each of the gauges from the metal housing a/k/a "bucket", and then reassembling the bucket with the new digital board and smoked acrylic cover inserted.
Remove the bulbs for the old OEM gauges, but not for the 4 warning lights.
Use a tiny jewelers flathead to unscrew the (eyeglasses size) retaining screw in the center of the clock knob, and put it somewhere safe like a magnetic parts tray or piece of tape.
Unscrew the plastic clock knob until it comes off.
Remove the nut-head screws from the back of the panel to release the metal bucket from the black plastic console.
Remove the 3 nuts from the back of each of the 5 gauges in turn, using deep sockets, nut drivers, or pliers.
Set aside the OEM gauges.

Digital Panel Installation:
Center the new digital dash panel board into the bucket, and gently but firmly press it in.
Route the new panel wires out through a hole the back of the bucket.
Align the smoked acrylic over the digital board, and the OEM clear plastic over that.
Make sure the colored warning light covers are still in place in the black bezel.
Flip everything over and secure it to the back of the black plastic console bezel with the 4 OEM screws.
Make sure the flexible circuit is still attached to the back of the bezel to power the 4 warning lights.
Make sure the 4 warning light bulbs are still in place.
The center console is now ready to re-install.

Console Re-installation:
Plug in the upper accent light coupler.
Plug in the ancillary gauge coupler to power the warning lights.
Work the console back into its original position, being careful of the heater control switches.
Secure the front bezel to the dash with the 4 OEM Phillips screws that came out.
Do not reinstall the car radio yet, until you have completed the wiring connections to the sensors.
Congratulations, you are done with this part!

Running wires

Wires need to be run between the digital dash panel boards and the supplied sensors, to send a signal to each gauge, plus power and ground. Power should be a good clean, switched 12V source, and ground should be solid bare metal such as engine block or unpainted frame members. How and where you run these wires will vary depending on your preferences, and how your car is set up. A good practice is to poke through into the engine bay via an existing grommet, and it is often easiest to fish the wires though in a staggered manner if the grommet is tight. Tuck in the wire runs behind existing components to achieve a clean look. Secure the wires with zip ties at intervals. Make sure the new wiring doesn't interfere with gas or brake pedals. The rest is up to you.

WIRING INSTRUCTIONS

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

Note: If doing an 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.

Ground – **Black** This is the main ground for the display system. A wire should be run from this board to the vehicle's 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 panels can cause incorrect or erratic operation.

Power – **Red** 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.

Speedometer – **White** If your vehicle has a mechanical speedometer cable from the transmission, disconnect it 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 ECM. Tap into the VSS 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 digital dash.

--OR --

Speedometer – **White** If your vehicle has an electronic vehicle speed signal from a transmission -- one wire goes to the speedometer, and the other to the ground -- or ECM. Tap into the VSS 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 digital dash. The speed signal wire should not be routed alongside the tachometer, ignition, or any other high-current or high-voltage wires. Twisting the ground and signal wires around each other will provide an additional level of interference protection

Note*: If your vehicle is equipped with an electronic transmission, your electronic vehicle sender will have either two or three wires.*

Trip/Cal Recall Button – **Grey** There are two long grey wires connected to a push-button on the speedometer board. Mount the button in a convenient location such as under the steering column so that you may easily reset your trip odometer or other speedometer functions. Alternatively, your speedometer may have a small pushbutton which will accomplish these same settings.

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.

Tachometer (memory capable) – **Green**

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.

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.

Note: The default setting for this dash is for an 8-cylinder engine. If the engine you are using is smaller, the dash unit will have to be returned to us to be re-set.

To recall the highest RPM achieved, simply press and release the button near the tach readout. To reset the peak RPM value, press and hold the button until the RPM displayed value is zero.

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, or the dimming feature will not work properly.

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.

Note: The default setting for this dash is the GM industry standard of 0-90Ω

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. This will avoid inaccurate ground connections as the sending units get their ground from the threads. The oil sender gets its ground from the threading into the engine block, thus proper grounding is crucial. Connect to the sending unit.

Water – **Blue** 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.

Volt – **Pink** Connect the alternator wire from the engine to the pink wire on the dash panel.

Oil Temp – **Orange/White** Replace the existing oil temperature sending unit with the unit included. **Do not** use Teflon tape or other sealer on the new sending unit's threads, to avoid inaccurate readings. Connect the orange/white wire to the sending unit.

DIGITAL PERFORMANCE SPEEDOMETER

Your Intellitronix dash panel is equipped with our Digital Performance Speedometer. 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 for 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

Note: If you are using the Intellitronix GPS Sending Unit, (S9020 – not included) the speedometer does not need to be calibrated.

The speedometer leaves the factory with a pre-set industry standard setting of 8,000 pulses per mile. Chances are that 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. <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 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 <u>push-button</u> 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 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 '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 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. 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.

# # #

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Intellitronix
Intelligent Electronics

Technical Support

Monday – Friday
9am to 5 pm EST

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support@intellitronix.com

This product carries a limited Lifetime Warranty.
This warranty is limited to replacement or repair of the unit at the discretion of Intellitronix.