

## Dakota Digital Sensor Package

Dakota Digital Part Number 393050

This universal sensor kit, supplied with all Dakota Digital integrated instrument systems includes the required sensors and harnesses needed to complete the installation. This kit also contains an assortment of commonly used adaptor bushings to allow simpler installation into various applications.

The oil pressure and water temp sensor provided in this kit **MUST** be used with your Dakota Digital display system, using stock or other aftermarket sensors will result in incorrect readings, gauges not working at all, or damage to the Dakota Digital control module. The speed sensor provided can be used for mechanical speedometer cable driven applications to convert to an electronic signal. If you are currently using an electronic speed sensor or have an ECM that provides an electronic vehicle speed output (VSS), these signals may be wired directly to the control module. A fuel level sensor is not supplied as the Dakota Digital control module can accept a wide range of stock sensors as well as a custom calibration for universal installations. Dakota Digital offers a universal fuel sensor, part number **SEN-06-1**.

***Dakota Digital provides commonly used hardware to expedite the installation of its sensors, but due to the universal nature of the systems and the variety of vehicles and drivetrains they are installed within, it may be necessary to source additional adaptors, fittings or wiring to fit the specific application. Typically, brass plumbing fittings from a hardware store provide a simple solution to a unique mounting application. The threads on the oil pressure and water temp sensor are 1/8" NPT and easily adaptable to other larger sized fittings. If necessary, the threads on the sensors in this kit may be sealed with the use of thread sealant or tape.***

### The Sensor Package includes the following parts:

Ford Adaptor Cable for Speed Sensor  
(Included in certain applications)

16,000 PPM Speed Sensor  
with harness

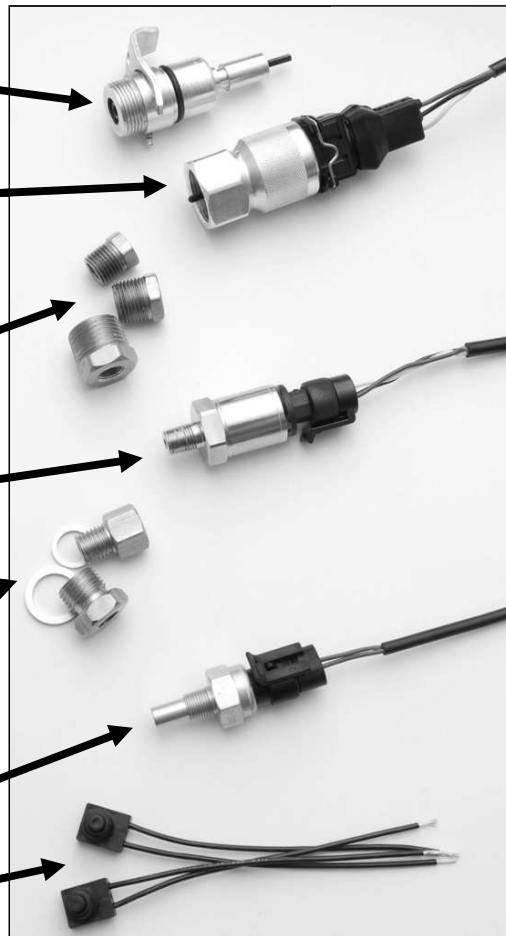
1/8" NPT > 1/4", 3/8", and 1/2" NPT Bushings

0-100 PSI Solid State Oil Pressure Sensor  
with harness

1/8" NPT > 12 and 16 mm Bushings  
with crush washers

100-300°F Isolated Water Temp Sensor (40-150°C)  
with harness

Momentary Push Button Switches



## Speed Sensor

Installation of the speed sensor is generally straightforward. Remove the cable from the transmission if present, then simply tighten the new sensor in place making sure that the square drive shaft on the sensor engages into the existing speedometer gear. The sensor will thread directly onto a standard GM transmission speedometer gear that has 7/8"-18 threads.

Connect the harness until it "clips" into place. You may need to depress the silver wire locking clip on the harness connector while pressing it onto the sensor to lock it in place. The harness is indexed to fit the connector body in only one direction.

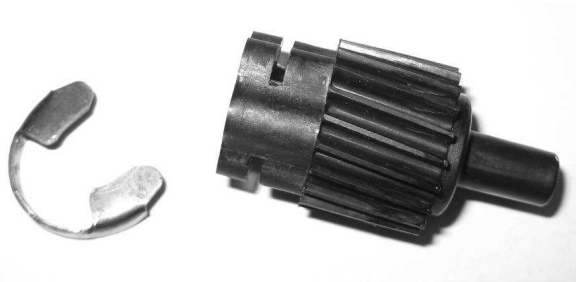


## Ford Adaptor Cable (Included in Certain Model Applications)

First, remove the stock gear from the end of the original speedometer cable or pulse generator. Once the gear is removed, install it onto the new Ford adaptor cable. Secure the new Ford adaptor to the transmission using the original attachment screw, making certain the gears on the adaptor correspond with the mating gears on the transmission. Finally, thread the new speed sensor onto the Ford adaptor cable.



Original speed sensor removed from transmission



Gear and clip removed



Gear installed on new Ford adaptor

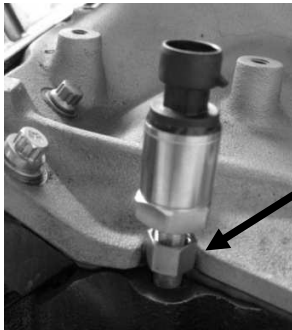


New sensor installed on adaptor

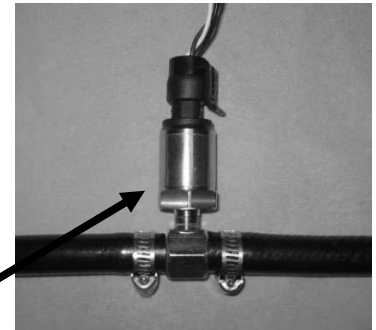
If you are using an electronic speed sensor installed in the transmission or have an ECM that provides a vehicle speed output (VSS), the speed sensor supplied in this kit will not be used. Instead, route the speed signal directly to the **SPD SND** terminal on the control module.

### Oil Pressure

Most engines have an oil pressure port on the engine block or near the oil filter assembly. Some locations may require a separate extension or angled fitting for proper sensor clearance. You may also "T" this fitting into an oil cooler line, application permitting.



On the rear of a Small Block Chevy (with use of an additional extension)



Sensor T'd into oil cooler line (with inline adaptor purchased separately)

For LSx based engines, you may drill and tap the cast metal assembly above the oil filter to accept the 1/8" npt sensor. Alternatively, use the supplied 1/8" npt > 16mm adaptor and replace the stock pressure sensor located near the driver's side rear of the engine behind the intake manifold.

Drill / Tap here for 1/8"-27 NPT. Drill size of 11/32"

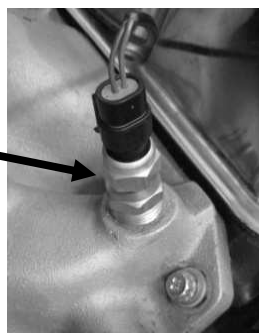


Sensor installed on oil filter assembly

### Water Temperature

Typical mounting locations for the water temperature sensor are the engine block, cylinder head, or intake manifold. When installing the temperature sensor, use caution when selecting a mounting location to avoid excessive exhaust heat from damaging the sensor.

Sensor installed in intake manifold



Sensor installed in coolant housing



**(Water Temp Cont.)**

For LSx based engines, the use of the supplied 1/8"npt > 12mm bushing and crush washer make installation of the water temp sensor simple. First, using two wrenches (5/8" and 3/4"), tighten the sensor into the bushing. Then, simply remove the allen-head plug toward the rear of the passenger's side head and install the bushing and sensor in this location.

**\*\*\*Use extreme care when tightening this assembly into the engine to avoid breaking the bushing. The 1/8" thread is slightly smaller than the diameter of the 12mm thread, hand tightening plus 1/4 turn with a wrench is typically a sufficient amount.**



Allen plug



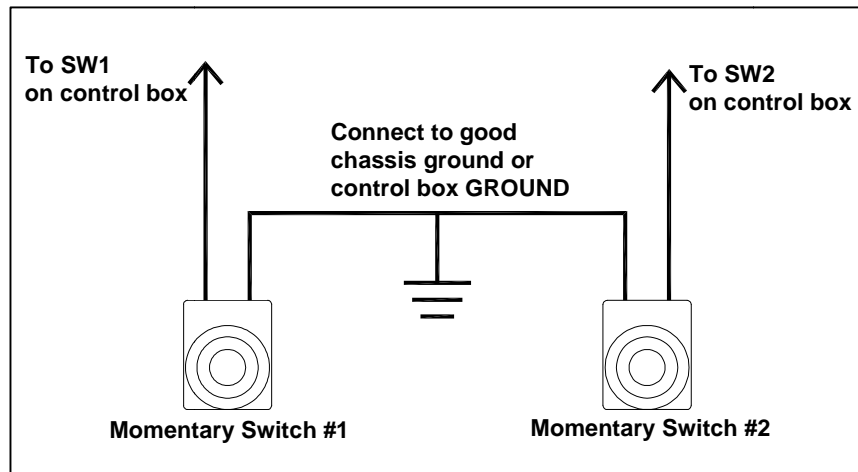
Sensor installed



Sensor and harness installed

**Push Buttons**

The two push button switches supplied in the kit are not proprietary to Dakota Digital, any normally open momentary switch can be substituted or used in their place if desired. These switches are used for speedometer calibration, initial set up and for accessing the Odometers along with several other message displays. One side of each switch connects to the appropriate location at the control module, with the remaining switch wire attaching to ground. The switch installation is covered in greater detail within the instrument cluster manual.



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