

# QUICK START GUIDE

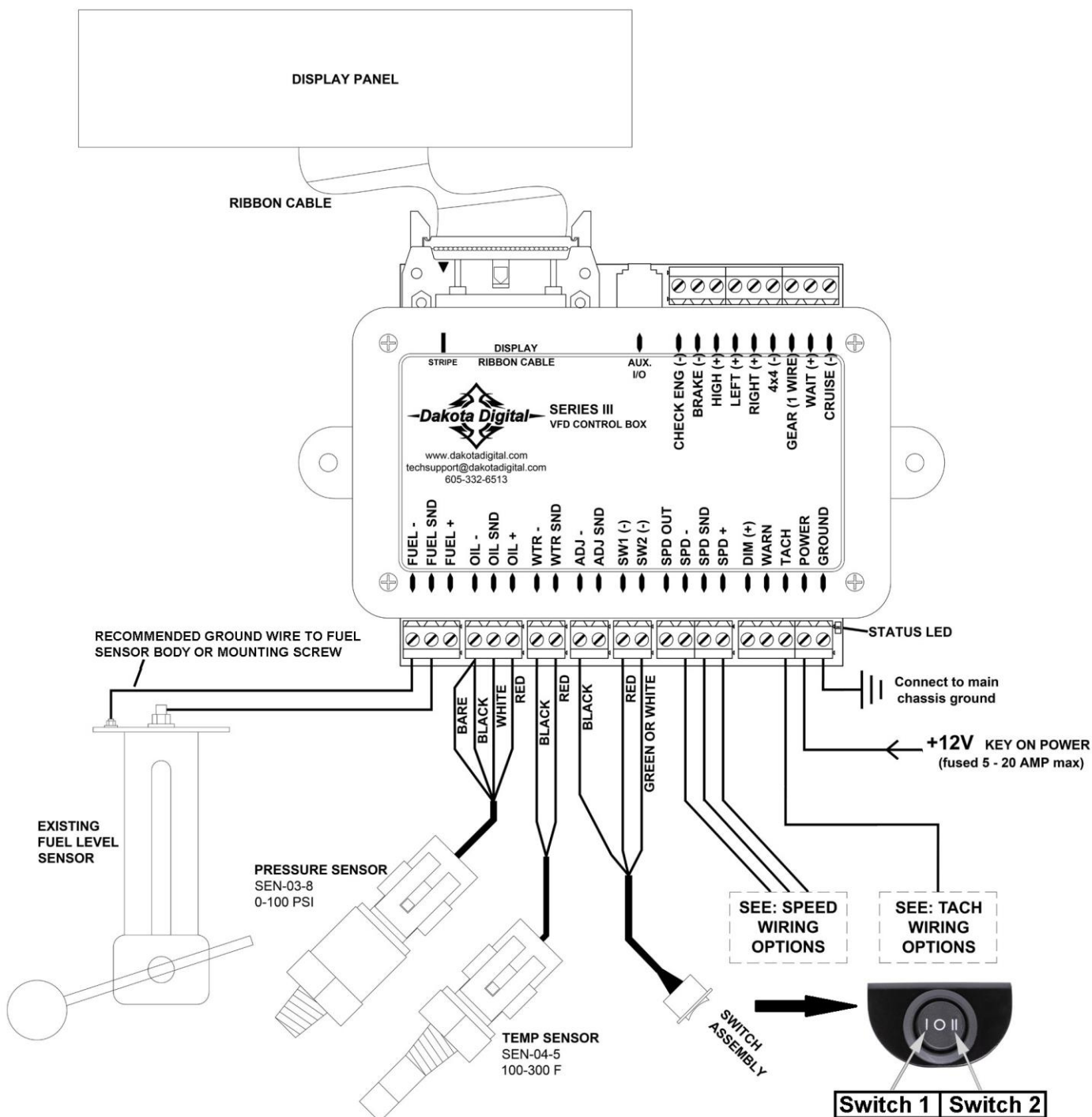
## DAKOTA DIGITAL VFD SERIES III GAUGE SYSTEM

This guide is designed to get you up and running quickly with a minimal amount of options installed. It shows a typical and abbreviated wiring diagram as well as how to set up your speedometer, tachometer, and fuel sensor. A detailed description of all the wiring and connections can be found in the full instruction manual.

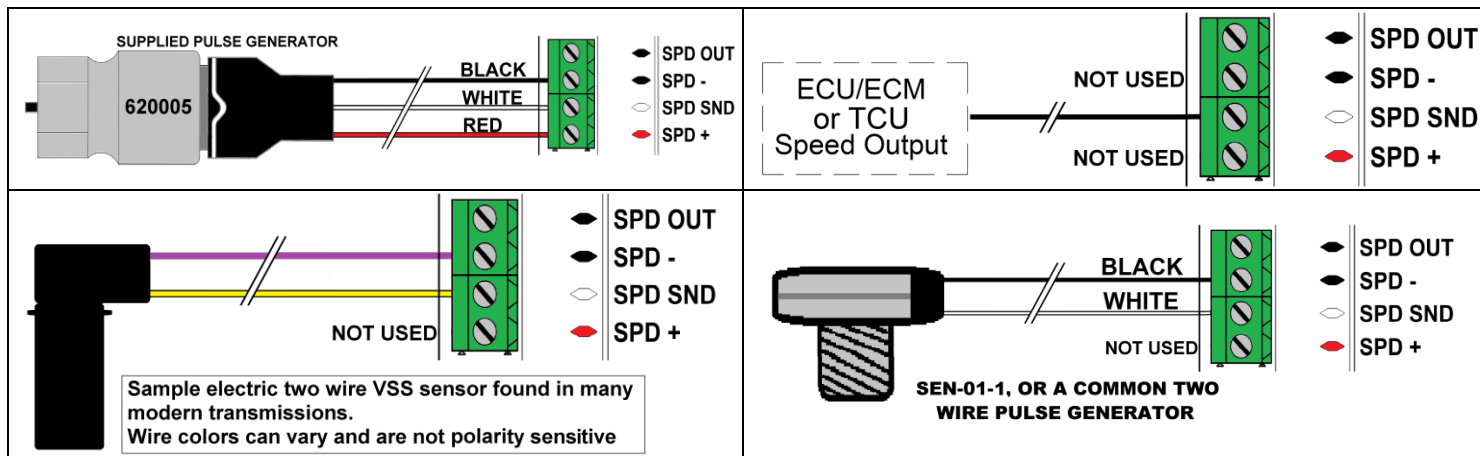
### \*\*\*\*\* IMPORTANT NOTE! \*\*\*\*\*

This control box has an odometer preset option that is only available one time within the first 100 miles (160km) of operation. See "ODOMETER PRESET MENU" in main instruction manual for details.

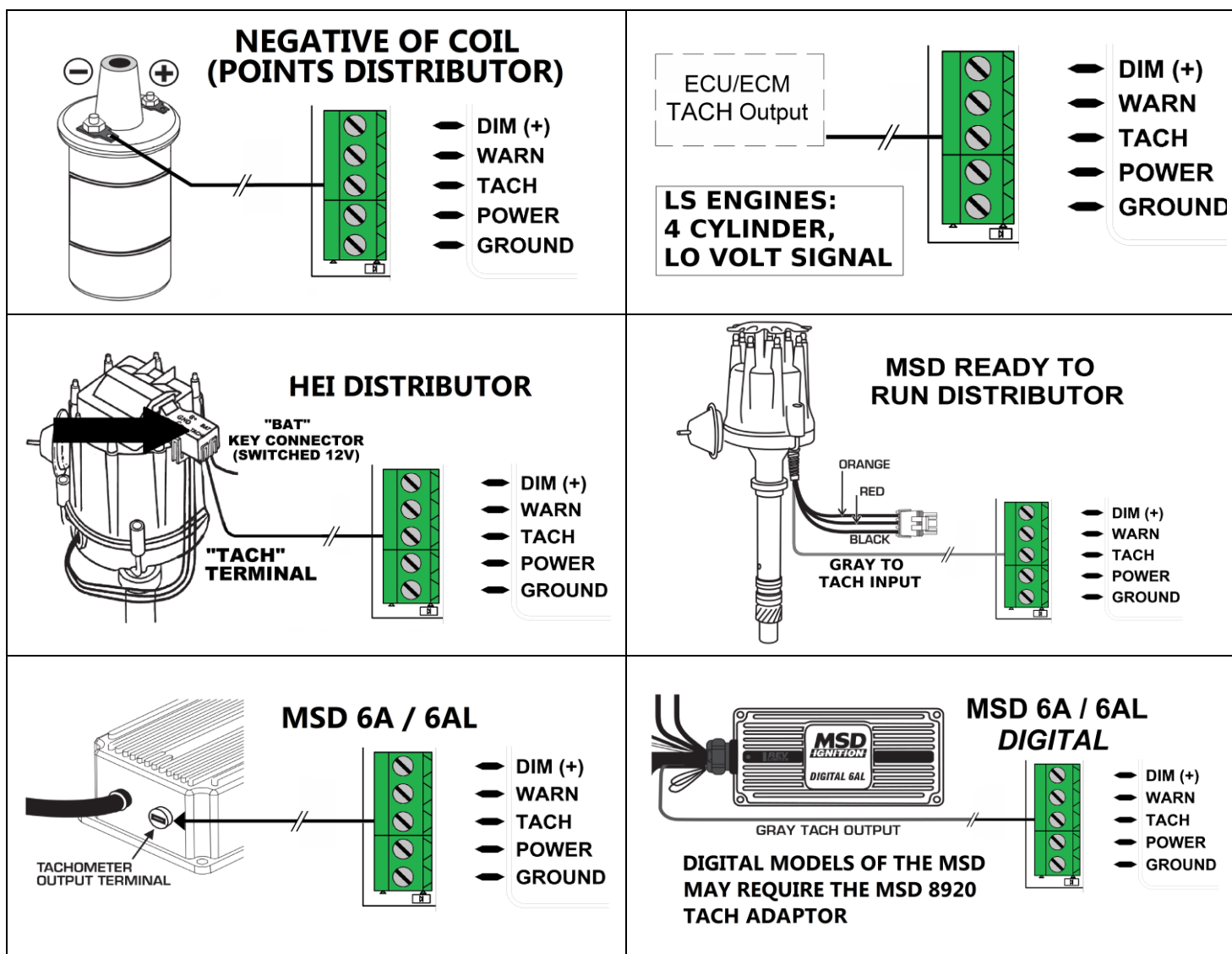
- Install the supplied oil pressure, coolant temperature and speed senders. (see sensor pack manual)
- Mount and wire the control box. (see diagram below and main manual for more detailed descriptions)
- Mount the display panel into your dash, (see Mounting Manual instructions)
- Set up the control box: select the fuel sensor and calibrate the speedometer



## • SPEED SENSOR WIRING OPTIONS



## • TACH WIRING OPTIONS



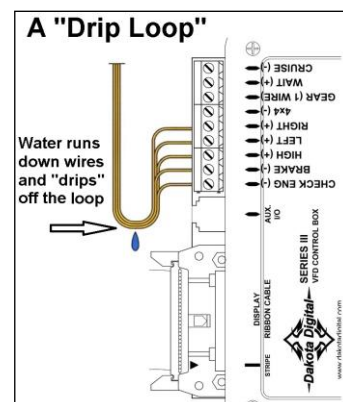
- Diesel engines will require the SGI-100BT to obtain a valid tachometer signal

## • Sender Installation

- Oil
  - Chevy small block engines will require a short pipe to clear the manifold. A brass 1/8" NPT pipe nipple with a 45 or 90-degree elbow from a hardware store will work.
  - LS engines have a location above the oil filter that may have a 1/8" NPT port, or one can be tapped.
- Water
  - We recommend mounting our temp sender in the water flow exiting the engine near the thermostat.
  - Cylinder head mounting locations tend to read higher.
  - LS engines provide a 12mm x 1.5 port in the passenger side cylinder head.
    - The supplied metric adapter and crush washer must be used.

## • Control Box Mounting

- The control box must be mounted inside the cabin of the vehicle
- Do not mount a coil or MSD ignition box inside the vehicle with the control box
  - The high voltage output of either device will interfere with electronics
- Do not mount the control box direct across from distributor on inside firewall
  - The high voltage points or HEI distributor can interfere with electronics
- Do not mount the box near the A/C ducts, to prevent condensation from harming the electronics
- Do not run straight wire leads / harnesses to the control box
  - A loop or bend in the wiring should be added to prevent any moisture damage
    - A leaky window or condensation can let moisture run into the box without a drip loop



## • Set up the control box to match your vehicle

- The switch assembly must be installed and be within reach of the driver
  - The switch allows the driver to change message displays while driving
  - The switch is required to enter setup, run the demo mode, set clock, reset trip meter and more
- Calibrate speedometer, for accurate speed regardless of gearing and tire size
  - Adjust the tachometer to match the engine's number of cylinders.
    - Default is 8 cylinders, high voltage (HEI, points)
    - Set to 4 cylinders, low voltage for LS ECM tach signal
- The fuel gauge must be set to match the sender in your tank. We provide 9 common sender options; if yours is not listed, the system can be programmed to a custom sender
- **A battery disconnect will not cause loss of settings**

## • Speedometer Calibration

- The setup procedure described below is AUTO CAL using any of the pictured VSS wiring options
- You must have a known one mile run (*or one kilometer*) mapped out prior to starting
  - Begin with the car at the beginning of the known mile (*kilometer*), with engine off
  - Hold SW 1 (I), and start engine, speed will display **5EE** and message center will display **SETUP**
  - Release SW1 (I), speed will display **5EE** and message center will display **SPEED**
  - Hold SW 1 (I) until speed displays "-", then release SW 1
  - Tap SW 1 (I) once message center will display **AUTO**
  - Hold SW 1 (I) until speed displays "-", release SW 1
  - Message center will display **MPH**
  - Hold SW 1 (I) to keep MPH, until speed shows "-"
    - Tap SW 1 (I) once to change message center to KPH, the hold until speed displays "-"
  - Releasing SW 1 (I) message center will display **T000000** and speed will display **CAL**
  - Drive the vehicle for the one mile distance, or one kilometer for KPH
    - The pulses in the message center should count up
  - Once one mile (*kilometer*) is reached, tap SW 1(I) once to save the speed calibration

## • Tachometer Calibration

- Old school V-8 points or HEI systems: with or without a MSD box, will not need any setup
- Six and four cylinder engines need the cylinder count changed
- LS engines: signal from the ECM will read as a four cylinder, and it will be a low voltage input
  - Hold SW 1 (I), turn ignition on, speed will display **5EE** and message center will display **SETUP**
  - Release SW1 (I), speed will display **5EE** and message center will display **SPEED**
  - Tap SW 1 (I) once to change message center to **TACH**

## • Tachometer Calibration continued

- Hold SW 1 (I) until speed displays “-“, then release SW 1
- Message center will display **T CAL**, speed will display “5E~~t~~“
- Hold SW 1 (I) until speed displays “-“, then release SW 1
- Tap SW 1 (I) to change the cylinder count in speed (LS = 04)
- Hold SW 1 (I) until **DONE** and “-“ are display to save cylinder, release SW 1
- Tap SW 1 (I) until message center displays **SIGNAL**
- Hold SW 1 (I) until speed displays “-“, then release SW 1
- Message center will display **12 H**, speed will display “5E~~t~~“
- Tap SW 1 (I) to change to **5 LD** (LS engines)
- Hold SW1 (I) until message center displays **DONE**, and speed displays “-“ to save

## • Fuel Setup

- Hold SW 1 (I), turn ignition on, speed will display 5E~~t~~ and message center will display **SETUP**
- Release SW1 (I), speed will display 5E~~t~~ and message center will display **SPEED**
- Tap SW 1 (I) several times to change message center = **FUEL**, speed will display 5E~~t~~
- Hold SW 1 (I) until speed displays “-“ and message center = **FUEL**, then release SW 1
- Message center will display **SENDER** and speed will display 5E~~t~~
- Hold SW 1 (I) again to enter sender option menu, release when speed displays “-“
- Message center will display a fuel option, **SW 33** being factory preset, speed display = 5E~~t~~
- Tap SW 1 (I) to change sender type
  - **SW 33 BUS 63 VET CUSTOM GM 30 GM 90 GM 250 F 10 F 150 U 180**
- Hold SW 1 (I) when desired sender in on the display, hold until **DONE** is displayed
- Tap SW 1 (I) until message displays **DONE** and speed displays 5E~~t~~
- Hold SW 1 (I) until message center display **DONE** and speed displays “-“

### ▪ Common Sender Options

Sender type	Menu	Empty R	Full R
Chrysler – typically uses a 73-10 ohm	<b>F 10</b>	73 ohms	10 ohms
GM 0-30 ohm (mid 50’s-mid ‘60s)	<b>GM 30</b>	0 ohms	30 ohms
GM 0-90 ohm (mid 60’s-late 90’s)	<b>GM 90</b>	0 ohms	90 ohms
GM 40-250 ohm (late 90’s-later)	<b>GM 250</b>	40 ohms	249 ohms
GM 90-0 ohm (63-67 Corvette)	<b>63 VET</b>	90 ohms	0 ohms
FORD 73-10 ohm (earlier 60’s -late 80’s)	<b>F 10</b>	73 ohms	10 ohms
FORD 20-150 ohm (late 80’s-later)	<b>F 150</b>	20 ohms	150 ohms
VDO 10-180 ohm	<b>U 180</b>	10 ohms	180 ohms
SW/SUN 33-240	<b>SW 33</b>	240 ohms	33 ohms
User programmed (preset for 118-4 ohms)	<b>CUSTOM</b>	User settable	User settable

**See full installation manual for custom fuel sender calibration in the CUSTOM mode**

### Emissions note:

If your vehicle requires emissions testing in your area then the CHECK ENG terminal must be connected to the ECM service engine wire. A BIM-01 or STA-1000 cannot be used to supply the Check Engine or Service Engine indicator.

**⚠ WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)



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