QUICK START GUIDE

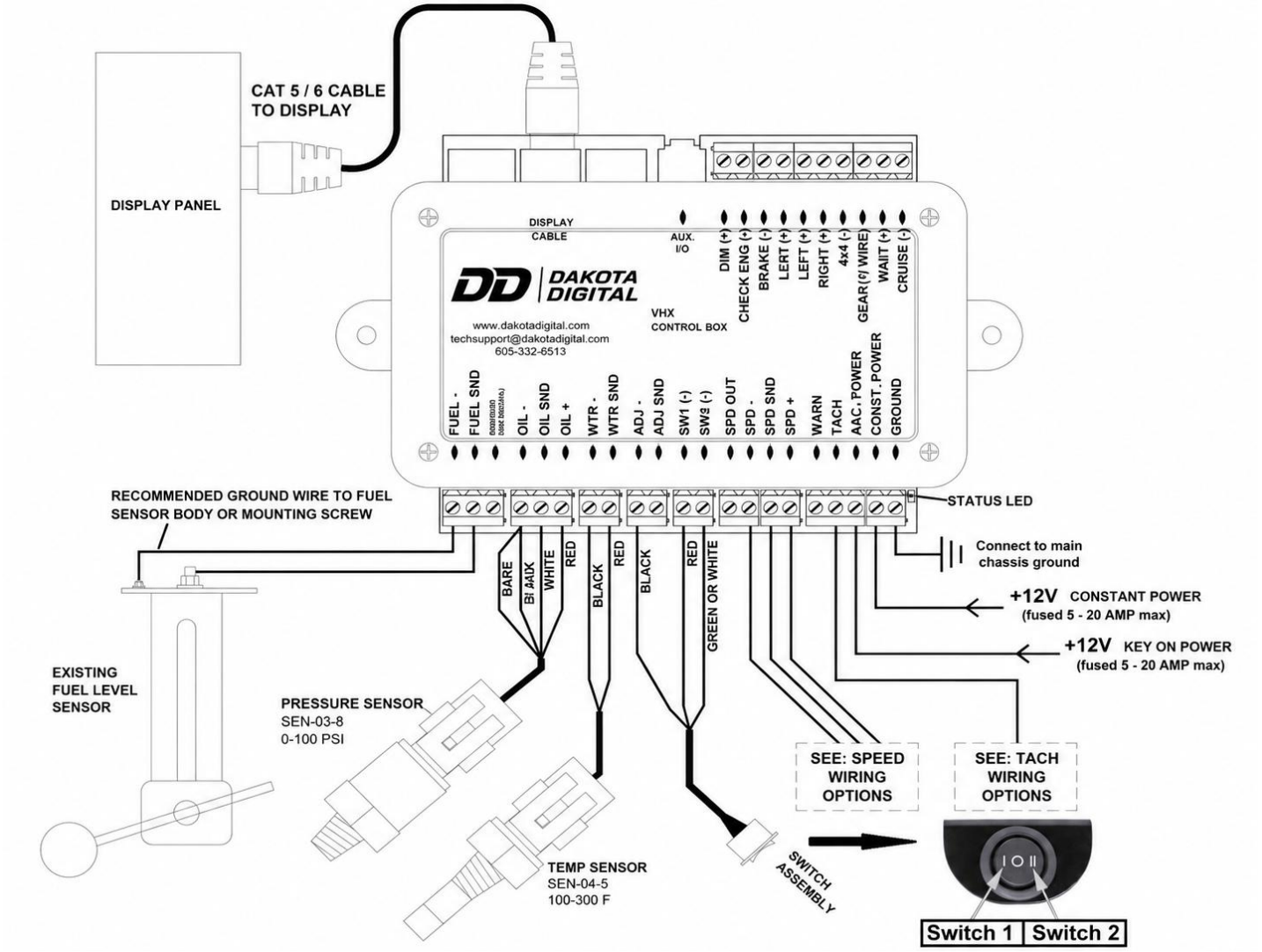
DAKOTA DIGITAL VHX GAUGE SYSTEM

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.

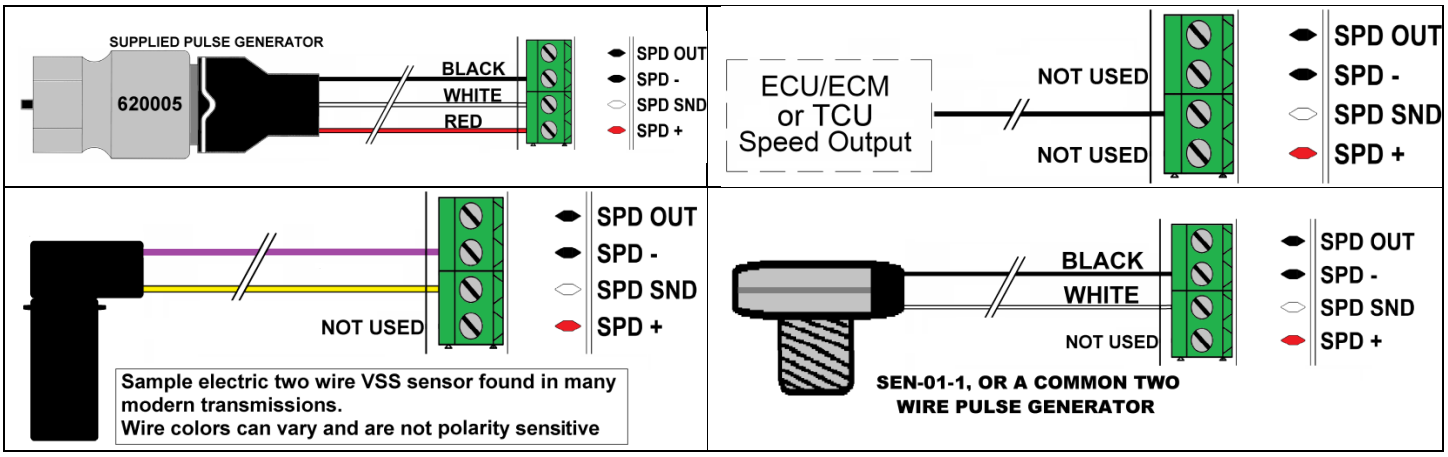
******* IMPORTANT NOTE! *******

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

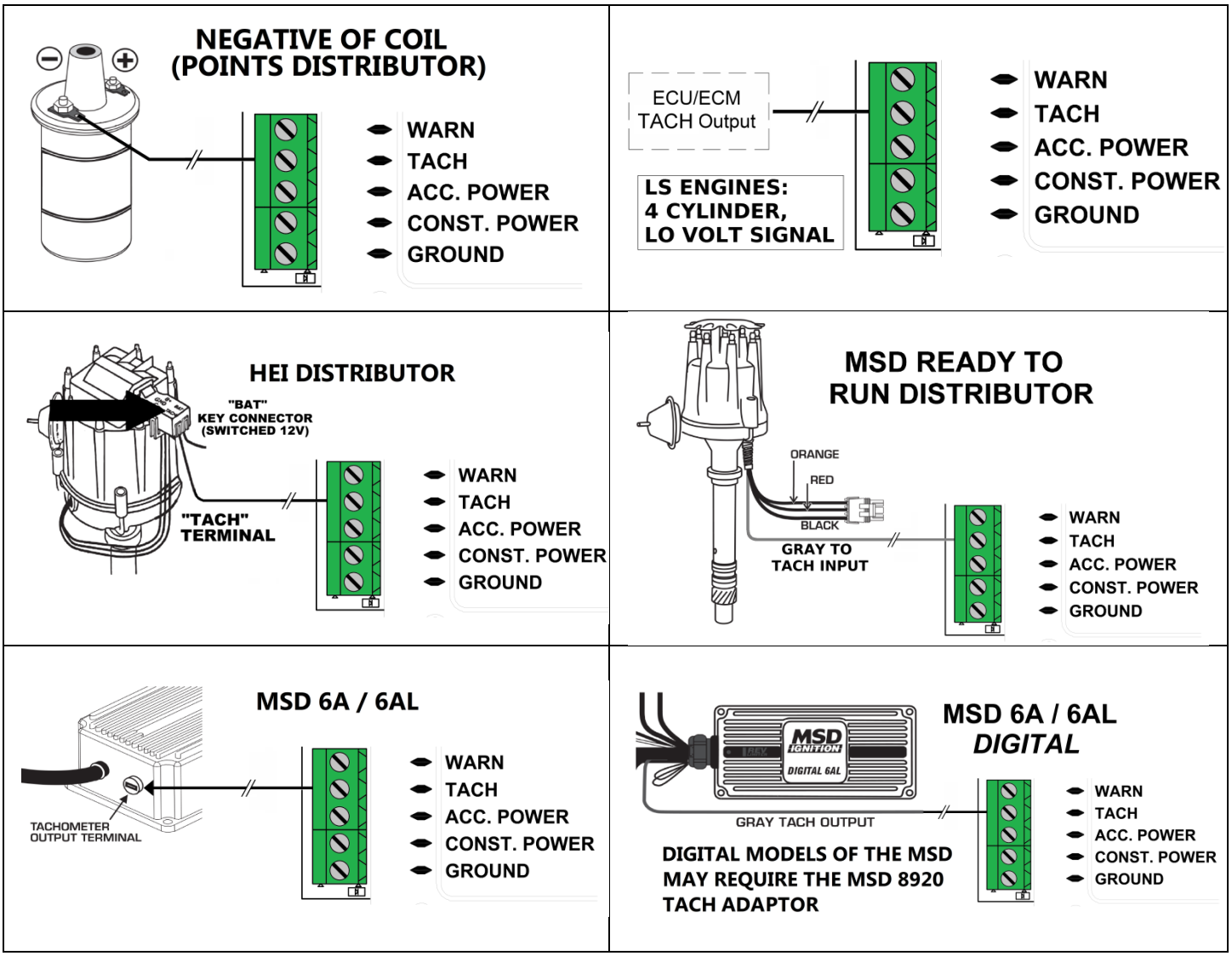
- Install the supplied oil pressure, coolant temperature and speed senders. (see sensor pack manual)
- Mount and wire the control box. (see diagram below and main manual for more detailed descriptions)
- Mount the instrument cluster into your dash, (see Mounting Manual instructions)
- Setup the control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



- **SPEED SENSOR WIRING OPTIONS**



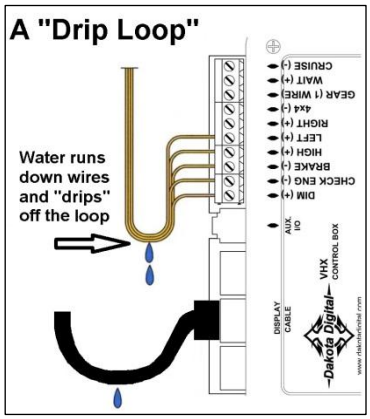
- **TACH WIRING OPTIONS**



- **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 operation of a 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, only the time for the clock.**

- **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 (*or one kilometer*) run 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, then release SW 1 (I)
    - LCD will read **SETUP SPEED**
    - Hold SW 1 (I) until **SPEED SENDER** is displayed, then release SW 1
    - Tap SW 1 (I) once to display **SPEED AUTO**
    - Hold SW 1 (I) until **SPEED PULSES 0** is displayed, then release SW 1
    - Drive the vehicle for the one mile (*or one kilometer*) distance – the pulses 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) and turn ignition on
    - LCD will read **SETUP SPEED**
    - Tap SW 1 (I) once to change to **SETUP TACH**
    - Hold SW 1 (I) to enter tach setup and display **TACH ENGINE**, then release SW 1
    - Hold SW 1 (I) until engine 8 (any number) is shown, then release SW 1
    - Tap SW 1 (I) to change the cylinder count (LS = **4**)
    - Hold SW 1 (I) until **DONE** is display to save cylinder
    - Release SW 1 (I), then tap SW 1 until **TACH SIGNAL**

- **Tachometer Calibration (continued)**
  - Hold SW 1 (I) until **SIGNAL 12V HIGH** is displayed
  - Tap SW 1 (I) to change to **5V LOW** (LS engines)
  - Hold SW1 (I) until **DONE** to save

- **Fuel Setup**
  - Hold SW 1 (I) and turn ignition on
  - LCD will read **SETUP SPEED**
  - Tap SW 1 (I) several times to change the display to **SETUP FUEL**
  - Hold SW 1 (I) until **FUEL SENDER** is displayed to enter the fuel setup menus, release SW1
  - Hold SW 1 (I) again to enter sender option menu, release when **SENDER SW 33** (first time) is displayed
  - Tap SW 1 (I) to change sender type
    - **SW 33 BUS 63 VET CUSTOM GM 30 GM 90 GM 250 F 10 F 150 V 180**
  - Hold SW 1 (I) when desired sender in on the display, hold until **DONE** is displayed
  - Tap SW 1 (I) until **FUEL DONE** is displayed
  - Hold SW 1 (I) until a big **DONE** appears

- **Common Sender Options**

Sender type	Menu	Empty R	Full R
Chrysler – typically uses a 73-10 ohm	F 10	73 ohms	10 ohms
GM 0-30 ohm (mid 50's-mid '60s)	GM 30	0 ohms	30 ohms
GM 0-90 ohm (mid 60's-late 90's)	GM 90	0 ohms	90 ohms
GM 40-250 ohm (late 90's-later)	GM 250	40 ohms	249 ohms
GM 90-0 ohm (63-67 Corvette)	63 VET	90 ohms	0 ohms
GM 250-40 ohms	GM 40	250 ohms	40 ohms
FORD 73-10 ohm (earlier 60's -late 80's)	F 10	73 ohms	10 ohms
FORD 20-150 ohm (late 80's-later)	F 150	20 ohms	150 ohms
VDO 10-180 ohm	V 180	10 ohms	180 ohms
SW/SUN 33-240	SW 33	240 ohms	33 ohms
Toyota S70	IMPT 4	100 ohms	4 ohms
Toyota S60	IMPT 17	120 ohms	17 ohms
User programmed (preset for 118-4 ohms)	CUSTOM	User settable	User settable

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

- **Setting Clock**
  - The clock is **not** in the setup menu
  - Turn ignition on normally, without holding either switch
  - With the clock visible, Hold SW 2 (II) until the hours begin to flash
    - If something else other than the clock is displayed, tap SW2 until the time is displayed
  - Tap SW 2 (II) to change hours
  - Hold SW 2 (II) to save hours – the first of the minutes (0 to 5) will begin to flash
  - Tap SW 2 (II) to change the minutes
  - Hold SW 2 (II) to save – the second of the minutes will flash (0 to 9)
  - Tap SW 2 (II) to change minutes
  - Hold SW 2 (II) to save and exit clock setup

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

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