



## **Nordskog Performance Products**

### **DP5302 '87-'89 MUSTANG DIGITAL DASH PANEL**

#### **Instrument Panel Mounting**

1. Instrument Cluster Removal
2. Remove both switches from the sides of the upper trim plate.
3. Remove the 3 screws and the lower trim panel.
4. Remove the steering column cover by removing the 2 screws from the bottom.
5. Remove the 5 screws holding the upper trim piece and then remove the upper trim piece.
6. Remove the lower metal bracket.
7. Remove the 4 instrument cluster screws.
8. Reach behind the instrument cluster and disconnect the speedometer cable by depressing the retaining clamp.
9. Remove the entire instrument cluster from the dash and disconnect the factory wiring harness.
10. Remove the 8 cover screws and remove the clear plastic cover and cluster cover.
11. Remove the voltmeter screws on the back of the housing.
12. Remove all of the factory gauges. Remove all circuit boards and illumination light bulbs, but leave the bulbs in for the turn signals, high beams and warning lights.
13. **DO NOT REMOVE YOUR EXISTING FACTORY WARNING LIGHTS!**
14. Insert the new Digital instrument cluster circuit boards on the instrument cluster.
15. Make sure the plastic faceplate for the turn signals and high beam indicator is replaced after the new circuit board is installed.
16. Feed all of the wires from the new circuit boards through the back of the housing.
17. Remove the protective paper covering from the new smoked Plexiglas faceplate.
18. Insert the new faceplate into the black plastic instrument cluster covering.
19. Replace the covering on top of the circuit boards and replace the 8 screws while the circuit boards are "sandwiched" between the original gauge housing and the instrument cover.

#### **Instrument Panel Wiring**

Note: To prevent electrical noise from causing the gauges to act abnormally, check to make sure that any signal wire between the senders to the gauges does not run next to the ignition system or spark plug wires. Resistor-type spark plugs and wires that are in good condition are also suggested. Unless noted, the following wires are 18 gauge.

1. Connect the **BLACK** (GND) wires to a good chassis ground. The best location is on the engine block. The included sending units provide a resistance value to the gauges. If any additional resistance is seen (because of having the grounds of the sending units and gauges grounded at different locations) the readings on the gauges will be inaccurate.
2. Connect the **RED** (+12V) wires to the ignition switch circuit or an accessory fuse.
3. Connect the **PURPLE** (DIM) wires to the vehicle's headlights. This will cause the display brightness to be dimmed by 50% when it receives +12 volts.
4. Remove the factory equipped water temperature and oil pressure sending units and install the supplied Nordskog units. You will be using the factory fuel level sender.

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5. When mounting the new water temperature-sending unit, be sure **not** to use Teflon tape on the threads because the sender must be grounded to operate properly.
6. Connect the **BLUE** (TEMP) wire to the water temperature sending unit wire.
7. Connect the **ORANGE** (OIL) wire to the oil pressure sending unit wire. This will be a white/red stripe wire.
8. Connect the **GREEN** (TACH) wire to the correct wire from your car. 1987-1989 will have a dark green wire with a yellow stripe. 1990-1993 will have a dark green wire with a light green stripe. **NOTE: If your car is equipped with an aftermarket capacitive discharge or other high-energy ignition system, the tach output of that system must be used. Damage will occur and the warranty voided if the panel is incorrectly wired. Please contact Customer Support at (805) 483-2411 if you have any questions.**
9. Connect the **GRAY** (SPEED) wire to the green wire with the white stripe located on the cruise control speedometer-sending unit. Connect the orange wire with the white stripe on the transmission-sending unit to a good ground, preferably to the same location as the ground from the main digital panel. (If your car is not equipped with a cruise control you will need to purchase a Nordskog Performance Products speedometer sending unit part number S9013 or a Ford P/N E3AZ-9E731. Connect the **GRAY** speedometer sensor wire to the white wire of the twisted shielded cable included with this kit. Connect the other end of the twisted shielded cable to the **TAN** sensing wire on the speedometer sensor. Ground the **BLACK** wire from the cable to the same ground location as the ground wire for the panel. Connect the other end of the black wire of the twisted shielded cable to the **BLACK** ground wire on the speedometer sensor. "Cut back" the bare twisted shield wire at the dash end of the cable making sure that it cannot make contact with any other wires. Ground the other end of the bare twisted shield wire on the transmission.)
10. Connect the **YELLOW** (FUEL) wire to your fuel level sending unit wire, which is a yellow wire with a white stripe. This gauge reads in 0 to 99% remaining, not gallons. NOTE: The fuel level gauge may be equipped with a slosh circuit board mounted in back of the instrument cluster housing next to the fuel level gauge. The circuit was designed for the factory fuel level gauge to prevent the needle from bouncing around when going around turns or over rough road. This board must be removed in order for the fuel level gauge on the panel to operate correctly. If the fuel level gauge is wired into the terminal that the factory fuel level gauge plugged into, another wire must be run from the back side of the housing of that terminal to the fuel level signal wire running back to the sender.
11. Install the entire assembly back into the dash by reversing the removal process.
12. To implement the Performance Speedometer function you will need to install a separate "momentary" normally open switch that may be purchased separately from any local Radio Shack or other electronic parts supplier. Connect the two 22 gauge white wires to the switch. This will be used to activate the speedometer functions described below.

## DIGITAL PERFORMANCE SPEEDOMETER

Your digital panel is equipped with an electronic speedometer that has the capability to display your speed as well as your mileage traveled (odometer). It also has the ability to track your trip distance, record and display the highest speed you obtained as well as your 0-60 mph and ¼ mile elapsed times. Your speedometer will also allow you to adjust your readings (through electronic recalibration) to different tire or gear sizes.

Your speedometer comes with factory set defaults and must be recalibrated for your specific application. To accomplish this, you must locate a measured mile of highway where you can safely start and stop your vehicle. By running the vehicle over this measured distance, your speedometer will learn how many pulses your speedometer sensor is outputting in this measured distance. It will then use this acquired data to calibrate itself for accurate reading.

After installing your speedometer according to the installation instructions, with the ignition on or your car running, it should immediately exhibit the default display (figure 1): the first green light bar, the odometer display (small "0") and speedometer display (large "0"). If, for any reason, your instrument does not show this display, please thoroughly re-check all of your connections and try it again. If the problem persists, please contact us for assistance. In the right hand corner of the face, you will notice a small recall pushbutton. This will

be used to calibrate and read all of the data involved with your speedometer. The unit is also equipped with wires that allow you to add an external recall button which can be mounted in a location which is easily reached during operation of the vehicle (Earlier models are not equipped with the wires. Please contact us if you have an earlier model and wish to have the wires installed).

**\*\*THE FOLLOWING INSTRUCTIONS WILL INFORM YOU ON HOW TO CALIBRATE YOUR SPEEDOMETER. TO INSURE THAT IT IS DONE CORRECTLY, IT IS IMPARTITIVE THAT YOU READ THROUGH THE INSTRUCTIONS COMPLETELY BEFORE YOU ATTEMPT TO PROGRAM OR OPERATE YOUR SPEEDOMETER!\*\***

### Calibration

1. While stopped at the beginning of the measured mile with your vehicle running, press and hold down the customer supplied momentary switch until the odometer displays "HI-SP" (figure 2). IMMEDIATELY release the switch.
2. On its own, the gauge will cycle through the performance data that it records in the following order "HI-SP," "0-60," "1/4," "CAL." (Figures 2-5).
3. While "CAL" is being displayed quickly tap the switch one time. This will put the speedometer in the program mode and "PROG" will be displayed (figure 6) (**YOU MUST BE EXTREMELY CAREFUL TO DEPRESS THE SWITCH QUICKLY AND NOT HOLD IT DOWN.** If you miss stopping the display at "CAL", simply repeat the step). With "PROG" displayed, the speedometer is now waiting to record the data that will be accumulated over the measured mile.
4. When you are ready to begin driving quickly tap the switch one time. The speedometer will display "CAL" and the odometer will show "0" (figure 5). Begin driving the vehicle at a safe speed (the level of speed is not important) through the measured mile. As you move, the odometer will begin showing the speedometer pulses as they are being calculated.
5. At the end of the mile, bring the vehicle to a safe stop and quickly tap the switch one time. The odometer will continue displaying the number of speedometer pulses that were registered over the one mile for several seconds (**NOTE: If the number displayed is 12,800, either the speedometer received no signal from the sensor and you must recheck all connections or your stock speedometer sensor does not output the correct number of pulses per mile-between 2000 and 32,000. If the number displayed is 8000, the default setting, the speedometer was not put in the calibration mode and the pulses per mile were not recorded. You must repeat steps 2-4.**).
6. Once it reverts to the default mode (figure 1), your speedometer has been calibrated and is ready for operation.

### Trip Distance

A single push of the switch will show the trip distance mileage in the odometer display (the presence of a decimal point denotes that you are in the odometer mode). Holding down the switch while in the trip odometer display for a few seconds will clear the trip distance.

### Recording and Viewing Performance Data

To begin recording Performance Data (High speed, ¼ mile elapsed time and 0-60mph elapsed time), execute the following:

With your car stopped in its starting position, press and hold the recall button until "HI-SP" is displayed (figure 2) and then **IMMEDIATELY** release the button (**\*\*NOTE: Depressing the button for an extended period of time will cause the speedometer's memory to clear the pulse calibration. This would require it to be reprogrammed using steps 1-4 above.**). On its own, the gauge will cycle through the performance data that it records in the following order "0-60," "1/4," "CAL" (figure 2-5). At the end of your desired run, safely bring the vehicle to a complete stop. Hold down the recall button until "HI-SP" appears in the odometer display. On its own, the gauge will cycle through the newly acquired performance data. While stopped, you can view this data as many times as you wish. However, once it finishes scrolling one time, the memory is ready to record new data and will begin once the vehicle starts moving.

