

Ford Hybrid Electronic Cluster (HEC) Diagnostics

Depress and hold the **SELECT/RESET** button. Turn the ignition switch to the **RUN** position, and then continue holding the **SELECT/RESET** button (5 seconds) until “**tES†**” is displayed in the odometer. The **SELECT/RESET** button must be released within 3 seconds of the odometer “**tES†**” display to begin.

Depress the **SELECT/RESET** button to advance through the following steps until “**d†c**” is displayed. Depressing the **SELECT/RESET** button will display any stored continuous DTCs before proceeding.

Display	Description																		
GAGE	Activates gauge sweep of all gauges, then displays present gauge values. Also carries out the checksum tests on ROM and EE. If the gauge sweep is inoperative, install a new instrument cluster.																		
All segments illuminated	Illuminates all odometer segments. If any odometer segment is inoperative install a new instrument cluster.																		
bulb	Illuminates all micro-controlled indicators and LEDs. Install a new indicator or LED as necessary.																		
r	Returns to normal operation of all micro-controlled indicators and LEDs and displays hexadecimal value for ROM level. If alternating flashes for FAIL and ROM level are displayed, install a new instrument cluster.																		
EE	Displays the hexadecimal value for EE level. If alternating flashes of FAIL and EE level are displayed replace instrument cluster.																		
dt	Displays hexadecimal coding of final manufacturing test date.																		
d†c	Displays continuous DTC's in hexadecimal format. Pressing the SELECT/RESET button will display any DTCs stored before proceeding to the next step.																		
enG	Displays the English speed in MPH. Speedometer will indicate present speed within tolerances. Display will show 0 if input in not received, if input is invalid for one second or more, or if speed is 0.																		
m	Displays the metric speed data in KPH. Speedometer will indicate present speed within tolerances. Display will show 0 if input in not received, if input is invalid for one second or more, or if speed is 0.																		
tAc	Displays the tachometer data received from the PCM via the SCP network within tolerances. Tachometer will indicate present RPM. Display will show 0 if input is no received, if input received is invalid for one second or more, or if engine RPM is 0.																		
FUEL	Displays 0-255 for the fuel sender input to the HEC. The fuel gauge will display a filtered fuel level value. This filter will keep the pointer from moving suddenly or erratically. <table style="width: 100%; border: none;"> <tr> <td style="text-align: right; padding-right: 20px;">255</td> <td>open send +/- 0</td> </tr> <tr> <td style="text-align: right; padding-right: 20px;">232</td> <td>full stop +/- 0</td> </tr> <tr> <td style="text-align: right; padding-right: 20px;">215</td> <td>Full mark +/- 10</td> </tr> <tr> <td style="text-align: right; padding-right: 20px;">178</td> <td>3/4 mark +/- 8</td> </tr> <tr> <td style="text-align: right; padding-right: 20px;">138</td> <td>1/2 mark +/- 7</td> </tr> <tr> <td style="text-align: right; padding-right: 20px;">93</td> <td>1/4 mark +/- 5</td> </tr> <tr> <td style="text-align: right; padding-right: 20px;">41</td> <td>E mark +/- 4</td> </tr> <tr> <td style="text-align: right; padding-right: 20px;">54</td> <td>Low Fuel (0-59)</td> </tr> <tr> <td style="text-align: right; padding-right: 20px;">0-18</td> <td>short (0-20 max)</td> </tr> </table>	255	open send +/- 0	232	full stop +/- 0	215	Full mark +/- 10	178	3/4 mark +/- 8	138	1/2 mark +/- 7	93	1/4 mark +/- 5	41	E mark +/- 4	54	Low Fuel (0-59)	0-18	short (0-20 max)
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OIL	Displays 0-250 for the oil pressure switch input to the HEC. Oil pressure gauge will indicate present oil pressure. Normal oil pressure (greater than 6psi) will display a value between 000 and 176. A low oil pressure or an inoperative engine oil pressure switch (less than 6 psi) will display a value greater than 176.																		
dEGC	Display of engine temperature in Degrees C input from cylinder head temperature sensor. <table style="width: 100%; border: none;"> <tr> <td style="text-align: right; padding-right: 20px;">49 C</td> <td>"C" mark</td> </tr> <tr> <td style="text-align: right; padding-right: 20px;">60 C</td> <td>Normal band start</td> </tr> <tr> <td style="text-align: right; padding-right: 20px;">120 C</td> <td>Normal band end</td> </tr> <tr> <td style="text-align: right; padding-right: 20px;">-40 C</td> <td>No SCP message for 5 seconds</td> </tr> </table>	49 C	"C" mark	60 C	Normal band start	120 C	Normal band end	-40 C	No SCP message for 5 seconds										
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bAtt	Displays the code (0-255) for the battery voltage input to the HEC. Battery voltage gauge will indicate present battery voltage. 93-102 6.2-9.1 volts, low voltage 115-124 8.5-10.7 volts, Normal band start 215-225 15.8-18 volts, Normal band end 230-241 16.9-19.1 volts, high voltage
rhEo	Displays the present decimal rheostat dimming input, 0-255.
rhi rhS rho	Not used.
Cr	Displays the current RUN/START sense input. Display will show -h for high input with the ignition switch in the START position and -L for low input with the ignition switch in the RUN position.
PA-PE7	Not used.
GAGE	Repeats the display cycle

Body and chassis DTC trouble codes (Not OBD-II powertrain codes):

9202: Fuel sender open circuit
9204: Fuel sender short to ground
9213: Anti-theft number of programmed keys is below minimum
A103 or 9232: Antenna not connected-defective transceiver
9317: Battery Voltage high
9318: Battery voltage low
9342: ECU is defective
9356: Ignition run circuit open
9364: Ignition Start circuit open
9600: PATS Ignition Key Transponder Signal is Not Received - Damaged Key or non-PATS Key
9601: PATS Received Incorrect Key-Code from Ignition Key Transponder (un-programmed Encoded Ignition Key)
9602: PATS Received Invalid Format of Key - Code From Ignition Key Transponder (Partial Key Code)
9681: PATS Tranceiver Signal is Not Received (Not Connected, Damaged, or Wiring)
A139: PCM ID does not match between Instrument Cluster and PCM
A141: NVM Configuration Failure (No PCM ID exchange between Instrument Cluster and PCM)
A143: NVM memory failure
5284: Oil Pressure Switch Failure
D027: SCP Invalid or Missing Data for Engine RPM
D041: SCP Invalid or missing data for Vehicle Speed
D043: SCP Invalid or missing data for Traction Control
D073: SCP Invalid or missing data for engine coolant
D123: SCP Invalid or missing data for Odometer
D147: SCP Invalid or missing data for vehicle security
D262: Missing SCP message.

Note: Functions can also be displayed while driving. To accomplish this, start vehicle while in diagnostic mode and display will revert to this state. Use SELECT/RESET button to scroll through display.