



GROUP
ENG

MODEL
Optima Hybrid (TF HEV)

NUMBER
PS328

DATE
August 2014



TECHNICAL OPERATIONS

SUBJECT: HESITATION IN ELECTRIC AND GAS MODES

When diagnosing an Optima Hybrid with an off idle hesitation concern that can be duplicated, and no DTC(s) codes (active or history) are stored, access **MCU > Current Data** to check the status of the MCU warning flag (see image). If the flag is ON, the elevated temperatures in the MCU system may cause a reduction in power from the electric motor; this in turn will affect acceleration in both electric and gas modes. To correct this concern, check the Electric Water Pump (EWP) for proper operation, along with the hoses for kinks and the radiator for damages, blockages or pinholes. In the case below, a damaged radiator caused an overheating condition and set the MCU warning flag ON.

The screenshot shows the GDS software interface for an Optima Hybrid (TF HEV) 2012/G 2.4 HEV. The 'Current Data' window is open, displaying a list of sensors and their values. The 'MCU(GCU) Warning Flag' is highlighted with a red dashed box, showing a value of 'ON'. Other highlighted items include 'Generator(HSG) Actuation Test Flag' (OFF), 'Drive Motor Phase Current (RMS value)' (2.8 Arms), and 'MCU Temperature' (194 °F). The software interface includes a navigation menu on the left with options like 'Basic Inspection', 'DTC Analysis', and 'Data Analysis'. The bottom status bar shows the time as 1:35 PM on 7/9/2014.

Sensor Name	Value	Unit
Generator(HSG) Controllable Flag	ON	-
MCU(GCU) Ready Flag	ON	-
MCU(GCU) Service Lamp On Request Flag	OFF	-
MCU(GCU) MIL On Request Flag	OFF	-
Generator(HSG) Actuation Test Flag	OFF	-
MCU(GCU) Warning Flag	ON	-
MCU(GCU) Fault Flag	OFF	-
Inverter DC Link Voltage	262	V
Auxiliary Battery Voltage	14.1	V
Electric Water Pump(EWP) Operation Status	ON	-
Electric Water Pump(EWP) Speed	3299	RPM
Actual Driver Motor Speed	0	RPM
Drive Motor Torque Reference	0.0	Nm
Actual Driver Motor Torque	0.0	Nm
Drive Motor Phase Current (RMS value)	2.8	Arms
Drive Motor Temperature	200	°F
MCU Temperature	194	°F
Drive Motor U Phase Current Sensor Offset	0	-
Drive Motor V Phase Current Sensor Offset	1	-
Drive Motor Resolver Offset	2.328	rad
Drive Motor Resolver CAL Command	Ready	-
Drive Motor Resolver Mal Counter	0	-
MCU Gate Board Fault Counter	0	-