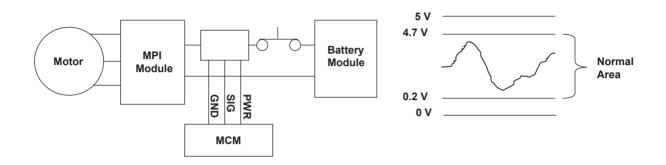# Advanced Diagnostics

DTC P1581 (19): Motor Power Inverter (MPI) Module Current Signal Circuit Low Input

MPI Module Current Sensor

MPI Module Current Sensor Output

P1581-0071

General Description

The MCM (motor control module) controls the motor output based on the MPI (motor power inverter) module current sensor signals. Under ordinary conditions, the MPI module current sensor has these characteristics: if its input current is -200 A or less, the output voltage is between 4.5 - 4.7 V, or if its input current is +200 A or more, the output voltage is between 0.2 - 0.5 V. If an open in the signal wire, a short to ground, or a faulty ground wiring harness or a faulty sensor power source line occurs, the output voltage stays out of range.

If the input voltage to the MCM is excessively lower than the normal range, a malfunction such as an open in the signal wire, a short to ground, or a faulty ground wiring harness or a short to ground is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type

Execution	Continuous
Sequence	None
Duration	2 seconds or more
DTC Type	One drive cycle, MIL ON, IMA system indicator ON

Enable Conditions

Condition	Minimum	Maximum
MCM power-supply voltage	10.5 V	—
Ignition switch	ON	
No active DTCs	MCM, MPI	

Malfunction Threshold

The MCM input voltage is 0.156 V or less for at least 2 seconds.

Diagnosis Details

Conditions for illuminating the MIL

When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the ECM memory.

Conditions for clearing the MIL

The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.
The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.