

## Cold Idle Frame 1

Numbers of DTCs 0  
Fuel system 1 statusOL  
Fuel System 2 statusOL  
Calculated Load Value(%)4.3  
Engine Coolant Temperature(i°F)95  
Short Term Fuel Trim -Bank 1(%)0.0  
Long Term Fuel Trim - Bank 1(%) -1.6  
Short Term Fuel Trim -Bank 2(%)0.0  
Long Term Fuel Trim - Bank 2(%) -1.6  
Intake Manifold Absolute Pressure(psi)5.9  
Engine RPM(rpm) 899  
Vehicle Speed Sensor(mph)0  
Ignition Timing Advance for #1 Cylinder(i°) -24.0  
Intake Air Temperature(i°F)78  
Air Flow Rate from Mass Air Flow Sensor(lb/s)0.03  
Absolute Throttle Position(%)0.0  
Commanded Secondary Air StatusUPS  
Location of Oxygen SensorsB1S12--B2S12--  
Oxygen Sensor Output Voltage Bank 1-Sensor 1(V)0.160  
Short Term Fuel Trim Bank 1-Sensor 1(%)0.0  
Oxygen Sensor Output Voltage Bank 1-Sensor 2(V)0.600  
Short Term Fuel Trim Bank 1-Sensor 2(%)N/A  
Oxygen Sensor Output Voltage Bank 2-Sensor 1(V)0.090  
Short Term Fuel Trim Bank 2-Sensor 1(%)0.0  
Oxygen Sensor Output Voltage Bank 2-Sensor 2(V)0.305  
Short Term Fuel Trim Bank 2-Sensor 2(%)99.2  
OBD requirements to which vehicle is designedOBDII

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## Cold Idle Frame 2

Numbers of DTCs 0  
Fuel system 1 statusOL  
Fuel System 2 statusOL  
Calculated Load Value(%)4.3  
Engine Coolant Temperature(i°F)95  
Short Term Fuel Trim -Bank 1(%)0.0  
Long Term Fuel Trim - Bank 1(%) -1.6  
Short Term Fuel Trim -Bank 2(%)0.0  
Long Term Fuel Trim - Bank 2(%) -1.6  
Intake Manifold Absolute Pressure(psi)6.1  
Engine RPM(rpm) 858  
Vehicle Speed Sensor(mph)0  
Ignition Timing Advance for #1 Cylinder(i°) -24.0  
Intake Air Temperature(i°F)78  
Air Flow Rate from Mass Air Flow Sensor(lb/s)0.03  
Absolute Throttle Position(%)0.0  
Commanded Secondary Air StatusUPS  
Location of Oxygen SensorsB1S12--B2S12--  
Oxygen Sensor Output Voltage Bank 1-Sensor 1(V)0.165  
Short Term Fuel Trim Bank 1-Sensor 1(%)0.0  
Oxygen Sensor Output Voltage Bank 1-Sensor 2(V)0.605  
Short Term Fuel Trim Bank 1-Sensor 2(%)N/A  
Oxygen Sensor Output Voltage Bank 2-Sensor 1(V)0.090  
Short Term Fuel Trim Bank 2-Sensor 1(%)0.0  
Oxygen Sensor Output Voltage Bank 2-Sensor 2(V)0.290  
Short Term Fuel Trim Bank 2-Sensor 2(%)99.2  
OBD requirements to which vehicle is designedOBDII

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### **Cold Idle Frame 3**

Numbers of DTCs 0  
Fuel system 1 statusOL  
Fuel System 2 statusOL  
Calculated Load Value(%)4.3  
Engine Coolant Temperature(i°F)96  
Short Term Fuel Trim -Bank 1(%)0.0  
Long Term Fuel Trim - Bank 1(%) -1.6  
Short Term Fuel Trim -Bank 2(%)0.0  
Long Term Fuel Trim - Bank 2(%) -1.6  
Intake Manifold Absolute Pressure(psi)6.2  
Engine RPM(rpm) 874  
Vehicle Speed Sensor(mph)0  
Ignition Timing Advance for #1 Cylinder(i°) -25.0  
Intake Air Temperature(i°F)78  
Air Flow Rate from Mass Air Flow Sensor(lb/s)0.03  
Absolute Throttle Position(%)0.0  
Commanded Secondary Air StatusUPS  
Location of Oxygen SensorsB1S12--B2S12--  
Oxygen Sensor Output Voltage Bank 1-Sensor 1(V)0.140  
Short Term Fuel Trim Bank 1-Sensor 1(%)0.0  
Oxygen Sensor Output Voltage Bank 1-Sensor 2(V)0.595  
Short Term Fuel Trim Bank 1-Sensor 2(%)N/A  
Oxygen Sensor Output Voltage Bank 2-Sensor 1(V)0.075  
Short Term Fuel Trim Bank 2-Sensor 1(%)0.0  
Oxygen Sensor Output Voltage Bank 2-Sensor 2(V)0.275  
Short Term Fuel Trim Bank 2-Sensor 2(%)99.2  
OBD requirements to which vehicle is designedOBDII

## Hot Idle Frame 1

Numbers of DTCs 0  
Fuel system 1 statusCL  
Fuel System 2 statusCL  
Calculated Load Value(%)3.5  
Engine Coolant Temperature(i°F)195  
Short Term Fuel Trim -Bank 1(%) -3.1  
Long Term Fuel Trim - Bank 1(%) -14.1  
Short Term Fuel Trim -Bank 2(%)0.0  
Long Term Fuel Trim - Bank 2(%) -0.8  
Intake Manifold Absolute Pressure(psi)6.1  
Engine RPM(rpm) 865  
Vehicle Speed Sensor(mph)0  
Ignition Timing Advance for #1 Cylinder(i°) -25.0  
Intake Air Temperature(i°F)98  
Air Flow Rate from Mass Air Flow Sensor(lb/s)0.02  
Absolute Throttle Position(%)0.0  
Commanded Secondary Air StatusOFF  
Location of Oxygen SensorsB1S12--B2S12--  
Oxygen Sensor Output Voltage Bank 1-Sensor 1(V)0.065  
Short Term Fuel Trim Bank 1-Sensor 1(%) -3.1  
Oxygen Sensor Output Voltage Bank 1-Sensor 2(V)0.825  
Short Term Fuel Trim Bank 1-Sensor 2(%)N/A  
Oxygen Sensor Output Voltage Bank 2-Sensor 1(V)0.765  
Short Term Fuel Trim Bank 2-Sensor 1(%) -0.8  
Oxygen Sensor Output Voltage Bank 2-Sensor 2(V)0.760  
Short Term Fuel Trim Bank 2-Sensor 2(%)99.2  
OBD requirements to which vehicle is designedOBDII

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## Hot Idle Frame 2

Numbers of DTCs 0  
Fuel system 1 statusCL  
Fuel System 2 statusCL  
Calculated Load Value(%)3.5  
Engine Coolant Temperature(i°F)195  
Short Term Fuel Trim -Bank 1(%) -3.1  
Long Term Fuel Trim - Bank 1(%) -14.1  
Short Term Fuel Trim -Bank 2(%) -1.6  
Long Term Fuel Trim - Bank 2(%) -0.8  
Intake Manifold Absolute Pressure(psi)6.2  
Engine RPM(rpm) 859  
Vehicle Speed Sensor(mph)0  
Ignition Timing Advance for #1 Cylinder(i°) -24.0  
Intake Air Temperature(i°F)98  
Air Flow Rate from Mass Air Flow Sensor(lb/s)0.02  
Absolute Throttle Position(%)0.0  
Commanded Secondary Air StatusOFF  
Location of Oxygen SensorsB1S12--B2S12--  
Oxygen Sensor Output Voltage Bank 1-Sensor 1(V)0.095  
Short Term Fuel Trim Bank 1-Sensor 1(%) -2.3  
Oxygen Sensor Output Voltage Bank 1-Sensor 2(V)0.805  
Short Term Fuel Trim Bank 1-Sensor 2(%)N/A  
Oxygen Sensor Output Voltage Bank 2-Sensor 1(V)0.775  
Short Term Fuel Trim Bank 2-Sensor 1(%)0.0  
Oxygen Sensor Output Voltage Bank 2-Sensor 2(V)0.740  
Short Term Fuel Trim Bank 2-Sensor 2(%)99.2  
OBD requirements to which vehicle is designedOBDII

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### Hot Idle Frame 3

Numbers of DTCs 0  
Fuel system 1 statusCL  
Fuel System 2 statusCL  
Calculated Load Value(%)3.5  
Engine Coolant Temperature(i°F)195  
Short Term Fuel Trim -Bank 1(%) -2.3  
Long Term Fuel Trim - Bank 1(%) -14.1  
Short Term Fuel Trim -Bank 2(%)0.0  
Long Term Fuel Trim - Bank 2(%) -0.8  
Intake Manifold Absolute Pressure(psi)6.1  
Engine RPM(rpm) 890  
Vehicle Speed Sensor(mph)0  
Ignition Timing Advance for #1 Cylinder(i°) -25.0  
Intake Air Temperature(i°F)98  
Air Flow Rate from Mass Air Flow Sensor(lb/s)0.02  
Absolute Throttle Position(%)0.0  
Commanded Secondary Air StatusOFF  
Location of Oxygen SensorsB1S12--B2S12--  
Oxygen Sensor Output Voltage Bank 1-Sensor 1(V)0.210  
Short Term Fuel Trim Bank 1-Sensor 1(%) -1.6  
Oxygen Sensor Output Voltage Bank 1-Sensor 2(V)0.795  
Short Term Fuel Trim Bank 1-Sensor 2(%)N/A  
Oxygen Sensor Output Voltage Bank 2-Sensor 1(V)0.785  
Short Term Fuel Trim Bank 2-Sensor 1(%)0.8  
Oxygen Sensor Output Voltage Bank 2-Sensor 2(V)0.760  
Short Term Fuel Trim Bank 2-Sensor 2(%)99.2  
OBD requirements to which vehicle is designedOBDII

## Cruise Frame 1

Numbers of DTCs 0  
Fuel system 1 statusCL  
Fuel System 2 statusCL  
Calculated Load Value(%)17.6  
Engine Coolant Temperature(i°F)195  
Short Term Fuel Trim -Bank 1(%) -3.1  
Long Term Fuel Trim - Bank 1(%) -6.3  
Short Term Fuel Trim -Bank 2(%) -2.3  
Long Term Fuel Trim - Bank 2(%) -3.9  
Intake Manifold Absolute Pressure(psi)7.5  
Engine RPM(rpm) 2246  
Vehicle Speed Sensor(mph)66  
Ignition Timing Advance for #1 Cylinder(i°) -36.0  
Intake Air Temperature(i°F)98  
Air Flow Rate from Mass Air Flow Sensor(lb/s)0.10  
Absolute Throttle Position(%)16.1  
Commanded Secondary Air StatusOFF  
Location of Oxygen SensorsB1S12--B2S12--  
Oxygen Sensor Output Voltage Bank 1-Sensor 1(V)0.215  
Short Term Fuel Trim Bank 1-Sensor 1(%) -3.1  
Oxygen Sensor Output Voltage Bank 1-Sensor 2(V)0.660  
Short Term Fuel Trim Bank 1-Sensor 2(%)N/A  
Oxygen Sensor Output Voltage Bank 2-Sensor 1(V)0.150  
Short Term Fuel Trim Bank 2-Sensor 1(%) -3.1  
Oxygen Sensor Output Voltage Bank 2-Sensor 2(V)0.060  
Short Term Fuel Trim Bank 2-Sensor 2(%)99.2  
OBD requirements to which vehicle is designedOBDII

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## Cruise Frame 2

Numbers of DTCs 0  
Fuel system 1 statusCL  
Fuel System 2 statusCL  
Calculated Load Value(%)18.8  
Engine Coolant Temperature(i°F)195  
Short Term Fuel Trim -Bank 1(%) -2.3  
Long Term Fuel Trim - Bank 1(%) -7.0  
Short Term Fuel Trim -Bank 2(%) -1.6  
Long Term Fuel Trim - Bank 2(%) -3.9  
Intake Manifold Absolute Pressure(psi)7.4  
Engine RPM(rpm) 2279  
Vehicle Speed Sensor(mph)67  
Ignition Timing Advance for #1 Cylinder(i°) -37.0  
Intake Air Temperature(i°F)96  
Air Flow Rate from Mass Air Flow Sensor(lb/s)0.10  
Absolute Throttle Position(%)16.1  
Commanded Secondary Air StatusOFF  
Location of Oxygen SensorsB1S12--B2S12--  
Oxygen Sensor Output Voltage Bank 1-Sensor 1(V)0.690  
Short Term Fuel Trim Bank 1-Sensor 1(%) -1.6  
Oxygen Sensor Output Voltage Bank 1-Sensor 2(V)0.625  
Short Term Fuel Trim Bank 1-Sensor 2(%)N/A  
Oxygen Sensor Output Voltage Bank 2-Sensor 1(V)0.645  
Short Term Fuel Trim Bank 2-Sensor 1(%) -0.8  
Oxygen Sensor Output Voltage Bank 2-Sensor 2(V)0.085  
Short Term Fuel Trim Bank 2-Sensor 2(%)99.2  
OBD requirements to which vehicle is designedOBDII

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### Cruise Frame 3

Numbers of DTCs 0  
Fuel system 1 statusCL  
Fuel System 2 statusCL  
Calculated Load Value(%)19.2  
Engine Coolant Temperature(i°F)195  
Short Term Fuel Trim -Bank 1(%) -3.9  
Long Term Fuel Trim - Bank 1(%) -7.0  
Short Term Fuel Trim -Bank 2(%) -3.1  
Long Term Fuel Trim - Bank 2(%) -3.9  
Intake Manifold Absolute Pressure(psi)7.3  
Engine RPM(rpm) 2239  
Vehicle Speed Sensor(mph)68  
Ignition Timing Advance for #1 Cylinder(i°) -40.0  
Intake Air Temperature(i°F)96  
Air Flow Rate from Mass Air Flow Sensor(lb/s)0.10  
Absolute Throttle Position(%)16.1  
Commanded Secondary Air StatusOFF  
Location of Oxygen SensorsB1S12--B2S12--  
Oxygen Sensor Output Voltage Bank 1-Sensor 1(V)0.520  
Short Term Fuel Trim Bank 1-Sensor 1(%) -1.6  
Oxygen Sensor Output Voltage Bank 1-Sensor 2(V)0.585  
Short Term Fuel Trim Bank 1-Sensor 2(%)N/A  
Oxygen Sensor Output Voltage Bank 2-Sensor 1(V)0.220  
Short Term Fuel Trim Bank 2-Sensor 1(%) -1.6  
Oxygen Sensor Output Voltage Bank 2-Sensor 2(V)0.060  
Short Term Fuel Trim Bank 2-Sensor 2(%)99.2  
OBD requirements to which vehicle is designedOBDII

## Wide Open Throttle Frame 1

Numbers of DTCs 0  
Fuel system 1 statusCL  
Fuel System 2 statusCL  
Calculated Load Value(%)72.9  
Engine Coolant Temperature(i°F)195  
Short Term Fuel Trim -Bank 1(%)0.0  
Long Term Fuel Trim - Bank 1(%)0.0  
Short Term Fuel Trim -Bank 2(%)0.0  
Long Term Fuel Trim - Bank 2(%)0.0  
Intake Manifold Absolute Pressure(psi)14.5  
Engine RPM(rpm) 3942  
Vehicle Speed Sensor(mph)78  
Ignition Timing Advance for #1 Cylinder(i°)-33.0  
Intake Air Temperature(i°F)93  
Air Flow Rate from Mass Air Flow Sensor(lb/s)0.41  
Absolute Throttle Position(%)100.0  
Commanded Secondary Air StatusOFF  
Location of Oxygen SensorsB1S12--B2S12--  
Oxygen Sensor Output Voltage Bank 1-Sensor 1(V)0.875  
Short Term Fuel Trim Bank 1-Sensor 1(%)0.0  
Oxygen Sensor Output Voltage Bank 1-Sensor 2(V)0.905  
Short Term Fuel Trim Bank 1-Sensor 2(%)N/A  
Oxygen Sensor Output Voltage Bank 2-Sensor 1(V)0.890  
Short Term Fuel Trim Bank 2-Sensor 1(%)0.0  
Oxygen Sensor Output Voltage Bank 2-Sensor 2(V)0.870  
Short Term Fuel Trim Bank 2-Sensor 2(%)99.2  
OBD requirements to which vehicle is designedOBDII

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## Wide Open Throttle Frame 2

Numbers of DTCs 0  
Fuel system 1 statusCL  
Fuel System 2 statusCL  
Calculated Load Value(%)86.3  
Engine Coolant Temperature(i°F)195  
Short Term Fuel Trim -Bank 1(%)0.0  
Long Term Fuel Trim - Bank 1(%)0.0  
Short Term Fuel Trim -Bank 2(%)0.0  
Long Term Fuel Trim - Bank 2(%)0.0  
Intake Manifold Absolute Pressure(psi)14.2  
Engine RPM(rpm) 4414  
Vehicle Speed Sensor(mph)89  
Ignition Timing Advance for #1 Cylinder(i°)-33.0  
Intake Air Temperature(i°F)93  
Air Flow Rate from Mass Air Flow Sensor(lb/s)0.49  
Absolute Throttle Position(%)100.0  
Commanded Secondary Air StatusOFF  
Location of Oxygen SensorsB1S12--B2S12--  
Oxygen Sensor Output Voltage Bank 1-Sensor 1(V)0.875  
Short Term Fuel Trim Bank 1-Sensor 1(%)0.0  
Oxygen Sensor Output Voltage Bank 1-Sensor 2(V)0.895  
Short Term Fuel Trim Bank 1-Sensor 2(%)N/A  
Oxygen Sensor Output Voltage Bank 2-Sensor 1(V)0.895  
Short Term Fuel Trim Bank 2-Sensor 1(%)0.0  
Oxygen Sensor Output Voltage Bank 2-Sensor 2(V)0.875  
Short Term Fuel Trim Bank 2-Sensor 2(%)99.2  
OBD requirements to which vehicle is designedOBDII

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### Wide Open Throttle Frame 3

Numbers of DTCs 0  
Fuel system 1 statusCL  
Fuel System 2 statusCL  
Calculated Load Value(%)99.6  
Engine Coolant Temperature(i°F)195  
Short Term Fuel Trim -Bank 1(%)0.0  
Long Term Fuel Trim - Bank 1(%)0.0  
Short Term Fuel Trim -Bank 2(%)0.0  
Long Term Fuel Trim - Bank 2(%)0.0  
Intake Manifold Absolute Pressure(psi)14.4  
Engine RPM(rpm) 4915  
Vehicle Speed Sensor(mph)99  
Ignition Timing Advance for #1 Cylinder(i°)-33.0  
Intake Air Temperature(i°F)91  
Air Flow Rate from Mass Air Flow Sensor(lb/s)0.55  
Absolute Throttle Position(%)100.0  
Commanded Secondary Air StatusOFF  
Location of Oxygen SensorsB1S12--B2S12--  
Oxygen Sensor Output Voltage Bank 1-Sensor 1(V)0.530  
Short Term Fuel Trim Bank 1-Sensor 1(%)0.0  
Oxygen Sensor Output Voltage Bank 1-Sensor 2(V)0.940  
Short Term Fuel Trim Bank 1-Sensor 2(%)N/A  
Oxygen Sensor Output Voltage Bank 2-Sensor 1(V)0.445  
Short Term Fuel Trim Bank 2-Sensor 1(%)0.0  
Oxygen Sensor Output Voltage Bank 2-Sensor 2(V)0.930  
Short Term Fuel Trim Bank 2-Sensor 2(%)99.2  
OBD requirements to which vehicle is designedOBDII