

Cause

Low voltage supply on intake air pressure sensor.

Details

A voltage supply inferior to 4.75 volts was detected on sensor.

This voltage may be consequence of an ECM internal problem or a probable short-circuit to battery negative (ground). Check for short-circuits to battery negative according to Troubleshooting Routine.

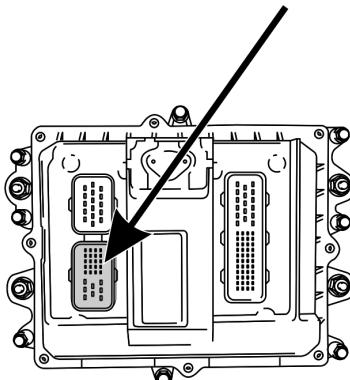
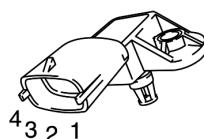
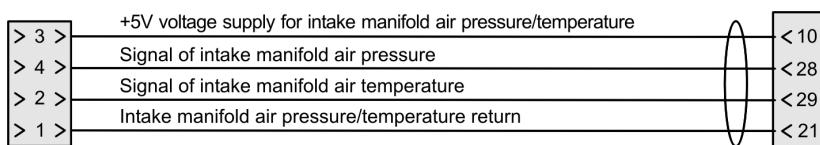
Strategy**Detection of defective sensor**

Yellow light turns ON / Engine power is reduced by 20%.

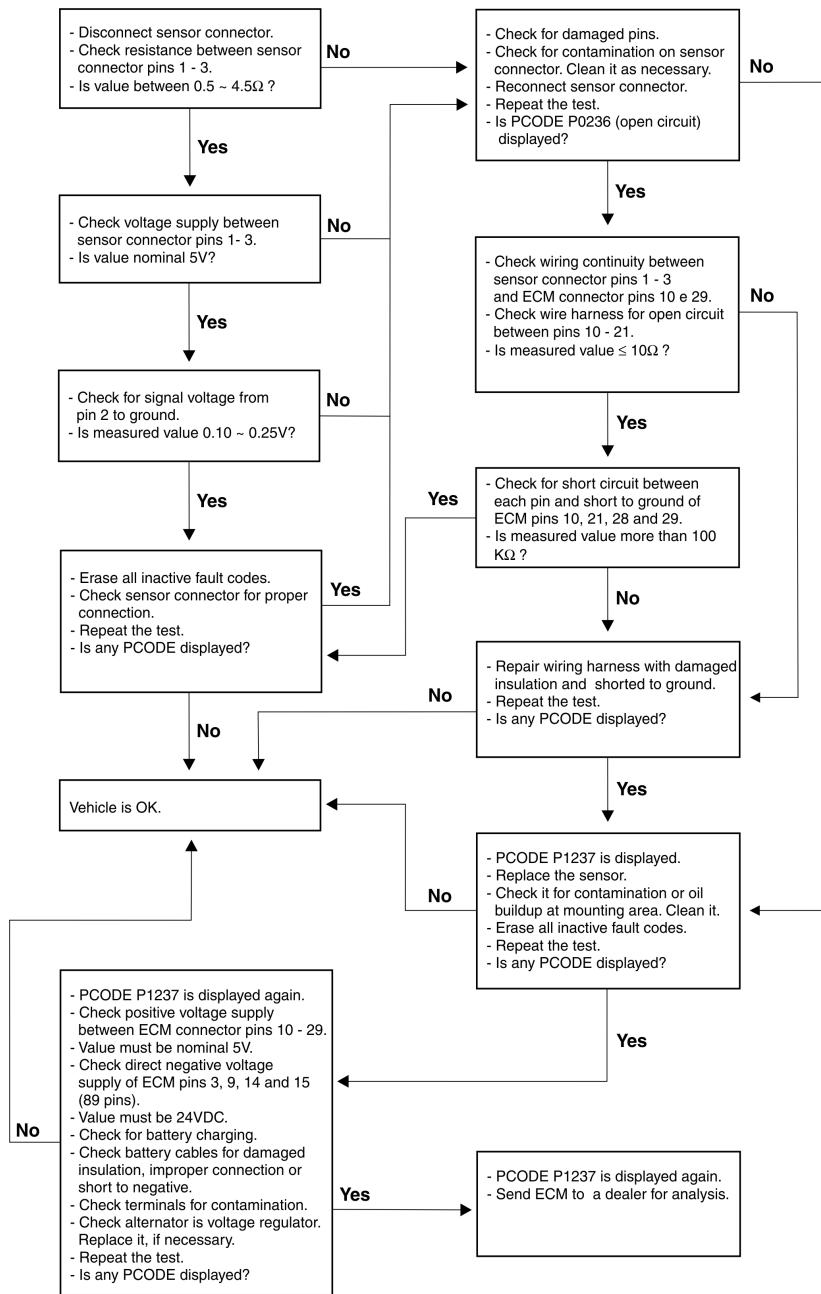
Above 3000 hPa it reduces by 50%.

ECM uses this signal to calculate the intake air mass and to define:

- Injection timing;
- Start of injection angle;
- As protection on emissions map.



Troubleshooting Routine



Cause

Voltage supply high on intake air pressure sensor.

Details

A voltage supply superior to 5.25 volts was detected on sensor.

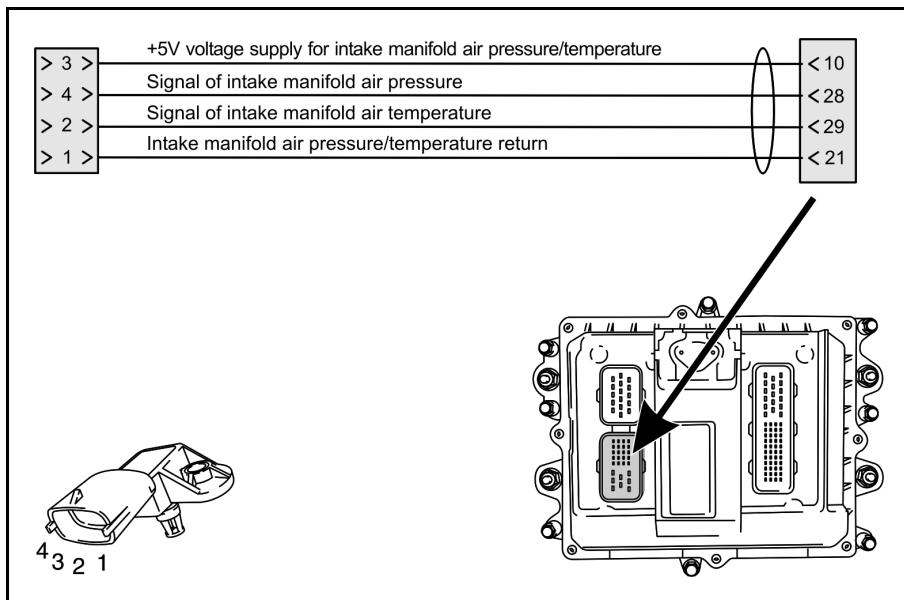
This voltage may be consequence of an internal problem on ECM or a possible short-circuit to battery positive. Check for short-circuits to battery positive according to Troubleshooting Routine.

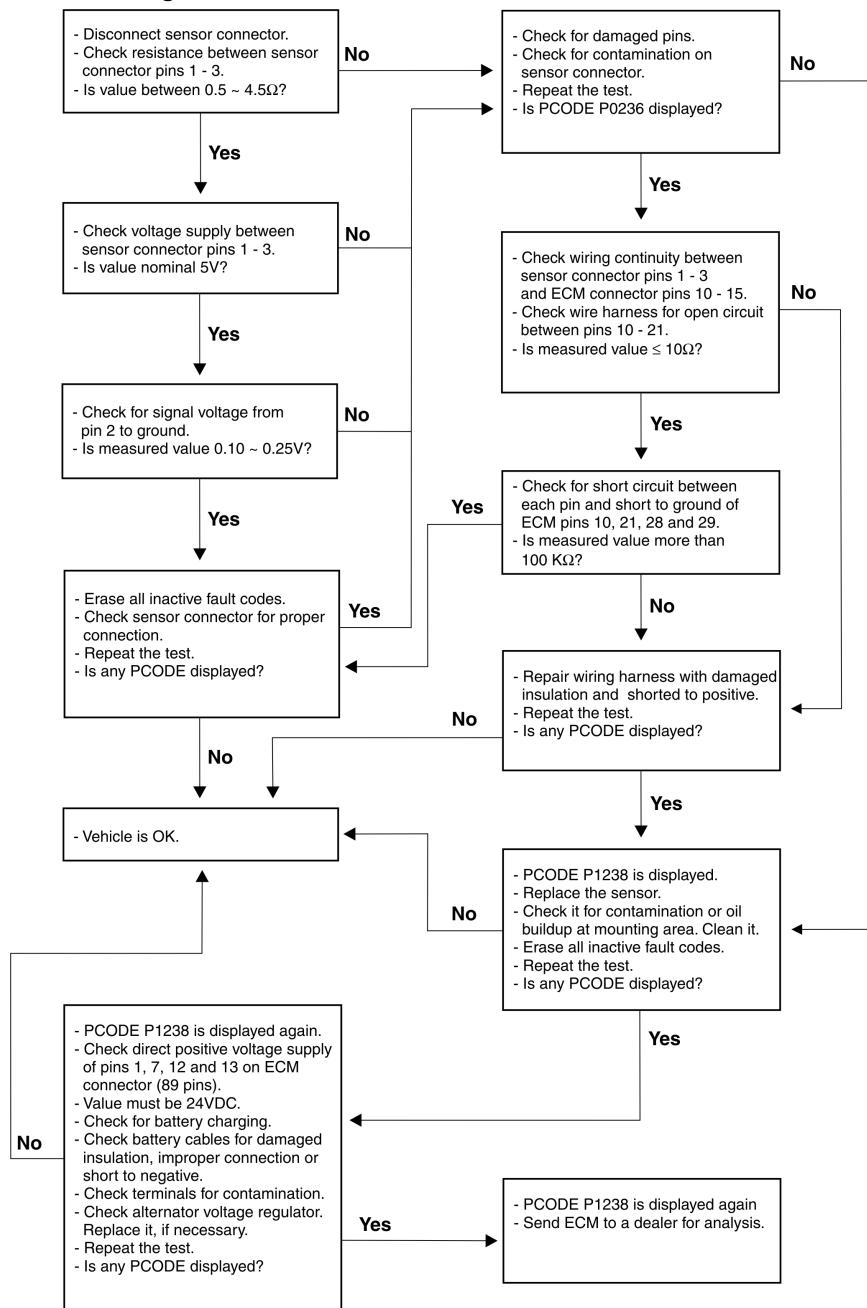
Strategy

Detection of defective sensor	Yellow light turns ON / Engine power is reduced by 20%.
	Above 3000 hPa it reduces by 50%.

ECM uses this signal to calculate the intake air mass and to define:

- Injection timing;
- Start of injection angle;
- As protection on emissions map.



Troubleshooting Routine:

Cause
Test of internal clock is implausible.

Details

There was a monitoring failure of internal clock on ECM's CPU.

Before starting fault correction, check if battery voltage parameters are according to specification. This fault input may occur in case of an incorrect voltage or resistance on system's grounding is above the maximum value of 3 ohms

As this is an ECM internal component, erase all inactive fault codes and check if battery terminals are correctly installed and tightened.

Inspect it again using the Diagnosis Tool. If failure persists, check the following:

1 - **ECM (89 pins)**

- 1a - Inspect positive voltage supply pins (1, 7 and 12 and 13) and negative voltage supply pins (3, 9, 14 and 15) from 89 pins connector for corrosion, bent pins or moisture presence;
- 1b - Check for voltage supply on pins 1, 7, 12, 13, and 3, 9, 14, 15. Value must be nominal 5V;
- 1c - Check for short-circuits on pins 1, 7, 12 and 13 (to ground) and 3, 9, 14 and 15 (to positive). Value must be =10 Mohms;
- 1d - Check for direct positive voltage supply on pins 1, 7, 12 and 13; and for direct negative voltage supply on pins 3, 9, 14 and 15. Value must be 24VDC.

2 - **BATTERY/ALTERNATOR**

- 2a - Check for battery charging, battery cables with damaged insulation, incorrect connection or short-circuit to negative. Replace battery if a low charge is verified after a quick-charging.
- 2b - Check battery poles for contamination. Clean them with a steel wire brush;
- 2c - Check the alternator's voltage regulator. If necessary, replace the component. Check alternator wiring for correct installation. If connections do present tampering, replace them;
- 2d - Check the 20A fuse for correct installation. Replace it if it is blown;
- 2e - Check for battery voltage on engine start. Value must be 12V as minimum for 24V system.

After having checked all parameters, inspect it again using the Diagnosis Tool.

If fault is displayed again, ECM shall be sent to a dealer for analysis.

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Cause
Failure on engine cut-off test.

Details

During engine start, ECM tests the high-pressure pump solenoid cut-off. A failure was detected on solenoid's voltage supply circuit.

Before starting fault correction, check if battery voltage parameters are according to specification.

If fault code P1002 referring to pump solenoid is displayed, check first solenoid's failure and then check the actual fault.

As this is an ECM internal component, erase all inactive fault codes and check if battery terminals are correctly installed and tightened.

Inspect it again using the Diagnosis Tool. If failure persists, check the following:

- 1 - ECM (89 pins)**
- 1a -** Inspect positive voltage supply pins (1, 7 and 12 and 13) and negative voltage supply pins (3, 9, 14 and 15) from 89 pins connector for corrosion, bent pins or moisture presence;
- 1b -** Check for voltage supply on pins 1, 7, 12, 13, and 3, 9, 14, 15. Value must be nominal 5V;
- 1c -** Check for short-circuits on pins 1, 7, 12 and 13 (to ground) and 3, 9, 14 and 15 (to positive). Value must be =10 Mohms;
- 1d -** Check for direct positive voltage supply on pins 1, 7, 12 and 13; and for direct negative voltage supply on pins 3, 9, 14 and 15. Value must be 24VDC.

After having checked all parameters, inspect it again using the Diagnosis Tool.

If the failure persists, ECM shall be sent to a dealer for analysis.

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Cause
Monitoring signal of voltage supply below limit.

Details

An error was detected while recording data on determined memory position.

Before starting fault correction, check if battery voltage parameters are according to specification.

As this is an ECM internal component, erase all inactive fault codes and check if battery terminals are correctly installed and tightened.

Inspect it again using the Diagnosis Tool. If failure persists, check the following:

- 1 - ECM (89 pins)**
- 1a -** Inspect positive voltage supply pins (1, 7 and 12 and 13) and negative voltage supply pins (3, 9, 14 and 15) from 89 pins connector for corrosion, bent pins or moisture presence;
- 1b -** Check for voltage supply on pins 1, 7, 12, 13, and 3, 9, 14, 15. Value must be nominal 5V;
- 1c -** Check for short-circuits on pins 1, 7, 12 and 13 (to ground) and 3, 9, 14 and 15 (to positive). Value must be =10 Mohms;
- 1d -** Check for direct positive voltage supply on pins 1, 7, 12 and 13, and for direct negative voltage supply on pins 3, 9, 14 and 15. Value must be 24VDC.

After having checked all parameters, inspect it again using the Diagnosis Tool.

If failure persists, ECM shall be sent to a dealer for analysis and probable memory recalibration.

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Cause
Voltage supply monitoring signal above limit.

Details

The internal micro-processor for monitoring voltage supply of solenoid from high-pressure pump presents a failure.

Before starting fault correction, check if battery voltage parameters are according to specification.

If fault code P1002 is displayed referring to pump solenoid, check first solenoid's failure and then check the actual fault.

As this is an ECM internal component, erase all inactive fault codes and check if battery terminals are correctly installed and tightened.

Inspect it again using the Diagnosis Tool. If failure persists, check the following:

1 - ECM (89 pins)

- 1a - Inspect positive voltage supply pins (1, 7 and 12 and 13) and negative voltage supply pins (3, 9, 14 and 15) from 89 pins connector for corrosion, bent pins or moisture presence;
- 1b - Check for voltage supply on pins 1, 7, 12, 13, and 3, 9, 14, 15. Value must be nominal 5V;
- 1c - Check for short-circuits on pins 1, 7, 12 and 13 (to ground) and 3, 9, 14 and 15 (to positive). Value must be =10 Mohms;
- 1d - Check for direct positive voltage supply on pins 1, 7, 12 and 13 and for direct negative voltage supply on pins 3, 9, 14 and 15. Value must be 24VDC.

2 - BATTERY/ALTERNATOR

- 2a - Check for battery charging, battery cables with damaged insulation, incorrect connection or short-circuit to negative. Replace battery if a low charge is verified after a quick-charging.
- 2b - Check battery poles for contamination. Clean them with a steel wire brush;
- 2c - Check the alternator's voltage regulator. If necessary, replace the component. Check alternator wiring for correct installation. If connections do present tampering, replace them;
- 2d - Check the 20A fuse for correct installation. Replace it if it is blown;
- 2e - Check for battery voltage on engine start. Value must be 12V as minimum for 24V system.

After having checked all parameters, inspect it again using the Diagnosis Tool.
If the failure persists, ECM shall be sent to a dealer for analysis.

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Cause

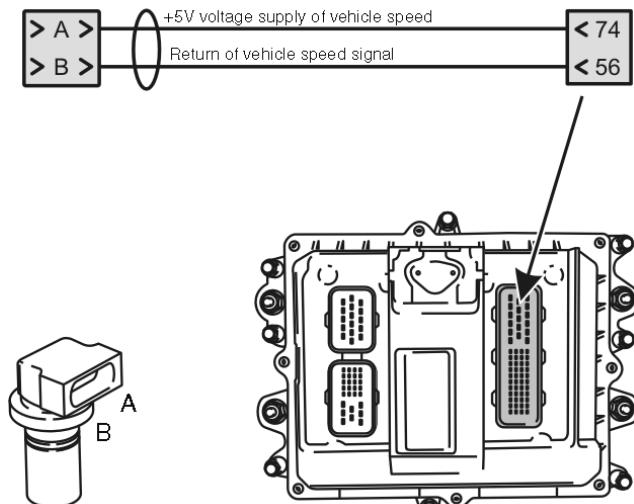
Vehicle speed signal is implausible.

Details

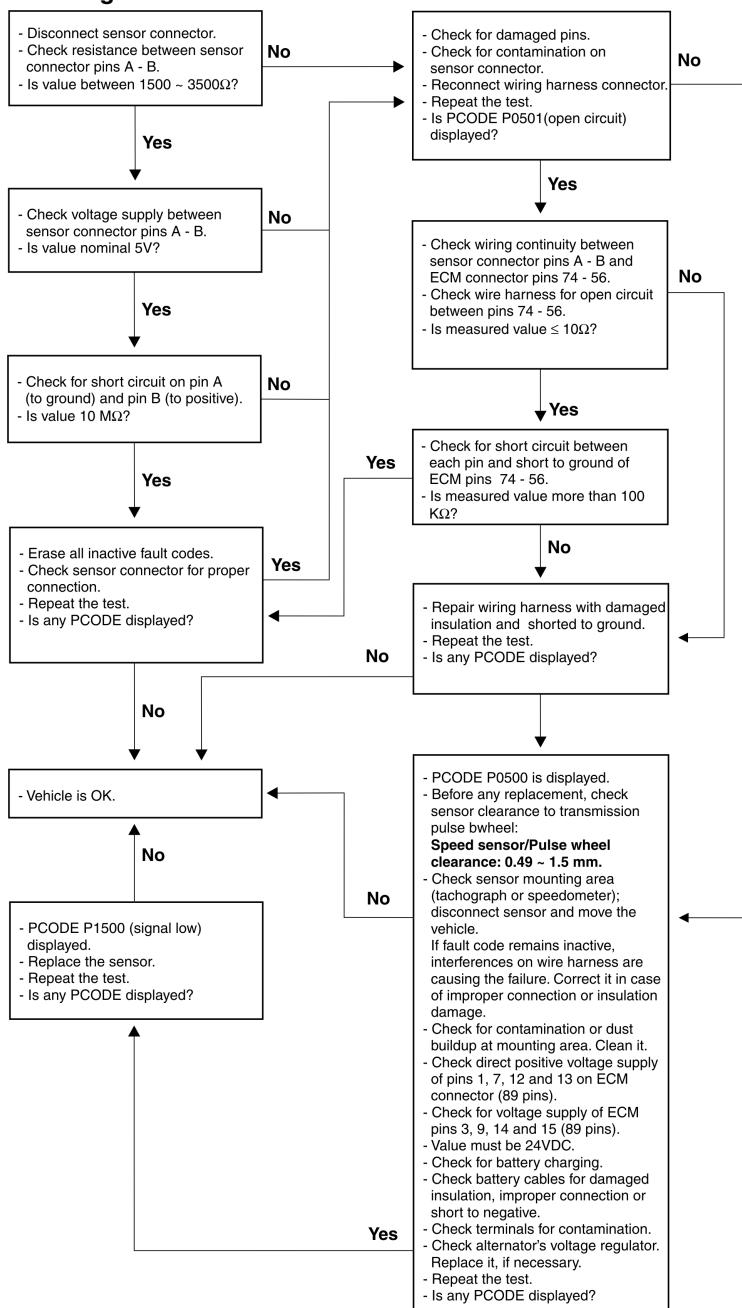
Possibly the circuit or vehicle speed sensor is in an open circuit condition or it is not placed according specification (before proceeding with troubleshooting, check if distance between sensor and pulse generator is within 0.49 ~ 1.5 mm).

Strategy

Detection of defective sensor	Yellow light turns ON. Engine speed limited by parameter "maximum rotation without speed sensor".
<ul style="list-style-type: none">ECM uses this signal for engine protection.	



Troubleshooting Routine



Cause

Implausibility between brake pedal and accelerator pedal switches.

Details

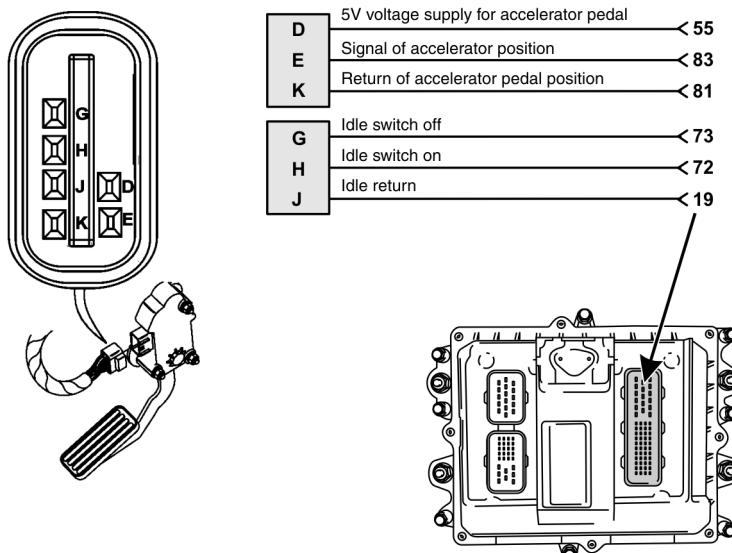
An implausible voltage signal was detected between accelerator pedal sensor and brake pedal.

Strategy

If this signal is missing, engine speed will be fixed in 1200 rpm.

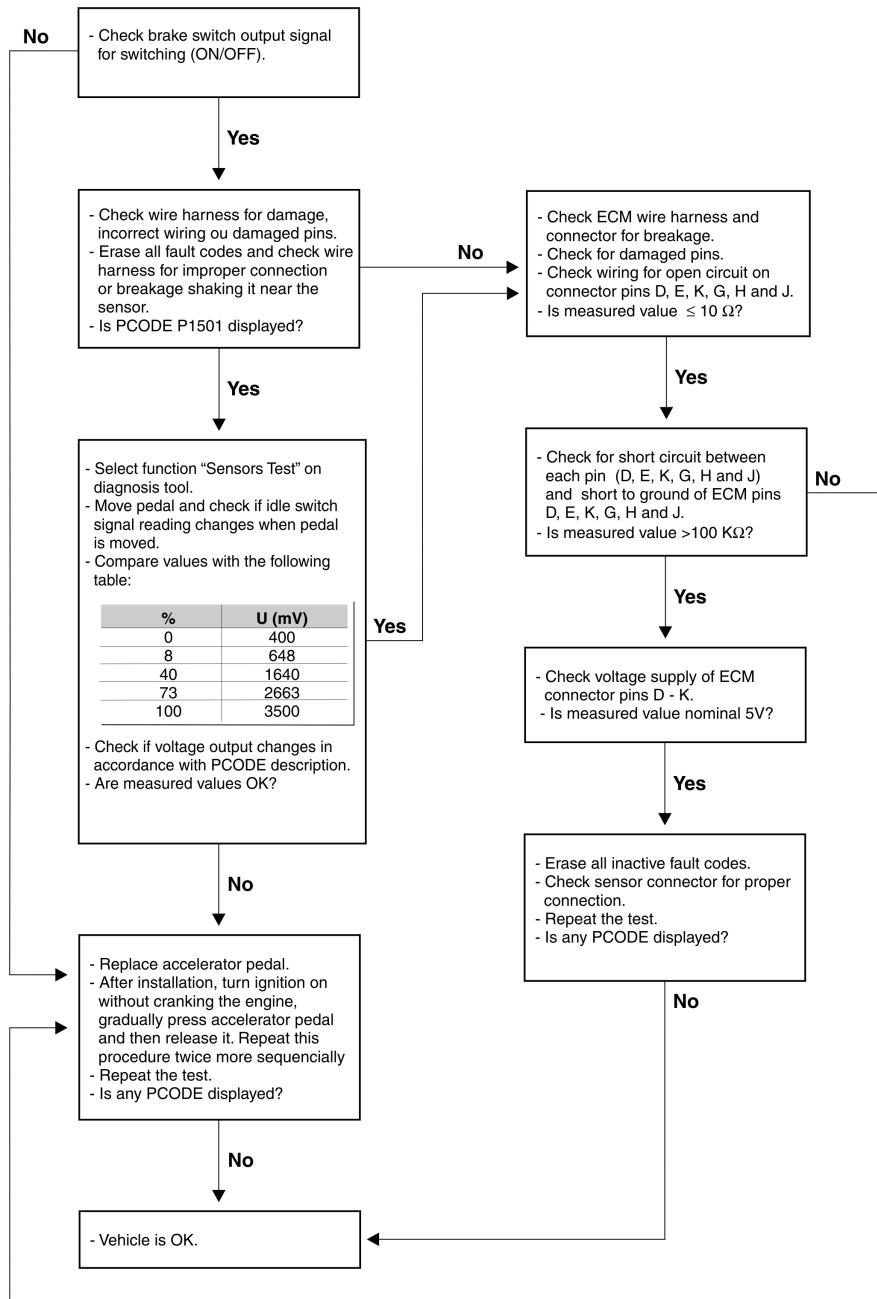
Yellow light is turned ON.

- ECM uses this signal for to validate idle speed and to change rpm according to driver's request.



Accelerator Pedal Sensor

Troubleshooting Routine



Cause
Low voltage supply of oil pressure sensor

Details

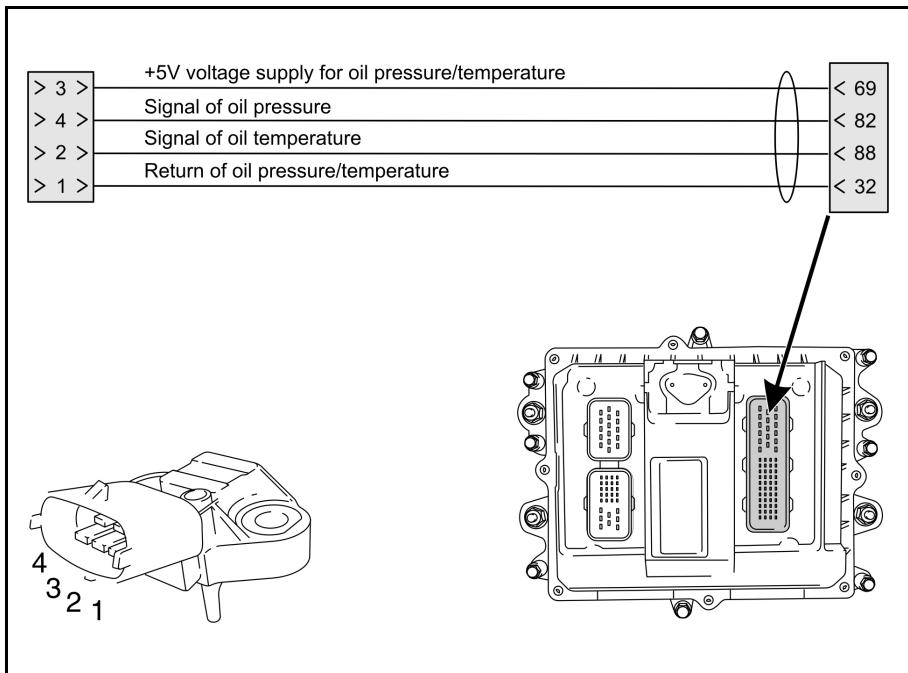
A voltage supply inferior to 4.75 volts was detected on sensor.

This voltage may be consequence of an ECM internal problem or a probable short-circuit to battery negative (ground). Erase all active fault codes on ECM and start the engine again.

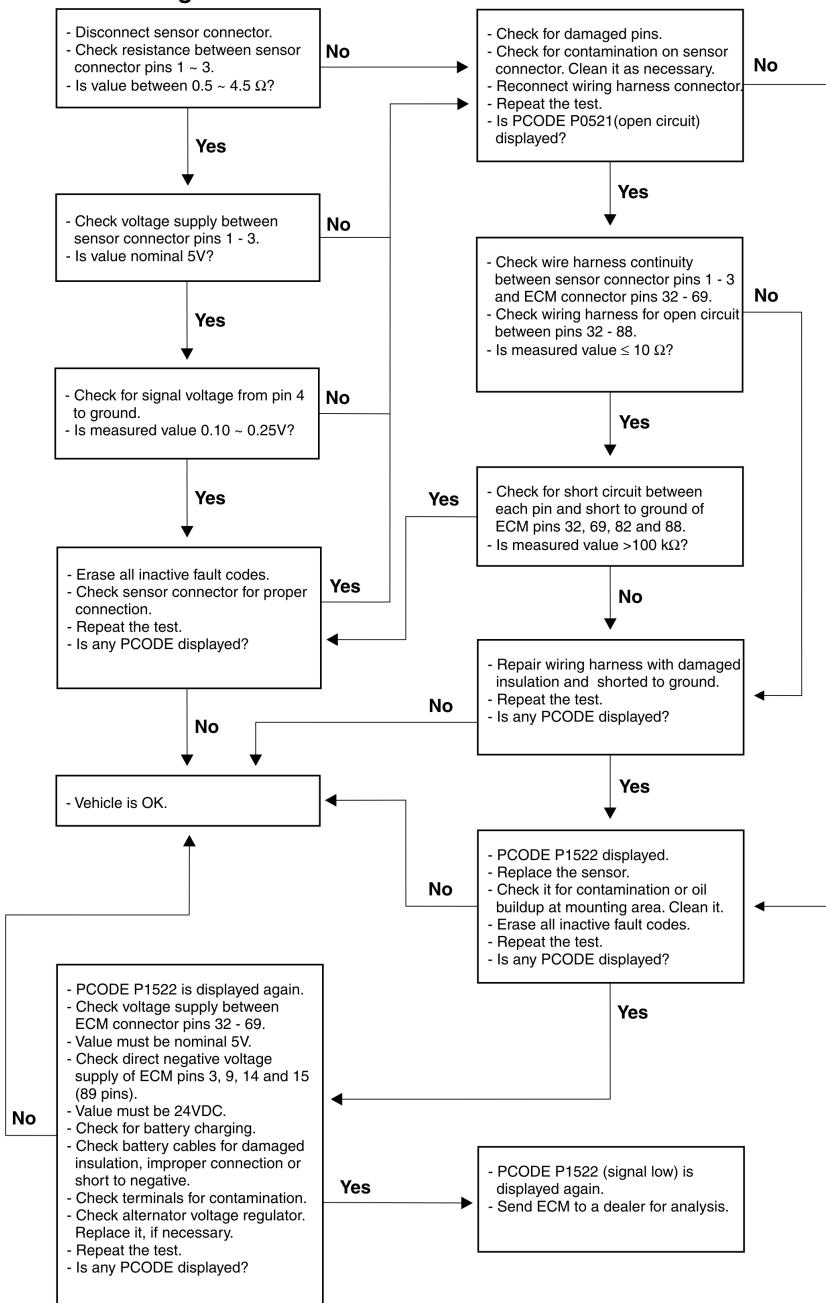
If failure persists, check for short-circuit to battery negative (ground) according to Troubleshooting Routine.

Strategy

Detection of defective sensor	Yellow light turns ON. Engine stop - below 0.5 bar.
• ECM uses this signal for engine protection.	



Troubleshooting Routine



Cause

Voltage supply high on oil pressuresensor

Details

A voltage supply superior to 5.25 volts was detected on sensor. This voltage may be consequence of an internal problem on ECM or a possible short-circuit to battery positive. Erase all active fault codes and start vehicle's engine again.

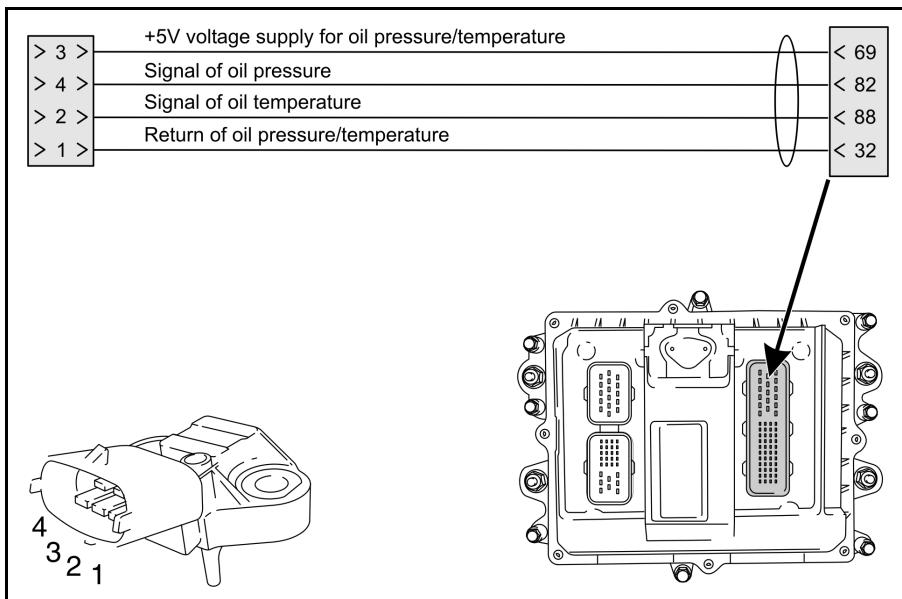
If failure persists, check for short-circuit to battery positive according to Troubleshooting Routine.

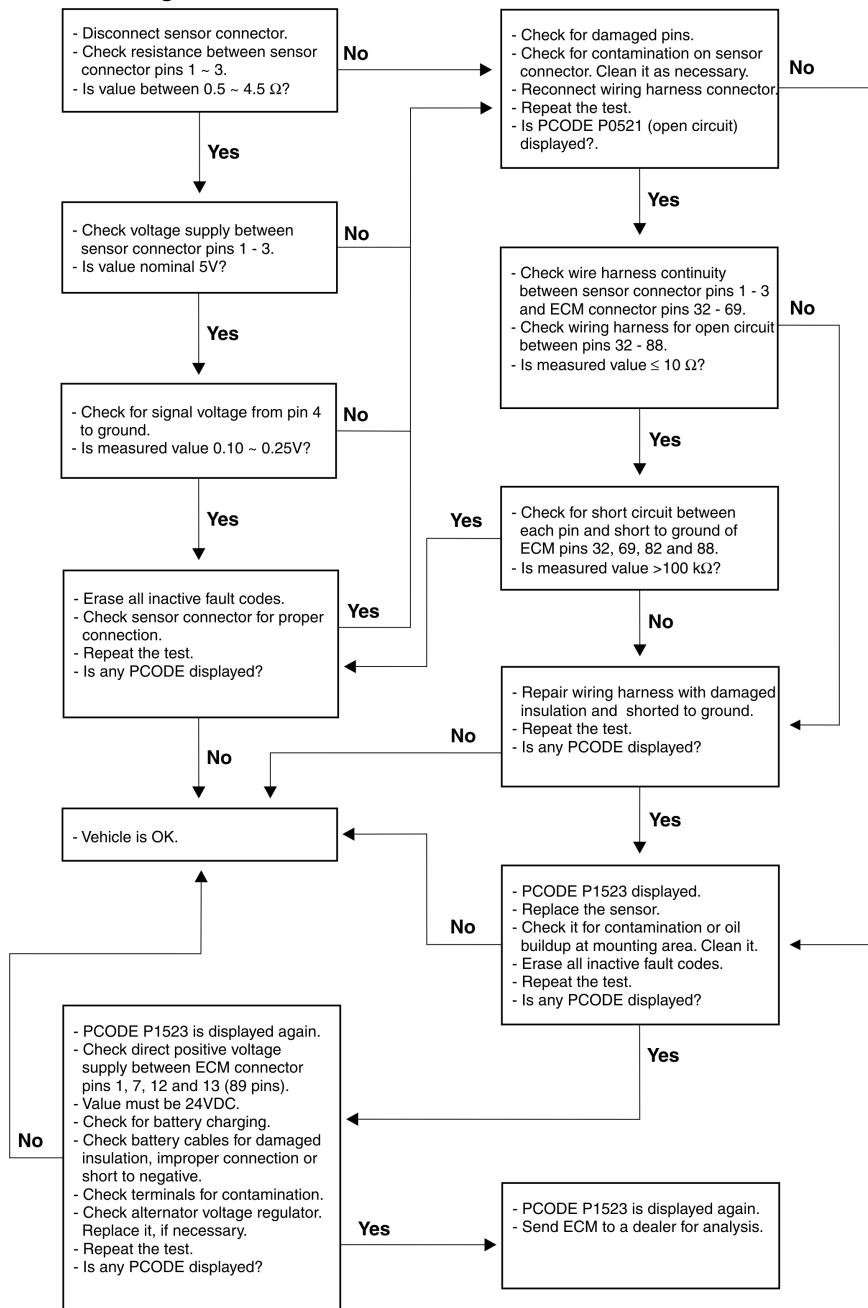
Strategy**Detection of defective sensor**

Yellow light turns ON.

Engine stop - below 0.5 bar.

- ECM uses this signal for engine protection.



Troubleshooting Routine

Cause

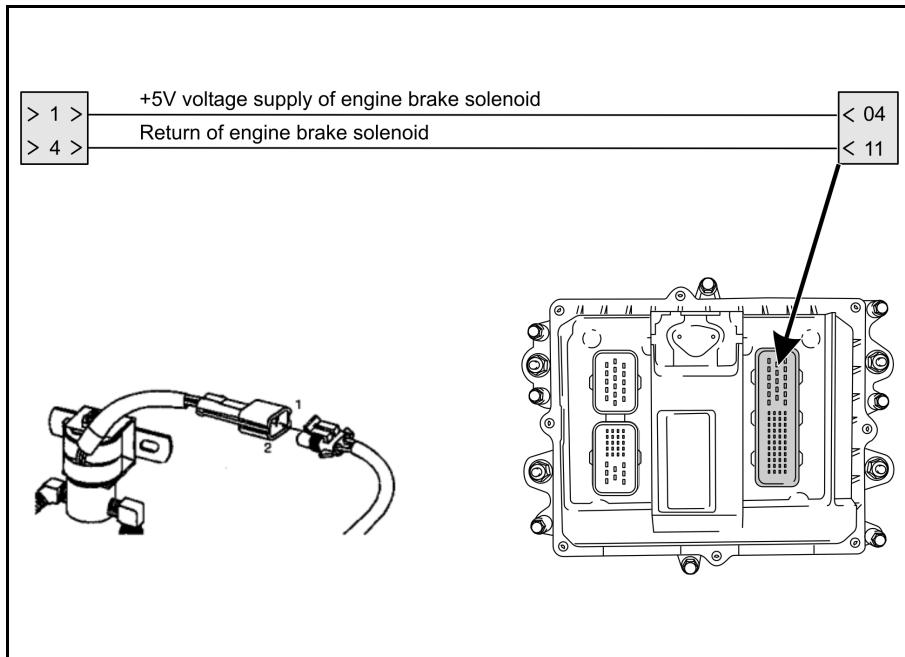
Engine brake valve is disconnected.

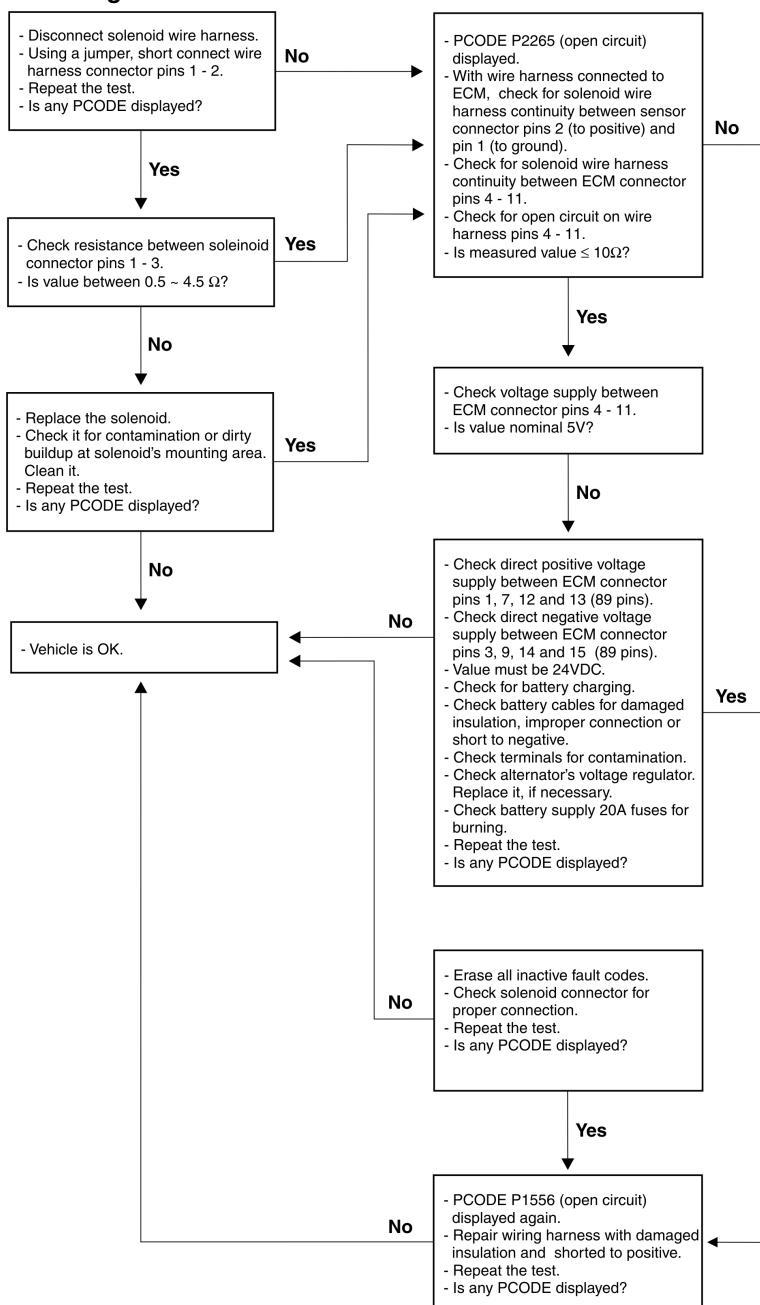
Details

Possibly the circuit or engine brake solenoid is in an open circuit condition, with no connection to ECM. Check solenoid wire harness for proper connection and solenoid it self if wire harness resistance is 3 ohms, as maximum.

Strategy

Signal from engine brake solenoid	Detection of defective sensor This failure does not reduce engine power.
• ECM uses this signal for acknowledge the activation of engine brake solenoid.	



Troubleshooting Routine:

Cause

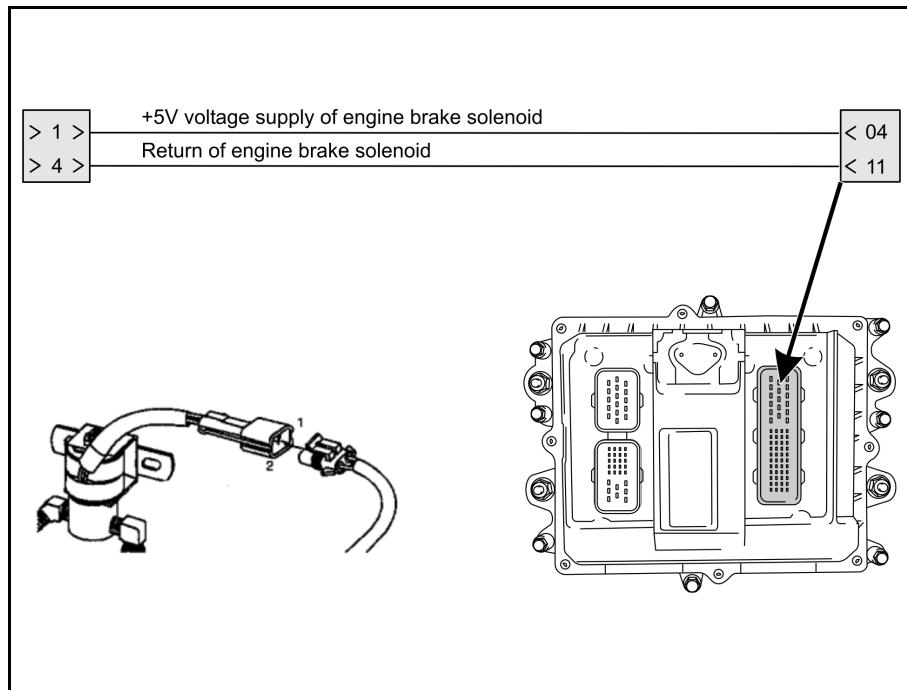
Short-circuit to ground on engine brake valve.

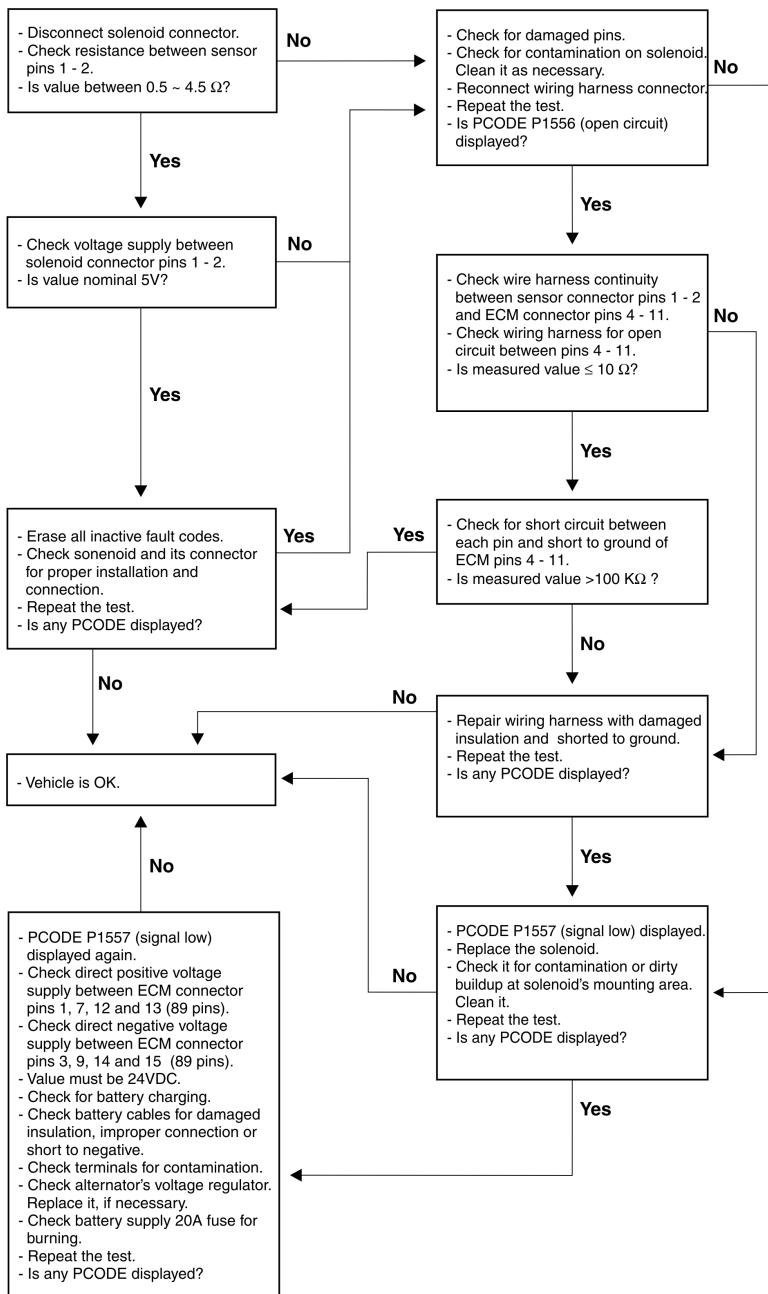
Details

A low voltage signal was detected coming from engine brake solenoid. There is possibly a biased coil's resistance or short-circuits on wire harness.

Strategy

Signal from Engine brake solenoid	Detection of defective sensor. This failure does not reduce engine power
<ul style="list-style-type: none">ECM uses this signal for acknowledging the activation of engine brake solenoid.	



Troubleshooting Routine

Cause

Short-circuit to battery voltage on engine brake valve.

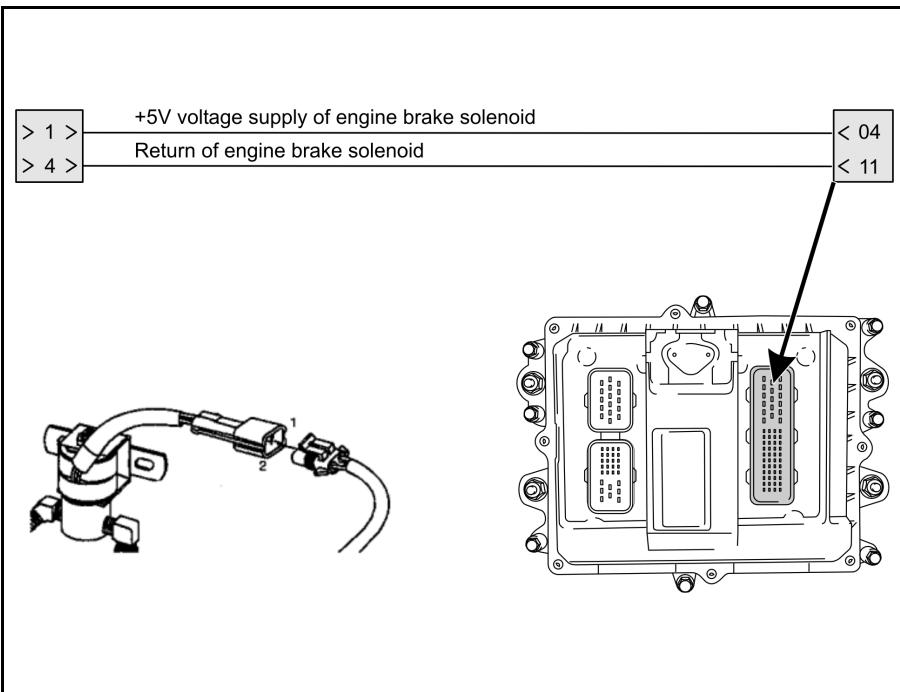
Details

A high voltage signal was detected coming from engine brake solenoid. There is possibly a biased coil's resistance or short-circuits on wire harness.

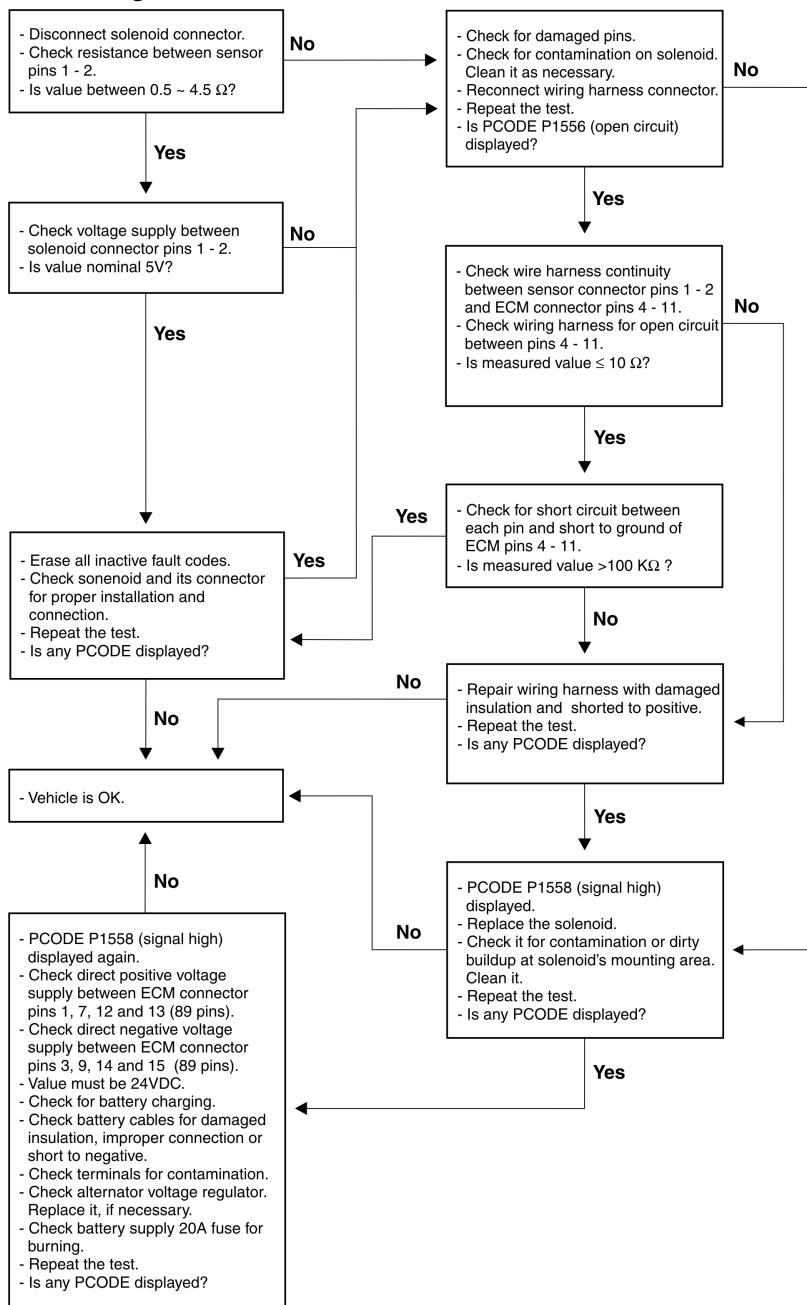
Strategy

Signal from Engine brake solenoid	Detection of defective sensor. This failure does not reduce engine power.
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- ECM uses this signal for acknowledging activation of engine brake solenoid.



Troubleshooting Routine:



Cause

Failure on monitoring internal clock module.

Details

There was a monitoring failure of internal clock of ECM.

Before starting fault correction, check if battery voltage parameters are according to specification. This fault input may occur in case of an incorrect voltage or resistance on system's grounding is above the maximum value of 3 ohms

As this is an ECM internal component, erase all inactive fault codes and check if battery terminals are correctly installed and tightened.

Inspect it again using the Diagnosis Tool. If failure persists, check the following:

1 - ECM (89 pins)

- 1a -** Inspect positive voltage supply pins (1, 7 and 12 and 13) and negative voltage supply pins (3, 9, 14 and 15) from 89 pins connector for corrosion, bent pins or moisture presence;
- 1b -** Check for voltage supply on pins 1, 7, 12, 13, and 3, 9, 14, 15. Value must be nominal 5V;
- 1c -** Check for short-circuits on pins 1, 7, 12 and 13 (to ground) and 3, 9, 14 and 15 (to positive). Value must be =10 Mohms;
- 1d -** Check for direct positive voltage supply on pins 1, 7, 12 and 13; and for direct negative voltage supply on pins 3, 9, 14 and 15. Value must be 24VDC.

After having checked all parameters, inspect it again using the Diagnosis Tool.

If the failure persists, ECM shall be sent to a dealer for analysis.

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Cause
Internal low voltage supply.

Detalhamento

ECM internal voltage supply is momentarily low.

Before starting fault correction, check if battery voltage parameters are according to specification. This fault input may occur in case of an incorrect voltage or resistance on system's grounding is above the maximum value of 3 ohms

As this is an ECM internal component, erase all inactive fault codes and check if battery terminals are correctly installed and tightened.

Inspect it again using the Diagnosis Tool. If failure persists, check the following:

1 - **ECM (89 pins)**

- 1a - Inspect positive voltage supply pins (1, 7 and 12 and 13) and negative voltage supply pins (3, 9, 14 and 15) from 89 pins connector for corrosion, bent pins or moisture presence;
- 1b - Check for voltage supply on pins 1, 7, 12, 13, and 3, 9, 14, 15. Value must be nominal 5V;
- 1c - Check for short-circuits on pins 1, 7, 12 and 13 (to ground) and 3, 9, 14 and 15 (to positive). Value must be =10 Mohms;
- 1d - Check for direct positive voltage supply on pins 1, 7, 12 and 13; and for direct negative voltage supply on pins 3, 9, 14 and 15. Value must be 24VDC.

2 - **BATTERY/ALTERNATOR**

- 2a - Check for battery charging, battery cables with damaged insulation, incorrect connection or short-circuit to negative. Replace battery if a low charge is verified after a quick-charging.
- 2b - Check battery poles for contamination. Clean them with a steel wire brush;
- 2c - Check the alternator's voltage regulator. If necessary, replace the component. Check alternator wiring for correct installation. If connections do present tampering, replace them;
- 2d - Check the 20A fuse for correct installation. Replace it if it is blown;
- 2e - Check for battery voltage on engine start. Value must be 12V as minimum for 24V system.

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Cause
Internal voltage supply high.

Details

ECM internal voltage supply is momentarily high.

Before starting fault correction, check if battery voltage parameters are according to specification. This fault input may occur in case of an incorrect voltage or resistance on system's grounding is above the maximum value of 3 ohms

As this is an ECM internal component, erase all inactive fault codes and check if battery terminals are correctly installed and tightened.

Inspect it again using the Diagnosis Tool. If failure persists, check the following:

1 - **ECM (89 pins)**

- 1a -** Inspect positive voltage supply pins (1, 7 and 12 and 13) and negative voltage supply pins (3, 9, 14 and 15) from 89 pins connector for corrosion, bent pins or moisture presence;
- 1b -** Check for voltage supply on pins 1, 7, 12, 13, and 3, 9, 14, 15. Value must be nominal 5V;
- 1c -** Check for short-circuits on pins 1, 7, 12 and 13 (to ground) and 3, 9, 14 and 15 (to positive). Value must be =10 Mohms;
- 1d -** Check for direct positive voltage supply on pins 1, 7, 12 and 13; and for direct negative voltage supply on pins 3, 9, 14 and 15. Value must be 24VDC.

2 - **BATTERY/ALTERNATOR**

- 2a -** Check for battery charging, battery cables with damaged insulation, incorrect connection or short-circuit to negative. Replace battery if a low charge is verified after a quick-charging
- 2b -** Check battery poles for contamination. Clean them with a steel wire brush;
- 2c -** Check the alternator's voltage regulator and diodes bridge. If necessary, replace the component. Check alternator wiring for correct installation. If connections do present tampering, replace them;
- 2d -** Check the 20A fuse for correct installation. Replace it if it is blown;
- 2e -** Check for battery voltage on engine start. Value must be 12V as minimum for 24V system.

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Cause

Error on signal analog to digital conversion.

Details

An analog to digital conversion error on battery voltage signal was detected.

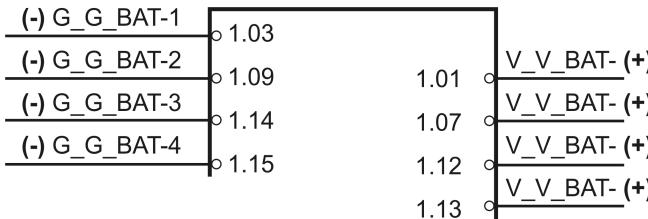
As this is a possible internal failure on ECM processing, erase all active fault codes and start vehicle's engine again. If failure persists, inspect ECM's and wire harness connector pins for corrosion, bent pins or moisture presence.

Use proper probes for testing while doing measurements.

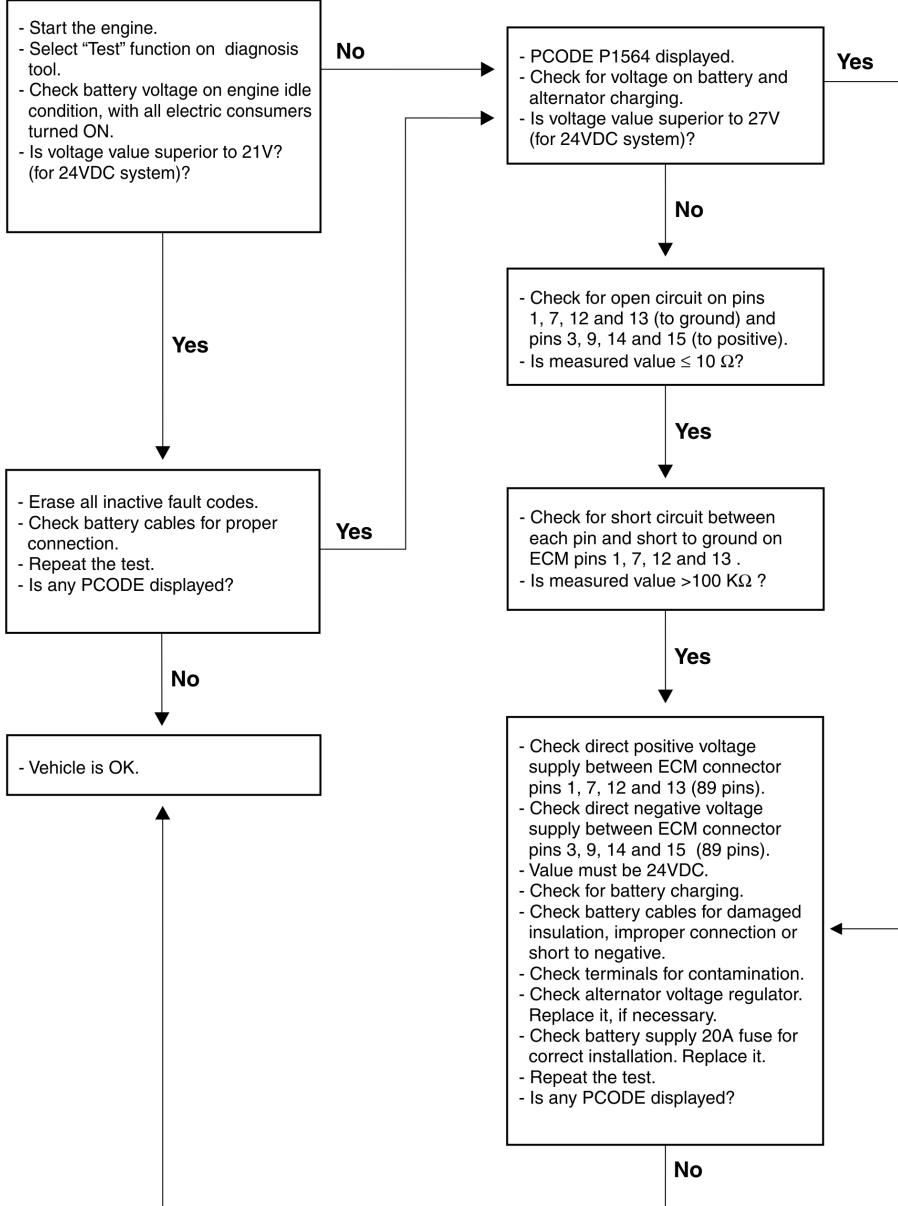
Strategy

Check ECM voltage supply before diagnosing a high or low voltage.

- This signal is used for monitoring the ECM voltage supply.



Troubleshooting Routine



Cause

Failure on monitoring internal clock module.

There was a monitoring failure of internal clock on ECM's CPU.

Before starting fault correction, check if battery voltage parameters are according to specification. This fault input may occur in case of an incorrect voltage or resistance on system's grounding is above the maximum value of 3 ohms

As this is an ECM internal component, erase all inactive fault codes and check if battery terminals are correctly installed and tightened.

Inspect it again using the Diagnosis Tool. If failure persists, check the following:

1 - ECM (89 pins)

- 1a -** Inspect positive voltage supply pins (1, 7 and 12 and 13) and negative voltage supply pins (3, 9, 14 and 15) from 89 pins connector for corrosion, bent pins or moisture presence;
- 1b -** Check for voltage supply on pins 1, 7, 12, 13, and 3, 9, 14, 15. Value must be nominal 5V;
- 1c -** Check for short-circuits on pins 1, 7, 12 and 13 (to ground) and 3, 9, 14 and 15 (to positive). Value must be =10 Mohms;
- 1d -** Check for direct positive voltage supply on pins 1, 7, 12 and 13; and for direct negative voltage supply on pins 3, 9, 14 and 15. Value must be 24VDC.

2 - BATTERY/ALTERNATOR

- 2a -** Check for battery charging, battery cables with damaged insulation, incorrect connection or short-circuit to negative. Replace battery if a low charge is verified after a quick-charging.
- 2b -** Check battery poles for contamination. Clean them with a steel wire brush;
- 2c -** Check the alternator's voltage regulator. If necessary, replace the component. Check alternator wiring for correct installation. If connections do present tampering, replace them;
- 2d -** Check the 20A fuse for correct installation. Replace it if it is blown;
- 2e -** Check for battery voltage on engine start. Value must be 12V as minimum for 24V system.

After having checked all parameters, inspect it again using the Diagnosis Tool.

If fault is displayed again, ECM shall be sent to a dealer for analysis.

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Cause
Memory block checksum error

Details

An error was detected while recording data on determined memory position.

Before starting fault correction, check if battery voltage parameters are according to specification.

As this is an ECM internal component, erase all inactive fault codes and check if battery terminals are correctly installed and tightened.

Inspect it again using the Diagnosis Tool. If failure persists, check the following:

- 1 - ECM (89 pins)**
- 1a -** Inspect positive voltage supply pins (1, 7 and 12 and 13) and negative voltage supply pins (3, 9, 14 and 15) from 89 pins connector for corrosion, bent pins or moisture presence;
- 1b -** Check for voltage supply on pins 1, 7, 12, 13, and 3, 9, 14, 15. Value must be nominal 5V;
- 1c -** Check for short-circuits on pins 1, 7, 12 and 13 (to ground) and 3, 9, 14 and 15 (to positive). Value must be =10 Mohms;
- 1d -** Check for direct positive voltage supply on pins 1, 7, 12 and 13; and for direct negative voltage supply on pins 3, 9, 14 and 15. Value must be 24VDC.

After having checked all parameters, inspect it again using the Diagnosis Tool.

If failure persists, ECM shall be sent to a dealer for analysis and probable memory recalibration.

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Cause
Writing error on memory block

Details

An error was detected while recording data on determined memory position.

Before starting fault correction, check if battery voltage parameters are according to specification.

As this is an ECM internal component, erase all inactive fault codes and check if battery terminals are correctly installed and tightened.

Inspect it again using the Diagnosis Tool. If failure persists, check the following:

1 - ECM (89 pins)

- 1a - Inspect positive voltage supply pins (1, 7 and 12 and 13) and negative voltage supply pins (3, 9, 14 and 15) from 89 pins connector for corrosion, bent pins or moisture presence;
- 1b - Check for voltage supply on pins 1, 7, 12, 13, and 3, 9, 14, 15. Value must be nominal 5V;
- 1c - Check for short-circuits on pins 1, 7, 12 and 13 (to ground) and 3, 9, 14 and 15 (to positive). Value must be =10 Mohms;
- 1d - Check for direct positive voltage supply on pins 1, 7, 12 and 13; and for direct negative voltage supply on pins 3, 9, 14 and 15. Value must be 24VDC.

After having checked all parameters, inspect it again using the Diagnosis Tool.

If failure persists, ECM shall be sent to a dealer for analysis and probable memory recalibration.

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Cause
Data saving execution error

Details

An error while attempting to record data after engine running operation was detected. ECM uses this signal to check reading and writing operations on memory areas.

Before starting fault correction, check if battery voltage parameters are according to specification.

As this is an ECM internal component, erase all inactive fault codes and check if battery terminals are correctly installed and tightened.

Inspect it again using the Diagnosis Tool. If failure persists, check the following:

- 1 - ECM (89 pins)**
- 1a -** Inspect positive voltage supply pins (1, 7 and 12 and 13) and negative voltage supply pins (3, 9, 14 and 15) from 89 pins connector for corrosion, bent pins or moisture presence;
- 1b -** Check for voltage supply on pins 1, 7, 12, 13, and 3, 9, 14, 15. Value must be nominal 5V;
- 1c -** Check for short-circuits on pins 1, 7, 12 and 13 (to ground) and 3, 9, 14 and 15 (to positive). Value must be =10 Mohms;
- 1d -** Check for direct positive voltage supply on pins 1, 7, 12 and 13; and for direct negative voltage supply on pins 3, 9, 14 and 15. Value must be 24VDC.

After having checked all parameters, inspect it again using the Diagnosis Tool.

If failure persists, ECM shall be sent to a dealer for analysis and probable memory recalibration.

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Cause
Memory block mapping error.

Details

An error was detected while attempting to check data positions on RAM.

Before starting fault correction, check if battery voltage parameters are according to specification.

As this is an ECM internal component, erase all inactive fault codes and check if battery terminals are correctly installed and tightened.

Inspect it again using the Diagnosis Tool. If failure persists, check the following:

1 - ECM (89 pins)

- 1a - Inspect positive voltage supply pins (1, 7 and 12 and 13) and negative voltage supply pins (3, 9, 14 and 15) from 89 pins connector for corrosion, bent pins or moisture presence;
- 1b - Check for voltage supply on pins 1, 7, 12, 13, and 3, 9, 14, 15. Value must be nominal 5V;
- 1c - Check for short-circuits on pins 1, 7, 12 and 13 (to ground) and 3, 9, 14 and 15 (to positive). Value must be =10 Mohms;
- 1d - Check for direct positive voltage supply on pins 1, 7, 12 and 13; and for direct negative voltage supply on pins 3, 9, 14 and 15. Value must be 24VDC.

After having checked all parameters, inspect it again using the Diagnosis Tool.

If failure persists, ECM shall be sent to a dealer for analysis and probable memory recalibration.

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Cause

Emergency stop light (STOP) disconnected

Details

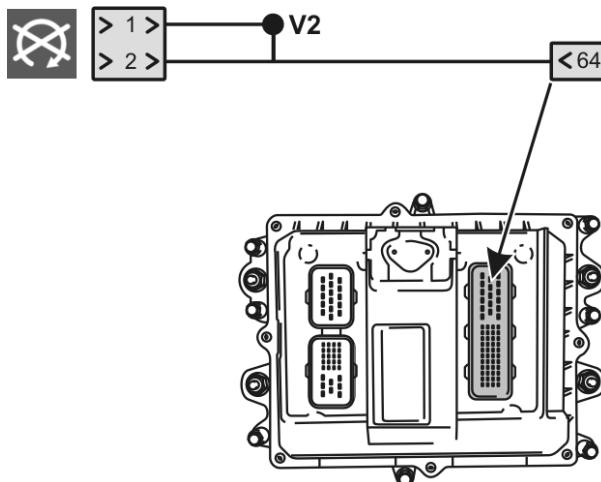
During system's check-up, an open circuit condition from emergency warning light was detected. It is possible that wire harness or lamp is in an open circuit condition (blown bulb). Replace the bulb if it is blown and proceed according to Troubleshooting Routine.

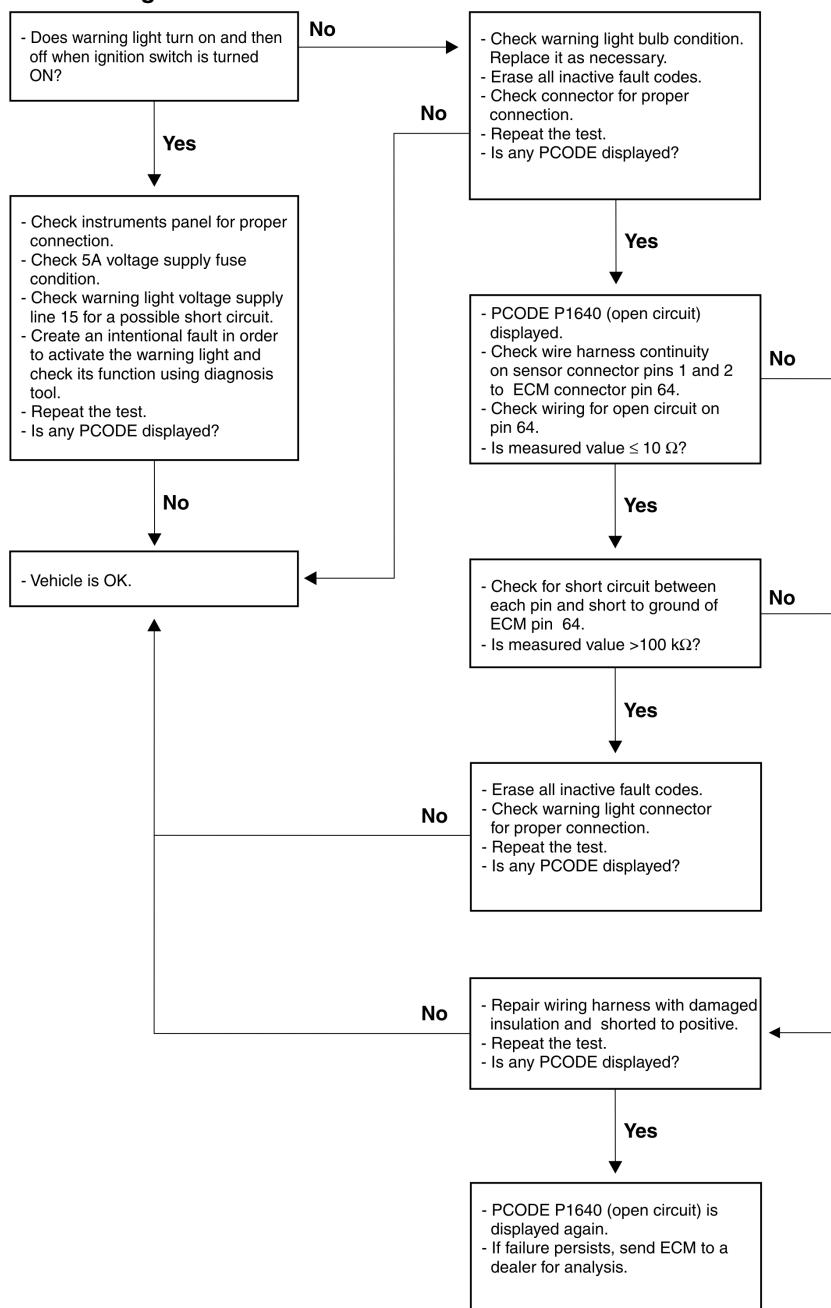
Strategy**Emergency light activation signal**

Detection of defective sensor.

This failure does not reduce engine power.

- ECM uses this signal to activate the emergency stop indicator light.



Troubleshooting Routine

Cause

Short-circuit to ground on emergency stop light

Details

A low voltage signal (current consumption) was detected from emergency light, when commanded by ECM.

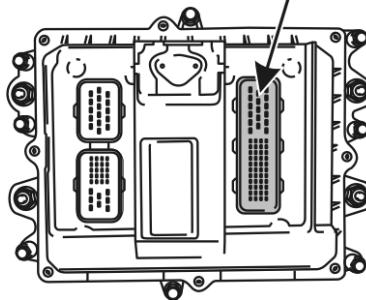
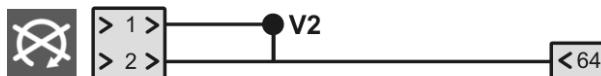
There is a probable wire harness short-circuit to battery negative (ground).

Strategy**Emergency light activation signal**

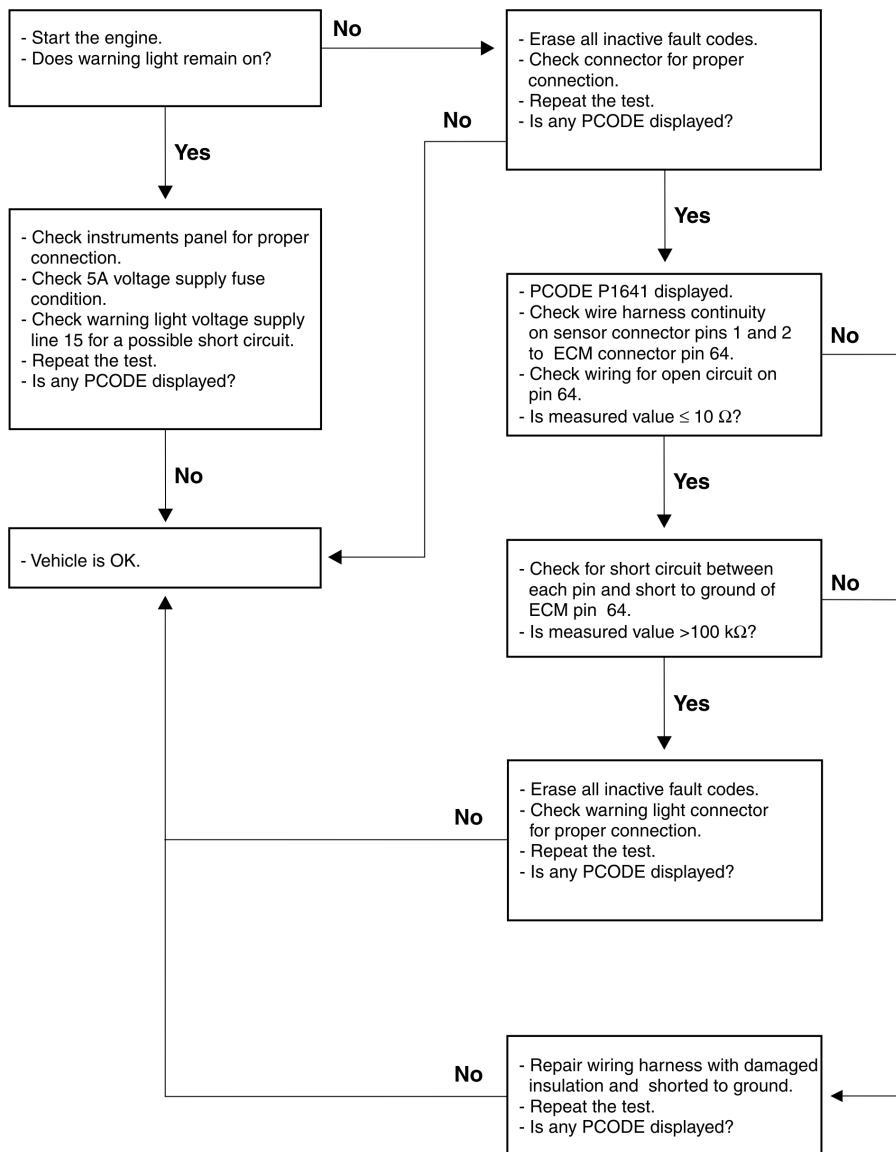
Detection of defective sensor.

This failure does not reduce engine power.

- ECM uses this signal to activate the emergency stop indicator light.



Troubleshooting Routine



Cause

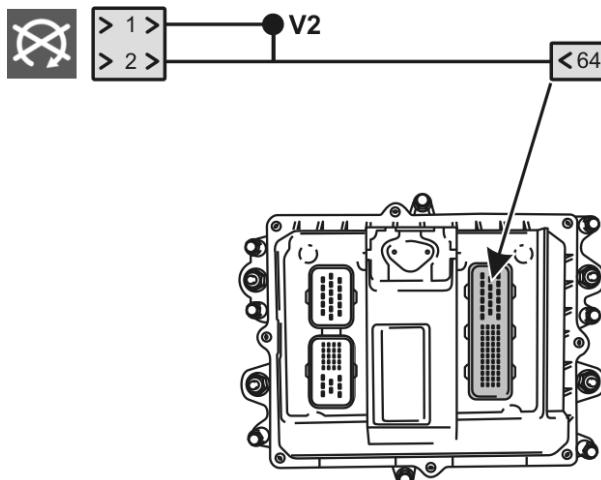
Short-circuit to battery voltage on emergency stop light

Details

A high voltage signal was detected from warning light without a command sent by ECM.
There is a probable wire harness short-circuit to battery positive.

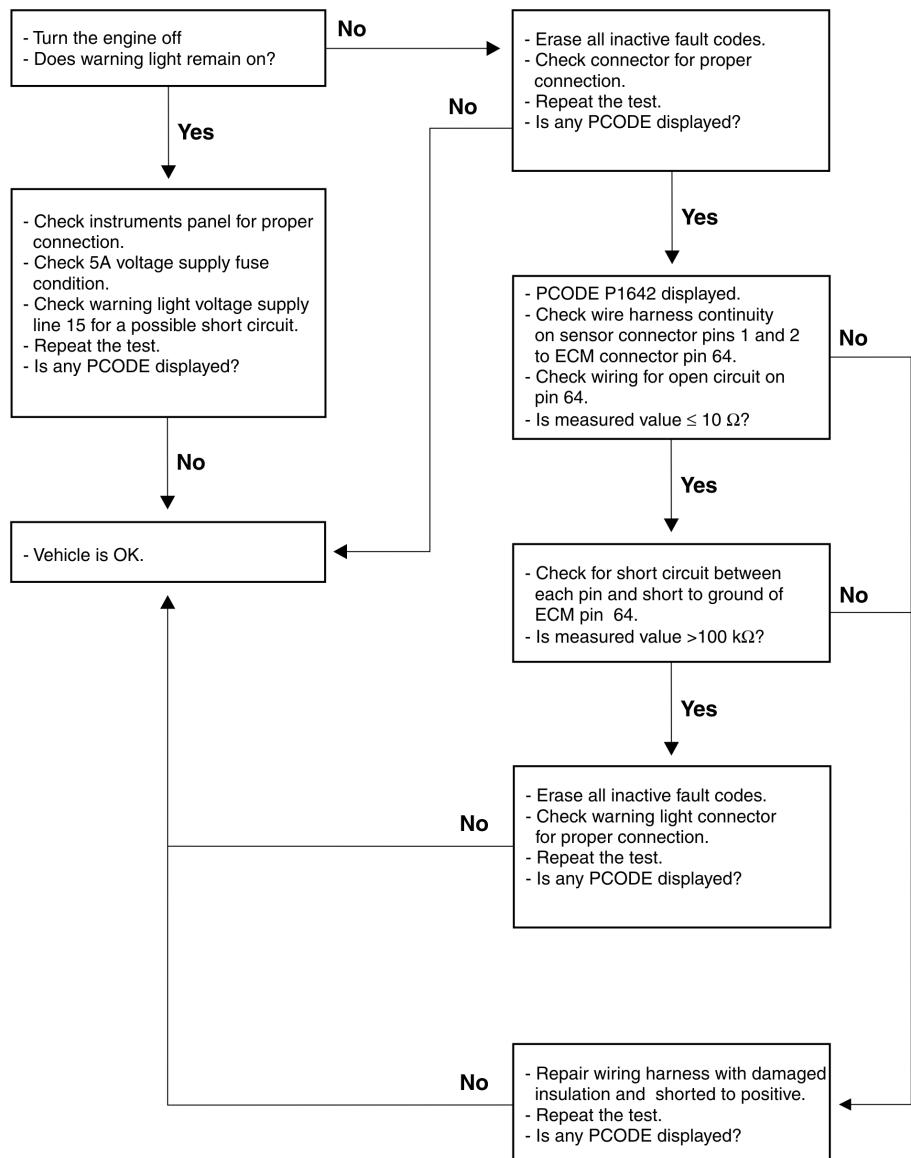
Strategy

- | | |
|--|--|
| Emergency light activation signal | Detection of defective sensor.
This failure does not reduce engine power. |
| • ECM uses this signal to activate the emergency stop indicator light. | |



Warning Light

Troubleshooting Routine



Cause

Warning light (Warning) disconnected

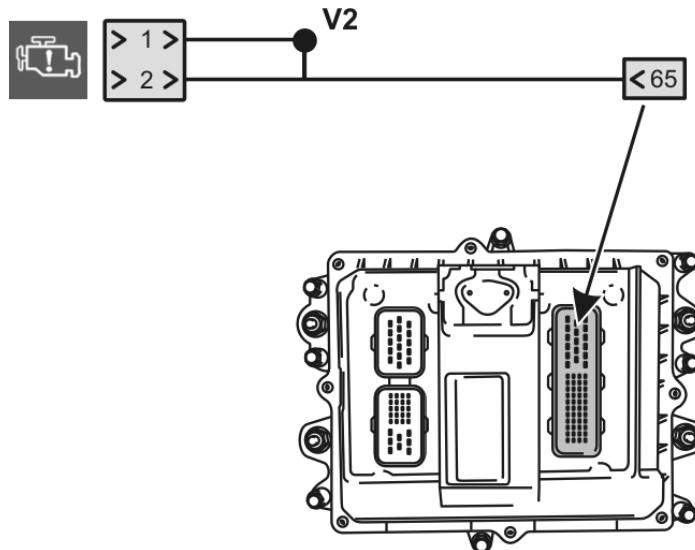
Details

During a check-up of system, an open circuit from warning light was detected.

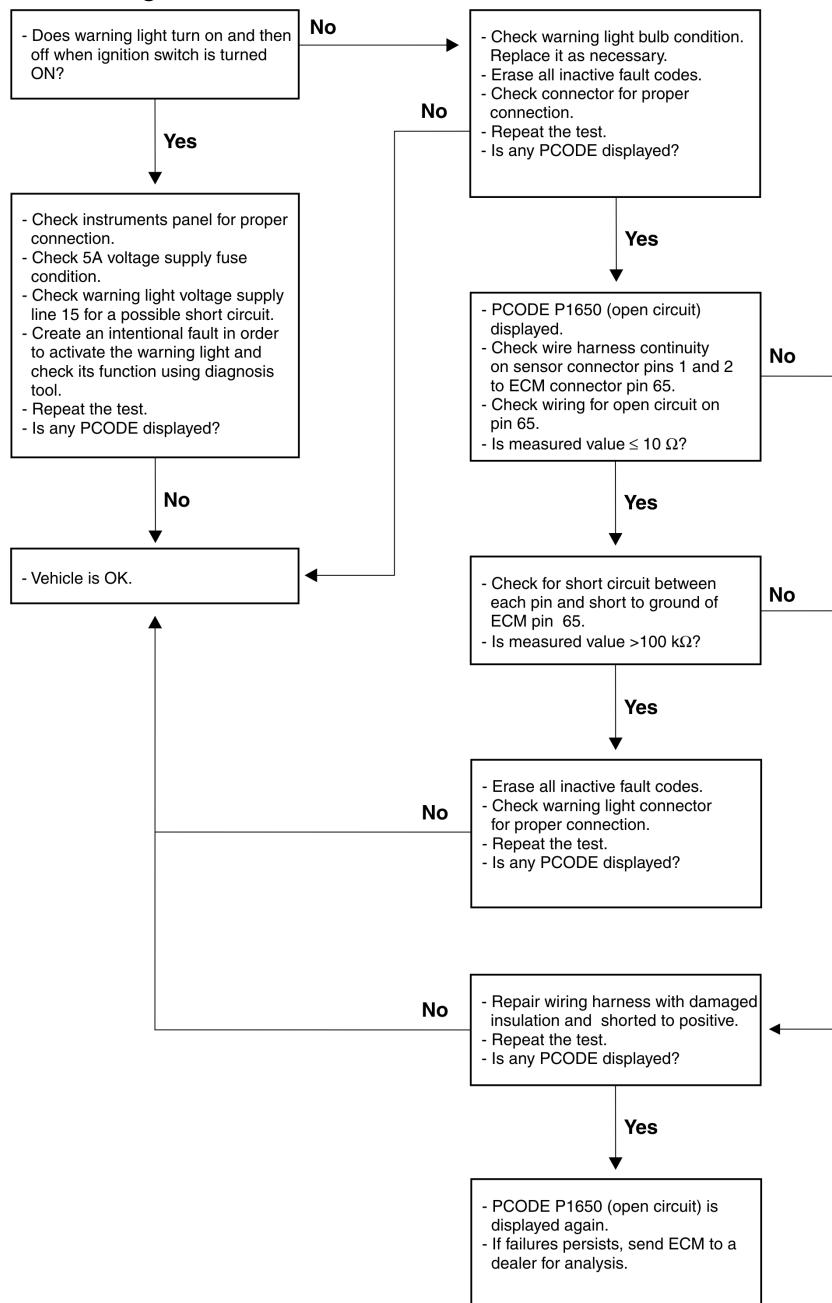
It is possible that a wire harness or lamp is in an open circuit condition (blown bulb). Replace it as necessary. Check the bulb for correct installation on instruments panel connector.

Strategy

Warning Light Activation Signal	Detection of defective sensor. This failure does not reduce engine power
<ul style="list-style-type: none">ECM uses this signal to activate the fault indication light (yellow).	



Troubleshooting Routine



Cause

Short-circuit to ground on warning light (Warning)

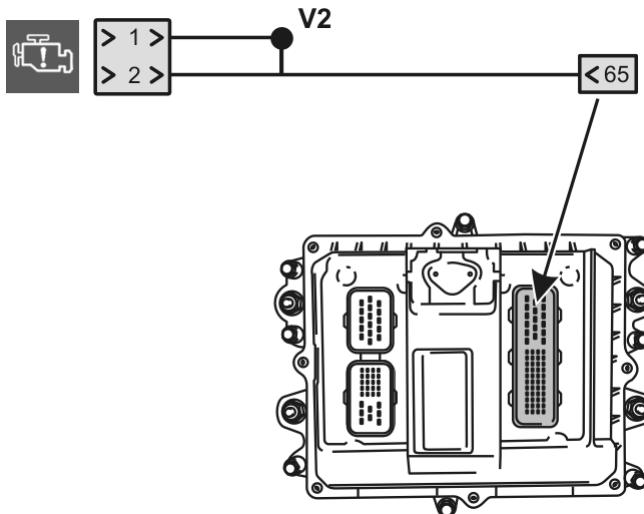
Details

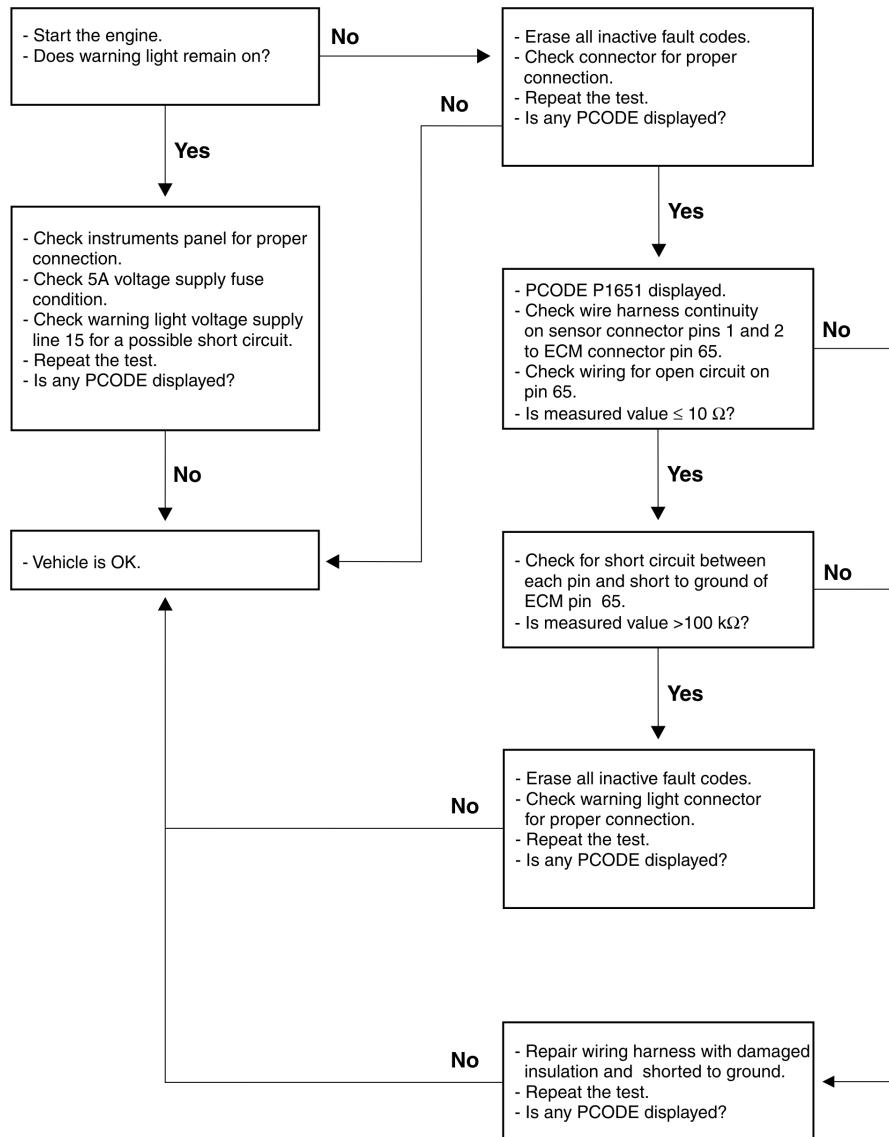
A low voltage signal was detected (current consumption) from warning light, while commanded by ECM.

There is a probable wire harness short-circuit to battery negative (ground).

Strategy

Warning Light Activation Signal	Detection of defective sensor. This failure does not reduce engine power.
<ul style="list-style-type: none">ECM uses this signal to activate the fault indication light (yellow).	



Troubleshooting Routine

Cause

Short-circuit to battery voltage on warning light (Warning)

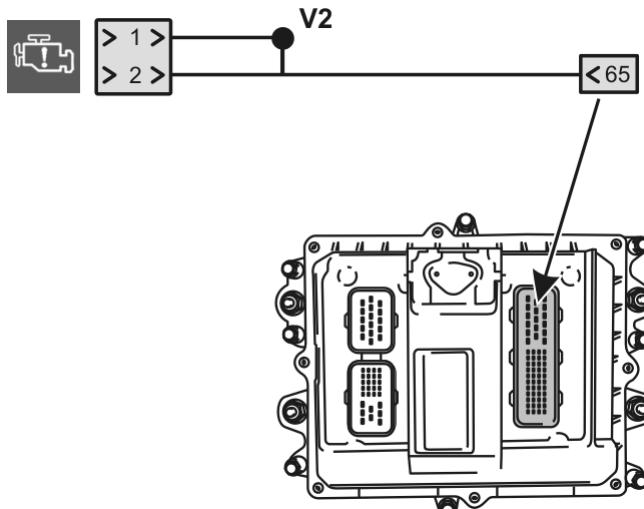
Details

A high voltage signal was detected from warning light without a command from ECM.

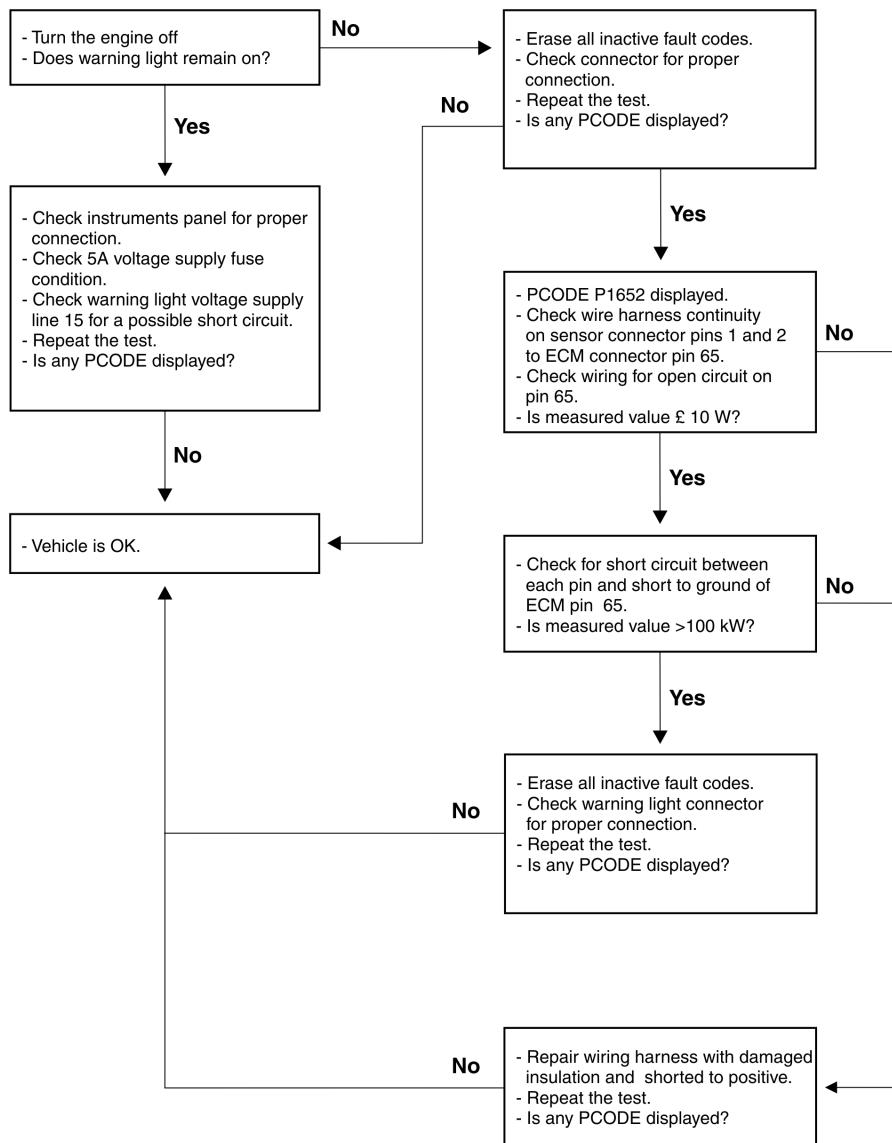
There is a probable wire harness short-circuit to battery positive. Check the bulb for correct installation on instruments panel connector.

Strategy

Warning Light Activation Signal	Detection of defective sensor. This failure does not reduce engine power.
<ul style="list-style-type: none">• ECM uses this signal to activate the fault indication light (yellow).	



Troubleshooting Routine



Cause

Failure on monitoring internal voltage supply UB2, UB3 and UB4.

Details

A voltage supply failure probably occurred on ECM's main relay, which is micro-processed and internal to the component.

Before starting fault correction procedure, check for occurrence of one of the following items:

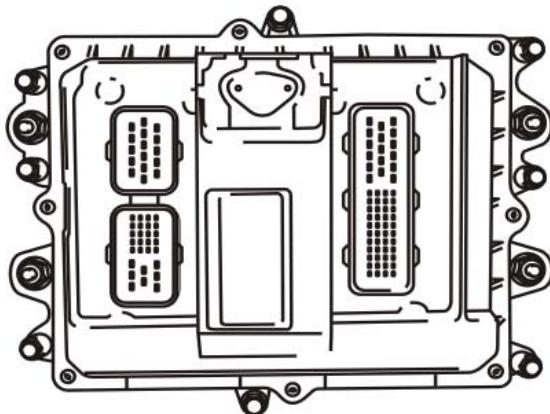
- Battery charging while it was connected, electric welding on chassis with battery connected, supplementary power source, impact, battery removal while ignition switch was ON, and polarity inversion.

If any of these events has occurred, erase all active fault codes and proceed according to Troubleshooting Routine.

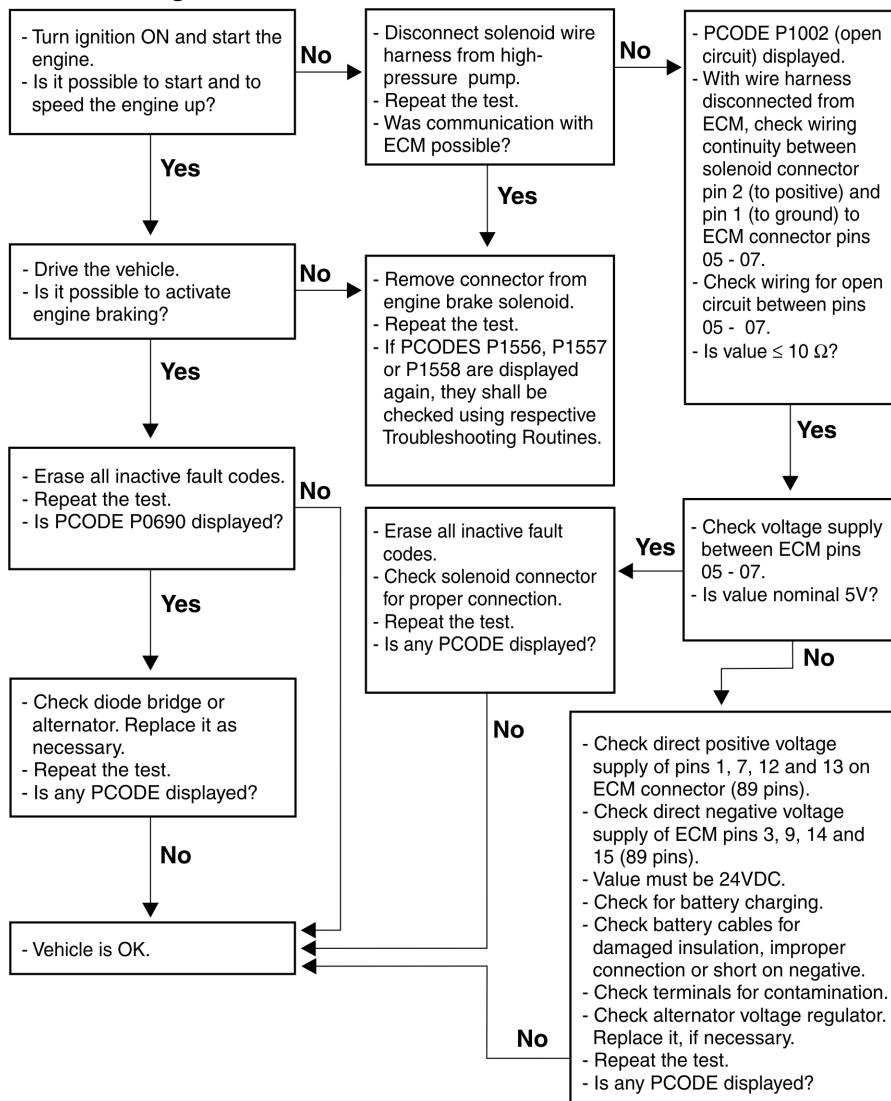
Strategy

This is a safety element, so there is no emergency strategy for it.

- This is an internal relay from ECM which cannot be repaired internally. Failure correction procedure shall be done using the Diagnosis Tool.



Troubleshooting Routine



Cause

Failure on monitoring voltage supply of main relay (A/D converter).

Details

A voltage supply failure probably occurred on ECM's main relay, which is micro-processed and internal to the component.

Before starting fault correction procedure, check for occurrence of one of the following items:

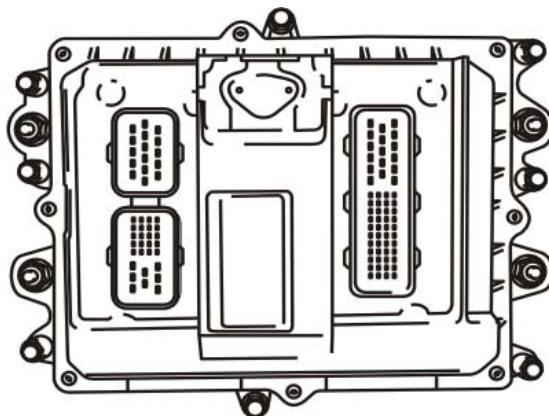
- Battery charging while it was connected, electric welding on chassis with battery connected, supplementary power source, impact, battery removal while ignition switch was ON, and polarity inversion.

If any of these events has occurred, erase all active fault codes and proceed according to Troubleshooting Routine.

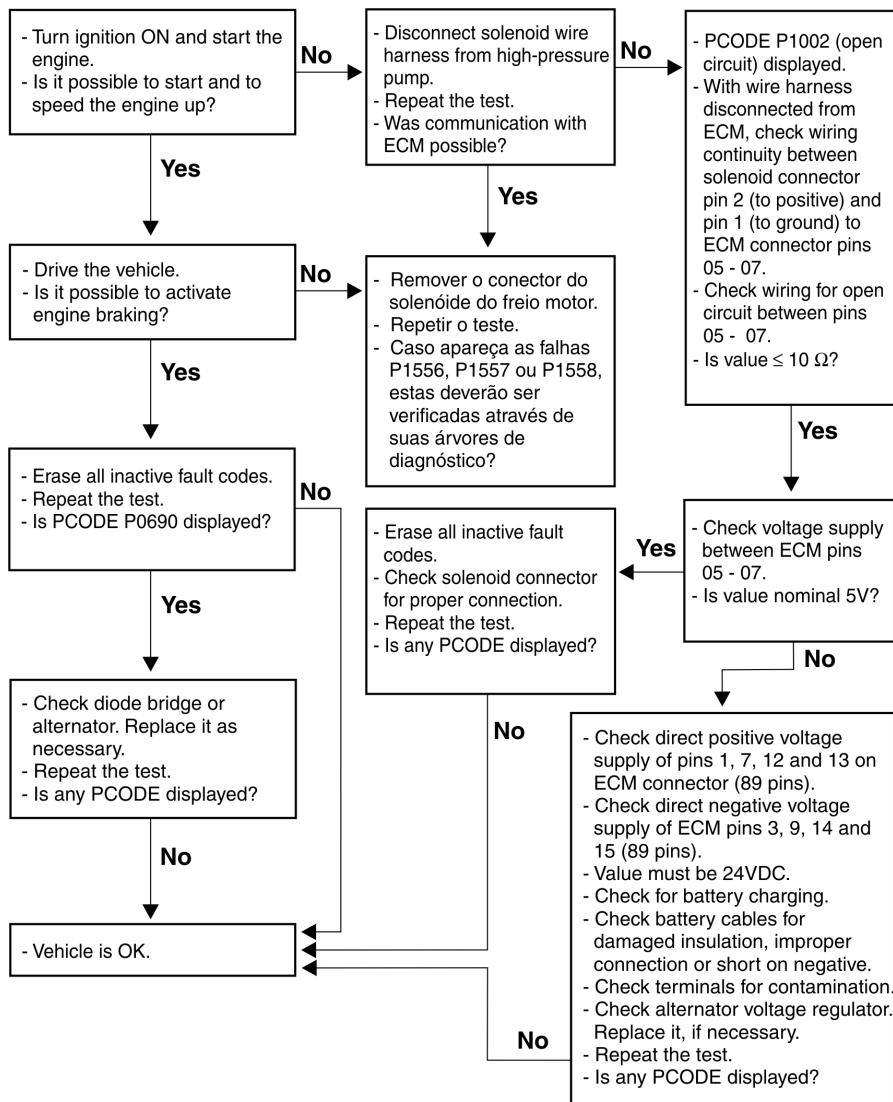
Strategy

This is a safety element, so there is no emergency strategy for it.

- This is an internal relay from ECM which cannot be repaired internally. Failure correction procedure shall be done using the Diagnosis Tool.



Troubleshooting Routine



Cause
Signal from sensor of water presence on fuel.

Details

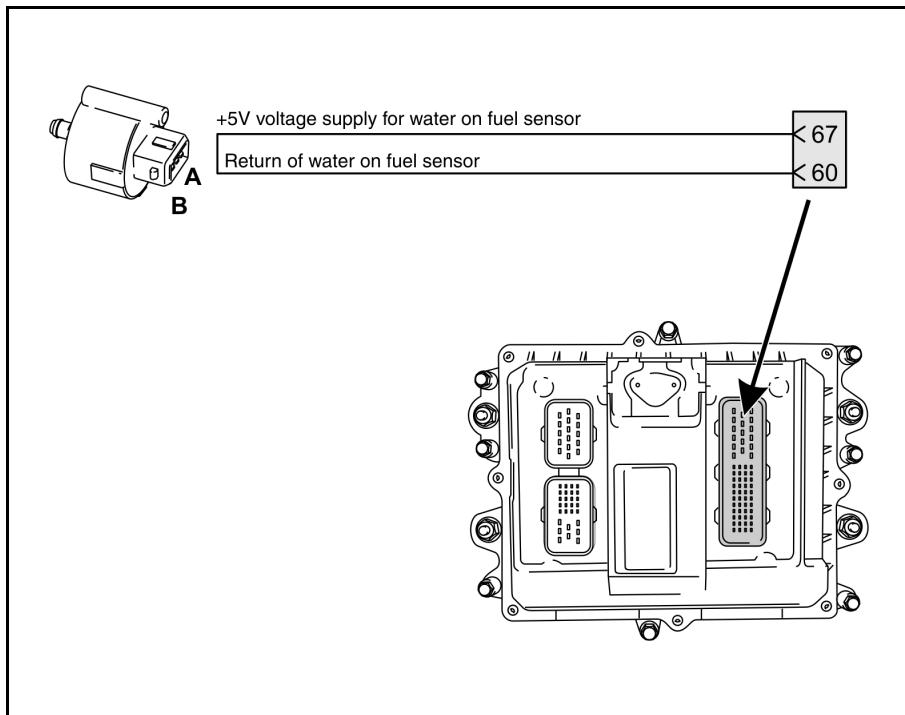
Possibly the circuit or sensor of water presence on fuel is in an open circuit condition, with no connection to ECM.

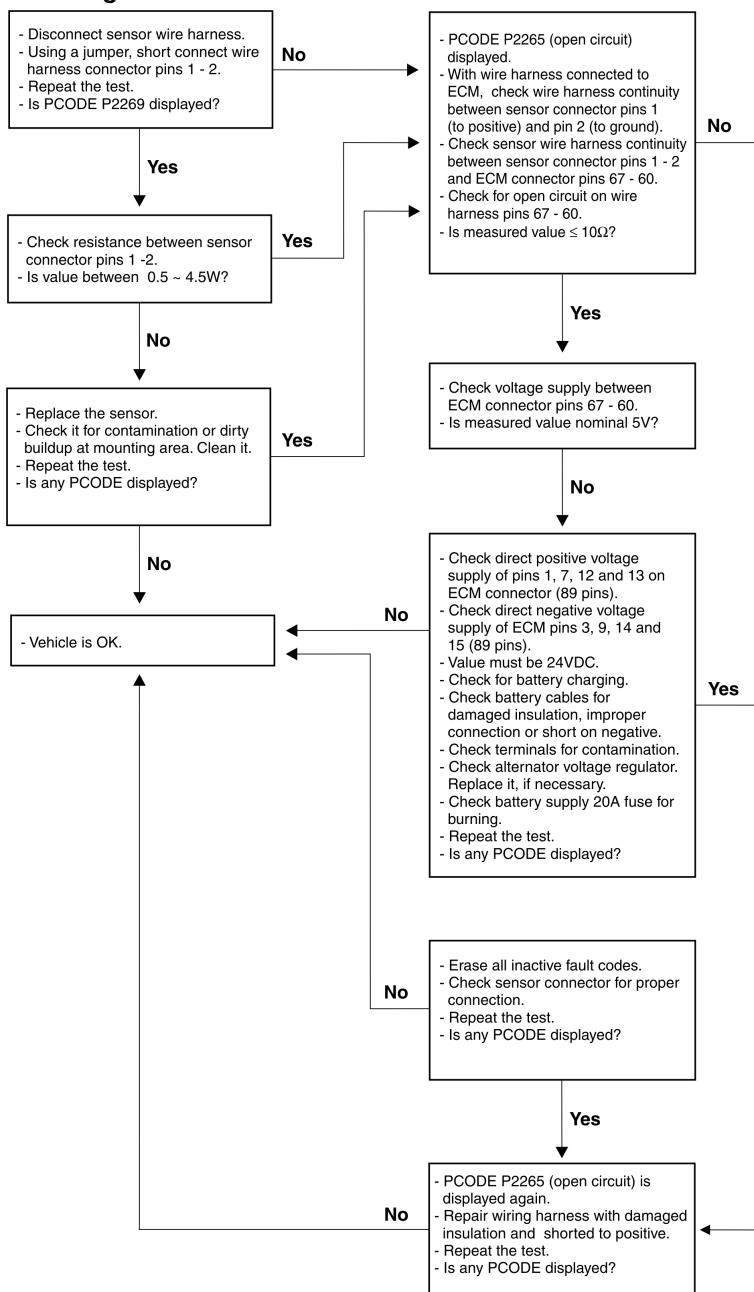
Create an inverse defect according to Troubleshooting Routine in order to locate the failure.

Strategy

Water presence on fuel	Yellow light turns ON.
Sensor defeituoso	Defective sensor Yellow light turns ON / Engine power is reduced by 20%.

- ECM uses this signal as a protection element for fuel injection system.



Troubleshooting Routine

Cause

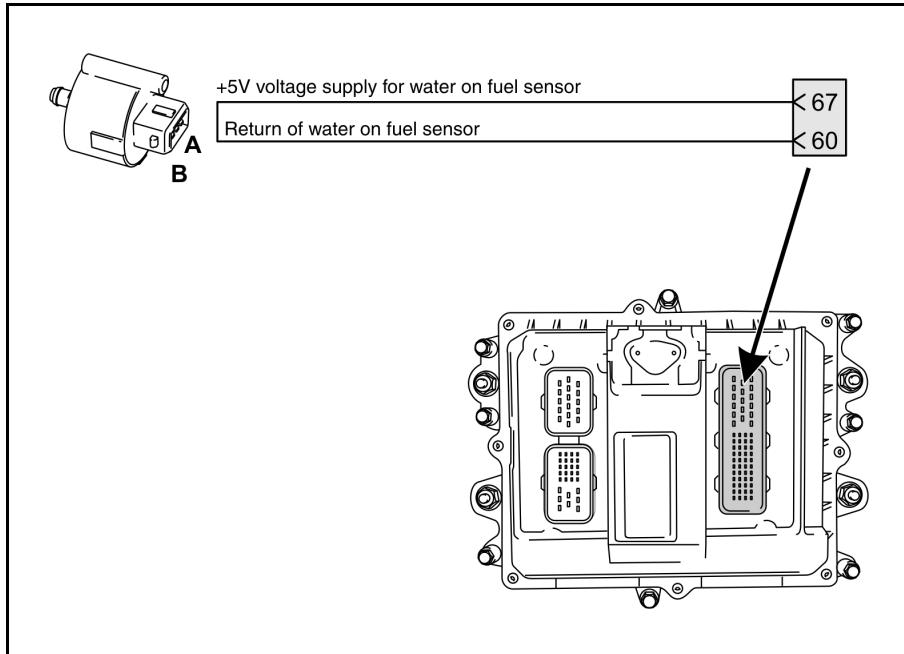
Presence of water on fuel.

Details

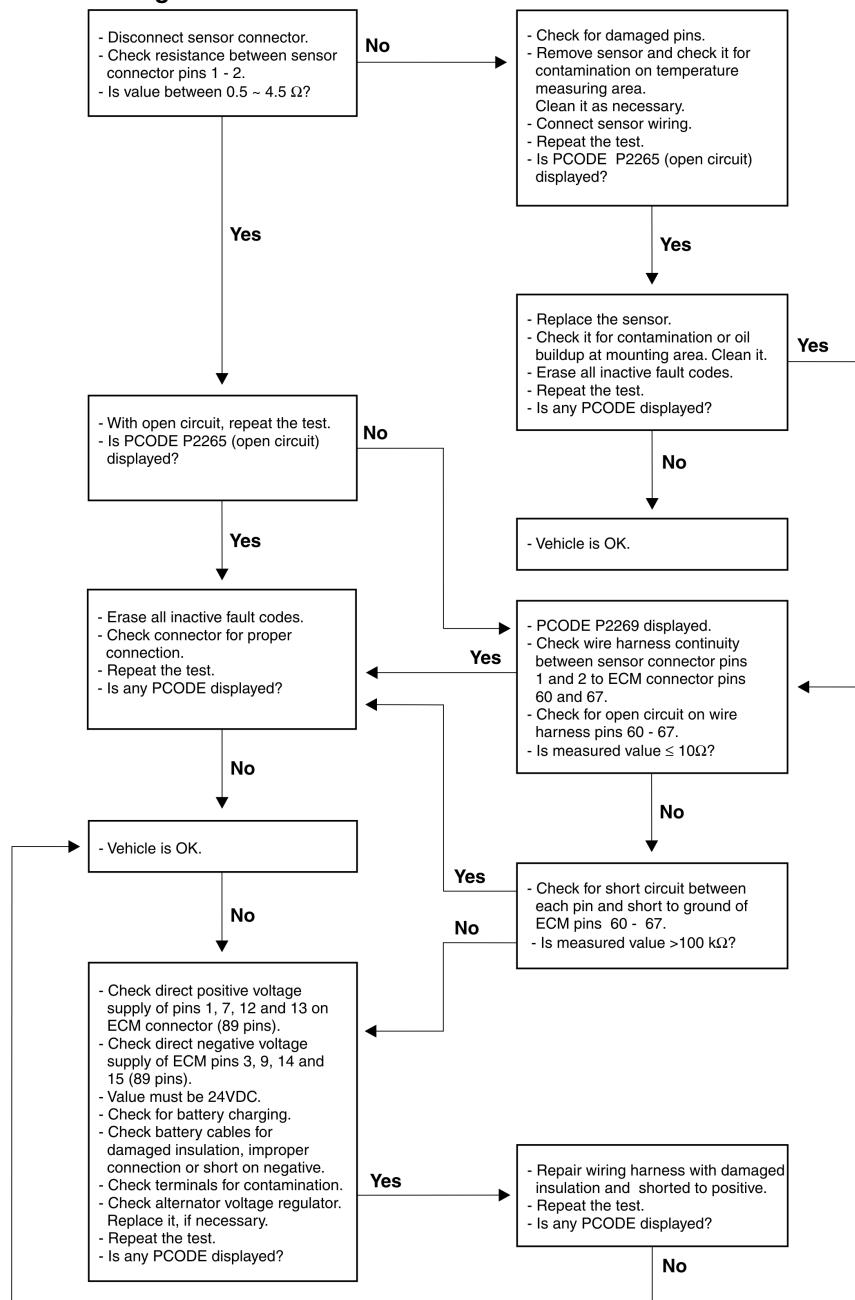
Water presence on fuel or some debris build up on sensor was detected.
Before starting fault correction, check the sensor and clean it as necessary.

Strategy

Water presence on fuel	Yellow light turns ON.
Defective sensor	Yellow light turns ON / Engine power is reduced by 20%.
<ul style="list-style-type: none">The module uses this signal as protection element for fuel injection system.	



Troubleshooting Routine



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