



3.6 Fuel Tank Pressure Sensor Monitor

3.6.1 Description

1. Diagnostic Trouble Codes:

Fuel tank pressure sensor low fault:	P0452
Fuel tank pressure sensor high fault:	P0453
Fuel tank pressure sensor performance fault:	P0451

2. Monitoring Procedure

Summary

The resistance of the fuel tank pressure sensor changes in relation to the pressure difference between the fuel tank and ambient pressure. Through connection to the input resistor networks of the ECM any disconnection of the sensor can generate both high and low input voltages, which are outside the normal operating voltage range. These are detected to diagnose a fuel tank pressure fault in the system.

Range Test

If the value of FUEL TANK PRESS VOLTS is less than FUEL TANK PRESS DIAG MIN VOLT THR or more than FUEL TANK PRESS DIAG MAX VOLT THR, then an appropriate fault counter is incremented up to a limit of fuel tank pressure diagnostic fault limit. Otherwise the fault counter is decremented down to a limit of zero. If the fault counter reaches the limit then a fuel tank pressure sensor fault is present.

Rationality Test

The test on the fuel tank pressure sensor comprises of comparing the output from the fuel tank pressure sensor with a tolerance band around ambient pressure. This is done during conditions of minimal vapour generation within the fuel tank.

3. Primary Detection Parameter

Fuel tank pressure - Measured in volts, the outcome of a potential divider calculation.

4. Fault Criteria Limits

Fuel Tank Pressure - Low out of range	0V
Fuel Tank Pressure - High out of range	6V
Error between fuel tank pressure and ambient pressure	> 1 kPa or < -0.3 kPa

5. Monitoring Conditions

The range test will take place when the EVAP canister closure valve is open.

The rationality check will take place when the engine coolant temperature is between two thresholds, intake air temperature is between two thresholds, EVAP canister purge flow rate is below a threshold and the EVAP canister closure valve is open.

6. Monitoring Time Length / Frequency of Checks

The frequency of the fuel tank pressure diagnostic is 40Hz.

7. Criteria for Storing Fault Code

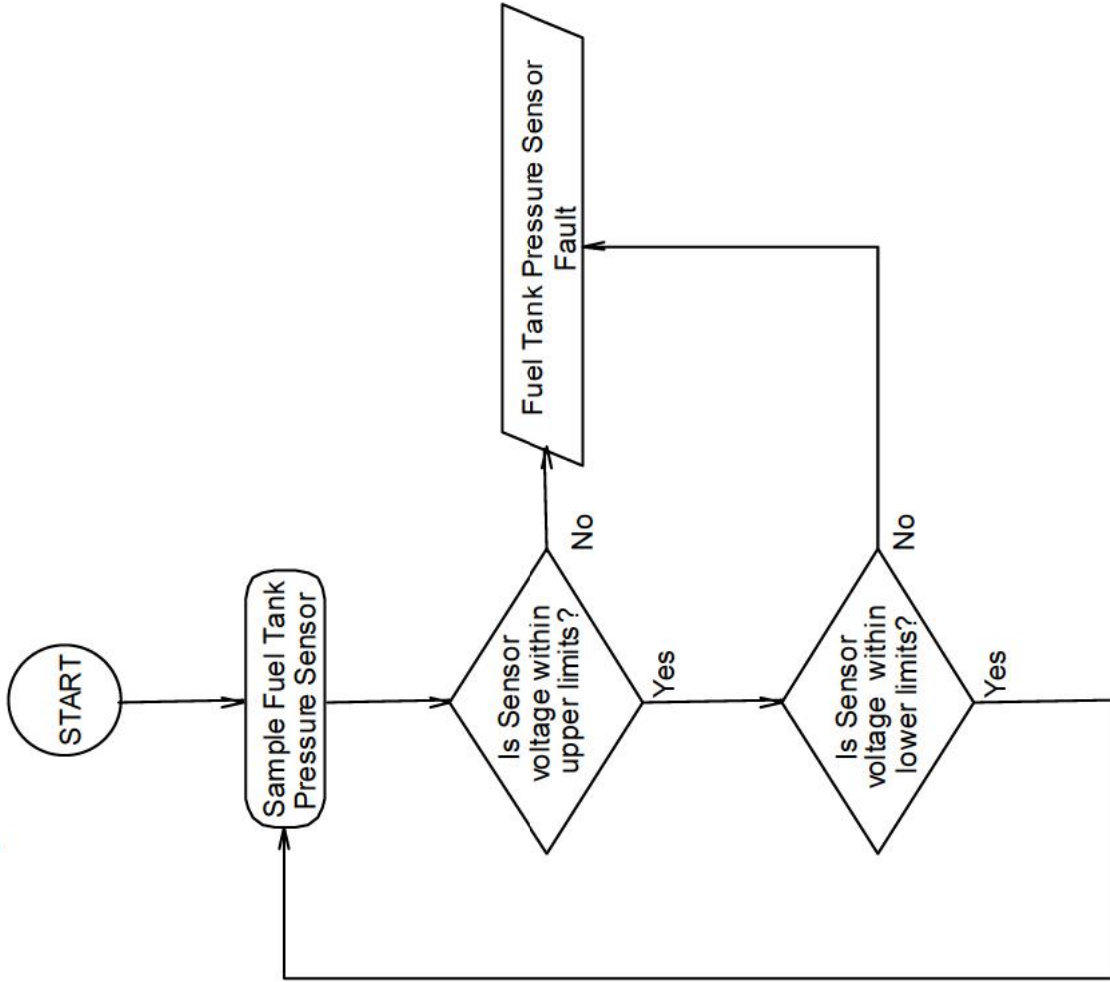
Two successive trips where the fuel tank pressure diagnostic indicates a failed fuel tank pressure sensor.



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8. Criteria for Illuminating MIL
Two successive trips where the fuel tank pressure diagnostic indicates a failed fuel tank pressure sensor.
 9. Criteria for Determining Out of Range Input Signals
The fuel tank pressure sensor is subject to the range test above.

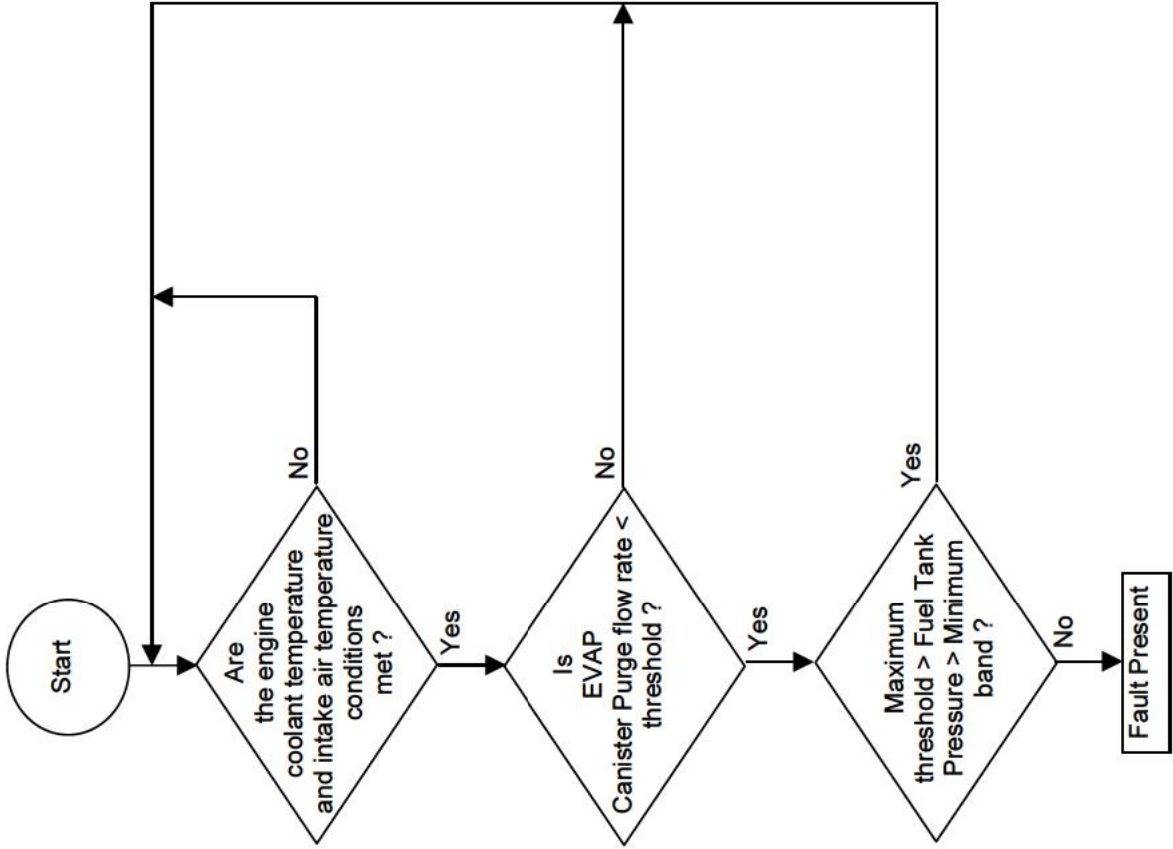


3.6.2 Monitoring Structure – Range Test





3.6.3 Monitoring Structure – Rationality Test





Fuel Tank Pressure Sensor Monitor

Component/ System	Fault Codes	Monitoring Strategy Description	Malfunction Criteria	Threshold value	Secondary Parameter	Enable Conditions	Time Required	MIL Illumination
FUEL TANK PRESSURE SENSOR	P0452/3	Out of range check	high voltage low voltage	5V 0V	ECM status EVAP Canister Closure Valve	active open	20 sec	2 successive trips
	P0451	Rationality check	fuel tank pressure	>1.0KPa or <-0.3KPa	Ignition Engine ECT IAT	on stalled >-7° C and <35° >-7° C and <35° C	20sec	2 successive trips

If the above table does not include details of the following enabling conditions: - intake air and engine coolant temperature, vehicle speed range, and time after engine start-up then the state of these parameters has no influence upon the execution of the monitor.