Diagnostic Troubleshooting Manual
Engine Management System

Diagnostic Trouble Code Trouble Shooting

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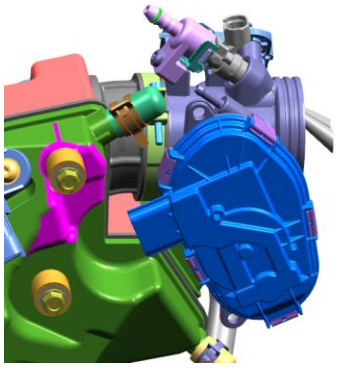
Diagnostic Trouble Code Trouble Shooting

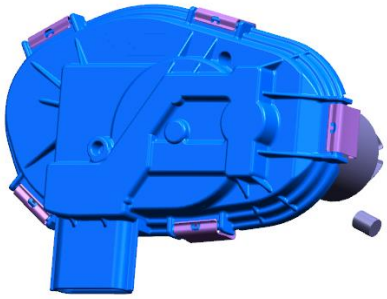
P0122 – Throttle/Pedal Position Sensor/Switch “A” Circuit Low

Overview:

Error Code	P0122
Customer Symptom	Idle RPM is affected and drivability is affected
Fault effects (On vehicle)	Idle RPM is affected and drivability is affected
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets logged if throttle position sensor signal is short circuited to GROUND or OPEN circuit
Probable trouble area	TPS with actuator motor, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:





Connector View & Information:

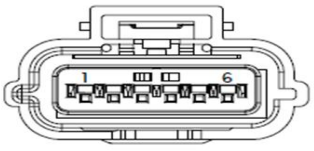
Component Side:

Pin 1	Sensor GND
Pin 2	Sensor Signal 1
Pin 3	Sensor Signal 2
Pin 4	Sensor Supply
Pin 5	DC Motor positive
Pin 6	DC Motor negative

Wiring Harness Side:

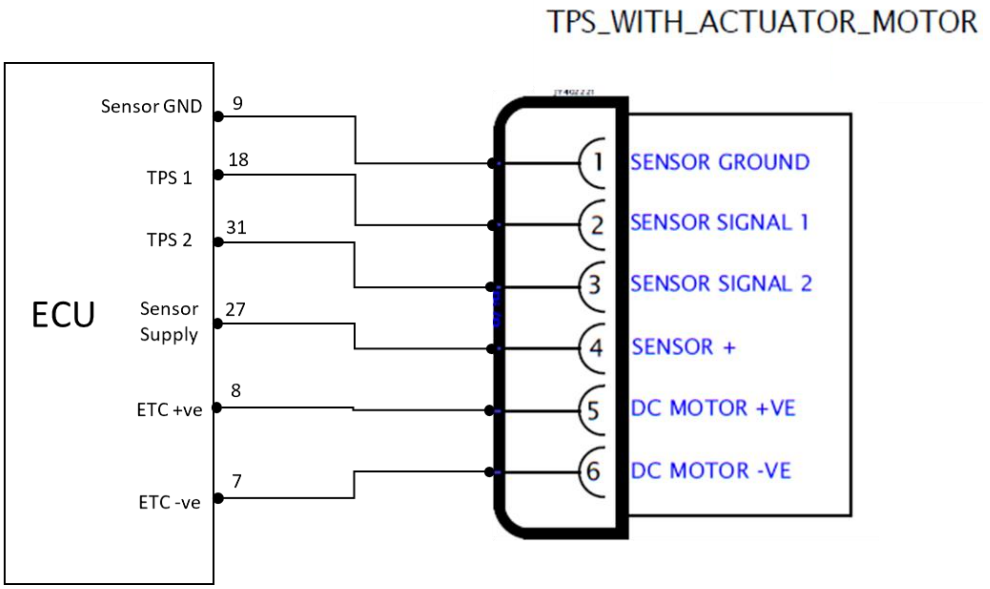
TO_TPS_WITH_ACTUATOR_MOTOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE173	0.5	Y/B	JY402230	JY402231	TWP1
2	WIRE133	0.5	G/Y	JY402230	JY402231	TWP1
3	WIRE153	0.5	Pi/R	JY402230	JY402231	TWP1
4	WIRE149	0.5	R/L	JY402230	JY402231	
5	WIRE126	0.5	W/G	JY402230	JY402231	
6	WIRE125	0.5	O/Gr	JY402230	JY402231	



Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on sensor terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside sensor connector?	Replace the sensor	Go to Step 3
3	Disconnect the sensor and then check following. Is ECU pin no 18 short circuited to GROUND?	Short ckt in harness. Check/ Replace wiring harness	Go to Step 4
4	Is ECU pin no 18 open circuited? Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Open/ cut in harness. Check/ Replace wiring harness	Go to Step 5
5	Is there +5V supply available at pin no 4 of sensor?	Replace wiring harness/ Replace ECU	Go to Step 6
6	Erase fault in diagnostics tool and check again. Is fault still present?	Replaced Sensor/ Replace ECU	

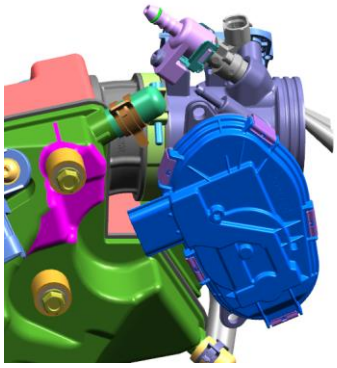
Diagnostic Trouble Code Trouble Shooting

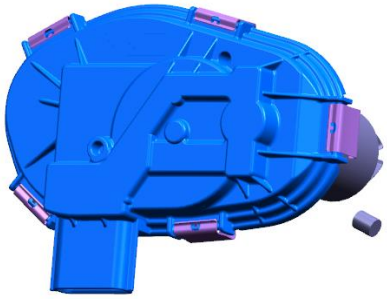
P0123 – Throttle/Pedal Position Sensor/Switch “A” Circuit High

Overview:

Error Code	P0123
Customer Symptom	Idle RPM is affected and drivability is affected
Fault effects (On vehicle)	Idle RPM is affected and drivability is affected
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets logged if throttle position sensor signal is short circuited to BATTERY
Probable trouble area	TPS with actuator motor, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:





Connector View & Information:

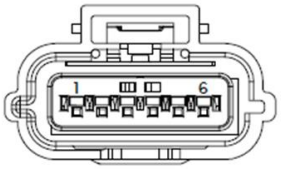
Component Side:

Pin 1	Sensor GND
Pin 2	Sensor Signal 1
Pin 3	Sensor Signal 2
Pin 4	Sensor Supply
Pin 5	DC Motor positive
Pin 6	DC Motor negative

Wiring Harness Side:

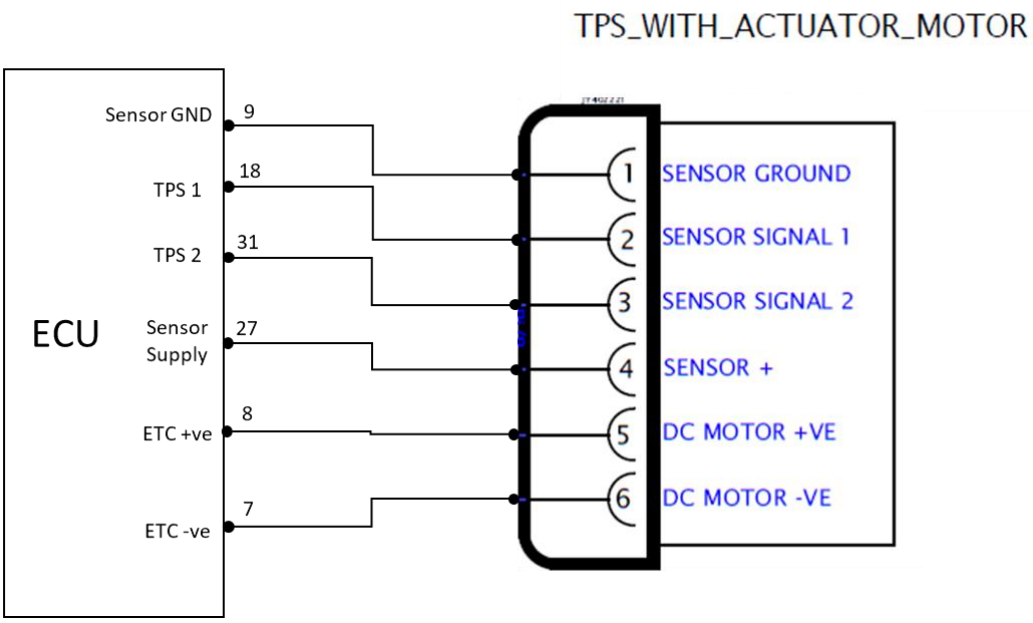
TO_TPS_WITH_ACTUATOR_MOTOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE173	0.5	Y/B	JY402230	JY402231	TWP1
2	WIRE133	0.5	G/Y	JY402230	JY402231	TWP1
3	WIRE153	0.5	Pi/R	JY402230	JY402231	TWP1
4	WIRE149	0.5	R/L	JY402230	JY402231	
5	WIRE126	0.5	W/G	JY402230	JY402231	
6	WIRE125	0.5	O/Gr	JY402230	JY402231	



Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on sensor terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside sensor connector?	Replace the sensor	Go to Step 3
3	Disconnect the sensor and then check following. Is ECU pin no 18 short circuited to GROUND?	Short ckt in harness. Check/ Replace wiring harness	Go to Step 4
4	Is ECU pin no 18 open circuited? Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Open/ cut in harness. Check/ Replace wiring harness	Go to Step 5
5	Is there +5V supply available at pin no 4 of sensor?	Replace wiring harness/ Replace ECU	Go to Step 6
6	Erase fault in diagnostics tool and check again. Is fault still present?	Replaced Sensor/ Replace ECU	

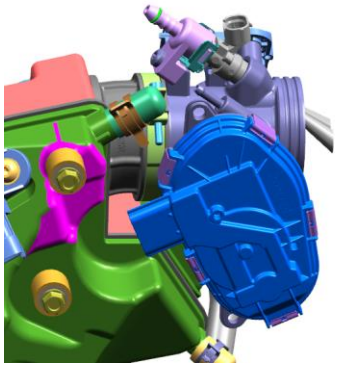
Diagnostic Trouble Code Trouble Shooting

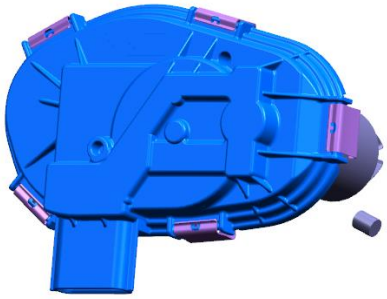
P0222 – Throttle/Pedal Position Sensor/Switch “B” Circuit Low

Overview:

Error Code	P0222
Customer Symptom	Idle RPM is affected and drivability is affected
Fault effects (On vehicle)	Idle RPM is affected and drivability is affected
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets logged if throttle position sensor signal is short circuited to GROUND or OPEN circuit
Probable trouble area	TPS with actuator motor, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:





Connector View & Information:

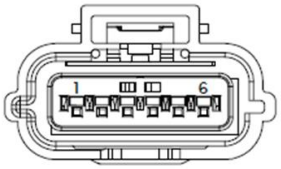
Component Side:

Pin 1	Sensor GND
Pin 2	Sensor Signal 1
Pin 3	Sensor Signal 2
Pin 4	Sensor Supply
Pin 5	DC Motor positive
Pin 6	DC Motor negative

Wiring Harness Side:

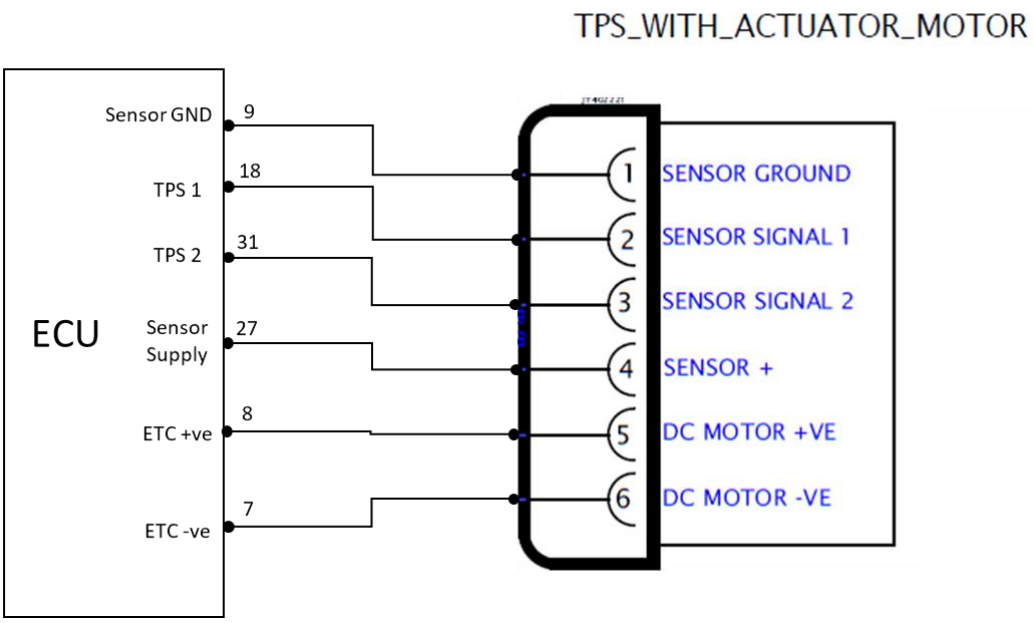
TO_TPS_WITH_ACTUATOR_MOTOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE173	0.5	Y/B	JY402230	JY402231	TWP1
2	WIRE133	0.5	G/Y	JY402230	JY402231	TWP1
3	WIRE153	0.5	Pi/R	JY402230	JY402231	TWP1
4	WIRE149	0.5	R/L	JY402230	JY402231	
5	WIRE126	0.5	W/G	JY402230	JY402231	
6	WIRE125	0.5	O/Gr	JY402230	JY402231	



Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on sensor terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside sensor connector?	Replace the sensor	Go to Step 3
3	Disconnect the sensor and then check following. Is ECU pin no 31 short circuited to GROUND?	Short ckt in harness. Check/ Replace wiring harness	Go to Step 4
4	Is ECU pin no 31 open circuited? Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Open/ cut in harness. Check/ Replace wiring harness	Go to Step 5
5	Is there +5V supply available at pin no 4 of sensor?	Replace wiring harness/ Replace ECU	Go to Step 6
6	Erase fault in diagnostics tool and check again. Is fault still present?	Replaced Sensor/ Replace ECU	

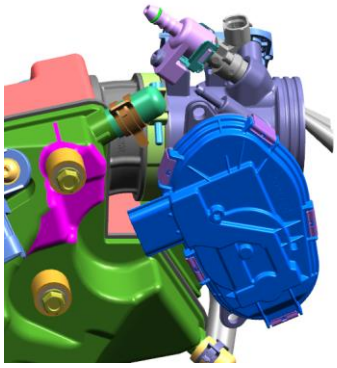
Diagnostic Trouble Code Trouble Shooting

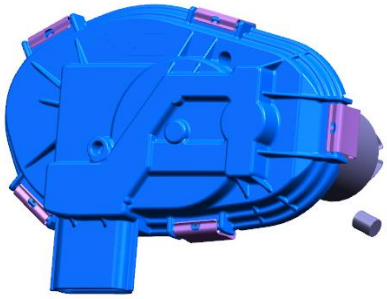
P0223 – Throttle/Pedal Position Sensor/Switch “B” Circuit High

Overview:

Error Code	P0223
Customer Symptom	Idle RPM is affected and drivability is affected
Fault effects (On vehicle)	Idle RPM is affected and drivability is affected
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets logged if throttle position sensor signal is short circuited to BATTERY
Probable trouble area	TPS with actuator motor, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:





Connector View & Information:

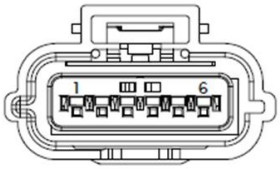
Component Side:

Pin 1	Sensor GND
Pin 2	Sensor Signal 1
Pin 3	Sensor Signal 2
Pin 4	Sensor Supply
Pin 5	DC Motor positive
Pin 6	DC Motor negative

Wiring Harness Side:

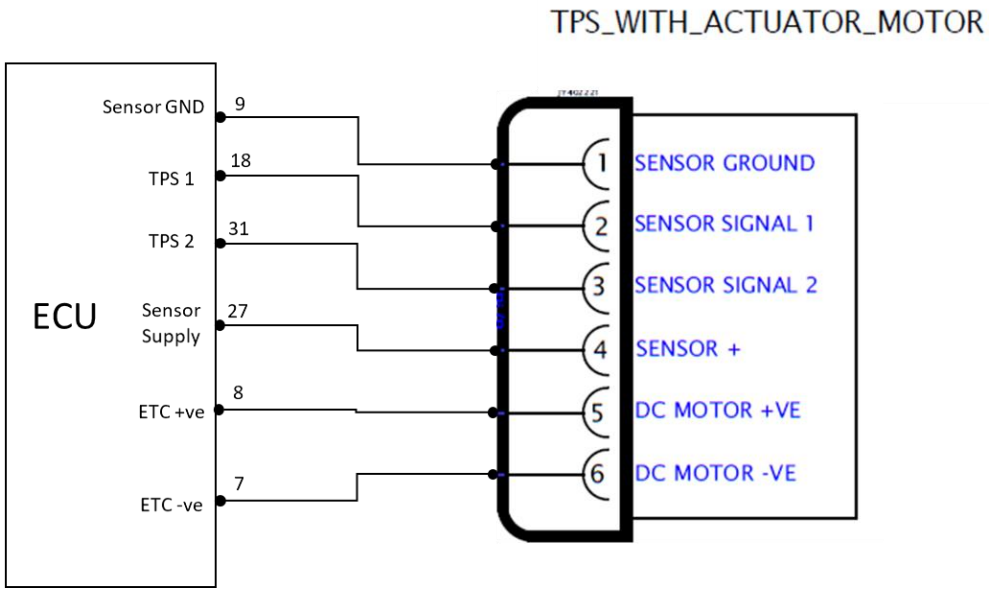
TO_TPS_WITH_ACTUATOR_MOTOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE173	0.5	Y/B	JY402230	JY402231	TWP1
2	WIRE133	0.5	G/Y	JY402230	JY402231	TWP1
3	WIRE153	0.5	Pi/R	JY402230	JY402231	TWP1
4	WIRE149	0.5	R/L	JY402230	JY402231	
5	WIRE126	0.5	W/G	JY402230	JY402231	
6	WIRE125	0.5	O/Gr	JY402230	JY402231	



Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on sensor terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside sensor connector?	Replace the sensor	Go to Step 3
3	Disconnect the sensor and then check following. Is ECU pin no 31 short circuited to GROUND?	Short ckt in harness. Check/ Replace wiring harness	Go to Step 4
4	Is ECU pin no 31 open circuited? Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Open/ cut in harness. Check/ Replace wiring harness	Go to Step 5
5	Is there +5V supply available at pin no 4 of sensor?	Replace wiring harness/ Replace ECU	Go to Step 6
6	Erase fault in diagnostics tool and check again. Is fault still present?	Replaced Sensor/ Replace ECU	

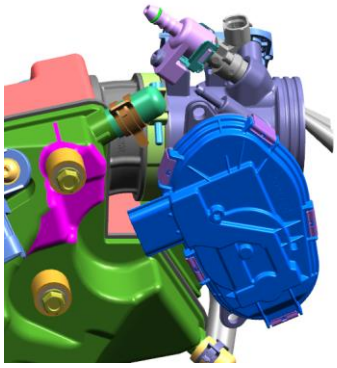
Diagnostic Trouble Code Trouble Shooting

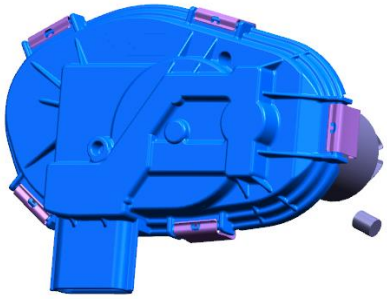
P2135 – Throttle/Pedal Position Sensor/Switch "A"/"B" Voltage Correlation

Overview:

Error Code	P2135
Customer Symptom	Idle RPM is affected and drivability is affected
Fault effects (On vehicle)	Idle RPM is affected and drivability is affected
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets logged under plausibility check strategy if correlation between TPS1 & TPS 2 signals is incorrect.
Probable trouble area	TPS with actuator motor, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:





Connector View & Information:

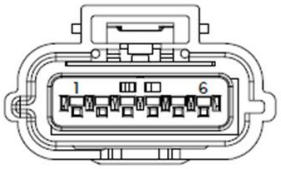
Component Side:

Pin 1	Sensor GND
Pin 2	Sensor Signal 1
Pin 3	Sensor Signal 2
Pin 4	Sensor Supply
Pin 5	DC Motor positive
Pin 6	DC Motor negative

Wiring Harness Side:

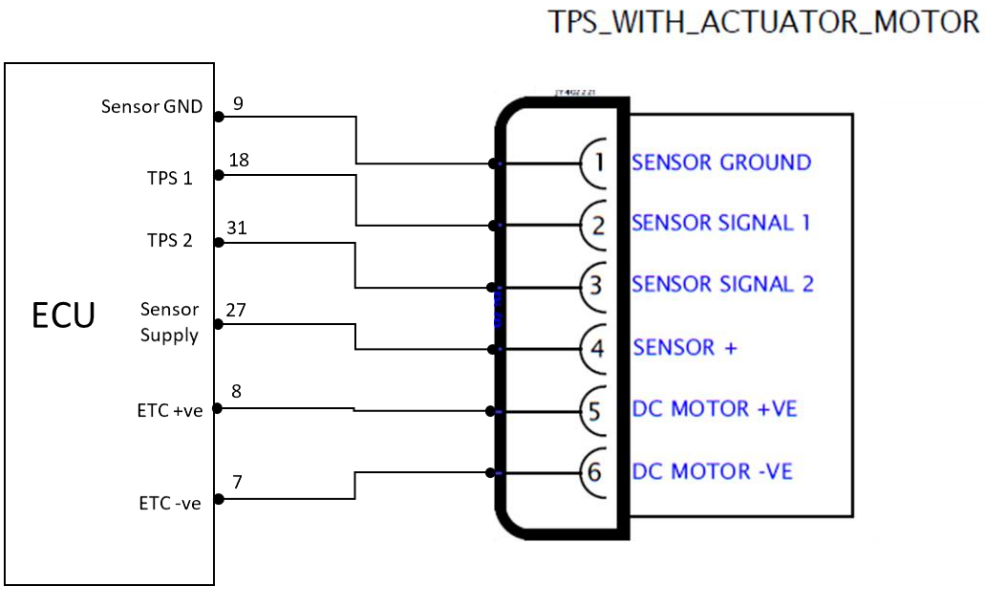
TO_TPS_WITH_ACTUATOR_MOTOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE173	0.5	Y/B	JY402230	JY402231	TWP1
2	WIRE133	0.5	G/Y	JY402230	JY402231	TWP1
3	WIRE153	0.5	Pi/R	JY402230	JY402231	TWP1
4	WIRE149	0.5	R/L	JY402230	JY402231	
5	WIRE126	0.5	W/G	JY402230	JY402231	
6	WIRE125	0.5	O/Gr	JY402230	JY402231	



Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on sensor terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside sensor connector?	Replace the sensor	Go to Step 3
3	Disconnect the sensor and then check following. Is ECU pin no 31 short circuited to GROUND? *Check using multi-meter.*	Short ckt in harness. Check/ Replace wiring harness	Go to Step 4
4	Is ECU pin no 31 open circuited? Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Open/ cut in harness. Check/ Replace wiring harness	Go to Step 5
5	Is there +5V supply available at pin no 4 of sensor?	Replace wiring harness/ Replace ECU	Go to Step 6
6	Erase fault in diagnostics tool and check again. Is fault still present?	Replaced Sensor/ Replace ECU	

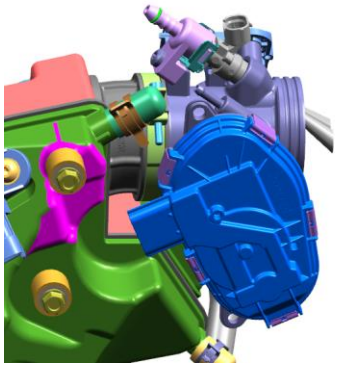
Diagnostic Trouble Code Trouble Shooting

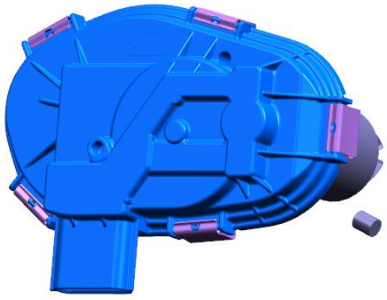
P2103:-Throttle Actuator + "A" Control Motor Circuit High

Overview:

Error Code	P2103
Customer Symptom	Idle RPM is affected and drivability is affected
Fault effects (On vehicle)	Idle RPM is affected and drivability is affected
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets logged under plausibility check strategy if correlation between TPS1 & TPS 2 signals is incorrect.
Probable trouble area	TPS with actuator motor, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:





Connector View & Information:

Component Side:

Pin 1	Sensor GND
Pin 2	Sensor Signal 1
Pin 3	Sensor Signal 2
Pin 4	Sensor Supply
Pin 5	DC Motor positive
Pin 6	DC Motor negative

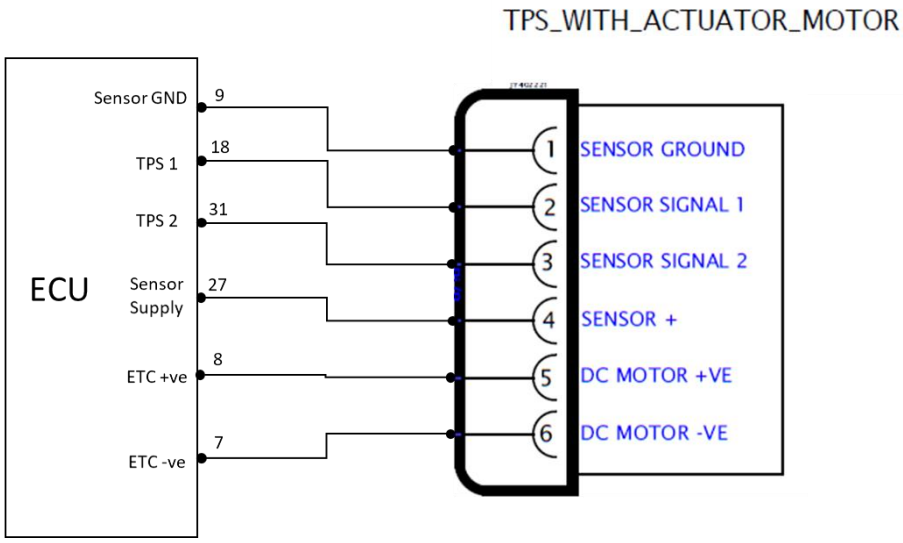
Wiring Harness Side:

TO_TPS_WITH_ACTUATOR_MOTOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE173	0.5	Y/B	JY402230	JY402231	TWP1
2	WIRE133	0.5	G/Y	JY402230	JY402231	TWP1
3	WIRE153	0.5	Pi/R	JY402230	JY402231	TWP1
4	WIRE149	0.5	R/L	JY402230	JY402231	
5	WIRE126	0.5	W/G	JY402230	JY402231	
6	WIRE125	0.5	O/Gr	JY402230	JY402231	

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on sensor terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside sensor connector?	Replace the sensor	Go to Step 3
3	Disconnect sensor and ECU and then check following. Is wire continuity available between ECU pin no 8 and Pin 5 of actuator motor? Is wire continuity available between ECU pin no 7 and Pin 6 of actuator motor? *Check using multi-meter.*	Go to Step 4	Check/ Replace wiring harness
4	Disconnect the sensor and ECU then check following. Is ECU pin no 7 & 8 short circuited to +12V? *Check using multi-meter.*	Short ckt in harness. Check/ Replace wiring harness	Go to Step 5
5	Is ECU pin no 31 open circuited? Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Open/ cut in harness. Check/ Replace wiring harness	Go to Step 6
6	Erase fault in diagnostics tool and check again. Is fault still present?	Replaced Sensor/ Replace ECU	

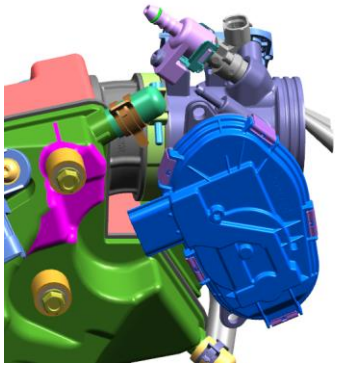
Diagnostic Trouble Code Trouble Shooting

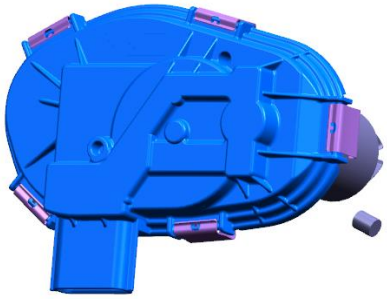
P2102:-Throttle Actuator + "A" Control Motor Circuit Low

Overview:

Error Code	P2102
Customer Symptom	Idle RPM is affected and drivability is affected
Fault effects (On vehicle)	Idle RPM is affected and drivability is affected
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets logged under plausibility check strategy if correlation between TPS1 & TPS 2 signals is incorrect.
Probable trouble area	TPS with actuator motor, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:





Connector View & Information:

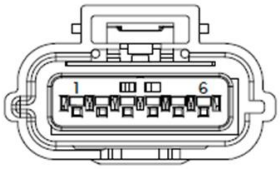
Component Side:

Pin 1	Sensor GND
Pin 2	Sensor Signal 1
Pin 3	Sensor Signal 2
Pin 4	Sensor Supply
Pin 5	DC Motor positive
Pin 6	DC Motor negative

Wiring Harness Side:

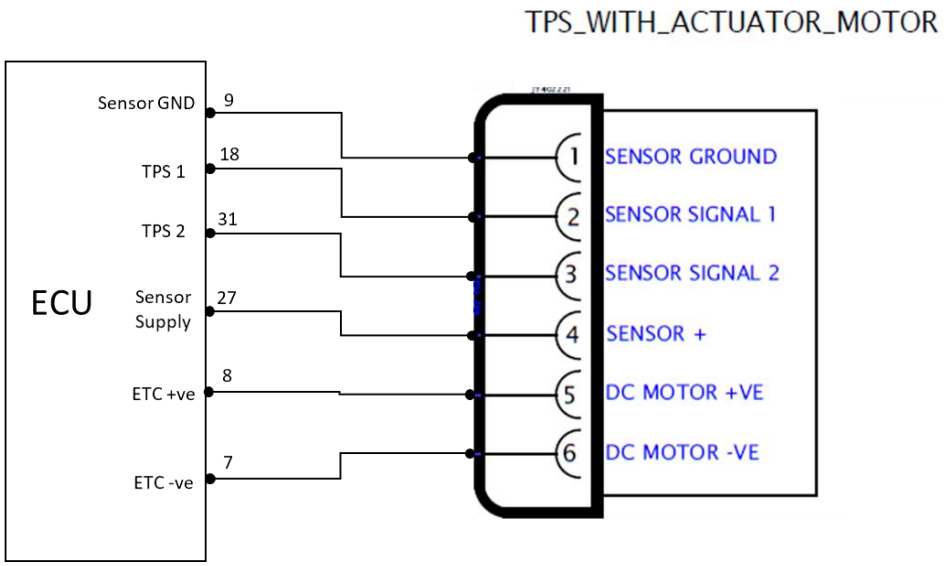
TO_TPS_WITH_ACTUATOR_MOTOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE173	0.5	Y/B	JY402230	JY402231	TWP1
2	WIRE133	0.5	G/Y	JY402230	JY402231	TWP1
3	WIRE153	0.5	Pi/R	JY402230	JY402231	TWP1
4	WIRE149	0.5	R/L	JY402230	JY402231	
5	WIRE126	0.5	W/G	JY402230	JY402231	
6	WIRE125	0.5	O/Gr	JY402230	JY402231	



Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on sensor terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside sensor connector?	Replace the sensor	Go to Step 3
3	Disconnect sensor and ECU and then check following. Is wire continuity available between ECU pin no 8 and Pin 5 of actuator motor? Is wire continuity available between ECU pin no 7 and Pin 6 of actuator motor? *Check using multi-meter.*	Go to Step 4	Check/ Replace wiring harness
4	Disconnect the sensor and ECU then check following. Is ECU pin no 7 & 8 short circuited to +12V? *Check using multi-meter.*	Short ckt in harness. Check/ Replace wiring harness	Go to Step 5
5	Is ECU pin no 31 open circuited? Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Open/ cut in harness. Check/ Replace wiring harness	Go to Step 6
6	Erase fault in diagnostics tool and check again. Is fault still present?	Replaced Sensor/ Replace ECU	

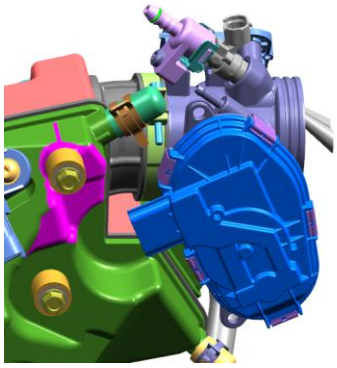
Diagnostic Trouble Code Trouble Shooting

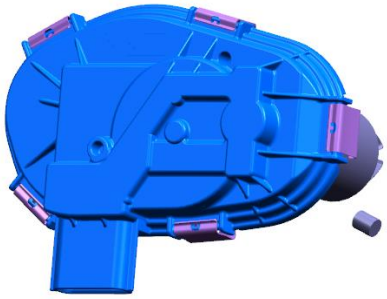
P2100:- Throttle Actuator - "A" Control Motor Circuit Open

Overview:

Error Code	P2100
Customer Symptom	Idle RPM is affected and drivability is affected
Fault effects (On vehicle)	Idle RPM is affected and drivability is affected
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets logged under plausibility check strategy if correlation between TPS1 & TPS 2 signals is incorrect.
Probable trouble area	TPS with actuator motor, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:





Connector View & Information:

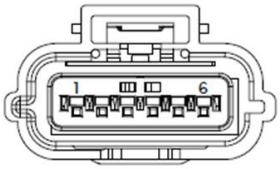
Component Side:

Pin 1	Sensor GND
Pin 2	Sensor Signal 1
Pin 3	Sensor Signal 2
Pin 4	Sensor Supply
Pin 5	DC Motor positive
Pin 6	DC Motor negative

Wiring Harness Side:

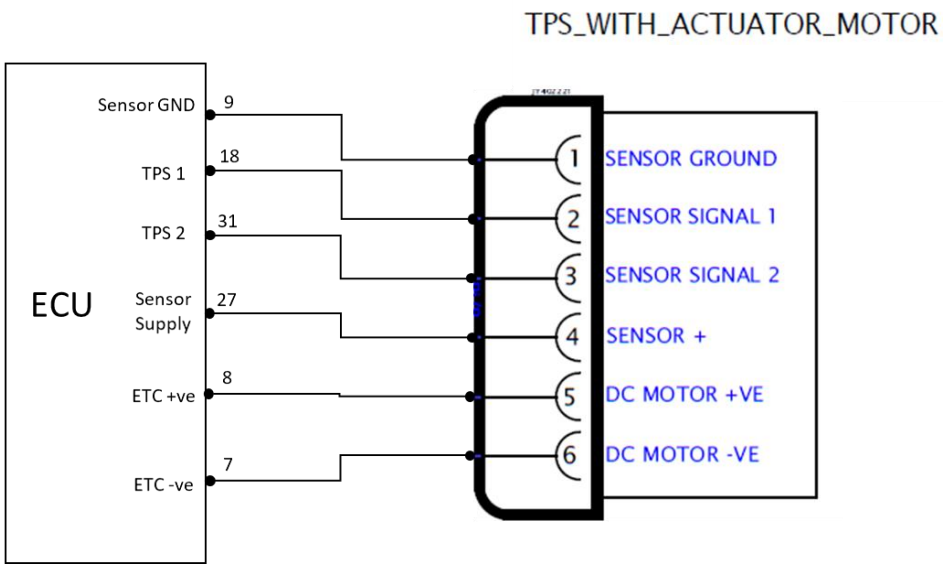
TO_TPS_WITH_ACTUATOR_MOTOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE173	0.5	Y/B	JY402230	JY402231	TWP1
2	WIRE133	0.5	G/Y	JY402230	JY402231	TWP1
3	WIRE153	0.5	Pi/R	JY402230	JY402231	TWP1
4	WIRE149	0.5	R/L	JY402230	JY402231	
5	WIRE126	0.5	W/G	JY402230	JY402231	
6	WIRE125	0.5	O/Gr	JY402230	JY402231	



Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on sensor terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside sensor connector?	Replace the sensor	Go to Step 3
3	Disconnect sensor and ECU and then check following. Is wire continuity available between ECU pin no 8 and Pin 5 of actuator motor? Is wire continuity available between ECU pin no 7 and Pin 6 of actuator motor? *Check using multi-meter.*	Go to Step 4	Check/ Replace wiring harness
4	Disconnect the sensor and ECU then check following. Is ECU pin no 7 & 8 open circuit? *Check using multi-meter.*	Short ckt in harness. Check/ Replace wiring harness	Go to Step 5
5	Is ECU pin no 31 open circuited? Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Open/ cut in harness. Check/ Replace wiring harness	Go to Step 6
6	Erase fault in diagnostics tool and check again. Is fault still present?	Replaced Sensor/ Replace ECU	

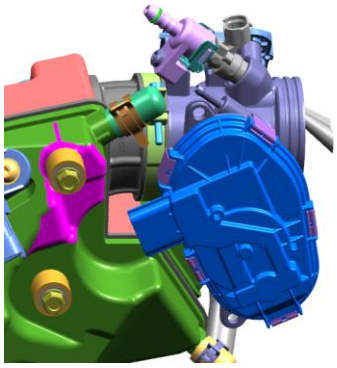
Diagnostic Trouble Code Trouble Shooting

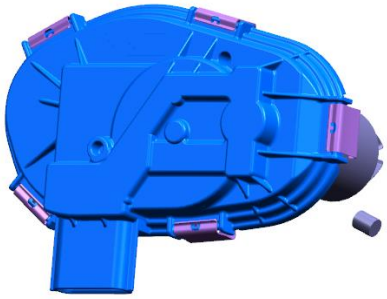
P2101:- Throttle Actuator - "A" Control Motor Range/ Performance

Overview:

Error Code	P2101
Customer Symptom	Idle RPM is affected and drivability is affected
Fault effects (On vehicle)	Idle RPM is affected and drivability is affected
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets logged under if TPS output and motor actuation is not within specified range.
Probable trouble area	TPS with actuator motor, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:





Connector View & Information:

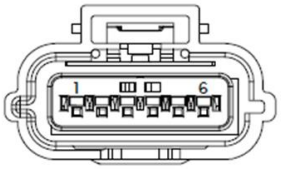
Component Side:

Pin 1	Sensor GND
Pin 2	Sensor Signal 1
Pin 3	Sensor Signal 2
Pin 4	Sensor Supply
Pin 5	DC Motor positive
Pin 6	DC Motor negative

Wiring Harness Side:

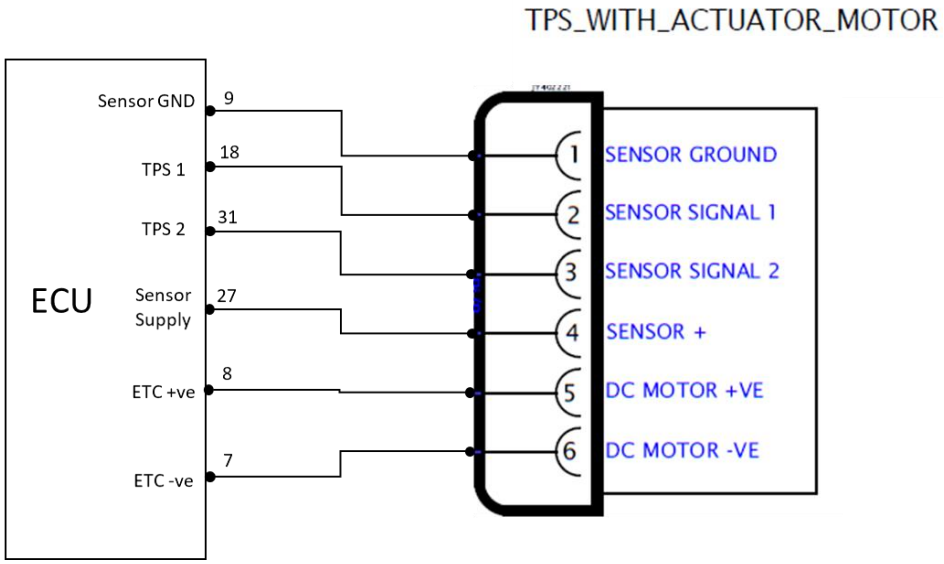
TO_TPS_WITH_ACTUATOR_MOTOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE173	0.5	Y/B	JY402230	JY402231	TWP1
2	WIRE133	0.5	G/Y	JY402230	JY402231	TWP1
3	WIRE153	0.5	Pi/R	JY402230	JY402231	TWP1
4	WIRE149	0.5	R/L	JY402230	JY402231	
5	WIRE126	0.5	W/G	JY402230	JY402231	
6	WIRE125	0.5	O/Gr	JY402230	JY402231	



Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on sensor terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside sensor connector?	Replace the sensor	Go to Step 3
3	Disconnect sensor and ECU and then check following. Is wire continuity available between ECU pin no 8 and Pin 5 of actuator motor? Is wire continuity available between ECU pin no 7 and Pin 6 of actuator motor?	Go to Step 4	Check/ Replace wiring harness
4	Disconnect the sensor and ECU then check following. Is ECU pin no 7 & 8 open circuit or short to to +12V/ GROUND?	Short ckt in harness. Check/ Replace wiring harness	Go to Step 5
5	Is ECU pin no 31 open circuited? Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Open/ cut in harness. Check/ Replace wiring harness	Go to Step 6
6	Erase fault in diagnostics tool and check again. Is fault still present?	Replaced Sensor/ Replace ECU	

Diagnostic Trouble Code Trouble Shooting

P2111:- Throttle Actuator Control System - Stuck Open

P2106 - Throttle Actuator Control System – Forced limited power

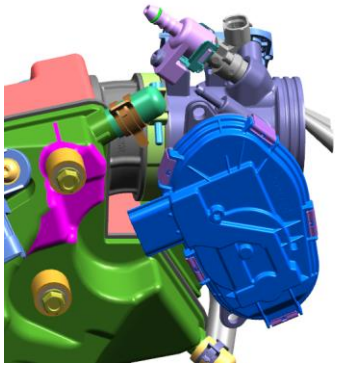
P2119 - Throttle Actuator Control Throttle body Range/ Performance

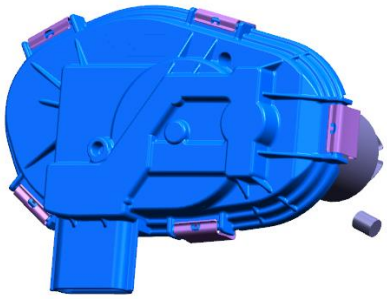
P2176 - Throttle Actuator Control System – Idle position not learnt

Overview:

Error Code	P2111/ P2106/ P219/ P2176
Customer Symptom	Idle RPM is affected and drivability is affected
Fault effects (On vehicle)	Throttle operation is affected. Vehicle may not start, stall if error comes live during operation.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 1st driving cycle
Fault detection condition	This fault gets logged under if TPS output and motor actuation is not within specified range.
Probable trouble area	TPS with actuator motor, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:





Connector View & Information:

Component Side:

Wiring Harness Side:

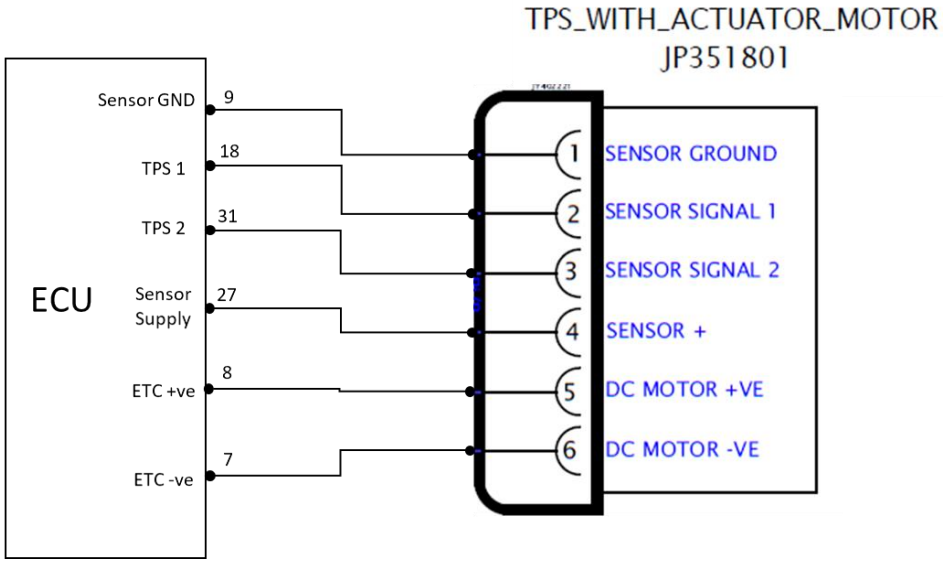
Pin 1	Sensor GND
Pin 2	Sensor Signal 1
Pin 3	Sensor Signal 2
Pin 4	Sensor Supply
Pin 5	DC Motor positive
Pin 6	DC Motor negative

Diagnostic Trouble Code Trouble Shooting

TO_TPS_WITH_ACTUATOR_MOTOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE173	0.5	Y/B	JY402230	JY402231	TWP1
2	WIRE133	0.5	G/Y	JY402230	JY402231	TWP1
3	WIRE153	0.5	Pi/R	JY402230	JY402231	TWP1
4	WIRE149	0.5	R/L	JY402230	JY402231	
5	WIRE126	0.5	W/G	JY402230	JY402231	
6	WIRE125	0.5	O/Gr	JY402230	JY402231	

Circuit Interface:



Diagnostic Trouble Code Trouble Shooting

Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on sensor terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside sensor connector?	Replace the sensor	Go to Step 3
3	Disconnect sensor and ECU and then check following. Is wire continuity available between ECU pin no 27 and Pin 4 of TPS with actuator motor? Is wire continuity available between ECU pin no 9 and Pin 1 of TPS with actuator motor?	Go to Step 4	Check/ Replace wiring harness
4	Disconnect the sensor and ECU then check following. Is ECU pin no 7 & 8 open circuit or short to to +12V/ GROUND?	Short ckt in harness. Check/ Replace wiring harness	Go to Step 5
5	Is ECU pin no 31 & pin 18 open circuited? Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Open/ cut in harness. Check/ Replace wiring harness	Go to Step 6
6	Erase fault in diagnostics tool and check again. Is fault still present?	Replaced Sensor/ Replace ECU	

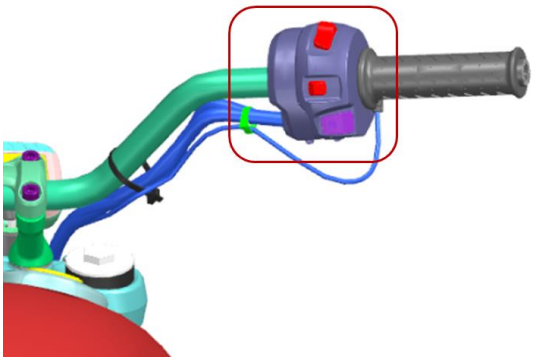
Diagnostic Trouble Code Trouble Shooting

P2122 – Throttle/Pedal Position Sensor/Switch “D” Circuit Low

Overview:

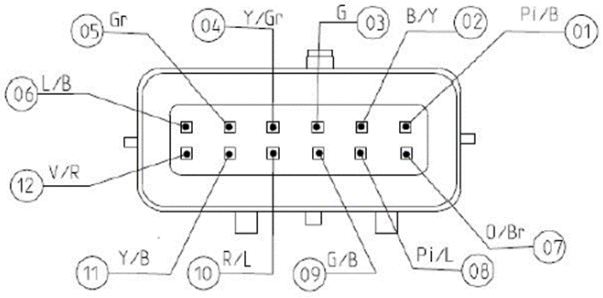
Error Code	P2122
Customer Symptom	No throttle response. Drivability is affected.
Fault effects (On vehicle)	Throttle operation is affected. Vehicle may not start, stall if error comes live during operation
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets logged if accelerator position sensor output 1 is short circuited to GROUND.
Probable trouble area	Control switch RH, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:



Connector View & Information:

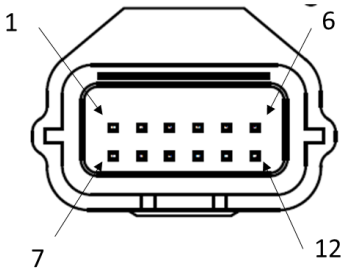
Component Side:



Pin 1	Engine OFF switch output
Pin 2	5V Ground
Pin 3	Hazard switch output RH
Pin 4	Hazard switch input
Pin 5	Hazard switch output LH
Pin 6	Start switch output to ECU
Pin 7	5V supply 1
Pin 8	5V Ground 1
Pin 9	APS output 1
Pin 10	5V Supply 2
Pin 11	5V Ground 1
Pin 12	APS output 2

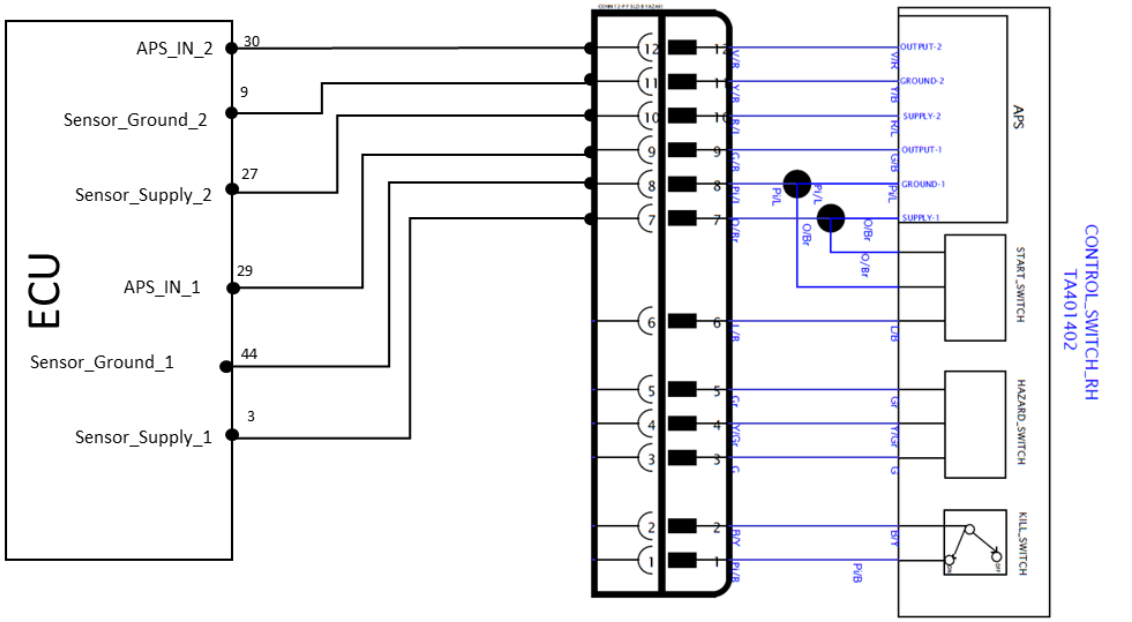
Diagnostic Trouble Code Trouble Shooting

Wiring Harness Side:



Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE4532	0.5	Pi/B	JY402230	TA402231	
2	WIRE234	0.5	B/Y	JY402230	TA402231	
3	WIRE328	0.5	G	JY402230	TA402231	
4	WIRE1500	0.75	Y/Gr	JP402252	TA402232	
5	WIRE330	0.5	Gr	JY402230	TA402231	
6	WIRE136	0.5	L/B	JY402230	TA402231	
7	WIRE120	0.5	O/Br	JY402230	TA402231	
8	WIRE181	0.5	Pi/L	JY402230	TA402231	TWP13
9	WIRE151	0.5	G/B	JY402230	TA402231	TWP13
10	WIRE148	0.5	R/L	JY402230	TA402231	
11	WIRE176	0.5	Y/B	JY402230	TA402231	TWP2
12	WIRE152	0.5	V/R	JY402230	TA402231	TWP2

Circuit Interface:



Diagnostic Trouble Code Trouble Shooting

Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on sensor terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside sensor connector?	Replace the sensor	Go to Step 3
3	Disconnect the control switch and ECU then check following. Is wire continuity available between ECU pin no 3 to switch pin 7? ECU pin no 44 to switch pin 8? ECU pin no 29 to switch pin 9?	Go to Step 4	Open in harness. Check/ Replace wiring harness
4	Disconnect the control switch and ECU then check following. Is ECU pin no 29 short circuited to GROUND?	Short ckt in harness. Check/ Replace wiring harness	Go to Step 5
5	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Open/ cut in harness. Check/ Replace wiring harness	Go to Step 6
6	Is there +5V supply available at pin no 7 and pin 10 of control switch RH?	Go to Step 7	Replace wiring harness/ Replace ECU
7	Erase fault in diagnostics tool and check again. Is fault still present?	Replaced Switch/ Replace ECU	

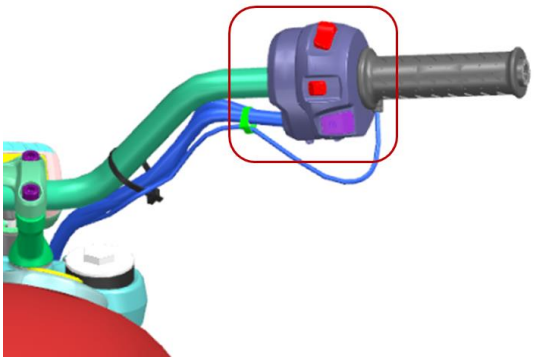
Diagnostic Trouble Code Trouble Shooting

P2123 – Throttle/Pedal Position Sensor/Switch “D” Circuit High

Overview:

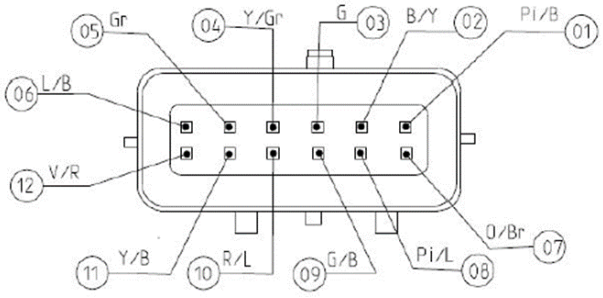
Error Code	P2123
Customer Symptom	No throttle response. Drivability is affected.
Fault effects (On vehicle)	Throttle operation is affected. Vehicle may not start, stall if error comes live during operation
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets logged if accelerator position sensor output 1 is short circuited to +5V/ +12V.
Probable trouble area	Control switch RH, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:



Connector View & Information:

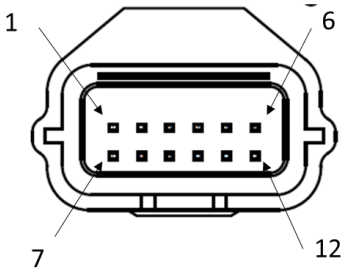
Component Side:



Pin 1	Engine OFF switch output
Pin 2	5V Ground
Pin 3	Hazard switch output RH
Pin 4	Hazard switch input
Pin 5	Hazard switch output LH
Pin 6	Start switch output to ECU
Pin 7	5V supply 1
Pin 8	5V Ground 1
Pin 9	APS output 1
Pin 10	5V Supply 2
Pin 11	5V Ground 1
Pin 12	APS output 2

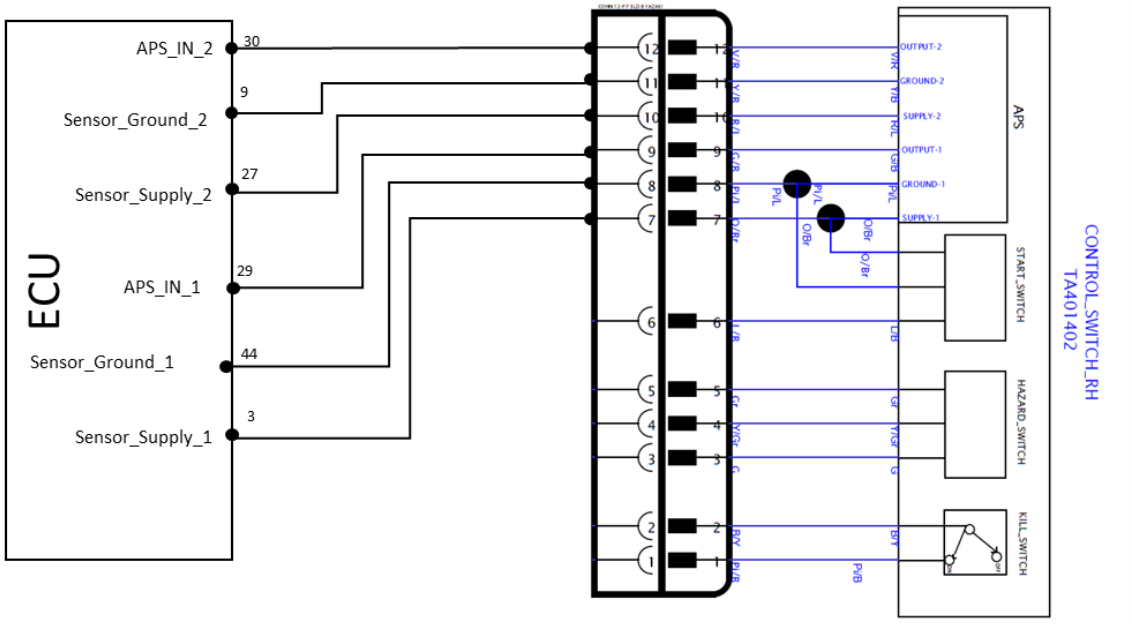
Diagnostic Trouble Code Trouble Shooting

Wiring Harness Side:



Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE4532	0.5	Pi/B	JY402230	TA402231	
2	WIRE234	0.5	B/Y	JY402230	TA402231	
3	WIRE328	0.5	G	JY402230	TA402231	
4	WIRE1500	0.75	Y/Gr	JP402252	TA402232	
5	WIRE330	0.5	Gr	JY402230	TA402231	
6	WIRE136	0.5	L/B	JY402230	TA402231	
7	WIRE120	0.5	O/Br	JY402230	TA402231	
8	WIRE181	0.5	Pi/L	JY402230	TA402231	TWP13
9	WIRE151	0.5	G/B	JY402230	TA402231	TWP13
10	WIRE148	0.5	R/L	JY402230	TA402231	
11	WIRE176	0.5	Y/B	JY402230	TA402231	TWP2
12	WIRE152	0.5	V/R	JY402230	TA402231	TWP2

Circuit Interface:



Diagnostic Trouble Code Trouble Shooting

Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on sensor terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside sensor connector?	Replace the sensor	Go to Step 3
3	Disconnect the control switch and ECU then check following. Is wire continuity available between ECU pin no 3 to switch pin 7? ECU pin no 44 to switch pin 8? ECU pin no 29 to switch pin 9?	Go to Step 4	Open in harness. Check/ Replace wiring harness
4	Disconnect the control switch and ECU then check following. Is ECU pin no 29 short circuited to +5V/12V?	Short ckt in harness. Check/ Replace wiring harness	Go to Step 5
5	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Open/ cut in harness. Check/ Replace wiring harness	Go to Step 6
6	Is there +5V supply available at pin no 7 and pin 10 of control switch RH?	Go to Step 7	Replace wiring harness/ Replace ECU
7	Erase fault in diagnostics tool and check again. Is fault still present?	Replaced Switch/ Replace ECU	

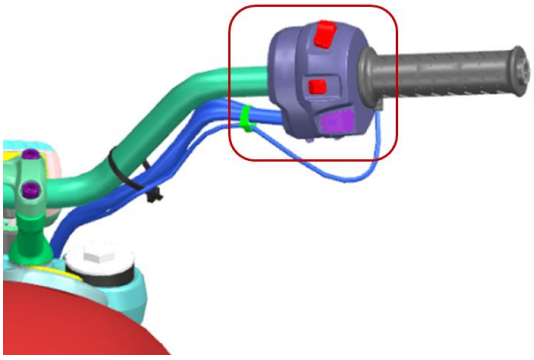
Diagnostic Trouble Code Trouble Shooting

P2127 – Throttle/Pedal Position Sensor/Switch “E” Circuit Low

Overview:

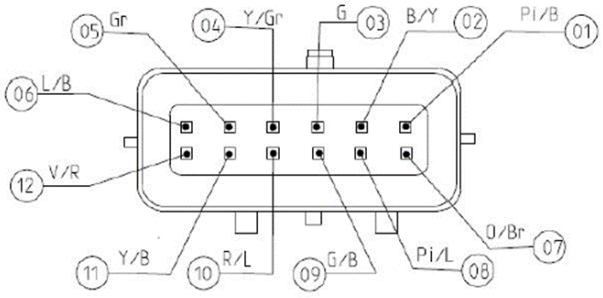
Error Code	P2127
Customer Symptom	No throttle response. Drivability is affected.
Fault effects (On vehicle)	Throttle operation is affected. Vehicle may not start, stall if error comes live during operation
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets logged if accelerator position sensor output 1 is short circuited to GROUND.
Probable trouble area	Control switch RH, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:



Connector View & Information:

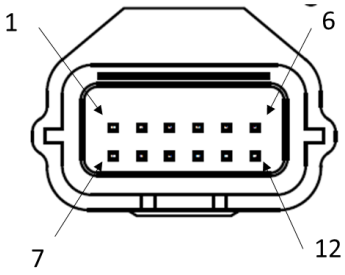
Component Side:



Pin 1	Engine OFF switch output
Pin 2	5V Ground
Pin 3	Hazard switch output RH
Pin 4	Hazard switch input
Pin 5	Hazard switch output LH
Pin 6	Start switch output to ECU
Pin 7	5V supply 1
Pin 8	5V Ground 1
Pin 9	APS output 1
Pin 10	5V Supply 2
Pin 11	5V Ground 1
Pin 12	APS output 2

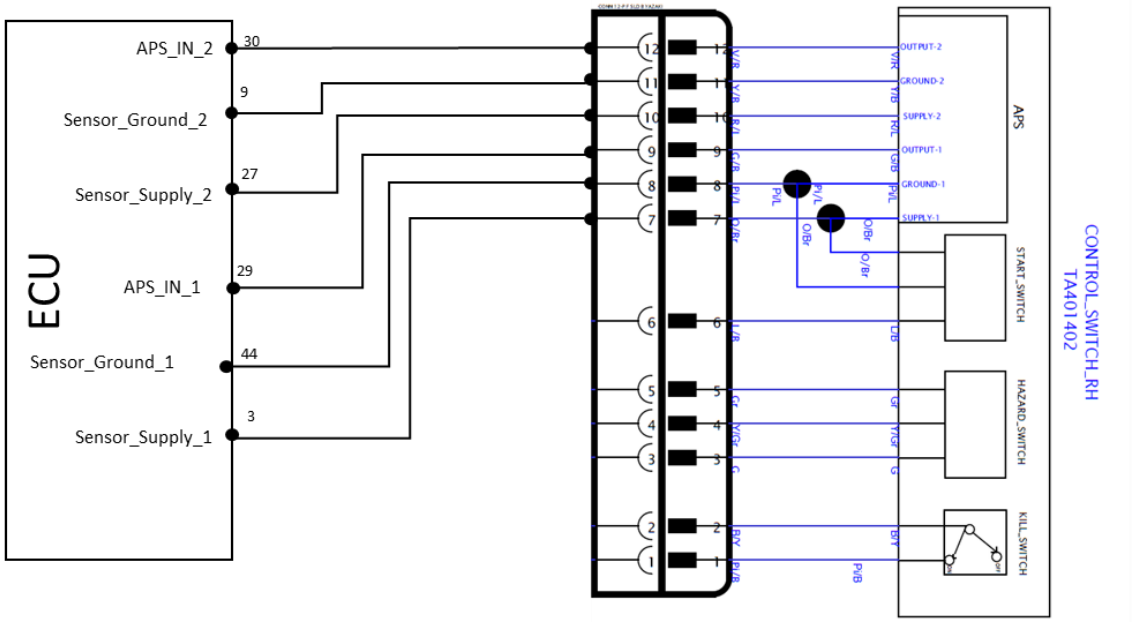
Diagnostic Trouble Code Trouble Shooting

Wiring Harness Side:



Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE4532	0.5	Pi/B	JY402230	TA402231	
2	WIRE234	0.5	B/Y	JY402230	TA402231	
3	WIRE328	0.5	G	JY402230	TA402231	
4	WIRE1500	0.75	Y/Gr	JP402252	TA402232	
5	WIRE330	0.5	Gr	JY402230	TA402231	
6	WIRE136	0.5	L/B	JY402230	TA402231	
7	WIRE120	0.5	O/Br	JY402230	TA402231	
8	WIRE181	0.5	Pi/L	JY402230	TA402231	TWP13
9	WIRE151	0.5	G/B	JY402230	TA402231	TWP13
10	WIRE148	0.5	R/L	JY402230	TA402231	
11	WIRE176	0.5	Y/B	JY402230	TA402231	TWP2
12	WIRE152	0.5	V/R	JY402230	TA402231	TWP2

Circuit Interface:



Diagnostic Trouble Code Trouble Shooting

Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on sensor terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside sensor connector?	Replace the sensor	Go to Step 3
3	Disconnect the control switch and ECU then check following. Is wire continuity available between ECU pin no 27 to switch pin 10? ECU pin no 9 to switch pin 11? ECU pin no 30 to switch pin 12?	Go to Step 4	Open in harness. Check/ Replace wiring harness
4	Disconnect the control switch and ECU then check following. Is ECU pin no 30 short circuited to GROUND?	Short ckt in harness. Check/ Replace wiring harness	Go to Step 5
5	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Open/ cut in harness. Check/ Replace wiring harness	Go to Step 6
6	Is there +5V supply available at pin no 7 and pin 10 of control switch RH?	Go to Step 7	Replace wiring harness/ Replace ECU
7	Erase fault in diagnostics tool and check again. Is fault still present?	Replaced Switch/ Replace ECU	

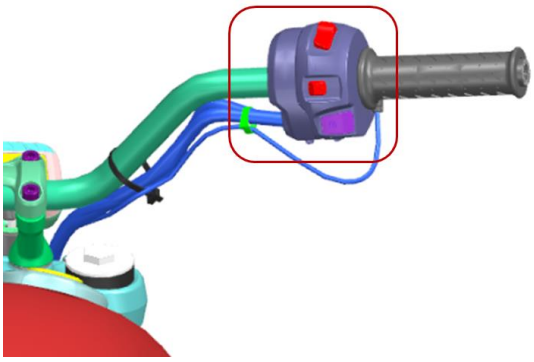
Diagnostic Trouble Code Trouble Shooting

P2128 – Throttle/Pedal Position Sensor/Switch “E” Circuit High

Overview:

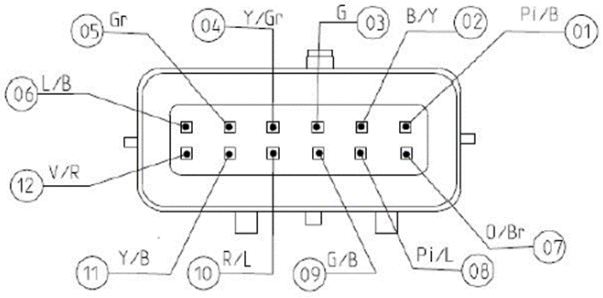
Error Code	P2128
Customer Symptom	No throttle response. Drivability is affected.
Fault effects (On vehicle)	Throttle operation is affected. Vehicle may not start, stall if error comes live during operation
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets logged if accelerator position sensor output 1 is short circuited to +5V/12V.
Probable trouble area	Control switch RH, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:



Connector View & Information:

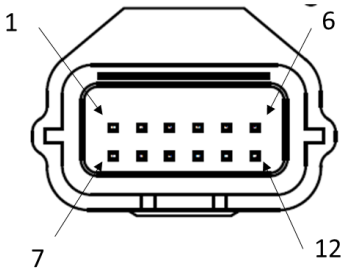
Component Side:



Pin 1	Engine OFF switch output
Pin 2	5V Ground
Pin 3	Hazard switch output RH
Pin 4	Hazard switch input
Pin 5	Hazard switch output LH
Pin 6	Start switch output to ECU
Pin 7	5V supply 1
Pin 8	5V Ground 1
Pin 9	APS output 1
Pin 10	5V Supply 2
Pin 11	5V Ground 1
Pin 12	APS output 2

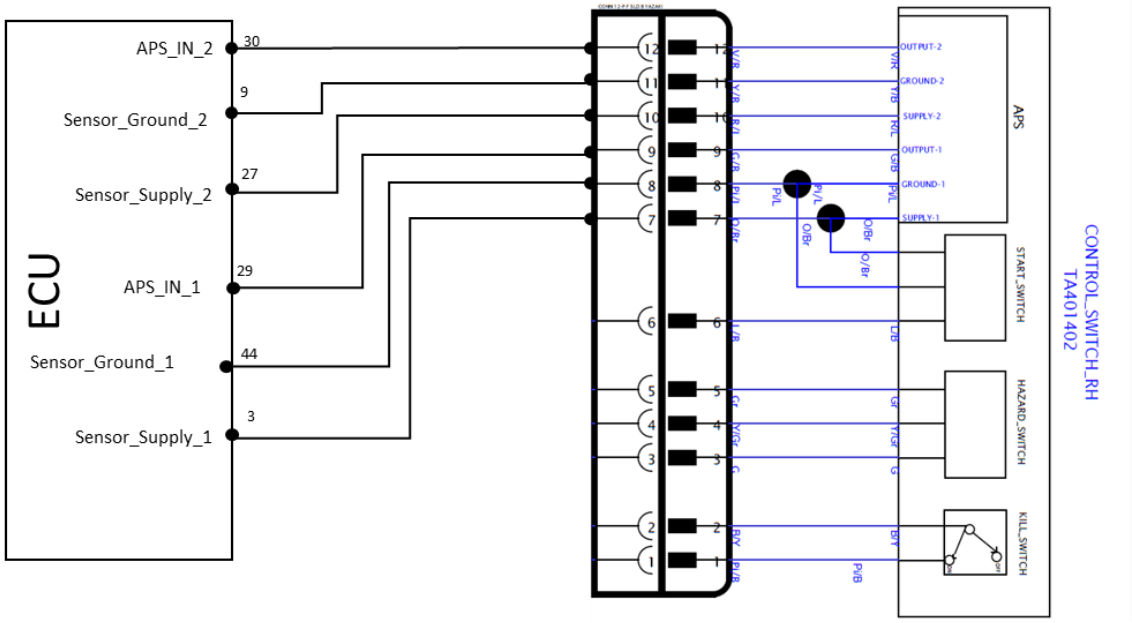
Diagnostic Trouble Code Trouble Shooting

Wiring Harness Side:



Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE4532	0.5	Pi/B	JY402230	TA402231	
2	WIRE234	0.5	B/Y	JY402230	TA402231	
3	WIRE328	0.5	G	JY402230	TA402231	
4	WIRE1500	0.75	Y/Gr	JP402252	TA402232	
5	WIRE330	0.5	Gr	JY402230	TA402231	
6	WIRE136	0.5	L/B	JY402230	TA402231	
7	WIRE120	0.5	O/Br	JY402230	TA402231	
8	WIRE181	0.5	Pi/L	JY402230	TA402231	TWP13
9	WIRE151	0.5	G/B	JY402230	TA402231	TWP13
10	WIRE148	0.5	R/L	JY402230	TA402231	
11	WIRE176	0.5	Y/B	JY402230	TA402231	TWP2
12	WIRE152	0.5	V/R	JY402230	TA402231	TWP2

Circuit Interface:



Diagnostic Trouble Code Trouble Shooting

Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on sensor terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside sensor connector?	Replace the sensor	Go to Step 3
3	Disconnect the control switch and ECU then check following. Is wire continuity available between ECU pin no 27 to switch pin 10? ECU pin no 9 to switch pin 11? ECU pin no 30 to switch pin 12?	Go to Step 4	Open in harness. Check/ Replace wiring harness
4	Disconnect the control switch and ECU then check following. Is ECU pin no 30 short circuited to +5V/12V?	Short ckt in harness. Check/ Replace wiring harness	Go to Step 5
5	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Open/ cut in harness. Check/ Replace wiring harness	Go to Step 6
6	Is there +5V supply available at pin no 7 and pin 10 of control switch RH?	Go to Step 7	Replace wiring harness/ Replace ECU
7	Erase fault in diagnostics tool and check again. Is fault still present?	Replaced Switch/ Replace ECU	

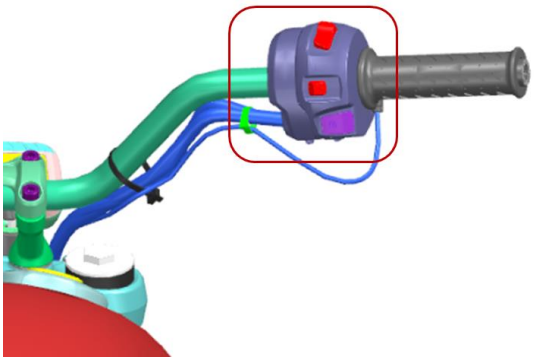
Diagnostic Trouble Code Trouble Shooting

P2138 – Throttle/ Pedal Position Sensor/Switch “D”/“E” Voltage Correlation

Overview:

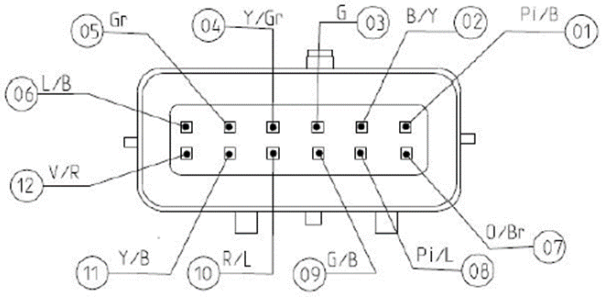
Error Code	P2138
Customer Symptom	No throttle response. Drivability is affected.
Fault effects (On vehicle)	Throttle operation is affected. Vehicle may not start, stall if error comes live during operation
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets logged if difference between Sensor output 1 voltage and Sensor output voltage 2 is greater than 0.2V
Probable trouble area	Control switch RH, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:



Connector View & Information:

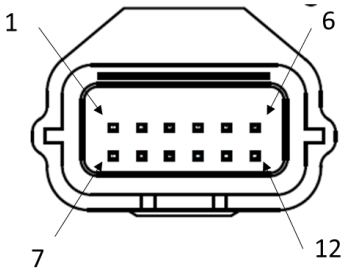
Component Side:



Pin 1	Engine OFF switch output
Pin 2	5V Ground
Pin 3	Hazard switch output RH
Pin 4	Hazard switch input
Pin 5	Hazard switch output LH
Pin 6	Start switch output to ECU
Pin 7	5V supply 1
Pin 8	5V Ground 1
Pin 9	APS output 1
Pin 10	5V Supply 2
Pin 11	5V Ground 1
Pin 12	APS output 2

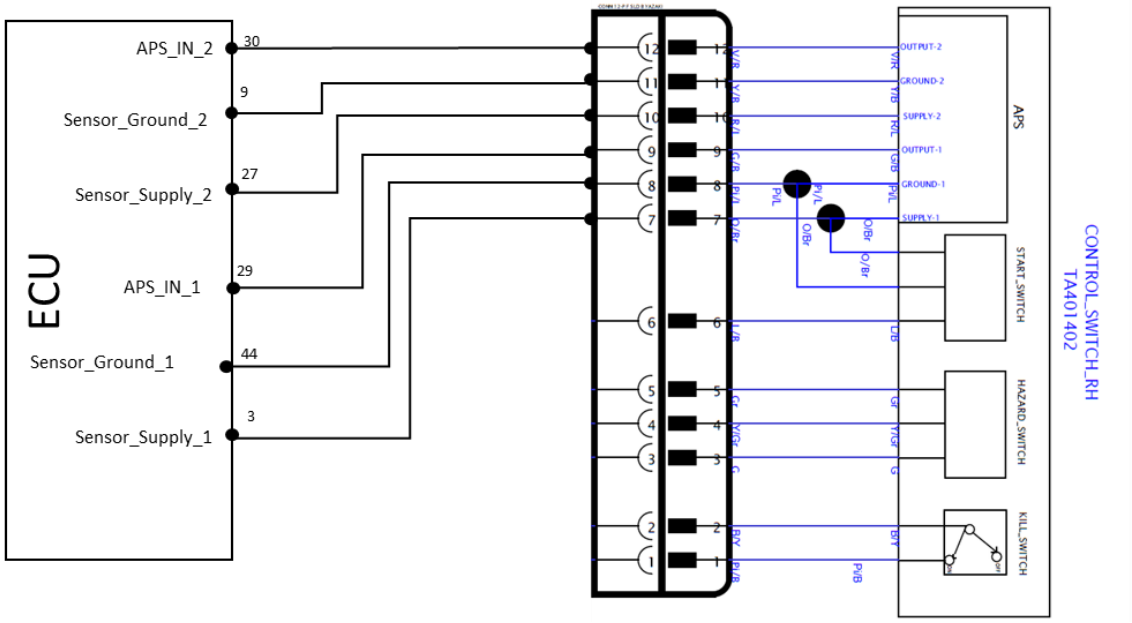
Diagnostic Trouble Code Trouble Shooting

Wiring Harness Side:



Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE4532	0.5	Pi/B	JY402230	TA402231	
2	WIRE234	0.5	B/Y	JY402230	TA402231	
3	WIRE328	0.5	G	JY402230	TA402231	
4	WIRE1500	0.75	Y/Gr	JP402252	TA402232	
5	WIRE330	0.5	Gr	JY402230	TA402231	
6	WIRE136	0.5	L/B	JY402230	TA402231	
7	WIRE120	0.5	O/Br	JY402230	TA402231	
8	WIRE181	0.5	Pi/L	JY402230	TA402231	TWP13
9	WIRE151	0.5	G/B	JY402230	TA402231	TWP13
10	WIRE148	0.5	R/L	JY402230	TA402231	
11	WIRE176	0.5	Y/B	JY402230	TA402231	TWP2
12	WIRE152	0.5	V/R	JY402230	TA402231	TWP2

Circuit Interface:



Diagnostic Trouble Code Trouble Shooting

Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on sensor terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside sensor connector?	Replace the sensor	Go to Step 3
3	Disconnect the control switch and ECU then check following. Is wire continuity available between ECU pin no 3 to switch pin 7? ECU pin no 44 to switch pin 8? ECU pin no 29 to switch pin 9? ECU pin no 27 to switch pin 10? ECU pin no 9 to switch pin 11? ECU pin no 30 to switch pin 12?	Go to Step 4	Open in harness. Check/ Replace wiring harness
4	Disconnect the control switch and ECU then check following. Is ECU pin no 29 & 30 short circuited to +5V/12V, GROUND?	Short ckt in harness. Check/ Replace wiring harness	Go to Step 5
5	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Open/ cut in harness. Check/ Replace wiring harness	Go to Step 6
6	Is there +5V supply available at pin no 7 and pin 10 of control switch RH?	Go to Step 7	Replace wiring harness/ Replace ECU
7	Erase fault in diagnostics tool and check again. Is fault still present?	Replaced Switch/ Replace ECU	

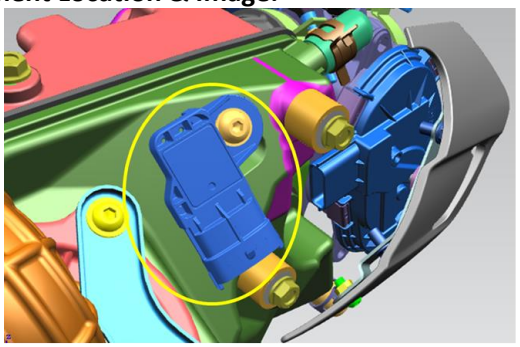
Diagnostic Trouble Code Trouble Shooting

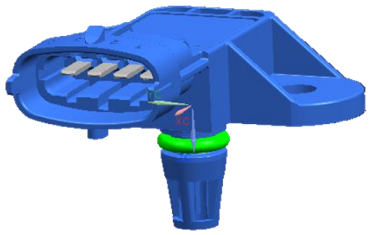
P0108 - Manifold Absolute/ Barometric Pressure Circuit High

Overview:

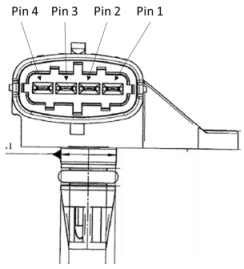
Error Code	P0108
Customer Symptom	Startability & Idle RPM is not stable or fluctuating.
Fault effects (On vehicle)	Manifold pressure is computed basis throttle angle. Low speed drivability is affected. Throttle body leakage calculation is affected.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets logged if TMAP pressure signal is short circuited to +5 V Supply or OPEN circuited.
Probable trouble area	TMAP sensor, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:



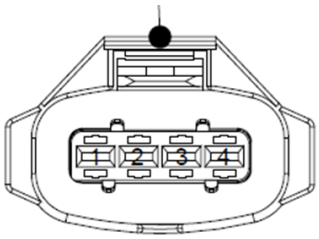


Connector View & Information:
Component Side:



Pin 1	Ground
Pin 2	Temperature signal
Pin 3	Supply (+5V)
Pin 4	Pressure Signal

Wiring Harness Side:

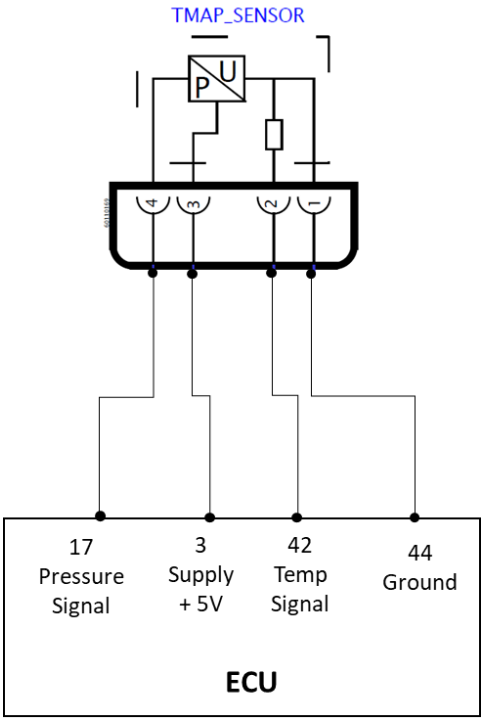


TO_SENSOR_TMAP

Cav	No.	CSA	Col.	Term.	Seal
1	WIRE5928	0.5	Pi/L	60111093	60111149
2	WIRE5929	0.5	L/R	60111093	60111149
3	WIRE5926	0.5	O/Br	60111093	60111149
4	WIRE5927	0.5	W/G	60111093	60111149

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage inside TMAP sensor connector?	Rectify/ replace harness	Go to Step 2
2	Is there any sulphation/ rust observed on TMAP sensor and its harness side connector?	Check/ Replace wiring harness or sensor	Go to Step 3
3	Is there any terminal bend/ damage causing short circuit to +5V inside sensor connector?	Replace the sensor	Go to Step 4
4	Disconnect sensor and then check following. Is ECU pin no 17 short circuited to +5V supply? *Check using multi-meter.*	Check/ Replace wiring harness	Go to Step 5
5	Is ECU pin no 17 open circuited? *Check using multi-meter.* Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Open/ Cut in harness. Replace wiring harness	Go to Step 6
6	Erase fault in diagnostics tool and check again. Is fault still present?	Replace sensor/ Replace ECU	

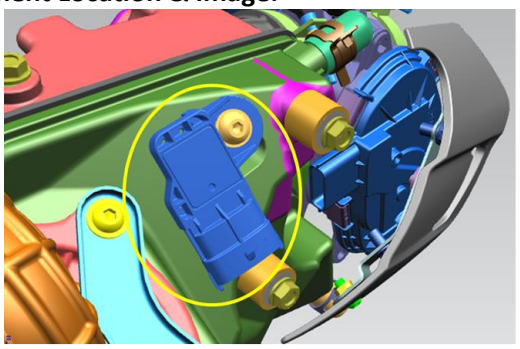
Diagnostic Trouble Code Trouble Shooting

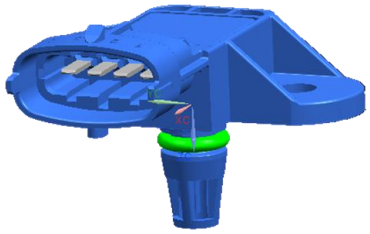
P0107 - Manifold Absolute Pressure Circuit Low

Overview:

Error Code	P0107
Customer Symptom	Startability & Idle RPM is not stable or fluctuating.
Fault effects (On vehicle)	Manifold pressure is computed basis throttle angle. Low speed drivability is affected. Throttle body leakage calculation is affected.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets logged if TMAP pressure signal is short circuited to Ground.
Probable trouble area	TMAP sensor, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

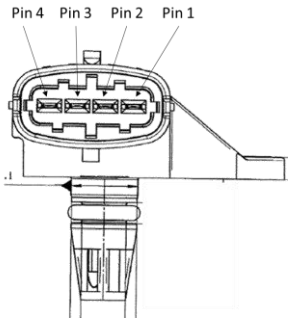
Component Location & Image:





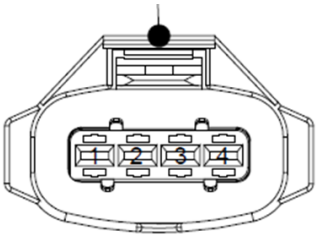
Connector View & Information:

Component Side:



Pin 1	GND
Pin 2	Temperature signal
Pin 3	Supply (+5V)
Pin 4	Pressure Signal

Wiring Harness Side:

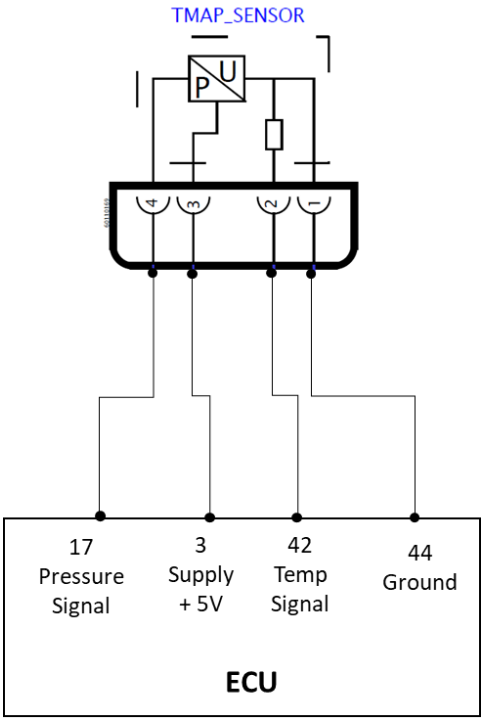


TO_SENSOR_TMAP

Cav	No.	CSA	Col.	Term.	Seal
1	WIRE5928	0.5	Pi/L	60111093	60111149
2	WIRE5929	0.5	L/R	60111093	60111149
3	WIRE5926	0.5	O/Br	60111093	60111149
4	WIRE5927	0.5	W/G	60111093	60111149

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage inside TMAP sensor connector?	Rectify/ replace harness	Go to Step 2
2	Is there any sulphation/ rust observed on TMAP sensor and its harness side connector?	Check/ Replace wiring harness or sensor	Go to Step 3
3	Is there any terminal bend/ damage causing short circuit to Ground inside sensor connector?	Replace the sensor	Go to Step 4
4	Disconnect sensor and then check following. Is ECU pin no 17 short circuited to Ground (Pin 44)? *Check using multi-meter.*	Check/ Replace wiring harness	Go to Step 5
5	Erase fault in diagnostics tool and check again. Is fault still present?	Replace sensor/ Replace ECU	

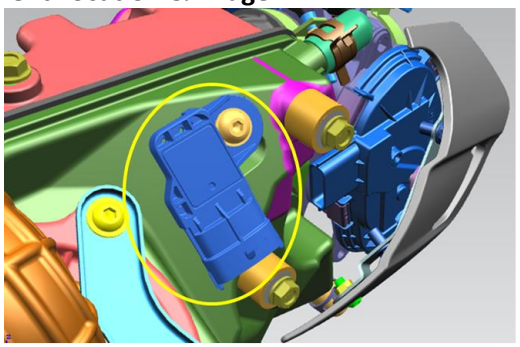
Diagnostic Trouble Code Trouble Shooting

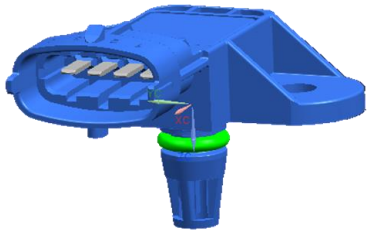
P0106 - Manifold Absolute Pressure/Barometric Pressure Circuit Range/Performance

Overview:

Error Code	P0106
Customer Symptom	Startability & Idle RPM is not stable or fluctuating.
Fault effects (On vehicle)	Manifold pressure is computed basis throttle angle. Low speed drivability is affected. Throttle body leakage calculation is affected.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 3rd driving cycle
Fault detection condition	This fault gets logged if pressure sensor signal value exceeds 1150 mbar or is less than 100 mbar.
Probable trouble area	TMAP sensor, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

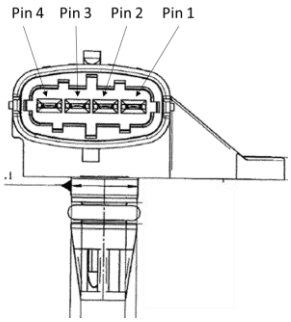
Component Location & Image:





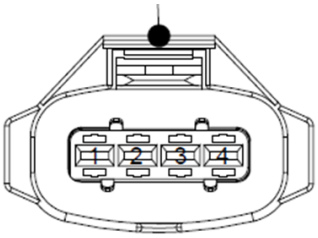
Connector View & Information:

Component Side:



Pin 1	GND
Pin 2	Temperature signal
Pin 3	Supply (+5V)
Pin 4	Pressure Signal

Wiring Harness Side:

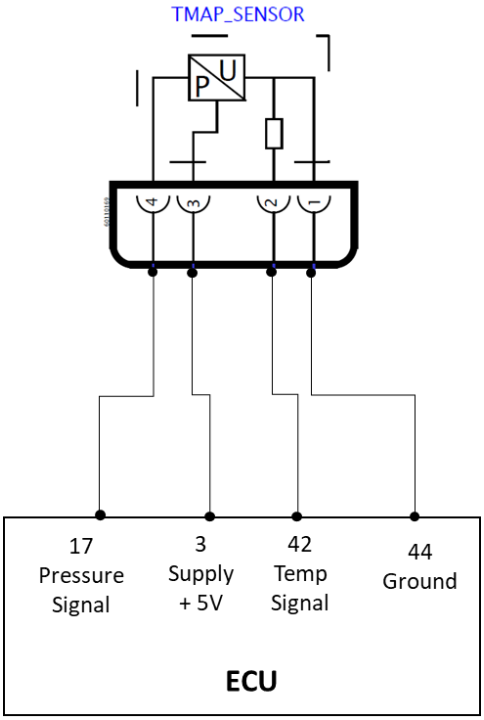


TO_SENSOR_TMAP

Cav	No.	CSA	Col.	Term.	Seal
1	WIRE5928	0.5	Pi/L	60111093	60111149
2	WIRE5929	0.5	L/R	60111093	60111149
3	WIRE5926	0.5	O/Br	60111093	60111149
4	WIRE5927	0.5	W/G	60111093	60111149

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage causing short circuit to GND or open circuit inside sensor connector?	Replace sensor and check	Go to Step 2
2	Disconnect sensor and ECU then check following. Is ECU pin no 17 and sensor pin 4 circuit continuity okay? Is ECU pin 3 and sensor pin 3 circuit continuity okay? Is ECU pin 44 and sensor pin 1 circuit continuity okay? *Check using multi-meter.*	Go to Step 3	Check/ Replace wiring harness
3	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 4
4	If all electrical checks are ok, check air path in vehicle for any clogging/ damage etc.	Rectify and check	Go to Step 5
5	Erase fault in diagnostics tool and check again. Is fault still present?	Replace sensor/ Replace ECU	

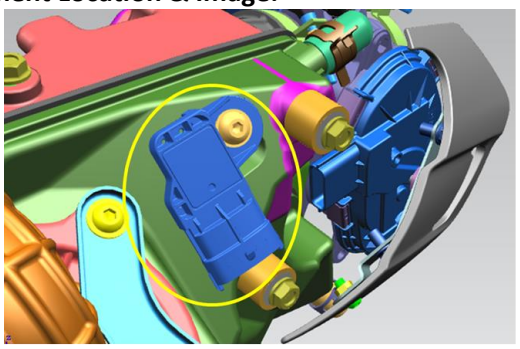
Diagnostic Trouble Code Trouble Shooting

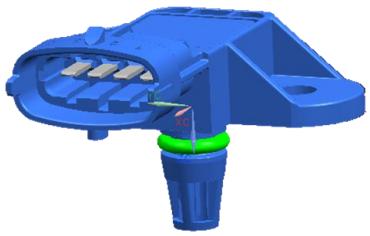
P0105 - Manifold Absolute Pressure/Barometric Pressure Circuit

Overview:

Error Code	P0105
Customer Symptom	Startability & Idle RPM is not stable or fluctuating.
Fault effects (On vehicle)	Manifold pressure is computed basis throttle angle. Low speed drivability is affected. Throttle body leakage calculation is affected.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 3rd driving cycle
Fault detection condition	This fault gets logged if sensor signal value does not change by at least 50 mbar after engine start.
Probable trouble area	TMAP sensor, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

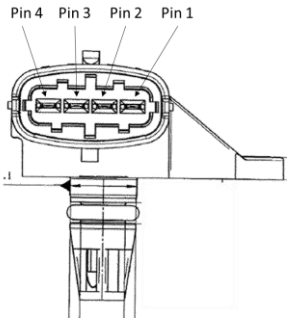
Component Location & Image:





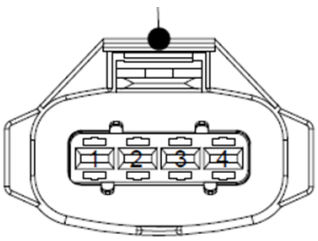
Connector View & Information:

Component Side:



Pin 1	GND
Pin 2	Temperature signal
Pin 3	Supply (+5V)
Pin 4	Pressure Signal

Wiring Harness Side:

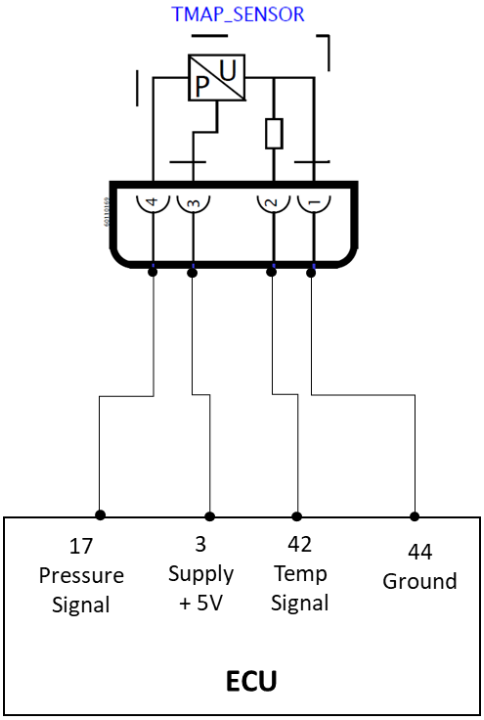


TO_SENSOR_TMAP

Cav	No.	CSA	Col.	Term.	Seal
1	WIRE5928	0.5	Pi/L	60111093	60111149
2	WIRE5929	0.5	L/R	60111093	60111149
3	WIRE5926	0.5	O/Br	60111093	60111149
4	WIRE5927	0.5	W/G	60111093	60111149

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage causing short circuit to GND or open circuit inside sensor connector?	Replace sensor and check	Go to Step 2
2	Disconnect sensor and ECU then check following. Is ECU pin no 17 and sensor pin 4 circuit continuity okay? Is ECU pin 3 and sensor pin 3 circuit continuity okay? Is ECU pin 44 and sensor pin 1 circuit continuity okay? *Check using multi-meter.*	Go to Step 3	Check/ Replace wiring harness
3	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 4
4	If all electrical checks are ok, check air path in vehicle for any clogging/ damage etc.	Rectify and check	Go to Step 5
5	Erase fault in diagnostics tool and check again. Is fault still present?	Replace sensor/ Replace ECU	

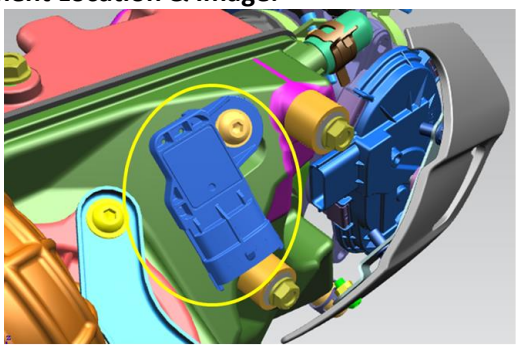
Diagnostic Trouble Code Trouble Shooting

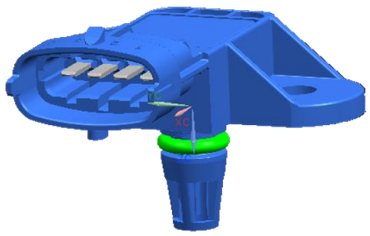
P0112 – Intake air temperature sensor 1 circuit low

Overview:

Error Code	P0112
Customer Symptom	Startability & Idle RPM is not stable or fluctuating.
Fault effects (On vehicle)	Intake air temperature not correct. Modelled value is followed for engine control.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 1st driving cycle
Fault detection condition	This fault gets logged if TMAP **temperature signal** is short circuited to GROUND
Probable trouble area	TMAP, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

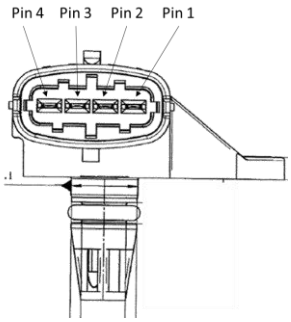
Component Location & Image:





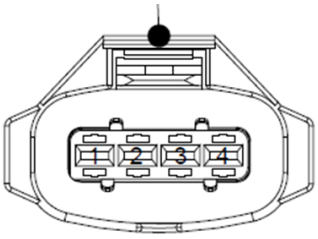
Connector View & Information:

Component Side:



Pin 1	GND
Pin 2	Temperature signal
Pin 3	Supply (+5V)
Pin 4	Pressure Signal

Wiring Harness Side:

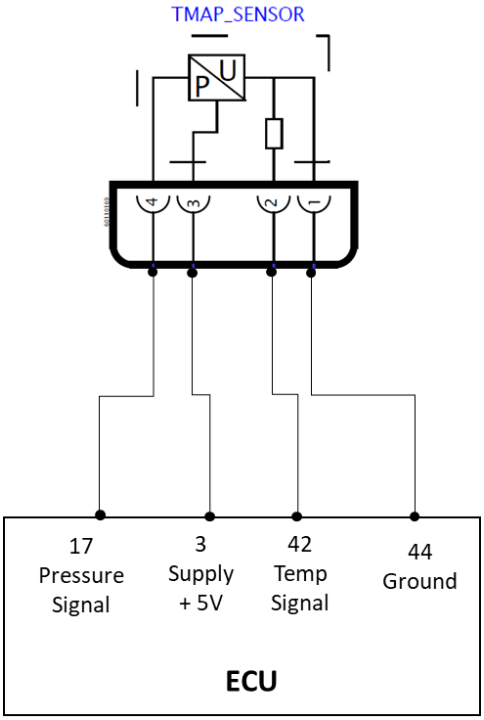


TO_SENSOR_TMAP

Cav	No.	CSA	Col.	Term.	Seal
1	WIRE5928	0.5	Pi/L	60111093	60111149
2	WIRE5929	0.5	L/R	60111093	60111149
3	WIRE5926	0.5	O/Br	60111093	60111149
4	WIRE5927	0.5	W/G	60111093	60111149

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage inside TMAP sensor connector?	Rectify/ replace harness	Go to Step 2
2	Is there any sulphation/ rust observed on TMAP sensor and its harness side connector?	Check/ Replace wiring harness or sensor	Go to Step 3
3	Is there any terminal bend/ damage causing short circuit to Ground inside sensor connector?	Replace the sensor	Go to Step 4
4	Disconnect sensor and then check following. Is ECU pin no 17 short circuited to Ground (Pin 44)? *Check using multi-meter.*	Check/ Replace wiring harness	Go to Step 5
5	Erase fault in diagnostics tool and check again. Is fault still present?	Replace sensor/ Replace ECU	

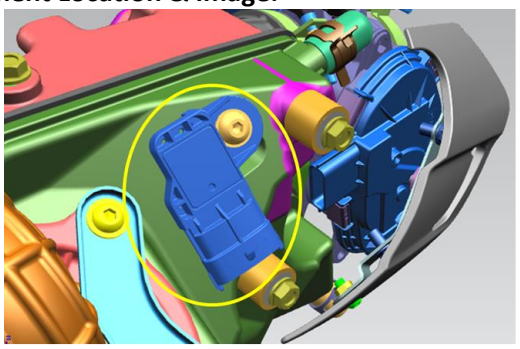
Diagnostic Trouble Code Trouble Shooting

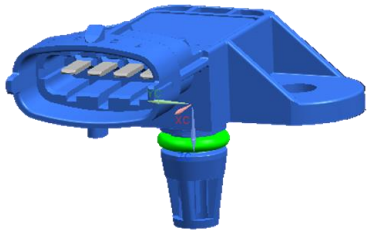
P0113 – Intake air temperature sensor 1 circuit high

Overview:

Error Code	P0113
Customer Symptom	Startability & Idle RPM is not stable or fluctuating.
Fault effects (On vehicle)	Intake air temperature not correct. Modelled value is followed for engine control.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 1st driving cycle
Fault detection condition	This fault gets logged if TMAP **temperature signal** is short circuited to 5V or 12V supply
Probable trouble area	TMAP, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

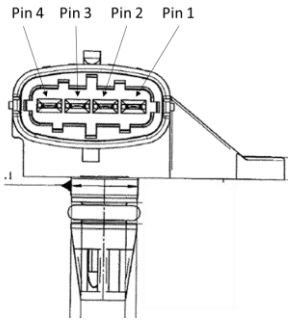
Component Location & Image:





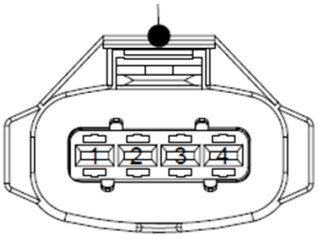
Connector View & Information:

Component Side:



Pin 1	GND
Pin 2	Temperature signal
Pin 3	Supply (+5V)
Pin 4	Pressure Signal

Wiring Harness Side:

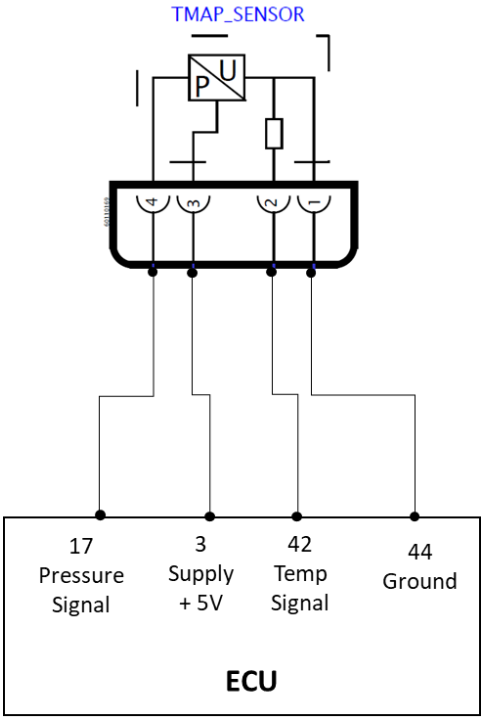


TO_SENSOR_TMAP

Cav	No.	CSA	Col.	Term.	Seal
1	WIRE5928	0.5	Pi/L	60111093	60111149
2	WIRE5929	0.5	L/R	60111093	60111149
3	WIRE5926	0.5	O/Br	60111093	60111149
4	WIRE5927	0.5	W/G	60111093	60111149

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage inside TMAP sensor connector?	Rectify/ replace harness	Go to Step 2
2	Is there any sulphation/ rust observed on TMAP sensor and its harness side connector?	Check/ Replace wiring harness or sensor	Go to Step 3
3	Is there any terminal bend/ damage causing short circuit to +5V inside sensor connector?	Replace the sensor	Go to Step 4
4	Disconnect sensor and then check following. Is ECU pin no 42 short circuited to +5V supply? *Check using multi-meter.*	Check/ Replace wiring harness	Go to Step 5
5	Is ECU pin no 42 open circuited? *Check using multi-meter.* Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Open/ Cut in harness. Replace wiring harness	Go to Step 6
6	Erase fault in diagnostics tool and check again. Is fault still present?	Replace sensor/ Replace ECU	

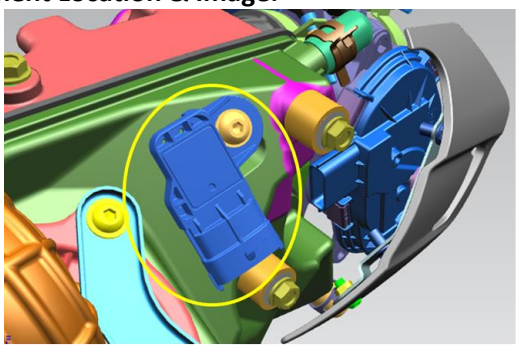
Diagnostic Trouble Code Trouble Shooting

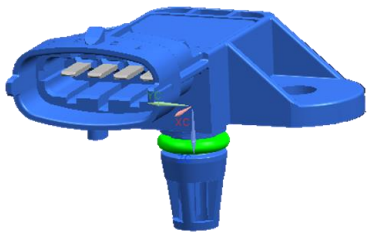
P0111 – Intake Air Temperature Sensor 1 Circuit Range/Performance / Bank 1

Overview:

Error Code	P0111
Customer Symptom	Startability & Idle RPM is affected and drivability is affected
Fault effects (On vehicle)	Startability & Idle RPM is affected and drivability is affected
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 3rd driving cycle
Fault detection condition	This fault gets logged if temperature sensor signal value exceeds 100 °C or is less than -26.3 °C.
Probable trouble area	TMAP, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

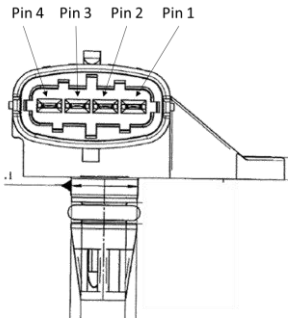
Component Location & Image:





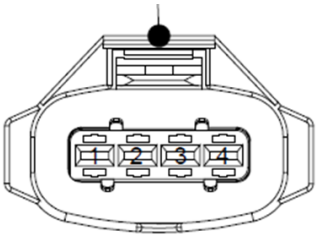
Connector View & Information:

Component Side:



Pin 1	GND
Pin 2	Temperature signal
Pin 3	Supply (+5V)
Pin 4	Pressure Signal

Wiring Harness Side:

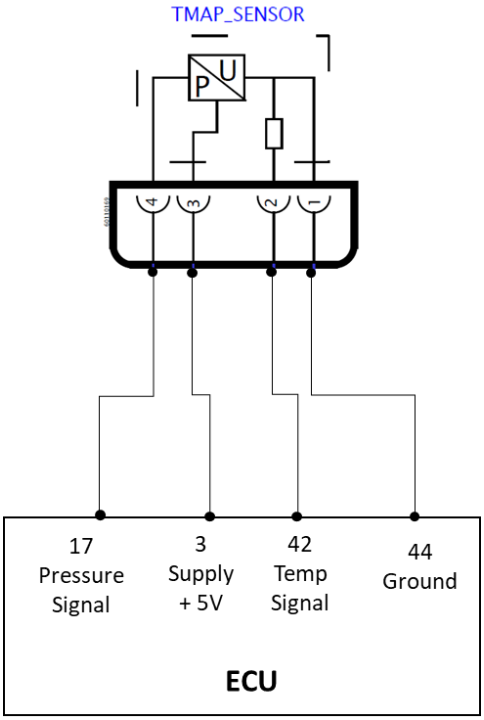


TO_SENSOR_TMAP

Cav	No.	CSA	Col.	Term.	Seal
1	WIRE5928	0.5	Pi/L	60111093	60111149
2	WIRE5929	0.5	L/R	60111093	60111149
3	WIRE5926	0.5	O/Br	60111093	60111149
4	WIRE5927	0.5	W/G	60111093	60111149

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage causing short circuit to GND or open circuit inside sensor connector?	Replace sensor and check	Go to Step 2
2	Disconnect sensor and ECU then check following. Is ECU pin no 42 and sensor pin 2 circuit continuity okay? Is ECU pin 3 and sensor pin 3 circuit continuity okay? Is ECU pin 44 and sensor pin 1 circuit continuity okay? *Check using multi-meter.*	Go to Step 3	Check/ Replace wiring harness
3	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 4
4	Erase fault in diagnostics tool and check again. Is fault still present?	Replace sensor/ Replace ECU	

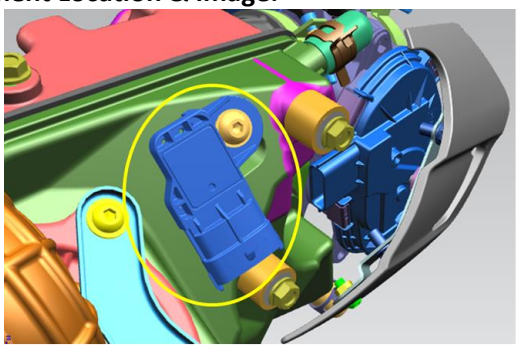
Diagnostic Trouble Code Trouble Shooting

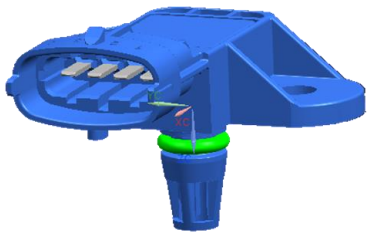
P0110 – Intake Air Temperature Sensor 1 Circuit

Overview:

Error Code	P0111
Customer Symptom	Startability & Idle RPM is affected and drivability is affected
Fault effects (On vehicle)	Startability & Idle RPM is affected and drivability is affected
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 3rd driving cycle
Fault detection condition	This fault gets logged if engine is running and 3 kg of intake air has passed, but the change in sensed air temperature is not more than 0.26 °C.
Probable trouble area	TMAP, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

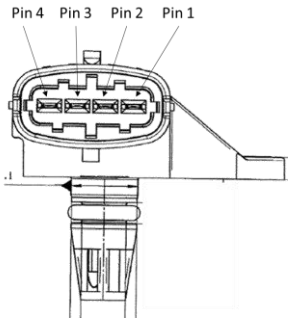
Component Location & Image:





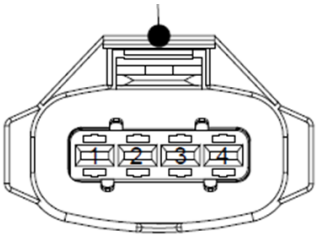
Connector View & Information:

Component Side:



Pin 1	GND
Pin 2	Temperature signal
Pin 3	Supply (+5V)
Pin 4	Pressure Signal

Wiring Harness Side:

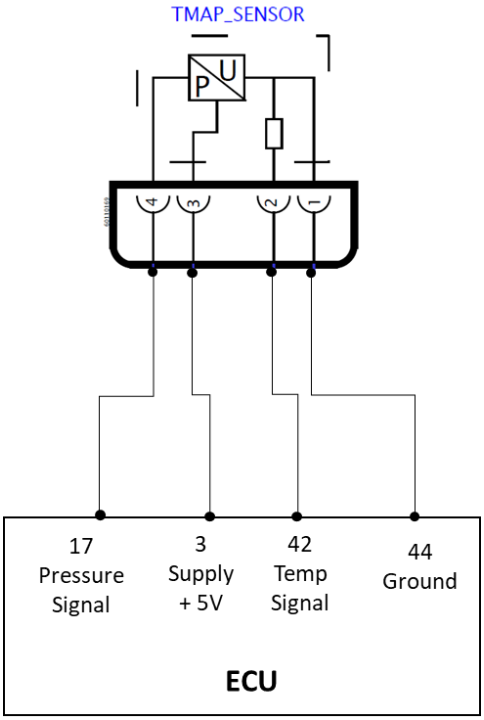


TO_SENSOR_TMAP

Cav	No.	CSA	Col.	Term.	Seal
1	WIRE5928	0.5	Pi/L	60111093	60111149
2	WIRE5929	0.5	L/R	60111093	60111149
3	WIRE5926	0.5	O/Br	60111093	60111149
4	WIRE5927	0.5	W/G	60111093	60111149

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage causing short circuit to GND or open circuit inside sensor connector?	Replace sensor and check	Go to Step 2
2	Disconnect sensor and ECU then check following. Is ECU pin no 42 and sensor pin 2 circuit continuity okay? Is ECU pin 3 and sensor pin 3 circuit continuity okay? Is ECU pin 44 and sensor pin 1 circuit continuity okay? *Check using multi-meter.*	Go to Step 3	Check/ Replace wiring harness
3	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 4
4	Erase fault in diagnostics tool and check again. Is fault still present?	Replace sensor/ Replace ECU	

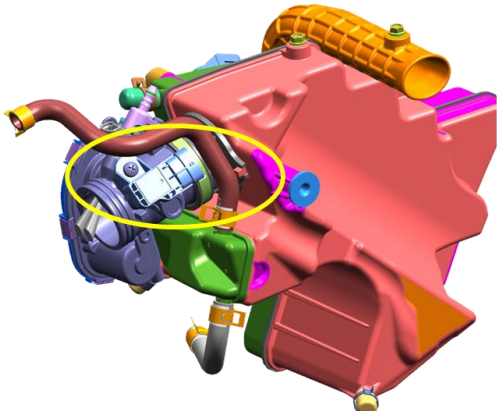
Diagnostic Trouble Code Trouble Shooting

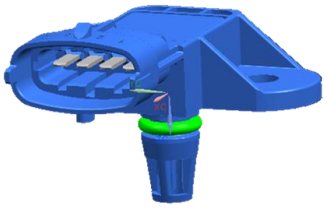
P2229 – Barometric pressure circuit high

Overview:

Error Code	P2229
Customer Symptom	Startability & Idle RPM is not stable or fluctuating.
Fault effects (On vehicle)	Atmospheric pressure is calculated based on intake manifold pressure value.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 3rd driving cycle
Fault detection condition	This fault gets logged if MAP pressure signal is short circuited to +5V/ +12V.
Probable trouble area	MAP sensor, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

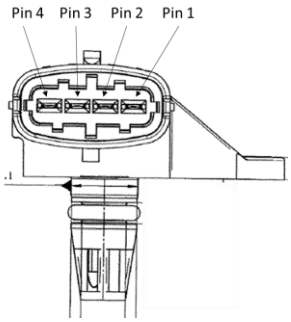
Component Location & Image:





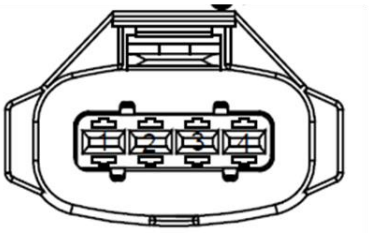
Connector View & Information:

Component Side:



Pin 1	GND
Pin 2	Not conencted
Pin 3	Supply (+5V)
Pin 4	Pressure Signal

Wiring Harness Side:

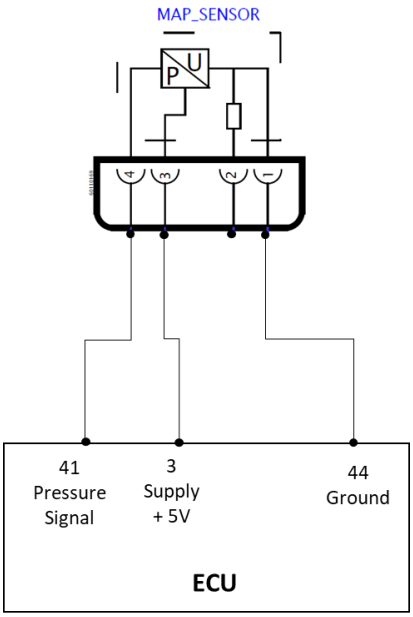


TO_MAP_SENSOR

Cav	No.	CSA	Col.	Term.	Seal	Plug
1	WIRE1576	0.5	Pi/L	60111093	60111149	-
2	-	-	-	-	-	60111155
3	WIRE1575	0.5	O/Br	60111093	60111149	-
4	WIRE167	0.5	W/O	60111093	60111149	-

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage inside TMAP sensor connector?	Rectify/ replace harness	Go to Step 2
2	Is there any sulphation/ rust observed on TMAP sensor and its harness side connector?	Check/ Replace wiring harness or sensor	Go to Step 3
3	Disconnect sensor and ECU then check following. Is wire continuity found ok for following? ECU pin no 41 to Sensor Pin 4? ECU pin 3 to Sensor pin 3? ECU pin 44 to Sensor pin 1? *Check using multi-meter.*	Go to Step 4	Check/ Replace wiring harness or sensor
4	Disconnect sensor and ECU then check following. Is ECU pin no 41 short circuited to +5V (Pin 3) or +12V? *Check using multi-meter.*	Check/ Replace wiring harness	Go to Step 5
5	Is there any pinching/ damage of wiring harness with surrounding parts?	Check/ Replace wiring harness	Go to Step 6
6	Erase fault in diagnostics tool and check again. Is fault still present?	Replace sensor/ Replace ECU	

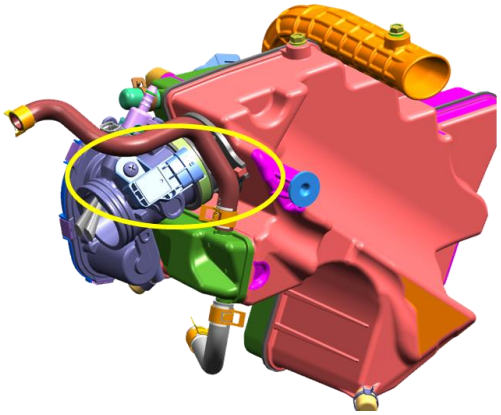
Diagnostic Trouble Code Trouble Shooting

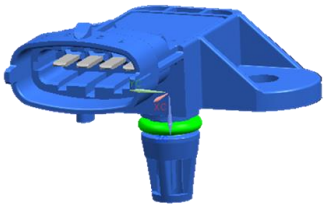
P2228 – Barometric pressure circuit low

Overview:

Error Code	P2228
Customer Symptom	Startability & Idle RPM is not stable or fluctuating.
Fault effects (On vehicle)	Atmospheric pressure is calculated based on intake manifold pressure value.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 3rd driving cycle
Fault detection condition	This fault gets logged if MAP pressure signal is short circuited to Ground.
Probable trouble area	MAP sensor, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

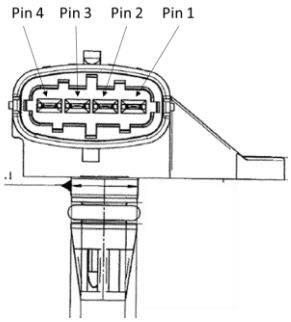
Component Location & Image:





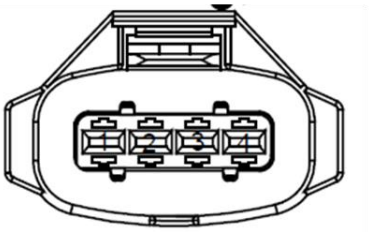
Connector View & Information:

Component Side:



Pin 1	GND
Pin 2	Not conencted
Pin 3	Supply (+5V)
Pin 4	Pressure Signal

Wiring Harness Side:

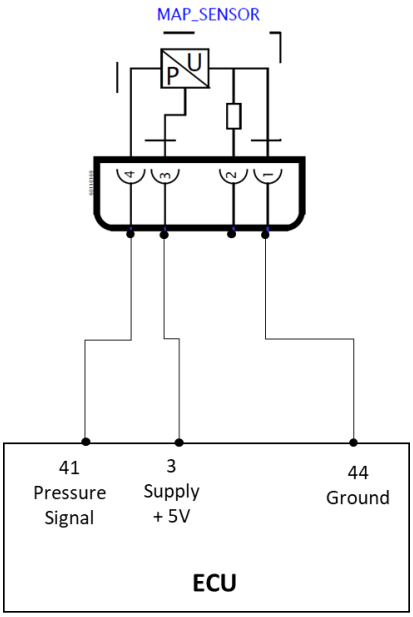


TO_MAP_SENSOR

Cav	No.	CSA	Col.	Term.	Seal	Plug
1	WIRE1576	0.5	Pi/L	60111093	60111149	-
2	-	-	-	-	-	60111155
3	WIRE1575	0.5	O/Br	60111093	60111149	-
4	WIRE167	0.5	W/O	60111093	60111149	-

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage inside TMAP sensor connector?	Rectify/ replace harness	Go to Step 2
2	Is there any sulphation/ rust observed on TMAP sensor and its harness side connector?	Check/ Replace wiring harness or sensor	Go to Step 3
3	Disconnect sensor and ECU then check following. Is wire continuity found ok for following? ECU pin no 41 to Sensor Pin 4? ECU pin 3 to Sensor pin 3? ECU pin 44 to Sensor pin 1? *Check using multi-meter.*	Go to Step 4	Check/ Replace wiring harness or sensor
4	Disconnect sensor and ECU then check following. Is ECU pin no 41 short circuited to Ground (Pin 44)? *Check using multi-meter.*	Check/ Replace wiring harness	Go to Step 5
5	Is there any pinching/ damage of wiring harness with surrounding parts?	Check/ Replace wiring harness	Go to Step 6
6	Erase fault in diagnostics tool and check again. Is fault still present?	Replace sensor/ Replace ECU	

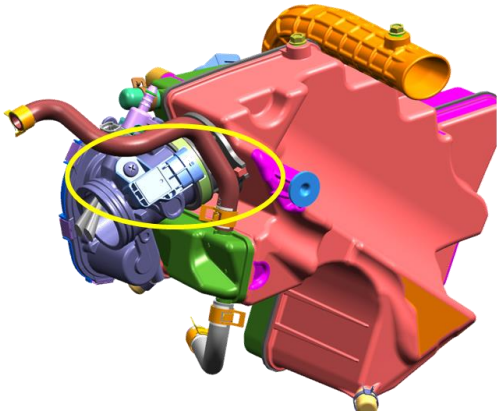
Diagnostic Trouble Code Trouble Shooting

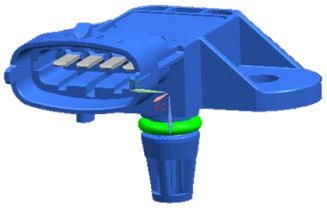
P2227 – Barometric pressure circuit Range/ performance

Overview:

Error Code	P2227
Customer Symptom	Startability & Idle RPM is not stable or fluctuating.
Fault effects (On vehicle)	Atmospheric pressure is calculated based on intake manifold pressure value.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 3rd driving cycle
Fault detection condition	This fault gets logged if sensor signal value exceeds 1150 mbar or is less than 300 mbar.
Probable trouble area	MAP sensor, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

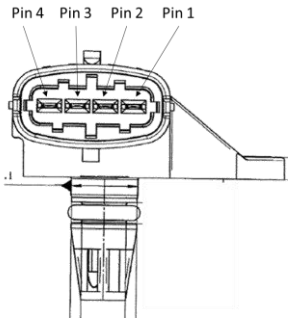
Component Location & Image:





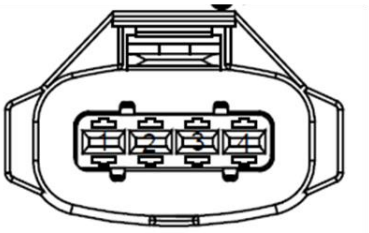
Connector View & Information:

Component Side:



Pin 1	GND
Pin 2	Not conencted
Pin 3	Supply (+5V)
Pin 4	Pressure Signal

Wiring Harness Side:

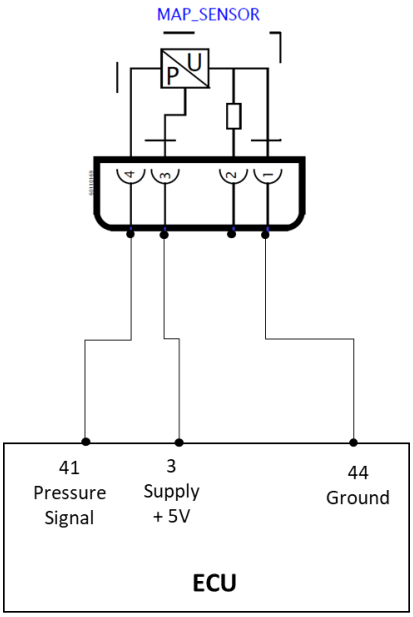


TO_MAP_SENSOR

Cav	No.	CSA	Col.	Term.	Seal	Plug
1	WIRE1576	0.5	Pi/L	60111093	60111149	-
2	-	-	-	-	-	60111155
3	WIRE1575	0.5	O/Br	60111093	60111149	-
4	WIRE167	0.5	W/O	60111093	60111149	-

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage inside TMAP sensor connector?	Rectify/ replace harness	Go to Step 2
2	Is there any sulphation/ rust observed on TMAP sensor and its harness side connector?	Check/ Replace wiring harness or sensor	Go to Step 3
3	Disconnect sensor and ECU then check following. Is wire continuity found ok for following? ECU pin no 41 to Sensor Pin 4? ECU pin 3 to Sensor pin 3? ECU pin 44 to Sensor pin 1? *Check using multi-meter.*	Go to Step 4	Check/ Replace wiring harness or sensor
4	Is there any pinching/ damage of wiring harness with surrounding parts?	Check/ Replace wiring harness	Go to Step 5
5	Erase fault in diagnostics tool and check again. Is fault still present?	Replace sensor/ Replace ECU	

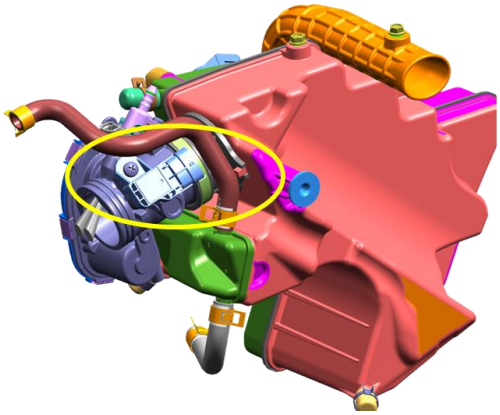
Diagnostic Trouble Code Trouble Shooting

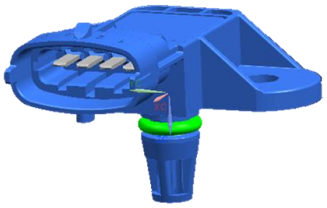
P0069 – Manifold Absolute Pressure - Barometric Pressure Correlation

Overview:

Error Code	P0069
Customer Symptom	Startability & Idle RPM is not stable or fluctuating.
Fault effects (On vehicle)	Atmospheric pressure is calculated based on intake manifold pressure value.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 3rd driving cycle
Fault detection condition	This fault gets logged if sensor signal correlation between Manifold absolute pressure and barometric pressure is not within range.
Probable trouble area	MAP sensor, ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

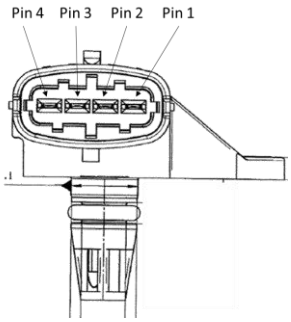
Component Location & Image:





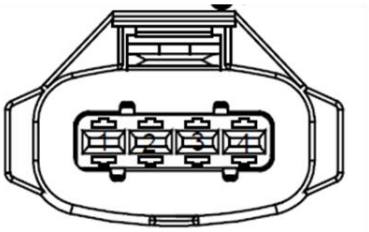
Connector View & Information:

Component Side:



Pin 1	GND
Pin 2	Not conencted
Pin 3	Supply (+5V)
Pin 4	Pressure Signal

Wiring Harness Side:

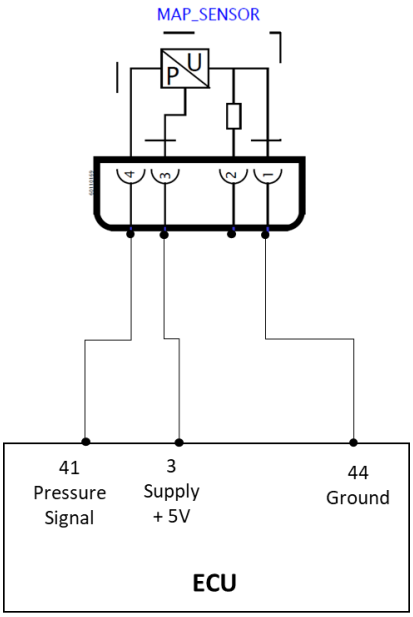


TO_MAP_SENSOR

Cav	No.	CSA	Col.	Term.	Seal	Plug
1	WIRE1576	0.5	Pi/L	60111093	60111149	-
2	-	-	-	-	-	60111155
3	WIRE1575	0.5	O/Br	60111093	60111149	-
4	WIRE167	0.5	W/O	60111093	60111149	-

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage inside MAP sensor connector?	Rectify/ replace harness	Go to Step 2
2	Is there any sulphation/ rust observed on MAP sensor and its harness side connector?	Check/ Replace wiring harness or sensor	Go to Step 3
3	Disconnect sensor and ECU then check following. Is wire continuity found ok for following? ECU pin no 41 to Sensor Pin 4? ECU pin 3 to Sensor pin 3? ECU pin 44 to Sensor pin 1? *Check using multi-meter.*	Go to Step 4	Check/ Replace wiring harness or sensor
4	Is there any pinching/ damage of wiring harness with surrounding parts?	Check/ Replace wiring harness	Go to Step 5
5	Follow TMAP sensor related check points for any electrical fault. Please refer error codes P0105,P0106,P0107,P0108	--	Go to Step 6
6	Erase fault in diagnostics tool and check again. Is fault still present?	Replace sensor/ Replace ECU	

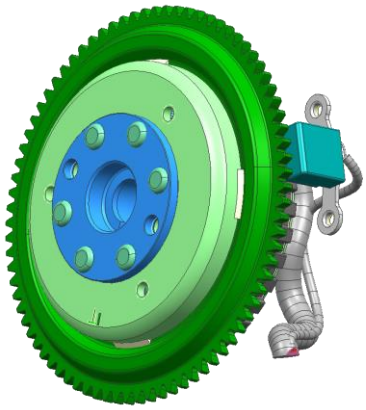
Diagnostic Trouble Code Trouble Shooting

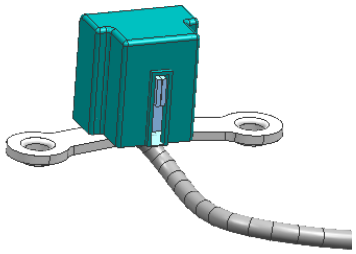
P0335 - Crankshaft Position Sensor “A” Circuit

Overview:

Error Code	P0335
Customer Symptom	Vehicle/ Engine stops OR doesn’t start
Fault effects (On vehicle)	RPM signal absent. Engine stops OR doesn’t start.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 1st driving cycle
Fault detection condition	This fault gets detected if crank shaft sensor signal is absent.
Probable trouble area	Crank position sensor, Wiring harness, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

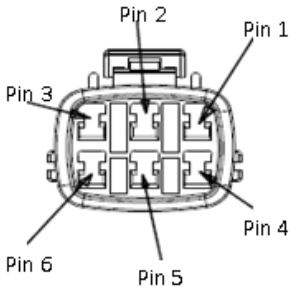
Component Location & Image:





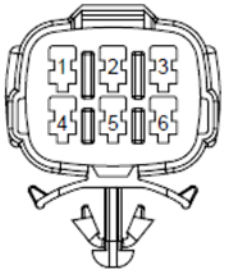
Connector View & Information:

Component Side:



Pin 1	+5V Supply
Pin 2	Output
Pin 3	GND
Pin 4	NC
Pin 5	Crank signal -
Pin 6	Crank signal +

Wiring Harness Side:

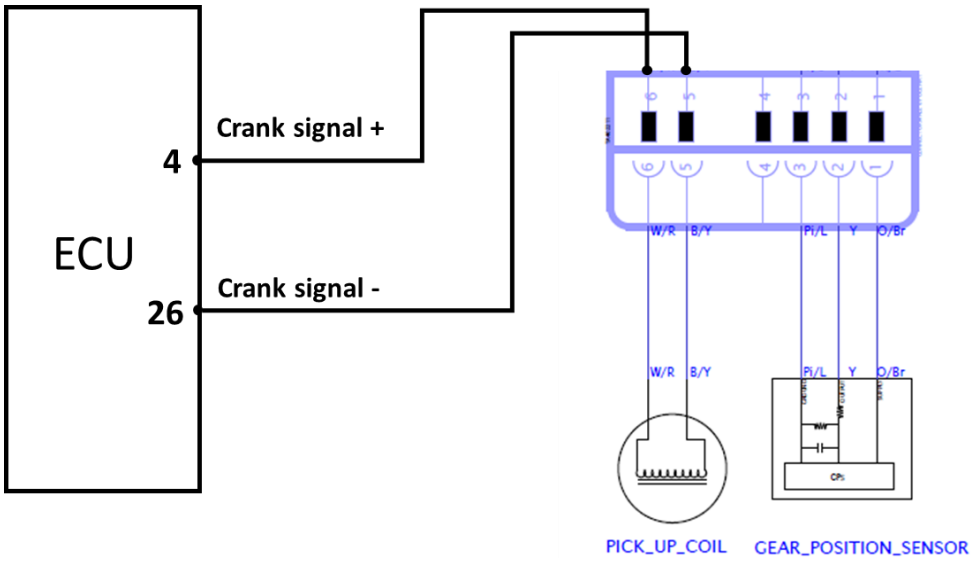


TO_GEAR_POSITION_SENSOR

Cav	No.	CSA	Col.	Term.	Seal	Plug	Multicore
1	WIRE119	0.5	R/L	60111012	60111139	-	
2	WIRE135	0.5	Y	60111012	60111139	-	
3	WIRE178	0.5	Y/B	60111012	60111139	-	
4	-	-	-	-	-	60111129	-
5	WIRE145	0.5	B/Y	60111012	60111139	-	TWP4
6	WIRE123	0.5	W/R	60111012	60111139	-	TWP4

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage inside gear position sensor connector?	Replace sensor and check	Go to Step 2
2	Disconnect sensor and then check resistance for coil. Connect multi-meter between Pin 5 & 6 of gear position sensor. Nominal resistance value should be 390 ± 15 Ω Is resistance value in above range? *Check using multi-meter.*	Go to Step 3	Replace gear position sensor *(includes crank shaft position sensor)*
3	Disconnect sensor and ECU. Check following. Is there wire continuity between Pin 5 of sensor and pin 26 of ECU? Is there wire continuity between Pin 6 of sensor and pin 4 of ECU?	Go to Step 4	Replace gear position sensor *(includes crank shaft position sensor)/ Replace wiring harness and check.*
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 5
5	Erase fault in diagnostics tool and check again. Is fault still present?	Replace sensor/ if fault still persists Replace ECU	

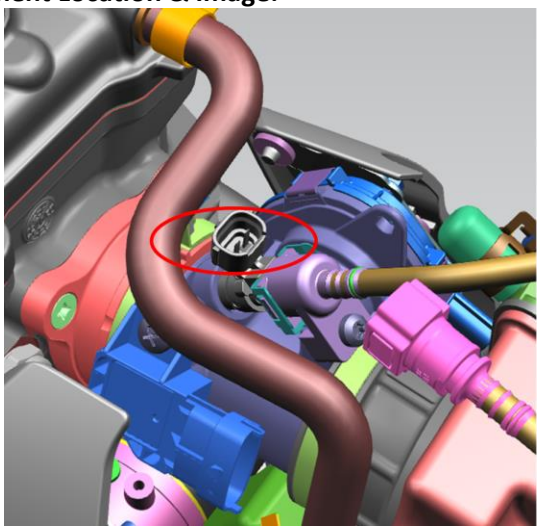
Diagnostic Trouble Code Trouble Shooting

P0262- Cylinder 1 Injector Circuit High

Overview:

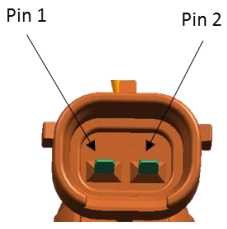
Error Code	P0262
Customer Symptom	Vehicle might stall/ doesn't start
Fault effects (On vehicle)	No fuel delivery to engine
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets detected if Injector control pin is short circuited to battery
Probable trouble area	Wiring harness, Injector
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:



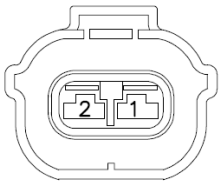
Connector View & Information:

Component Side:



Pin 1	Power Supply
Pin 2	Injector Driver

Wiring Harness Side:

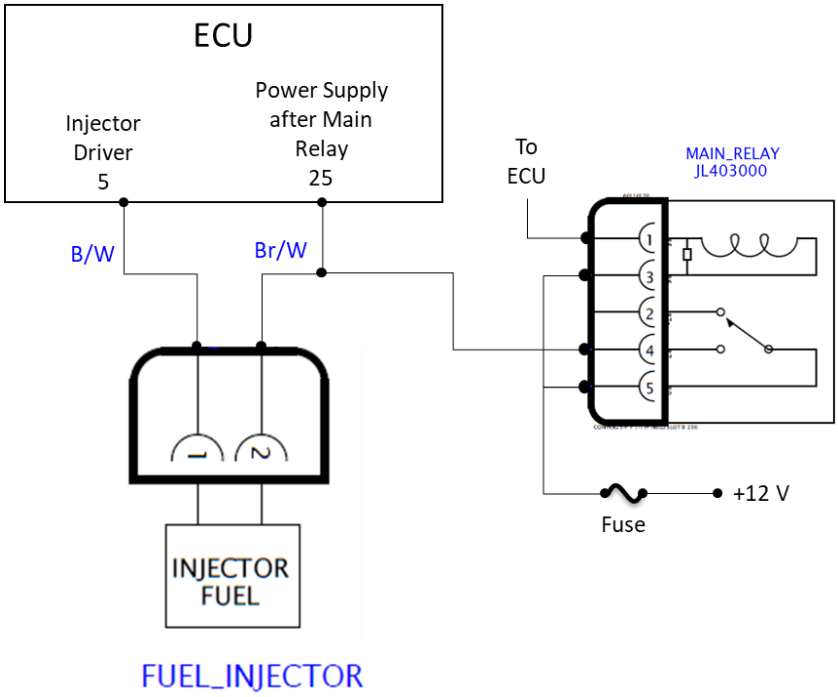


TO_FUEL_INJECTOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE1402	0.75	Br/W	60111084	60111154	TWP1
2	WIRE1853	0.75	B/W	60111084	60111154	TWP1

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage inside injector connector?	Replace injector	Go to Step 2
2	Disconnect injector and then check following. Is there continuity between ECU pin no 5 & BATTERY in wiring harness side connector?	Check/ Replace wiring harness	Go to Step 3
3	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 4
4	Erase fault in diagnostics tool and check again. Is fault still present?	Replace sensor if fault still persists Replace ECU	

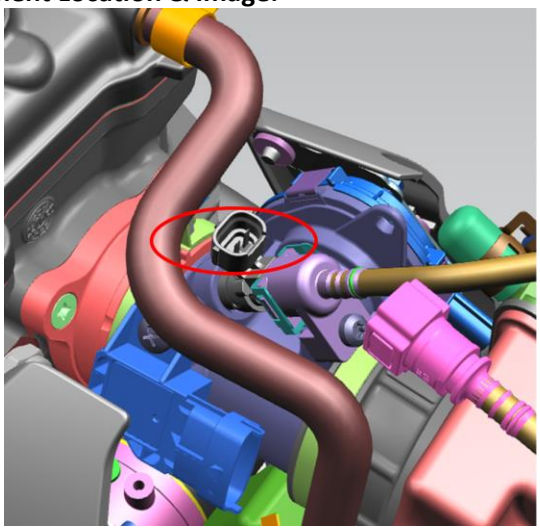
Diagnostic Trouble Code Trouble Shooting

P0261- Cylinder 1 Injector Circuit Low

Overview:

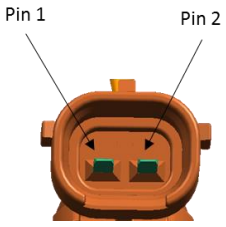
Error Code	P0261
Customer Symptom	Engine runs normally
Fault effects (On vehicle)	Engine runs normally. No apprehensive effect.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets detected if Injector control pin is short circuited to GND
Probable trouble area	Wiring harness, Injector
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:



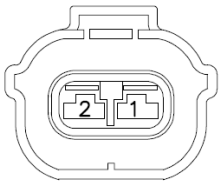
Connector View & Information:

Component Side:



Pin 1	Power Supply
Pin 2	Injector Driver

Wiring Harness Side:

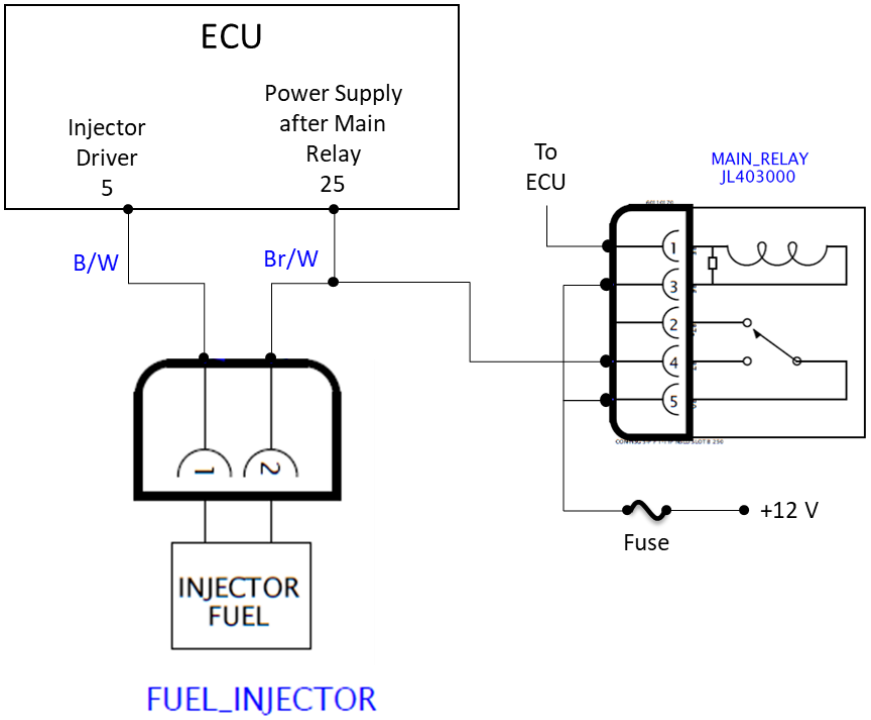


TO_FUEL_INJECTOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE1402	0.75	Br/W	60111084	60111154	TWP1
2	WIRE1853	0.75	B/W	60111084	60111154	TWP1

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage inside injector connector?	Replace injector	Go to Step 2
2	Disconnect injector and then check following. Is there continuity between ECU pin no 5 & GND in wiring harness side connector?	Check/ Replace wiring harness	Go to Step 3
3	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 4
4	Erase fault in diagnostics tool and check again. Is fault still present?	Replace sensor if fault still persists Replace ECU	

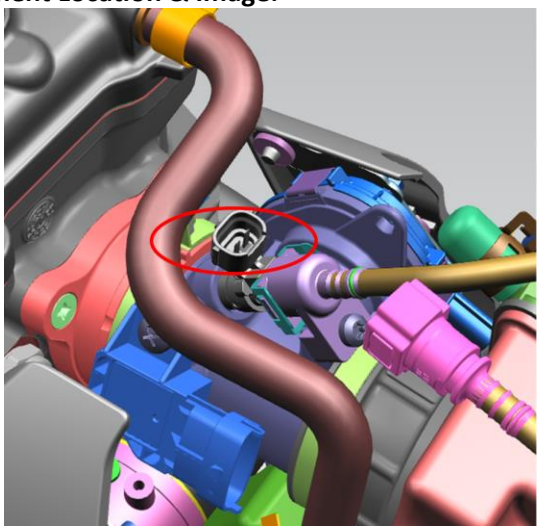
Diagnostic Trouble Code Trouble Shooting

P0201- Injector Circuit/Open – Cylinder 1

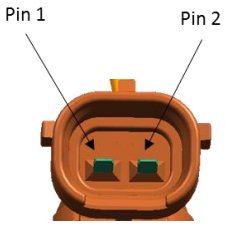
Overview:

Error Code	P0201
Customer Symptom	Vehicle not starting/ stalls while running
Fault effects (On vehicle)	Engine might stall, Poor acceleration, Idle not stable
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets detected if Injector control pin is open circuited
Probable trouble area	Wiring harness, Injector
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:

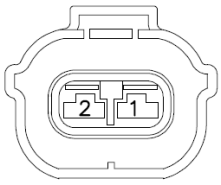


Connector View & Information:
Component Side:



Pin 1	12V Supply
Pin 2	Injector Driver from ECU

Wiring Harness Side:

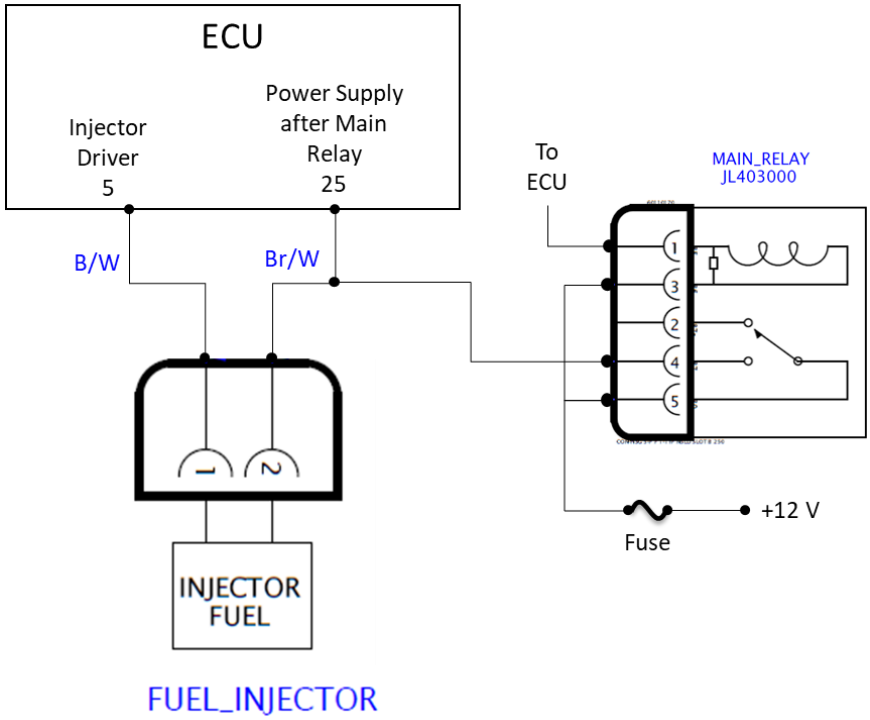


TO_FUEL_INJECTOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE1402	0.75	Br/W	60111084	60111154	TWP1
2	WIRE1853	0.75	B/W	60111084	60111154	TWP1

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage inside injector connector?	Replace injector	Go to Step 2
2	Disconnect injector and ECU to check following. Is ECU pin no 5 is open circuited? *Check using multi-meter.*	Check/ Replace wiring harness	Go to Step 3
3	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 4
4	Erase fault in diagnostics tool and check again. Is fault still present?	Replace sensor if fault still persists Replace ECU	

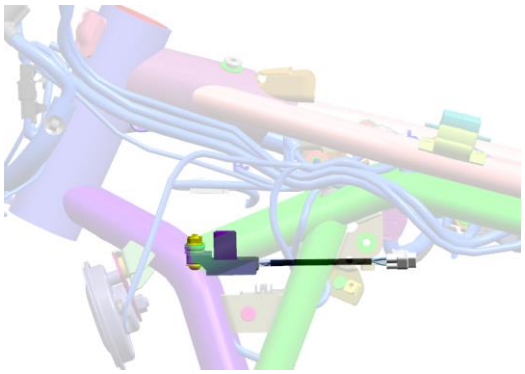
Diagnostic Trouble Code Trouble Shooting

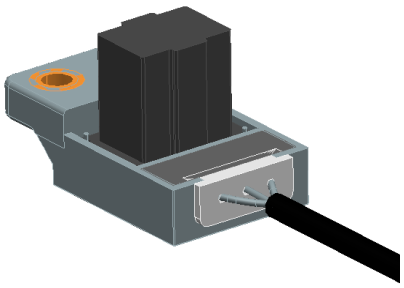
P1502- Roll over sensor Circuit Open

Overview:

Error Code	P1502
Customer Symptom	Vehicle runs normally
Fault effects (On vehicle)	Roll over sensor not working
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets detected if roll over sensor signal is open circuited
Probable trouble area	Wiring harness, Roll over sensor, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

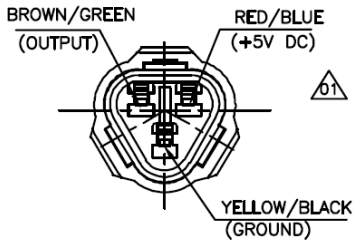
Component Location & Image:





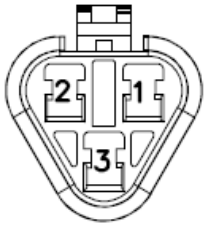
Connector View & Information:

Component Side:



Pin 1	Output
Pin 2	Supply +5V
Pin 3	GND

Wiring Harness Side:

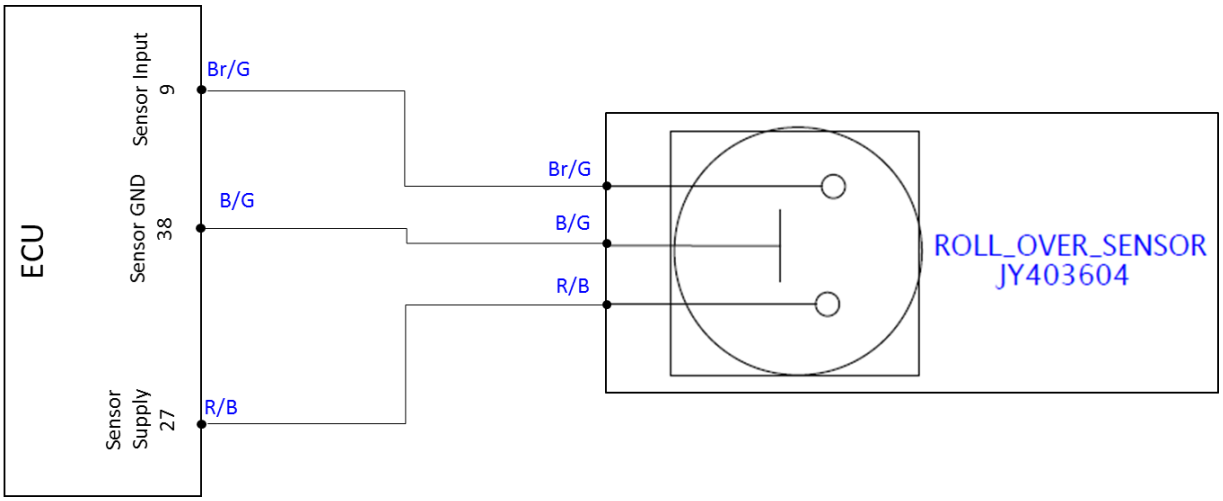


TO_ROLL_OVER_SENSOR

Cav	No.	CSA	Col.	Term.	Seal
1	WIRE2212	0.5	Br/G	60111011	60111139
2	WIRE2213	0.5	R/B	60111011	60111139
3	WIRE2216	0.5	B/G	60111011	60111139

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage on sensor connector?	Replace sensor	Go to Step 2
2	Is there continuity between (disconnect sensor and ECU to check) ECU pin no 9 →Sensor Pin no 1 ECU pin no 27 → Sensor pin no 2 ECU pin no 38 → Sensor pin no 3 *Check using multimeter.*	Go to Step 3	Check/ Replace wiring harness
3	Is pin no 9 open circuited?	Check/ Replace wiring harness	Go to Step 4
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 5
5	Is fault still present?	Replace sensor/ Replace ECU	

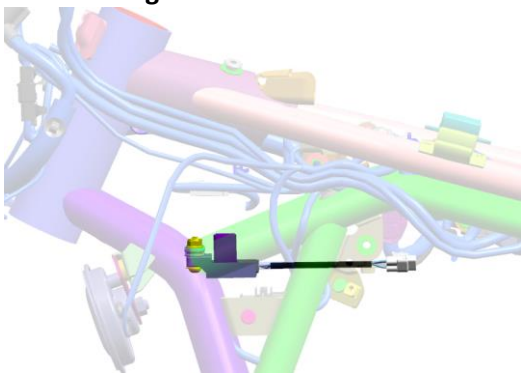
Diagnostic Trouble Code Trouble Shooting

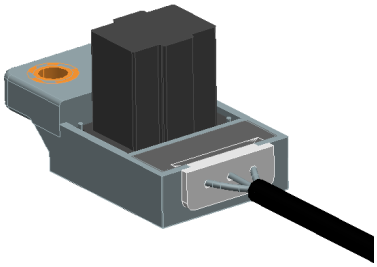
P1501- Roll Over Sensor Circuit Signal Non-Plausible

Overview:

Error Code	P1501
Customer Symptom	Vehicle runs normally
Fault effects (On vehicle)	Roll over sensor not working
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets detected if roll over sensor voltage signal detected by ECU is non-plausible
Probable trouble area	Wiring harness, Roll over sensor, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

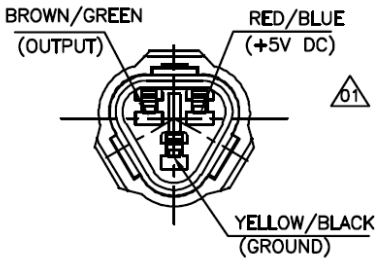
Component Location & Image:





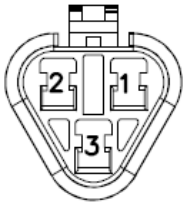
Connector View & Information:

Component Side:



Pin 1	Output
Pin 2	Supply +5V
Pin 3	GND

Wiring Harness Side:

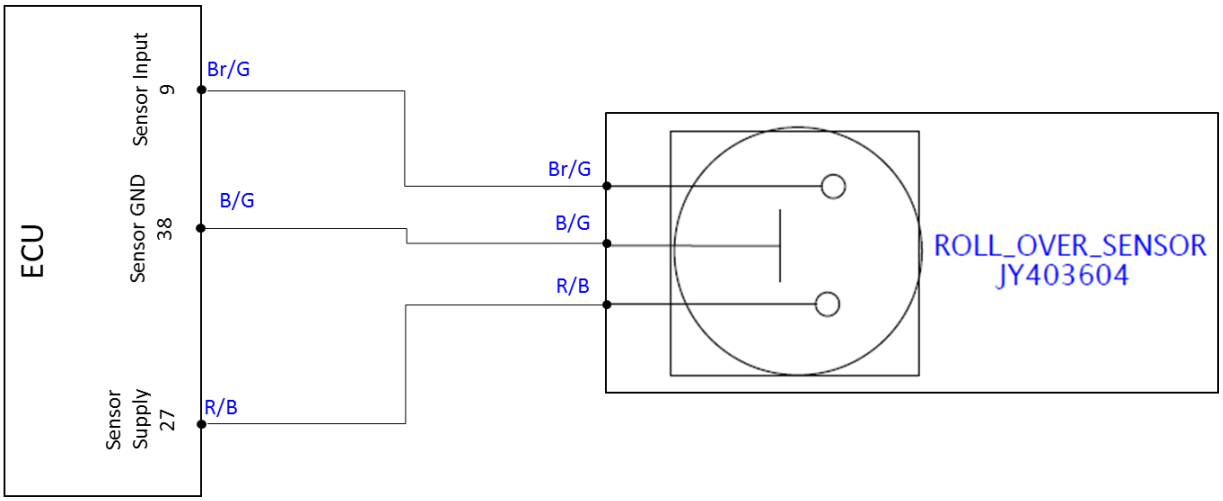


TO_ROLL_OVER_SENSOR

Cav	No.	CSA	Col.	Term.	Seal
1	WIRE2212	0.5	Br/G	60111011	60111139
2	WIRE2213	0.5	R/B	60111011	60111139
3	WIRE2216	0.5	B/G	60111011	60111139

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage on sensor connector?	Replace sensor	Go to Step 2
2	Is there continuity between (disconnect sensor to check) ECU pin no 9 →Sensor Pin no 1 ECU pin no 27 → Sensor pin no 2 ECU pin no 38 → Sensor pin no 3	Go to Step 3	Check/ Replace wiring harness
3	Is pin no 9 short to GND, Open circuit or short to 5V/12V supply?	Check/ Replace wiring harness	Go to Step 4
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 5
5	Is fault still present?	Replace sensor/ Replace ECU	

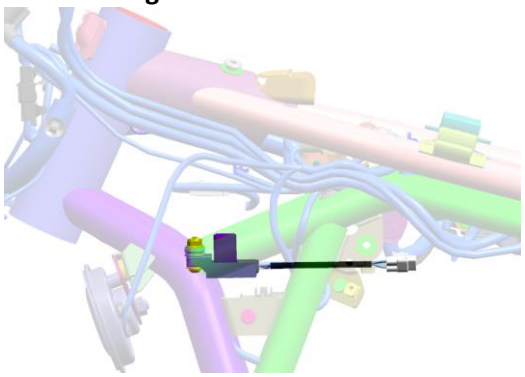
Diagnostic Trouble Code Trouble Shooting

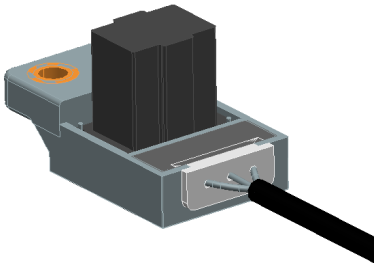
P1504- Roll over sensor Circuit High

Overview:

Error Code	P1504
Customer Symptom	Vehicle runs normally
Fault effects (On vehicle)	Roll over sensor not working
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets detected if roll over sensor signal is short to +5V/12V
Probable trouble area	Wiring harness, Roll over sensor, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

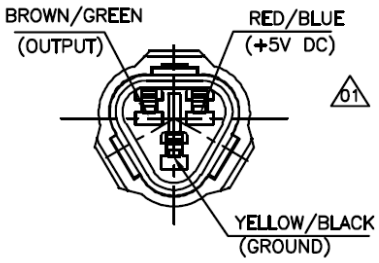
Component Location & Image:





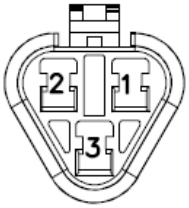
Connector View & Information:

Component Side:



Pin 1	Output
Pin 2	Supply +5V
Pin 3	GND

Wiring Harness Side:

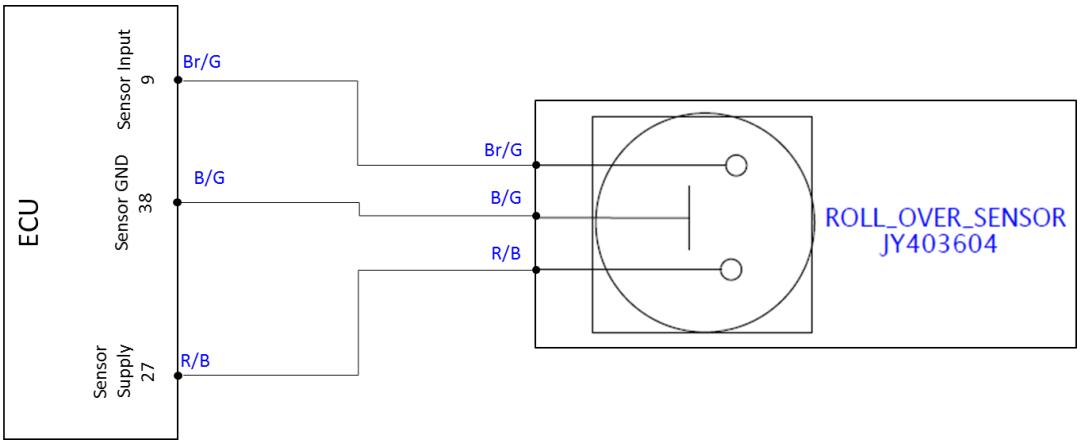


TO_ROLL_OVER_SENSOR

Cav	No.	CSA	Col.	Term.	Seal
1	WIRE2212	0.5	Br/G	60111011	60111139
2	WIRE2213	0.5	R/B	60111011	60111139
3	WIRE2216	0.5	B/G	60111011	60111139

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage on sensor connector?	Replace sensor	Go to Step 2
2	Is there continuity between (disconnect sensor to check) ECU pin no 9 →Sensor Pin no 1 ECU pin no 27 → Sensor pin no 2 ECU pin no 38 → Sensor pin no 3	Go to Step 3	Check/ Replace wiring harness
3	Is pin no 9 short to +12V supply?	Check/ Replace wiring harness	Go to Step 4
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 5
5	Is fault still present?	Replace sensor/ Replace ECU	

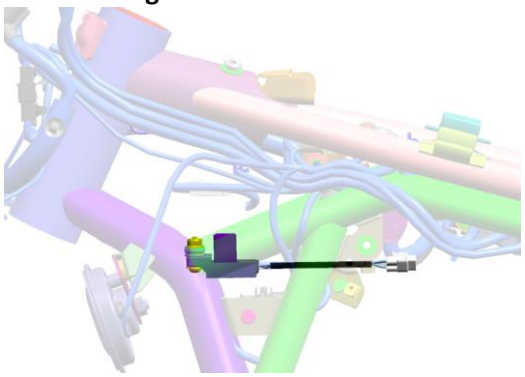
Diagnostic Trouble Code Trouble Shooting

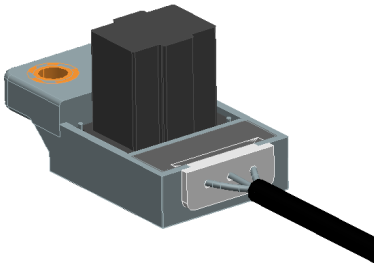
P1503- Roll over sensor Circuit Low

Overview:

Error Code	P1503
Customer Symptom	Vehicle runs normally.
Fault effects (On vehicle)	Roll over sensor not working
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets detected if roll over sensor signal is short to GND
Probable trouble area	Wiring harness, Roll over sensor, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

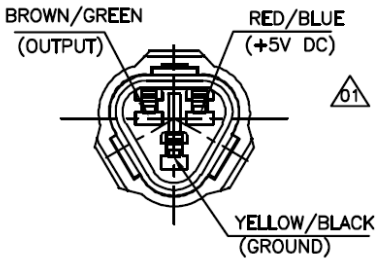
Component Location & Image:





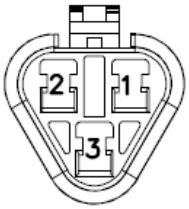
Connector View & Information:

Component Side:



Pin 1	Output
Pin 2	Supply +5V
Pin 3	GND

Wiring Harness Side:

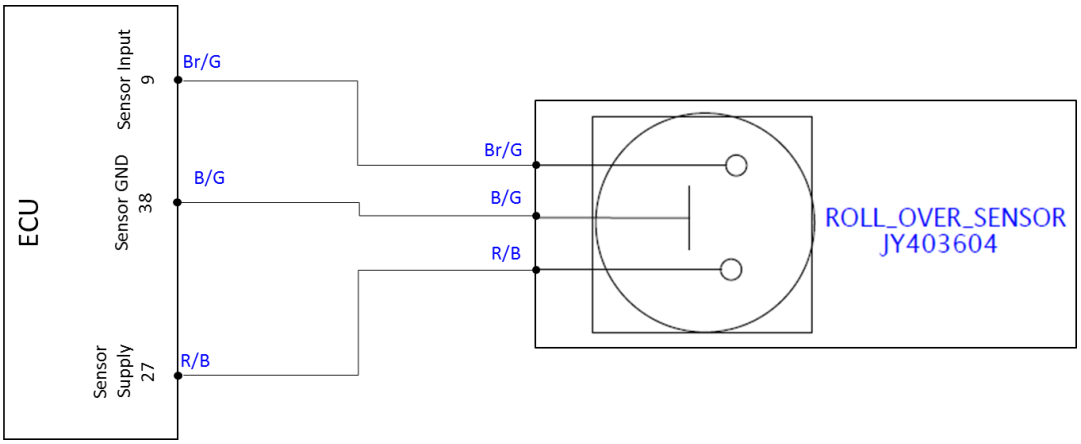


TO_ROLL_OVER_SENSOR

Cav	No.	CSA	Col.	Term.	Seal
1	WIRE2212	0.5	Br/G	60111011	60111139
2	WIRE2213	0.5	R/B	60111011	60111139
3	WIRE2216	0.5	B/G	60111011	60111139

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage on sensor connector?	Replace sensor	Go to Step 2
2	Is there continuity between (disconnect sensor to check) ECU pin no 9 →Sensor Pin no 1 ECU pin no 27 → Sensor pin no 2 ECU pin no 38 → Sensor pin no 3	Go to Step 3	Check/ Replace wiring harness
3	Is pin no 9 short to GROUND?	Check/ Replace wiring harness	Go to Step 4
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 5
5	Is fault still present?	Replace sensor/ Replace ECU	

Diagnostic Trouble Code Trouble Shooting

P0563- System Voltage High

Overview:

Error Code	P0563
Customer Symptom	Vehicle stalls while running, do not start sometimes.
Fault effects (On vehicle)	High voltage detected by ECU than threshold hence it switches off for safety reason.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 1st driving cycle
Fault detection condition	This fault gets detected if ECU detects battery voltage more than calibrated threshold of 16 volts.
Probable trouble area	Battery, Regulator Rectifier, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

P0562- System Voltage Low

Overview:

Error Code	P0562
Customer Symptom	Vehicle stalls while running, do not start sometimes.
Fault effects (On vehicle)	Low voltage detected by ECU than threshold hence it switches off.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets detected if ECU receives battery voltage less than calibrated threshold (9.8 volts)
Probable trouble area	Battery, Regulator Rectifier, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image: **NA**

Connector View & Information: **NA**
Component Side:

Wiring Harness Side: **NA**

Circuit Interface: **NA**

Diagnostic Trouble Code Trouble Shooting

Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/oxidation/ sulphation observed on battery terminals?	Repair/ Clean	Go to Step 2
2	Disconnect regulator rectifier output connector and check for any damage/ short circuit.	Replace regulator/ rectifier and check	Go to Step 3
3.1	Measure voltage at regulator output. Is voltage more than or equal to 16 volts? (Applicable for error code P0563)	Check/ Replace regulator rectifier.	Go to Step 4
3.2	Measure voltage at regulator output. Is voltage less than 9.6 volts? (Applicable for error code P0562) Check for any short circuit with ground wire.	Check/ Replace regulator rectifier.	Go to Step 4
4	Is fault still present?	Replace ECU and check	

Diagnostic Trouble Code Trouble Shooting

P0641- Sensor Reference Voltage "A" Circuit/ Open

Overview:

Error Code	P0641
Customer Symptom	Vehicle stalls while running, do not start sometimes.
Fault effects (On vehicle)	Sensor supply 1 (+5V) is absent hence sensors not working.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 1st driving cycle.
Fault detection condition	This fault gets detected if the sensor reference voltage supply "A" pin of ECU is short circuited to GND or BATTERY or OPEN circuit
Probable trouble area	ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

P0651- Sensor Reference voltage "B" Circuit/ Open

Overview:

Error Code	P0651
Customer Symptom	Vehicle stalls while running, do not start sometimes.
Fault effects (On vehicle)	Sensor supply 2 (+5V) is absent hence sensors not working.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 1st driving cycle
Fault detection condition	This fault gets detected if the sensor reference voltage supply "B" pin of ECU is short circuited to GND or BATTERY or OPEN circuit
Probable trouble area	ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image: **NA**

Connector View & Information: **NA**

Circuit Interface:

Troubleshooting: **NA**

ECU Internal fault – Replace ECU

Diagnostic Trouble Code Trouble Shooting

P0217- Engine Coolant Over Temperature Condition

Overview:

Error Code	P0217
Customer Symptom	Vehicle performance gets affected
Fault effects (On vehicle)	Engine coolant temperature crossed 115 °C.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets detected if the engine overheating is detected by coolant temperature sensor
Probable trouble area	Engine temperature, ECU, Sensor, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

Troubleshooting:

This fault means there is problem in the cooling circuit and not an electrical fault.

Please check engine related parameters for overheating

Diagnostic Trouble Code Trouble Shooting

P0300 - Random/Multiple cylinder misfire detected

P0301- Cylinder 1 Misfire Detected

P0314- Single Cylinder Misfire (Cylinder not Specified)

Overview:

Error Code	P0300/ P0301/ P0314
Customer Symptom	Uneven firing in engine
Fault effects (On vehicle)	Misfire in engine
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 1st driving cycle
Fault detection condition	This fault gets detected if misfire rate exceeds emission misfire rate threshold or catalyst damage misfire rate threshold.
Probable trouble area	Engine, EMS ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

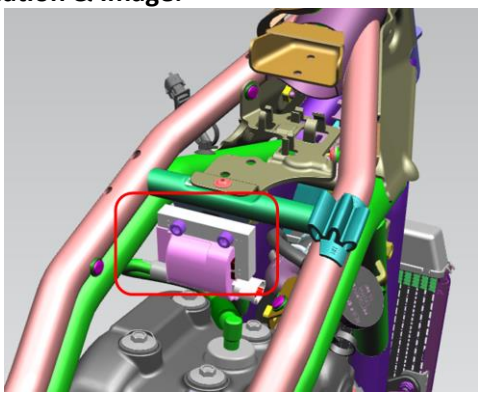
Diagnostic Trouble Code Trouble Shooting

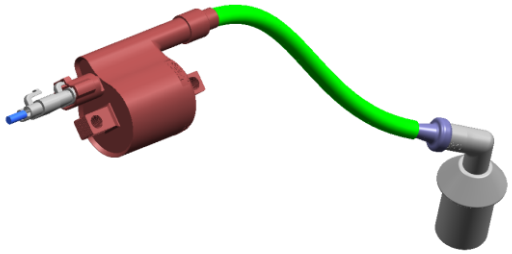
P0351 - Ignition Coil "A" Primary Control Circuit/Open

Overview:

Error Code	P0351
Customer Symptom	Vehicle shuts off, Misfire may happen.
Fault effects (On vehicle)	Spark ignition cuts off. Vehicle doesn't start/ it stalls.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON after 1 driving cycle
Fault detection condition	This fault gets detected if the ignition coil A driver pin in ECU is short circuited to 12V supply.
Probable trouble area	Ignition coil, Wiring harness, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

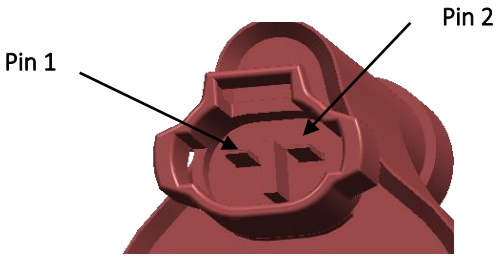
Component Location & Image:





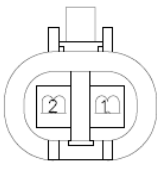
Connector View & Information:

Component Side:



Pin 1	+ 12V supply
Pin 2	Primary Input from ECU

Wiring Harness Side:

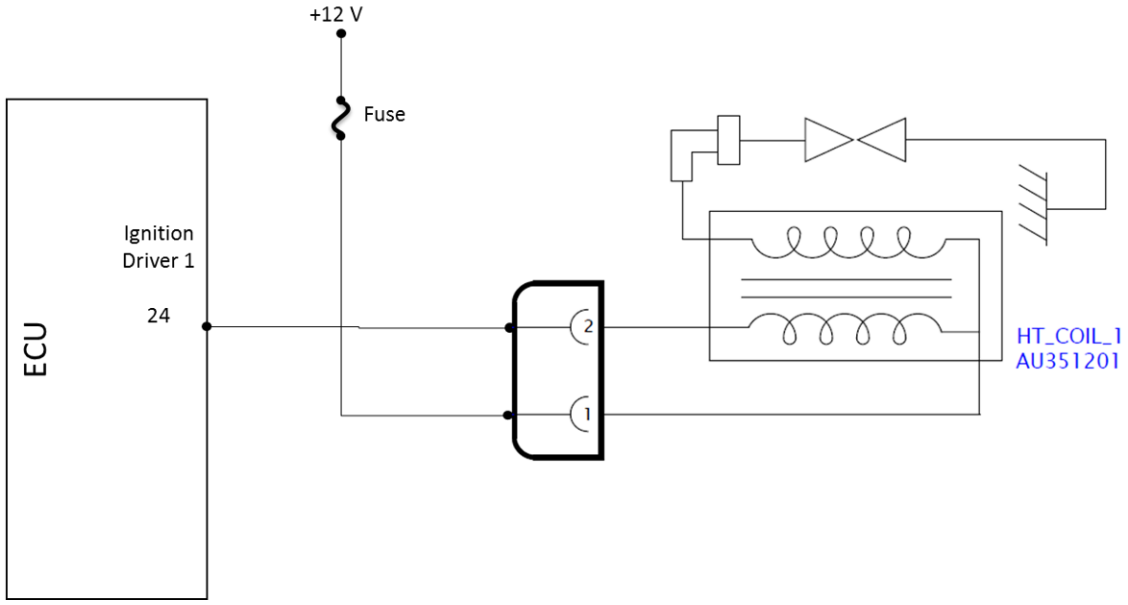


TO_HT_COIL_1

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE202	0.75	Br	60111011	60111128	TWP4
2	WIRE102	0.75	B	60111011	60111128	TWP4

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/oxidation/ sulphation observed on ignition coil terminals?	Clean/ Replace ignition coil	Go to Step 2
2	Is there wiring harness continuity between ECU pin no 24 & Ignition coil pin 2?	Go to Step 3	Possible wire open. Check/ Replace wiring harness
3	Is there wiring harness continuity between Pin no 24 & battery +ve?	Possible short with 12V supply. Check/ Replace wiring harness	Go to Step 4
4	Is fault still present? Connected diagnostic tool and erase faults after replacing.	Replace ignition coil. If fault still persists Replace ECU	

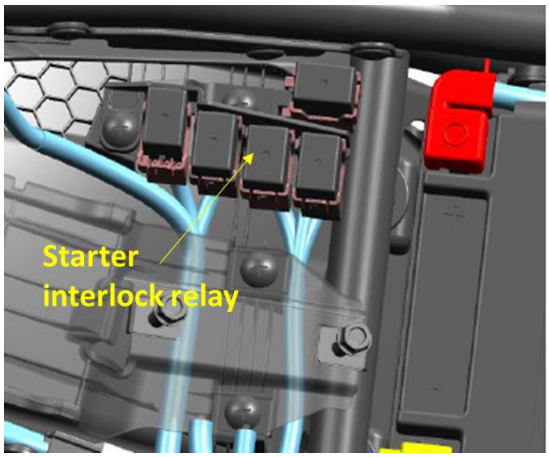
Diagnostic Trouble Code Trouble Shooting

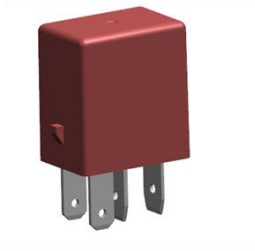
P0615- Starter relay coil circuit open

Overview:

Error Code	P0615
Customer Symptom	Vehicle not cranking
Fault effects (On vehicle)	Starter interlock relay remains OFF.
Lamp Status (If any)	MIL ON in 1st drive cycle
Fault detection condition	This fault gets reported if starter interlock relay coil circuit gets open circuit.
Probable trouble area	Wiring harness, Starter interlock relay, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

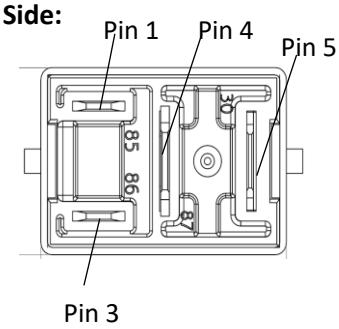
Component Location & Image:





Connector View & Information:

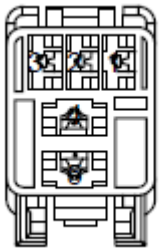
Component Side:



Pin 1	ECU signal
Pin 2	Not connected
Pin 3	12V supply after main relay
Pin 4	Output to starter relay
Pin 5	+12V supply

Diagnostic Trouble Code Trouble Shooting

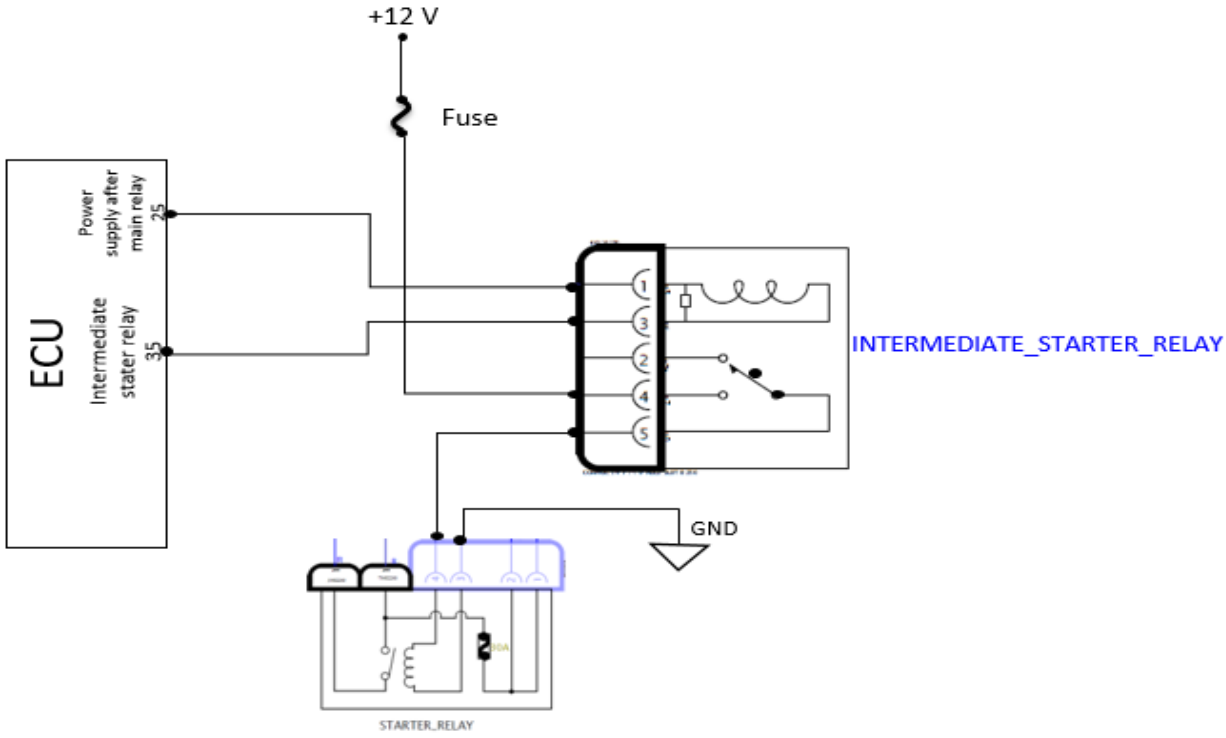
Wiring Harness Side:



TO_INTERMEDIATE_STARTER_RELAY

Cav	No.	CSA	Col.	Term.
1	WIRE142	0.5	Br/W	JY402264
2	-	-	-	-
3	WIRE128	0.5	R/G	JY402264
4	WIRE192	0.75	O/W	JY402265
5	WIRE197	0.75	Y/R	JY402265

Circuit Interface:



Diagnostic Trouble Code Trouble Shooting

Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on relay terminals or radiator fan terminals?	Replace the relay and check	Go to Step 2
2	Is there any terminal bend/ damage inside relay connector or radiator fan connector?	Replace the relay and check	Go to Step 3
3	Disconnect the relay and ECU then check following. Is ECU pin no 35 open circuit?	Short ckt in harness. Check/ Replace wiring harness	Go to Step 4
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 5
5	After electrical rectification, erase fault in diagnostics tool and check again. Is fault still present?	Replaced relay/ Replace ECU	

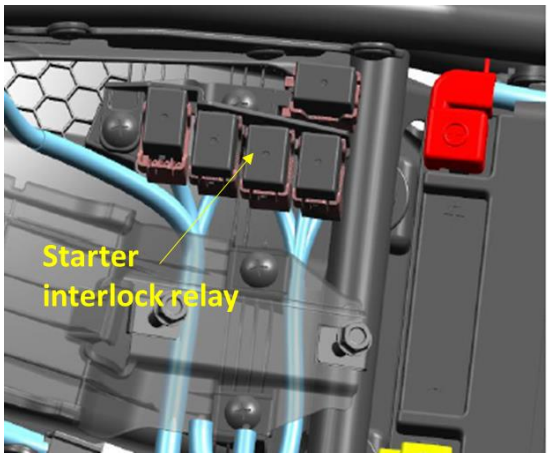
Diagnostic Trouble Code Trouble Shooting

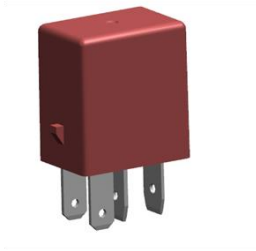
P0617- Starter relay coil circuit high

Overview:

Error Code	P0617
Customer Symptom	Vehicle not cranking
Fault effects (On vehicle)	Starter interlock relay remains OFF.
Lamp Status (If any)	MIL ON in 1st drive cycle
Fault detection condition	This fault gets reported if starter interlock relay coil circuit gets short to 12V supply.
Probable trouble area	Wiring harness, Starter interlock relay, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

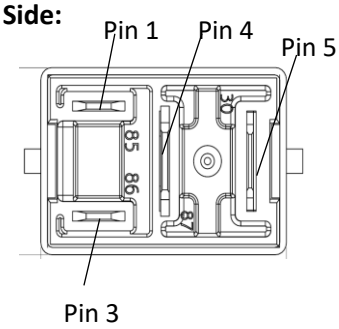
Component Location & Image:





Connector View & Information:

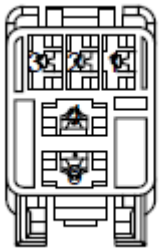
Component Side:



Pin 1	ECU signal
Pin 2	Not connected
Pin 3	12V supply after main relay
Pin 4	Output to starter relay
Pin 5	+12V supply

Diagnostic Trouble Code Trouble Shooting

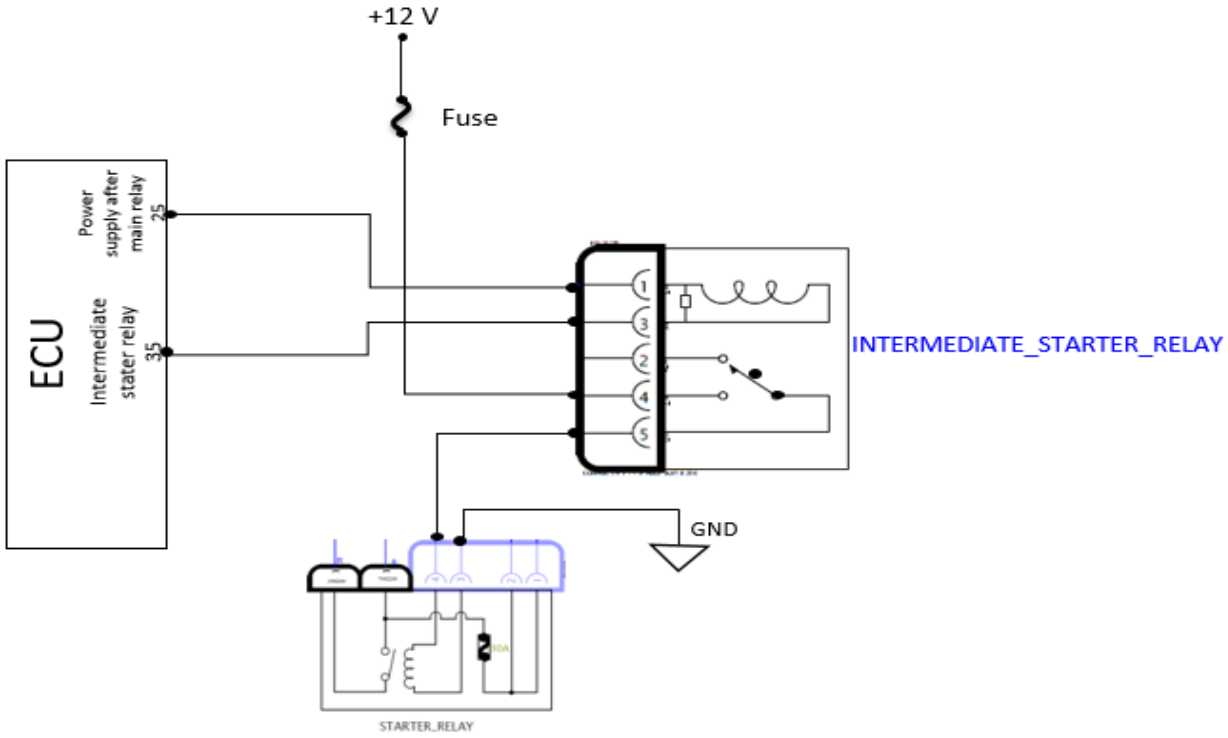
Wiring Harness Side:



TO_INTERMEDIATE_STARTER_RELAY

Cav	No.	CSA	Col.	Term.
1	WIRE142	0.5	Br/W	JY402264
2	-	-	-	-
3	WIRE128	0.5	R/G	JY402264
4	WIRE192	0.75	O/W	JY402265
5	WIRE197	0.75	Y/R	JY402265

Circuit Interface:



Diagnostic Trouble Code Trouble Shooting

Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on relay terminals or radiator fan terminals?	Replace the relay and check	Go to Step 2
2	Is there any terminal bend/ damage inside relay connector or radiator fan connector?	Replace the relay and check	Go to Step 3
3	Disconnect the relay and ECU then check following. Is ECU pin no 35 short circuit to 12V supply?	Short ckt in harness. Check/ Replace wiring harness	Go to Step 4
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 5
5	After electrical rectification, erase fault in diagnostics tool and check again. Is fault still present?	Replaced relay/ Replace ECU	

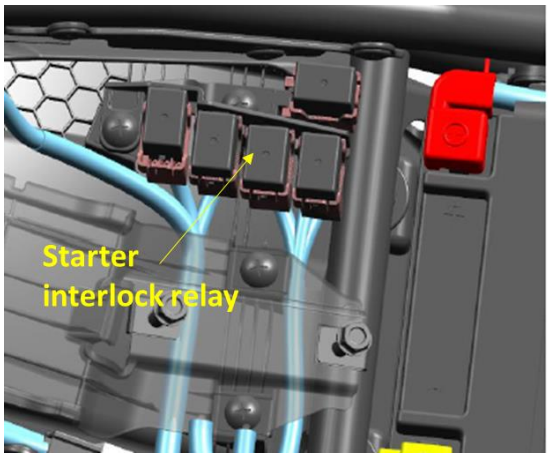
Diagnostic Trouble Code Trouble Shooting

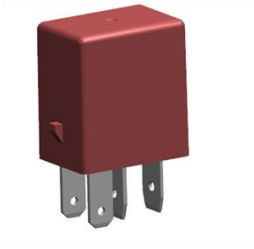
P0616- Starter relay coil circuit low

Overview:

Error Code	P0616
Customer Symptom	Starter motor continuously engaged. Abnormal noise from engine.
Fault effects (On vehicle)	Starter relay will remain engaged continuously irrespective of cranking request.
Lamp Status (If any)	MIL ON in 1st drive cycle
Fault detection condition	This fault gets reported if starter interlock relay coil circuit gets short to GROUND.
Probable trouble area	Wiring harness, Starter interlock relay, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

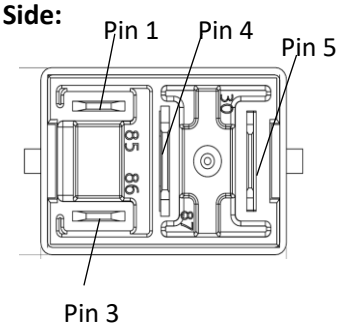
Component Location & Image:





Connector View & Information:

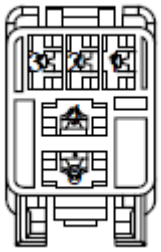
Component Side:



Pin 1	ECU signal
Pin 2	Not connected
Pin 3	12V supply after main relay
Pin 4	Output to starter relay
Pin 5	+12V supply

Diagnostic Trouble Code Trouble Shooting

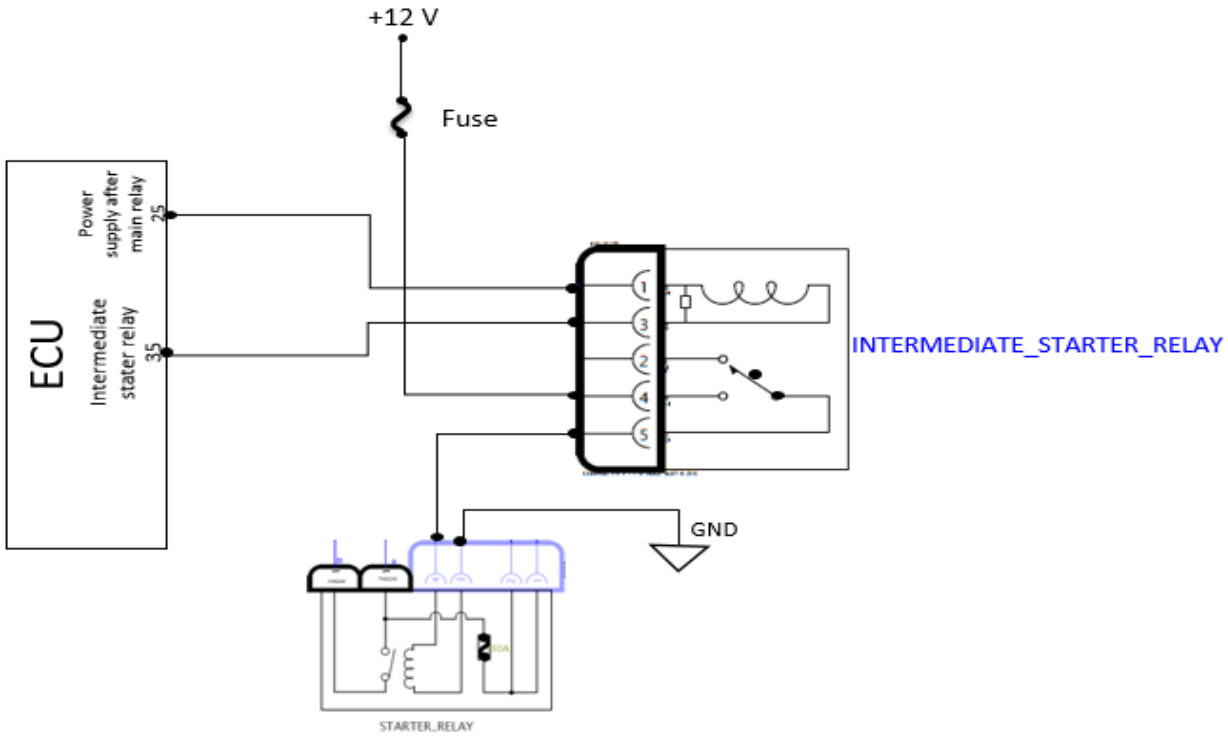
Wiring Harness Side:



TO_INTERMEDIATE_STARTER_RELAY

Cav	No.	CSA	Col.	Term.
1	WIRE142	0.5	Br/W	JY402264
2	-	-	-	-
3	WIRE128	0.5	R/G	JY402264
4	WIRE192	0.75	O/W	JY402265
5	WIRE197	0.75	Y/R	JY402265

Circuit Interface:



Diagnostic Trouble Code Trouble Shooting

Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on relay terminals or radiator fan terminals?	Replace the relay and check	Go to Step 2
2	Is there any terminal bend/ damage inside relay connector or radiator fan connector?	Replace the relay and check	Go to Step 3
3	Disconnect the relay and ECU then check following. Is ECU pin no 35 short circuit to GROUND?	Short ckt in harness. Check/ Replace wiring harness	Go to Step 4
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 5
5	After electrical rectification, erase fault in diagnostics tool and check again. Is fault still present?	Replaced relay/ Replace ECU	

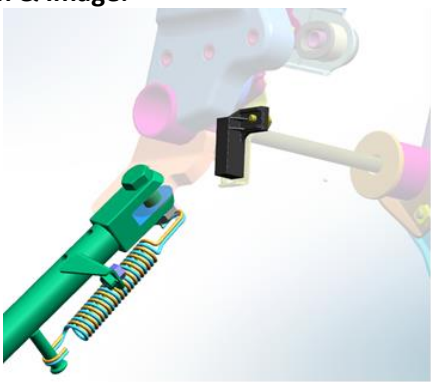
Diagnostic Trouble Code Trouble Shooting

P1505- Side Stand Sensor Circuit Signal Non-Plausible

Overview:

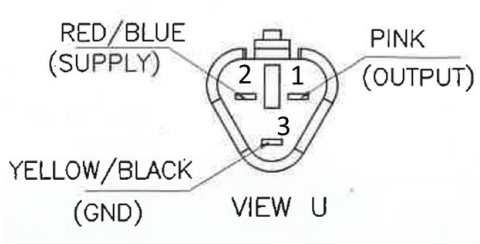
Error Code	P1505
Customer Symptom	Engine does not crank or stalls if in gear even if side stand is up.
Fault effects (On vehicle)	ECU detects 'SIDE STAND' fault hence do not allow engine to crank.
Lamp Status (If any)	MIL on in 1st driving cycle
Fault detection condition	This fault gets reported if side stand output voltage if out of plausible zone.
Probable trouble area	Side stand switch, Wiring harness, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:



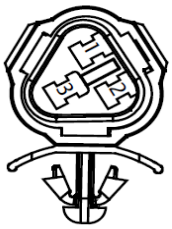
Connector View & Information:

Component Side:



Pin 1	Output signal
Pin 2	+5V supply
Pin 3	Ground

Wiring Harness Side:

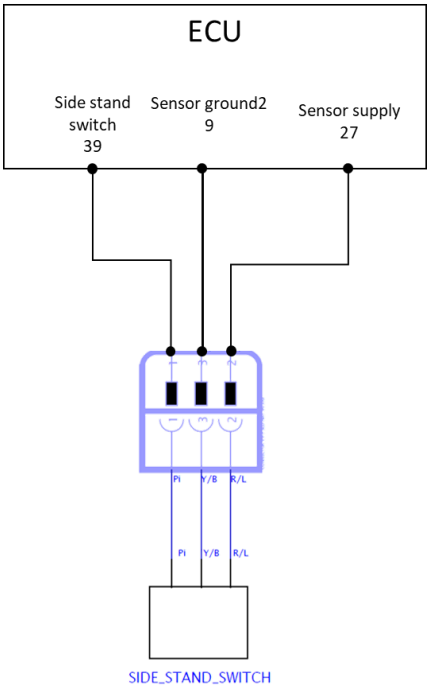


TO_SIDE_STAND_SWITCH

Cav	No.	CSA	Col.	Term.	Seal
1	WIRE166	0.5	Pi	60111012	60111139
2	WIRE121	0.5	R/L	60111012	60111139
3	WIRE180	0.5	Y/B	60111012	60111139

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on sensor terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside sensor connector?	Replace the sensor	Go to Step 3
3	Disconnect the sensor and ECU then check following. Is there continuity between ECU pin no 39 and sensor pin no 1? Is there continuity between ECU pin no 27 and sensor pin no 2? *Check using multi-meter.*	Open circuit in harness. Check/ Replace wiring harness	Go to Step 4
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts which can make wires open?	Open/ cut in harness. Check/ Replace wiring harness	Go to Step 5
5	Erase fault in diagnostics tool and check again. Is fault still present?	Replaced Sensor/ Replace ECU	

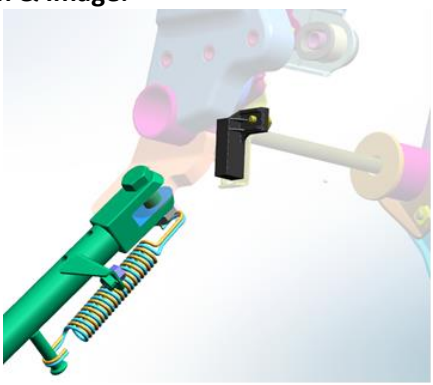
Diagnostic Trouble Code Trouble Shooting

P1506- Side stand switch open

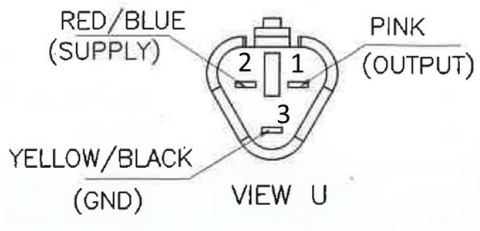
Overview:

Error Code	P1506
Customer Symptom	Engine does not crank or stalls if in gear even if side stand is up.
Fault effects (On vehicle)	ECU detects 'SIDE STAND' fault hence do not allow engine to crank.
Lamp Status (If any)	MIL on in 1st driving cycle
Fault detection condition	This fault gets reported if side stand input pin to ECU is open circuit
Probable trouble area	Side stand switch, Wiring harness, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:

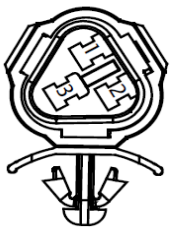


Connector View & Information:
Component Side:



Pin 1	Output signal
Pin 2	+5V supply
Pin 3	Ground

Wiring Harness Side:

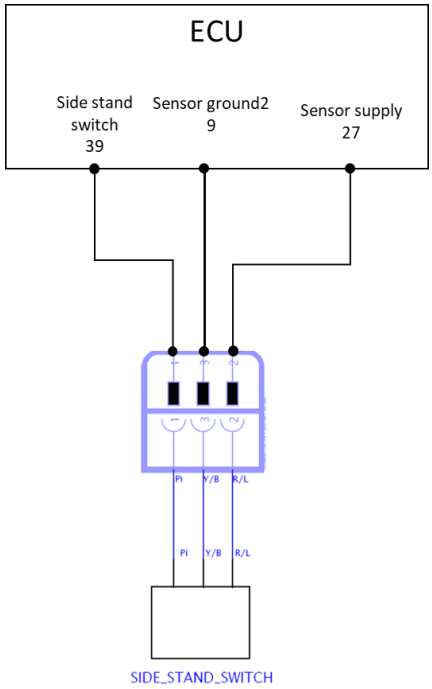


TO_SIDE_STAND_SWITCH

Cav	No.	CSA	Col.	Term.	Seal
1	WIRE166	0.5	Pi	60111012	60111139
2	WIRE121	0.5	R/L	60111012	60111139
3	WIRE180	0.5	Y/B	60111012	60111139

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on sensor terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside sensor connector?	Replace the sensor	Go to Step 3
3	Disconnect the sensor and ECU then check following. Is there continuity between ECU pin no 39 and sensor pin no 1? *Check using multi-meter.*	Open circuit in harness. Check/ Replace wiring harness	Go to Step 4
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts which can make wires open?	Open/ cut in harness. Check/ Replace wiring harness	Go to Step 5
5	Erase fault in diagnostics tool and check again. Is fault still present?	Replaced Sensor/ Replace ECU	

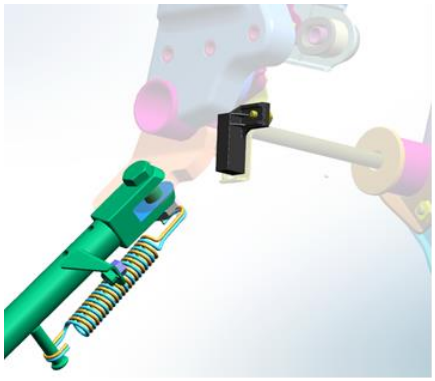
Diagnostic Trouble Code Trouble Shooting

P1507- Side stand switch low

Overview:

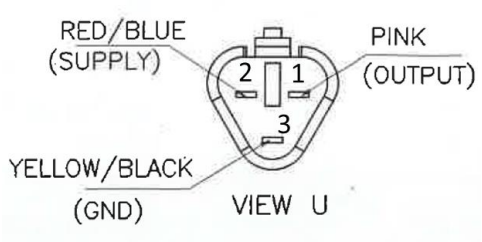
Error Code	P1507
Customer Symptom	Engine does not crank or stalls if in gear even if side stand is up.
Fault effects (On vehicle)	ECU detects 'SIDE STAND' fault hence do not allow engine to crank.
Lamp Status (If any)	MIL on in 1st driving cycle
Fault detection condition	This fault gets reported if side stand input pin to ECU is short circuited to GROUND.
Probable trouble area	Side stand switch, Wiring harness, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:



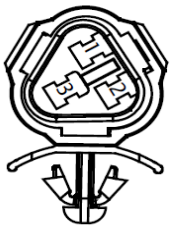
Connector View & Information:

Component Side:



Pin1	Output signal
Pin2	+5V supply
Pin3	Ground

Wiring Harness Side:

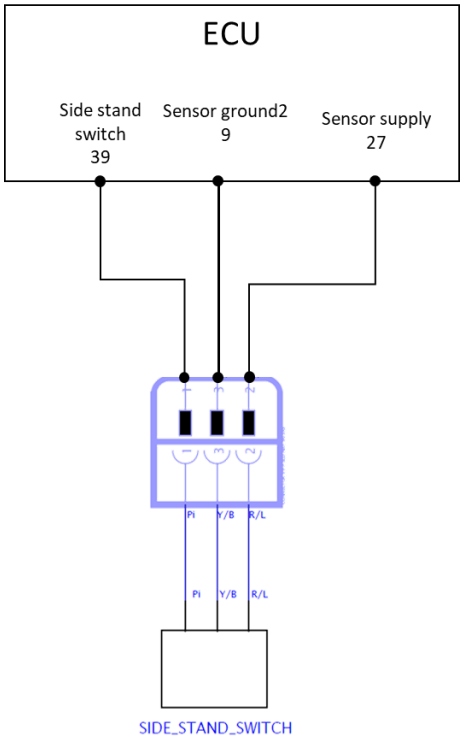


TO_SIDE_STAND_SWITCH

Cav	No.	CSA	Col.	Term.	Seal
1	WIRE166	0.5	Pi	60111012	60111139
2	WIRE121	0.5	R/L	60111012	60111139
3	WIRE180	0.5	Y/B	60111012	60111139

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on sensor terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside sensor connector?	Replace the sensor	Go to Step 3
3	Disconnect the sensor and ECU then check following. Is ECU pin no 39 short-circuited to GROUND?	Short ckt in harness. Check/ Replace wiring harness	Go to Step 4
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts which can short wires to supply?	Open/ cut in harness. Check/ Replace wiring harness	Go to Step 5
5	Erase fault in diagnostics tool and check again. Is fault still present?	Replaced Sensor/ Replace ECU	

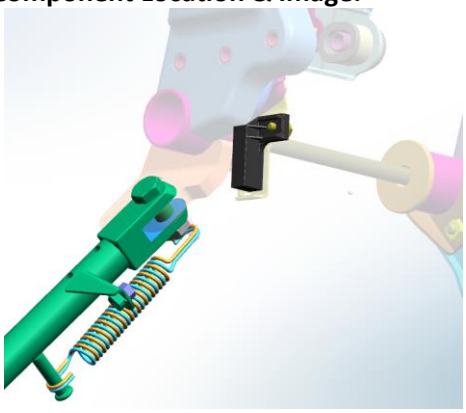
Diagnostic Trouble Code Trouble Shooting

P1508- Side stand switch high

Overview:

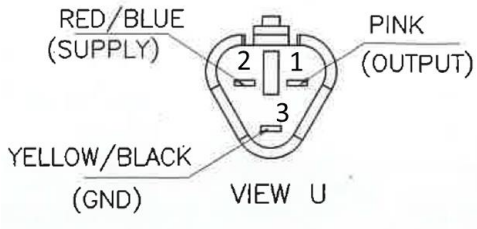
Error Code	P1508
Customer Symptom	Engine does not crank or stalls if in gear even if side stand is up.
Fault effects (On vehicle)	ECU detects 'SIDE STAND' fault hence do not allow engine to crank.
Lamp Status (If any)	MIL on in 1st driving cycle
Fault detection condition	This fault gets reported if side stand input pin to ECU is short circuited to 5V or 12V
Probable trouble area	Side stand switch, Wiring harness, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:



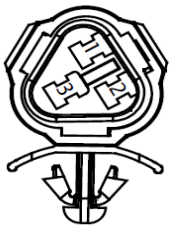
Connector View & Information:

Component Side:



Pin1	Output signal
Pin2	+5V supply
Pin3	Ground

Wiring Harness Side:

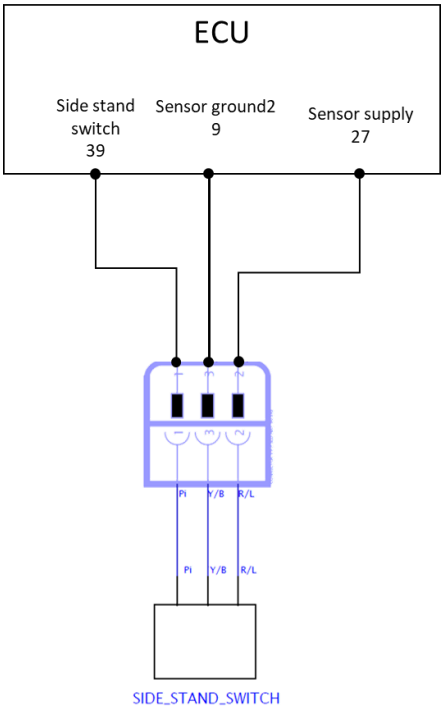


TO_SIDE_STAND_SWITCH

Cav	No.	CSA	Col.	Term.	Seal
1	WIRE166	0.5	Pi	60111012	60111139
2	WIRE121	0.5	R/L	60111012	60111139
3	WIRE180	0.5	Y/B	60111012	60111139

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on sensor terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside sensor connector?	Replace the sensor	Go to Step 3
3	Disconnect the sensor and ECU then check following. Is ECU pin no 39 short-circuited to +5V / 12V supply?	Short ckt in harness. Check/ Replace wiring harness	Go to Step 4
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts which can short wires to supply?	Open/ cut in harness. Check/ Replace wiring harness	Go to Step 5
5	Erase fault in diagnostics tool and check again. Is fault still present?	Replaced Sensor/ Replace ECU	

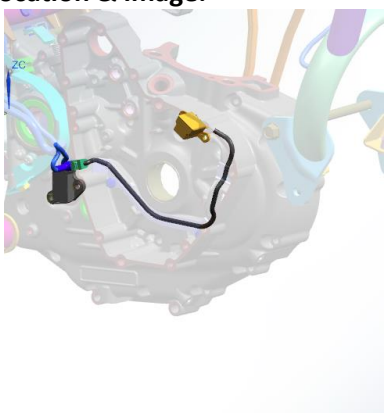
Diagnostic Trouble Code Trouble Shooting

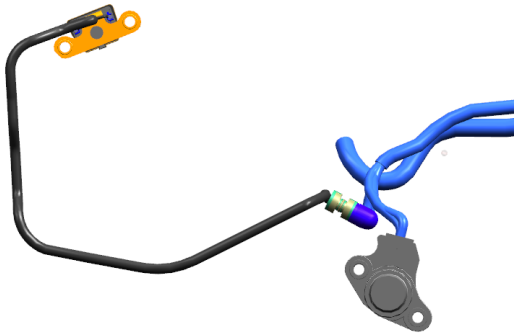
P0917:- Gear Position Sensor High

Overview:

Error Code	P0917
Customer Symptom	Neutral detection not possible. 1st gear shown as default for all gears.
Fault effects (On vehicle)	Vehicle cannot be started without clutch lever pressed.
Lamp Status (If any)	MIL ON
Fault detection condition	This fault gets detected if GPS output is short to supply
Probable trouble area	Gear position sensor, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

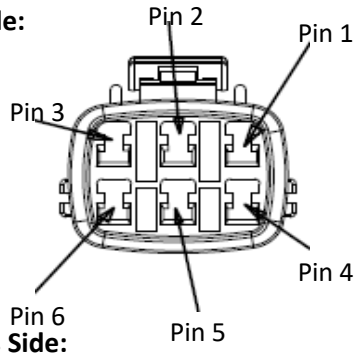
Component Location & Image:





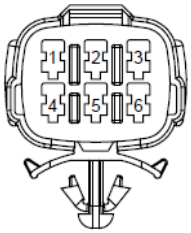
Connector View & Information:

Component Side:



Pin 1	Supply
Pin 2	Output
Pin 3	GND
Pin 4	NC
Pin 5	Pick up coil
Pin 6	Pick up coil

Wiring Harness Side:

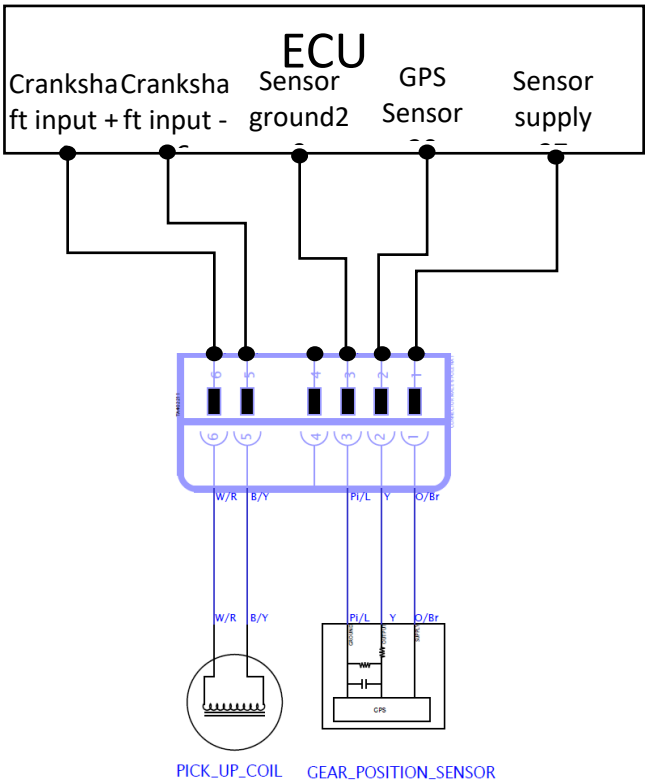


TO_GEAR_POSITION_SENSOR

Cav	No.	CSA	Col.	Term.	Seal	Plug	Multicore
1	WIRE119	0.5	R/L	60111012	60111139	-	
2	WIRE135	0.5	Y	60111012	60111139	-	
3	WIRE178	0.5	Y/B	60111012	60111139	-	
4	-	-	-	-	-	60111129	-
5	WIRE145	0.5	B/Y	60111012	60111139	-	TWP4
6	WIRE123	0.5	W/R	60111012	60111139	-	TWP4

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on sensor terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside sensor connector?	Replace the sensor	Go to Step 3
3	Disconnect the sensor and then check following. Is ECU pin no 20 short-circuited to +5V SUPPLY?	Short ckt in harness. Check/ Replace wiring harness	Go to Step 4
4	Is ECU pin no 20 short-circuited? Is there any damage/ cut/ pinching of wiring harness to surrounding parts which would short wires to supply?	Open/ cut in harness. Check/ Replace wiring harness	Go to Step 5
5	Erase fault in diagnostics tool and check again. Is fault still present?	Replaced Sensor/ Replace ECU	

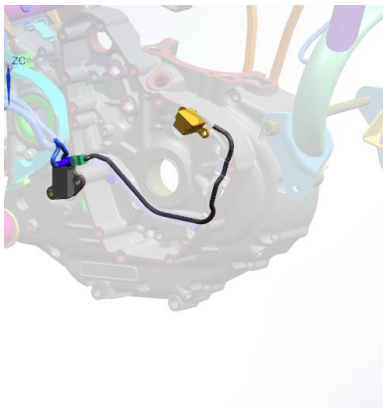
Diagnostic Trouble Code Trouble Shooting

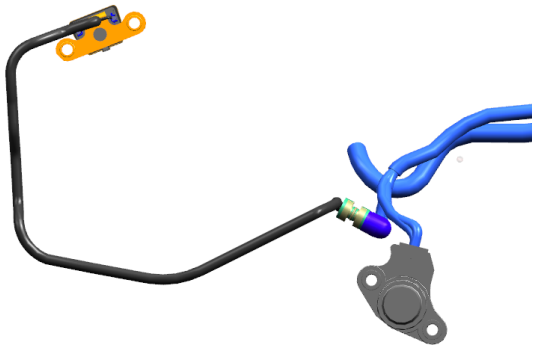
P0916:- Gear Position Sensor Low

Overview:

Error Code	P0916
Customer Symptom	Neutral detection not possible. 1st gear shown as default for all gears.
Fault effects (On vehicle)	Vehicle cannot be started without clutch lever pressed.
Lamp Status (If any)	MIL ON
Fault detection condition	This fault gets detected if GPS output is short to ground
Probable trouble area	Gear position sensor, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

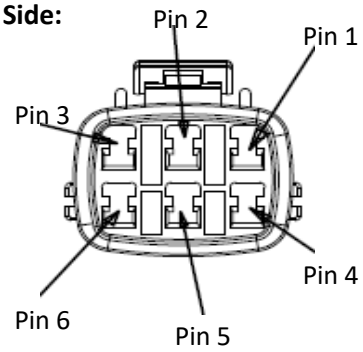
Component Location & Image:





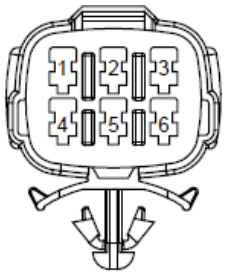
Connector View & Information:

Component Side:



Pin 1	Supply
Pin 2	Output
Pin 3	GND
Pin 4	NC
Pin 5	Pick up coil
Pin 6	Pick up coil

Wiring Harness Side:

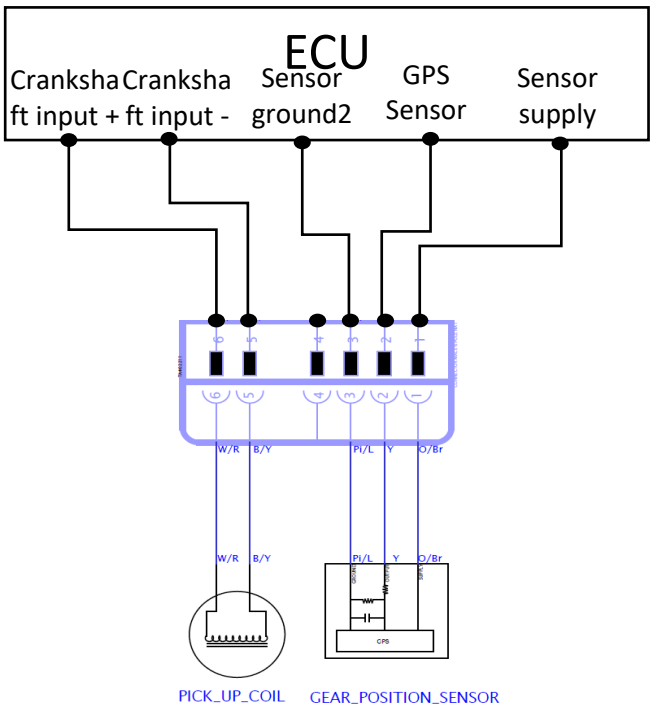


TO_GEAR_POSITION_SENSOR

Cav	No.	CSA	Col.	Term.	Seal	Plug	Multicore
1	WIRE119	0.5	R/L	60111012	60111139	-	
2	WIRE135	0.5	Y	60111012	60111139	-	
3	WIRE178	0.5	Y/B	60111012	60111139	-	
4	-	-	-	-	-	60111129	-
5	WIRE145	0.5	B/Y	60111012	60111139	-	TWP4
6	WIRE123	0.5	W/R	60111012	60111139	-	TWP4

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on sensor terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside sensor connector?	Replace the sensor	Go to Step 3
3	Disconnect the sensor and then check following. Is ECU pin no 20 short circuited to GROUND?	Short ckt in harness. Check/ Replace wiring harness	Go to Step 4
4	Is ECU pin no 20 open circuited? Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Open/ cut in harness. Check/ Replace wiring harness	Go to Step 5
5	Is there +5V supply available at pin no 1 of sensor?	Replace wiring harness/ Replace ECU	Go to Step 6
6	Erase fault in diagnostics tool and check again. Is fault still present?	Replaced Sensor/ Replace ECU	

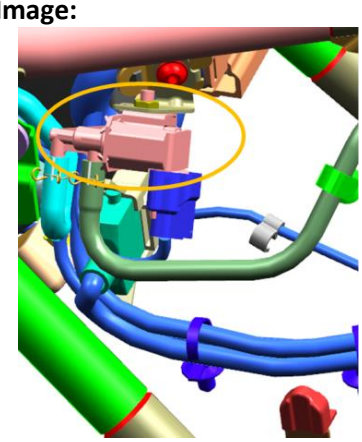
Diagnostic Trouble Code Trouble Shooting

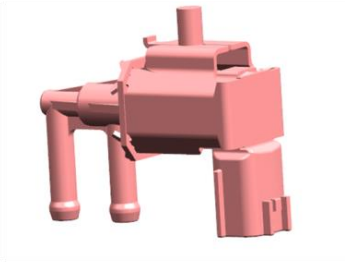
P0444:- EVAP System Purge control valve circuit open

Overview:

Error Code	P0444
Customer Symptom	No perceivable symptoms.
Fault effects (On vehicle)	Purging will not happen and canister can get fully loaded. Evaporative emisisons are affected.
Lamp Status (If any)	MIL ON in 1st drive cycle.
Fault detection condition	This fault gets reported if EVAP purge valve circuit gets open circuit.
Probable trouble area	Wiring harness, Purge valve, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

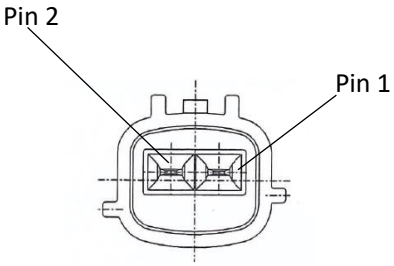
Component Location & Image:





Connector View & Information:

Component Side:



Pin 1	Power supply
Pin 2	ECU drive

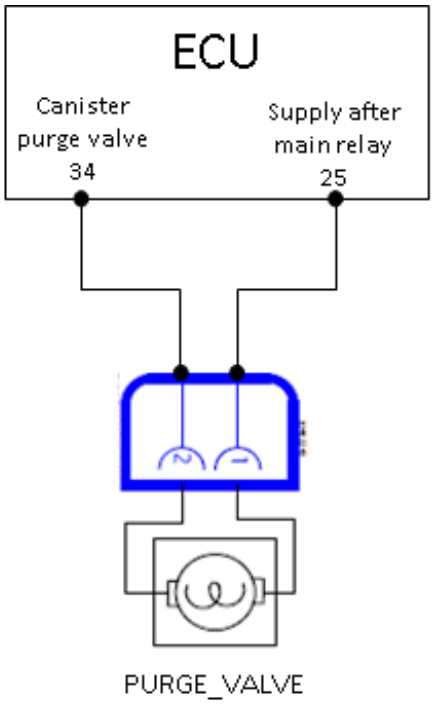
Wiring Harness Side:

TO_PURGE_VALVE

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE323	0.5	G/Pi	JU402244	JU402245	TWP19
2	WIRE324	0.5	Br/W	JU402244	JU402245	TWP19

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on purge valve terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside purge valve connector?	Replace the sensor	Go to Step 3
3	Disconnect the purge valve and ECU then check following. Is ECU pin no 34 open circuit? *Check using multi-meter.*	Short ckt in harness. Check/ Replace wiring harness	Go to Step 4
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 5
5	After electrical rectification, erase fault in diagnostics tool and check again. Is fault still present?	Replaced relay/ Replace ECU	

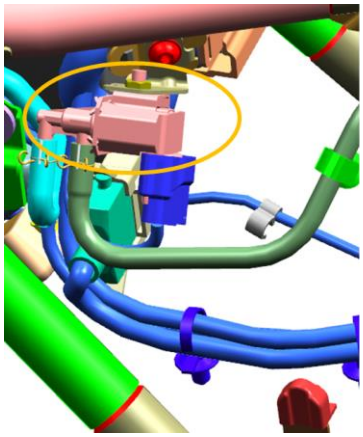
Diagnostic Trouble Code Trouble Shooting

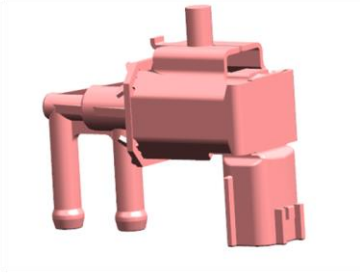
P0458:- EVAP System Purge control valve circuit low

Overview:

Error Code	P0458
Customer Symptom	No perceivable symptoms. Battery draining may be reported.
Fault effects (On vehicle)	Purge valve continuously ON. Battery may drain.
Lamp Status (If any)	MIL ON in 1st drive cycle.
Fault detection condition	This fault gets reported if EVAP purge valve circuit gets short circuited to GROUND.
Probable trouble area	Wiring harness, Purge valve, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

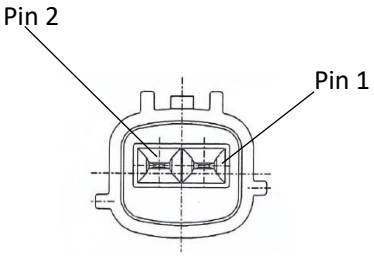
Component Location & Image:





Connector View & Information:

Component Side:



Pin 1	Power supply
Pin 2	ECU drive

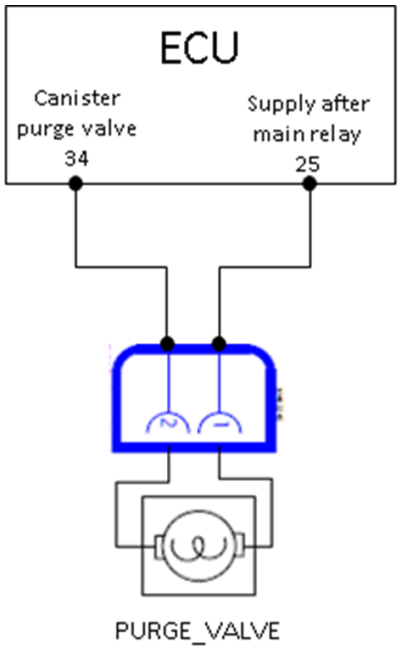
Wiring Harness Side:

TO_PURGE_VALVE

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE323	0.5	G/Pi	JU402244	JU402245	TWP19
2	WIRE324	0.5	Br/W	JU402244	JU402245	TWP19

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on purge valve terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside purge valve connector?	Replace the sensor	Go to Step 3
3	Disconnect the purge valve and ECU then check following. Is ECU pin no 34 short circuited to GROUND? *Check using multimeter.*	Short ckt in harness. Check/ Replace wiring harness	Go to Step 4
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 5
5	After electrical rectification, erase fault in diagnostics tool and check again. Is fault still present?	Replaced relay/ Replace ECU	

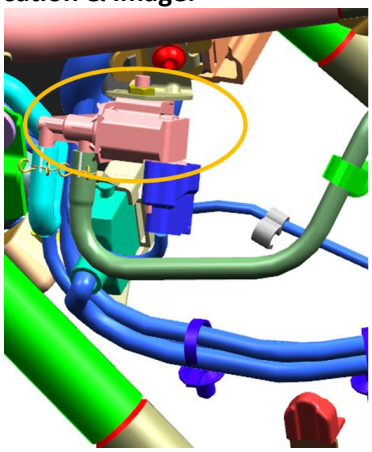
Diagnostic Trouble Code Trouble Shooting

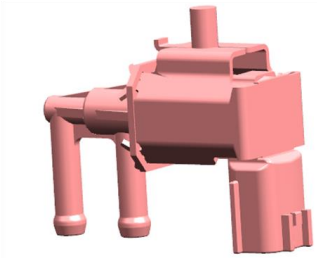
P0459:- EVAP System Purge control valve circuit high

Overview:

Error Code	P0459
Customer Symptom	No perceivable symptoms.
Fault effects (On vehicle)	Purging will not happen and canister can get fully loaded. Evaporative emisisons are affected.
Lamp Status (If any)	MIL ON in 1st drive cycle.
Fault detection condition	This fault gets reported if EVAP purge valve circuit gets short circuited to 12V supply.
Probable trouble area	Wiring harness, Purge valve, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

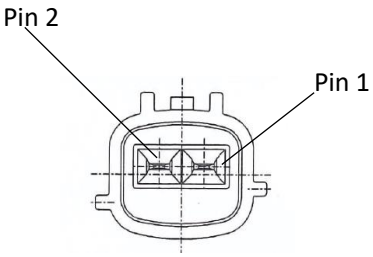
Component Location & Image:





Connector View & Information:

Component Side:



Pin 1	Power supply
Pin2	ECU drive

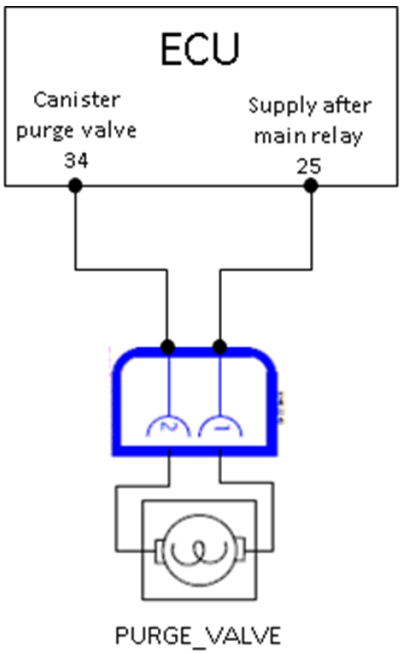
Wiring Harness Side:

TO_PURGE_VALVE

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE323	0.5	G/Pi	JU402244	JU402245	TWP19
2	WIRE324	0.5	Br/W	JU402244	JU402245	TWP19

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on purge valve terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside purge valve connector?	Replace the sensor	Go to Step 3
3	Disconnect the purge valve and ECU then check following. Is ECU pin no 34 short circuited to +12V supply? *Check using multimeter.*	Short ckt in harness. Check/ Replace wiring harness	Go to Step 4
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 5
5	After electrical rectification, erase fault in diagnostics tool and check again. Is fault still present?	Replaced relay/ Replace ECU	

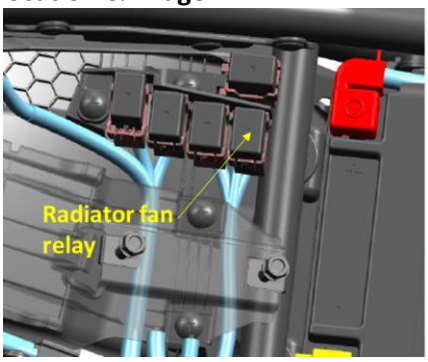
Diagnostic Trouble Code Trouble Shooting

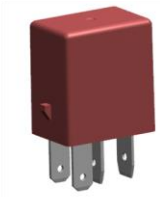
P0692:- Radiator Fan Control Circuit High

Overview:

Error Code	P0692
Customer Symptom	Radiator Fan not working/ Engine temperature high.
Fault effects (On vehicle)	Radiator Fan do not turn ON. High temperature at engine may occur. No engine-cooling while temperature is above threshold. Vehicle may go into limp home mode.
Lamp Status (If any)	MIL ON in 1st drive cycle
Fault detection condition	This fault is detected if Radiator Fan relay circuit is short to 12V supply.
Probable trouble area	Radiator Fan, Radiator Fan Relay, Wiring Harness
Healing condition	Engine running and 1 drive cycle after fault rectification

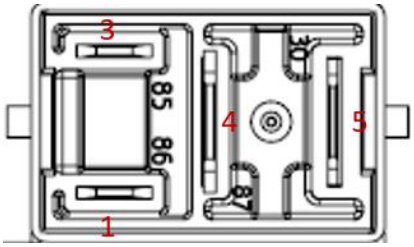
Component Location & Image:





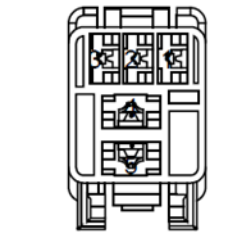
Connector View & Information:

Component Side:



Terminal	Function
1	Signal from ECU pin 43
2	Not connected
3	12V Supply after Main relay
4	Output to fan motor
5	+12V Battery

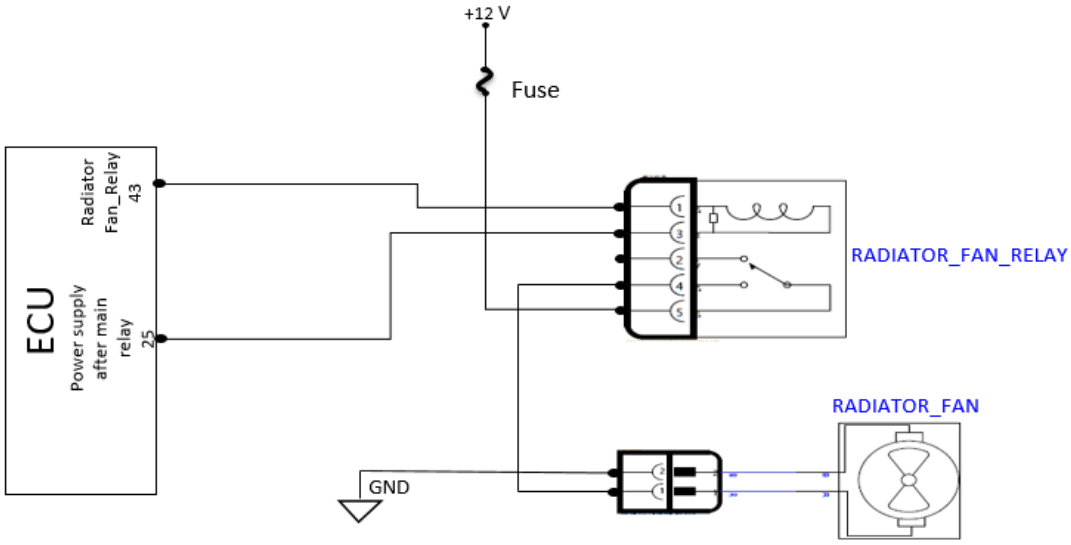
Wiring Harness Side:



Cav	No.	CSA	Col.	Term.
1	WIRE154	0.5	G/Br	JY402264
2	-	-	-	-
3	WIRE283	0.5	Br/W	JY402264
4	WIRE211	1	Gr/Y	JY402265
5	WIRE210	1	O	JY402265

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on relay terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside relay connector?	Replace the sensor	Go to Step 3
3	Disconnect relay and ECU and check following. Is there continuity between ECU pin 43 and Relay pin no 1? *Check using multi-meter.*	Go to Step 4	Check/ Replace wiring harness.
4	Disconnect the relay and ECU then check following. Is ECU pin no 43 short circuited to +12V supply?	Short ckt in harness. Check/ Replace wiring harness	Go to Step 5
5	After electrical rectification, erase fault in diagnostics tool and check again. Is fault still present?	Replaced relay/ Replace ECU	

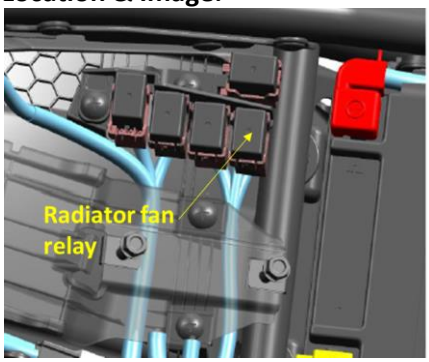
Diagnostic Trouble Code Trouble Shooting

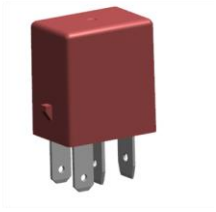
P0691:- Radiator Fan Control Circuit low

Overview:

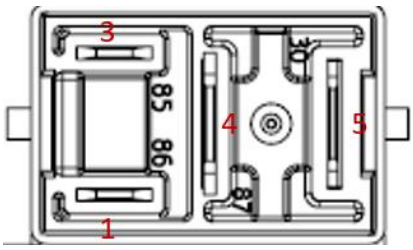
Error Code	P0691
Customer Symptom	Radiator Fan runs continuously. Battery draining.
Fault effects (On vehicle)	Radiator fan runs continuously as soon as ignition is turned ON. Battery may get drained quickly.
Lamp Status (If any)	MIL ON in 1st drive cycle
Fault detection condition	This fault gets detected if Radiator Fan relay circuit is short to ground.
Probable trouble area	Radiator Fan, Radiator Fan Relay, Wiring Harness
Healing condition	Engine running and 1 drive cycle after fault rectification

Component Location & Image:



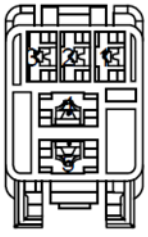


Connector View & Information:
Component Side:



Terminal	Function
1	ECU pin 43
2	--
3	Supp. after Main relay
4	To Fan
5	+12V

Wiring Harness Side:

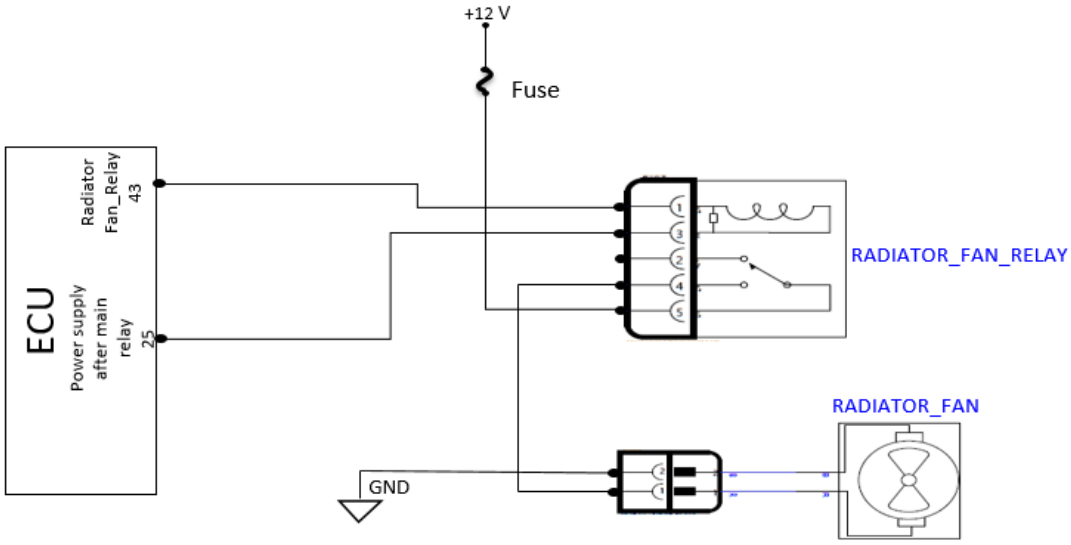


TO_RADIATOR_FAN_RELAY

Cav	No.	CSA	Col.	Term.
1	WIRE154	0.5	G/Br	JY402264
2	-	-	-	-
3	WIRE283	0.5	Br/W	JY402264
4	WIRE211	1	Gr/Y	JY402265
5	WIRE210	1	O	JY402265

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on relay terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside relay connector?	Replace the sensor	Go to Step 3
3	Disconnect relay and ECU and check following. Is there continuity between ECU pin 43 and Relay pin no 1? *Check using multi-meter.*	Go to Step 4	Check/ Replace wiring harness.
4	Disconnect the relay and ECU then check following. Is ECU pin no 43 short circuited to GROUND?	Short ckt in harness. Check/ Replace wiring harness	Go to Step 5
5	After electrical rectification, erase fault in diagnostics tool and check again. Is fault still present?	Replaced relay/ Replace ECU	

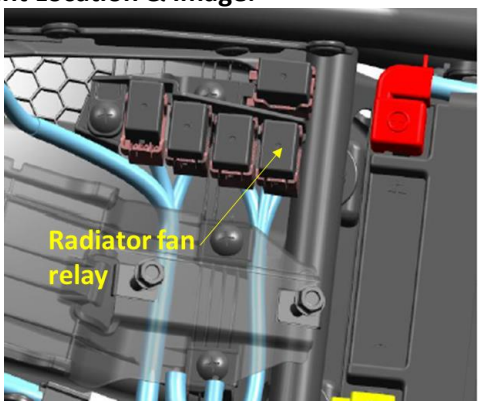
Diagnostic Trouble Code Trouble Shooting

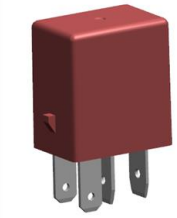
P0480:- Radiator Fan Control Circuit Fault

Overview:

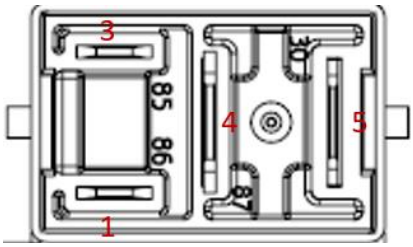
Error Code	P0480
Customer Symptom	Radiator Fan does not operate in any condition
Fault effects (On vehicle)	No engine-cooling while temperature is above threshold. Vehicle may go into limp home mode.
Lamp Status (If any)	MIL ON in 1st drive cycle
Fault detection condition	This fault gets detected if Radiator Fan relay circuit is open circuited.
Probable trouble area	Radiator Fan, Radiator Fan Relay, Wiring Harness
Healing condition	Engine running and 1 drive cycle after fault rectification

Component Location & Image:



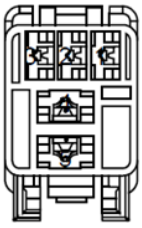


Connector View & Information:
Component Side:



Terminal	Function
1	ECU pin 43
2	--
3	Supp. after Main relay
4	To Fan
5	+12V

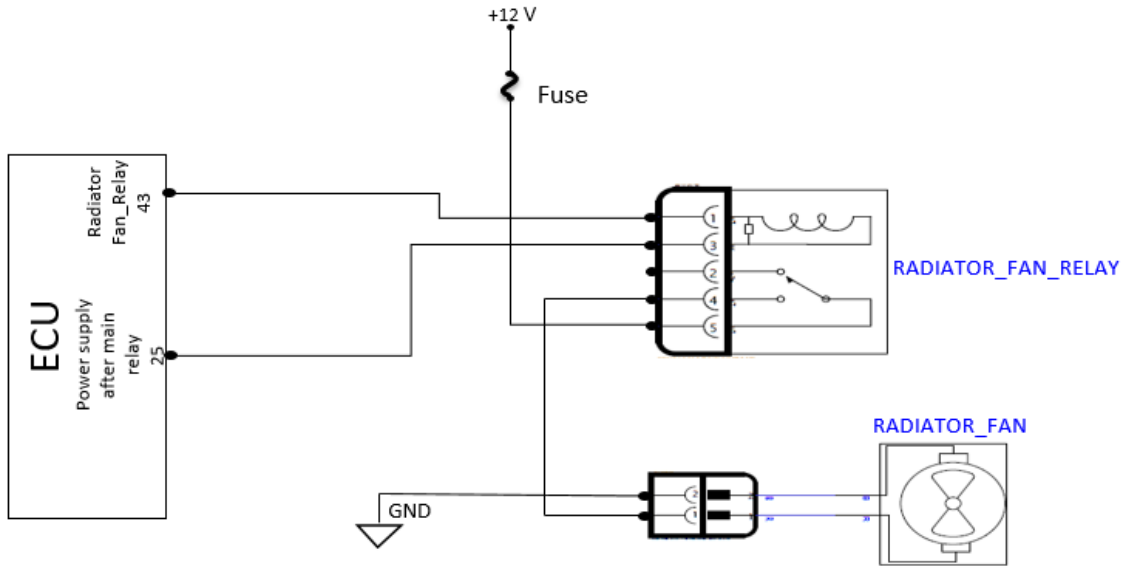
Wiring Harness Side:


TO_RADIATOR_FAN_RELAY

Cav	No.	CSA	Col.	Term.
1	WIRE154	0.5	G/Br	JY402264
2	-	-	-	-
3	WIRE283	0.5	Br/W	JY402264
4	WIRE211	1	Gr/Y	JY402265
5	WIRE210	1	O	JY402265

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on relay terminals?	Replace the sensor	Go to Step 2
2	Is there any terminal bend/ damage inside relay connector?	Replace the sensor	Go to Step 3
3	Disconnect relay and ECU and check following. Is there continuity between ECU pin 43 and Relay pin no 1? *Check using multi-meter.*	Go to Step 4	Open circuit - Check/ Replace wiring harness.
4	After electrical rectification, erase fault in diagnostics tool and check again. Is fault still present?	Replaced relay/ Replace ECU	

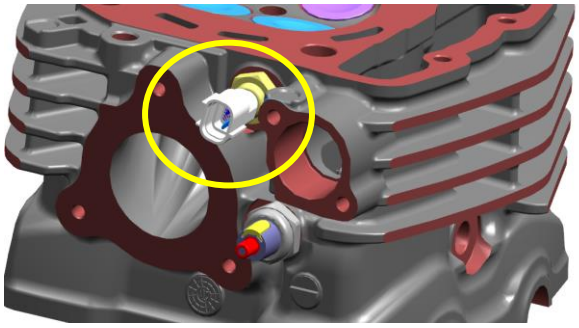
Diagnostic Trouble Code Trouble Shooting

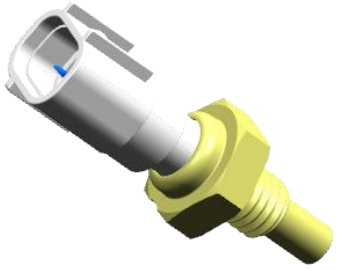
P0117:- Engine Temperature Sensor 1 Circuit Low

Overview:

Error Code	P0117
Customer Symptom	Start and drivability affected.
Fault effects (On vehicle)	Start and drivability affected.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 3rd driving cycle
Fault detection condition	This fault gets detected at Ignition ON when engine temperature signal is short circuited to GROUND
Probable trouble area	Engine temp sensor, Wiring harness, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:

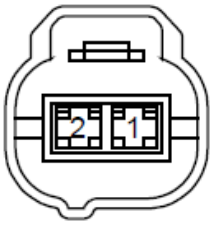




Connector View & Information:
Component Side:

Pin 1	Sensor input
Pin 2	Ground

Wiring Harness Side:

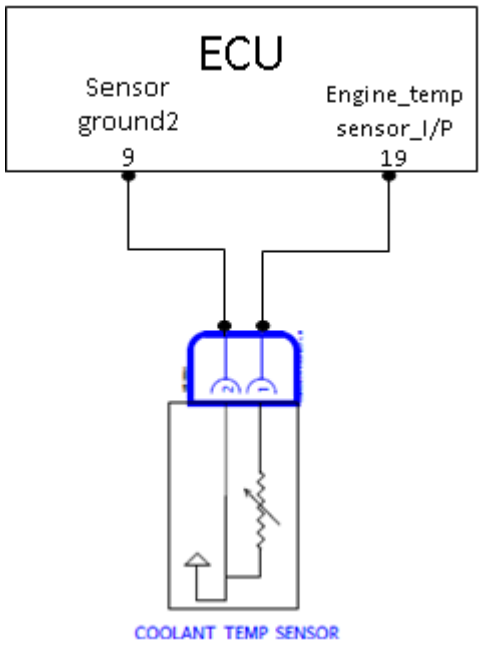


TO_CTS

Cav	No.	CSA	Col.	Term.	Seal
1	WIRE134	0.5	Y/W	60111011	60111139
2	WIRE174	0.5	Y/B	60111011	60111139

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage at sensor?	Replace sensor	Go to Step 2
2	Is there continuity between (disconnect sensor to check) ECU pin no 19 → Pin no 1 (Sensor output)	Go to Step 3	Check/ Replace wiring harness
3	Is sensor signal output at pin no 19 short to GND? *Check using multimeter.*	Check/ Replace wiring harness	Go to Step 5
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 6
5	Connect diagnostic tools and erase fault Is fault still present?	Replace sensor/ Replace ECU	

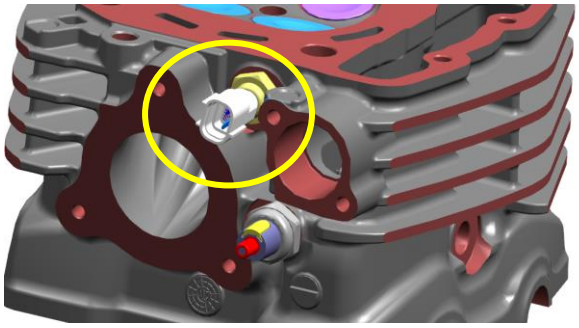
Diagnostic Trouble Code Trouble Shooting

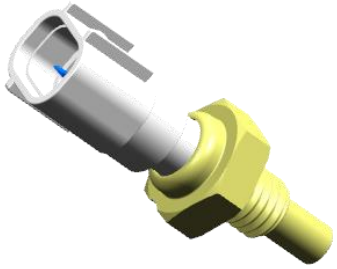
P0118:- Engine Temperature Sensor 1 Circuit High

Overview:

Error Code	P0118
Customer Symptom	Start and drivability affected.
Fault effects (On vehicle)	Start and drivability affected.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 3rd driving cycle
Fault detection condition	This fault gets detected at Ignition ON when engine temperature signal is short circuited to BATTERY
Probable trouble area	Engine temp sensor, Wiring harness, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:





Connector View & Information:
Component Side:

Pin 1	Sensor input
Pin 2	Ground

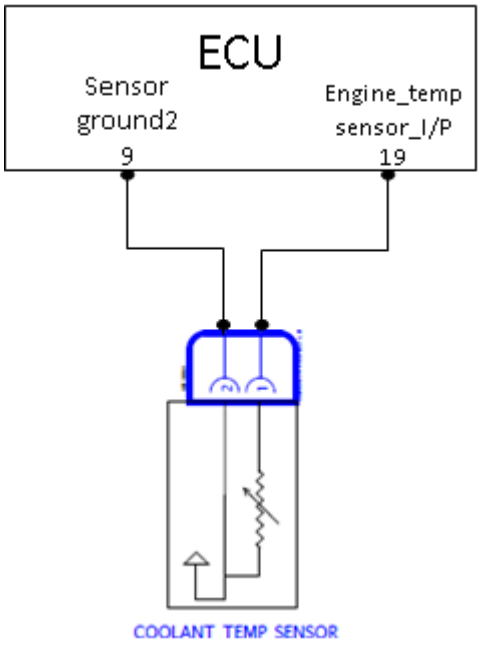
Wiring Harness Side:

TO_CTS

Cav	No.	CSA	Col.	Term.	Seal
1	WIRE134	0.5	Y/W	60111011	60111139
2	WIRE174	0.5	Y/B	60111011	60111139

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage at sensor?	Replace sensor	Go to Step 2
2	Is there continuity between (disconnect sensor to check) ECU pin no 19 → Pin no 1 (Sensor output)	Go to Step 3	Check/ Replace wiring harness
3	Is sensor signal output at pin no 19 short to 12V supply? *Check using multimeter.*	Check/ Replace wiring harness	Go to Step 5
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 6
5	Connect diagnostic tools and erase fault Is fault still present?	Replace sensor/ Replace ECU	

Diagnostic Trouble Code Trouble Shooting

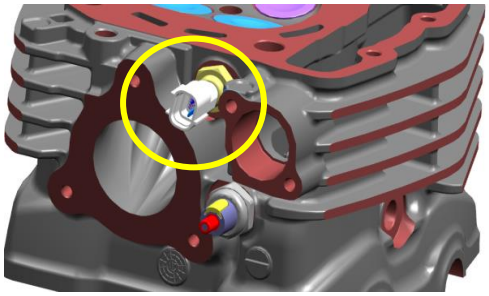
P0115:- Engine coolant Temperature Sensor 1 Circuit

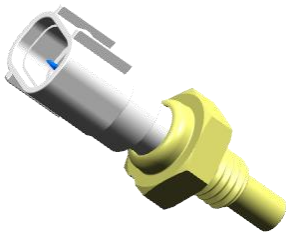
P0116:- Engine Temperature Sensor 1 Circuit Range/performance

Overview:

Error Code	P0115 / P0116
Customer Symptom	Start and drivability affected.
Fault effects (On vehicle)	Start and drivability affected.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 3rd driving cycle.
Fault detection condition	**P0115:** If engine is running for 300 s, but the change in sensed engine temperature is not more than 1 deg C. **P0116:** This fault gets reported if sensor signal value exceeds 145 °C or is less than -25 °C for 2 seconds.
Probable trouble area	Engine temp sensor, Wiring harness, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:





Connector View & Information:

Component Side:

Pin 1	Sensor input
Pin 2	Ground

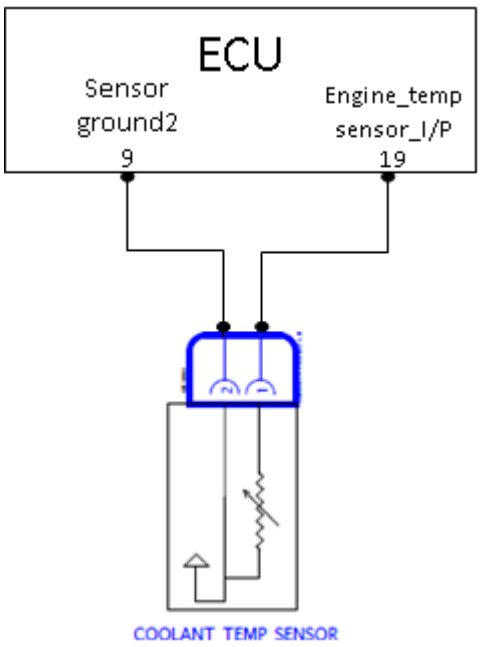
Wiring Harnes

TO_CTS

Cav	No.	CSA	Col.	Term.	Seal
1	WIRE134	0.5	Y/W	60111011	60111139
2	WIRE174	0.5	Y/B	60111011	60111139

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage at sensor?	Replace sensor	Go to Step 2
2	Is there continuity between (disconnect sensor to check) ECU pin no 19 → Pin no 1 (Sensor output)	Go to Step 3	Check/ Replace wiring harness
3	Is sensor signal output at pin no 19 short to 12V supply or Ground? *Check using multimeter.*	Check/ Replace wiring harness	Go to Step 5
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 6
5	Connect diagnostic tools and erase fault Is fault still present?	Replace sensor/ Replace ECU	

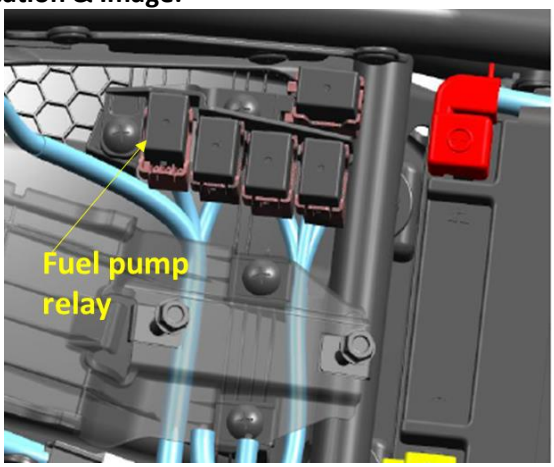
Diagnostic Trouble Code Trouble Shooting

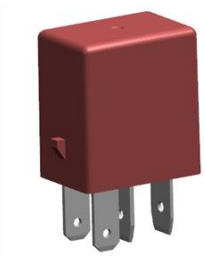
P0627:- Fuel Pump "A" Control Circuit/Open

Overview:

Error Code	P0627
Customer Symptom	Engine not starting, if running stalls.
Fault effects (On vehicle)	Fuel pump not working, no fuel delivery to engine.
Lamp Status (If any)	MIL ON in 1st drive cycle.
Fault detection condition	This fault gets detected if fuel pump relay circuit get open circuit.
Probable trouble area	Fuel pump relay, wiring harness, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

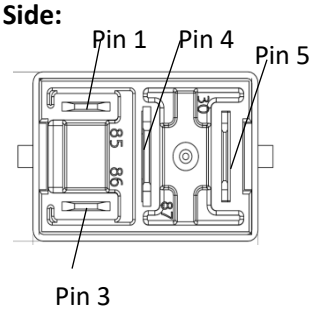
Component Location & Image:





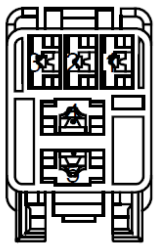
Connector View & Information:

Component Side:



Pin 1	Signal from EMS ECU
Pin 2	Not connected
Pin 3	12V supply after main relay
Pin 4	12V supply
Pin 5	Output to fuel pump

Wiring Harness Side:

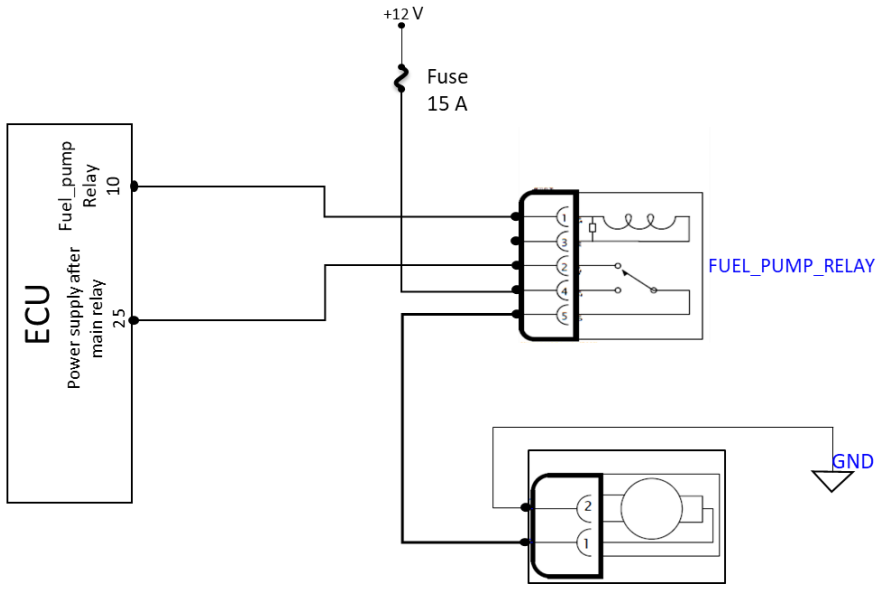


TO_FUEL_PUMP_RELAY

Cav	No.	CSA	Col.	Term.
1	WIRE131	0.5	W/Y	JY402264
2	-	-	-	-
3	WIRE155	0.5	Br/W	JY402264
4	WIRE196	0.75	O/W	JY402265
5	WIRE225	0.75	O/L	JY402265

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage at relay terminals or relay connector in harness?	Replace relay and check	Go to Step 2
2	Is there any terminal bend/ damage at ECU connector of wiring harness?	Replace harness and check	Go to Step 3
3	Is there continuity between (disconnect relay and ECU to check) ECU pin no 10 → Pin no 1 (Relay coil)	Go to Step 4	Check/ Replace wiring harness
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 5
5	Connect diagnostic tools and erase fault Is fault still present?	Replace wiring harness/ Replace relay/ Replace ECU	

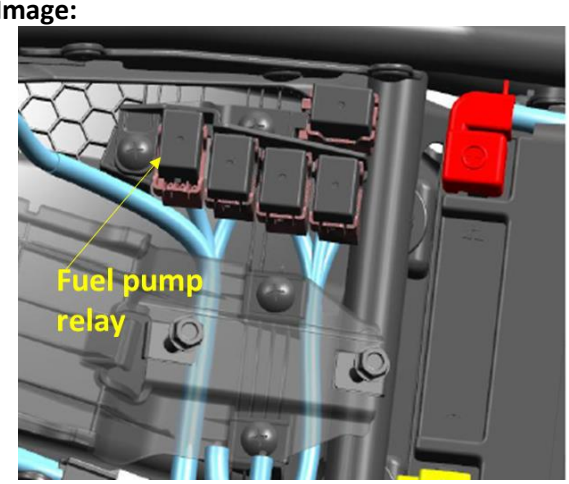
Diagnostic Trouble Code Trouble Shooting

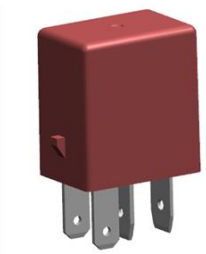
P0628:- Fuel Pump "A" Control Circuit Low

Overview:

Error Code	P0628
Customer Symptom	Battery draining quickly, fuel pump runs even if engine is OFF.
Fault effects (On vehicle)	Fuel pump running continuously.
Lamp Status (If any)	MIL ON in 1st drive cycle.
Fault detection condition	This fault gets detected if fuel pump relay circuit gets short circuit to GROUND.
Probable trouble area	Fuel pump relay, wiring harness, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

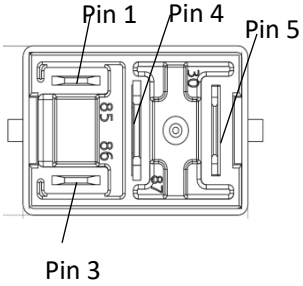
Component Location & Image:





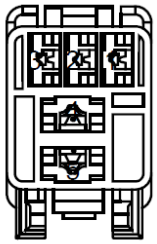
Connector View & Information:

Component Side:



Pin 1	Signal from EMS ECU
Pin 2	Not connected
Pin 3	12V supply after main relay
Pin 4	+12V supply
Pin 5	Output to fuel pump

Wiring Harness Side:

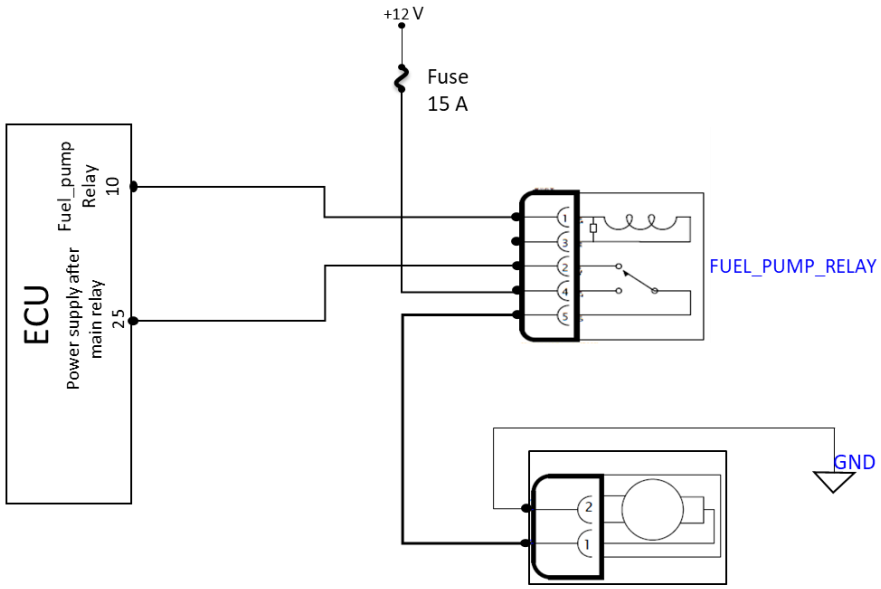


TO_FUEL_PUMP_RELAY

Cav	No.	CSA	Col.	Term.
1	WIRE131	0.5	W/Y	JY402264
2	-	-	-	-
3	WIRE155	0.5	Br/W	JY402264
4	WIRE196	0.75	O/W	JY402265
5	WIRE225	0.75	O/L	JY402265

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage at relay terminals or relay connector in harness?	Replace relay and check	Go to Step 2
2	Is there any terminal bend/ damage at ECU connector of wiring harness?	Replace harness and check	Go to Step 3
3	Is there continuity between (disconnect relay and ECU to check) ECU pin no 10 → Pin no 1 (Relay coil)	Go to Step 4	Check/ Replace wiring harness
4	Is ECU pin no 10 short circuit to GROUND? *Check using multi-meter.*	Check/ Replace wiring harness	Go to Step 5
5	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 6
5	Connect diagnostic tools and erase fault Is fault still present?	Replace wiring harness/ Replace relay/ Replace ECU	

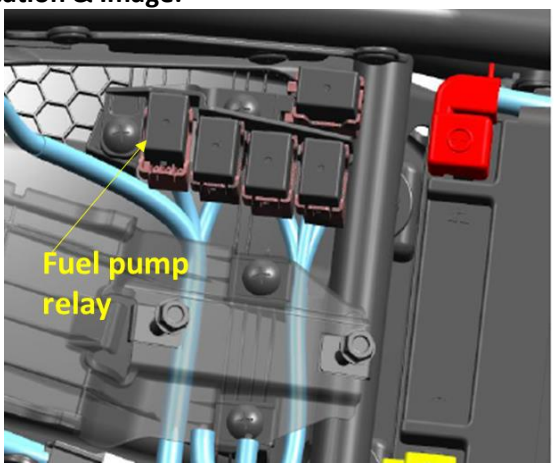
Diagnostic Trouble Code Trouble Shooting

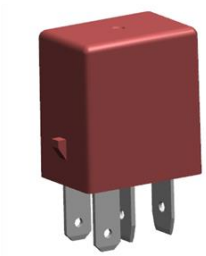
P0629:- Fuel Pump "A" Control Circuit High

Overview:

Error Code	P0629
Customer Symptom	Engine not starting, if running stalls.
Fault effects (On vehicle)	Fuel pump not working, no fuel delivery to engine.
Lamp Status (If any)	MIL ON in 1st drive cycle.
Fault detection condition	This fault gets detected if fuel pump relay circuit gets short to 12V supply.
Probable trouble area	Fuel pump relay, wiring harness, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

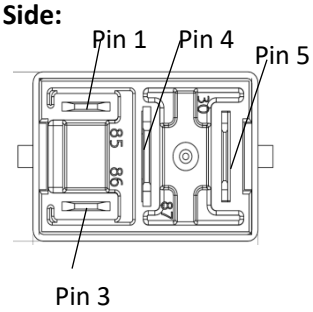
Component Location & Image:





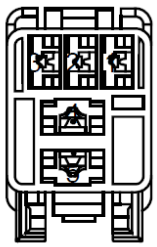
Connector View & Information:

Component Side:



Pin 1	Signal from EMS ECU
Pin 2	Not connected
Pin 3	12V supply after main relay
Pin 4	+12V supply
Pin 5	Output to fuel pump

Wiring Harness Side:

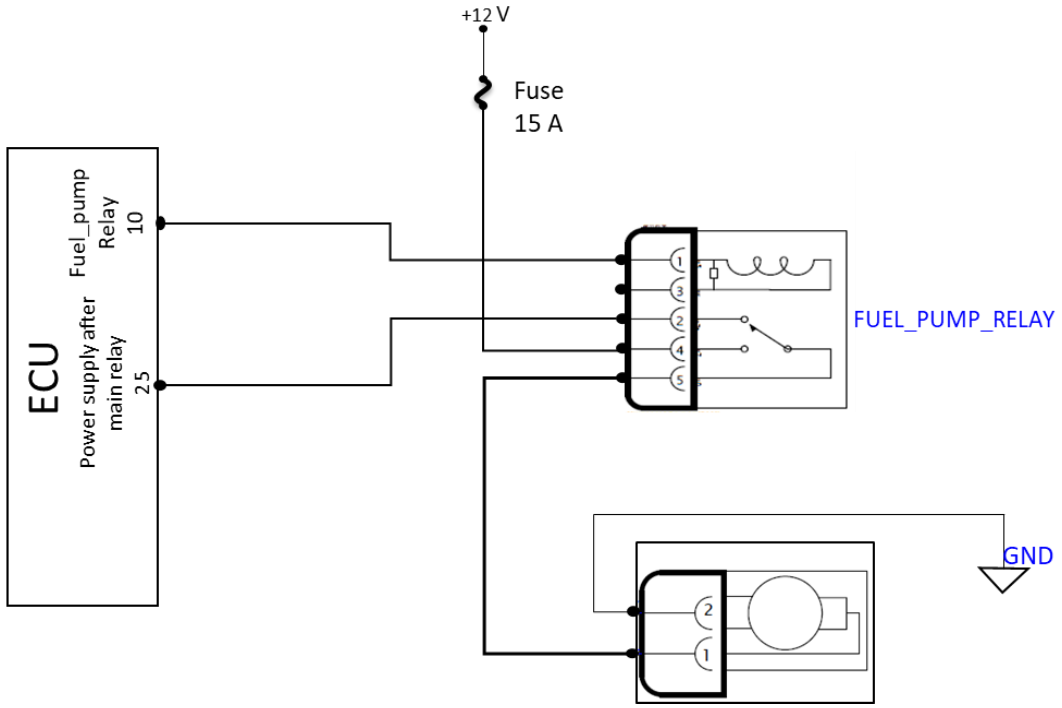


TO_FUEL_PUMP_RELAY

Cav	No.	CSA	Col.	Term.
1	WIRE131	0.5	W/Y	JY402264
2	-	-	-	-
3	WIRE155	0.5	Br/W	JY402264
4	WIRE196	0.75	O/W	JY402265
5	WIRE225	0.75	O/L	JY402265

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage at relay terminals or relay connector in harness?	Replace relay and check	Go to Step 2
2	Is there any terminal bend/ damage at ECU connector of wiring harness?	Replace harness and check	Go to Step 3
3	Is there continuity between (disconnect relay and ECU to check) ECU pin no 10 → Pin no 1 (Relay coil)	Go to Step 4	Check/ Replace wiring harness
4	Is relay signal from ECU at pin number 10 short circuit to +12V supply? *Check using multi-meter.*	Check/ Replace wiring harness	Go to Step 5
5	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 6
6	Connect diagnostic tools and erase fault Is fault still present?	Replace wiring harness/ Replace relay/ Replace ECU	

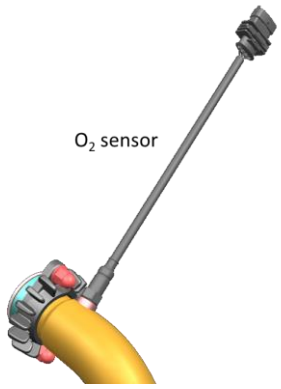
Diagnostic Trouble Code Trouble Shooting

P0032- HO_2S Heater Control Circuit High Bank 1 Sensor 1

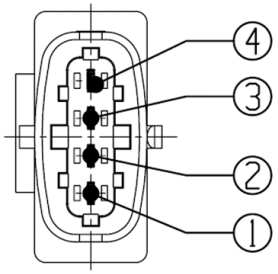
Overview:

P Code	P0032
Customer Symptom	MIL on continuously. Engine starting & drivability may be affected.
Fault effects (On vehicle)	Lambda sensor functioning is affected and system runs without closed loop lambda control. Exhaust emissions are affected.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 3rd driving cycle
Fault detection condition	This fault gets detected if Upstream lambda sensor heater control pin is short circuited to +12V.
Probable trouble area	Wiring harness, Lambda sensor, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:

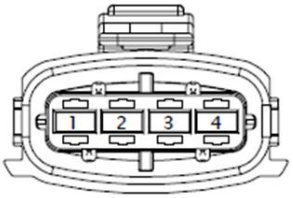


Connector View & Information:
Component Side:



Pin 1	Heater +
Pin 2	Heater GND
Pin 3	Sensor GND
Pin 4	Sensor Signal +

Wiring Harness side:

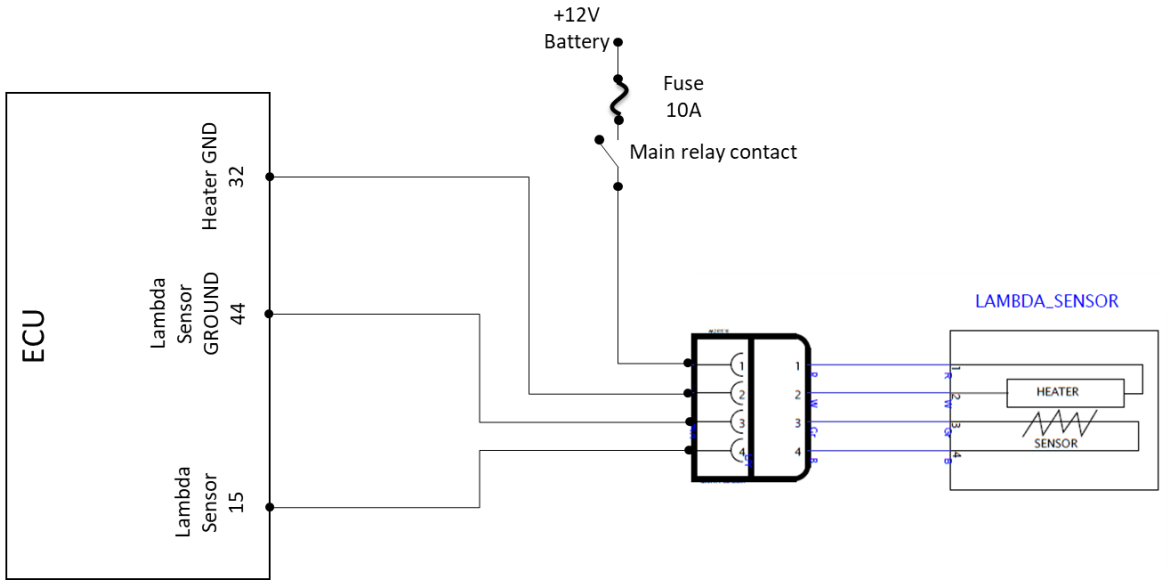


TO_LAMBDA_UPSTREAM_SENSOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE1564	0.75	Br/W	AA201592	AA201598	TWP17
2	WIRE150	0.75	L/W	AA201592	AA201598	TWP17
3	WIRE296	0.75	Pi/L	AA201592	AA201598	TWP16
4	WIRE132	0.75	L/Y	AA201592	AA201598	TWP16

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage in sensor connector?	Replace Sensor	Go to Step 2
2	Is there continuity between (disconnect sensor and ECU to check) ECU pin no 32 →Sensor Pin no 2, ECU pin no 44 →Sensor pin no 3, ECU pin no 15→Sensor pin no 4 *Check using multi-meter.*	Go to Step 3	Check/ Replace wiring harness
3	Is sensor pin no 2 short circuited to +12V? *Check using multi-meter.*	Check/ Replace wiring harness	Go to Step 4
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 5
5	Is sensor physically damaged/ contaminated? Is there any leakage in exhaust system?	Replace sensor/ Rectify defect	Go to Step 6
6	Connect diagnostics tool & erase fault. Is fault still present?	Replace sensor if fault still present replace ECU	

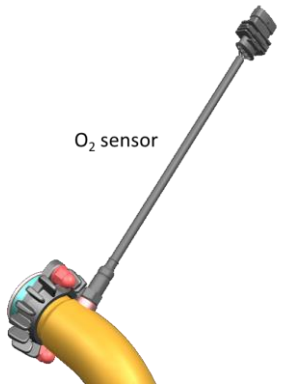
Diagnostic Trouble Code Trouble Shooting

P0031- HO_2S Heater Control Circuit Low Bank 1 Sensor 1

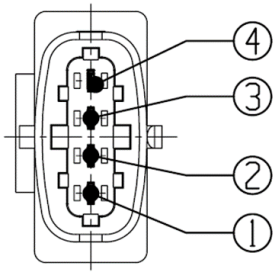
Overview:

P Code	P0031
Customer Symptom	MIL on continuously. Engine starting & drivability may be affected.
Fault effects (On vehicle)	Lambda sensor functioning is affected and system runs without closed loop lambda control. Exhaust emissions are affected.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 3rd driving cycle
Fault detection condition	This fault gets detected if Upstream lambda sensor heater control pin is short circuited to GROUND.
Probable trouble area	Wiring harness, Lambda sensor
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:

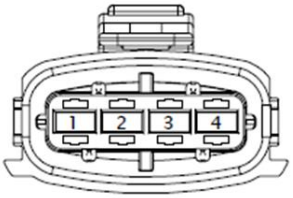


Connector View & Information:
Component Side:



Pin 1	Heater +
Pin 2	Heater GND
Pin 3	Sensor GND
Pin 4	Sensor Signal +

Wiring Harness side:

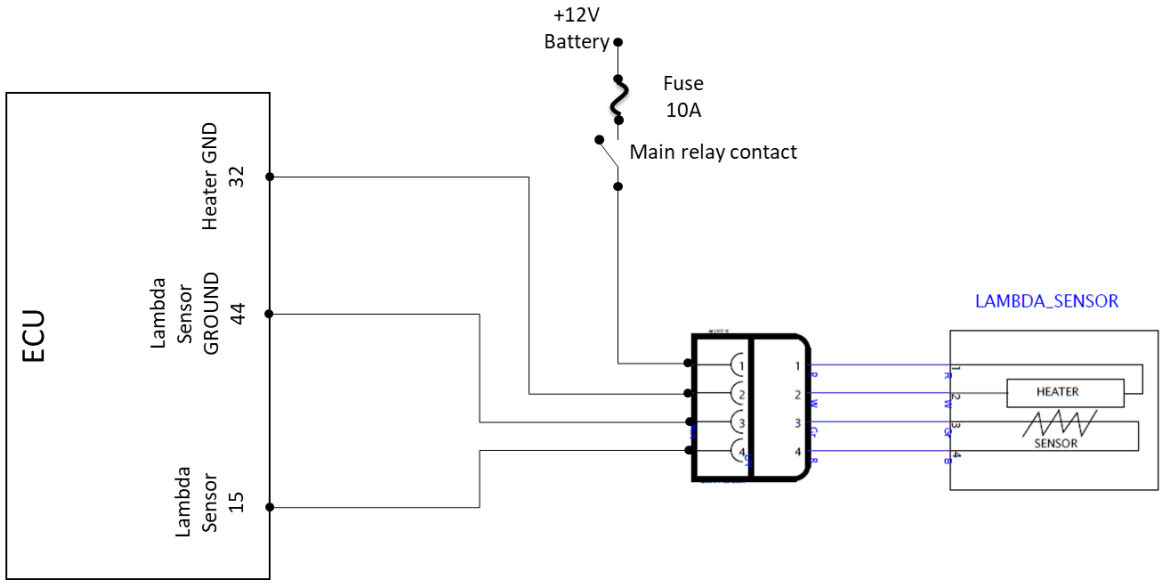


TO_LAMBDA_UPSTREAM_SENSOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE1564	0.75	Br/W	AA201592	AA201598	TWP17
2	WIRE150	0.75	L/W	AA201592	AA201598	TWP17
3	WIRE296	0.75	Pi/L	AA201592	AA201598	TWP16
4	WIRE132	0.75	L/Y	AA201592	AA201598	TWP16

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage in sensor connector?	Replace Sensor	Go to Step 2
2	Is there continuity between (disconnect sensor and ECU to check) ECU pin no 32 →Sensor Pin no 2, ECU pin no 44 →Sensor pin no 3, ECU pin no 15→Sensor pin no 4 *Check using multi-meter.*	Go to Step 3	Check/ Replace wiring harness
3	Is sensor pin no 2 short circuited to GROUND? *Check using multi-meter.*	Check/ Replace wiring harness	Go to Step 4
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 5
5	Is sensor physically damaged/ contaminated? Is there any leakage in exhaust system?	Replace sensor/ Rectify defect	Go to Step 6
6	Connect diagnostics tool & erase fault. Is fault still present?	Replace sensor if fault still present replace ECU	

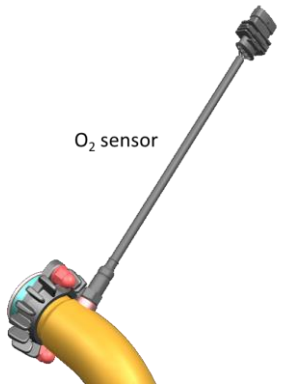
Diagnostic Trouble Code Trouble Shooting

P0030- HO_2S Heater Control Circuit Bank 1 Sensor 1

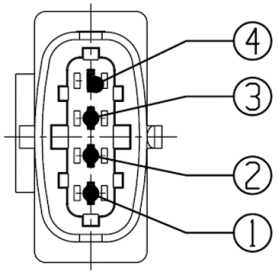
Overview:

P Code	P0030
Customer Symptom	MIL on continuously. Engine starting & drivability may be affected.
Fault effects (On vehicle)	Lambda sensor functioning is affected and system runs without closed loop lambda control. Exhaust emissions are affected.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 3rd driving cycle
Fault detection condition	This fault gets detected if Upstream lambda sensor heater control pin is open circuit.
Probable trouble area	Wiring harness, Lambda sensor
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:

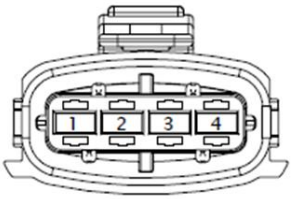


Connector View & Information:
Component Side:



Pin 1	Heater +
Pin 2	Heater GND
Pin 3	Sensor GND
Pin 4	Sensor Signal +

Wiring Harness side:

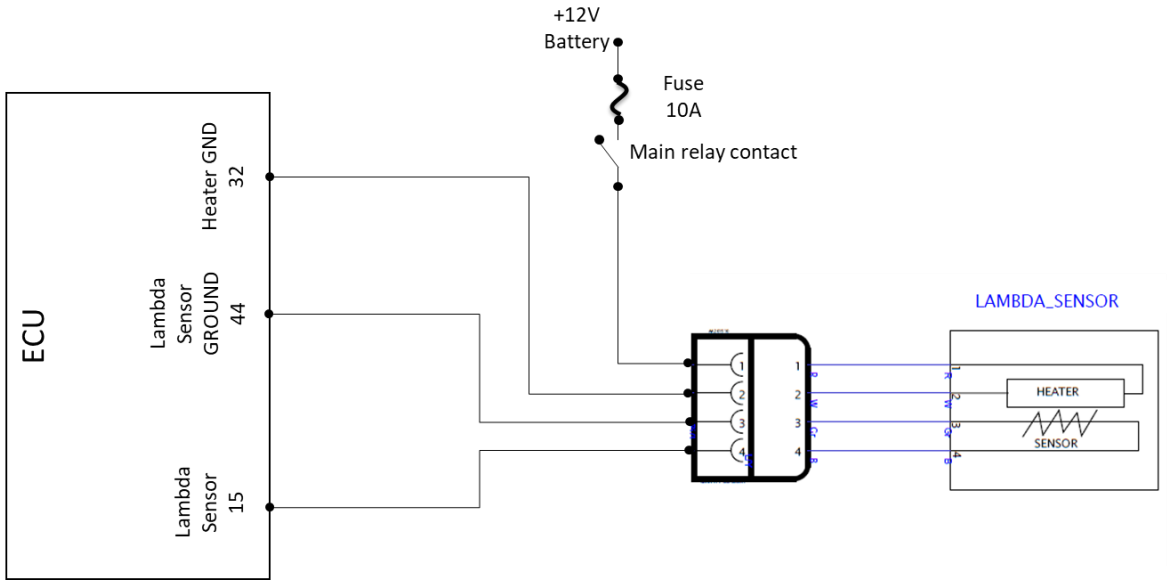


TO_LAMBDA_UPSTREAM_SENSOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE1564	0.75	Br/W	AA201592	AA201598	TWP17
2	WIRE150	0.75	L/W	AA201592	AA201598	TWP17
3	WIRE296	0.75	Pi/L	AA201592	AA201598	TWP16
4	WIRE132	0.75	L/Y	AA201592	AA201598	TWP16

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage in sensor connector?	Replace Sensor	Go to Step 2
2	Is there continuity between (disconnect sensor and ECU to check) ECU pin no 32 →Sensor Pin no 2, ECU pin no 44 →Sensor pin no 3, ECU pin no 15→Sensor pin no 4 *Check using multi-meter.*	Go to Step 3	Check/ Replace wiring harness
3	Is sensor pin no 2 open circuit? *Check using multi-meter.*	Check/ Replace wiring harness	Go to Step 4
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 5
5	Is sensor physically damaged/ contaminated? Is there any leakage in exhaust system?	Replace sensor/ Rectify defect	Go to Step 6
6	Connect diagnostics tool & erase fault. Is fault still present?	Replace sensor if fault still present replace ECU	

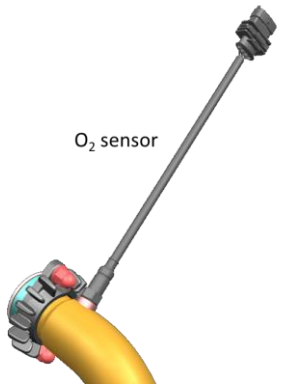
Diagnostic Trouble Code Trouble Shooting

P0053- HO_2S Heater Resistance Bank 1 Sensor 1

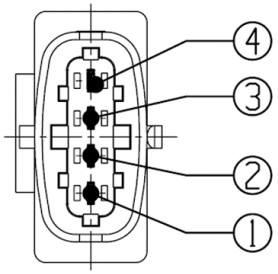
Overview:

P Code	P0053
Customer Symptom	MIL on continuously. Engine starting & drivability may be affected.
Fault effects (On vehicle)	Lambda sensor functioning is affected and system runs without closed loop lambda control. Exhaust emissions are affected.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 3rd driving cycle
Fault detection condition	This fault gets detected if Upstream lambda sensor heater resistance is out of range.
Probable trouble area	Wiring harness, Lambda sensor
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:

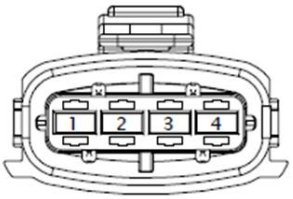


Connector View & Information:
Component Side:



Pin 1	Heater +
Pin 2	Heater GND
Pin 3	Sensor GND
Pin 4	Sensor Signal +

Wiring Harness side:

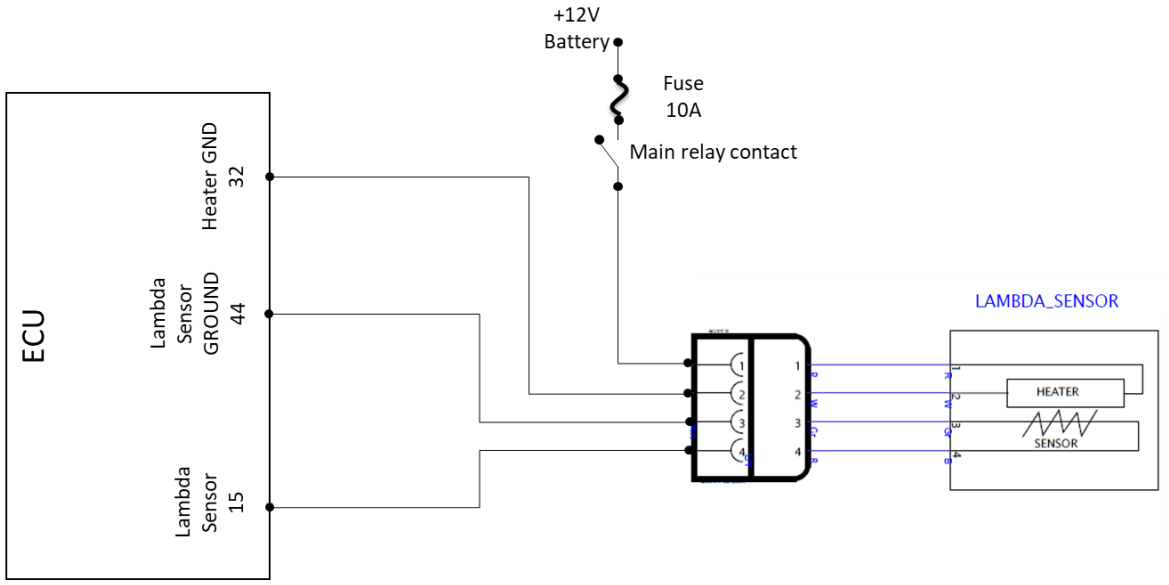


TO_LAMBDA_UPSTREAM_SENSOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE1564	0.75	Br/W	AA201592	AA201598	TWP17
2	WIRE150	0.75	L/W	AA201592	AA201598	TWP17
3	WIRE296	0.75	Pi/L	AA201592	AA201598	TWP16
4	WIRE132	0.75	L/Y	AA201592	AA201598	TWP16

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage on sensor connector?	Replace Sensor	Go to Step 2
2	Is there any corrosion/ sulphation observed on sensor connector pins or wiring harness pins?	Replace sensor/ wiring harness and check	Go to Step 3
3	Check resistance between sensor pin 1 & 2. (disconnect sensor to check) Is resistance between 9 ± 0.5 Ω	Go to Step 3	Check/ Replace wiring harness
4	Is sensor pin no 2 short circuited to any other circuit in harness?	Check/ Replace wiring harness	Go to Step 5
5	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 6
6	Is sensor physically damaged/ contaminated? Is there any leakage in exhaust system?	Replace sensor/ Rectify defect	Go to Step 7
7	Connect diagnostics tool & erase fault. Is fault still present?	Replace sensor if fault still present replace ECU	

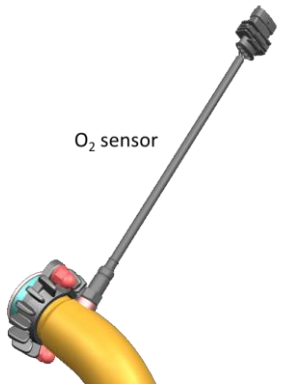
Diagnostic Trouble Code Trouble Shooting

P0132- O_2 Sensor Circuit High Voltage Bank 1 Sensor 1

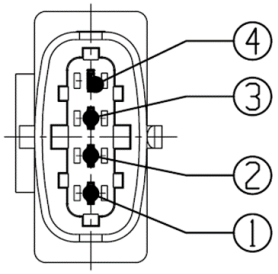
Overview:

P Code	P0132
Customer Symptom	MIL on continuously. Engine starting & drivability may be affected.
Fault effects (On vehicle)	Lambda sensor functioning is affected and system runs without closed loop lambda control. Exhaust emissions are affected.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 3rd driving cycle
Fault detection condition	This fault gets detected if sensor input pin to ECU is short circuited to +5V/ +12V .
Probable trouble area	Wiring harness, Lambda sensor, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:

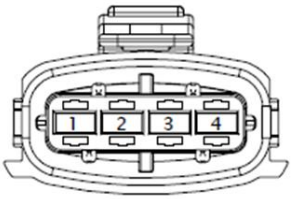


Connector View & Information:
Component Side:



Pin 1	Heater +
Pin 2	Heater GND
Pin 3	Sensor GND
Pin 4	Sensor Signal +

Wiring Harness side:

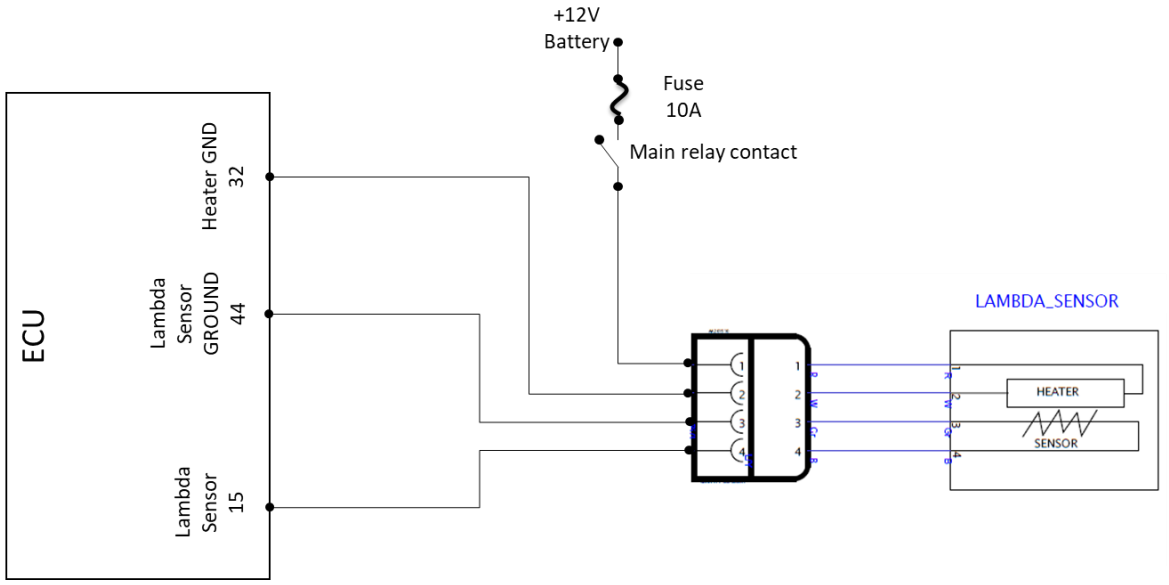


TO_LAMBDA_UPSTREAM_SENSOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE1564	0.75	Br/W	AA201592	AA201598	TWP17
2	WIRE150	0.75	L/W	AA201592	AA201598	TWP17
3	WIRE296	0.75	Pi/L	AA201592	AA201598	TWP16
4	WIRE132	0.75	L/Y	AA201592	AA201598	TWP16

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage on sensor connector?	Replace Sensor	Go to Step 2
2	Is there any corrosion/ sulphation observed on sensor connector pins or wiring harness pins?	Replace sensor/ wiring harness and check	Go to Step 3
3	Is there continuity between (disconnect sensor and ECU to check) ECU pin no 32 →Sensor Pin no 2, ECU pin no 44 →Sensor pin no 3, ECU pin no 15→Sensor pin no 4 *Check using multi-meter.*	Go to Step 3	Check/ Replace wiring harness
4	Is sensor pin no 4 short circuited to +5V/ +12V?	Check/ Replace wiring harness	Go to Step 5
5	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 6
6	Is sensor physically damaged/ contaminated? Is there any leakage in exhaust system?	Replace sensor/ Rectify defect	Go to Step 7
7	Connect diagnostics tool & erase fault. Is fault still present?	Replace sensor if fault still present replace ECU	

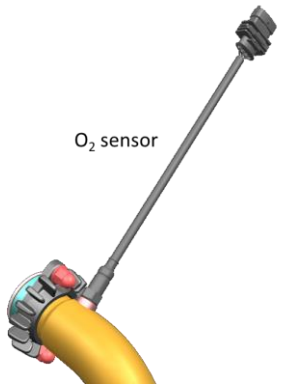
Diagnostic Trouble Code Trouble Shooting

P0131- O_2 Sensor Circuit Low Voltage Bank 1 Sensor 1

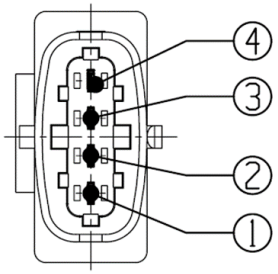
Overview:

P Code	P0131
Customer Symptom	MIL on continuously. Engine starting & drivability may be affected.
Fault effects (On vehicle)	Lambda sensor functioning is affected and system runs without closed loop lambda control. Exhaust emissions are affected.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 3rd driving cycle
Fault detection condition	This fault gets detected if sensor input pin to ECU is short circuited to GROUND.
Probable trouble area	Wiring harness, Lambda sensor, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:

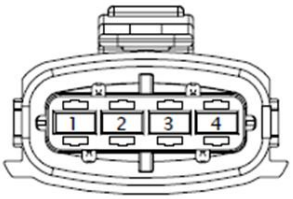


Connector View & Information:
Component Side:



Pin 1	Heater +
Pin 2	Heater GND
Pin 3	Sensor GND
Pin 4	Sensor Signal +

Wiring Harness side:

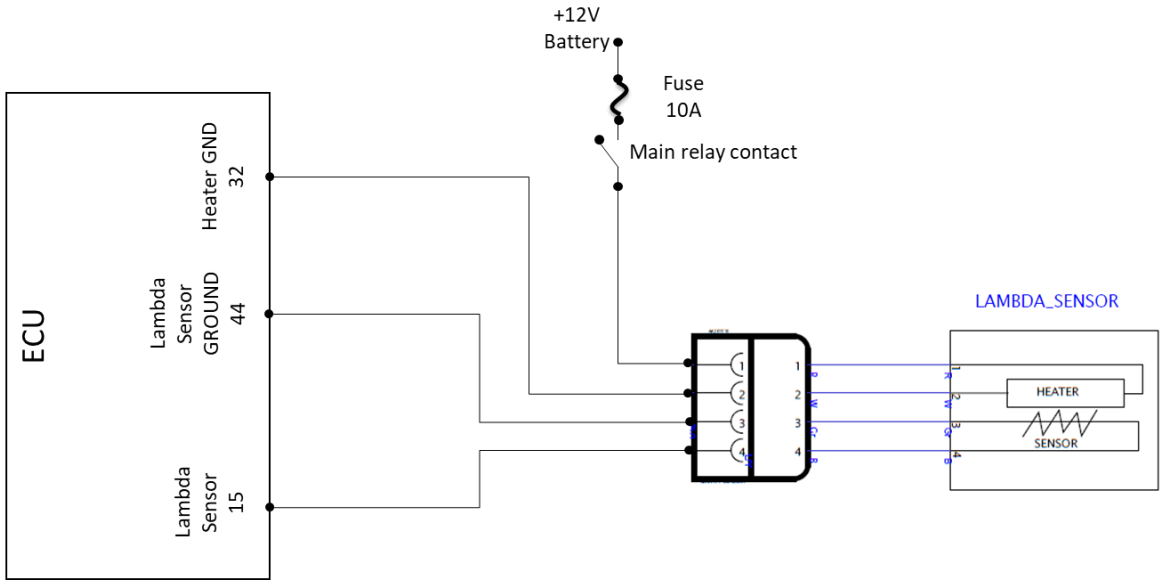


TO_LAMBDA_UPSTREAM_SENSOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE1564	0.75	Br/W	AA201592	AA201598	TWP17
2	WIRE150	0.75	L/W	AA201592	AA201598	TWP17
3	WIRE296	0.75	Pi/L	AA201592	AA201598	TWP16
4	WIRE132	0.75	L/Y	AA201592	AA201598	TWP16

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage on sensor connector?	Replace Sensor	Go to Step 2
2	Is there any corrosion/ sulphation observed on sensor connector pins or wiring harness pins?	Replace sensor/ wiring harness and check	Go to Step 3
3	Is there continuity between (disconnect sensor and ECU to check) ECU pin no 32 →Sensor Pin no 2, ECU pin no 44 →Sensor pin no 3, ECU pin no 15→Sensor pin no 4 *Check using multi-meter.*	Go to Step 3	Check/ Replace wiring harness
4	Is sensor pin no 4 short circuited to GROUND?	Check/ Replace wiring harness	Go to Step 5
5	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 6
6	Is sensor physically damaged/ contaminated? Is there any leakage in exhaust system?	Replace sensor/ Rectify defect	Go to Step 7
7	Connect diagnostics tool & erase fault. Is fault still present?	Replace sensor if fault still present replace ECU	

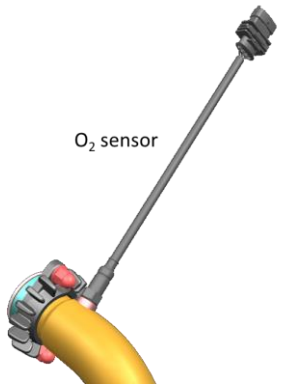
Diagnostic Trouble Code Trouble Shooting

P0130- O_2 Sensor Circuit Bank 1 Sensor 1

Overview:

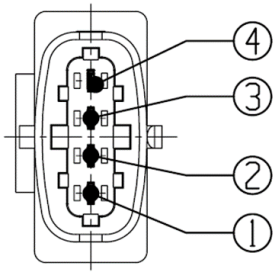
P Code	P0130
Customer Symptom	MIL on continuously. Engine starting & drivability may be affected.
Fault effects (On vehicle)	Lambda sensor functioning is affected and system runs without closed loop lambda control. Exhaust emissions are affected.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 3rd driving cycle
Fault detection condition	This fault gets detected if sensor input pin to ECU detects voltage <= 0.45 volts.
Probable trouble area	Wiring harness, Lambda sensor, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:



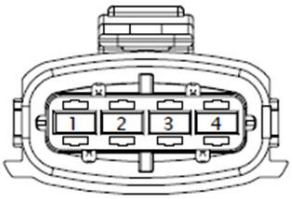
Connector View & Information:

Component Side:



Pin 1	Heater +
Pin 2	Heater GND
Pin 3	Sensor GND
Pin 4	Sensor Signal +

Wiring Harness side:

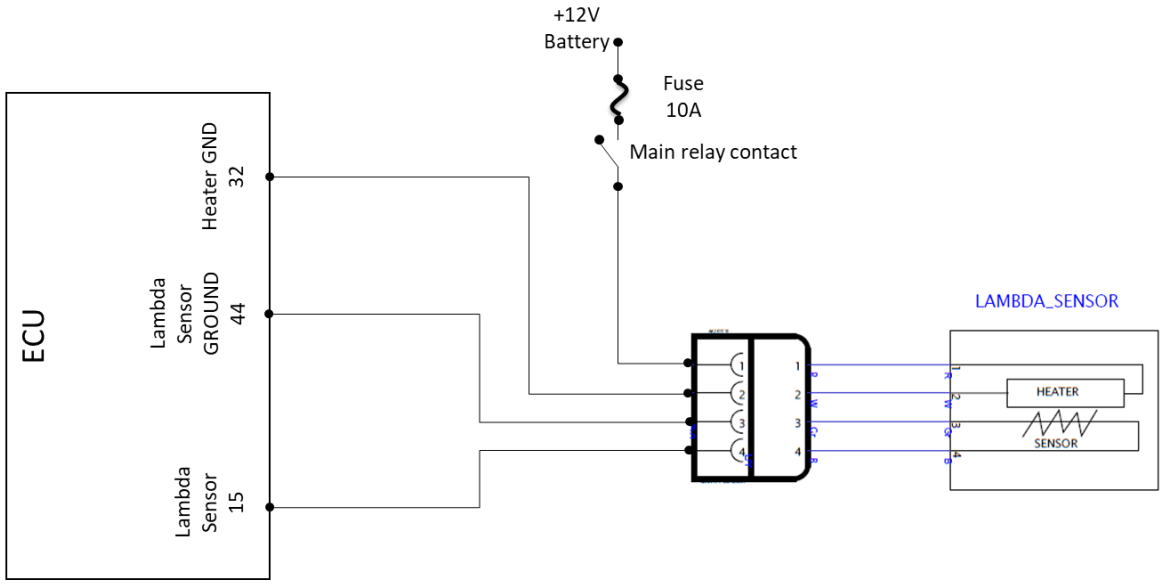


TO_LAMBDA_UPSTREAM_SENSOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE1564	0.75	Br/W	AA201592	AA201598	TWP17
2	WIRE150	0.75	L/W	AA201592	AA201598	TWP17
3	WIRE296	0.75	Pi/L	AA201592	AA201598	TWP16
4	WIRE132	0.75	L/Y	AA201592	AA201598	TWP16

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage on sensor connector?	Replace Sensor	Go to Step 2
2	Is there any corrosion/ sulphation observed on sensor connector pins or wiring harness pins?	Replace sensor/ wiring harness and check	Go to Step 3
3	Is there continuity between (disconnect sensor and ECU to check) ECU pin no 32 →Sensor Pin no 2, ECU pin no 44 →Sensor pin no 3, ECU pin no 15→Sensor pin no 4 *Check using multi-meter.*	Go to Step 3	Check/ Replace wiring harness
4	Is sensor pin no 4 short circuited to GROUND? Is sensor pin no 4 open circuit? *Check using multi-meter*	Check/ Replace wiring harness	Go to Step 5
5	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 6
6	Is sensor physically damaged/ contaminated? Is there any leakage in exhaust system?	Replace sensor/ Rectify defect	Go to Step 7
7	Connect diagnostics tool & erase fault. Is fault still present?	Replace sensor if fault still present replace ECU	

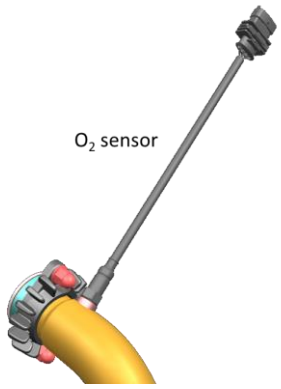
Diagnostic Trouble Code Trouble Shooting

P0134- O_2 Sensor Circuit No activity Detected Bank 1 Sensor 1

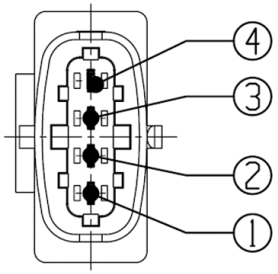
Overview:

P Code	P0134
Customer Symptom	MIL on continuously. Engine starting & drivability may be affected.
Fault effects (On vehicle)	Lambda sensor functioning is affected and system runs without closed loop lambda control. Exhaust emissions are affected.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 3rd driving cycle
Fault detection condition	This fault gets detected if sensor input pin to ECU detects no variation in voltage.
Probable trouble area	Wiring harness, Lambda sensor, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:

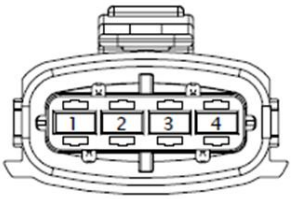


Connector View & Information:
Component Side:



Pin 1	Heater +
Pin 2	Heater GND
Pin 3	Sensor GND
Pin 4	Sensor Signal +

Wiring Harness side:

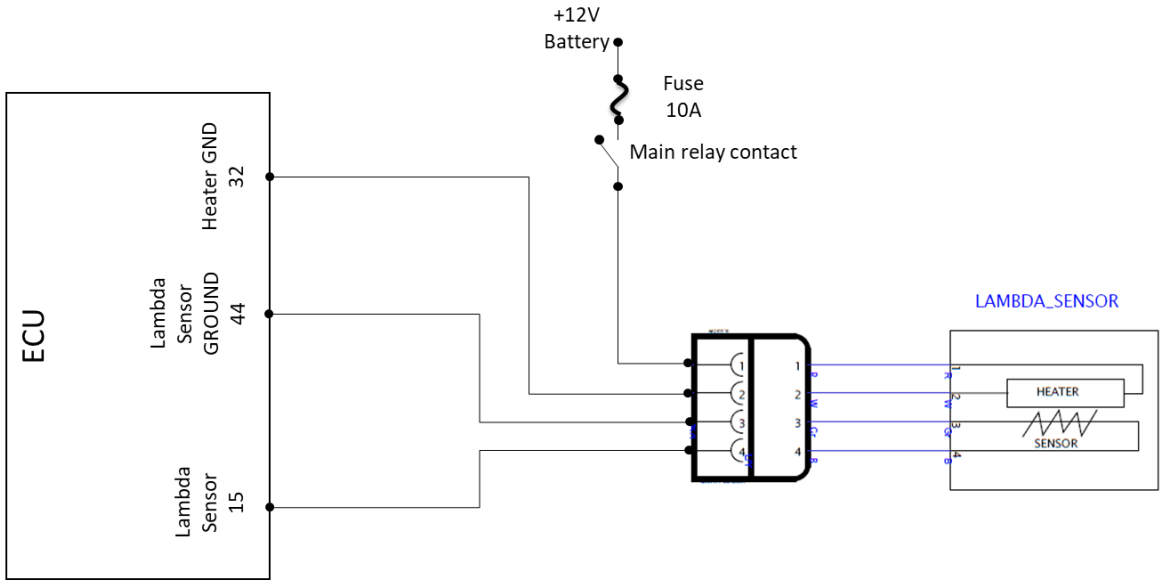


TO_LAMBDA_UPSTREAM_SENSOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE1564	0.75	Br/W	AA201592	AA201598	TWP17
2	WIRE150	0.75	L/W	AA201592	AA201598	TWP17
3	WIRE296	0.75	Pi/L	AA201592	AA201598	TWP16
4	WIRE132	0.75	L/Y	AA201592	AA201598	TWP16

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage on sensor connector?	Replace Sensor	Go to Step 2
2	Is there any corrosion/ sulphation observed on sensor connector pins or wiring harness pins?	Replace sensor/ wiring harness and check	Go to Step 3
3	Is there continuity between (disconnect sensor and ECU to check) ECU pin no 32 →Sensor Pin no 2, ECU pin no 44 →Sensor pin no 3, ECU pin no 15→Sensor pin no 4 *Check using multi-meter.*	Go to Step 3	Check/ Replace wiring harness
4	Is sensor pin no 4 short circuited to GROUND? Is sensor pin no 4 open circuit? *Check using multi-meter*	Check/ Replace wiring harness	Go to Step 5
5	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 6
6	Is sensor physically damaged/ contaminated? Is there any leakage in exhaust system?	Replace sensor/ Rectify defect	Go to Step 7
7	Connect diagnostics tool & erase fault. Is fault still present?	Replace sensor if fault still present replace ECU	

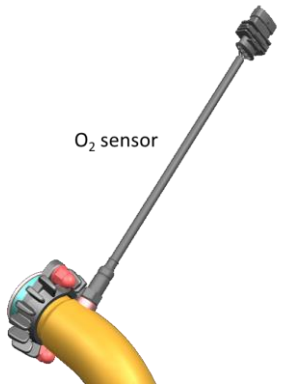
Diagnostic Trouble Code Trouble Shooting

P0133- O_2 Sensor Circuit No activity Detected Bank 1 Sensor 1

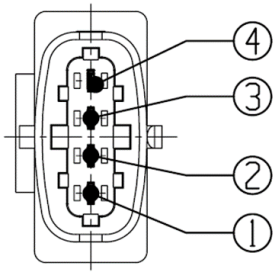
Overview:

P Code	P0133
Customer Symptom	MIL on continuously. Engine starting & drivability may be affected.
Fault effects (On vehicle)	Lambda sensor functioning is affected and system runs without closed loop lambda control. Exhaust emissions are affected.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 3rd driving cycle
Fault detection condition	This fault gets detected slow response from oxygen sensor if delta cycle duration exceeds threshold of 2.2 s.
Probable trouble area	Wiring harness, Lambda sensor, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:

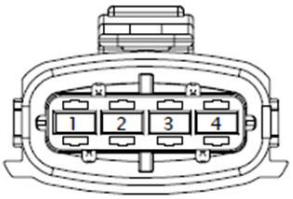


Connector View & Information:
Component Side:



Pin 1	Heater +
Pin 2	Heater GND
Pin 3	Sensor GND
Pin 4	Sensor Signal +

Wiring Harness side:

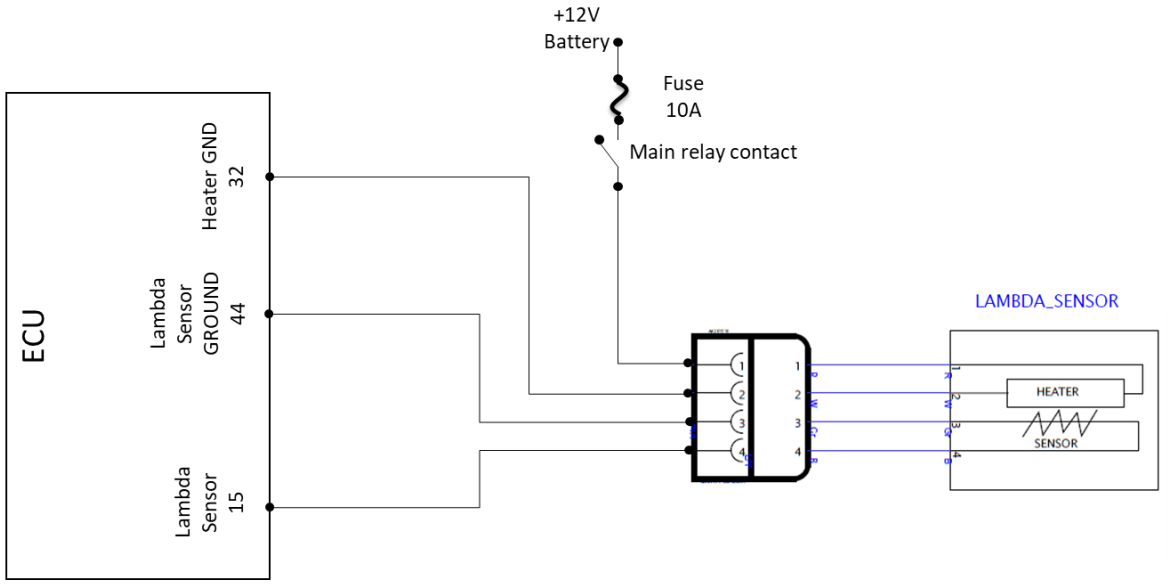


TO_LAMBDA_UPSTREAM_SENSOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE1564	0.75	Br/W	AA201592	AA201598	TWP17
2	WIRE150	0.75	L/W	AA201592	AA201598	TWP17
3	WIRE296	0.75	Pi/L	AA201592	AA201598	TWP16
4	WIRE132	0.75	L/Y	AA201592	AA201598	TWP16

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage on sensor connector?	Replace Sensor	Go to Step 2
2	Is there any corrosion/ sulphation observed on sensor connector pins or wiring harness pins?	Replace sensor/ wiring harness and check	Go to Step 3
3	Is there continuity between (disconnect sensor and ECU to check) ECU pin no 32 →Sensor Pin no 2, ECU pin no 44 →Sensor pin no 3, ECU pin no 15→Sensor pin no 4 *Check using multi-meter.*	Go to Step 3	Check/ Replace wiring harness
4	Is sensor pin no 4 short circuited to GROUND? Is sensor pin no 4 open circuit? *Check using multi-meter*	Check/ Replace wiring harness	Go to Step 5
5	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 6
6	Is sensor physically damaged/ contaminated? Is there any leakage in exhaust system?	Replace sensor/ Rectify defect	Go to Step 7
7	Connect diagnostics tool & erase fault. Is fault still present?	Replace sensor if fault still present replace ECU	

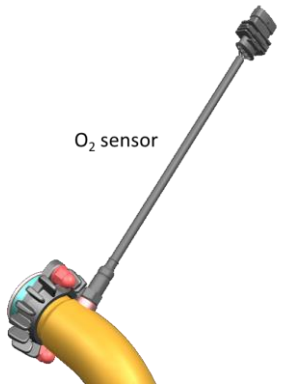
Diagnostic Trouble Code Trouble Shooting

P2231- O_2 Sensor signal Circuit shorted to Heater circuit Bank 1 Sensor 1

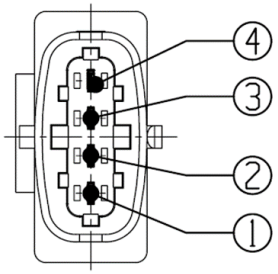
Overview:

P Code	P2231
Customer Symptom	MIL on continuously. Engine starting & drivability may be affected.
Fault effects (On vehicle)	Lambda sensor functioning is affected and system runs without closed loop lambda control. Exhaust emissions are affected.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 3rd driving cycle
Fault detection condition	This fault gets detected if Lambda sensor signal is short circuited to heater circuit.
Probable trouble area	Wiring harness, Lambda sensor, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

Component Location & Image:

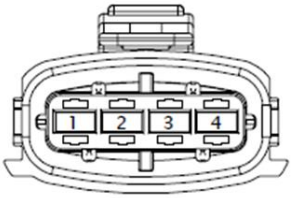


Connector View & Information:
Component Side:



Pin 1	Heater +
Pin 2	Heater GND
Pin 3	Sensor GND
Pin 4	Sensor Signal +

Wiring Harness side:

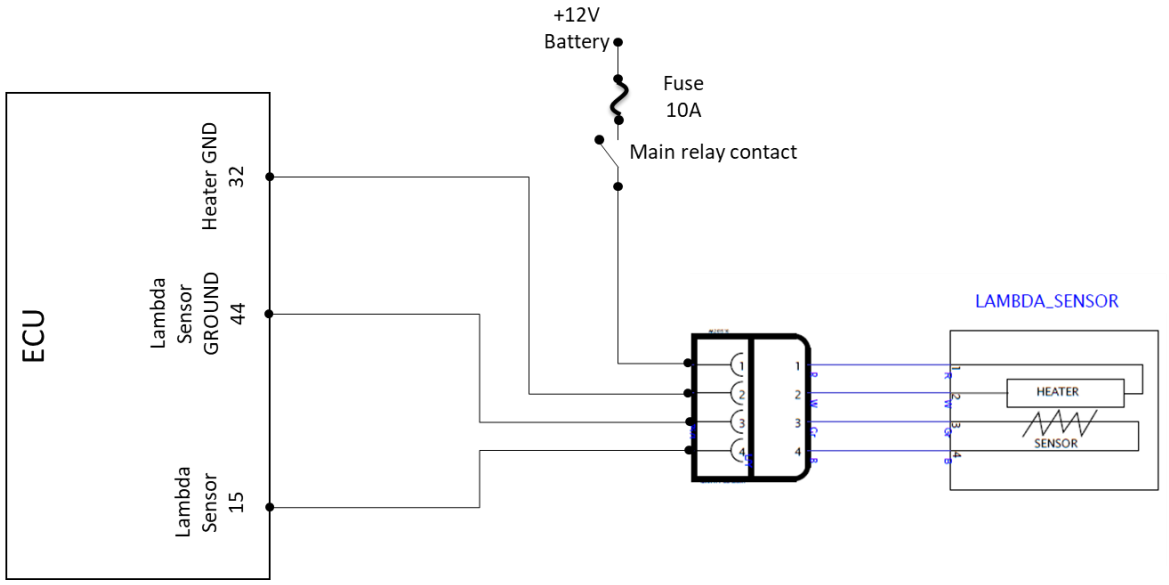


TO_LAMBDA_UPSTREAM_SENSOR

Cav	No.	CSA	Col.	Term.	Seal	Multicore
1	WIRE1564	0.75	Br/W	AA201592	AA201598	TWP17
2	WIRE150	0.75	L/W	AA201592	AA201598	TWP17
3	WIRE296	0.75	Pi/L	AA201592	AA201598	TWP16
4	WIRE132	0.75	L/Y	AA201592	AA201598	TWP16

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any terminal bend/ damage on sensor connector?	Replace Sensor	Go to Step 2
2	Is there any corrosion/ sulphation observed on sensor connector pins or wiring harness pins?	Replace sensor/ wiring harness and check	Go to Step 3
3	Is there continuity between (disconnect sensor and ECU to check) ECU pin no 32 →Sensor Pin no 2, ECU pin no 44 →Sensor pin no 3, ECU pin no 15→Sensor pin no 4 *Check using multi-meter.*	Go to Step 3	Check/ Replace wiring harness
4	Is sensor pin no 4 short circuited to Pin 2 or Pin 1? Is sensor pin no 4 open circuit? *Check using multi-meter*	Check/ Replace wiring harness	Go to Step 5
5	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 6
6	Is sensor physically damaged/ contaminated? Is there any leakage in exhaust system?	Replace sensor/ Rectify defect	Go to Step 7
7	Connect diagnostics tool & erase fault. Is fault still present?	Replace sensor if fault still present replace ECU	

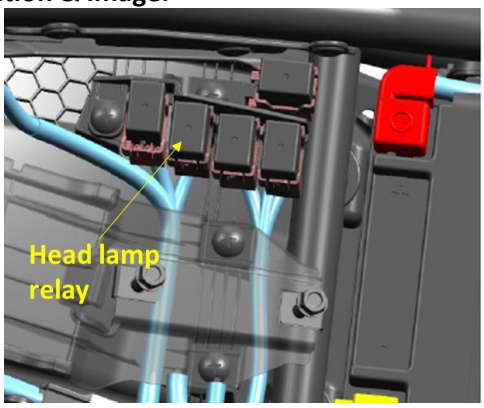
Diagnostic Trouble Code Trouble Shooting

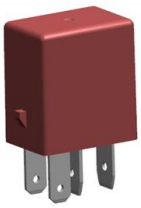
P01511- Headlamp relay coil circuit open

Overview:

Error Code	P1511
Customer Symptom	Headlamp not working, USB not working.
Fault effects (On vehicle)	ECU disables/ can not activate headlamp relay due to error.
Lamp Status (If any)	MIL ON in 1st drive cycle
Fault detection condition	This fault gets reported if headlamp relay coil circuit gets open circuit.
Probable trouble area	Wiring harness, Headlamp relay, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

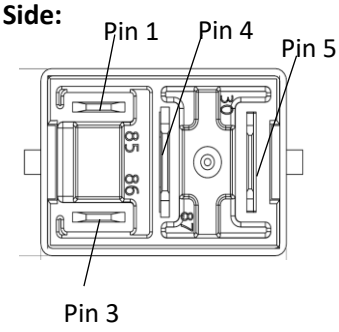
Component Location & Image:





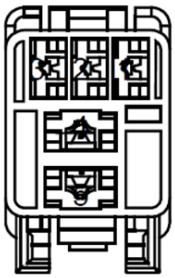
Connector View & Information:

Component Side:



Pin 1	ECU signal
Pin 2	Not connected
Pin 3	12V supply after main relay
Pin 4	Output to headlamp
Pin 5	+12V supply

Wiring Harness Side:

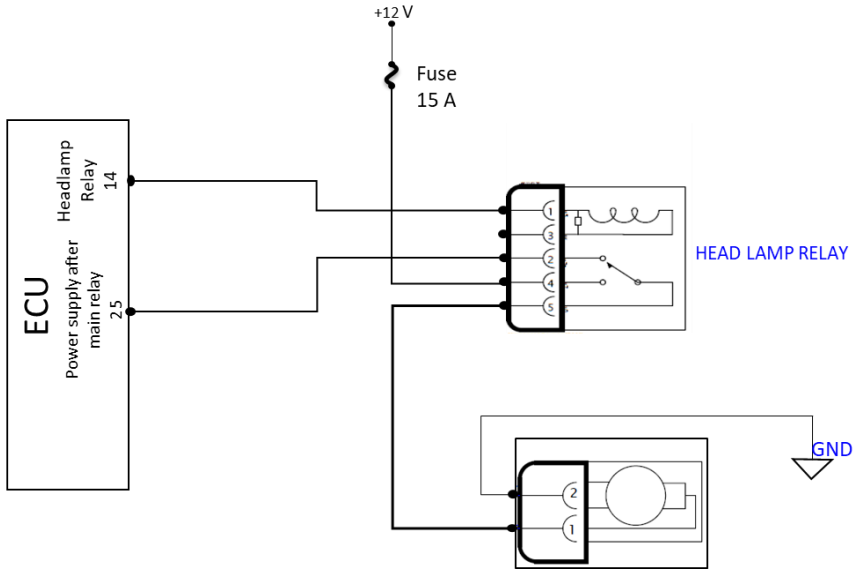


TO_HEAD_LAMP_RELAY

Cav	No.	CSA	Col.	Term.
1	WIRE175	0.5	W/Br	JY402264
2	-	-	-	-
3	WIRE1565	0.5	Br/W	JY402264
4	WIRE6200	0.75	Y/L	JY402265
5	WIRE1501	0.75	Br	JY402265

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on relay terminals?	Replace the relay and check	Go to Step 2
2	Is there any terminal bend/ damage inside relay connector?	Replace the relay and check	Go to Step 3
3	Disconnect the relay and ECU then check following. Is ECU pin no 14 open circuit?	Check/ Replace wiring harness	Go to Step 4
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 5
5	After electrical rectification, erase fault in diagnostics tool and check again. Is fault still present?	Replaced relay/ Replace ECU	

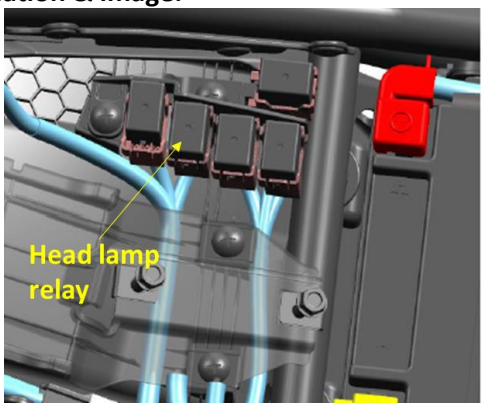
Diagnostic Trouble Code Trouble Shooting

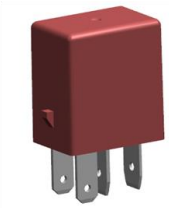
P1509- Headlamp relay coil circuit high

Overview:

Error Code	P1509
Customer Symptom	Headlamp not working, USB not working.
Fault effects (On vehicle)	ECU disables/ can not activate headlamp relay due to error.
Lamp Status (If any)	MIL ON in 1st drive cycle
Fault detection condition	This fault gets reported if headlamp relay coil circuit gets short to 12V supply.
Probable trouble area	Wiring harness, Starter interlock relay, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

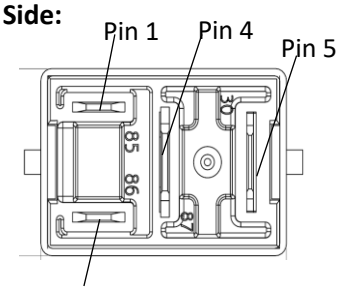
Component Location & Image:





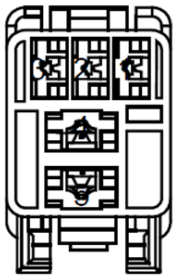
Connector View & Information:

Component Side:



Pin 1	ECU signal
Pin 2	Not connected
Pin 3	12V supply after main relay
Pin 4	Output to headlamp
Pin 5	+12V supply

Wiring Harness Side:

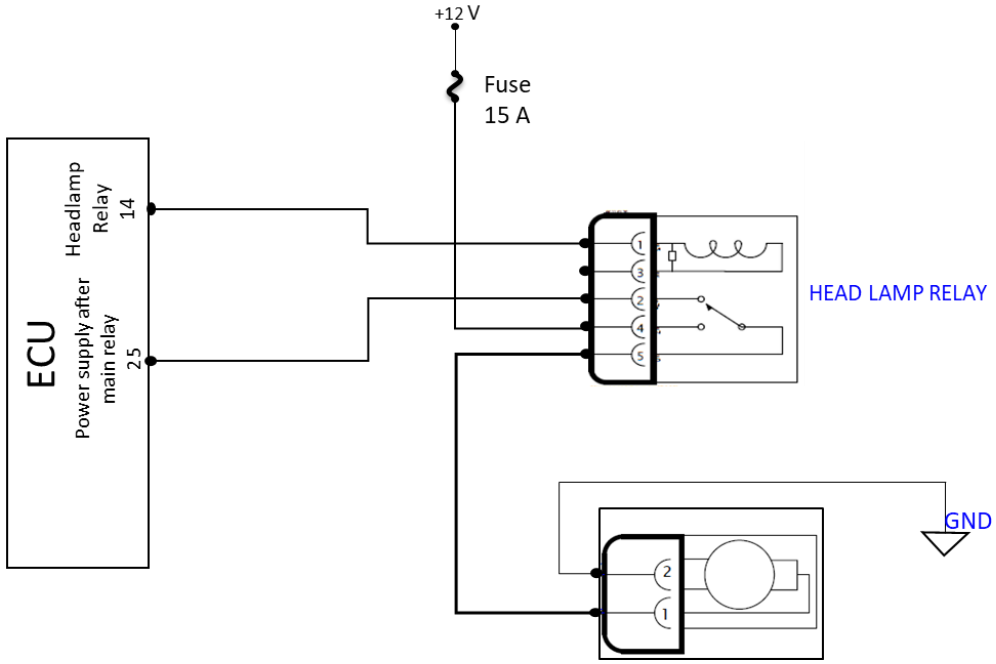


TO_HEAD_LAMP_RELAY

Cav	No.	CSA	Col.	Term.
1	WIRE175	0.5	W/Br	JY402264
2	-	-	-	-
3	WIRE1565	0.5	Br/W	JY402264
4	WIRE6200	0.75	Y/L	JY402265
5	WIRE1501	0.75	Br	JY402265

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

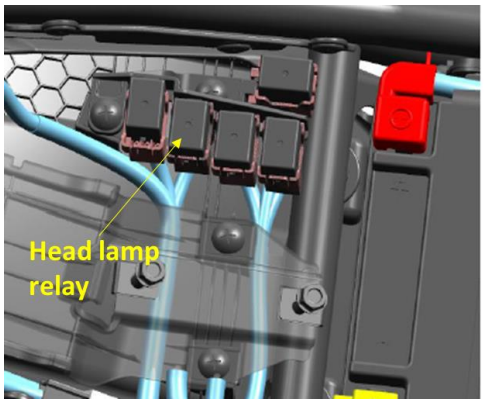
Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on relay terminals or radiator fan terminals?	Replace the relay and check	Go to Step 2
2	Is there any terminal bend/ damage inside relay connector or radiator fan connector?	Replace the relay and check	Go to Step 3
3	Disconnect the relay and ECU then check following. Is ECU pin no 14 short circuit to 12V supply?	Short ckt in harness. Check/ Replace wiring harness	Go to Step 4
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 5
5	After electrical rectification, erase fault in diagnostics tool and check again. Is fault still present?	Replaced relay/ Replace ECU	

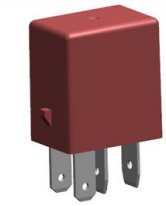
P1510- Headlamp relay coil circuit low

Overview:

Error Code	P1510
Customer Symptom	Headlamp not working, USB not working.
Fault effects (On vehicle)	ECU disables/ can not activate headlamp relay due to error.
Lamp Status (If any)	MIL ON in 1st drive cycle
Fault detection condition	This fault gets reported if headlamp relay coil circuit gets short to GROUND.
Probable trouble area	Wiring harness, Starter interlock relay, ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

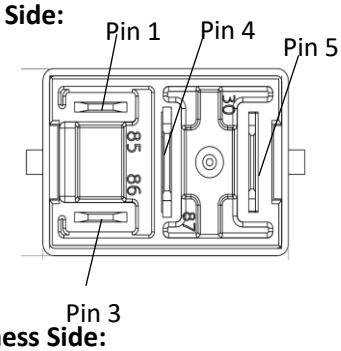
Component Location & Image:





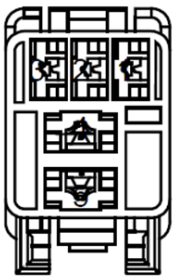
Connector View & Information:

Component Side:



Pin 1	ECU signal
Pin 2	Not connected
Pin 3	12V supply after main relay
Pin 4	Output to starter relay
Pin 5	+12V supply

Wiring Harness Side:

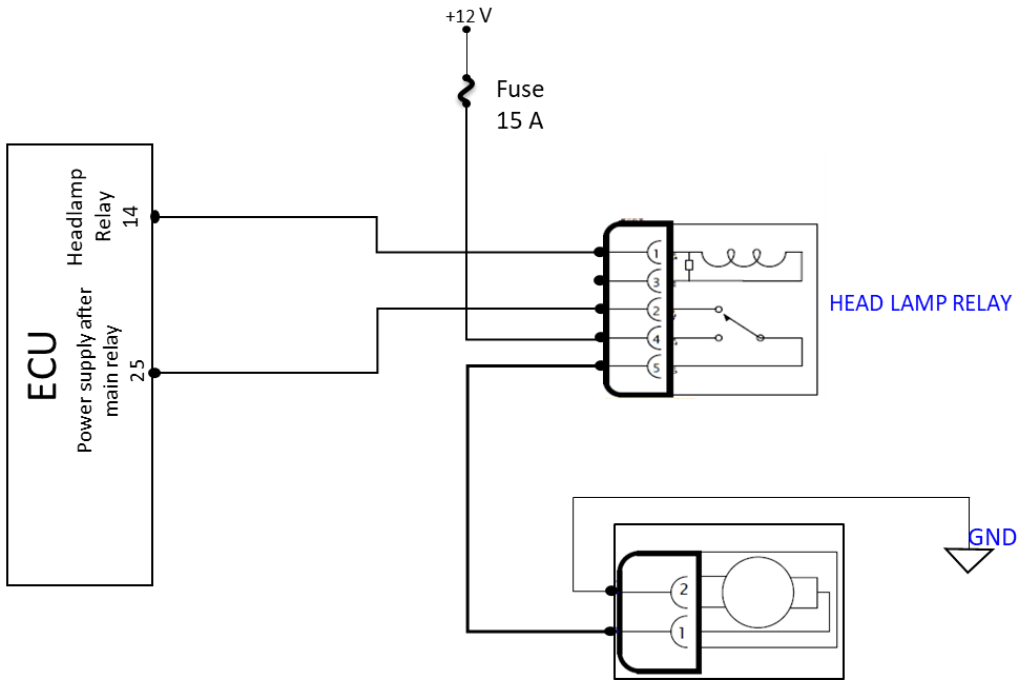


TO_HEAD_LAMP_RELAY

Cav	No.	CSA	Col.	Term.
1	WIRE175	0.5	W/Br	JY402264
2	-	-	-	-
3	WIRE1565	0.5	Br/W	JY402264
4	WIRE6200	0.75	Y/L	JY402265
5	WIRE1501	0.75	Br	JY402265

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on relay terminals or radiator fan terminals?	Replace the relay and check	Go to Step 2
2	Is there any terminal bend/ damage inside relay connector or radiator fan connector?	Replace the relay and check	Go to Step 3
3	Disconnect the relay and ECU then check following. Is ECU pin no 14 short circuit to GROUND?	Short ckt in harness. Check/ Replace wiring harness	Go to Step 4
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 5
5	After electrical rectification, erase fault in diagnostics tool and check again. Is fault still present?	Replaced relay/ Replace ECU	

Diagnostic Trouble Code Trouble Shooting

P0606- Control Module Processor

P060A - Internal control module monitoring processor performance

P060B - Internal Control Module A/D Processing Performance

P060D - Internal Control Module Accelerator Pedal Position Performance

P060E - Internal Control Module Throttle Position

P061C - Internal Control Module Main Processor Performance

P061F - Internal Control Module Throttle Actuator Controller Performance

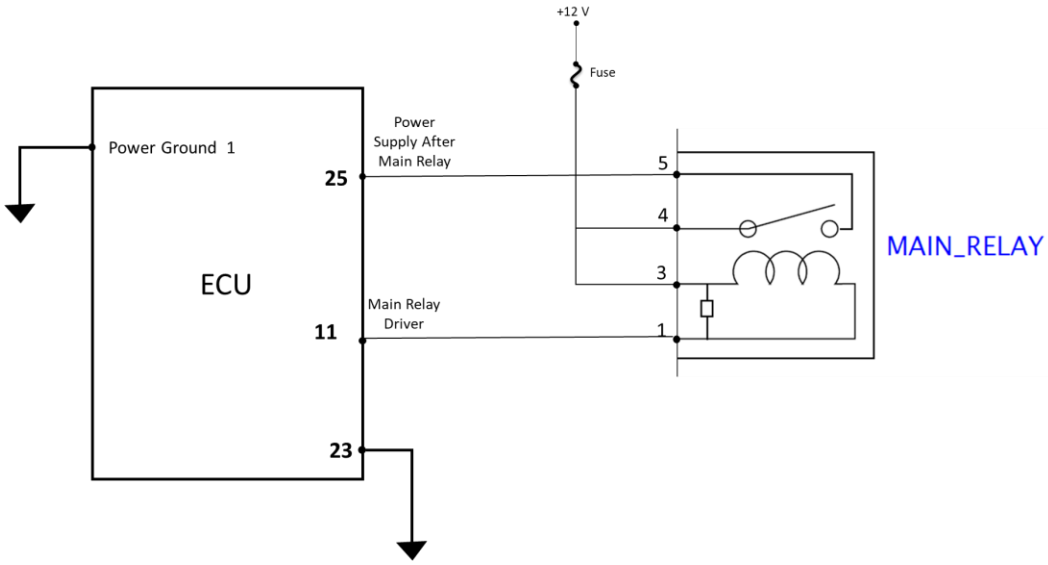
These error codes are internal to ECU and very rare to get reported.
Basic electrical checks can be done for ECU power supply and ground related points and if no abnormality is observed, ECU replacement is needed.

Overview:

Error Code	P0060A/P060B/P060D/P060E/P061C/P061F
Customer Symptom	Engine stalls while running, engine do not start.
Fault effects (On vehicle)	ECU not working. Engine not running and other vehicle parameters not available.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 1st driving cycle
Fault detection condition	This fault gets detected if ECU detects internal error for one or more modules.
Probable trouble area	Battery, Regulator Rectifier, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

Diagnostic Trouble Code Trouble Shooting

Circuit Interface:



Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on ECU terminals?	Replace the relay and check	Go to Step 2
2	Is there any terminal bend/ damage inside ECU terminals?	Replace the relay and check	Go to Step 3
3	Disconnect the ECU then check following. Is +12V supply available at Pin no 25? Is Ground available at Pin 1 & 23?	Go to Step 4	Open ckt in harness. Check/ Replace wiring harness
4	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 5
5	After electrical rectification, erase fault in diagnostics tool and check again. Is fault still present?	Replaced ECU and check	

Diagnostic Trouble Code Trouble Shooting

U0418- Invalid Data Received From Brake System Control Module

Overview:

Error Code	U0418
Customer Symptom	MIL is ON. ABS working intermittent.
Fault effects (On vehicle)	ABS functionality may get affected. Traction control functionality may get affected. Wheel speed information to ECU not available or invalid.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 1st driving cycle
Fault detection condition	This fault gets detected if ECU detects invalid CAN signal from ABS ECU.
Probable trouble area	ABS, EMS ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

U0423 - Invalid Data Received From Instrument Panel Cluster Control

Overview:

Error Code	U0423
Customer Symptom	Engine RPM doesn't increase beyond a limit.
Fault effects (On vehicle)	Limp home mode activated. EMS ECU doesn't received immobilizer related signal from Instrument cluster.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 1st driving cycle
Fault detection condition	This fault gets detected if ECU do not receive immobilizer related signal from instrument cluster within defined time frame.
Probable trouble area	Instrument cluster, EMS ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

U0416 - Invalid Data Received From Vehicle Dynamics Control Module

Overview:

Error Code	U0416
Customer Symptom	Traction control not working, MIL is ON.
Fault effects (On vehicle)	Traction control functionality may get affected.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 1st driving cycle
Fault detection condition	This fault gets detected if ECU do not receive Traction control related signal from ABS ECU within defined time frame.
Probable trouble area	ABS, EMS ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

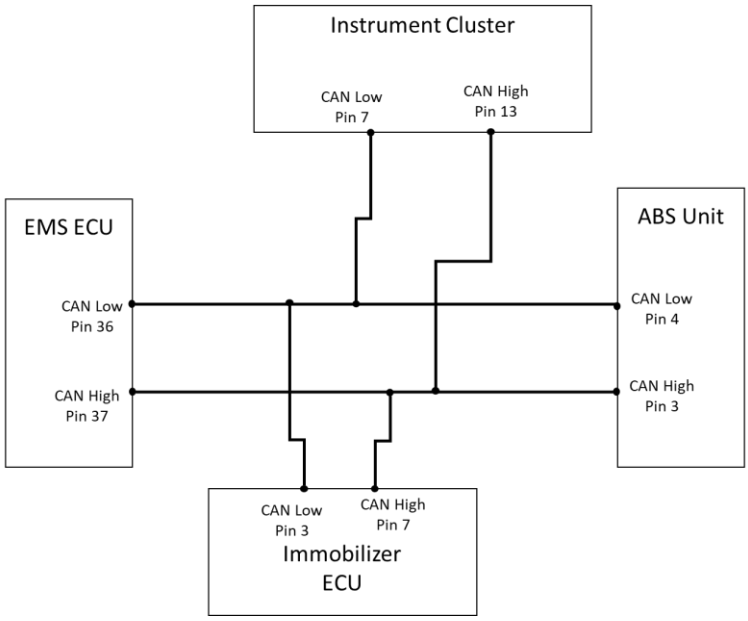
Diagnostic Trouble Code Trouble Shooting

U0167 - Lost Communication with vehicle Immobilizer Control Module

Overview:

Error Code	U0167
Customer Symptom	Engine not starting.
Fault effects (On vehicle)	ECU do not get authentication signal from Immobilizer hence engine start disabled.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 1st driving cycle
Fault detection condition	This fault gets detected if ECU do not receive Traction control related signal from ABS ECU within defined time frame.
Probable trouble area	ABS, EMS ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

Circuit Interface:



Diagnostic Trouble Code Trouble Shooting

Troubleshooting:

Step	Checkpoint	If Yes	If No
1	Is there any rust/ oxidation observed on ECU terminals?	Replace the relay and check	Go to Step 2
2	Is there any terminal bend/ damage inside ECU terminals?	Replace the relay and check	Go to Step 3
3	Disconnect all ECUs then check following. Is wire continuity available between all CAN low pins? *Check using multi-meter.*	Go to Step 4	Open ckt in harness. Check/ Replace wiring harness
4	Disconnect all ECUs then check following. Is wire continuity available between all CAN high pins? *Check using multi-meter.*	Go to Step 5	Open ckt in harness. Check/ Replace wiring harness
5	Is there any damage/ cut/ pinching of wiring harness to surrounding parts?	Check/ Replace wiring harness	Go to Step 5
6	After electrical rectification, erase fault in diagnostics tool and check again. Is fault still present?	Replaced ECU and check	

Diagnostic Trouble Code Trouble Shooting

U0326 - Software Incompatibility with Vehicle Immobilizer Control Module

Overview:

Error Code	U0326
Customer Symptom	Engine not starting.
Fault effects (On vehicle)	ECU do not get authentication signal from Immobilizer hence engine start disabled.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 1st driving cycle
Fault detection condition	This fault gets detected if ECU hardware/software is not supported with Immobilizer.
Probable trouble area	EMS ECU
Healing condition	Engine running and 3 drive cycles after fault rectification

Troubleshooting:

- Check if correct ECU hardware is used in the vehicle.
- Check if correct ECU hex file is flashed in the vehicle.
- If fault persists, replace EMS ECU and check.

Diagnostic Trouble Code Trouble Shooting

P0501 - Vehicle Speed Sensor "A"

Overview:

Error Code	P0501
Customer Symptom	No visible difference. MIL always ON.
Fault effects (On vehicle)	ECU do not get front wheel speed data from ABS unit and disables speed based strategies. Speed acquisition switched to other wheel, if available.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 3rd driving cycle
Fault detection condition	This fault gets detected if ECU do not receive Front wheel speed input over CAN from ABS ECU within defined time frame. Speed acquisition switched to other wheel, if available.
Probable trouble area	ABS, EMS ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

P2158 - Vehicle Speed Sensor "B"

Overview:

Error Code	P2158
Customer Symptom	No visible difference. MIL always ON.
Fault effects (On vehicle)	ECU do not get Rear wheel speed data from ABS unit and disables speed based strategies. Speed acquisition switched to other wheel, if available.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 3rd driving cycle
Fault detection condition	This fault gets detected if ECU do not receive Rear wheel speed input over CAN from ABS ECU within defined time frame.
Probable trouble area	ABS, EMS ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

Troubleshooting (P0501 & P2158):

- Check if correct ECU hardware is used in the vehicle.
- Check if correct ECU hex file is flashed in the vehicle.
- Check if ABS ECU has reported any wheel speed sensor related error codes.
- Check CAN Low & CAN high lines in wiring harness.
- If fault persists, replace EMS ECU and check.

Diagnostic Trouble Code Trouble Shooting

P0513 - Incorrect Immobilizer Key

Overview:

Error Code	P0513
Customer Symptom	Engine not starting, MIL ON
Fault effects (On vehicle)	ECU disables engine starting due to invalid key received from Immobilizer.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 1st driving cycle
Fault detection condition	This fault gets detected if ECU do not receive Front wheel speed input over CAN from ABS ECU within defined time frame. Speed acquisition switched to other wheel, if available.
Probable trouble area	ABS, EMS ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

P0633 - Immobilizer Key Not Programmed - ECM/PCM

Overview:

Error Code	P0633
Customer Symptom	Engine RPM gets limited, MIL ON
Fault effects (On vehicle)	Limp-home mode activated as ECU pairing with Immobiilzer not done.
Lamp Status (If any)	Malfunction Indication Lamp (MIL) ON in 1st driving cycle
Fault detection condition	This fault gets detected if ECU do not receive Rear wheel speed input over CAN from ABS ECU within defined time frame.
Probable trouble area	ABS, EMS ECU, Wiring harness
Healing condition	Engine running and 3 drive cycles after fault rectification

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