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**P0192-00: Rail pressure Sensor Short circuit to ground**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0192-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	Torque reduction

**Checkpoints:**

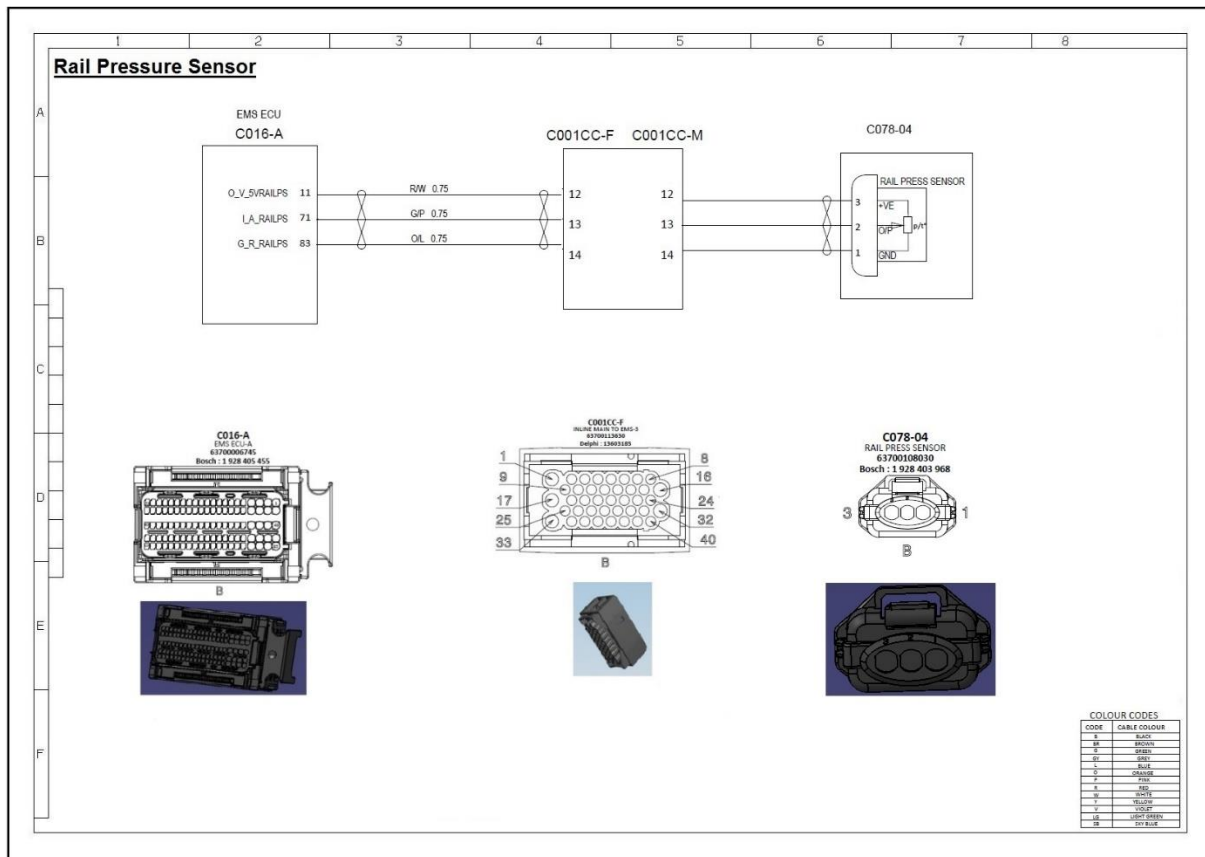
1. Check Battery Voltage.
2. Check Rail pressure sensor pins for damage
3. Check Rail pressure sensor connector for damage.
4. Check Rail pressure signal lines for continuity.

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check connector if rail pressure sensor is connected properly to the wire harness connector	
Step 3	If connector found loose in step 2 then fix is properly & go to Step 13	
Step 4	If the error is present check the connector pins from both side i.e. sensor side & wire harness side	
Step 5	If pins are damaged then go to Step No. 12	
Step 6	If error still present go to Step 7	
Step 7	Check the wire harness for any pin / wire back-out from connector, if yes go to Step 8	
Step 8	Fix the back-out cables in proper positions in connector & go to Step 13	
Step 9	If error is still present, check the continuity between pin 2 of rail pressure sensor to A71.	
Step 10	If continuity is OK in Step 9 then go to Step 12 else go to Step 11	
Step 11	Check the signal line for short to ground i.e. continuity between Pin2 of rail pressure sensor to A83. If yes, change the cable with new one & go to Step 13.	
Step 12	Change the rail pressure sensor with new one	
Step 13	Check the DTC	



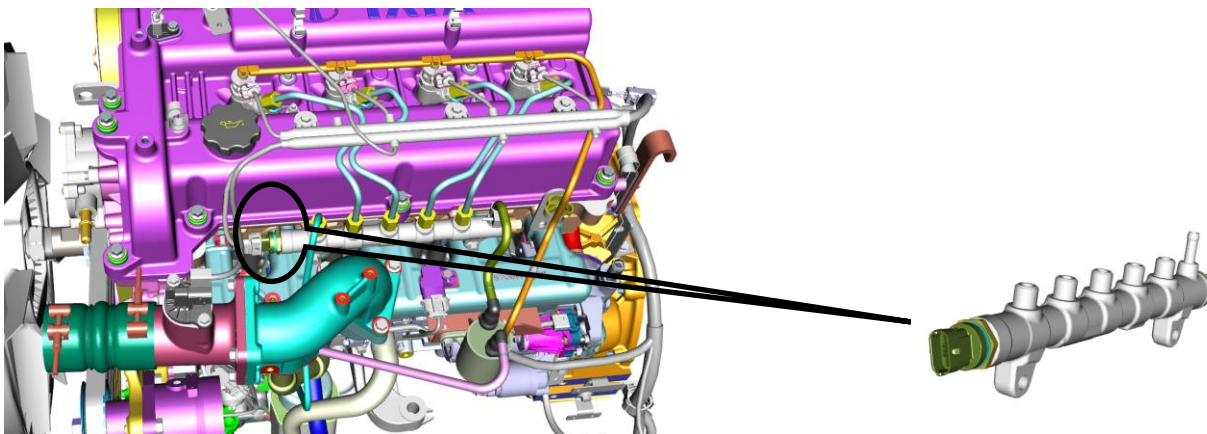
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS monitors the internal fuel pressure of common rail using Rail pressure sensor. It is an analog input type with 3-wires and it gives output voltage in proportion to the internal fuel pressure. This signal is used by EMS to adjust the pressure of rail to the required value. Check for the continuity between EMS and Sensor by referring above schematic.

#### Location & Component Image:





**P0193-00: Rail pressure sensor Short circuit to battery or Open circuit**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0193-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	Torque reduction

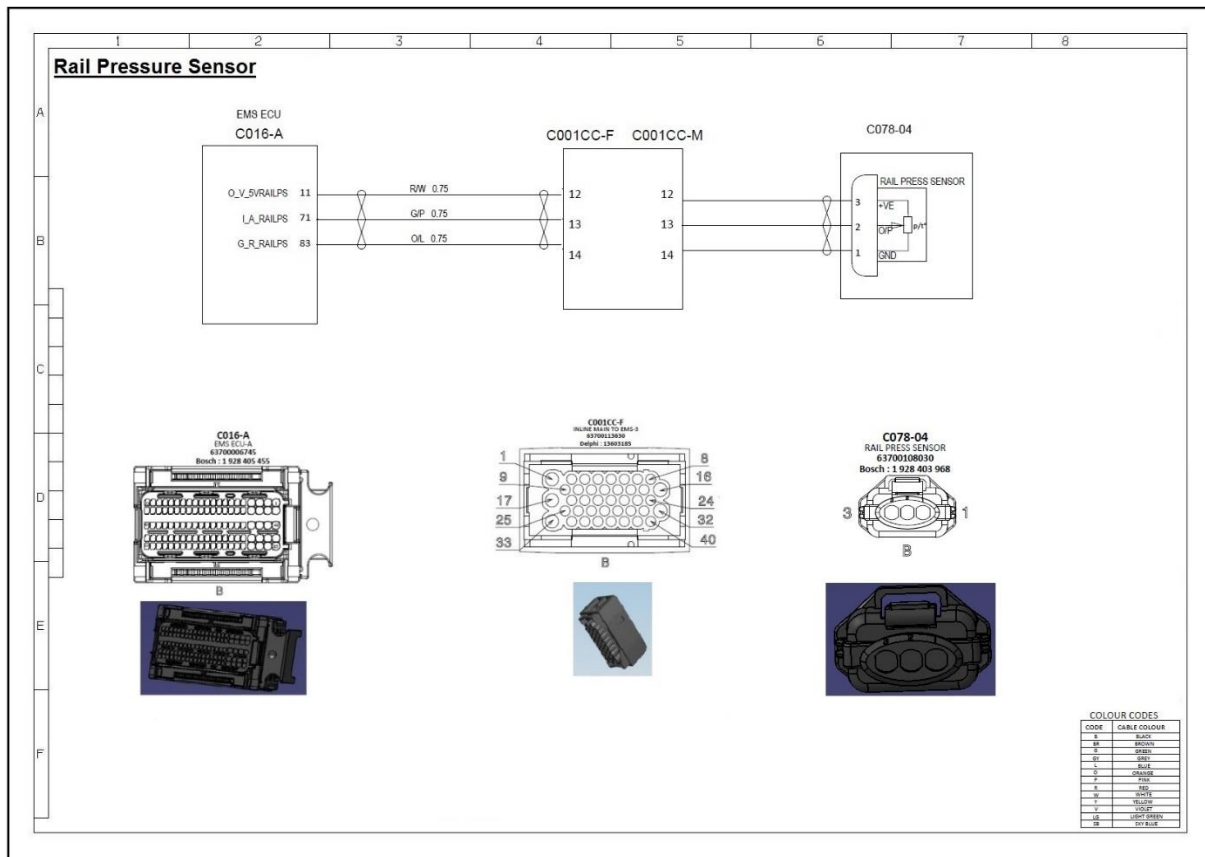
**Checkpoints:**

1. Check Battery Voltage.
2. Check Rail pressure sensor pins for damage
3. Check Rail pressure sensor connector for damage.
4. Check Rail pressure signal lines for continuity.

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check connector of rail pressure sensor is connected properly to the wire harness connector	
Step 3	If connector found loses in step 2 then fix is properly & go to Step 13	
Step 4	If the error is present check the connector pins from both side i.e. sensor side & wire harness side	
Step 5	If pins are damaged then go to Step No. 12	
Step 6	If error still present go to Step 7	
Step 7	Check the wire harness for any pin / wire back-out from connector, if yes go to Step 8	
Step 8	Fix the back-out cables in proper positions in connector & go to Step 13	
Step 9	If error is still present, check the continuity between pin 2 of rail pressure sensor to A71.	
Step 10	If continuity is OK in Step 7 then go to Step 12 else go to Step 11	
Step 11	Check the signal line for short to battery or Open circuit i.e. Pin2 to A11. If yes change the cable with new one & go to Step 13.	
Step 12	Change the rail pressure sensor with new one	
Step 13	Check the DTC	

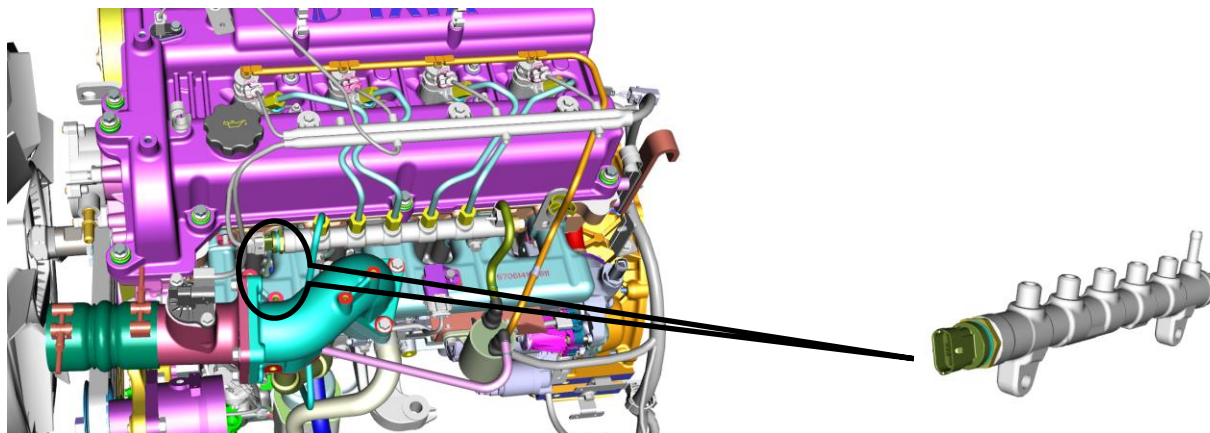
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS monitors the internal fuel pressure of common rail using Rail pressure sensor. It is an analog input type with 3-wires and it gives output voltage in proportion to the internal fuel pressure. This signal is used by EMS to adjust the pressure of rail to the required value. Check for the continuity between EMS and Sensor by referring above schematic.

#### Location & Component Image:



**P0194-00: Fuel Rail Pressure Sensor Circuit Drift**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0194-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	Torque reduction

**Checkpoints:**

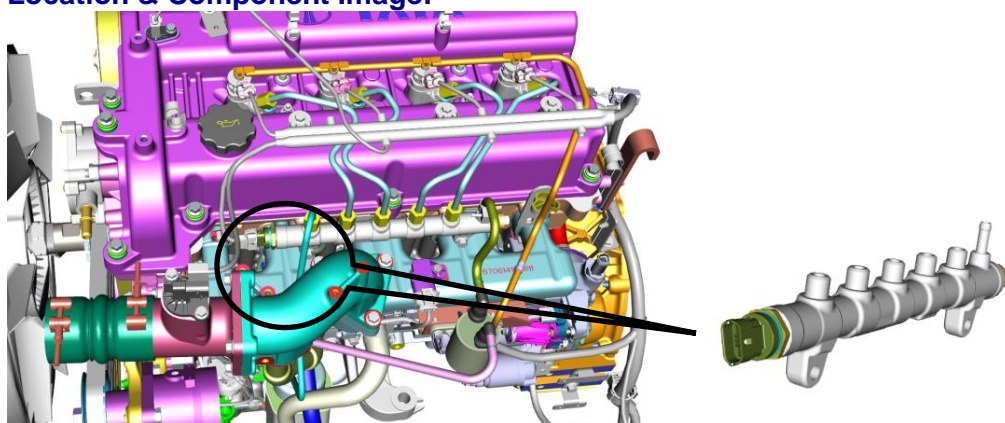
1. Check Battery Voltage.
2. Check Rail pressure sensor pins for damage
3. Check Rail pressure sensor connector for damage.

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check connector of rail pressure sensor is connected properly to the wire harness connector	
Step 3	If connector found loses in step 2 then fix is properly & go to Step 10	
Step 4	If the error is present check the connector pins from both side i.e. sensor side & wire harness side	
Step 5	If pins are damaged then go to Step No. 9	
Step 6	If error still present go to Step 7	
Step 7	Check the wire harness for any pin / wire back-out from connector, if yes go to Step 8	
Step 8	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 9	Change the rail pressure sensor with new one	
Step 10	Check the DTC	



**Location & Component Image:**



**P0117-00: Coolant temperature sensor signal Short circuit to ground**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0117-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

**Checkpoints:**

1. Check Battery Voltage
2. Check wire harness connections
3. Check sensor condition & any mechanical damage to sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check connector of coolant temperature sensor is connected properly to the wire harness connector	
Step 3	If connector found loose in step 2 then fix is properly & go to Step 11	
Step 4	Check the wire harness for any pin / wire back-out from connector, if yes go to step 5	
Step 5	Fix the back-out cables in proper positions in connector & go to Step 11	
Step 6	If error still present, check the continuity between sensor pin1 & A51, & continuity between sensor pin2 & A28. Go to Step 7	



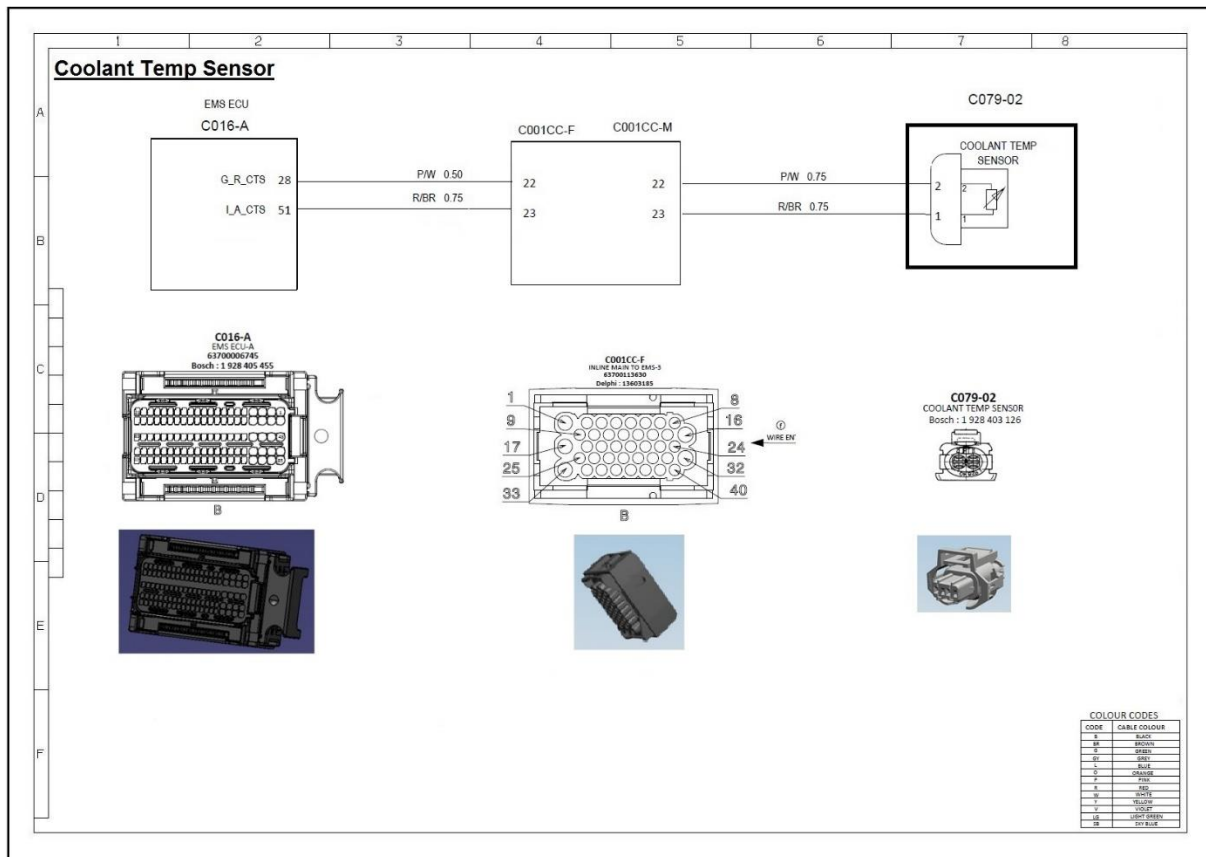
### 3.3L\_NGE\_BSVI & ECU MD1CS018 DTC Troubleshooting Data

Ver : 1.0

Date: 15/08/2019

Step 7	If continuity is unavailable from Step 6 then check the signal line short to ground & go to Step 11	
Step 8	If Step 7 is true then replace the wire harness cable with new one & go to Step 9	
Step 9	Check the proper mounting of the sensor & for mechanical damage. If Step 9 is true then go to Step 11	
Step 10	If error still present then replace Coolant Temp sensor with new one & go to Step 11	
Step 11	Check DTC	

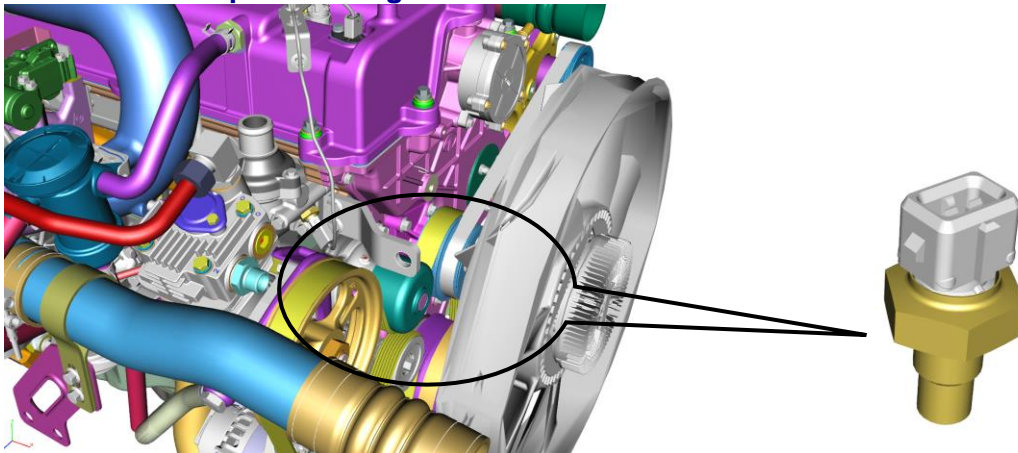
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of coolant by using this sensor. Coolant Temperature sensor has 2-pole connector and provides the analog input signal at A28. It is thermistor type and resistance of it changes according to coolant temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.

#### Location & Component Image:





**P0118-00: Coolant temperature sensor signal Short circuit to battery or Open Circuit**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0118-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

**Checkpoints:**

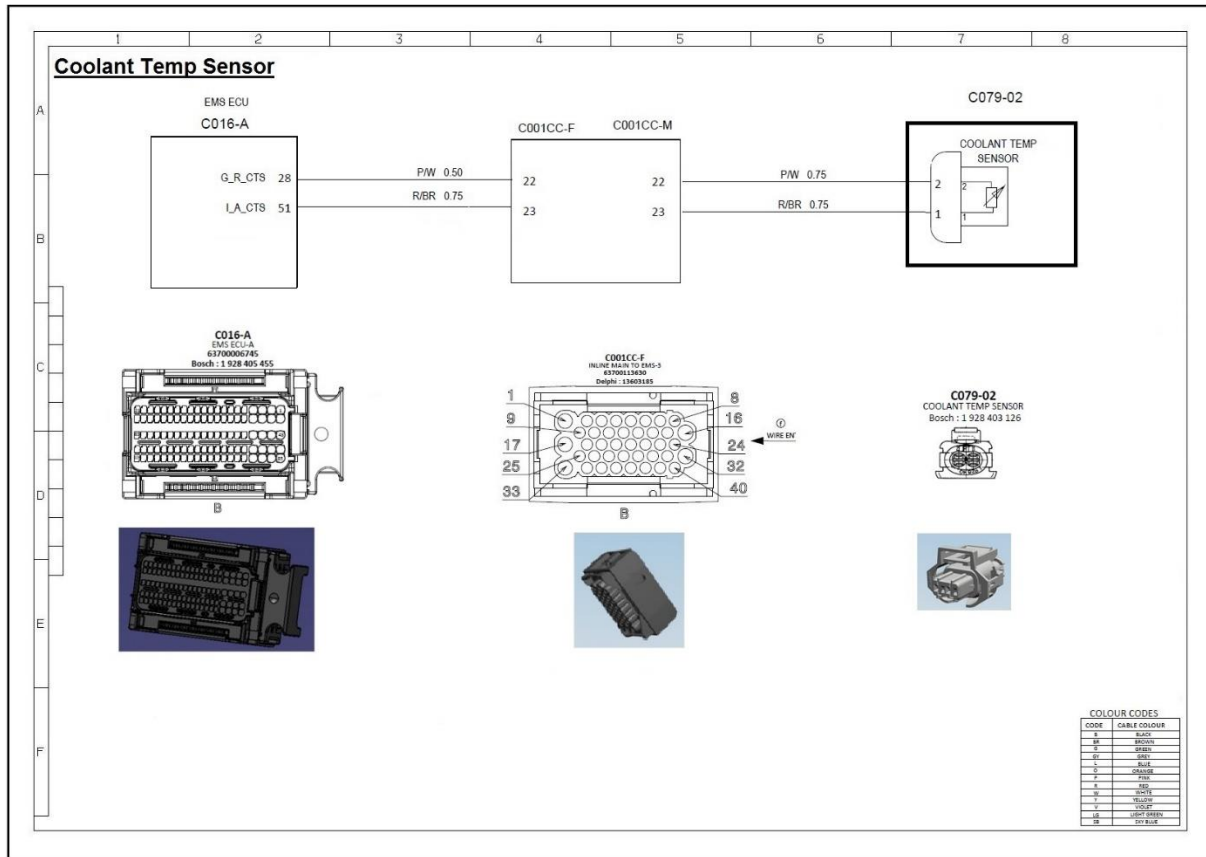
1. Check Battery Voltage
2. Check wire harness connections
3. Check sensor condition & any mechanical damage to sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check connector of coolant temperature sensor is connected properly to the wire harness connector	
Step 3	If connector found loose in step 2 then fix is properly & go to Step 11	
Step 4	Check the wire harness for any pin / wire back-out from connector, if yes go to step 5	
Step 5	Fix the back-out cables in proper positions in connector & go to Step 11	
Step 6	If error still present, check the continuity between sensor pin1 & A51. Go to Step 7	
Step 7	If continuity is unavailable from Step 6 then check the signal line short to ground & go to Step 11	
Step 8	If Step 7 is true then replace the wire harness cable with new one & go to Step 9	
Step 9	Check the proper mounting of the sensor & for mechanical damage. If Step 9 is true then go to Step 11	
Step 10	If error still present then replace Coolant Temp sensor with new one & go to Step 11	
Step 11	Check DTC	



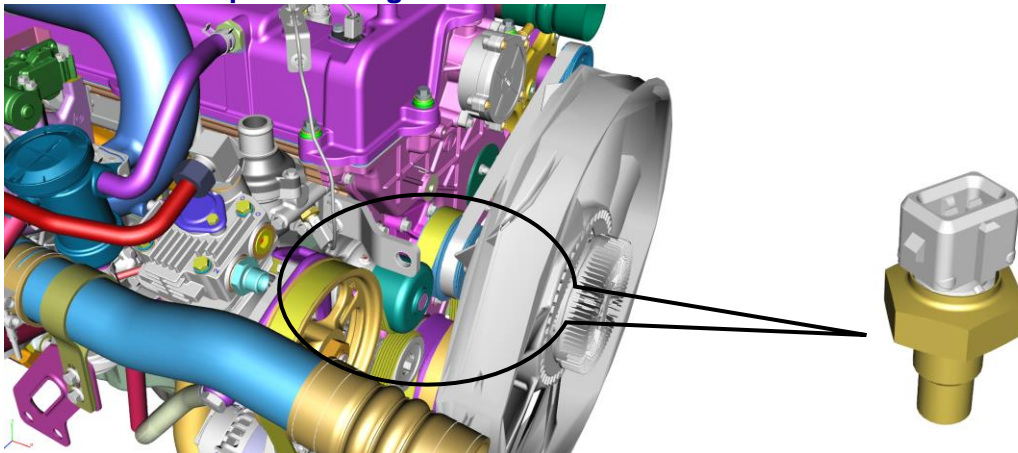
### Circuit Schematic Diagram:



### Circuit Description:

EMS measures the temperature of coolant by using this sensor. Coolant Temperature sensor has 2-pole connector and provides the analog input signal at A28. It is thermistor type and resistance of it changes according to coolant temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.

### Location & Component Image:





**P0119-00: Coolant temperature sensor signal gradient not plausible or intermittent**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0119-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

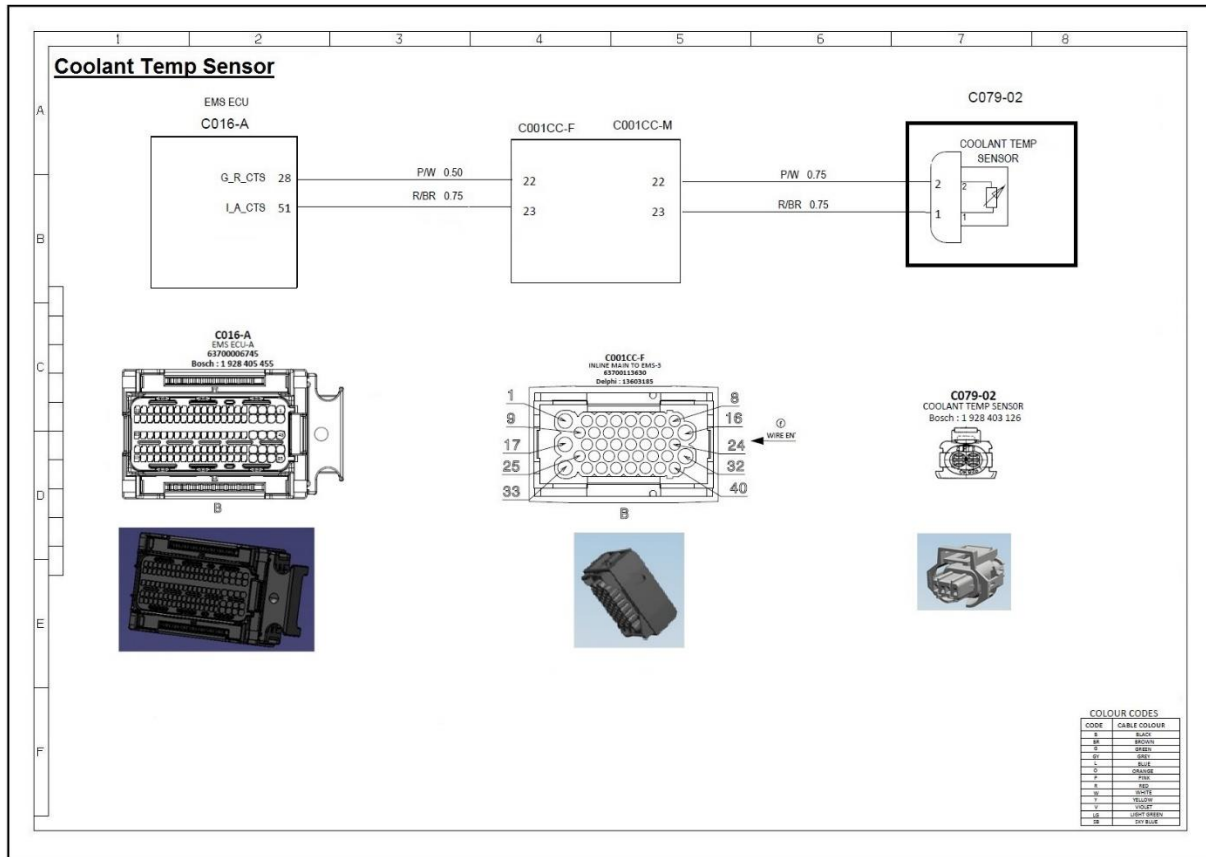
**Checkpoints:**

1. Check Battery Voltage
2. Check wire harness connections
3. Check sensor condition & any mechanical damage to sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 9	
Step 4	If error still present, check the continuity between sensor pin 1 & A28 & continuity between sensor pin 2 & A29. Go to Step 5	
Step 5	If continuity is unavailable from Step 4 then check the signal line short to battery or open circuit & go to Step 9	
Step 6	If Step 5 is true then replace the wire harness cable with new one & go to Step 9	
Step 7	Check the proper mounting of the sensor & for mechanical damage. If Step 7 is true then go to Step 8	
Step 8	If error still present then replace Coolant Temp sensor with new one & go to Step 9	
Step 9	Check DTC	

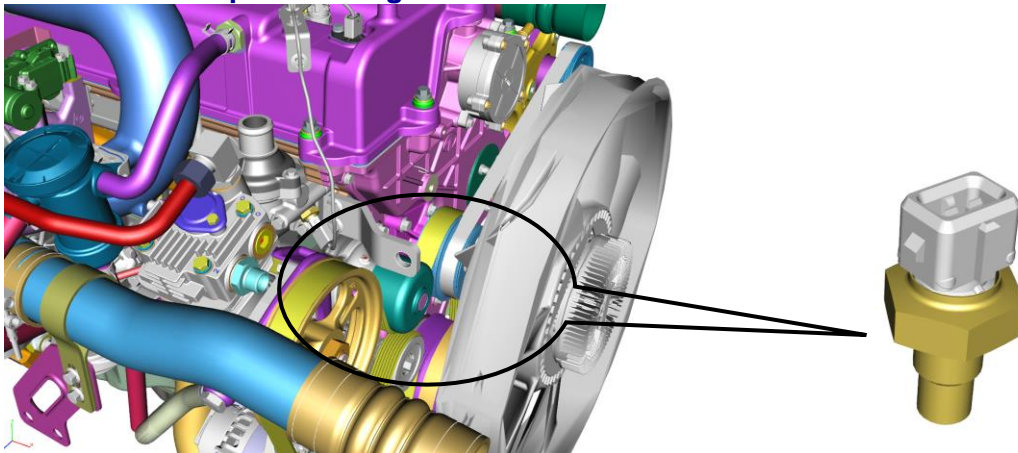
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of coolant by using this sensor. Coolant Temperature sensor has 2-pole connector and provides the analog input signal at A28. It is thermistor type and resistance of it changes according to coolant temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.

#### Location & Component Image:





**P0116-00: Coolant temperature sensor physical value plausibility check**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0116-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem 4. High Coolant Temperature	NA

**Checkpoints:**

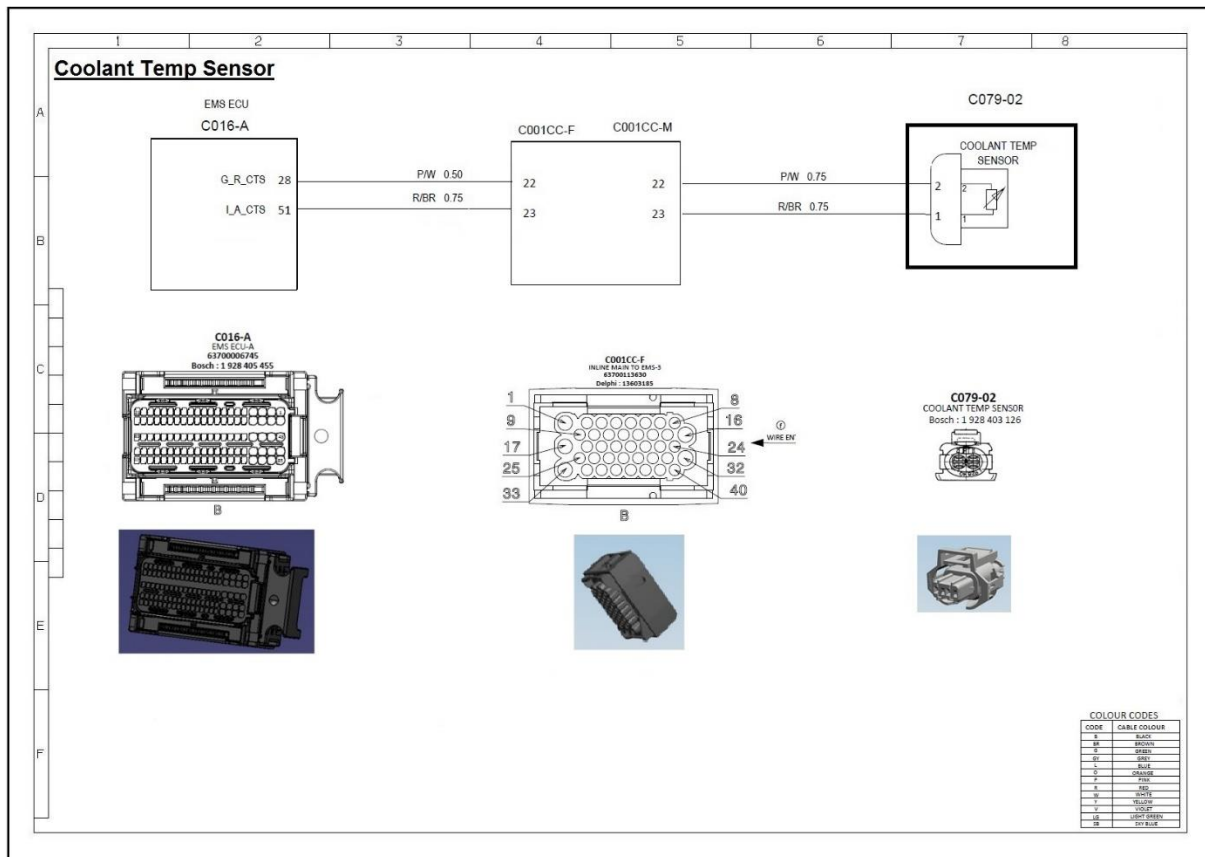
1. Check Battery Voltage
2. Check wire harness connections
3. Check sensor condition & any mechanical damage to sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 4	If error still present, check the continuity between sensor pin1 & A28 & continuity between sensor pin2 & A29. Go to Step 5	
Step 5	If continuity is unavailable from Step 4 then check the signal line short to ground & go to Step 10	
Step 6	If Step 5 is true then replace the wire harness cable with new one & go to Step 10	
Step 7	Check the proper mounting of the sensor & for mechanical damage. If Step 7 is true then go to Step 10	
Step 8	If error still present, check if sensor itself is exposed to high temperature source, go to step 10 after rectification	
Step 9	If error still present then replace Coolant Temp sensor with new one & go to Step 10	
Step 9	Check DTC	



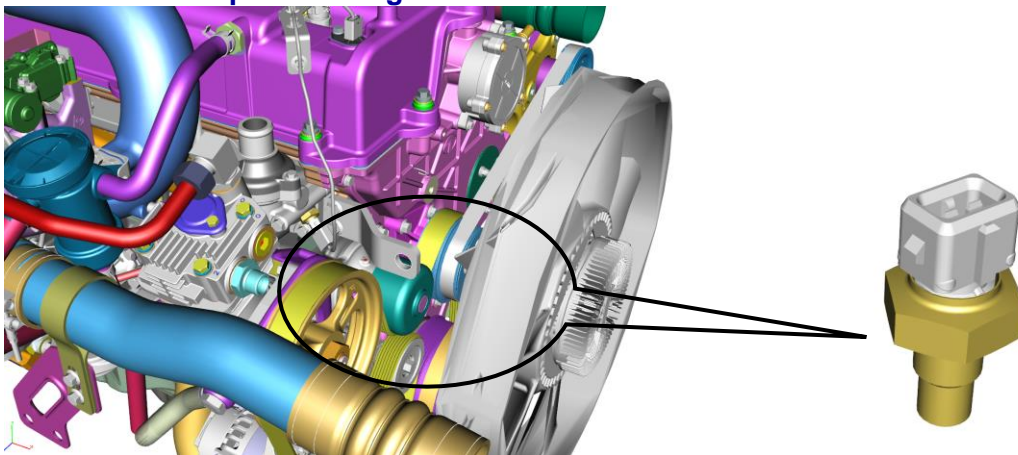
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of coolant by using this sensor. Coolant Temperature sensor has 2-pole connector and provides the analog input signal at A28. It is thermistor type and resistance of it changes according to coolant temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.

#### Location & Component Image:





**P0100-00: DFC to Display Communication errors of the SENT line of the Air Mass Sensor**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0100-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

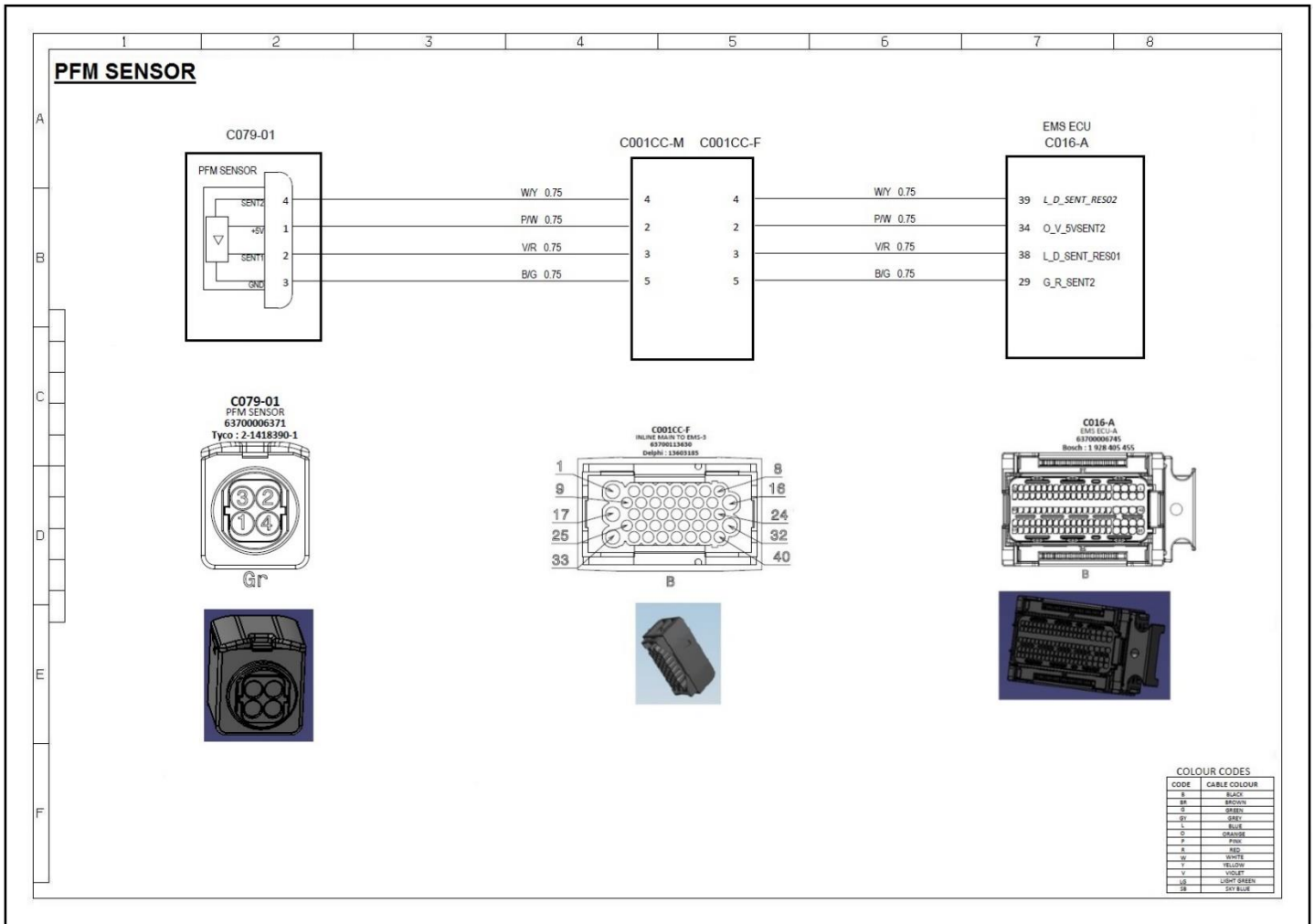
**Checkpoints:**

1. Check Battery Voltage
2. Check Wire harness connections
3. Check PFM Sensor condition for any mechanical damage.

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 4	Check for continuity between A38 (Pin 2) & A39 (Pin 4), it should not be connected.	
Step 5	If Continuity exists as per step 4, please eliminate it by ensuring Pin 2 is only connected to A38 & Pin 4 is connected only to A39 & go to step 7	
Step 6	If still error present replace PFM sensor with new one & go to Step 10	
Step 7	Check DTC	

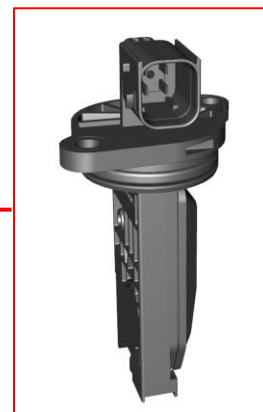
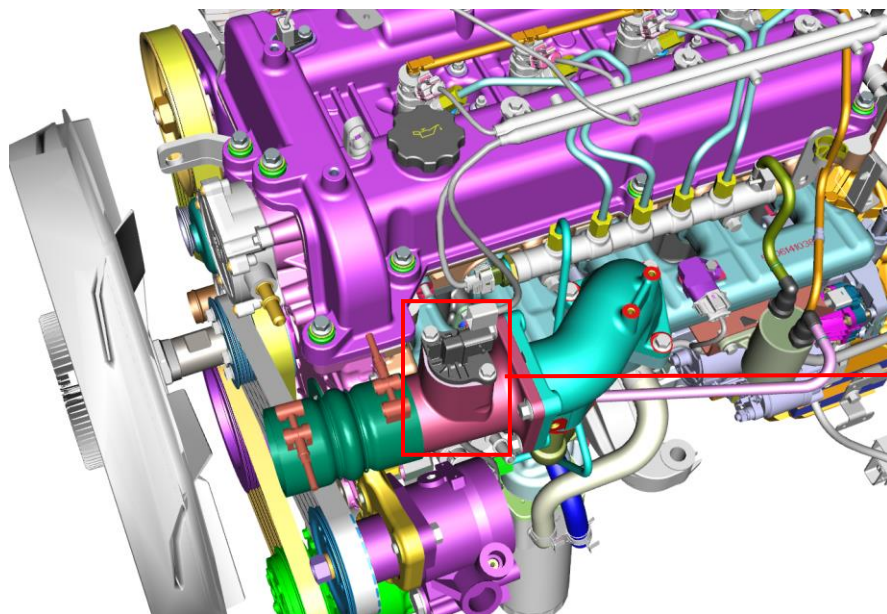
### Circuit Schematic Diagram:



### Circuit Description:

EMS measures the mass and temperature of air entering intake by using this sensor. PFM sensor has 4-pole connector and provides the frequency input signal at A38 which corresponds to Flow of air and Analog input at A39 which corresponds to temperature of air intake. It is mounted after intercooler before EGR cooler. Check for the continuity between EMS and Sensor by referring above schematic.

**Location & Component Image:**





**P0102-00: DFC for Mass or Volume Air Flow Sensor "A" Circuit Low**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0102-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

**Checkpoints:**

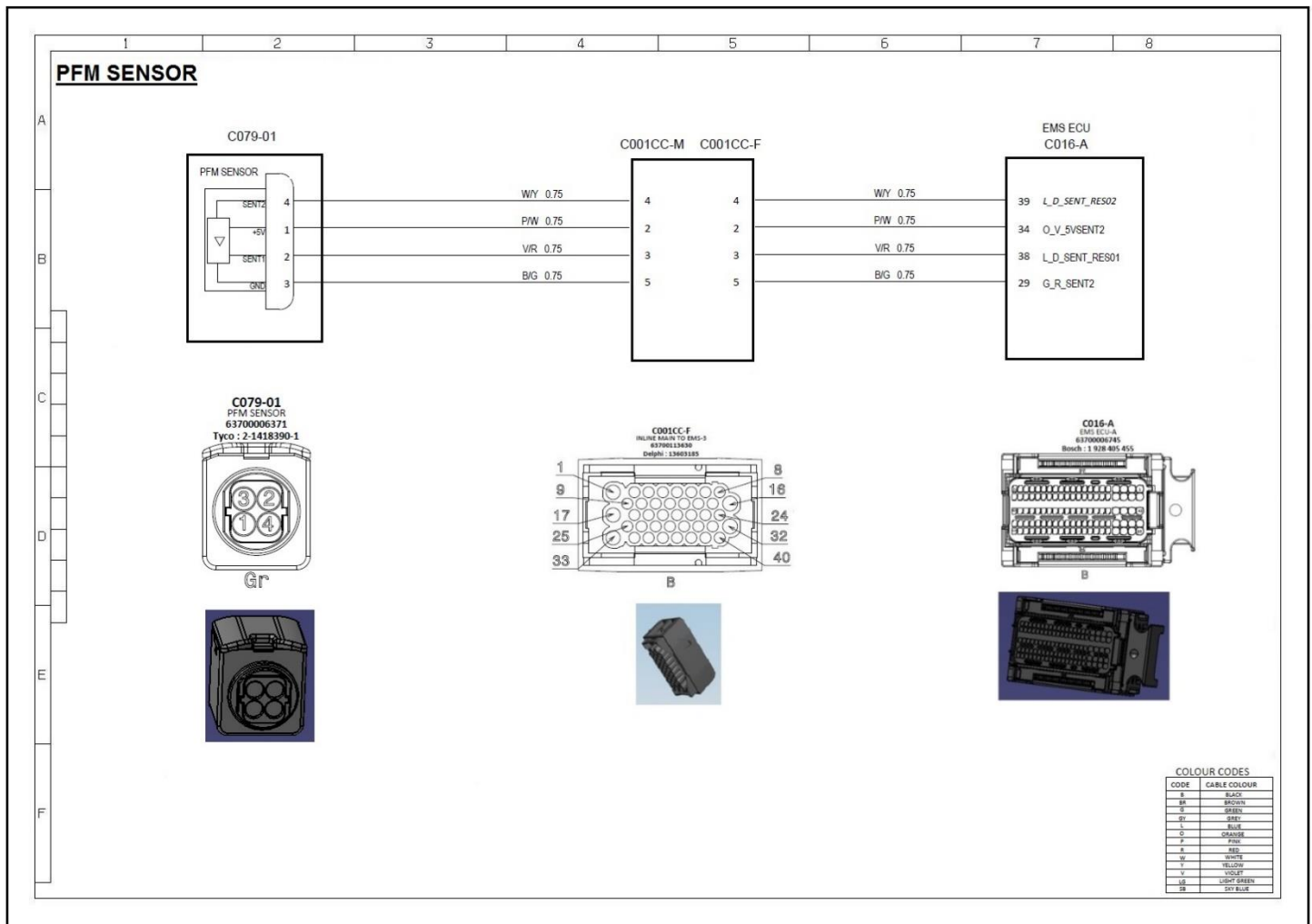
1. Check Battery Voltage
2. Check Wire harness connections
3. Check PFM Sensor condition for any mechanical damage.

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 9	
Step 4	Check the 5V supply between pin1 & pin3 of the sensor. Go to Step 5	5V
Step 5	If 5V not available, check the continuity between pin1 & A34.	
Step 6	If continuity between pin 1 & A34 is not available then replace the wire harness cable with new one & go to Step 9	
Step 7	Check if Pin 2( A39) is shorted to ground(A29),	
Step 8	If still error present replace PFM sensor with new one & go to Step 9	
Step 9	Check DTC	



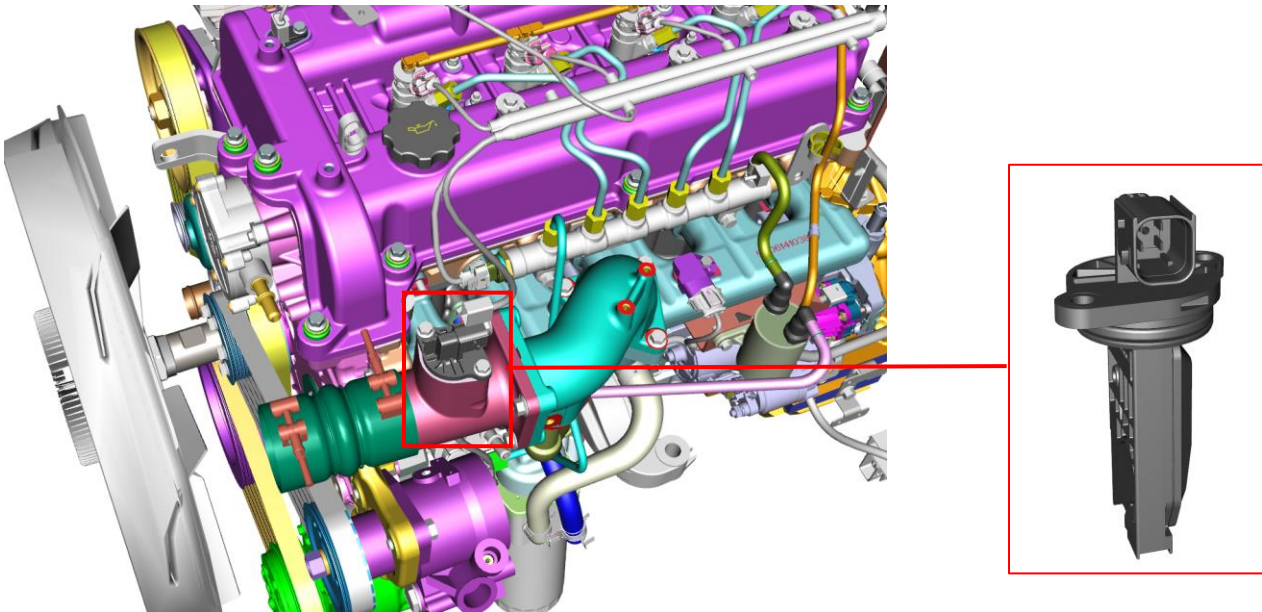
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the mass and temperature of air entering intake by using this sensor. PFM sensor has 4-pole connector and provides the input signal at A39 which corresponds to differential pressure sensor pdiff and input at A38 which corresponds to absolute pressure pabs and temperature sensor Tair. It is mounted in the intake air duct between the air cleaner and turbo charger. Check for the continuity between EMS and Sensor by referring above schematic.

**Location & Component Image:**





**P0103-00: DFC for Mass or Volume Air Flow Sensor "A" Circuit high**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0103-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

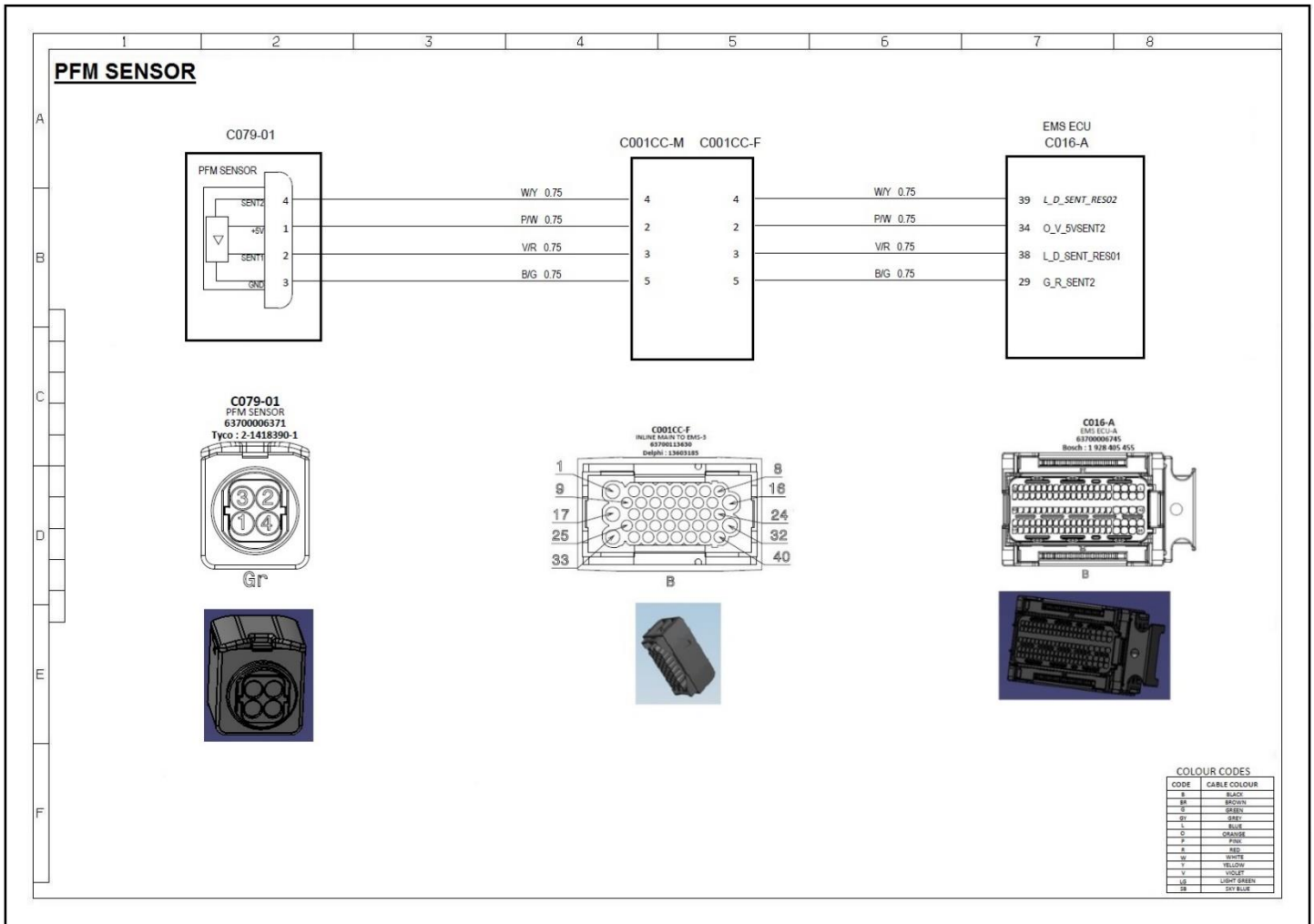
**Checkpoints:**

1. Check Battery Voltage
2. Check Wire harness connections
3. Check PFM Sensor condition for any mechanical damage.

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 9	
Step 4	Check the 5V supply between pin1 & pin3 of the sensor. Go to Step 5	5V
Step 5	If 5V not available, check the continuity between pin1 & A34.	
Step 6	If continuity between pin 1 & A34 is not available then replace the wire harness cable with new one & go to Step 9	
Step 7	Check if Pin 2( A39) is shorted to supply(A34) or open circuit, go to step 9	
Step 8	If still error present replace PFM sensor with new one & go to Step 9	
Step 9	Check DTC	

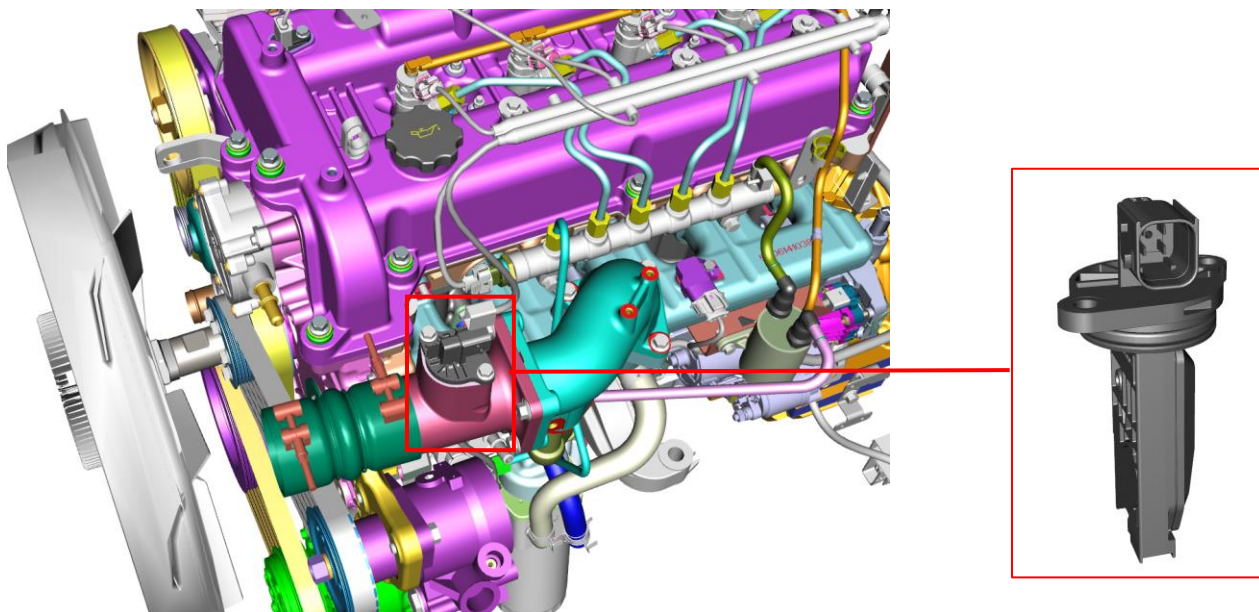
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the mass and temperature of air entering intake by using this sensor. PFM sensor has 4-pole connector and provides the input signal at A39 which corresponds to differential pressure sensor pdiff and input at A38 which corresponds to absolute pressure pabs and temperature sensor Tair. It is mounted in the intake air duct between the air cleaner and turbo charger. Check for the continuity between EMS and Sensor by referring above schematic.

**Location & Component Image:**







**P010C-00: DFC for Mass or Volume Air Flow Sensor "B" Circuit Low**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P010C-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

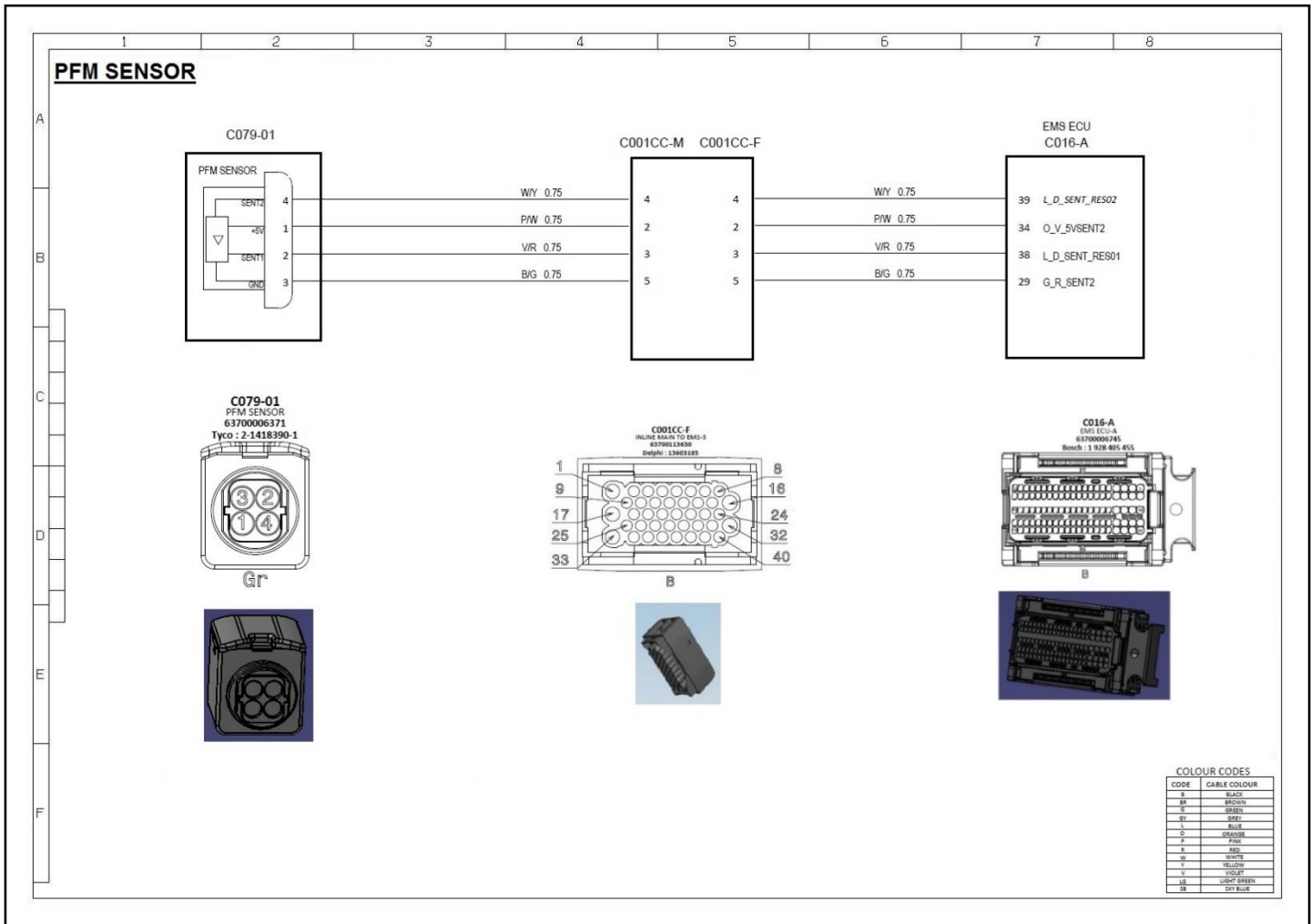
**Checkpoints:**

1. Check Battery Voltage
2. Check Wire harness connections
3. Check PFM Sensor condition for any mechanical damage.

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 9	
Step 4	Check the 5V supply between pin1 & pin3 of the sensor. Go to Step 5	5V
Step 5	If 5V not available, check the continuity between pin1 & A34.	
Step 6	If continuity between pin 1 & A34 is not available then replace the wire harness cable with new one & go to Step 9	
Step 7	Check if Pin 4( A38) is shorted to ground(A29),	
Step 8	If still error present replace PFM sensor with new one & go to Step 9	
Step 9	Check DTC	

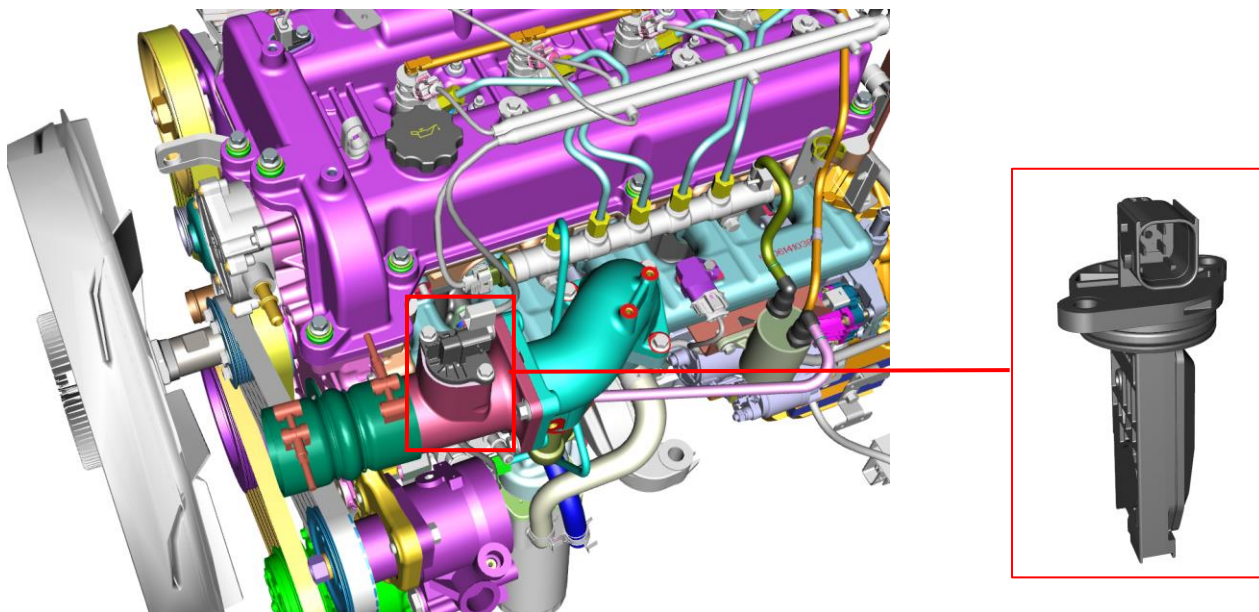
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the mass and temperature of air entering intake by using this sensor. PFM sensor has 4-pole connector and provides the input signal at A39 which corresponds to differential pressure sensor pdiff and input at A38 which corresponds to absolute pressure pabs and temperature sensor Tair. It is mounted in the intake air duct between the air cleaner and turbo charger. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





**P010D-00: DFC for Mass or Volume Air Flow Sensor "B" Circuit high**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P010D-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

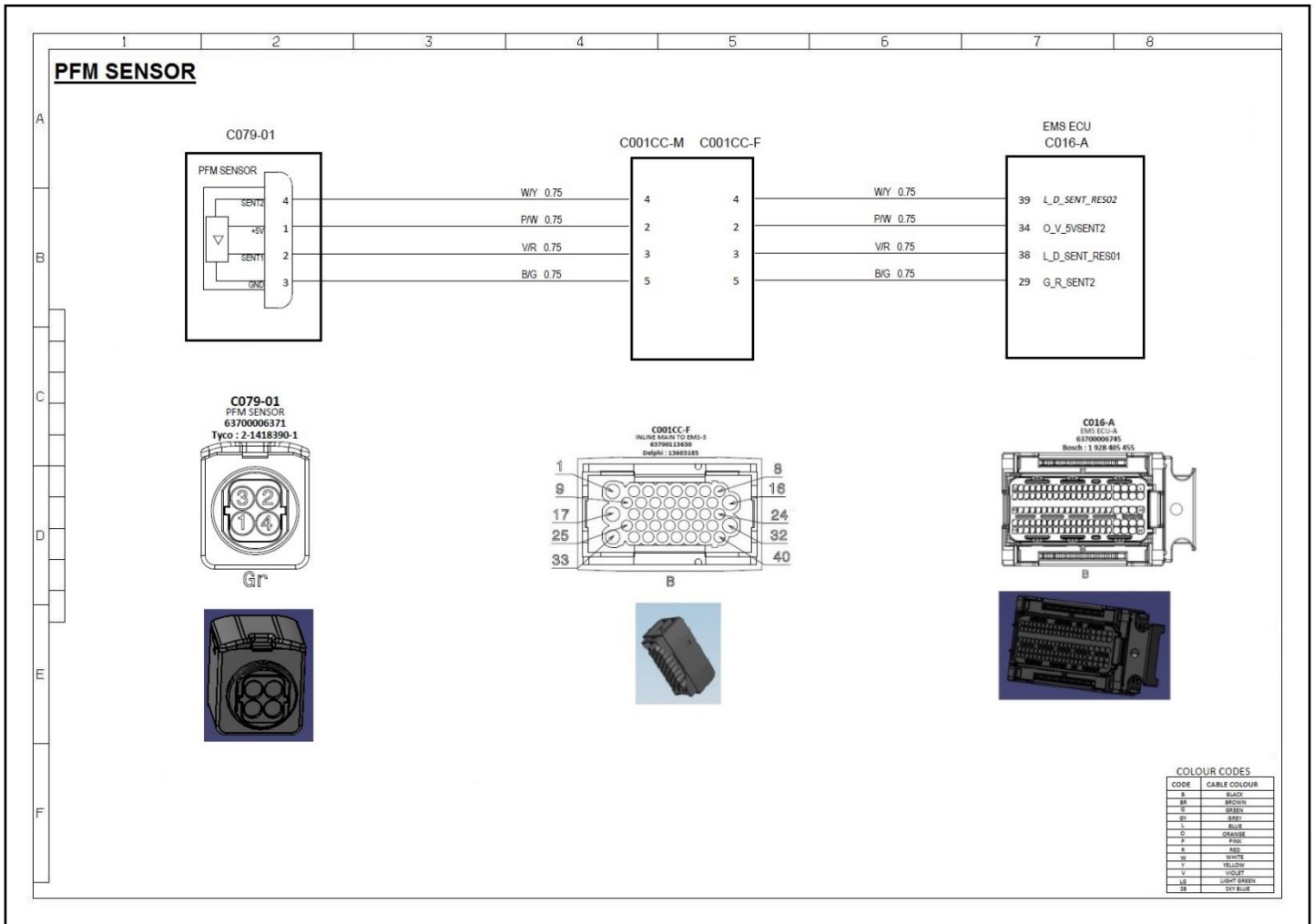
**Checkpoints:**

1. Check Battery Voltage
2. Check Wire harness connections
3. Check PFM Sensor condition for any mechanical damage.

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 9	
Step 4	Check the 5V supply between pin1 & pin3 of the sensor. Go to Step 5	5V
Step 5	If 5V not available, check the continuity between pin1 & A34.	
Step 6	If continuity between pin 1 & A34 is not available then replace the wire harness cable with new one & go to Step 9	
Step 7	Check if Pin 4( A38) is shorted to supply(A34) or open circuit, go to step 9	
Step 8	If still error present replace PFM sensor with new one & go to Step 9	
Step 9	Check DTC	

#### Circuit Schematic Diagram:

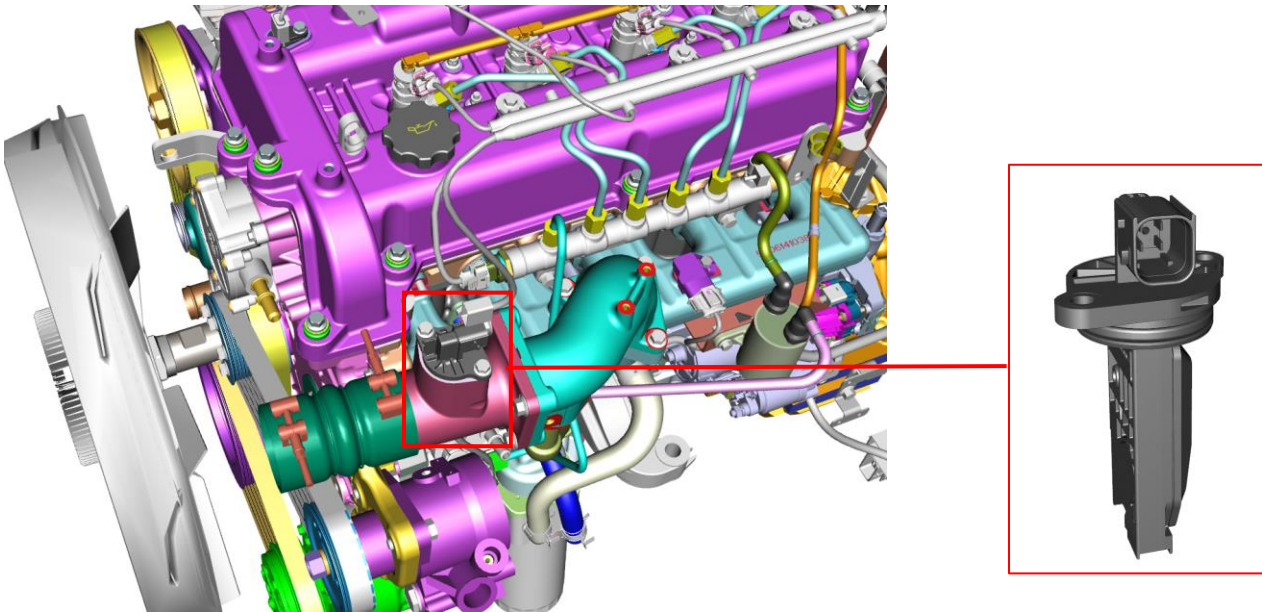


#### Circuit Description:

EMS measures the mass and temperature of air entering intake by using this sensor. PFM sensor has 4-pole connector and provides the input signal at A39 which corresponds to differential pressure sensor pdiff and input at A38 which corresponds to absolute pressure pabs and temperature sensor Tair. It is mounted in the intake air duct between the air cleaner and turbo charger. Check for the continuity between EMS and Sensor by referring above schematic.



Location & Component Image:





**P0100-9B: DFC for Mass air flow sensor physical range check high error**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code:P0100-9B MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem 4. Leakage in air intake pipes	NA

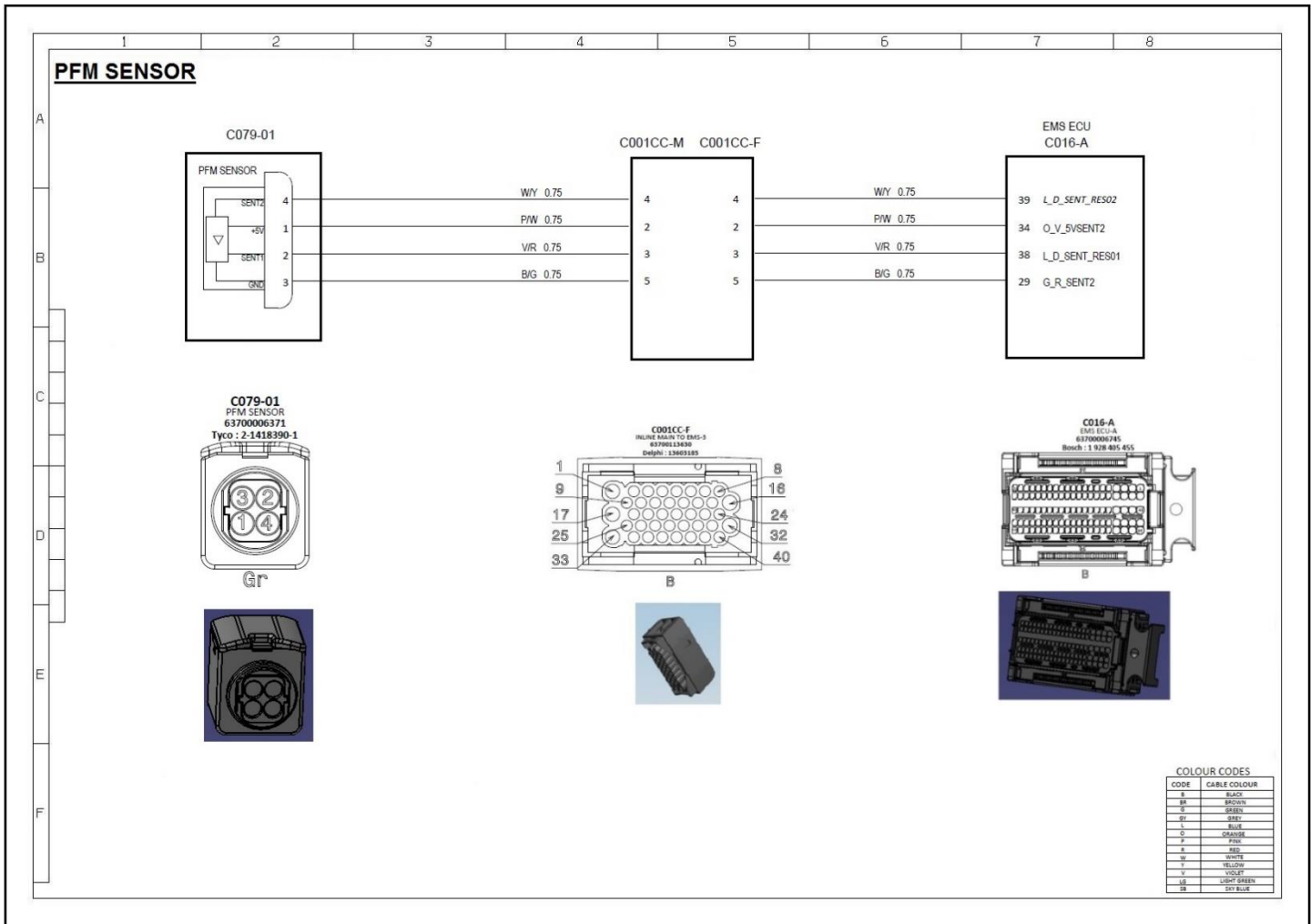
**Checkpoints:**

1. Check Battery Voltage
2. Check Wire harness connections
3. Check Air intake pipes for good condition & leakages or damage
4. Check PFM Sensor condition for any mechanical damage.

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 4	Check the 5V supply between pin1 & pin3 of the sensor. Go to Step 5	5V
Step 5	If 5V not available, check the continuity between pin1 & A34.	
Step 6	If continuity in between pin 1 & A34 and pin 3 & A29 is not available then replace the wire harness cable with new one & go to Step 10	
Step 7	Check for any physical damage to sensor. If yes, replace with new one go to Step 10	
Step 8	Checks the intake system for leaks, if present arrest it. Go to Step 10	
Step 9	If still error present replace PFM sensor with new one & go to Step 10	
Step 10	Check DTC	

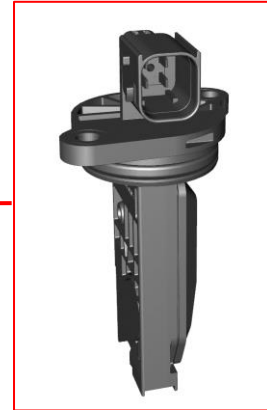
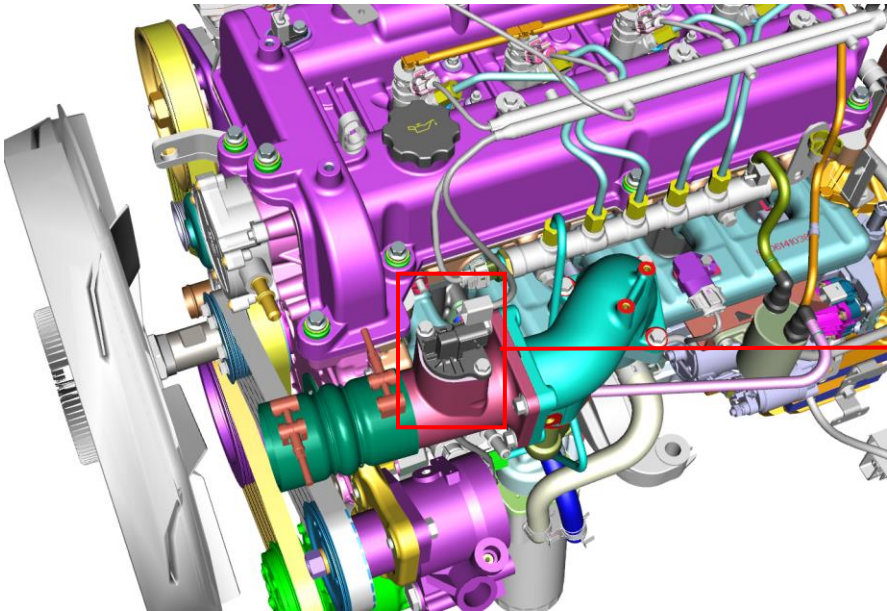
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the mass and temperature of air entering intake by using this sensor. PFM sensor has 4-pole connector and provides the input signal at A39 which corresponds to differential pressure sensor pdiff and input at A38 which corresponds to absolute pressure pabs and temperature sensor Tair. It is mounted in the intake air duct between the air cleaner and turbo charger. Check for the continuity between EMS and Sensor by referring above schematic.

**Location & Component Image:**





**P0100-9C: DFC for Mass air flow sensor physical range check low error**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code:P0100-9B MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem 4. Leakage in air intake pipes	NA

**Checkpoints:**

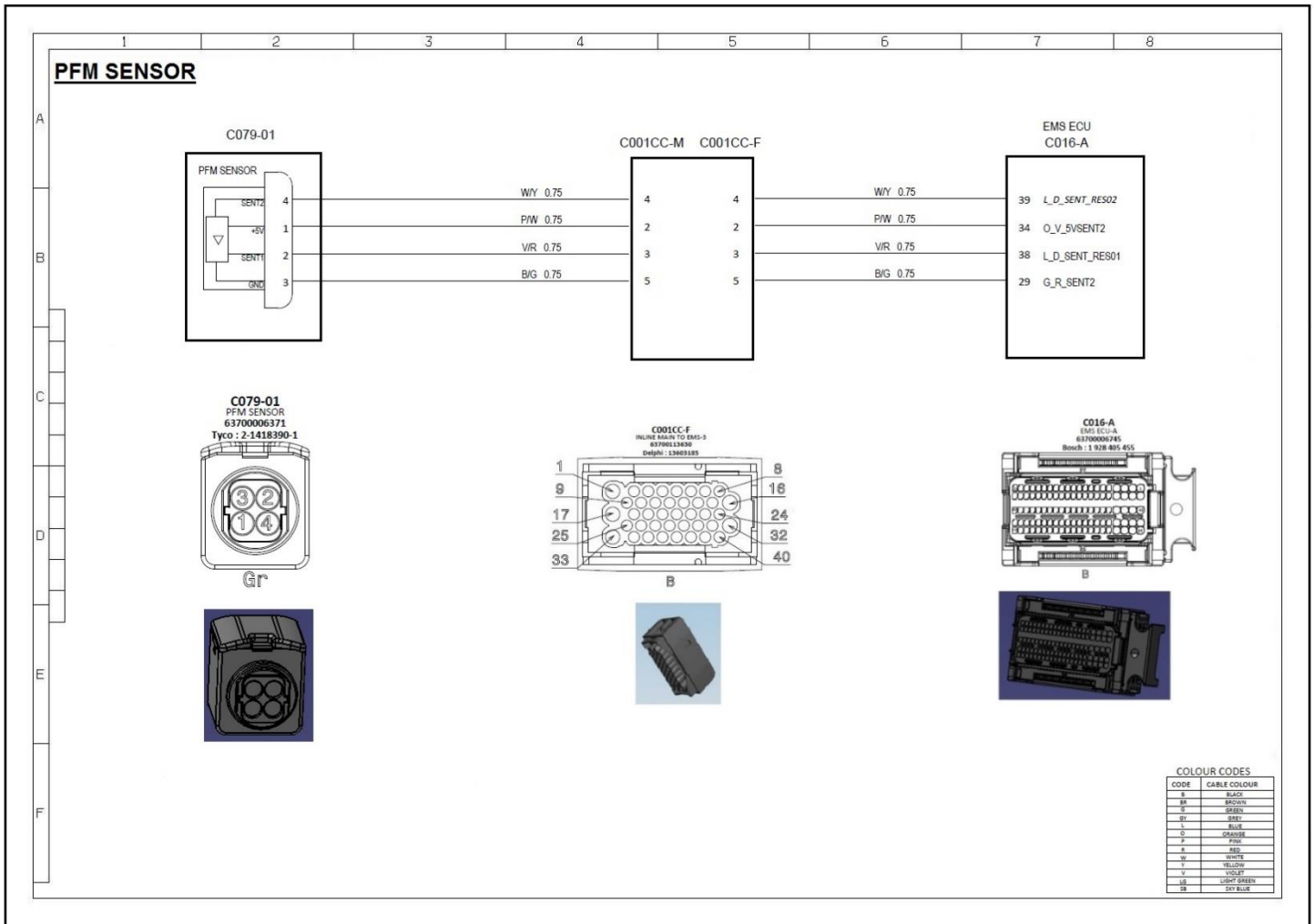
1. Check Battery Voltage
2. Check Wire harness connections
3. Check Air intake pipes for good condition & leakages or damage
4. Check PFM Sensor condition for any mechanical damage.

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 4	Check the 5V supply between pin1 & pin3 of the sensor. Go to Step 5	5V
Step 5	If 5V not available, check the continuity between pin1 & A34.	
Step 6	If continuity in between pin 1 & A34 and pin 3 & A29 is not available then replace the wire harness cable with new one & go to Step 10	
Step 7	Check for any physical damage to sensor. If yes, replace with new one go to Step 10	
Step 8	Checks the intake system for leaks, if present arrest it. Go to Step 10	
Step 9	If still error present replace PFM sensor with new one & go to Step 10	
Step 10	Check DTC	



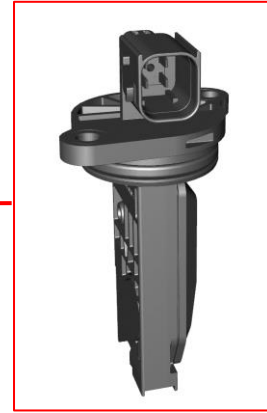
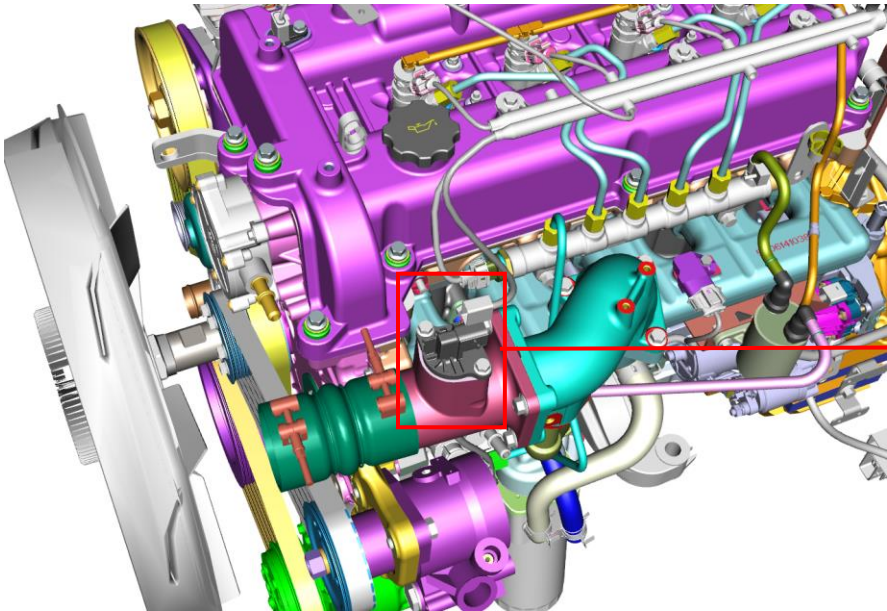
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the mass and temperature of air entering intake by using this sensor. PFM sensor has 4-pole connector and provides the input signal at A39 which corresponds to differential pressure sensor pdiff and input at A38 which corresponds to absolute pressure pabs and temperature sensor Tair. It is mounted in the intake air duct between the air cleaner and turbo charger. Check for the continuity between EMS and Sensor by referring above schematic.

**Location & Component Image:**





**P0101-00: DFC for Mass Airflow Pressure Charging System Plausibility**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0101 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem 4. Leakage in air intake pipes	NA

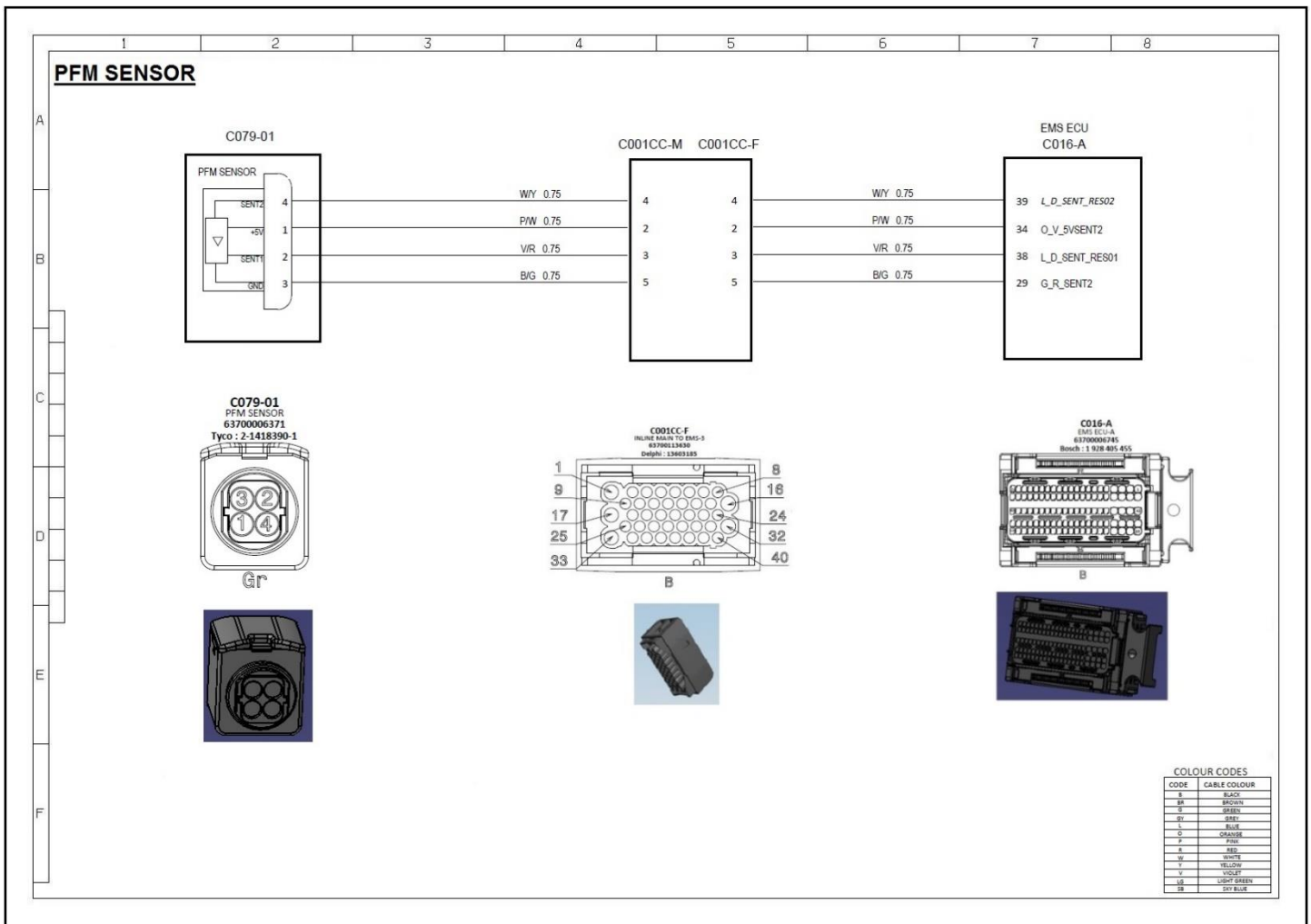
**Checkpoints:**

1. Check Battery Voltage
2. Check Wire harness connections
3. Check Air intake pipes for good condition & leakages or damage
4. Check HFM Sensor condition for any mechanical damage.

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 4	Check the 5V supply between pin4 & pin3 of the sensor. Go to Step 5	5V
Step 5	If 12V not available, check the fuse & the continuity between pin3 & A36 & pin 4 & A13	
Step 6	If continuity in between pin 1 & A34 and pin 3 & A29 is not available then replace the wire harness cable with new one & go to Step 10	
Step 7	Check for any physical damage to sensor. If yes, replace with new one go to Step 10	
Step 8	Checks the intake system for leaks, if present arrest it. Go to Step 10	
Step 9	If still error present replace PFM sensor with new one & go to Step 10	
Step 10	Check DTC	

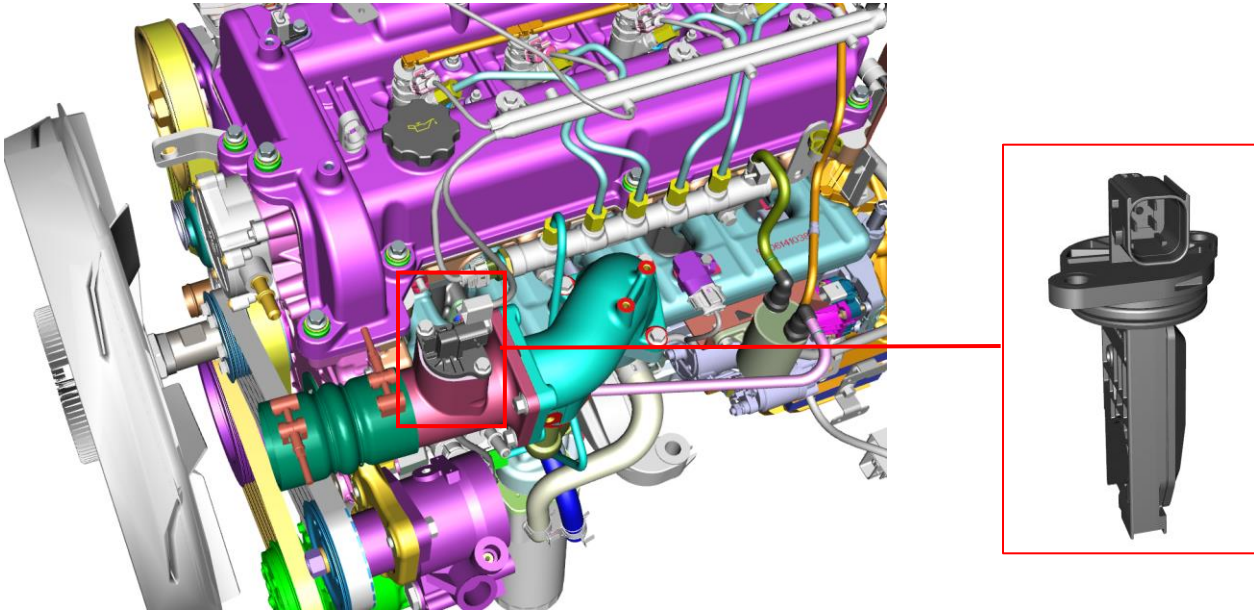
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the mass and temperature of air entering intake by using this sensor. AMF sensor has 4-pole connector and provides the Pressure input signal at A13 which corresponds to Flow of air and Analog input at A which corresponds to temperature of air intake. It is mounted in the intake air duct between the air cleaner and turbo charger. Check for the continuity between EMS and Sensor by referring above schematic.

**Location & Component Image:**





**P0401-00: Positive governor deviation above limit (air mass)**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0401-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1 Choked air filter 2 Air/boost leakage after PFM sensor 3 EGR valve stuck open 4 High back pressure in the exhaust	Torque limitation

**Checkpoints:**

1. Check Air Intake system
2. Check Exhaust brake connections
3. Check for leakages in air intake system

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the air filter service indicator and replace the cartridge if the indicator shows red	
Step 2	Check for the condition of the filter cartridge and replace it	
Step 3	Check for air/boost leakages in the engine circuit	
Step 4	Remove the dust protection cap in the EGR valve and check whether the EGR valve operates freely while switching OFF the ignition key	
Step 5	Switch off the exhaust brake request switch and check whether the exhaust brake flap is in open condition while the brake is pressed	
Step 6	Check Continuity between PFM pin1, 2, 3, 4 & ECU Pin no. A34,A38,A29,A39 respectively.	
Step 7	If Step 6 is true then replace the wire harness cable with new one & go to Step 10	
Step 8	Check DTC	





**P0402-00: Negative governor deviation above limit (air mass)**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0402-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1 Less restriction before PFM 2 Incorrect position for turbo actuator	Torque limitation

**Checkpoints:**

1. Check PFM sensor condition
2. Check Turbo actuator

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check weather specified air filter is fitted or not	
Step 2	Check turbo charger actuator setting	
Step 3	Check Continuity between PFM pin1, 2, 3, 4 & ECU Pin no. A34, A38, A29, A39 respectively.	



**P0107-00: Manifold Pressure sensor signal Short circuit to ground**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0107-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

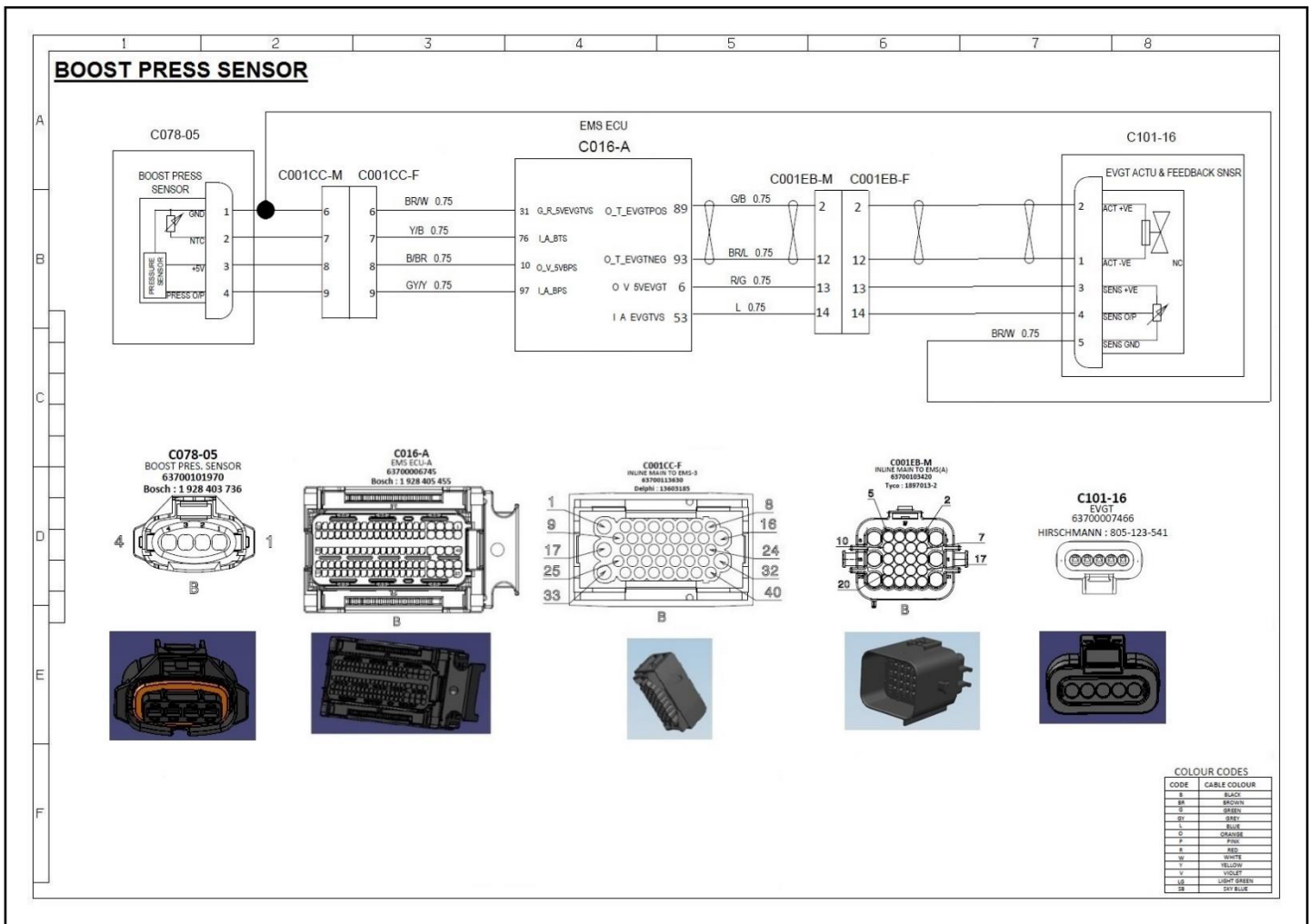
**Checkpoints:**

1. Check Battery Voltage
2. Check Wire harness connections
3. Check MAP Sensor condition for any mechanical damage.

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 9	
Step 4	If error still present, check continuity in between pin 3 & A10 and pin 2 & A31.	
Step 5	If error still present, check continuity in between pin 4 & A97	
Step 6	If Step 4 & Step 5 fails then check signal (A97) short circuit to ground (A31)	
Step 7	If Step 6 is true then replace the wire harness cable with new one & go to Step 9	
Step 8	If still error present replace MAP sensor with new one & go to Step 9	
Step 9	Check DTC	

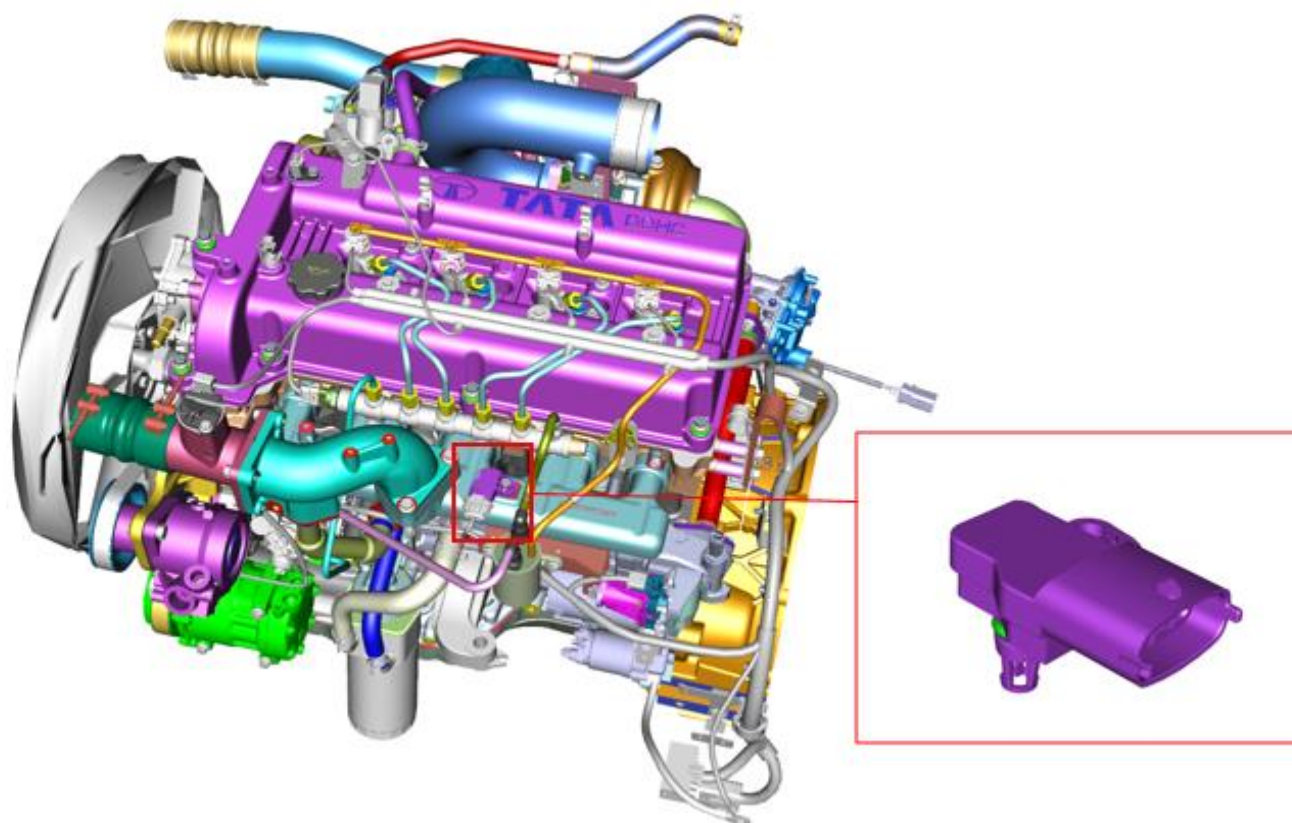
### Circuit Schematic Diagram:



### Circuit Description:

EMS measures the pressure and temperature of compressed air intake manifold by using this sensor. TMAP sensor has 4-pole connector and provides the Analog input signal at A97, which corresponds, to pressure of compressed air and Analog input at A76, which corresponds to temperature of compressed air. It is mounted on the Manifold after the turbo charger. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





**P0108-00: Manifold Pressure sensor signal Open circuit or Short circuit to battery**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0108-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

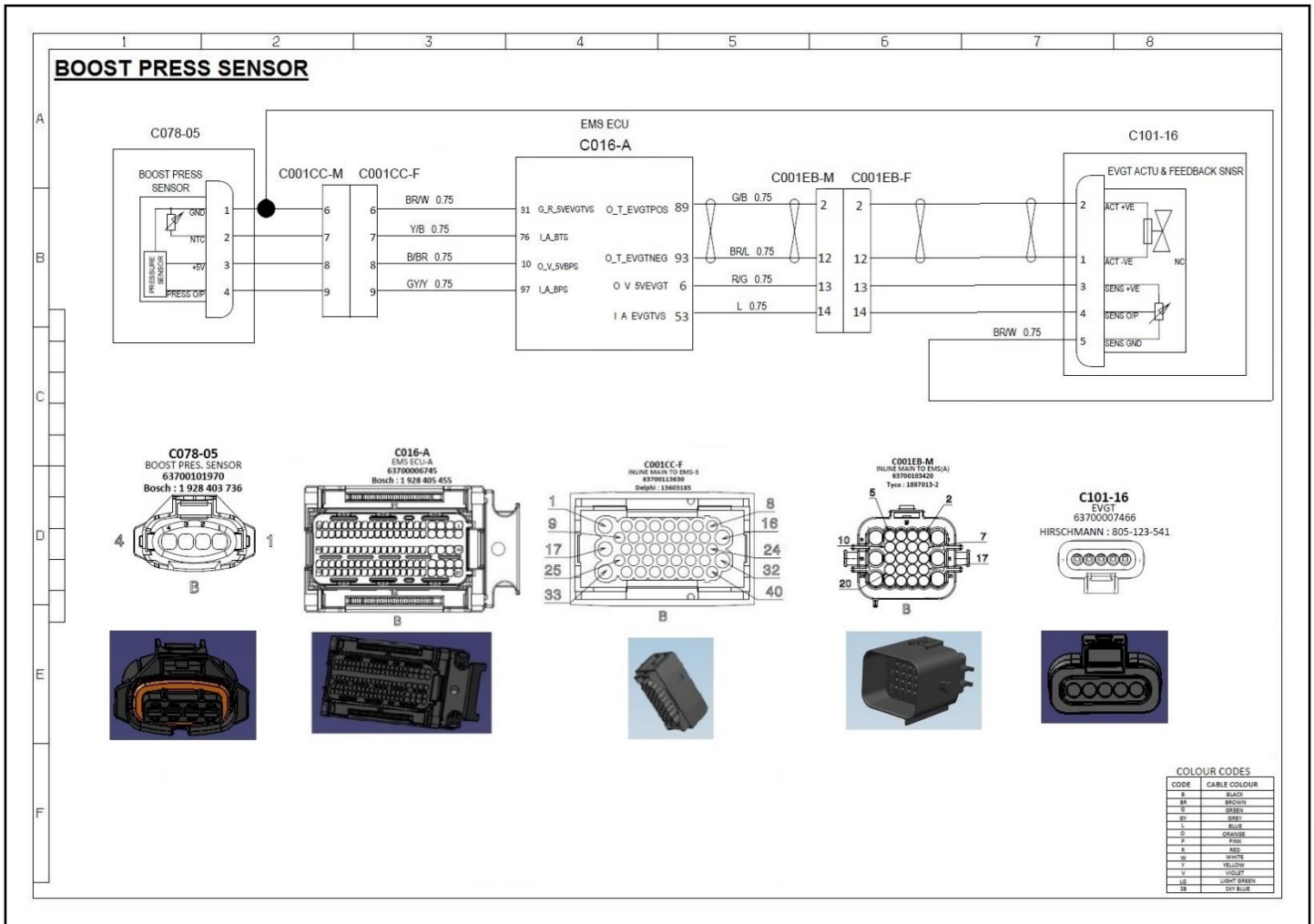
**Checkpoints:**

1. Check Battery Voltage
2. Check Wire harness connections
3. Check MAP Sensor condition for any mechanical damage.

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 9	
Step 4	If error still present, check continuity in between pin 3 & A10 and pin 2 & A31.	
Step 5	If error still present, check continuity in between pin 4 & A97(sensor signal)	
Step 6	If Step 4 & Step 5 fails then check signal short circuit to supply (A10)	
Step 7	If Step 6 is true then replace the wire harness cable with new one & go to Step 9	
Step 8	If still error present replace MAP sensor with new one & go to Step 9	
Step 9	Check DTC	

### Circuit Schematic Diagram:

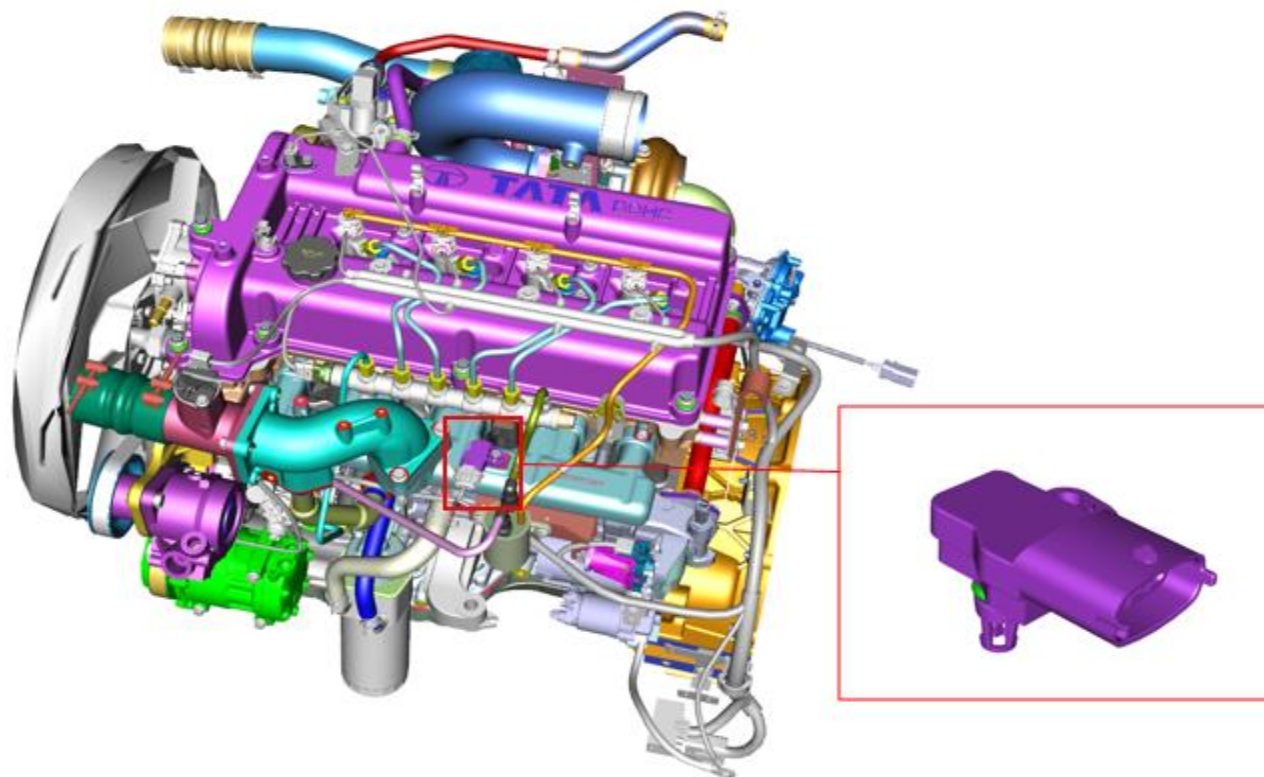


### Circuit Description:

EMS measures the pressure and temperature of compressed air intake manifold by using this sensor. TMAP sensor has 4-pole connector and provides the Analog input signal at A97, which corresponds, to pressure of compressed air and Analog input at A76, which corresponds to temperature of compressed air. It is mounted on the Manifold after the turbo charger. Check for the continuity between EMS and Sensor by referring above schematic.



### Location & Component Image





**P0109-00: Manifold pressure sensor signal gradient implausible or intermittent**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0109-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

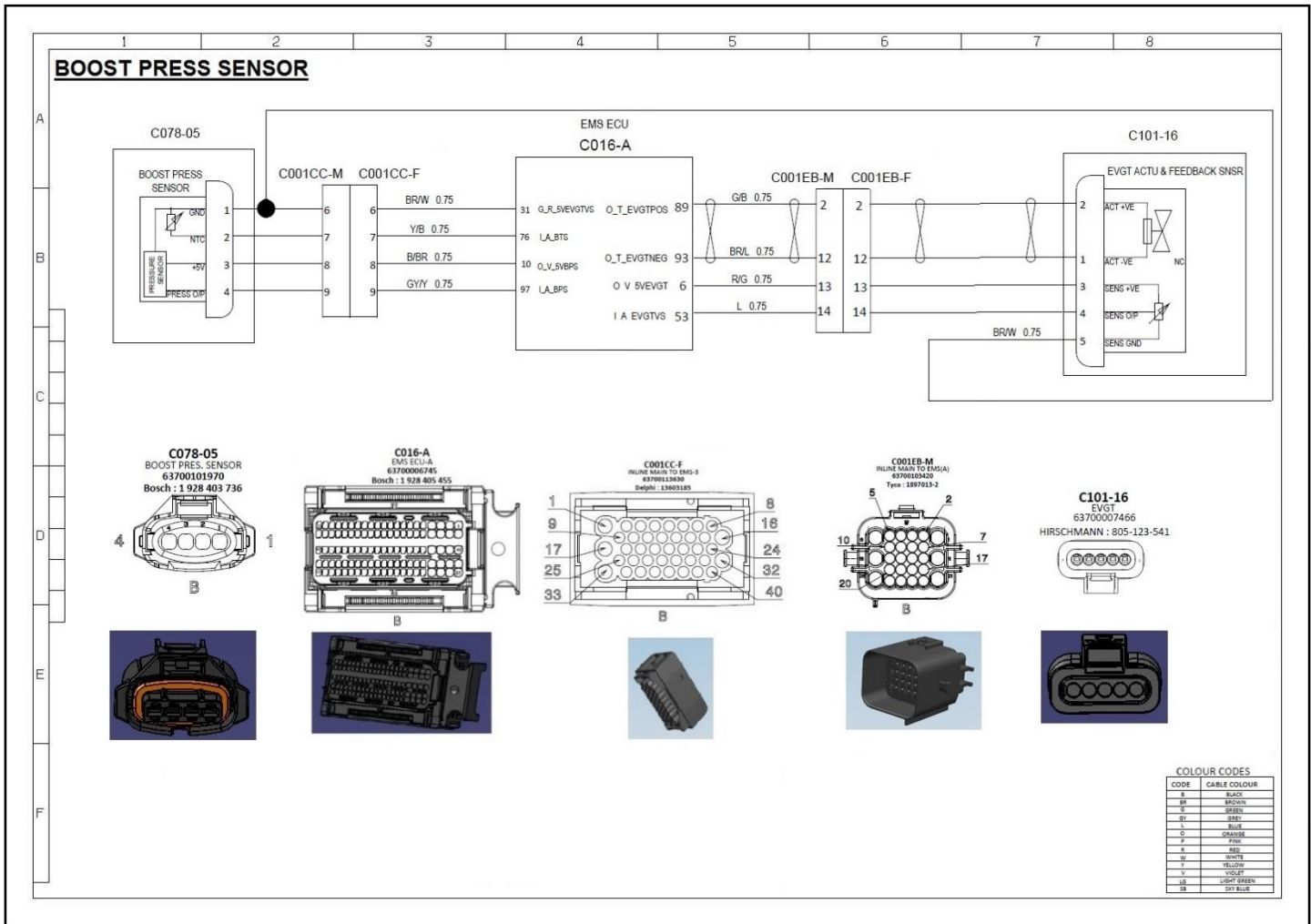
**Checkpoints:**

1. Check Battery Voltage
2. Check Wire harness connections
3. Check MAP Sensor condition for any mechanical damage.

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 9	
Step 4	If error still present, check continuity in between pin 4 & A97 and pin 2 & A27.	
Step 5	If Step 4 fails then check signal for Open circuit or short circuit to battery.	
Step 6	If Step 5 is true then check for air leakages & exhaust leakage which can cause higher boost pressure	
Step 7	If still error present replace MAP sensor with new one & go to Step 9	
Step 8	Check DTC	

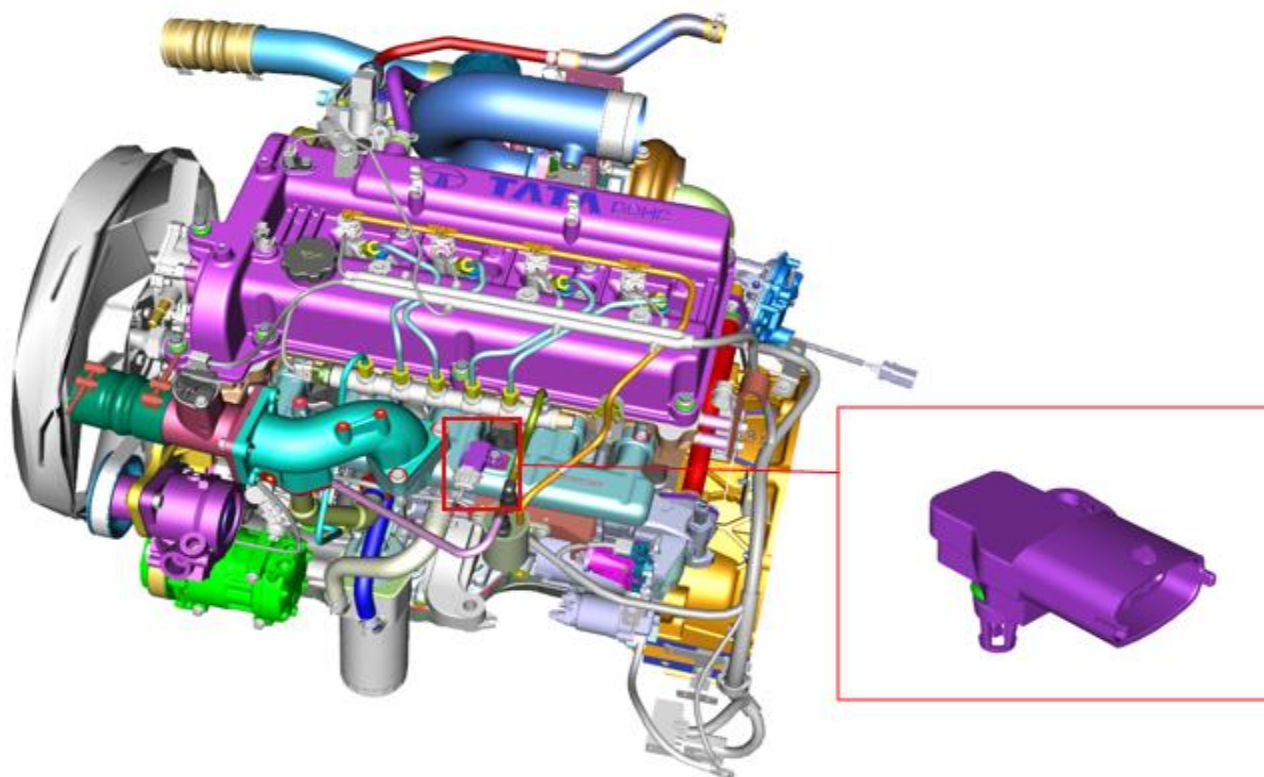
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the pressure and temperature of compressed air intake manifold by using this sensor. TMAP sensor has 4-pole connector and provides the Analog input signal at A97, which corresponds, to pressure of compressed air and Analog input at A76, which corresponds to temperature of compressed air. It is mounted on the Manifold after the turbo charger. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





**P0110-11: Intake air temperature Sensor Signal Short circuit to ground**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0110-11 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

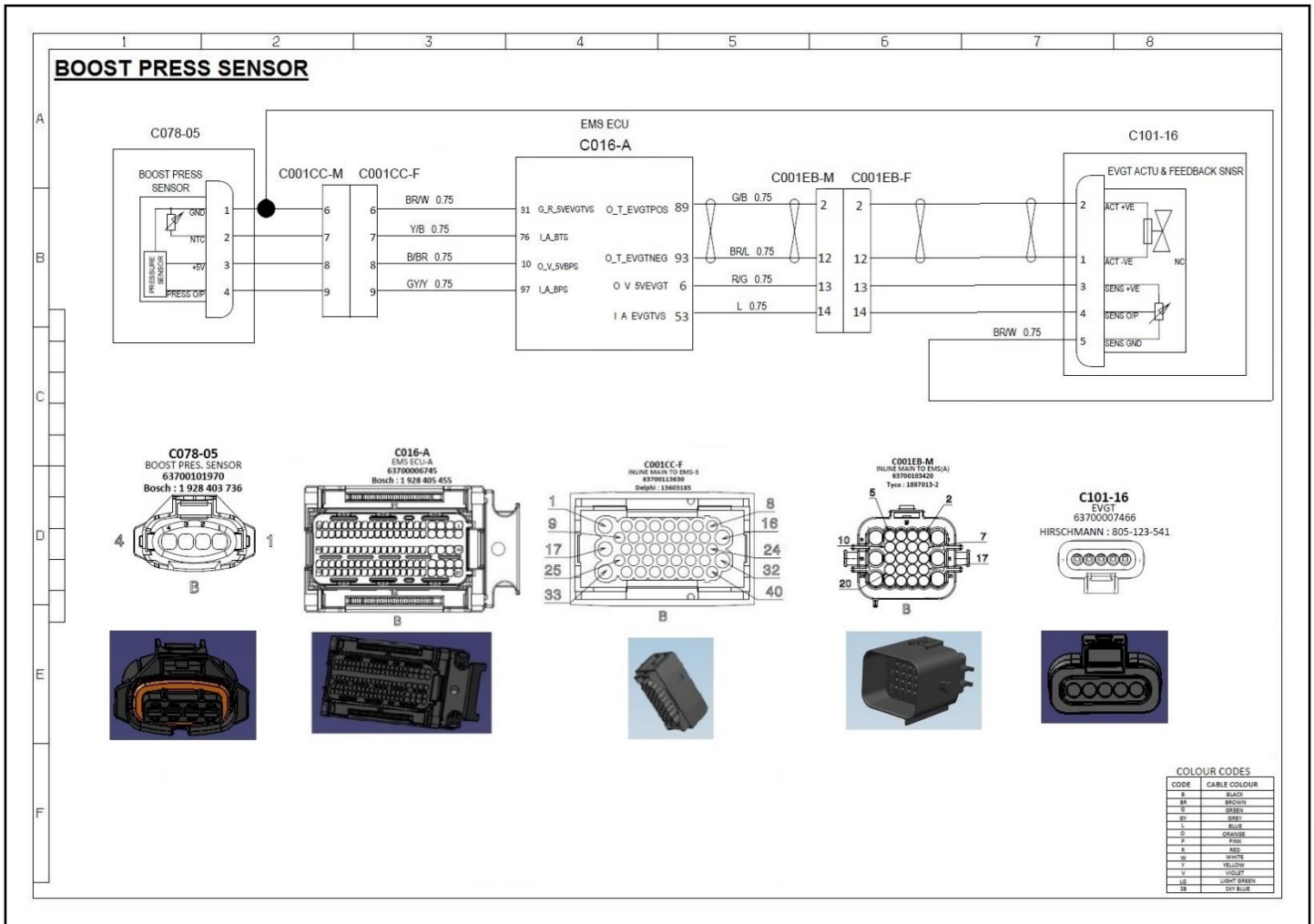
**Checkpoints:**

1. Check Battery Voltage
2. Check Wire harness connections
3. Check Air intake pipes for good condition & leakages or damage
4. Check Boost Sensor condition for any mechanical damage.

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 9	
Step 4	If error still present, check continuity in between pin 3 & A10 and pin 2 & A31.	
Step 5	If error still present, check continuity in between pin 1 & A76	
Step 6	If Step 4 & Step 5 fails then check signal (A76) short circuit to ground (A31)	
Step 7	If Step 6 is true then replace the wire harness cable with new one & go to Step 9	
Step 8	If still error present replace MAP sensor with new one & go to Step 9	
Step 9	Check DTC	

#### Circuit Schematic Diagram:

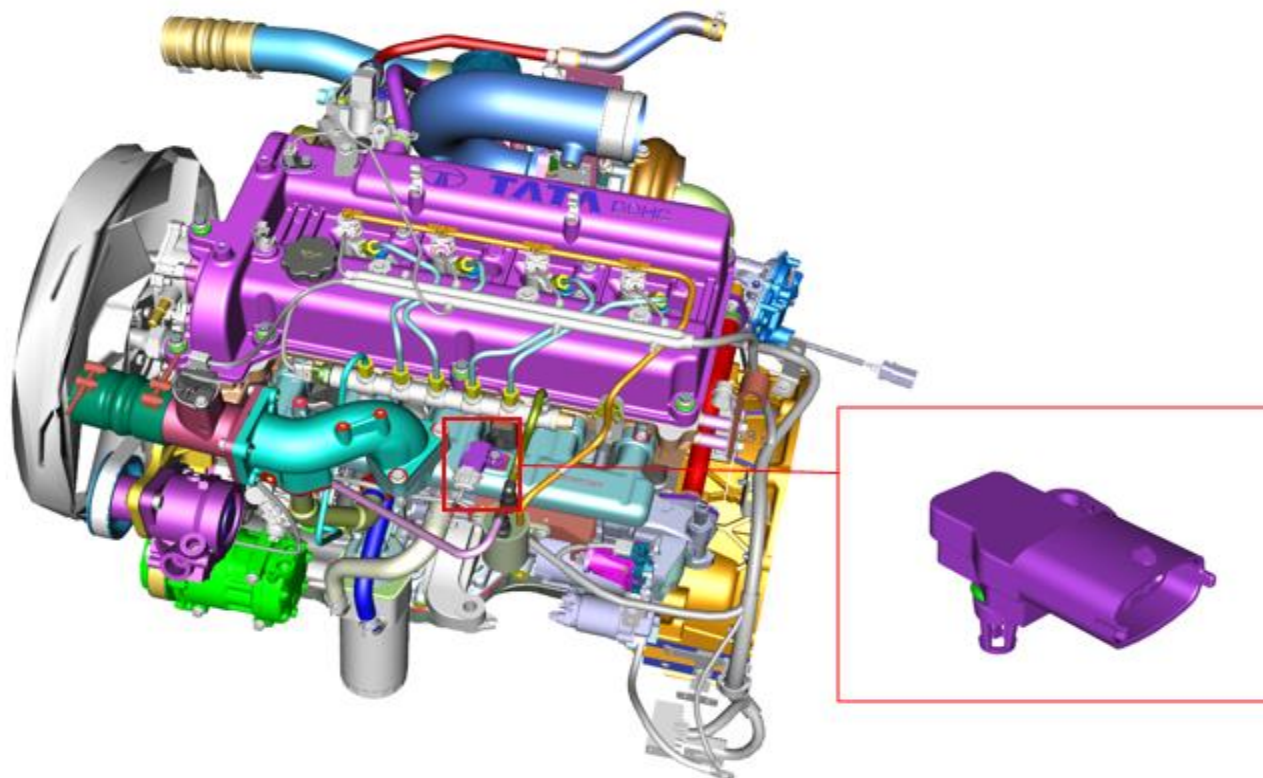


#### Circuit Description:

EMS measures the pressure and temperature of compressed air intake manifold by using this sensor. TMAP sensor has 4-pole connector and provides the Analog input signal at A97, which corresponds, to pressure of compressed air and Analog input at A76, which corresponds to temperature of compressed air. It is mounted on the Manifold after the turbo charger. Check for the continuity between EMS and Sensor by referring above schematic.



Location & Component Image:





**P0110-12: Intake air temperature Sensor Signal Open circuit or Short circuit to battery**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0110-12 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

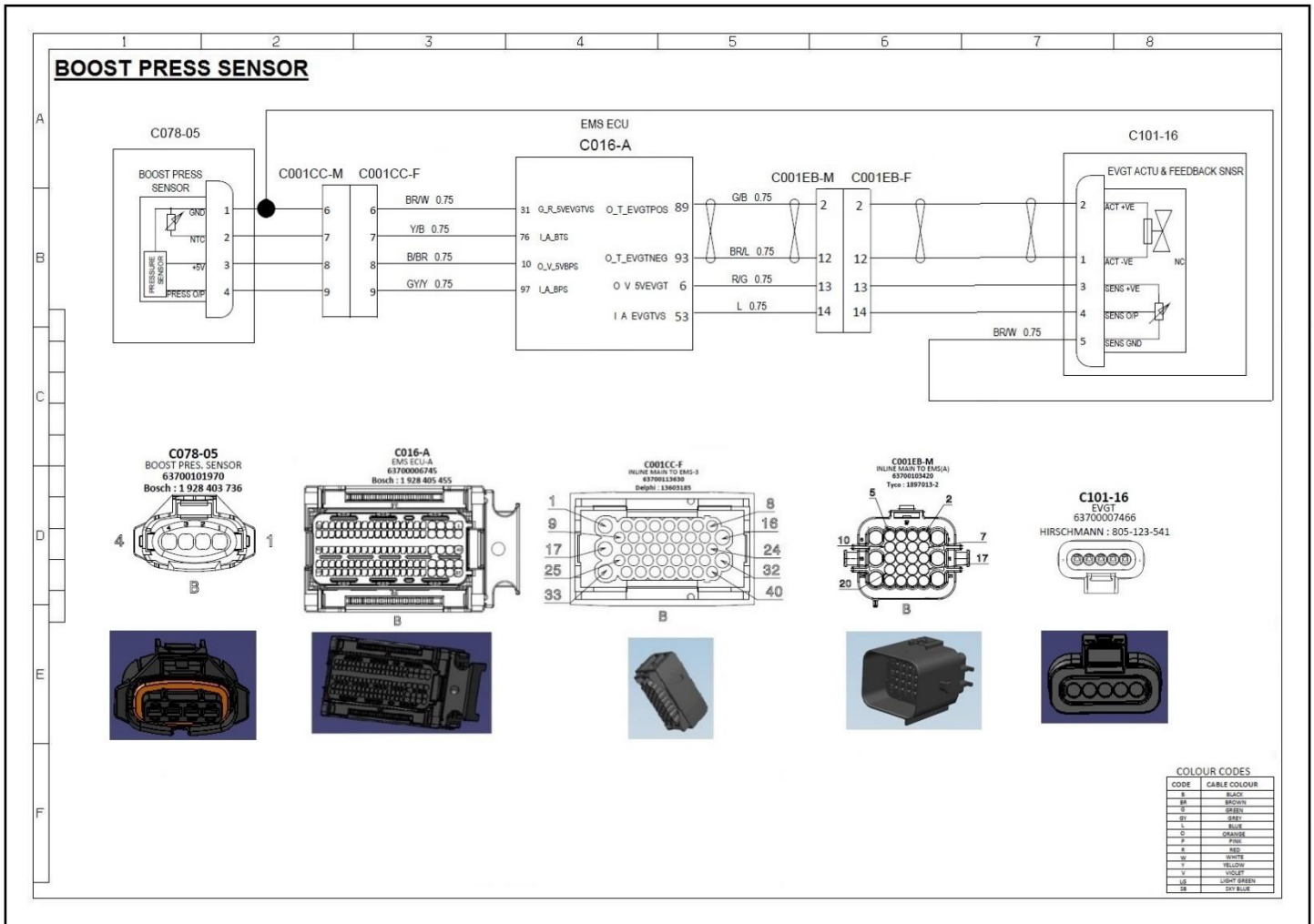
**Checkpoints:**

1. Check Battery Voltage
2. Check Wire harness connections
3. Check Air intake pipes for good condition & leakages or damage
4. Check TMAP Sensor condition for any mechanical damage

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 9	
Step 4	If error still present, check continuity in between pin 3 & A10 and pin 2 & A31.	
Step 5	If error still present, check continuity in between pin 1 & A76	
Step 6	If Step 4 & Step 5 fails then check signal (A76) short circuit to ground (A10)	
Step 7	If Step 6 is true then replace the wire harness cable with new one & go to Step 9	
Step 8	If still error present replace MAP sensor with new one & go to Step 9	
Step 9	Check DTC	

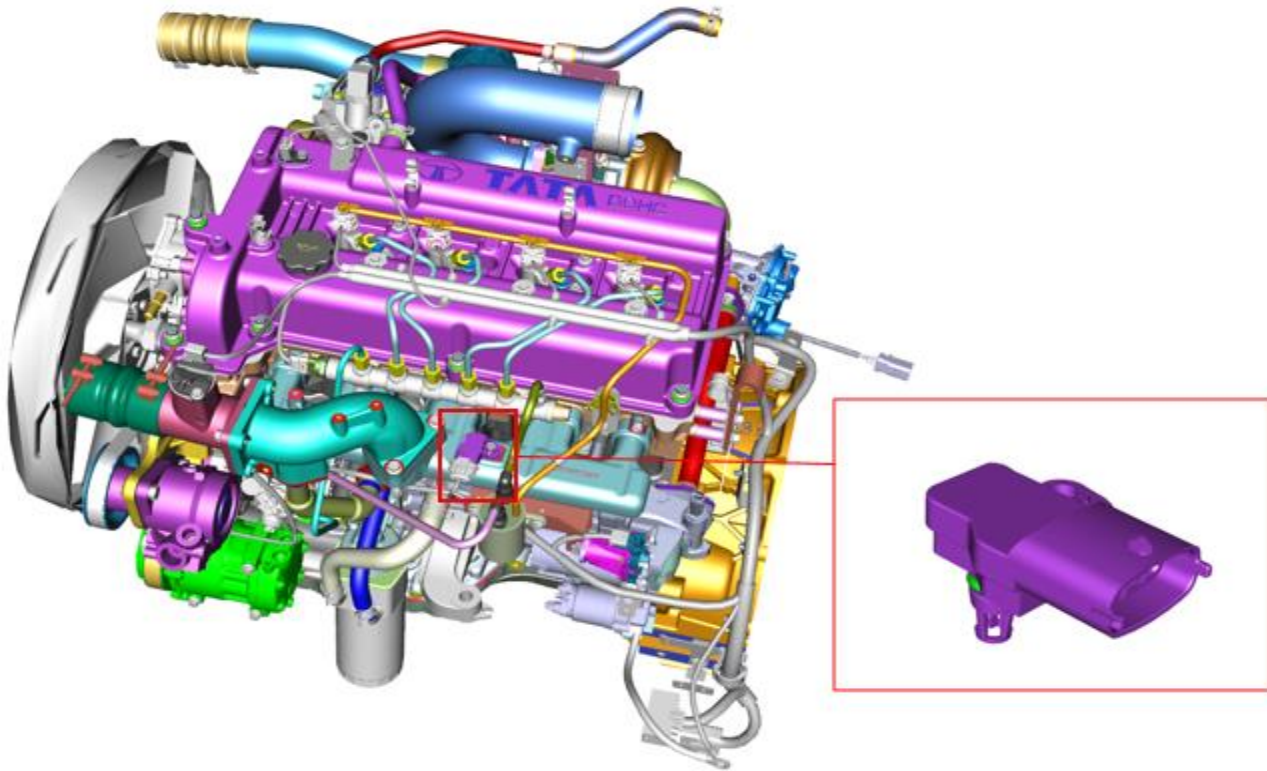
### Circuit Schematic Diagram:



### Circuit Description:

EMS measures the pressure and temperature of compressed air intake manifold by using this sensor. TMAP sensor has 4-pole connector and provides the Analog input signal at A97, which corresponds, to pressure of compressed air and Analog input at A76, which corresponds to temperature of compressed air. It is mounted on the Manifold after the turbo charger. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





## P006E-00: Turbocharger Boost Control Supply Voltage Circuit Low

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P006E-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Turbo Connector loose 2. Wiring harness issue	Torque limitation

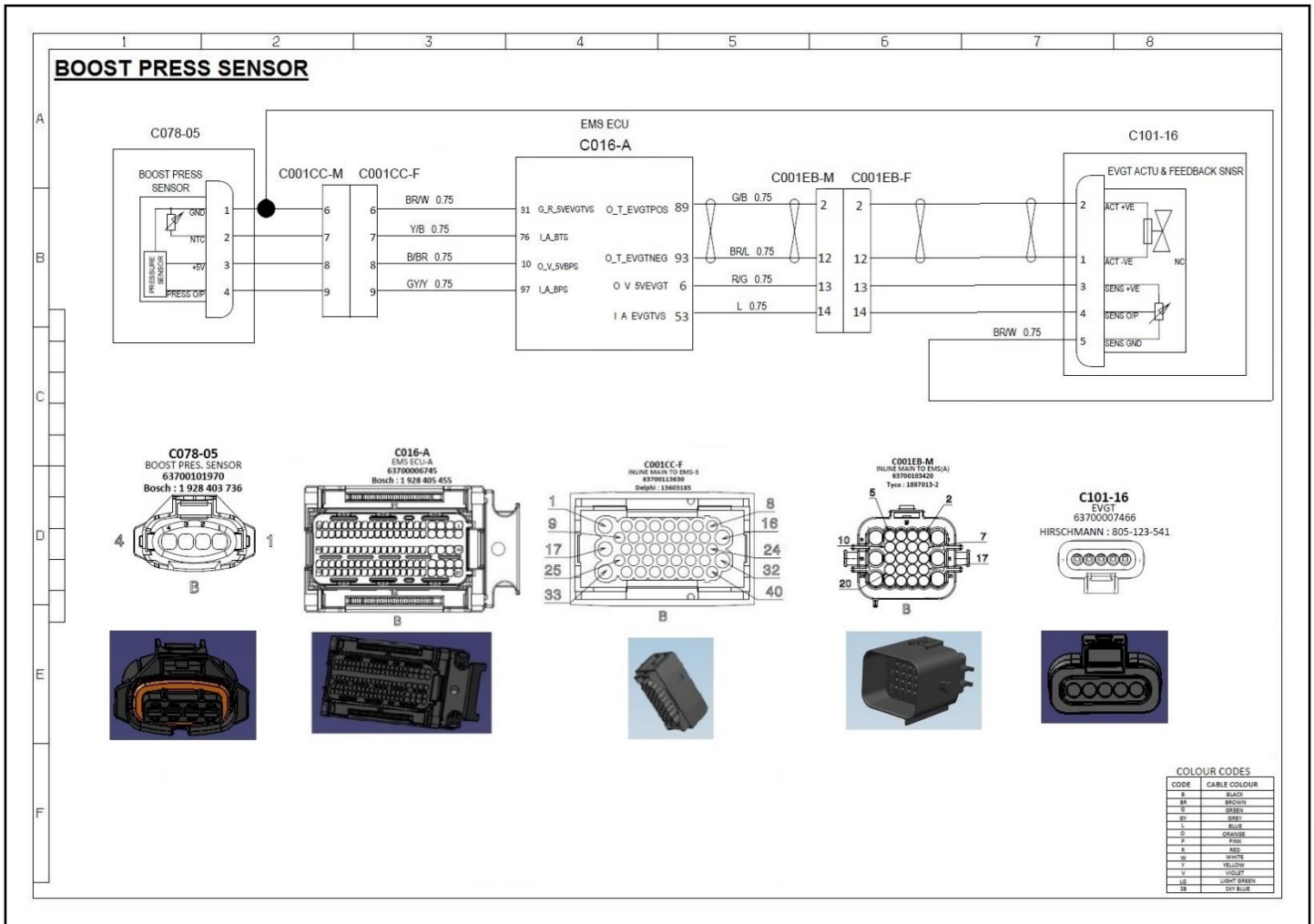
### Checkpoints:

1. Check EVGT Connector
2. Check wiring harness

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check battery voltage	<b>12.5 +/- 0.3 Volts</b>
Step 2	Check Turbocharger Connector for damage	
Step 3	Check for back out terminals of wiring harness, If yes fix the connections	
Step 4	Check continuity between EVGT connector pin 4 & ECU pin A53	
Step 5	Check continuity between EVGT connector pin 5 & ECU pin A31	
Step 6	If Step 4 & Step5 is true then check if sensor input (A53) is shorted to ground(A31)	
Step 7	If step 6 is true, replace the wire harness cable with new one & go to Step 9	
Step 8	If step7 is false change the ECU/EVGT & go to step 9	
Step 9	Check DTC	

### Circuit Schematic Diagram:

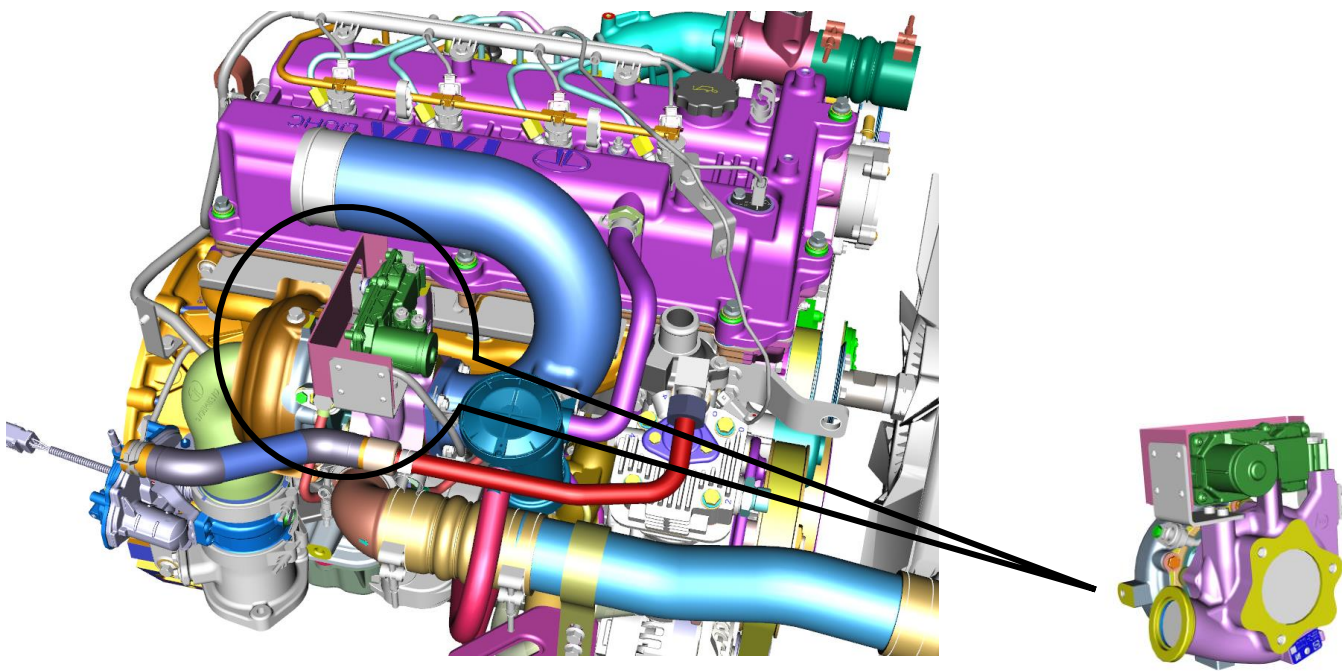


### Circuit Description:

EMS measures the Turbo actuator position by Analog input signal at A53, which corresponds, to the vane position. Check for the continuity between EMS and Sensor by referring above schematic.



Location & Component Image:





## P006F-00: Turbocharger Boost Control Supply Voltage Circuit High

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P006F-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Turbo Connector loose 2. Wiring harness issue	Torque limitation

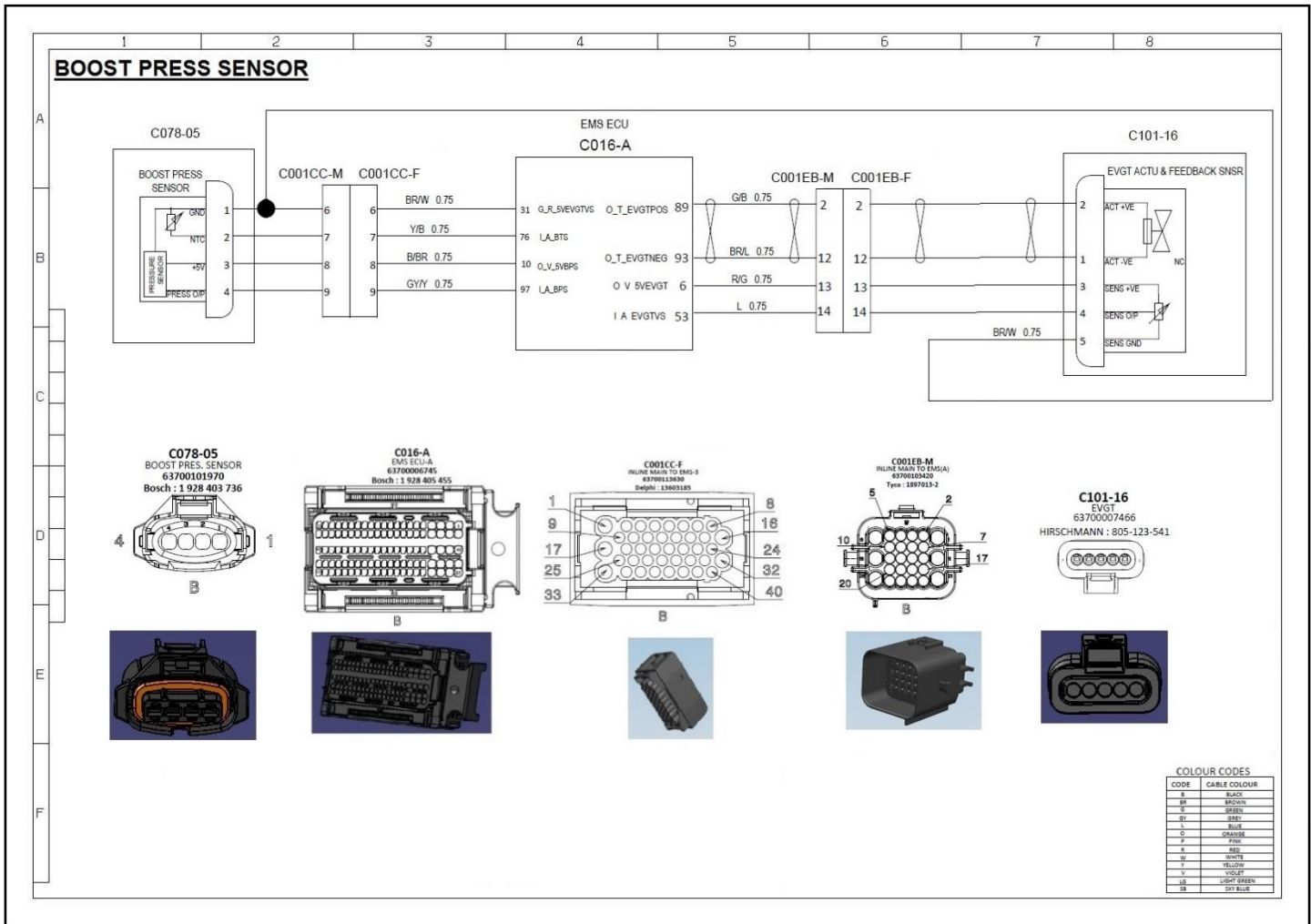
### Checkpoints:

1. Check EVGT Connector
2. Check wiring harness

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check battery voltage	<b>12.5 +/- 0.3 Volts</b>
Step 2	Check Turbocharger Connector for damage	
Step 3	Check for back out terminals of wiring harness, If yes fix the connections	
Step 4	Check continuity between EVGT connector pin 4 & ECU pin A53	
Step 5	Check continuity between EVGT connector pin 3 & ECU pin A06	
Step 6	If Step 4 & Step5 is true then check if sensor input (A53) is shorted to supply(A06)	
Step 7	If step 6 is true, replace the wire harness cable with new one & go to Step 9	
Step 8	If step7 is false change the ECU/EVGT & go to step 9	
Step 9	Check DTC	

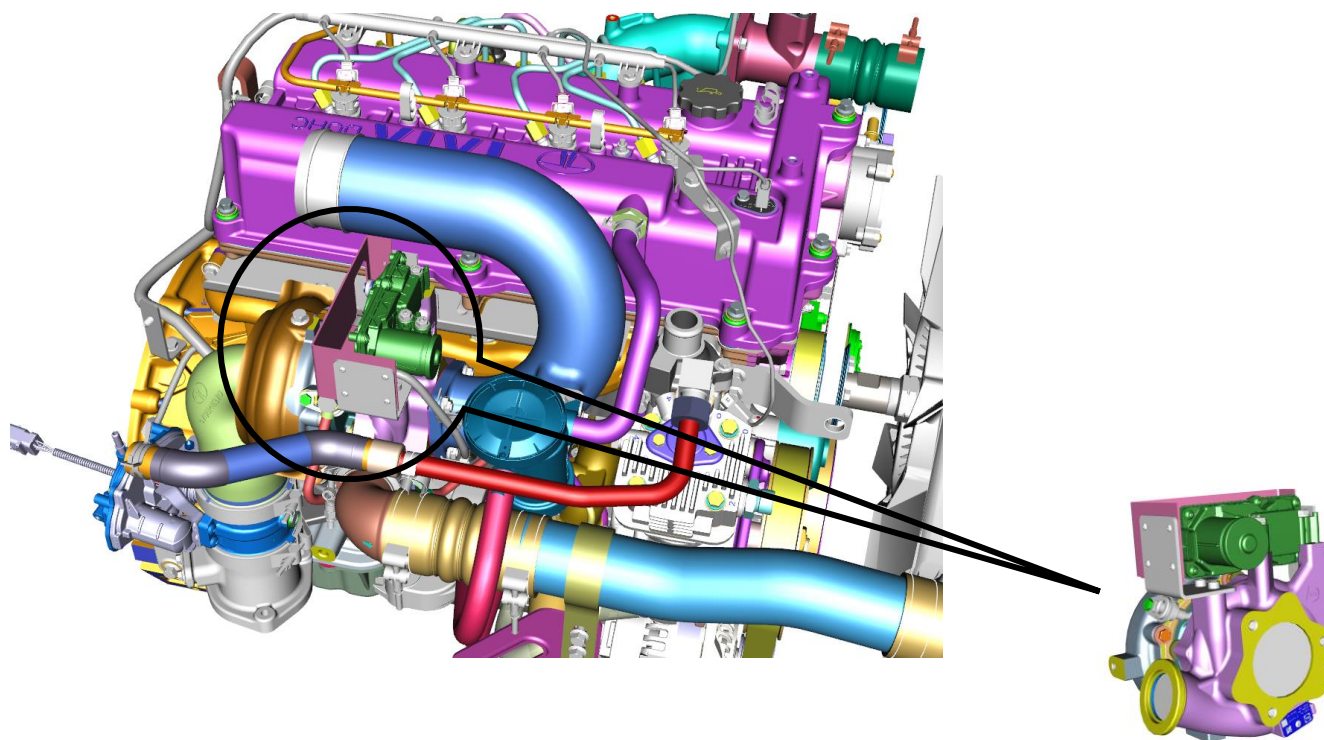
### Circuit Schematic Diagram:



### Circuit Description:

EMS measures the Turbo actuator position by Analog input signal at A53, which corresponds, to the vane position. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





## P0048-00: Turbocharger Boost Control "A" Circuit High

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P0048-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Turbo Connector loose 2. Wiring harness issue	Torque limitation

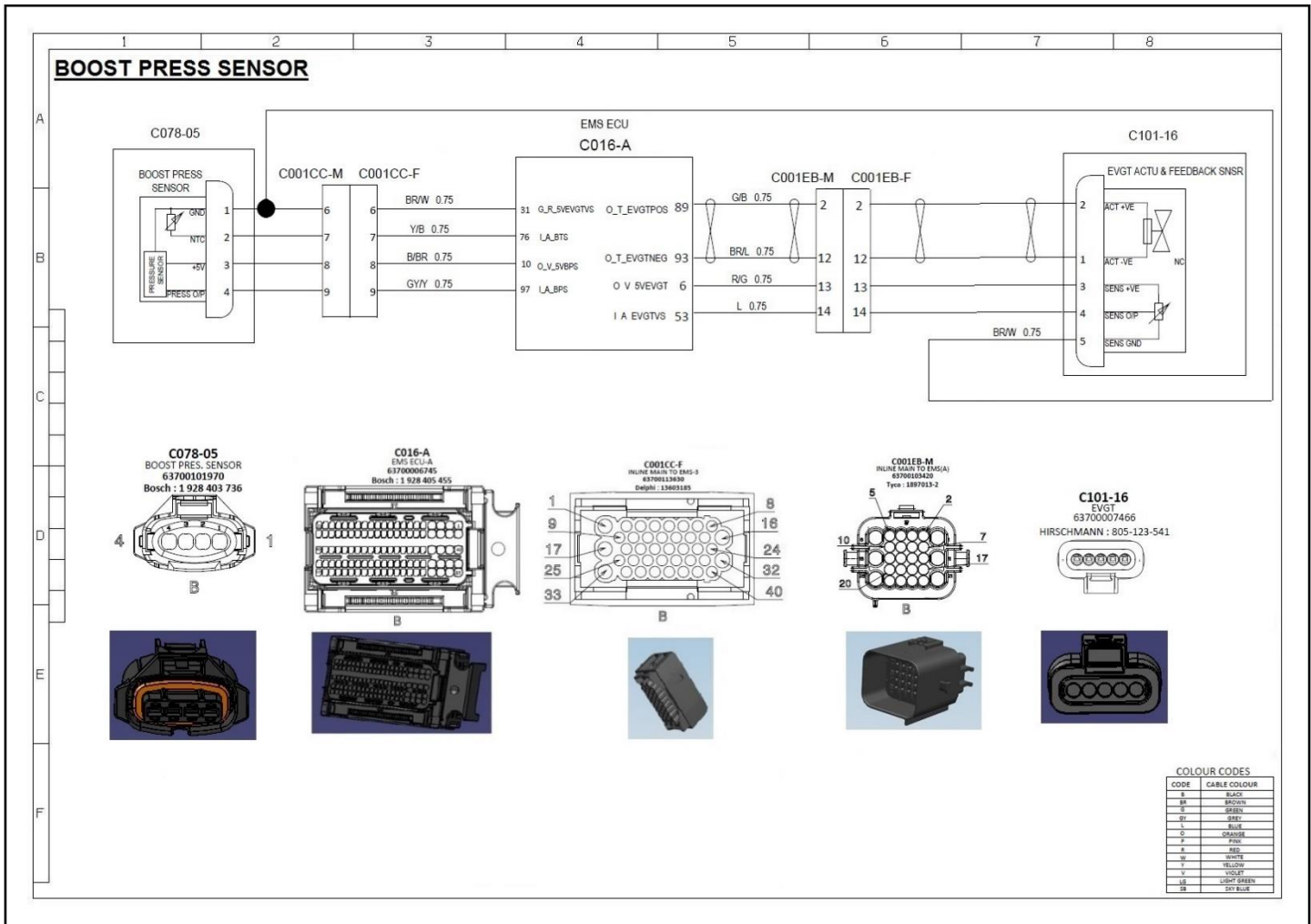
### Checkpoints:

1. Check EVGT Connector
2. Check wiring harness

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check battery voltage	<b>12.5 +/- 0.3 Volts</b>
Step 2	Check Turbocharger Connector for damage	
Step 3	Check for back out terminals of wiring harness, If yes fix the connections	
Step 4	Check continuity between EVGT connector pin 2 & ECU pin A89	
Step 5	Check continuity between EVGT connector pin 1 & ECU pin A93	
Step 6	If Step 4 & Step5 is true then check if connector pin2(A89) is shorted to supply(K01)	
Step 7	If step 6 is true, replace the wire harness cable with new one & go to Step 9	
Step 8	If step7 is false change the ECU/EVGT & go to step 9	
Step 9	Check DTC	

### Circuit Schematic Diagram:

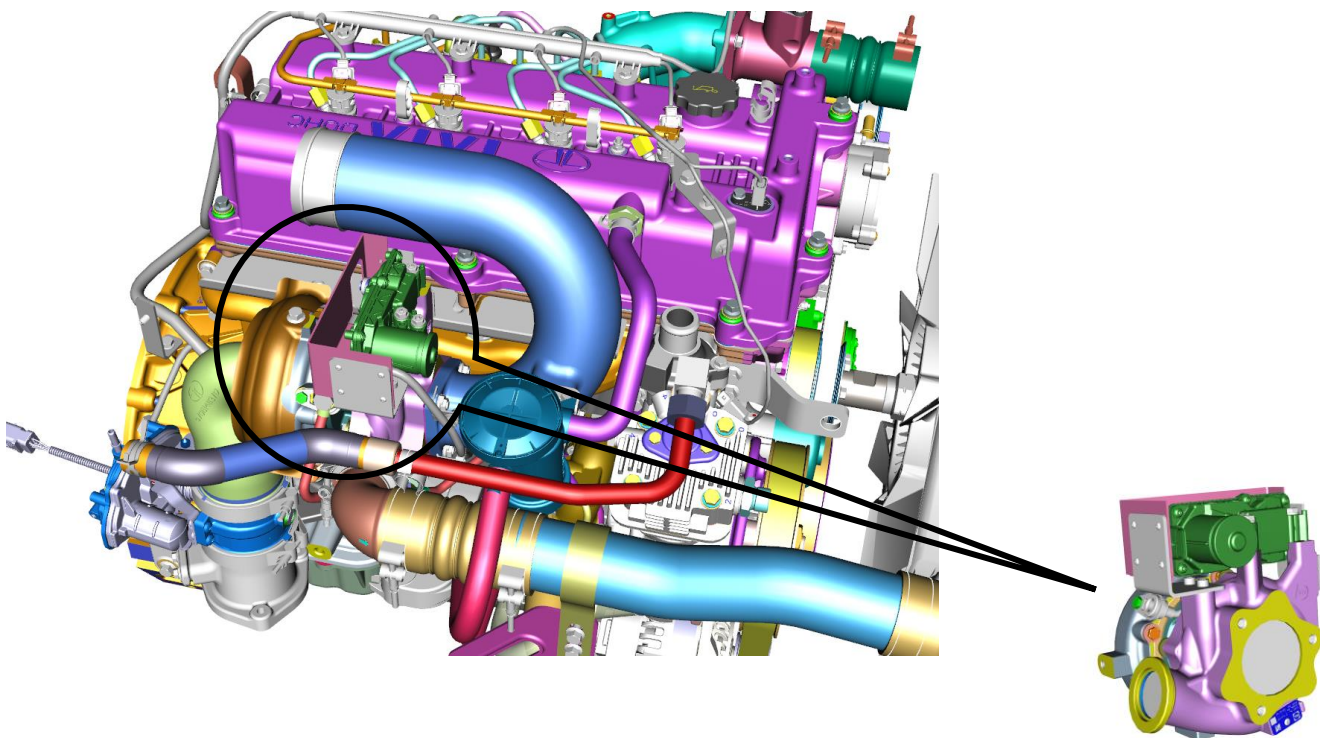


### Circuit Description:

EMS measures the Turbo actuator position by Analog input signal at A53, which corresponds, to the vane position. Check for the continuity between EMS and Sensor by referring above schematic.



Location & Component Image:





## P004D-00: Turbocharger Boost Control "B" Circuit High

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P004D-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Turbo Connector loose 2. Wiring harness issue	Torque limitation

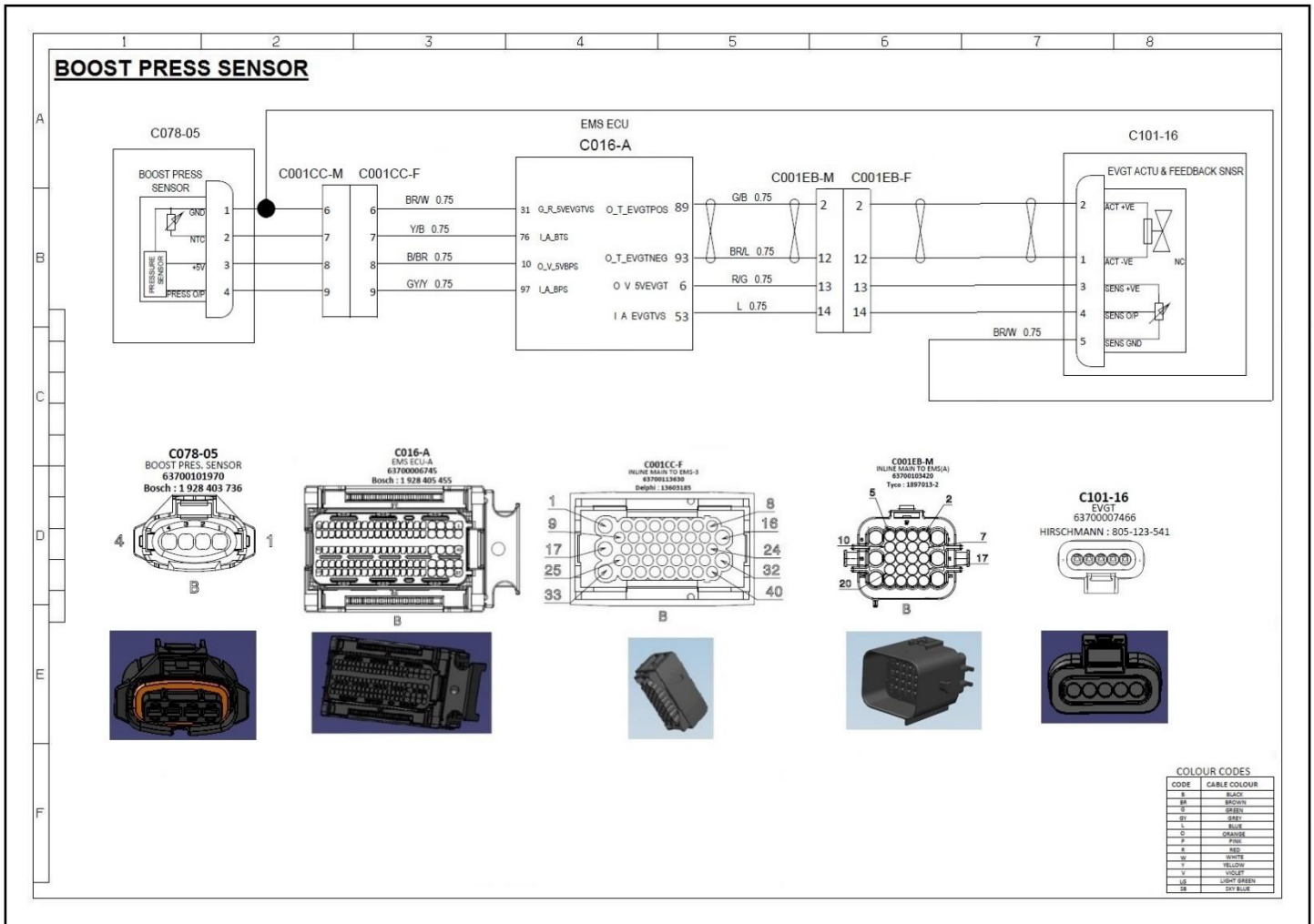
### Checkpoints:

1. Check EVGT Connector
2. Check wiring harness

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check battery voltage	<b>12.5 +/- 0.3 Volts</b>
Step 2	Check Turbocharger Connector for damage	
Step 3	Check for back out terminals of wiring harness, If yes fix the connections	
Step 4	Check continuity between EVGT connector pin 2 & ECU pin A89	
Step 5	Check continuity between EVGT connector pin 1 & ECU pin A93	
Step 6	If Step 4 & Step5 is true then check if connector pin1(A93) is shorted to supply(K01)	
Step 7	If step 6 is true, replace the wire harness cable with new one & go to Step 9	
Step 8	If step7 is false change the ECU/EVGT & go to step 9	
Step 9	Check DTC	

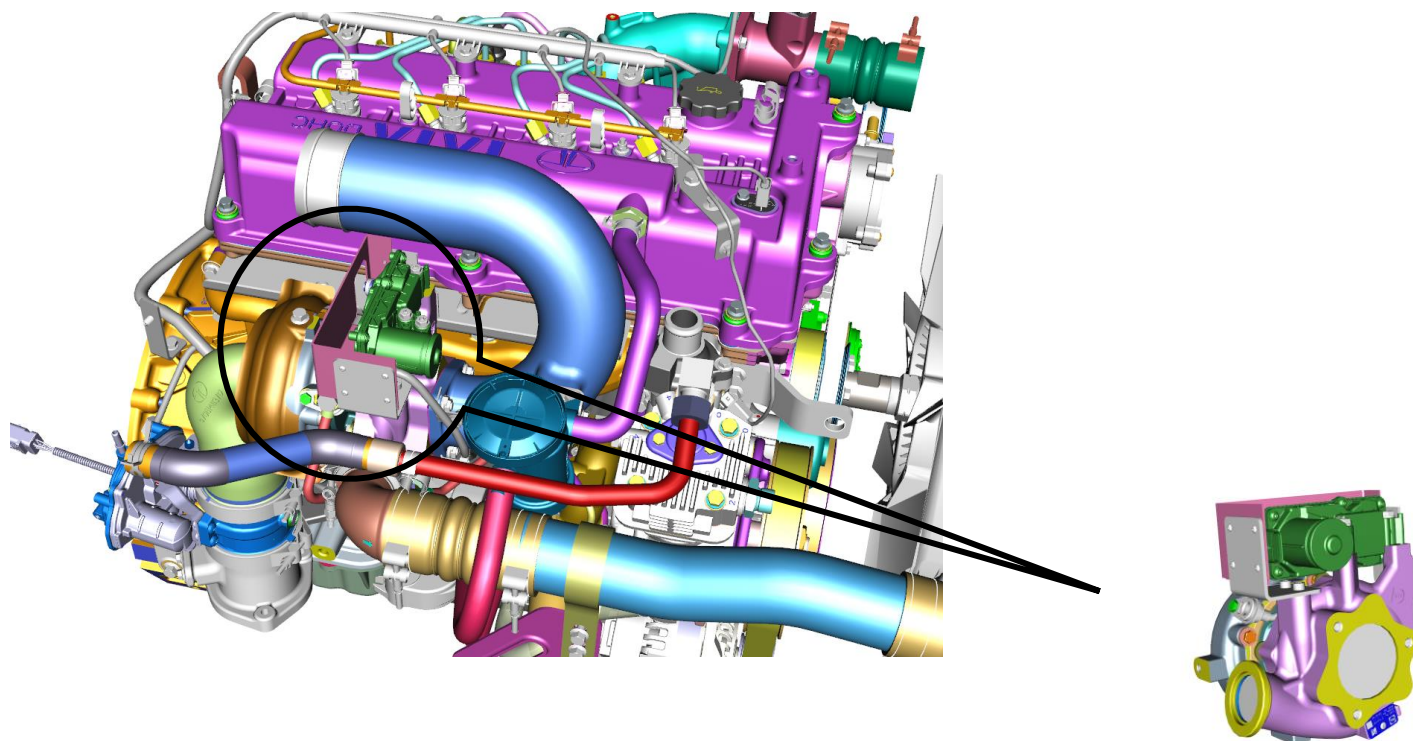
### Circuit Schematic Diagram:



### Circuit Description:

EMS measures the Turbo actuator position by Analog input signal at A53, which corresponds, to the vane position. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





## P0047-00: Turbocharger Boost Control "A" Circuit Low

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P0047-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Turbo Connector loose 2. Wiring harness issue	Torque limitation

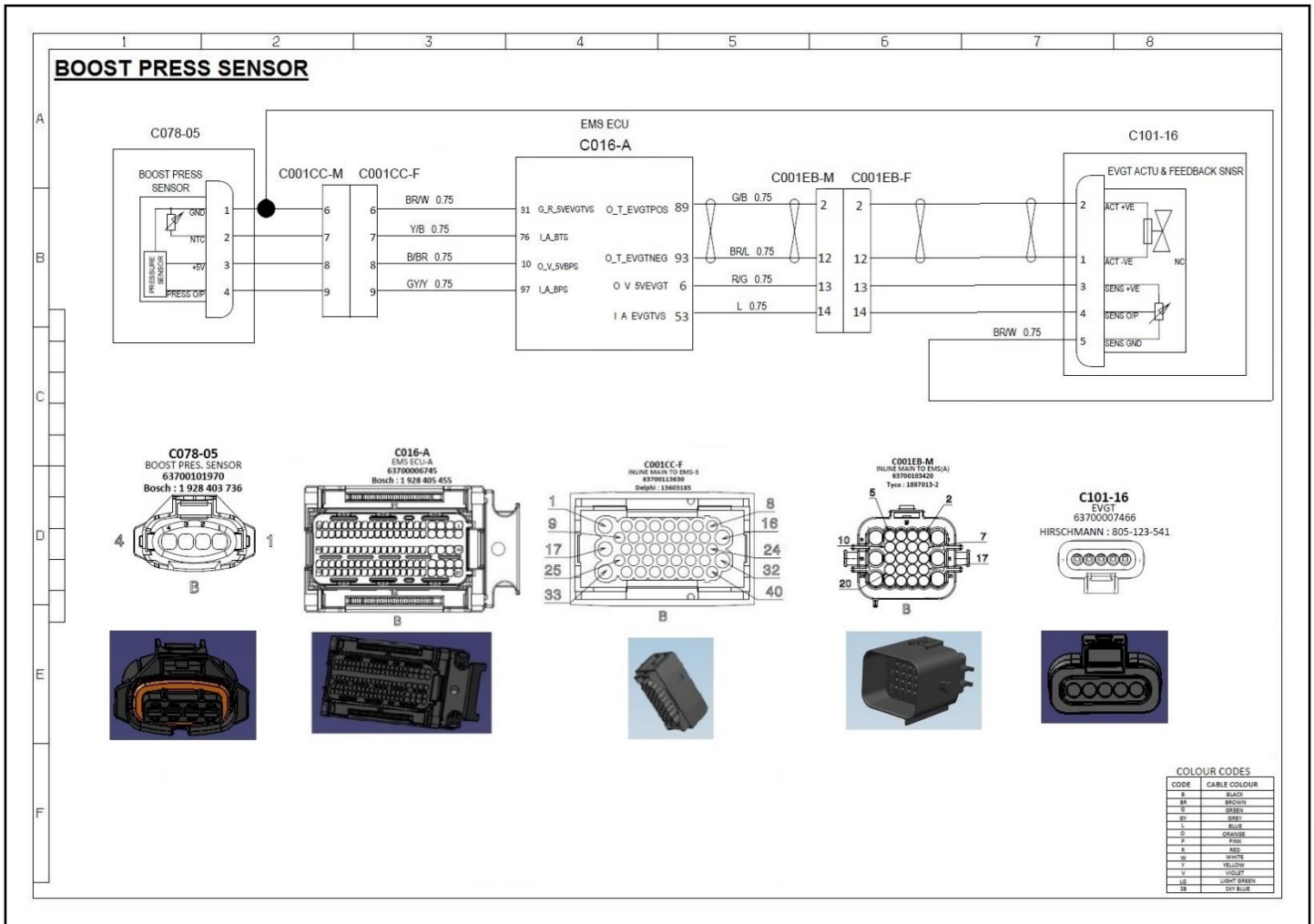
### Checkpoints:

1. Check EVGT Connector
2. Check wiring harness

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check battery voltage	<b>12.5 +/- 0.3 Volts</b>
Step 2	Check Turbocharger Connector for damage	
Step 3	Check for back out terminals of wiring harness, If yes fix the connections	
Step 4	Check continuity between EVGT connector pin 2 & ECU pin A89	
Step 5	Check continuity between EVGT connector pin 1 & ECU pin A93	
Step 6	If Step 4 & Step5 is true then check if connector pin2(A89) is shorted to ground(K02)	
Step 7	If step 6 is true, replace the wire harness cable with new one & go to Step 9	
Step 8	If step7 is false change the ECU/EVGT & go to step 9	
Step 9	Check DTC	

### Circuit Schematic Diagram:

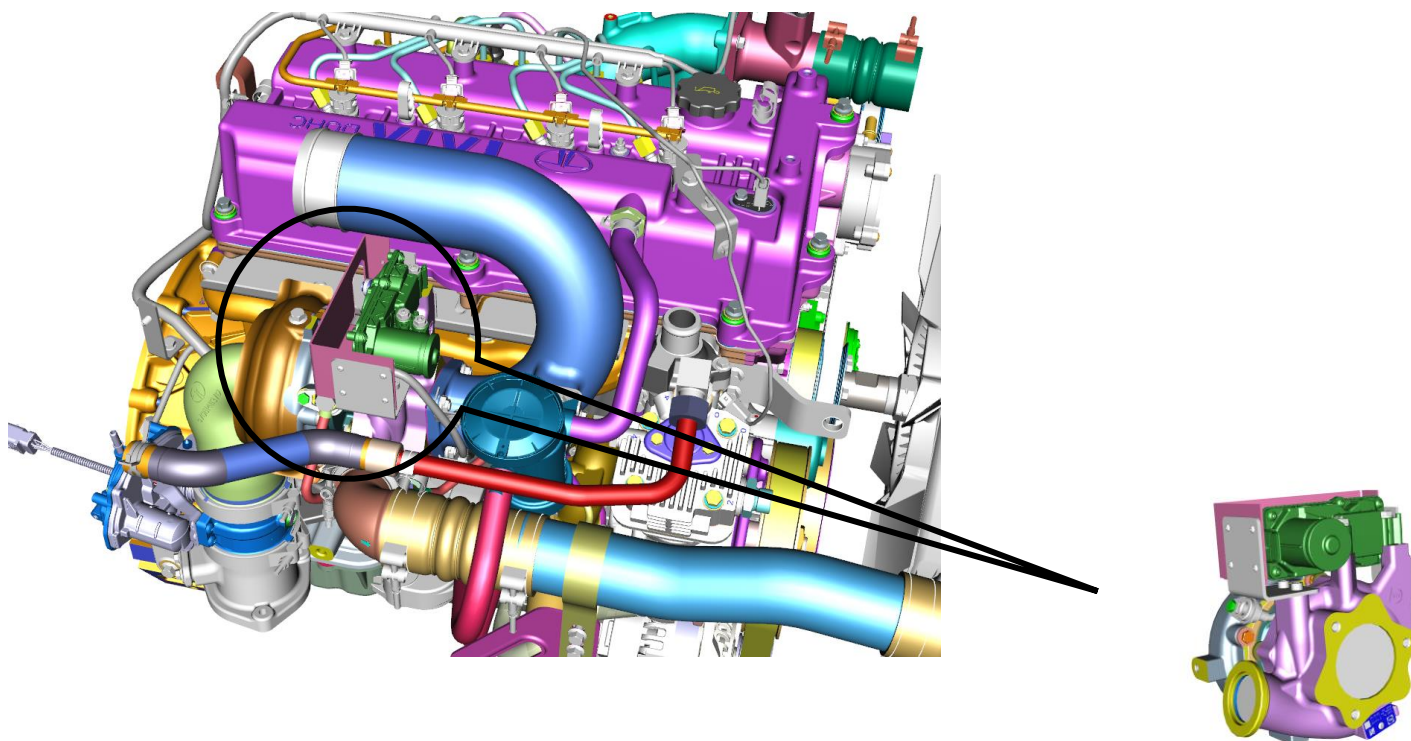


### Circuit Description:

EMS measures the Turbo actuator position by Analog input signal at A53, which corresponds, to the vane position. Check for the continuity between EMS and Sensor by referring above schematic.



Location & Component Image:





## P004C-00: Turbocharger Boost Control "B" Circuit Low

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P004C-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Turbo Connector loose 2. Wiring harness issue	Torque limitation

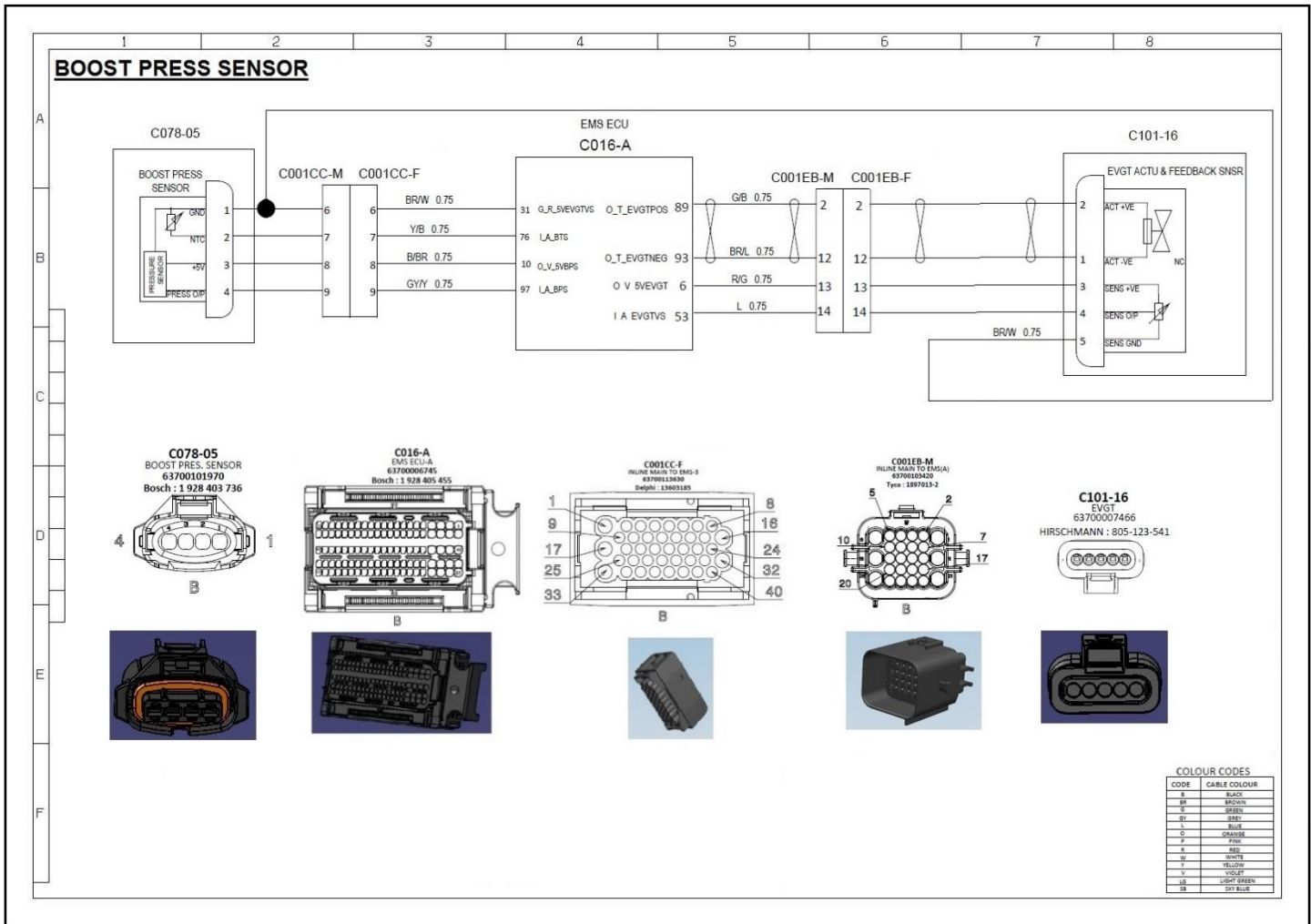
### Checkpoints:

1. Check EVGT Connector
2. Check wiring harness

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check battery voltage	<b>12.5 +/- 0.3 Volts</b>
Step 2	Check Turbocharger Connector for damage	
Step 3	Check for back out terminals of wiring harness, If yes fix the connections	
Step 4	Check continuity between EVGT connector pin 2 & ECU pin A89	
Step 5	Check continuity between EVGT connector pin 1 & ECU pin A93	
Step 6	If Step 4 & Step5 is true then check if connector pin2(A93) is shorted to ground(K02)	
Step 7	If step 6 is true, replace the wire harness cable with new one & go to Step 9	
Step 8	If step7 is false change the ECU/EVGT & go to step 9	
Step 9	Check DTC	

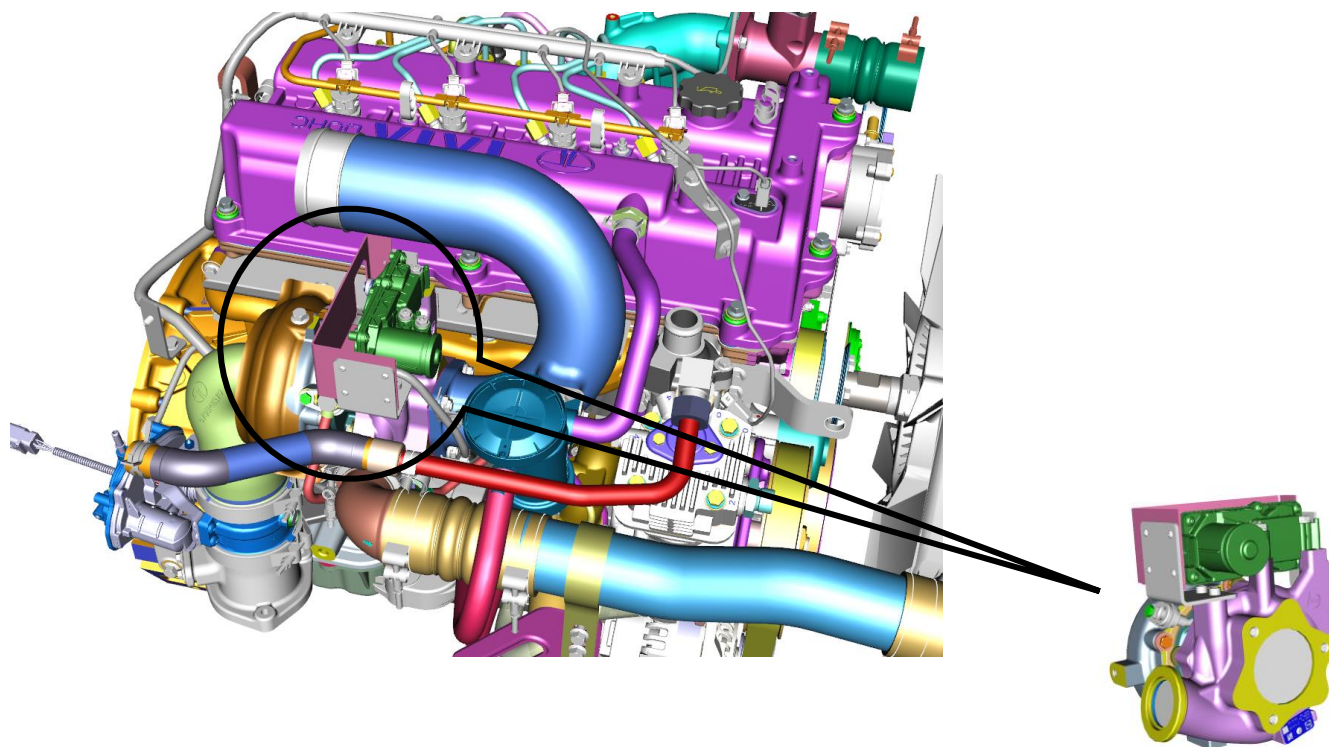
### Circuit Schematic Diagram:



### Circuit Description:

EMS measures the Turbo actuator position by Analog input signal at A53, which corresponds, to the vane position. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





**P0087-00: Maximum positive deviation of rail pressure exceeded**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0087-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Fuel leakage in the high pressure circuit 2. Restriction in fuel suction line 3. Pump could not deliver high pressure fuel 4. Fuel Tank is empty	NA

**Checkpoints:**

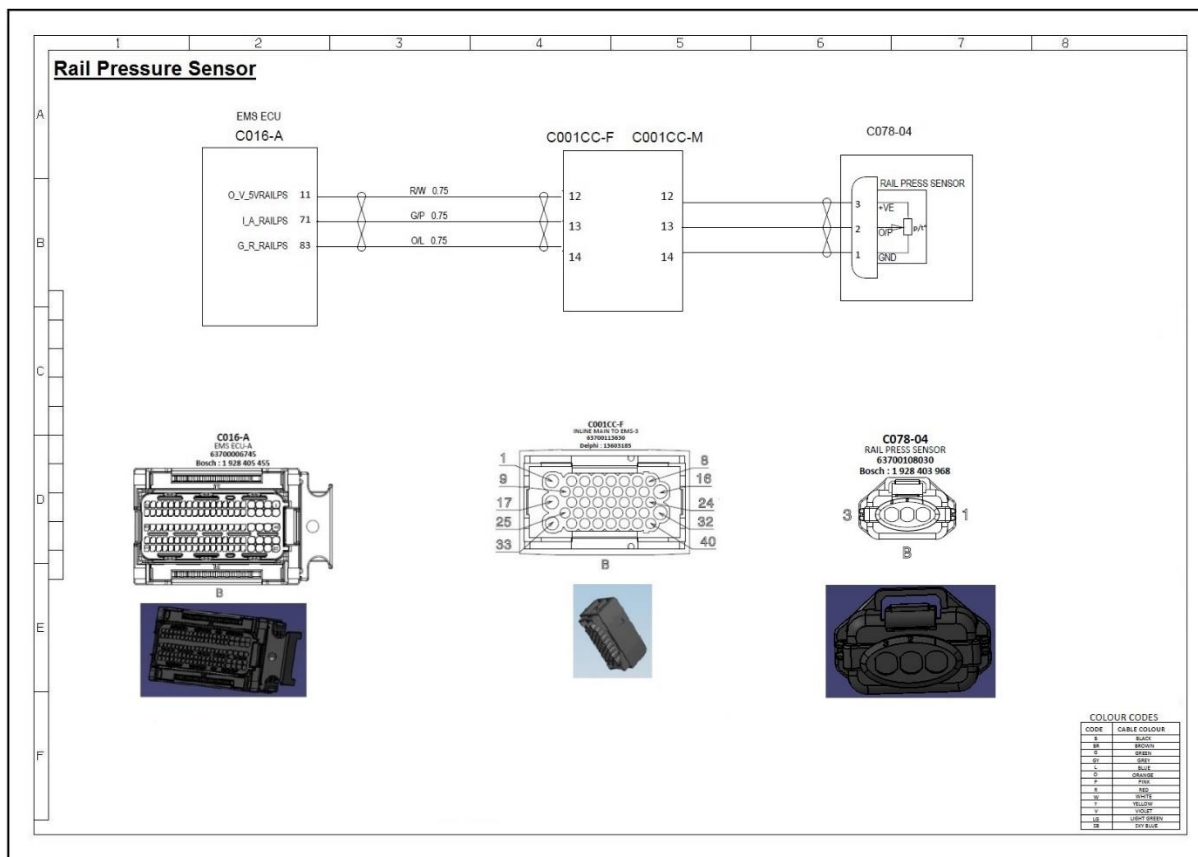
- 1 Check Fuel leakage in fuel lines
- 2 Check fuel filter condition
- 3 Check fuel level in fuel tank

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check for leakage in high pressure circuit, if arrested go to step 9	
Step 2	Check for leakage in low pressure circuit, if arrested go to step 9	
Step 3	Check the fuel level in fuel tank, if arrested go to step 9	
Step 4	Check for the bends/crimps in the fuel suction line, if arrested go to step 9	
Step 5	Change the fuel filter	
Step 6	Check for fuel leakage from rail return line in running condition, if yes get it checked from the authorized dealer, go to step 9 after rectification	
Step 7	Remove the pump and get it checked from the authorized dealer, go to step 9 after rectification	
Step 8	Remove the injector and get it checked from the authorized dealer, go to step 9 after rectification	
Step 9	Check DTC	



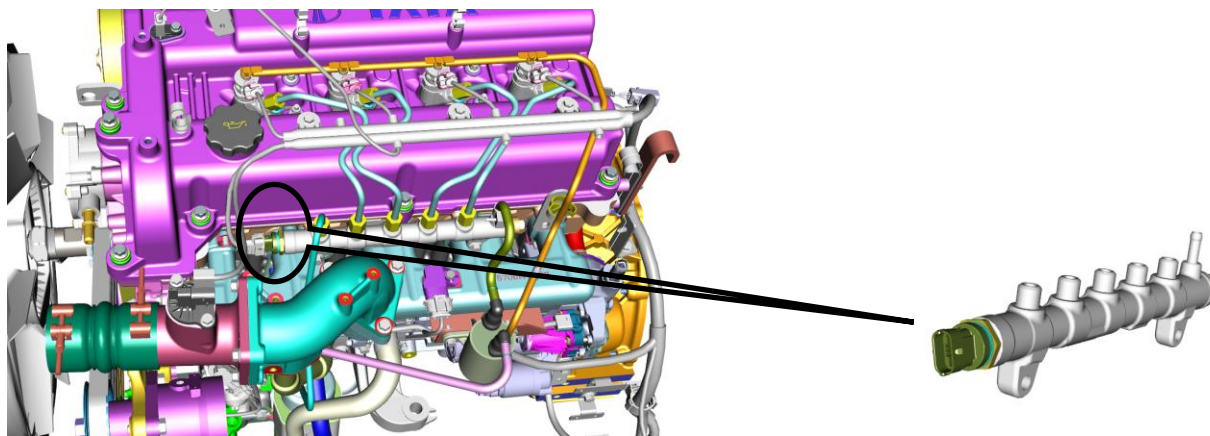
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS monitors the internal fuel pressure of common rail using Rail pressure sensor. It is an analog input type with 3-wires and it gives output voltage in proportion to the internal fuel pressure. This signal is used by EMS to adjust the pressure of rail to the required value. Check for the continuity between EMS and Sensor by referring above schematic.

#### Location & Component Image:







**P0088-00: Maximum negative rail pressure deviation with metering unit on lower limit is exceeded**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0088-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Pump or metering unit stuck in open position 2. Restriction in pressure relief valve 3. Electric feed pump pressure is high.	NA

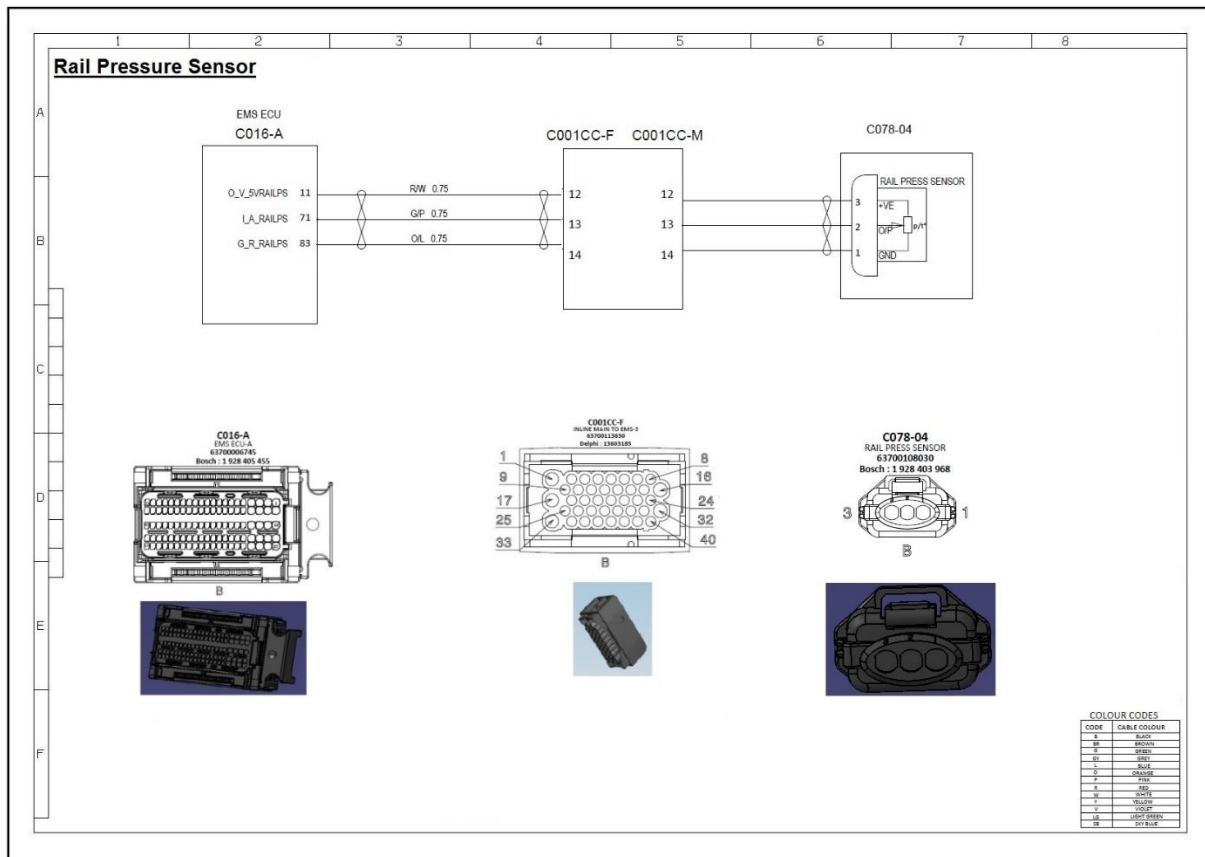
**Checkpoints:**

1. Check Fuel return lines
2. Check Fuel filter condition
3. Check if electrical connection to Metering unit of fuel pump is proper.

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check whether the pump metering unit connector is connected properly, go to step 10 after rectification	
Step 2	Check whether the rail pressure sensor connector is connected properly, go to step 10 after rectification	
Step 3	Check for the bends/crimps in the fuel return line, go to step 9 after rectification	
Step 4	Remove the pump and get it checked from the authorized dealer, go to step 9 after rectification	
Step 5	Change the fuel return lines , go to step 9 after rectification	
Step 6	Change the fuel accumulator , go to step 9 after rectification	
Step 7	Change the fuel rail	
Step 9	Check DTC	

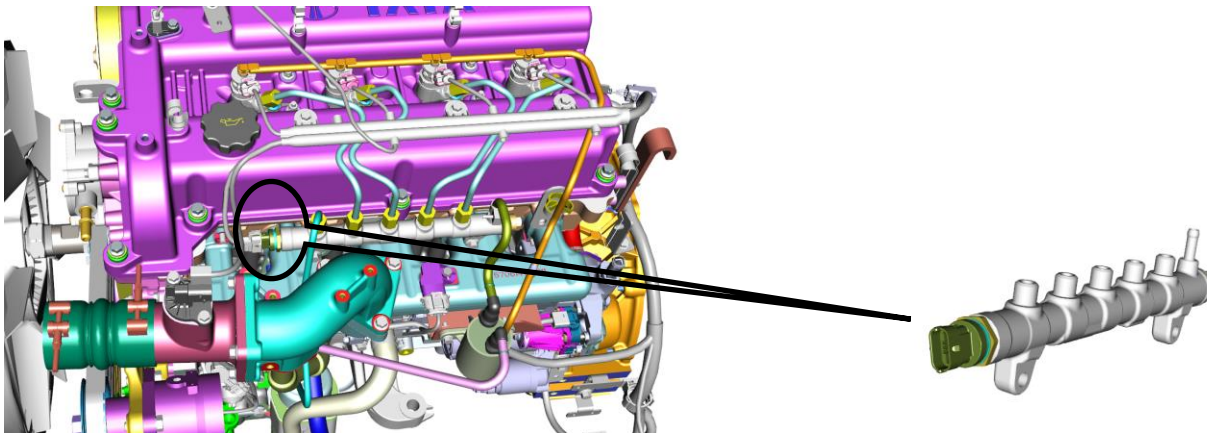
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS monitors the internal fuel pressure of common rail using Rail pressure sensor. It is an analog input type with 3-wires and it gives output voltage in proportion to the internal fuel pressure. This signal is used by EMS to adjust the pressure of rail to the required value. Check for the continuity between EMS and Sensor by referring above schematic.

#### Location & Component Image:





## P0089-92: DFC for Fuel Pressure Regulator 1 Performance

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P0089-92 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Pump or metering unit stuck in open position 2. Restriction in pressure relief valve 3. Electric feed pump pressure is high.	NA

### Checkpoints:

1. Check Fuel return lines
2. Check Fuel filter condition

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check whether the pump metering unit connector is connected properly, go to step 10 after rectification	
Step 2	Check whether the rail pressure sensor connector is connected properly, go to step 10 after rectification	
Step 3	Check for the bends/crimps in the fuel return line, go to step 9 after rectification	
Step 4	Remove the pump and get it checked from the authorized dealer, go to step 9 after rectification	
Step 5	Change the fuel return lines , go to step 9 after rectification	
Step 6	Change the fuel accumulator , go to step 9 after rectification	
Step 7	Change the fuel rail	
Step 9	Check DTC	



**P00C6-00: DFC for no rail pressure build-up during cranking**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P00C6-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	<ol style="list-style-type: none"> <li>1. Wiring harness problem</li> <li>2. Sensor connector problem</li> <li>3. Leakage in the fuel circuit</li> <li>4. Fuel filter clogged</li> <li>5. Air entry in the fuel circuit</li> </ol>	NA

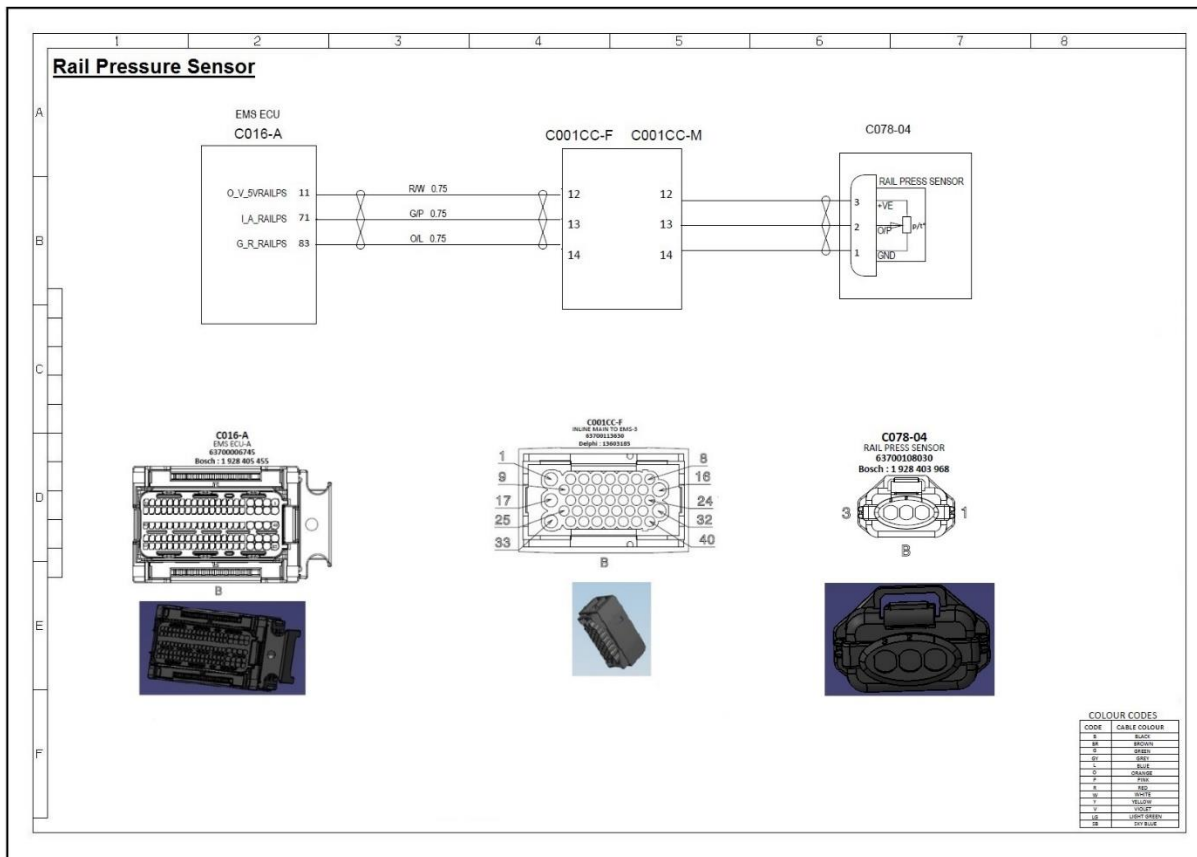
**Checkpoints:**

1. Check Fuel lines for leakage in both low pressure side & high pressure side
2. Check Fuel filter if clogged
3. Check for fuel level in tank

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check the electrical connections of the High Pressure fuel pump for loose connections	
Step 3	If connector is found lose in step 2 then fix is properly & go to Step 14	
Step 4	If error persists, check the electrical connections of Rail pressure sensor for loose connections	
Step 5	If connector found lose in step 4 then fix is properly & go to Step 14	
Step 6	Check fuel circuit for leakages	
Step 7	If any leakage observed , rectify it and run the engine to remove any air entrapped into the fuel line and go to step 14	
Step 8	If error persists, check the fuel filter for clogging	
Step 9	If fuel filter found clogged, Replace fuel filter and go to step 14	
Step 10	If error persists, check the fuel strainer in the fuel tank for clogging or dirt entrapment	
Step 11	If fuel strainer found clogged replace or clean and go to step 14	
Step 12	If error persists, check the fuel lines for air entry	
Step 13	Carry out a detailed check for any air entry into the fuel lines through minor pin holes, joints, banjo bolts etc. Tighten all banjo bolts if required and run the engine to remove air entrapped into the system and go to step 14	
Step 14	Clear and check DTC	

#### Circuit Schematic Diagram:



#### Circuit Description:

The DCP supplies the volume flow for the generation of the high pressure of the fuel in the rail, and thus provides the necessary fuel quantity to the injectors for all operating conditions of the engine. An integrated internal transfer pump is used to draw the diesel fuel from the tank through a fuel filter. The fuel is then passed to the volume flow control valve. The volume flow control valve, activated by the ECU, determines the fuel quantity which is delivered to the high-pressure pump (HPP). The pressure control valve controls the fuel quantity to the high-pressure outlet to maintain fuel pressure in the rail. Check for the continuity between EMS and valves by referring above schematic.



## P0089-00: DFC for Pressure Relief Valve Open

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P0089-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Pump or metering unit stuck in open position 2. Fuel tank is empty or low 3. Leakage in low pressure or high pressure fuel lines	NA

### Checkpoints:

1. Check fuel return line from rail during running condition for flow
2. Check for metering unit connection if it's open.

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check whether the pump metering unit connector is connected properly, go to step 9 after rectification	
Step 2	Check whether the rail pressure sensor connector is connected properly, go to step 9 after rectification	
Step 3	Remove the pump and get it checked from the authorized dealer, go to step 9 after rectification	
Step 4	Change the fuel return lines , go to step 9 after rectification	
Step 5	Change the fuel accumulator , go to step 9 after rectification	
Step 6	Change the fuel rail	
Step 7	Check DTC	





## P018F-00: DFC for Fuel System Over Pressure Relief Valve Frequent Activation

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P018F-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Pump or metering unit stuck in open position 2. Pressure relief valve is open for long duration	NA

### Checkpoints:

1. Check fuel return line from rail during running condition for flow
2. Check for metering unit connection if it's open.

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check whether the pump metering unit connector is connected properly, go to step 5 after rectification	
Step 2	Check whether the rail pressure sensor connector is connected properly, go to step 5 after rectification	
Step 3	Remove the pump and get it checked from the authorized dealer, go to step 5 after rectification	
Step 4	Check if Pressure relief valve counter or timer is exceeding the design limit, if yes change fuel rail	<b>Max Count:- 50 nos</b>
Step 5	Check DTC	



**P0120-11: DFC for Pedal Sensor Track 1 Signal Short circuit to ground**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0122-11 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	Torque Limitation

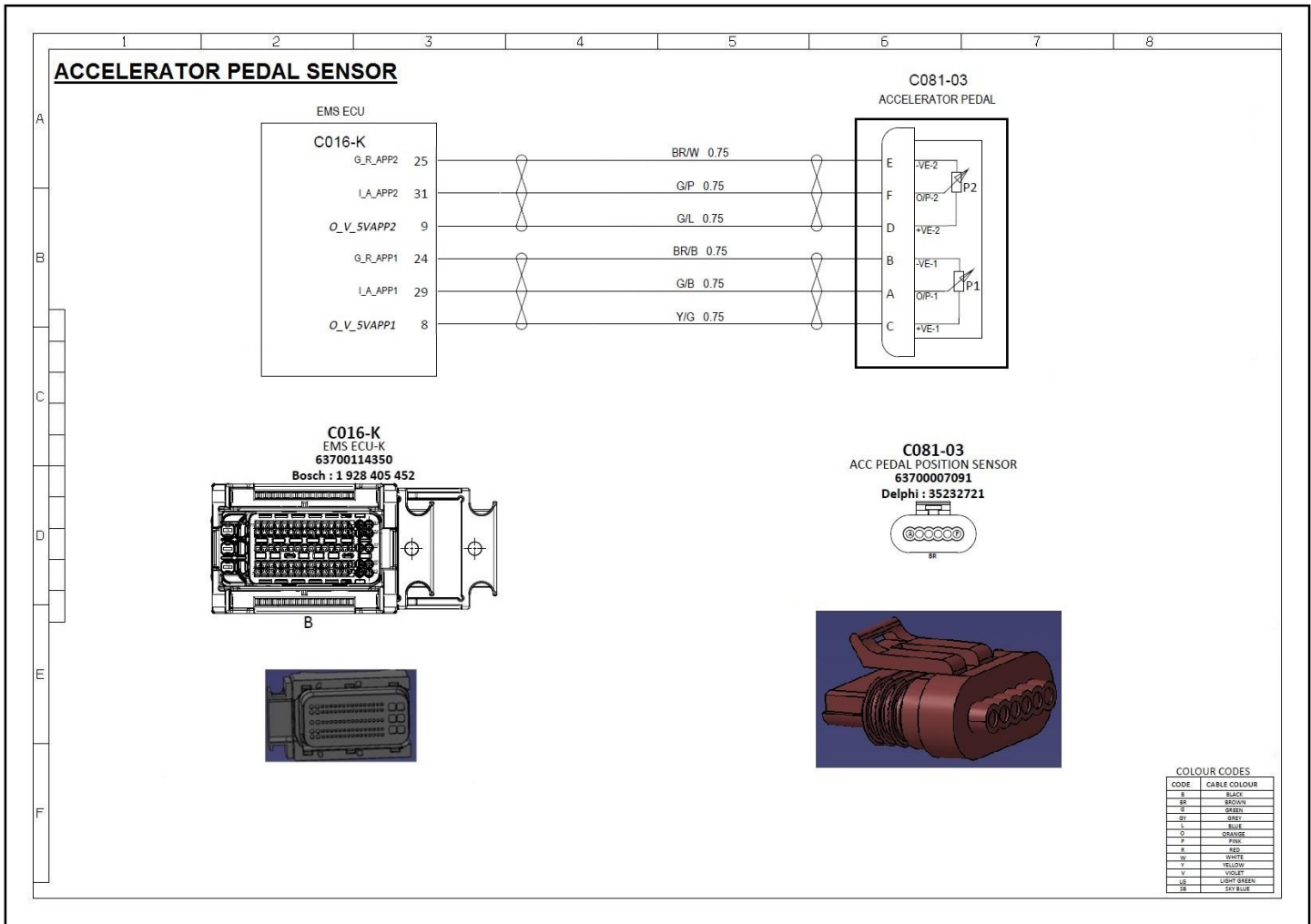
**Checkpoints:**

1. Check Battery Voltage
2. Check the Wire harness connections for pin damage or electrical problems
3. Check the Pedal Sensor condition & for any mechanical damage

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 11	
Step 4	If error still present, check continuity in between pin C & K08.	
Step 5	If error still present, check continuity in between pin A & K29	
Step 6	If error still present, check continuity in between pin B & K24	
Step 7	If Step 4, Step 5 & Step 6 fails then check signal for short circuit to ground or Open circuit	
Step 8	If Step 7 is true then replace the wire harness cable with new one & go to Step 11	
Step 9	If error still present check the mounting of the Pedal sensor is proper or not, if not make it right & go to Step 11	
Step 10	If still error present replace Pedal sensor with new one & go to Step 11	
Step 11	Check DTC	

#### Circuit Schematic Diagram:





**P0120-12: DFC for Pedal Sensor Track 1 Signal Short circuit to battery**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0122-12 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	Torque Limitation

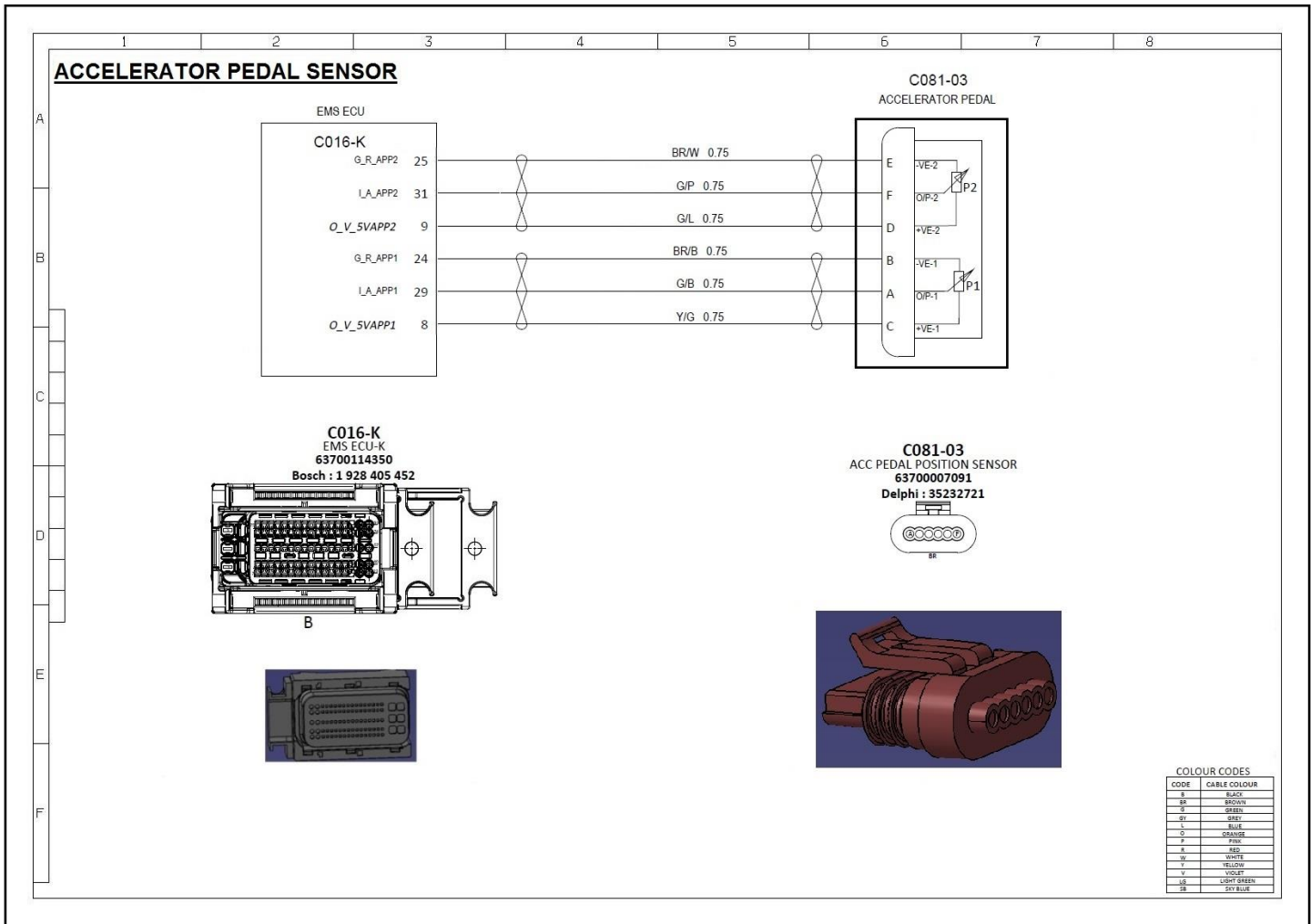
**Checkpoints:**

1. Check Battery Voltage
2. Check the Wire harness connections for pin damage or electrical problems
3. Check the Pedal Sensor condition & for any mechanical damage

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 11	
Step 4	If error still present, check continuity in between pin C & K08.	
Step 5	If error still present, check continuity in between pin A & K29	
Step 6	If error still present, check continuity in between pin B & K24	
Step 7	If Step 4, Step 5 & Step 6 fails then check signal for short circuit to battery.	
Step 8	If Step 7 is true then replace the wire harness cable with new one & go to Step 11	
Step 9	If error still present check the mounting of the Pedal sensor is proper or not, if not make it right & go to Step 11	
Step 10	If still error present replace Pedal sensor with new one & go to Step 11	
Step 11	Check DTC	

### Circuit Schematic Diagram:



### Circuit Description:

EMS measures the Acc. Pedal position, which gives driver requested acceleration by using this sensor. Accelerator Pedal sensor has two potentiometer sensors with 6-pole connector and provides the Analog input signals at K29 and K31, which corresponds, to sensor 1 and sensor 2 positions. It is mounted on the Accelerator Pedal. Check for the continuity between EMS and Sensor by referring above schematic.



**P0220-11: DFC for Pedal Sensor Track 2 Signal Short circuit to ground or Open circuit**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0220-11 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	Torque Limitation

**Checkpoints:**

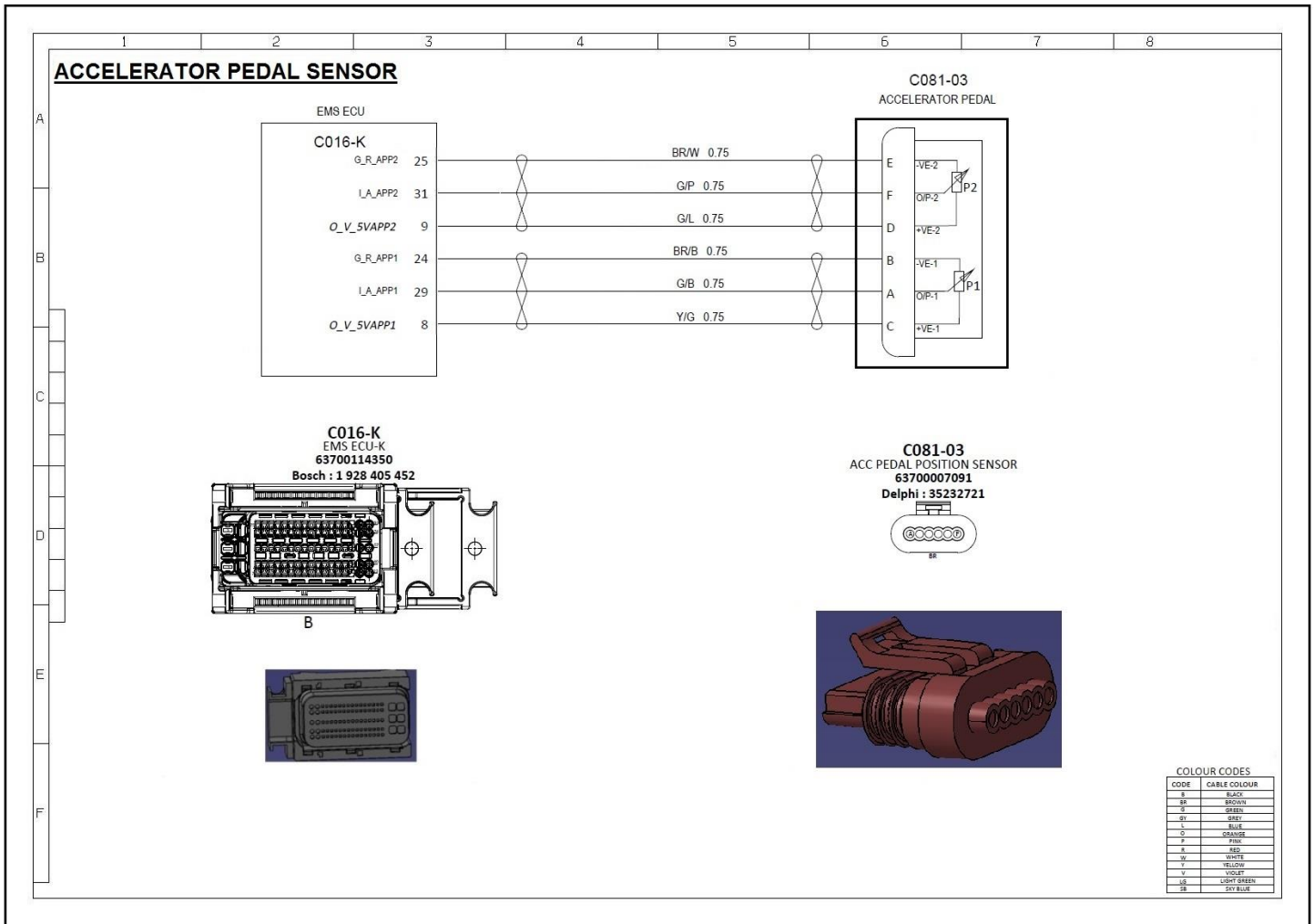
1. Check Battery Voltage
2. Check the Wire harness connections for pin damage or electrical problems
3. Check the Pedal Sensor condition & for any mechanical damage

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 11	
Step 4	If error still present, check continuity in between pin D & K09.	
Step 5	If error still present, check continuity in between pin F & K31	
Step 6	If error still present, check continuity in between pin E & K25	
Step 7	If Step 4, Step 5 & Step 6 fails then check signal for short circuit to ground or Open circuit	
Step 8	If Step 7 is true then replace the wire harness cable with new one & go to Step 11	
Step 9	If error still present check the mounting of the Pedal sensor is proper or not, if not make it right & go to Step 11	
Step 10	If still error present replace Pedal sensor with new one & go to Step 11	
Step 11	Check DTC	



#### Circuit Schematic Diagram:





**P0220-12: DFC for Pedal Sensor Track 2 Signal Short circuit to battery**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0220-12 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	Torque Limitation

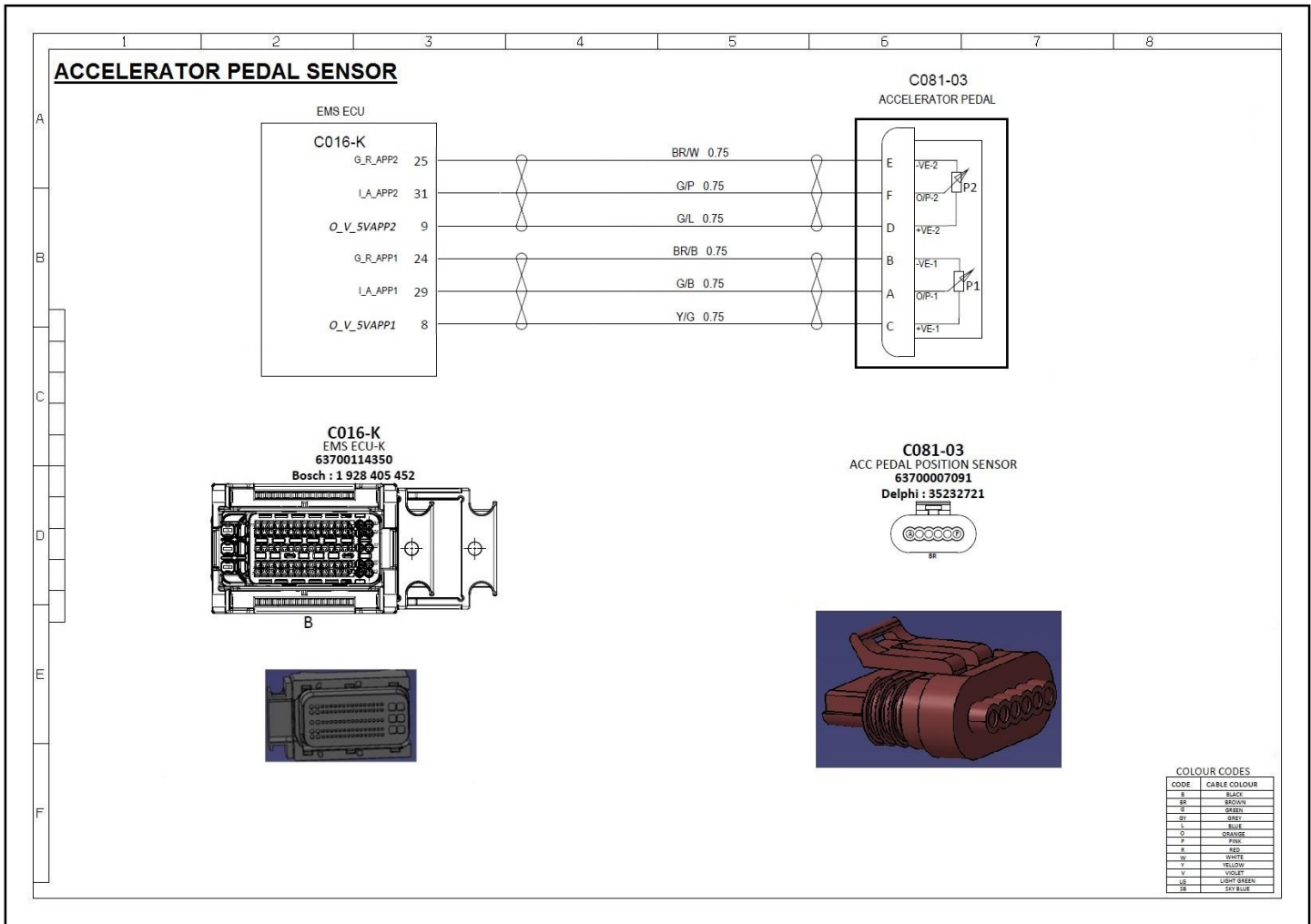
**Checkpoints:**

1. Check Battery Voltage
2. Check the Wire harness connections for pin damage or electrical problems
3. Check the Pedal Sensor condition & for any mechanical damage

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 11	
Step 4	If error still present, check continuity in between pin D & K09.	
Step 5	If error still present, check continuity in between pin F & K31	
Step 6	If error still present, check continuity in between pin E & K25	
Step 7	If Step 4, Step 5 & Step 6 fails then check signal for short circuit to battery.	
Step 8	If Step 7 is true then replace the wire harness cable with new one & go to Step 11	
Step 9	If error still present check the mounting of the Pedal sensor is proper or not, if not make it right & go to Step 11	
Step 10	If still error present replace Pedal sensor with new one & go to Step 11	
Step 11	Check DTC	

### Circuit Schematic Diagram:





**P2135-00: DFC for Monitoring of Pedal Position Incompatible**

**Overview:**

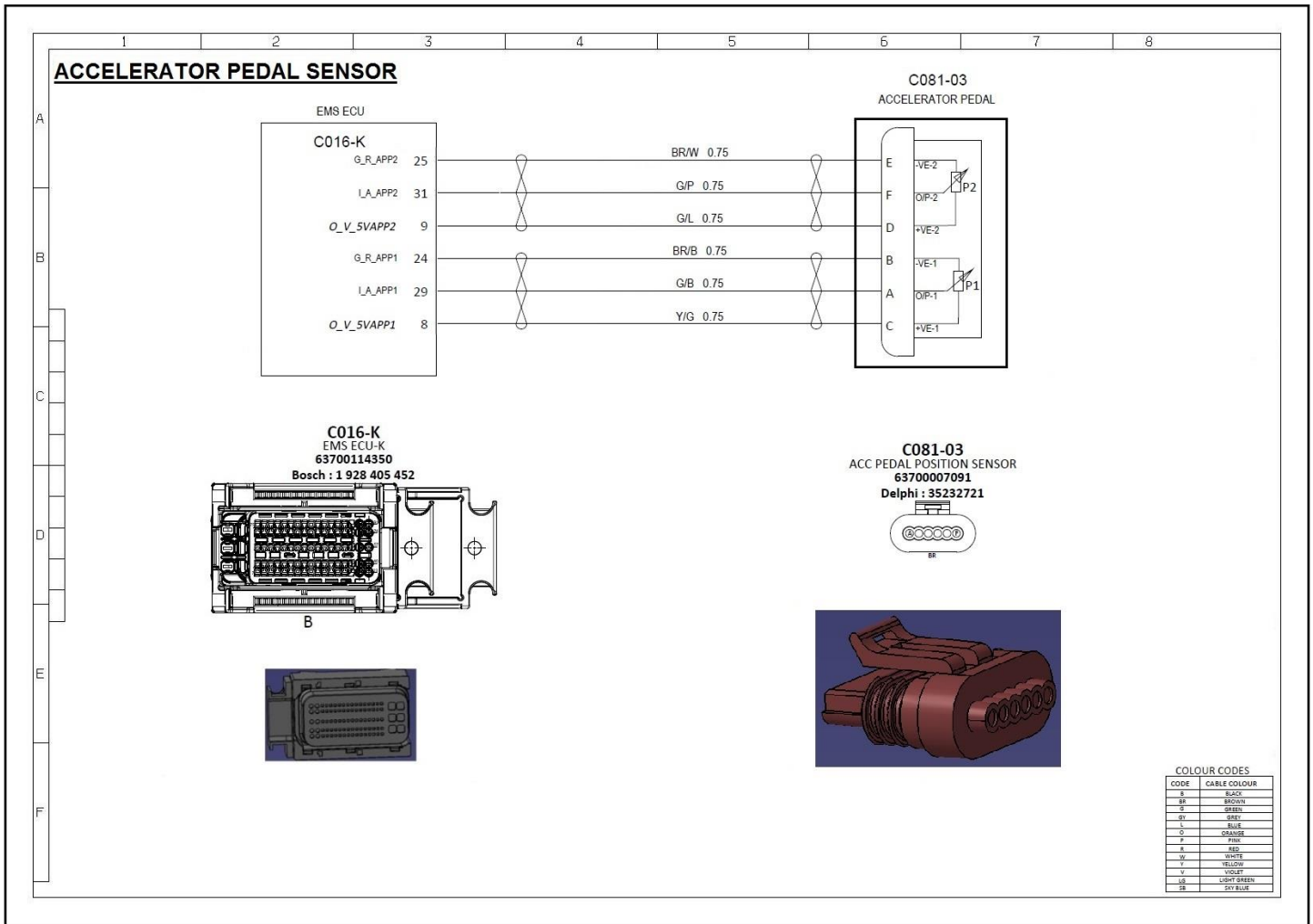
Code	Cause	Effect on Vehicle
Fault Code: P2135-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	Torque Limitation

**Checkpoints:**

1. Check Battery Voltage
2. Wire harness connections
3. Pedal Sensor 1

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 11	
Step 4	If error still present, check continuity in between pin D & K09.	
Step 5	If error still present, check continuity in between pin F & K31	
Step 6	If error still present, check continuity in between pin A & K29	
Step 7	If error still present, check continuity in between pin C & K08	
Step 8	If Step 4, Step 5 , Step 6 & Step 7 fails then check signal for short circuit to battery or ground or open circuit.	
Step 9	If Step 8 is true then replace the wire harness cable with new one & go to Step 12	
Step 10	If error still present check the mounting of the Pedal sensor is proper or not, if not make it right & go to Step 12	
Step 11	If still error present replace Pedal sensor with new one & go to Step 12	
Step 12	Check DTC	



#### Circuit Description:

EMS measures the Acc. Pedal position, which gives driver requested acceleration by using this sensor. Accelerator Pedal sensor has two potentiometer sensors with 6-pole connector and provides the Analog input signals at K29 and K31, which corresponds, to sensor 1 and sensor 2 positions. It is mounted on the Accelerator Pedal. Check for the continuity between EMS and Sensor by referring above schematic



## P0180-11: Fuel temperature sensor Short circuit to ground

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P0180-11 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	

### Checkpoints:

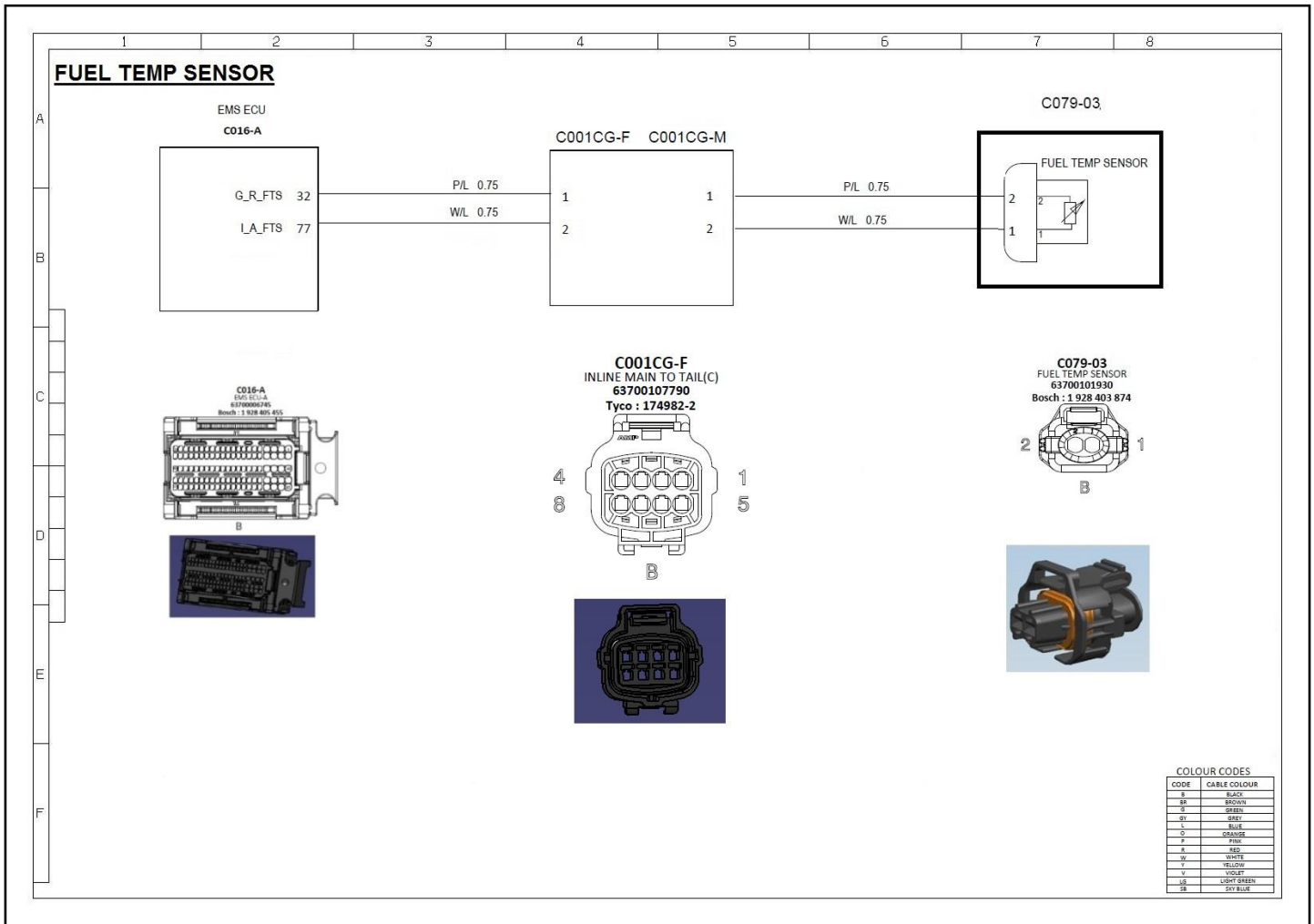
1. Check Battery Voltage.
2. Check Fuel temperature sensor pins for damage
3. Check Fuel temperature sensor connector for damage.
4. Check Fuel temperature sensor signal lines for continuity.

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 9	
Step 4	If error still present, check the continuity between sensor connector pin 1 & A77 & between pin 2 & A32. Go to Step 5	
Step 5	If continuity is available from Step 4 then check the signal line (A77) short to ground (A32) & go to Step 9	
Step 6	If Step 5 is true then replace the wire harness cable with new one & go to Step 9	
Step 7	Check the proper mounting of the sensor & for mechanical damage. If Step 7 is true then go to Step 9	
Step 8	If error still present then replace Fuel Temp sensor with new one & go to Step 9	
Step 9	Check DTC	



#### Circuit Schematic Diagram:



#### Circuit Description:

EMS monitors the internal fuel pressure of common rail using Fuel Temperature sensor. It is an analog input type with 2-wires and it gives output voltage in proportion to the internal fuel pressure. Check for the continuity between EMS and Sensor by referring above schematic.

#### Location & Component Image: Mounted on Fuel filter assembly





**P0180-12: Fuel temperature sensor Short circuit to battery or Open circuit**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0180-12 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	

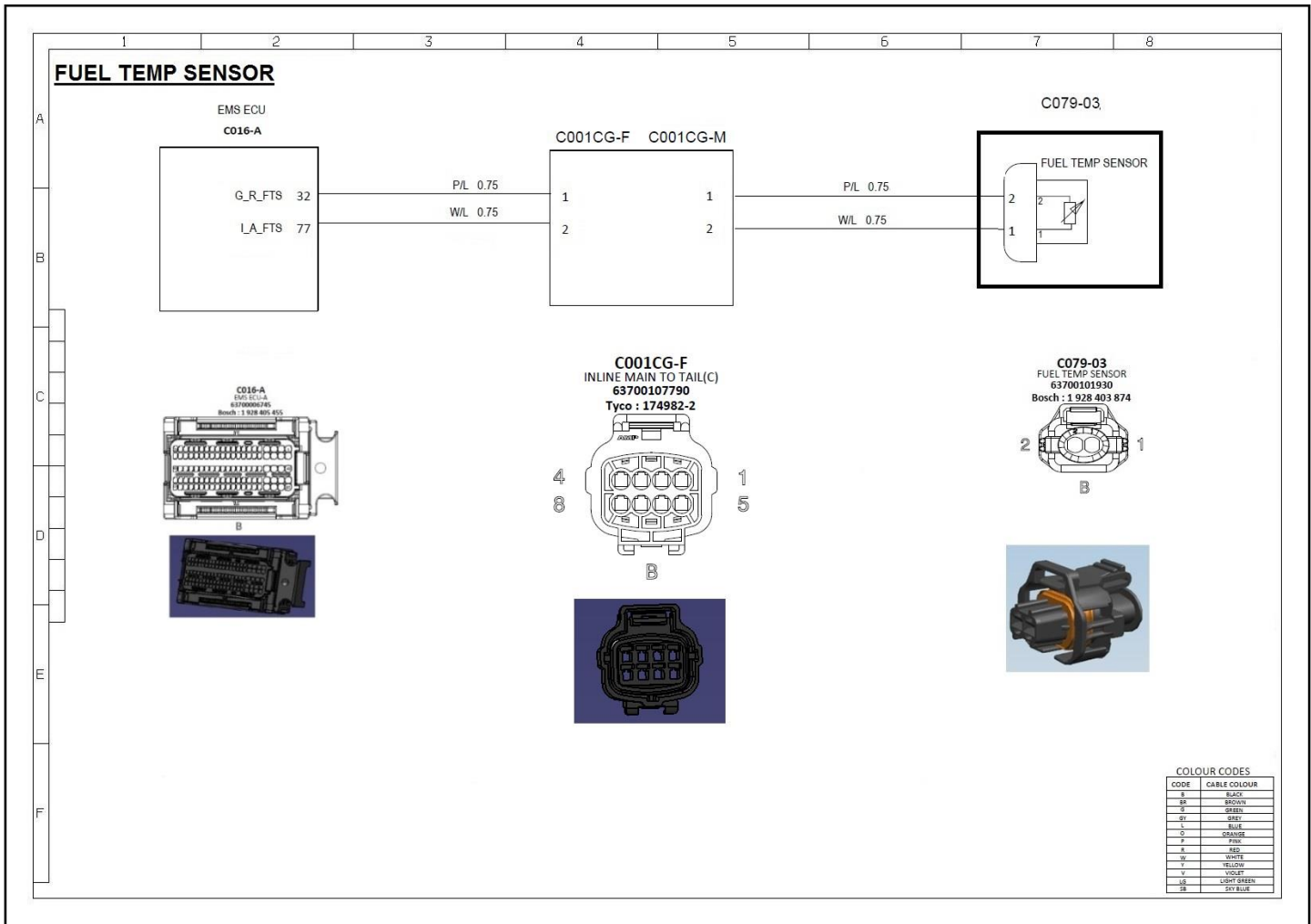
**Checkpoints:**

1. Check Battery Voltage.
2. Check Fuel temperature sensor pins for damage
3. Check Fuel temperature sensor connector for damage.
4. Check Fuel temperature sensor signal lines for continuity.

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 9	
Step 4	If error still present, check the continuity between sensor connector pin 1 & A77 & between pin 2 & A32. Go to Step 5	
Step 5	If continuity is available from Step 4 then check the signal line (A77) short to battery or open circuit & go to Step 9	
Step 6	If Step 5 is true then replace the wire harness cable with new one & go to Step 9	
Step 7	Check the proper mounting of the sensor & for mechanical damage. If Step 7 is true then go to Step 9	
Step 8	If error still present then replace Fuel Temp sensor with new one & go to Step 9	
Step 9	Check DTC	

#### Circuit Schematic Diagram:





**P0201-00: Injector open circuit for cylinder 1**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code:P0201-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring Harness problem 2. Connector problem 3. Injector failure	Torque limitation

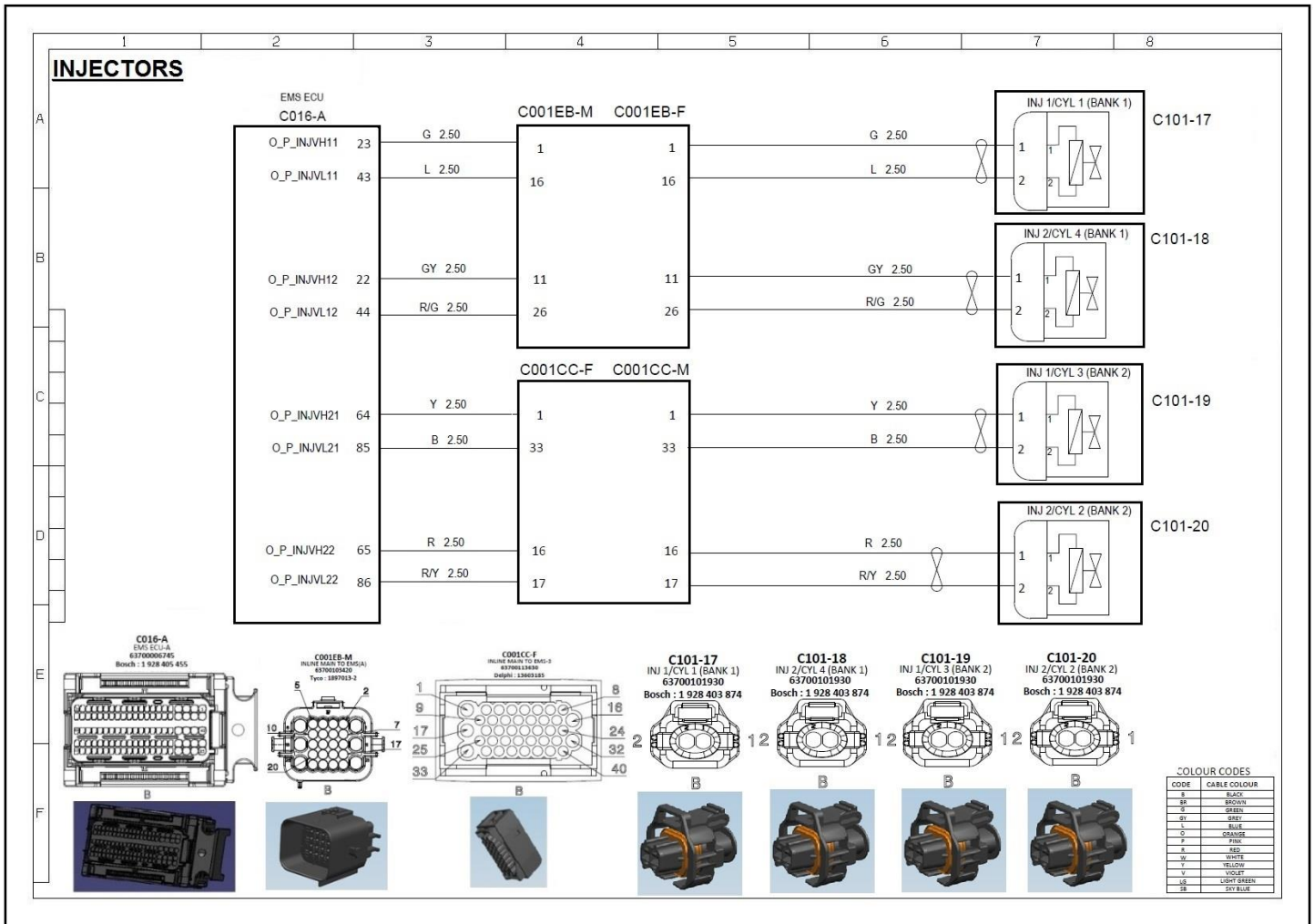
**Checkpoints:**

1. Check Battery Voltage
2. Check injector side connector in wiring harness
3. Check the continuity between 1<sup>st</sup> cylinder injector connector to ECU side connector in wiring harness
4. Check the 1<sup>st</sup> cylinder injector pins

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check if the wiring harness connector connected properly to 1 <sup>st</sup> cylinder injector, if not fix it and go to step 10	
Step 3	Check the wiring harness side connector for any damage, pin damage or wire back-out	
Step 4	Check the injector side connector for any damage, pin damage, rotated form the body	
Step 5	In case of non-conformity in step 3 & 4, fix the injector connector problem, wiring harness connector problem, fix the back-out cables in proper positions in connector and go to step 10	
Step 6	If error persists, check the continuity of injector connector pin 1 to ECU terminal A23 & injector connector pin 2 to ECU terminal A43	
Step 7	Check / ensure no cross continuity between terminals / pins in step no 6	
Step 8	In case of non-conformity in step 6 & 7 change the wires with new and go to step 10	
Step 9	If error persists change the injector with new and go to step 10	
Step 10	Clear and check the DTC	

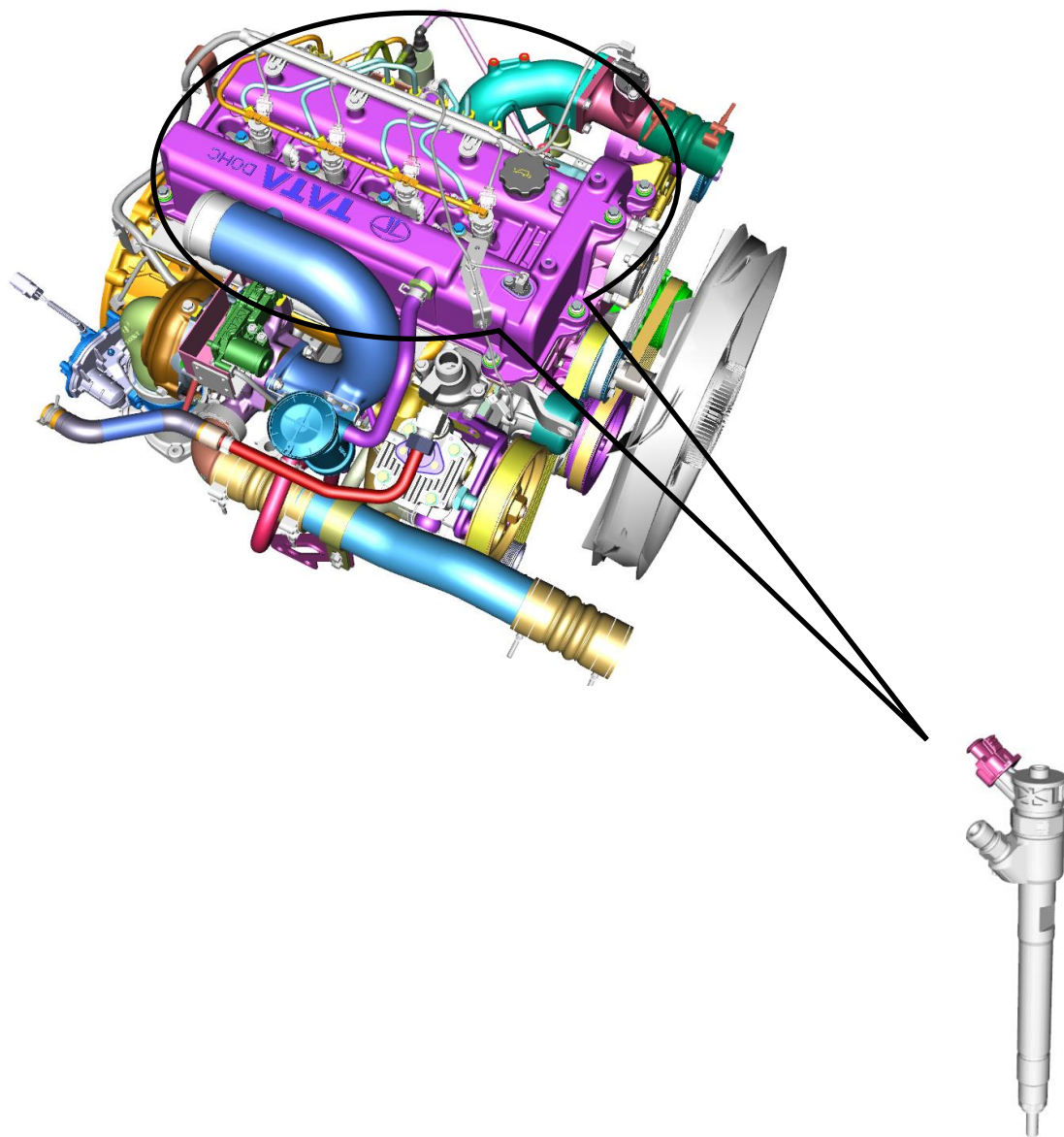
### Circuit Schematic Diagram:



### Circuit Description:

The rail and the injectors are connected to each other through the high-pressure pipes. The piezo injectors allow extremely short response times and enable a free selection of the injection beginning and the fuel quantity according to the demands of the ECU. EMS turns the injector ON for a precise amount of time referred to as injection pulse width to deliver the calculated fuel in cylinder. Injector is turned on through high side driver (supply) as well as low side driver (ground) present in the EMS. EMS is configured for 4 injectors by two bank arrangement with 2 injectors per bank. Check for the continuity between EMS and Injector by referring above schematic.

Location & Component Image:







**P0202-00: Injector open circuit for cylinder 2**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code:P0202-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring Harness problem 2. Connector problem 3. Injector failure	Torque limitation

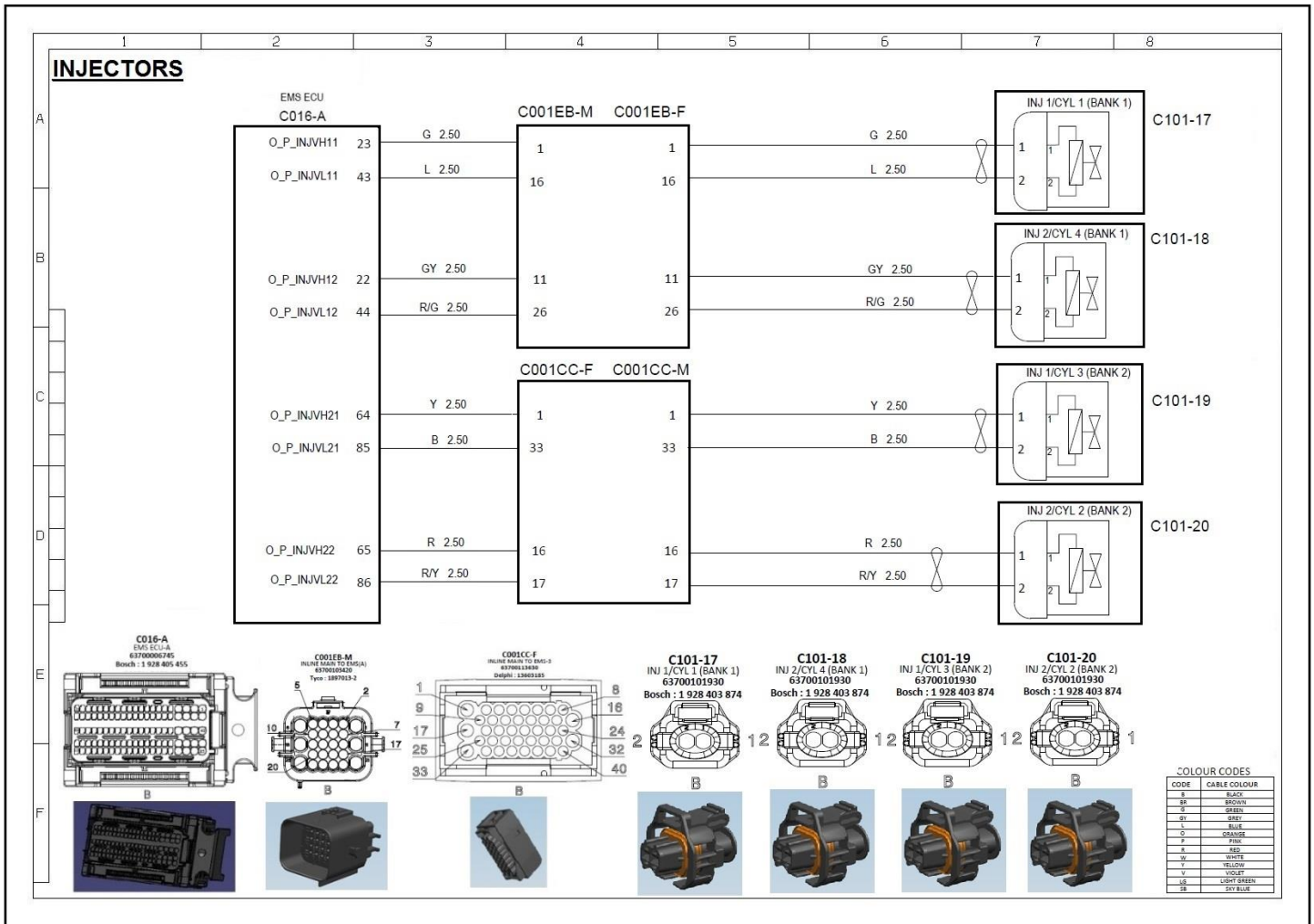
**Checkpoints:**

1. Check Battery Voltage
2. Check injector side connector in wiring harness
3. Check the continuity between 1<sup>st</sup> cylinder injector connector to ECU side connector in wiring harness
4. Check the 2<sup>nd</sup> cylinder injector pins

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check if the wiring harness connector connected properly to 2 <sup>nd</sup> cylinder injector, if not fix it and go to step 10	
Step 3	Check the wiring harness side connector for any damage, pin damage or wire back-out	
Step 4	Check the injector side connector for any damage, pin damage, rotated form the body	
Step 5	In case of non-conformity in step 3 & 4, fix the injector connector problem, wiring harness connector problem, fix the back-out cables in proper positions in connector and go to step 10	
Step 6	If error persists, check the continuity of injector connector pin 1 to ECU terminal A65 & injector connector pin 2 to ECU terminal A86	
Step 7	Check / ensure no cross continuity between terminals / pins in step no 6	
Step 8	In case of non-conformity in step 6 & 7 change the wires with new and go to step 10	
Step 9	If error persists change the injector with new and go to step 10	
Step 10	Clear and check the DTC	

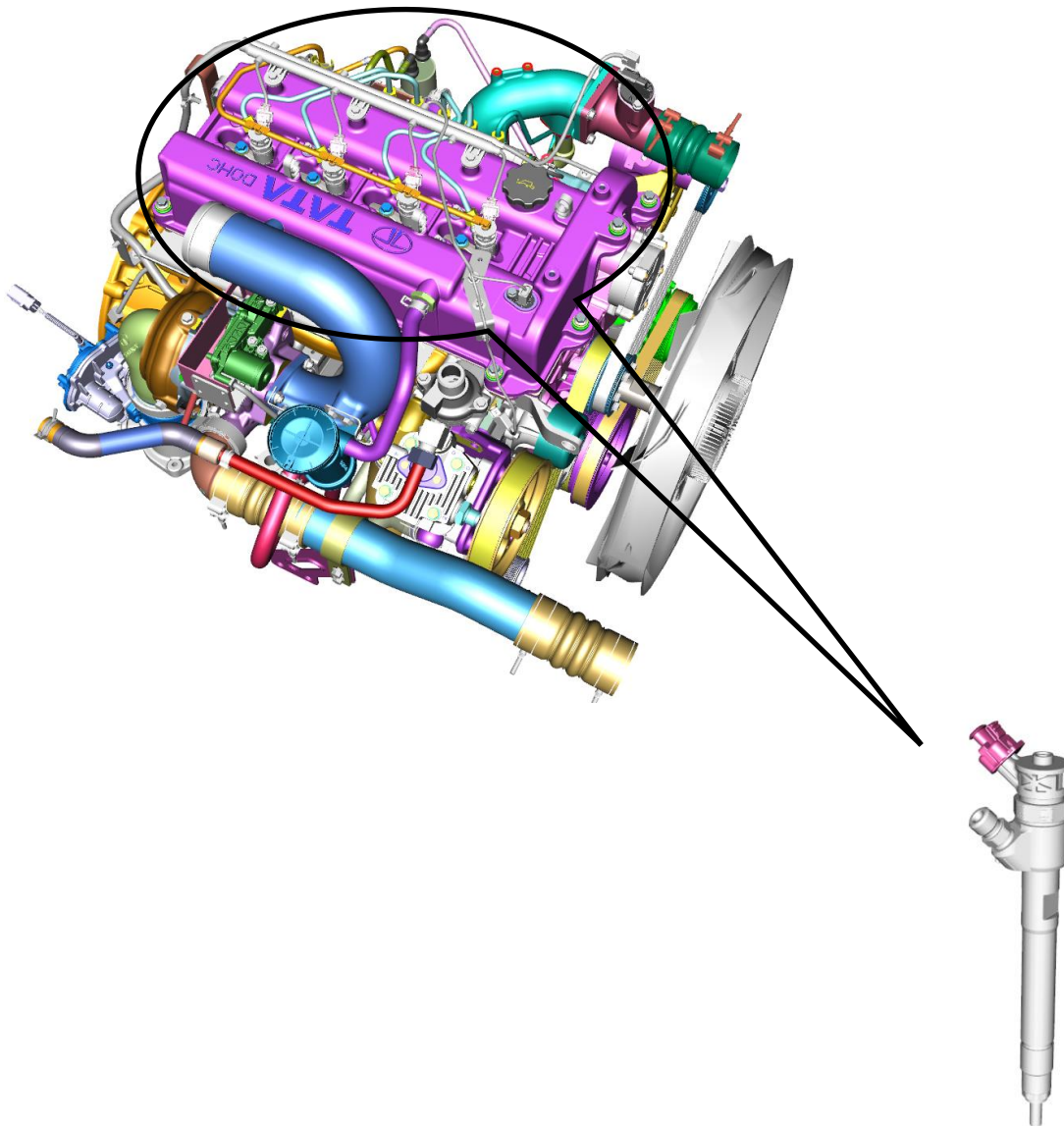
### Circuit Schematic Diagram:



### Circuit Description:

The rail and the injectors are connected to each other through the high-pressure pipes. The piezo injectors allow extremely short response times and enable a free selection of the injection beginning and the fuel quantity according to the demands of the ECU. EMS turns the injector ON for a precise amount of time referred to as injection pulse width to deliver the calculated fuel in cylinder. Injector is turned on through high side driver (supply) as well as low side driver (ground) present in the EMS. EMS is configured for 4 injectors by two bank arrangement with 2 injectors per bank. Check for the continuity between EMS and Injector by referring above schematic.

Location & Component Image:





**P0203-00: Injector open circuit for cylinder 3**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0203-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring Harness problem 2. Connector problem 3. Injector failure	Torque limitation

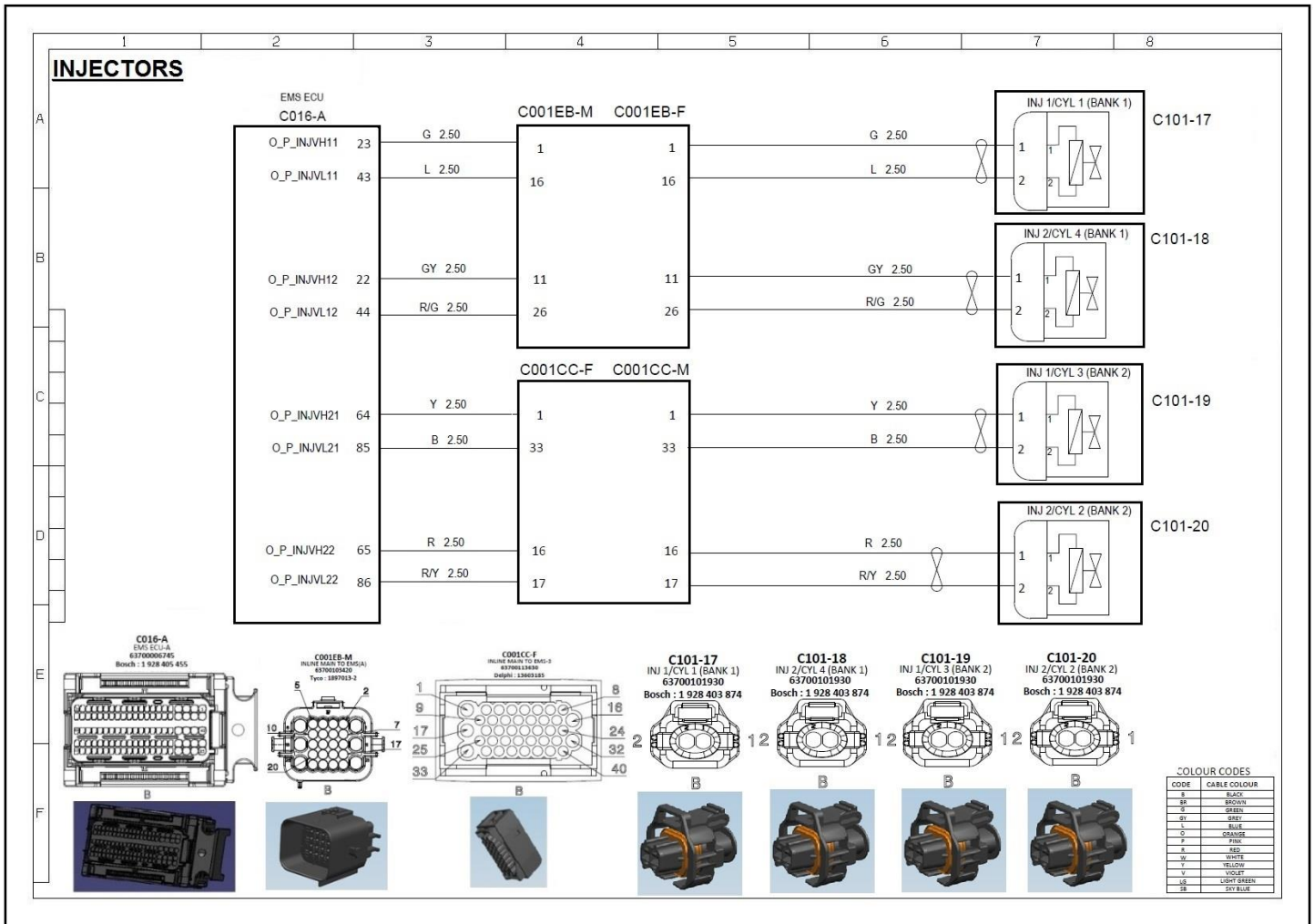
**Checkpoints:**

1. Check Battery Voltage
2. Check injector side connector in wiring harness
3. Check the continuity between 3<sup>rd</sup> cylinder injector connector to ECU side connector in wiring harness
4. Check the 3<sup>rd</sup> cylinder injector pins

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check if the wiring harness connector connected properly to 3 <sup>rd</sup> cylinder injector, if not fix it and go to step 10	
Step 3	Check the wiring harness side connector for any damage, pin damage or wire back-out	
Step 4	Check the injector side connector for any damage, pin damage, rotated form the body	
Step 5	In case of non-conformity in step 3 & 4, fix the injector connector problem, wiring harness connector problem, fix the back-out cables in proper positions in connector and go to step 10	
Step 6	If error persists, check the continuity of injector connector pin 1 to ECU terminal A64 & injector connector pin 2 to ECU terminal A85	
Step 7	Check / ensure no cross continuity between terminals / pins in step no 6	
Step 8	In case of non-conformity in step 6 & 7 change the wires with new and go to step 10	
Step 9	If error persists change the injector with new and go to step 10	
Step 10	Clear and check the DTC	

### Circuit Schematic Diagram:

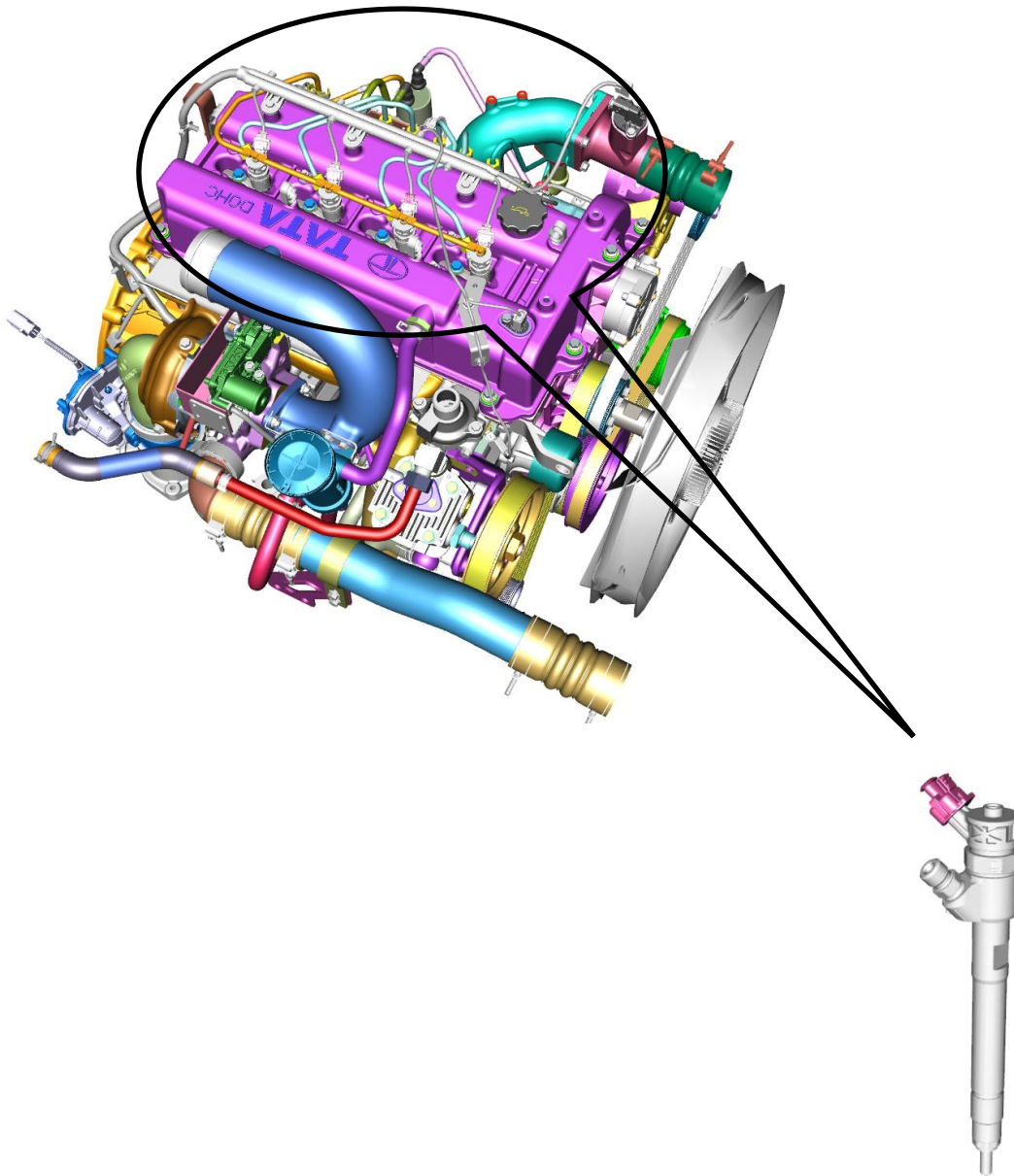


### Circuit Description:

The rail and the injectors are connected to each other through the high-pressure pipes. The piezo injectors allow extremely short response times and enable a free selection of the injection beginning and the fuel quantity according to the demands of the ECU. EMS turns the injector ON for a precise amount of time referred to as injection pulse width to deliver the calculated fuel in cylinder. Injector is turned on through high side driver (supply) as well as low side driver (ground) present in the EMS. EMS is configured for 4 injectors by two bank arrangement with 2 injectors per bank. Check for the continuity between EMS and Injector by referring above schematic.



Location & Component Image:







## P0204-00: Injector open circuit for cylinder 4

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P0204-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring Harness problem 2. Connector problem 3. Injector failure	Torque limitation

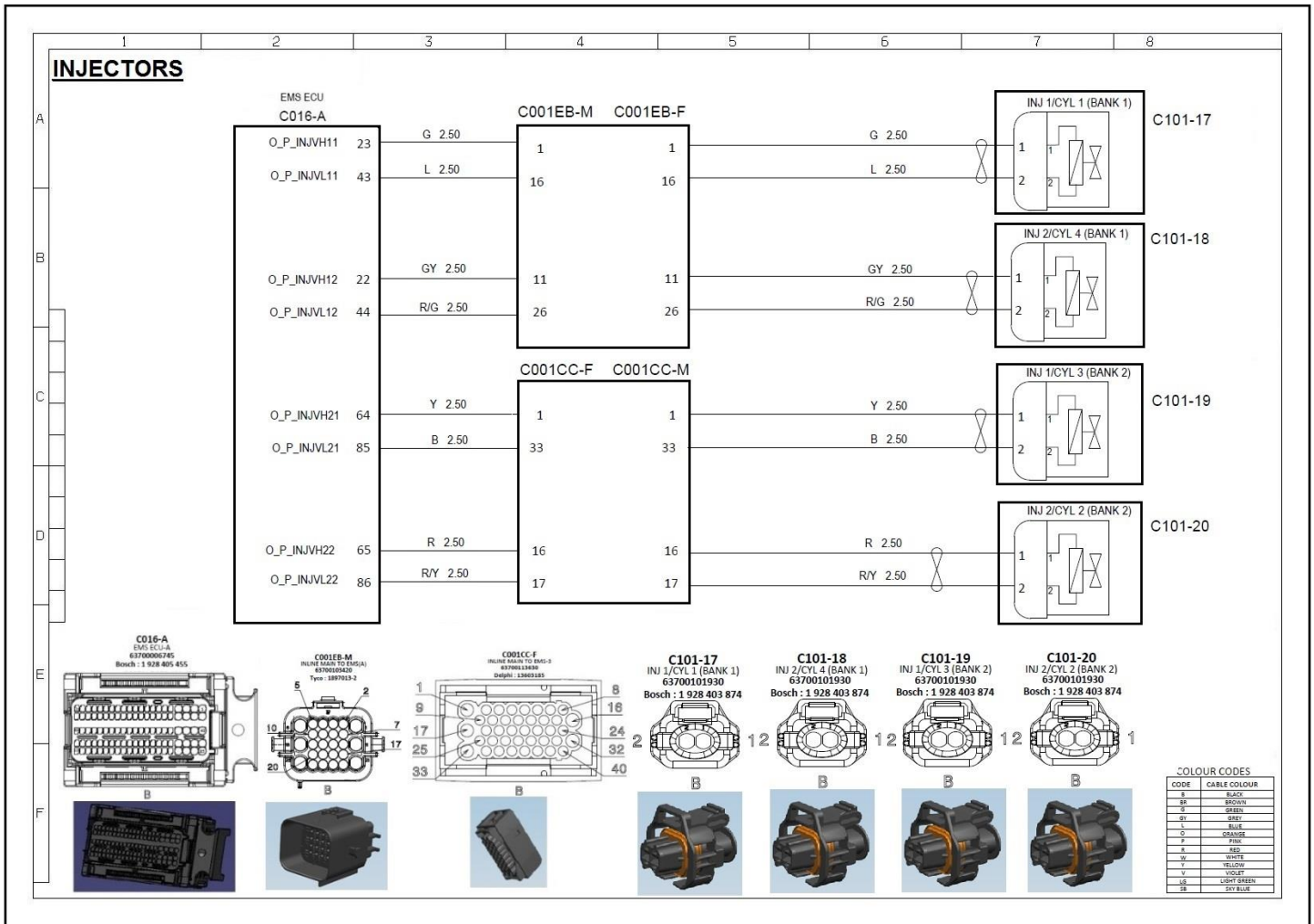
### Checkpoints:

1. Check Battery Voltage
2. Check injector side connector in wiring harness
3. Check the continuity between 3<sup>rd</sup> cylinder injector connector to ECU side connector in wiring harness
4. Check the 4<sup>th</sup> cylinder injector pins

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check if the wiring harness connector connected properly to 4 <sup>th</sup> cylinder injector, if not fix it and go to step 10	
Step 3	Check the wiring harness side connector for any damage, pin damage or wire back-out	
Step 4	Check the injector side connector for any damage, pin damage, rotated form the body	
Step 5	In case of non-conformity in step 3 & 4, fix the injector connector problem, wiring harness connector problem, fix the back-out cables in proper positions in connector and go to step 10	
Step 6	If error persists, check the continuity of injector connector pin 1 to ECU terminal A22 & injector connector pin 2 to ECU terminal A44	
Step 7	Check / ensure no cross continuity between terminals / pins in step no 6	
Step 8	In case of non-conformity in step 6 & 7 change the wires with new and go to step 10	
Step 9	If error persists change the injector with new and go to step 10	
Step 10	Clear and check the DTC	

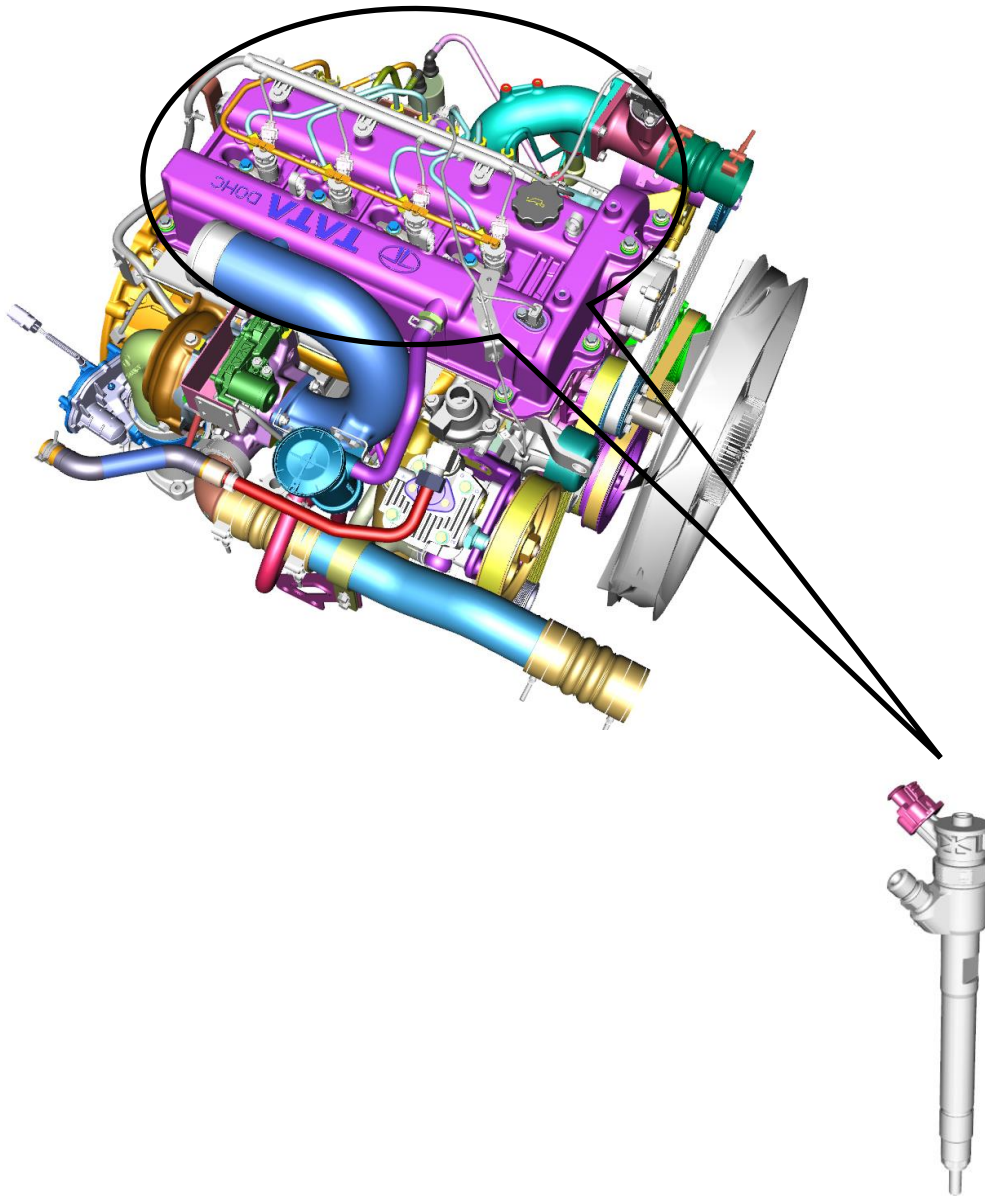
### Circuit Schematic Diagram:



### Circuit Description:

The rail and the injectors are connected to each other through the high-pressure pipes. The piezo injectors allow extremely short response times and enable a free selection of the injection beginning and the fuel quantity according to the demands of the ECU. EMS turns the injector ON for a precise amount of time referred to as injection pulse width to deliver the calculated fuel in cylinder. Injector is turned on through high side driver (supply) as well as low side driver (ground) present in the EMS. EMS is configured for 4 injectors by two bank arrangement with 2 injectors per bank. Check for the continuity between EMS and Injector by referring above schematic.

Location & Component Image:





**P1201-00: DFC for Injector short circuit high and low side for cylinder 1**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1201-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring Harness problem 2. Connector problem 3. Injector failure	Torque limitation

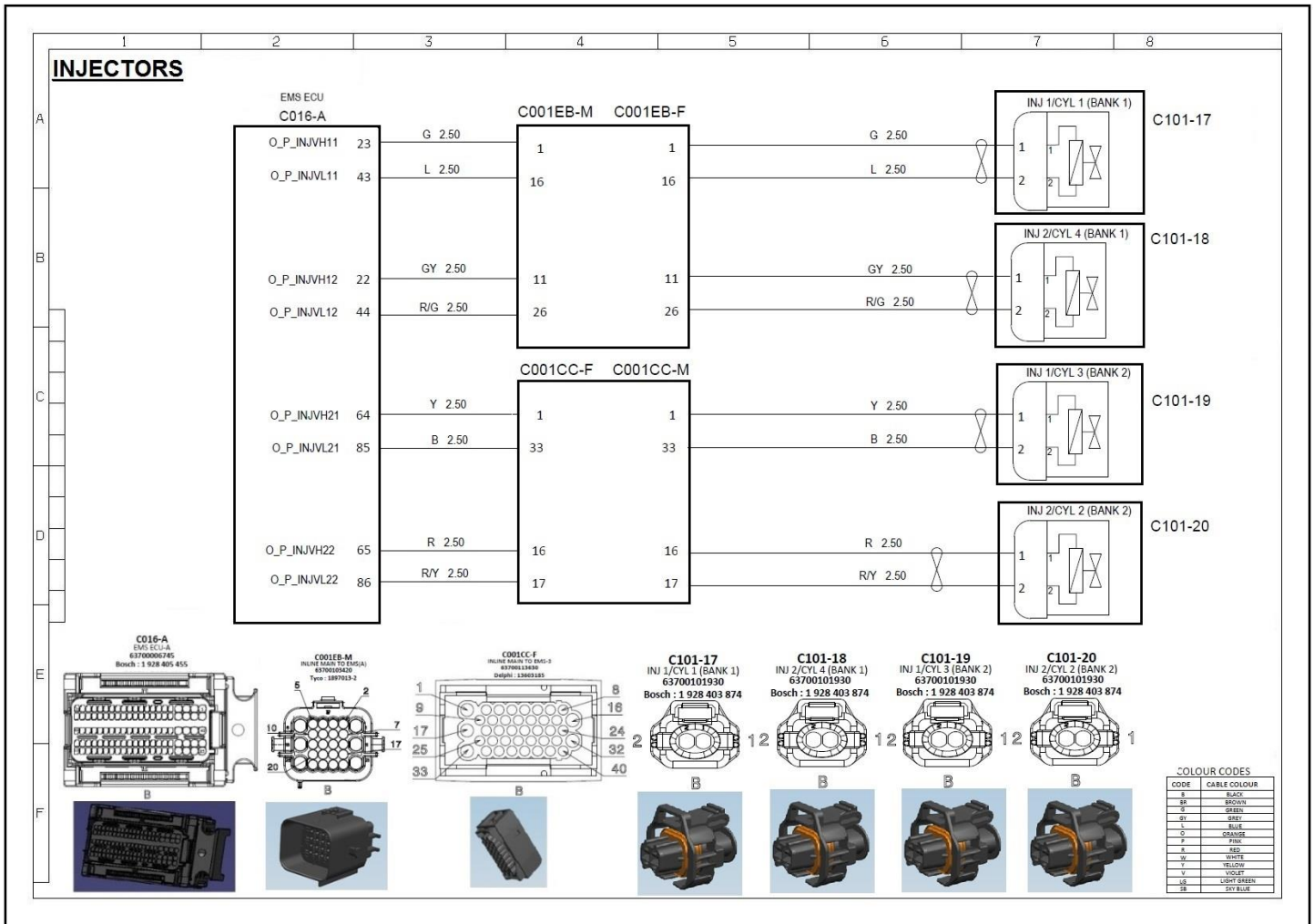
**Checkpoints:**

1. Check Battery Voltage
2. Check the wiring harness
3. Check injector side connector in wiring harness
4. Check the continuity between 1<sup>st</sup> cylinder injector connector to ECU side connector in wiring harness

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check if the wiring harness connector connected properly to 1 <sup>st</sup> cylinder injector, if not fix it and go to step 10	
Step 3	Check the wiring harness side connector for any damage, pin damage or wire back-out	
Step 4	Check the injector side connector for any damage, pin damage, rotated form the body	
Step 5	In case of non-conformity in step 3 & 4, fix the injector connector problem, wiring harness connector problem, fix the back-out cables in proper positions in connector and go to step 10	
Step 6	If error persists, check the continuity of injector connector pin 1 to ECU terminal A23 & injector connector pin 2 to ECU terminal A43 & between A23 & A43.	
Step 7	Check / ensure no cross continuity between terminals / pins in step no 6	
Step 8	In case of non-conformity in step 6 & 7 change the wires with new and go to step 10	
Step 9	If error persists change the injector with new and go to step 10	
Step 10	Clear and check the DTC	

### Circuit Schematic Diagram:

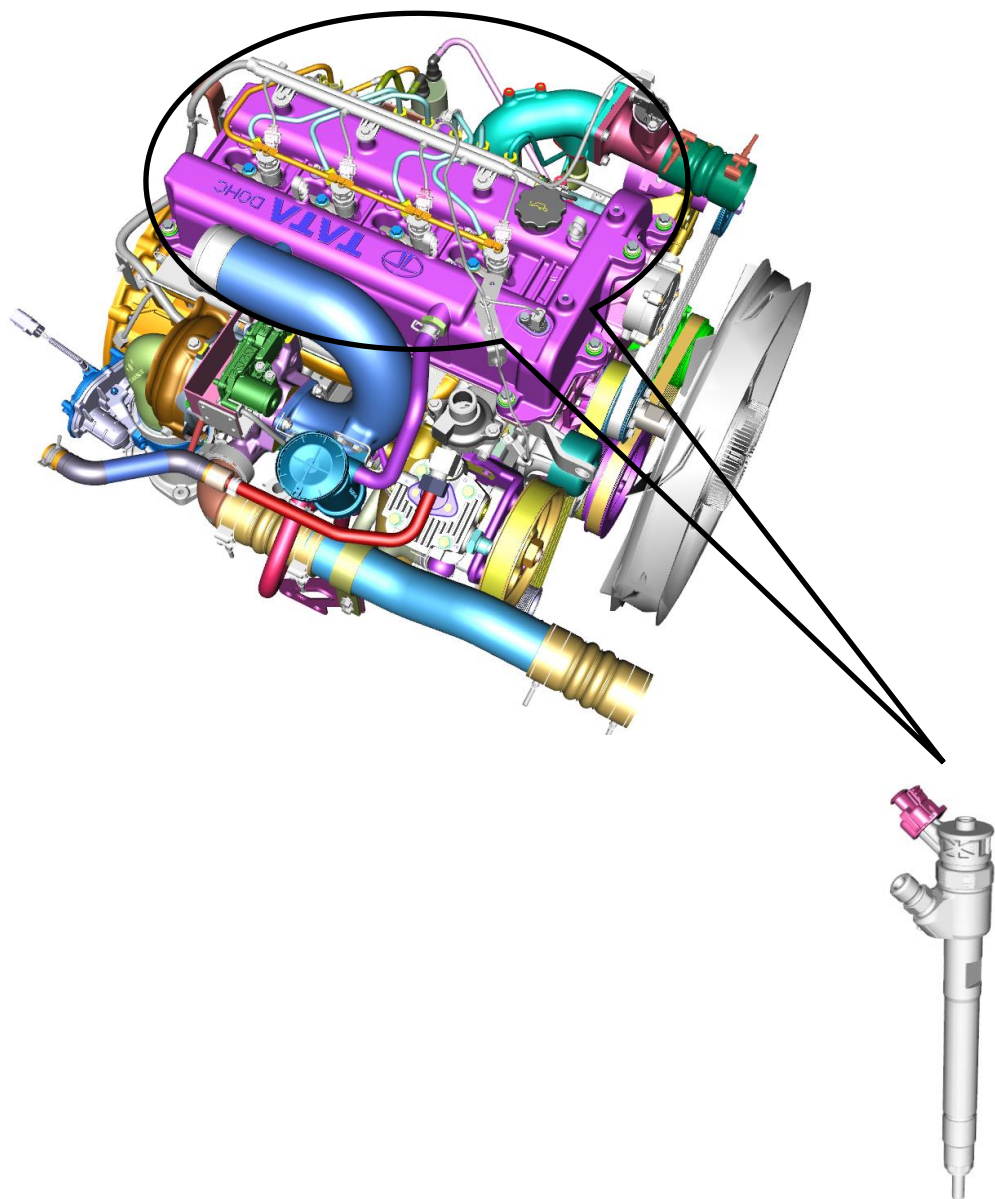


### Circuit Description:

The rail and the injectors are connected to each other through the high-pressure pipes. The piezo injectors allow extremely short response times and enable a free selection of the injection beginning and the fuel quantity according to the demands of the ECU. EMS turns the injector ON for a precise amount of time referred to as injection pulse width to deliver the calculated fuel in cylinder. Injector is turned on through high side driver (supply) as well as low side driver (ground) present in the EMS. EMS is configured for 4 injectors by two bank arrangement with 2 injectors per bank. Check for the continuity between EMS and Injector by referring above schematic.



Location & Component Image:







**P1202-00: DFC for Injector short circuit high and low side for cylinder 2**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1202-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring Harness problem 2. Connector problem 3. Injector failure	Torque limitation

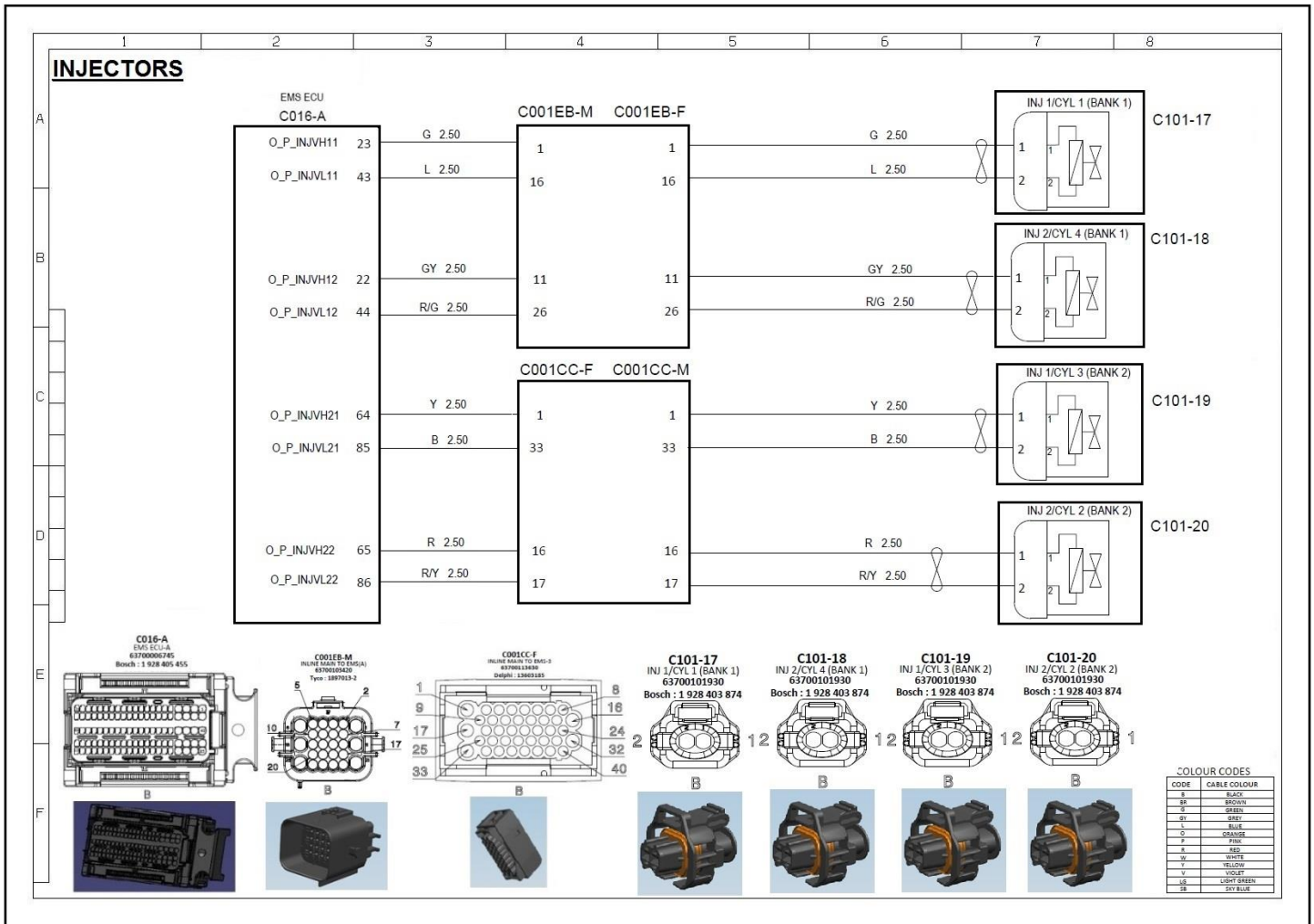
**Checkpoints:**

1. Check Battery Voltage
2. Check the wiring harness
3. Check injector side connector in wiring harness
4. Check the continuity between 4<sup>th</sup> cylinder injector connector to ECU side connector in wiring harness

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check if the wiring harness connector connected properly to 2 <sup>nd</sup> cylinder injector, if not fix it and go to step 10	
Step 3	Check the wiring harness side connector for any damage, pin damage or wire back-out	
Step 4	Check the injector side connector for any damage, pin damage, rotated from the body	
Step 5	In case of non-conformity in step 3 & 4, fix the injector connector problem, wiring harness connector problem, fix the back-out cables in proper positions in connector and go to step 10	
Step 6	If error persists, check the continuity of injector connector pin 1 to ECU terminal A65 & injector connector pin 2 to ECU terminal A86 & between A65 & A83.	
Step 7	Check / ensure no cross continuity between terminals / pins in step no 6	
Step 8	In case of non-conformity in step 6 & 7 change the wires with new and go to step 10	
Step 9	If error persists change the injector with new and go to step 10	
Step 10	Clear and check the DTC	

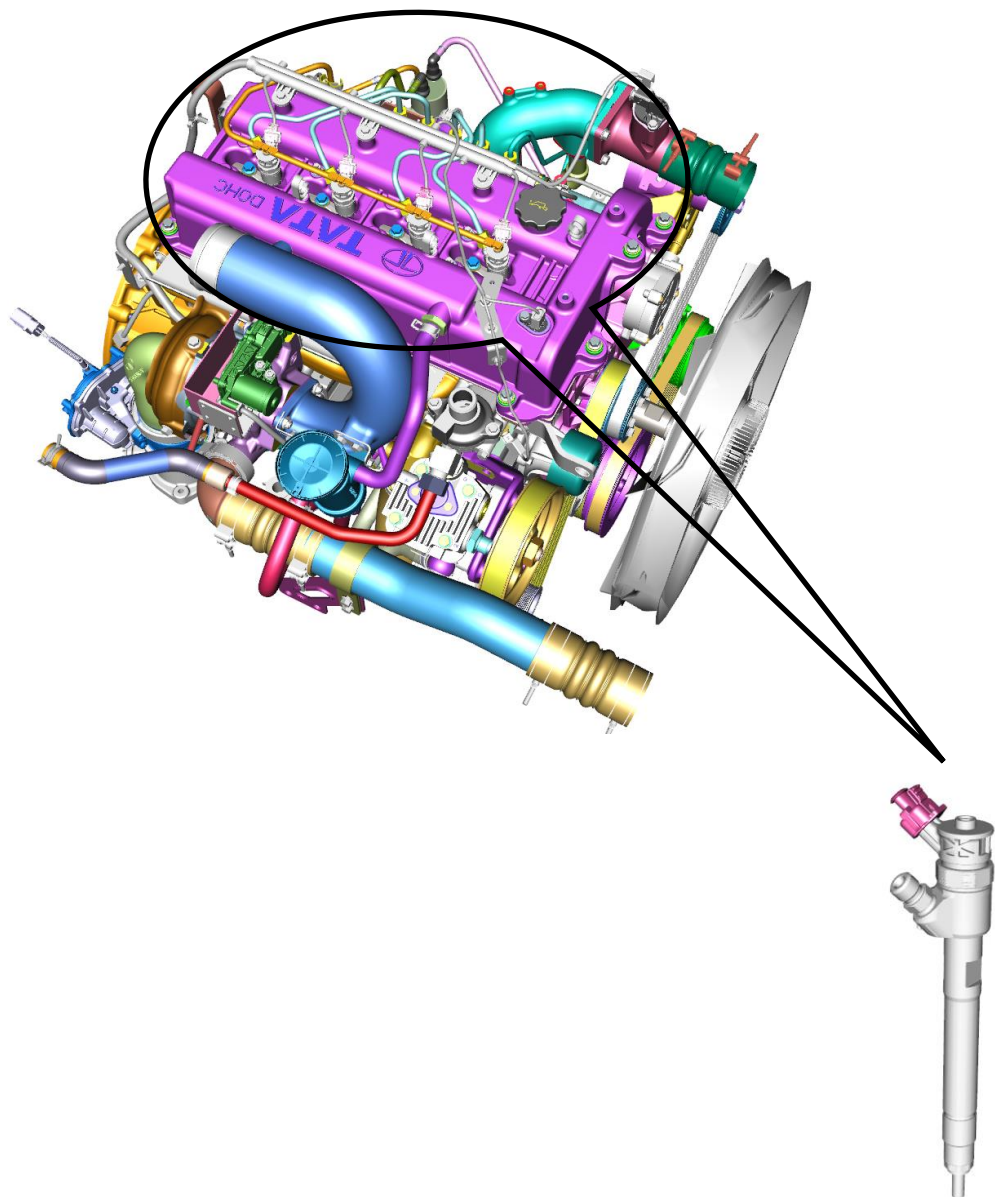
### Circuit Schematic Diagram:



### Circuit Description:

The rail and the injectors are connected to each other through the high-pressure pipes. The piezo injectors allow extremely short response times and enable a free selection of the injection beginning and the fuel quantity according to the demands of the ECU. EMS turns the injector ON for a precise amount of time referred to as injection pulse width to deliver the calculated fuel in cylinder. Injector is turned on through high side driver (supply) as well as low side driver (ground) present in the EMS. EMS is configured for 4 injectors by two bank arrangement with 2 injectors per bank. Check for the continuity between EMS and Injector by referring above schematic.

Location & Component Image:





**P1203-00: DFC for Injector short circuit high and low side for cylinder 3**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1203-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring Harness problem 2. Connector problem 3. Injector failure	Torque limitation

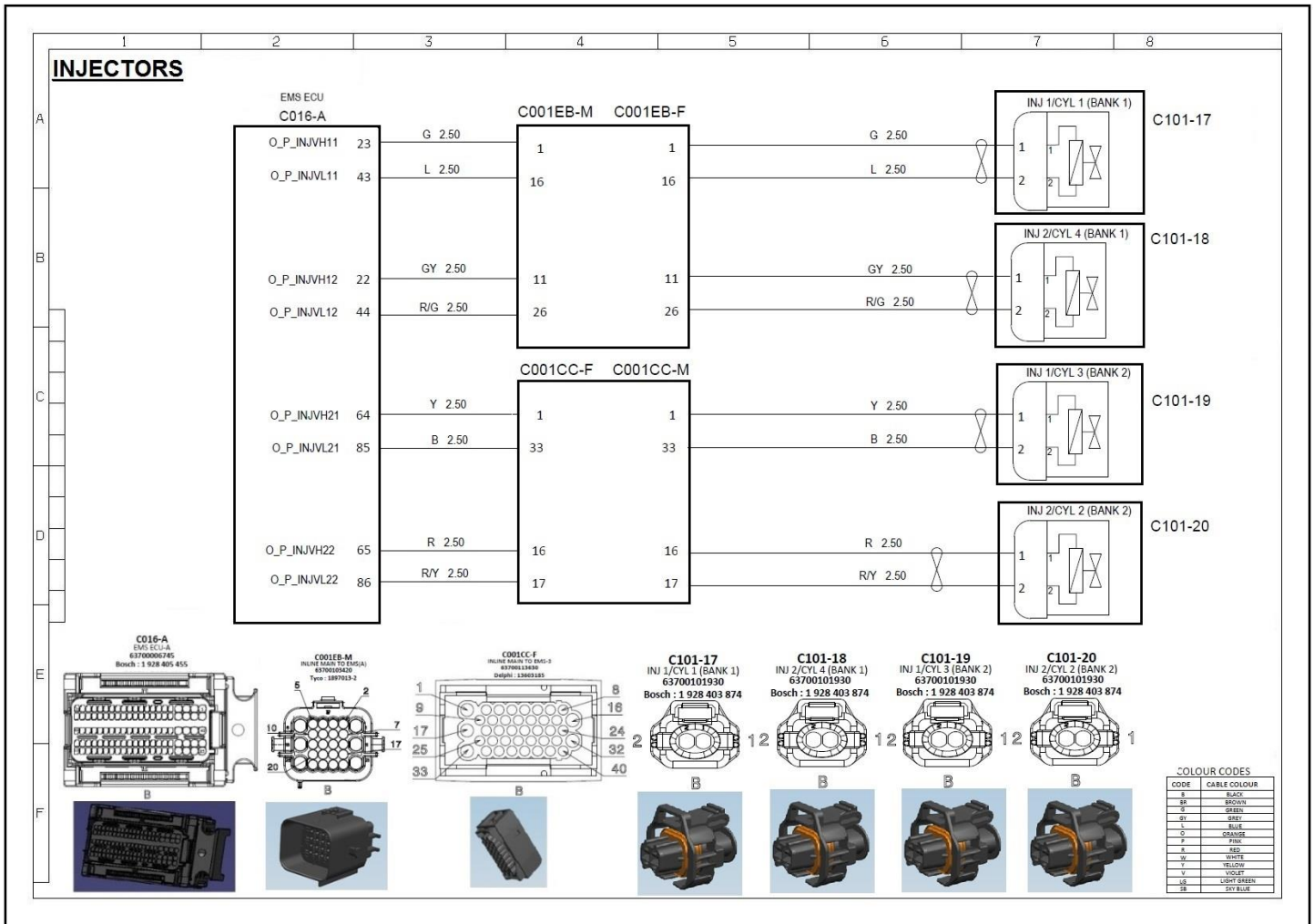
**Checkpoints:**

1. Check Battery Voltage
2. Check the wiring harness
3. Check injector side connector in wiring harness
4. Check the continuity between 2<sup>nd</sup> cylinder injector connector to ECU side connector in wiring harness

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check if the wiring harness connector connected properly to 2 <sup>nd</sup> cylinder injector, if not fix it and go to step 10	
Step 3	Check the wiring harness side connector for any damage, pin damage or wire back-out	
Step 4	Check the injector side connector for any damage, pin damage, rotated form the body	
Step 5	In case of non conformity in step 3 & 4, fix the injector connector problem, wiring harness connector problem, fix the back-out cables in proper positions in connector and go to step 10	
Step 6	If error persists, check the continuity of injector connector pin 1 to ECU terminal A31 & injector connector pin 2 to ECU terminal A01	Pin 1 to A31 Pin 2 to A01
Step 7	Check / ensure no cross continuity between terminals / pins in step no 6	No continuity between Pin 1 to A01 Pin 2 to A31
Step 8	In case of non-conformity in step 6 & 7 change the wires with new and go to step 10	
Step 9	If error persists change the injector with new and go to step 10	
Step 10	Clear and check the DTC	

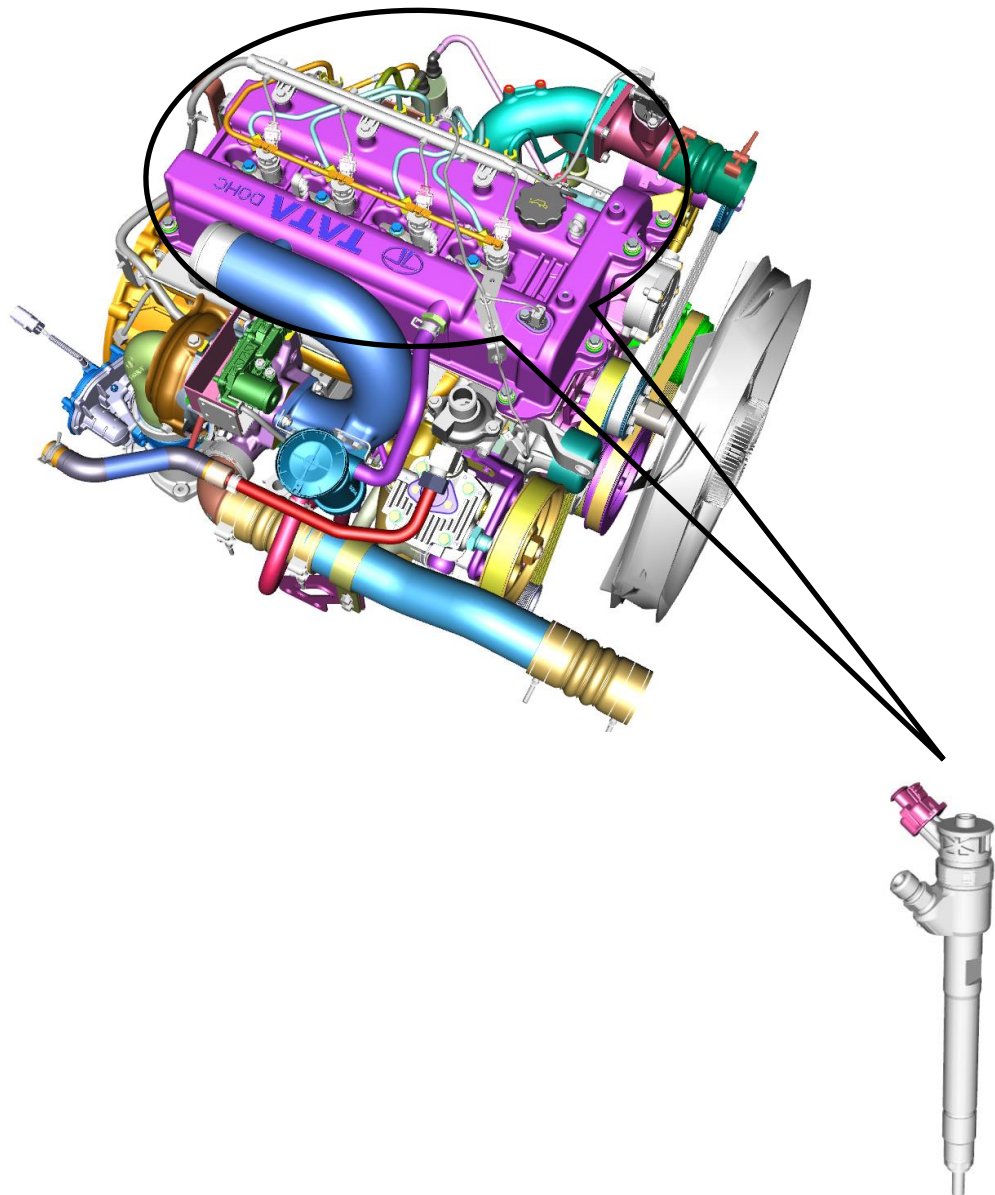
### Circuit Schematic Diagram:



**Circuit Description:** The rail and the injectors are connected to each other through the high-pressure pipes. EMS turns the injector ON for a precise amount of time referred to as injection pulse width to deliver the calculated fuel in cylinder. Injector is turned on through high side driver (supply) as well as low side driver (ground) present in the EMS. EMS is configured for 4 injectors by two bank arrangement with 2 injectors per bank. Check for the continuity between EMS and Injector by referring above schematic.



Location & Component Image:







**P1204-00: DFC for Injector short circuit high and low side for cylinder 4**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1204-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring Harness problem 2. Connector problem 3. Injector failure	Torque limitation

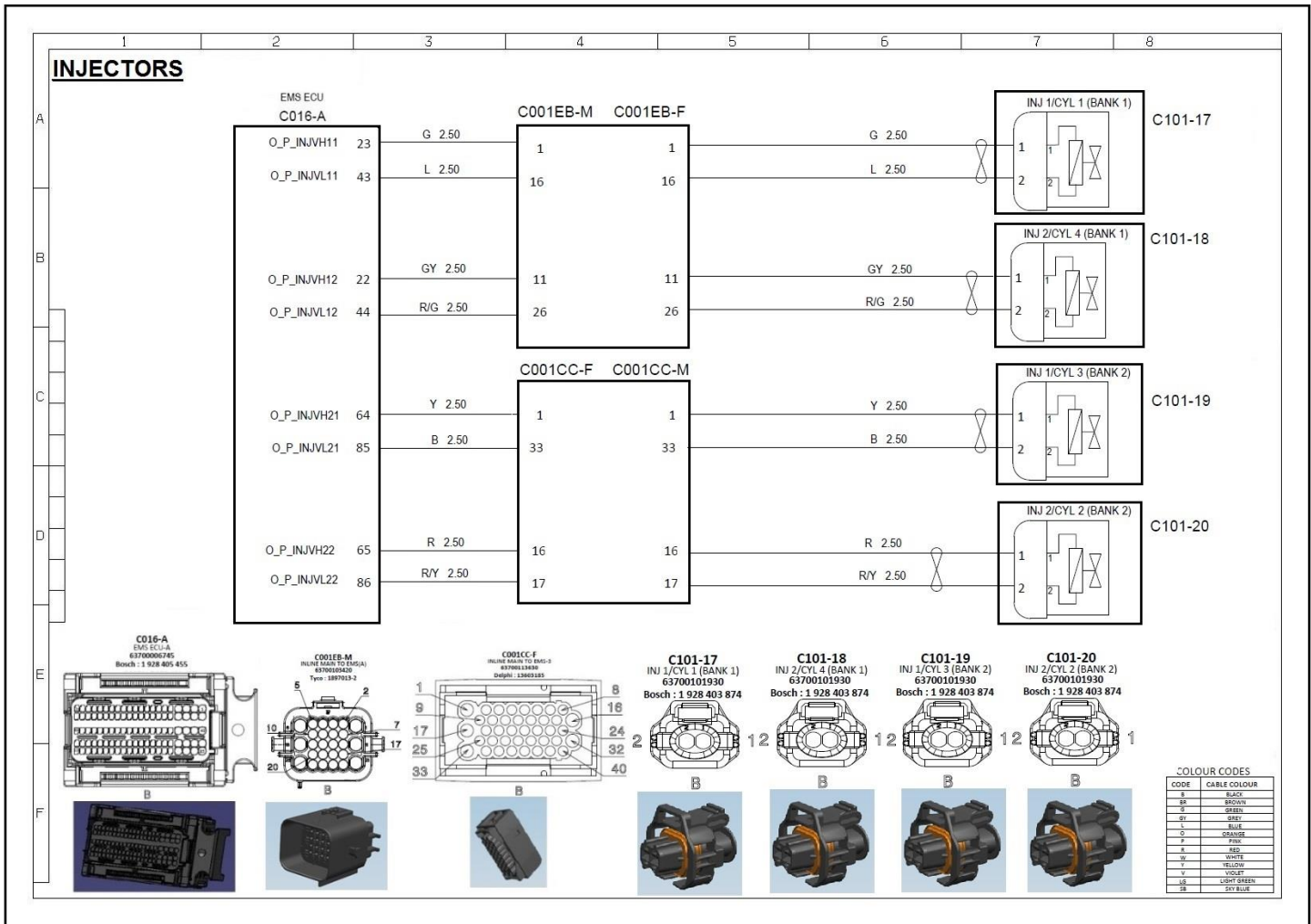
**Checkpoints:**

1. Check Battery Voltage
2. Check the wiring harness
3. Check injector side connector in wiring harness
4. Check the continuity between 3<sup>rd</sup> cylinder injector connector to ECU side connector in wiring harness

**Trouble Shooting Steps:**

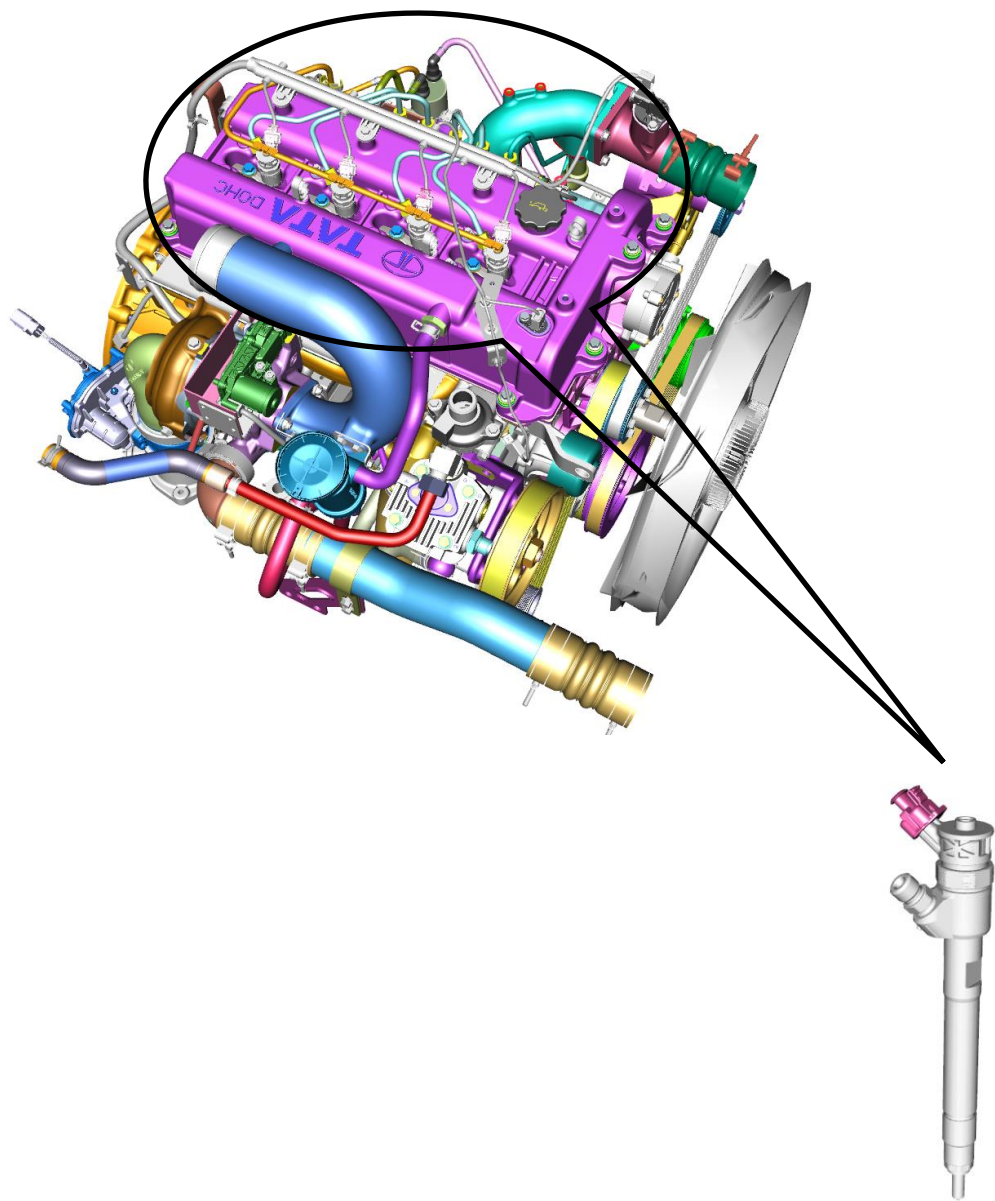
Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check if the wiring harness connector connected properly to 4 <sup>th</sup> cylinder injector, if not fix it and go to step 10	
Step 3	Check the wiring harness side connector for any damage, pin damage or wire back-out	
Step 4	Check the injector side connector for any damage, pin damage, rotated form the body	
Step 5	In case of non-conformity in step 3 & 4, fix the injector connector problem, wiring harness connector problem, fix the back-out cables in proper positions in connector and go to step 10	
Step 6	If error persists, check the continuity of injector connector pin 1 to ECU terminal A22 & injector connector pin 2 to ECU terminal A44 & between A22 & A44.	
Step 7	Check / ensure no cross continuity between terminals / pins in step no 6	
Step 8	In case of non-conformity in step 6 & 7 change the wires with new and go to step 10	
Step 9	If error persists change the injector with new and go to step 10	
Step 10	Clear and check the DTC	

### Circuit Schematic Diagram:



**Circuit Description:** The rail and the injectors are connected to each other through the high-pressure pipes. The piezo injectors allow extremely short response times and enable a free selection of the injection beginning and the fuel quantity according to the demands of the ECU. EMS turns the injector ON for a precise amount of time referred to as injection pulse width to deliver the calculated fuel in cylinder. Injector is turned on through high side driver (supply) as well as low side driver (ground) present in the EMS. EMS is configured for 4 injectors by two bank arrangement with 2 injectors per bank. Check for the continuity between EMS and Injector by referring above schematic.

Location & Component Image:





## P0001-00: Open load of metering unit output

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P0001-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Connector not connected 2. Wiring harness problem 3. Pump metering unit failure	Vehicle will go into limp-home mode

### Checkpoints:

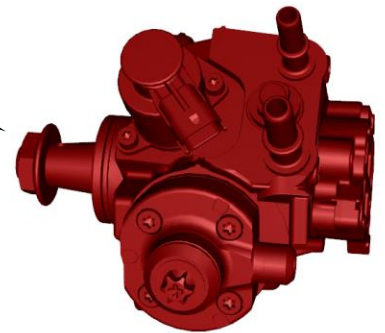
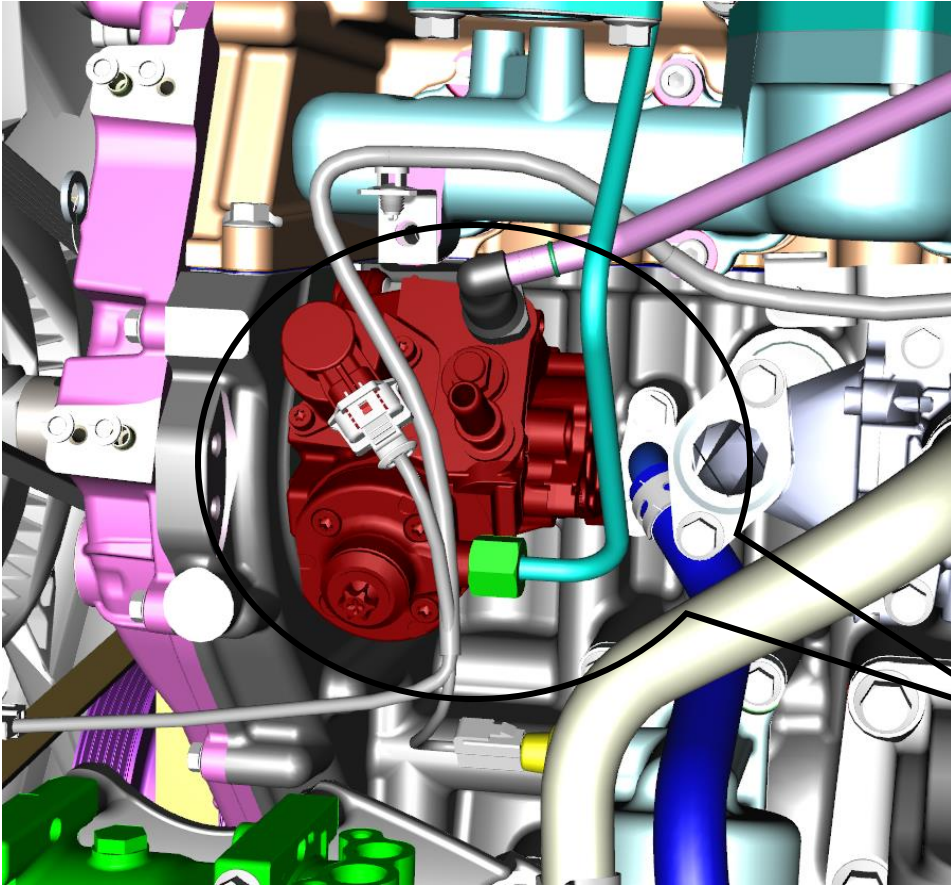
1. Check metering unit connector
2. Check wiring harness

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check whether the connector is connected	
Step 2	Check continuity between metering unit connector pin 2 and ECU connector pin A17	
Step 3	Change the wiring harness for terminal back out	
Step 4	If problem still persists remove the pump and get it checked from the authorized dealer	



Location & Component Image:







**P0003-00: Short circuit to ground of metering unit output**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0003-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Pump metering unit short circuit to ground 2. Loose connections	Vehicle will not start

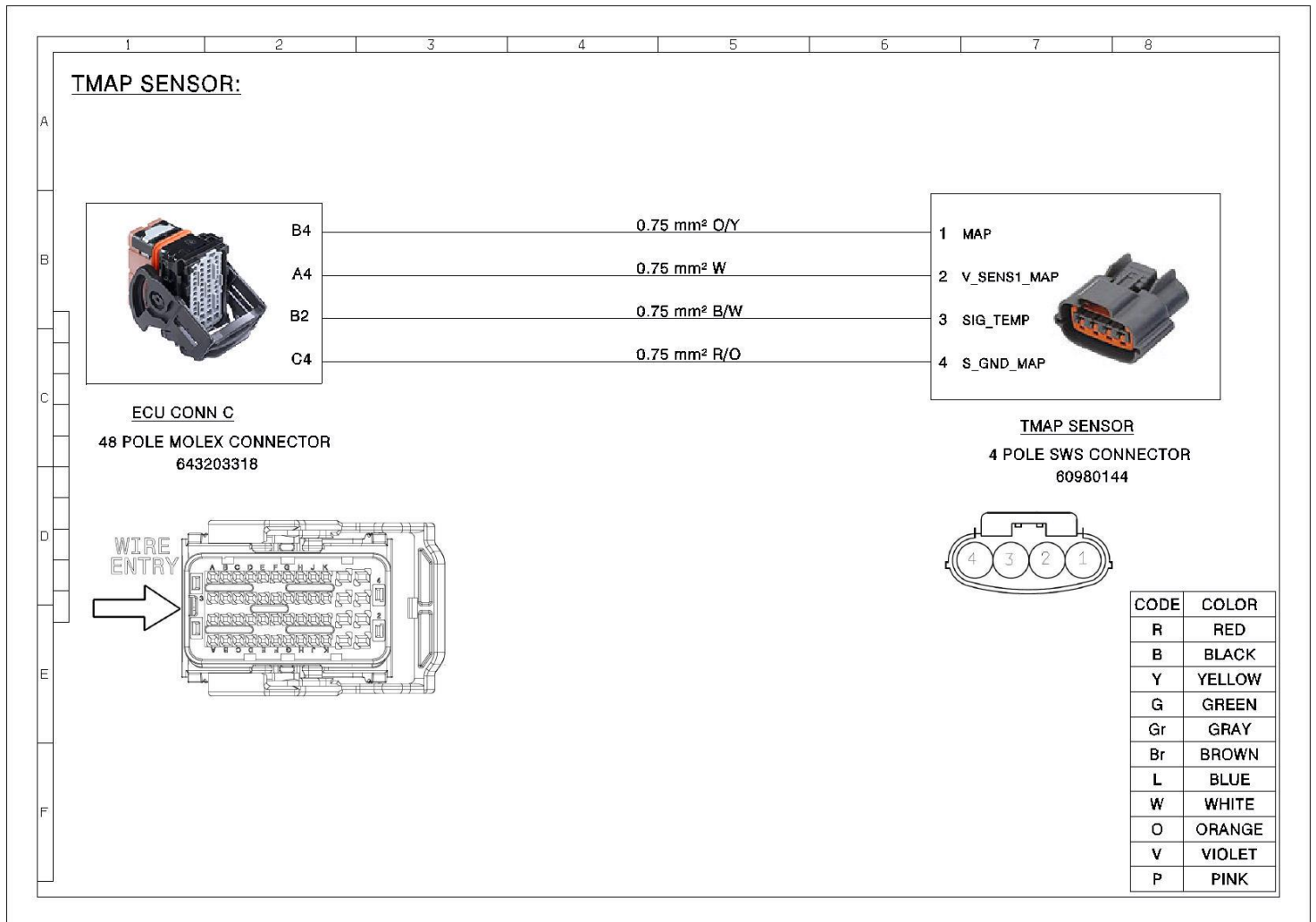
**Checkpoints:**

1. Check metering unit connector
2. Check wiring harness

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check for back out of pins at metering unit connector and ECU connector	
Step 2	Check for damage of pins at both metering unit connector and ECU connector	
Step 3	Check continuity between metering unit connector pin 2 and ECU connector pin A17.	
Step 4	Check continuity between metering unit fuse & metering unit pin 2	
Step 5	If problem still persists, replace the ECU with new one & recheck again	

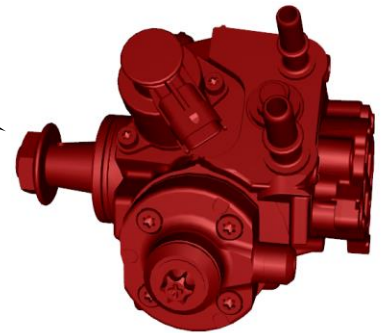
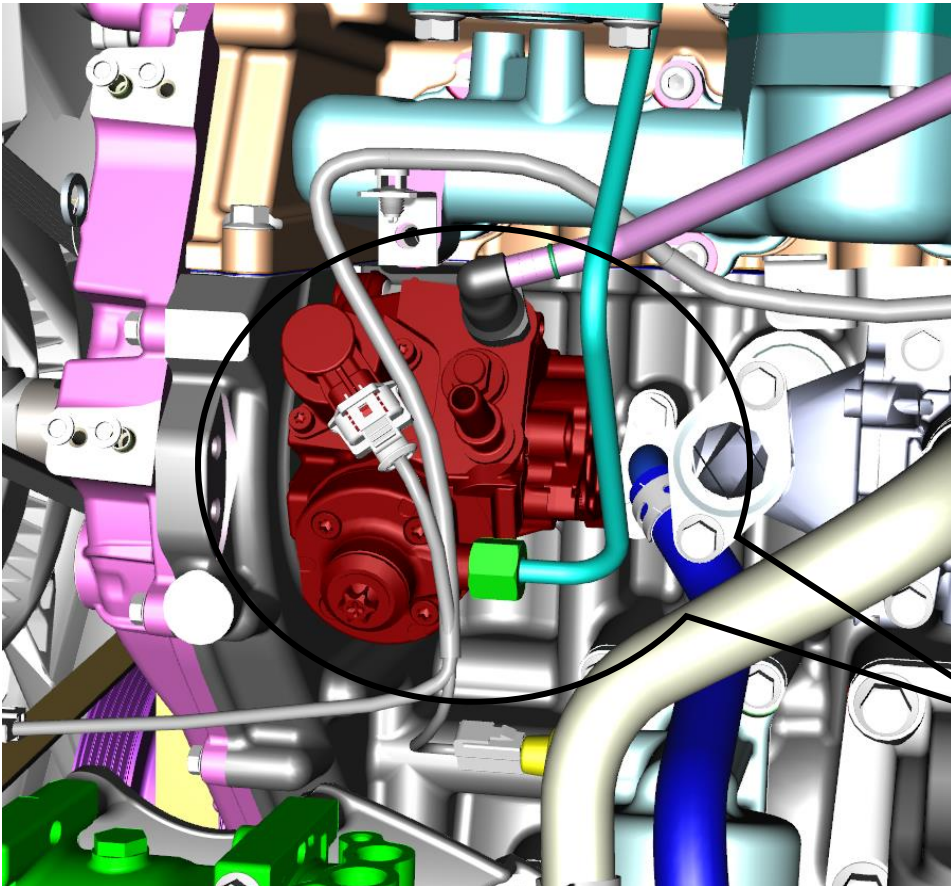
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the pump output thru metering unit. Metering unit has 2-pole connector Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





**P0004-00: Short circuit to battery of metering unit output (Low side)**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0004-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Pump metering unit short circuit to ground 2. Loose connections	Vehicle will not start

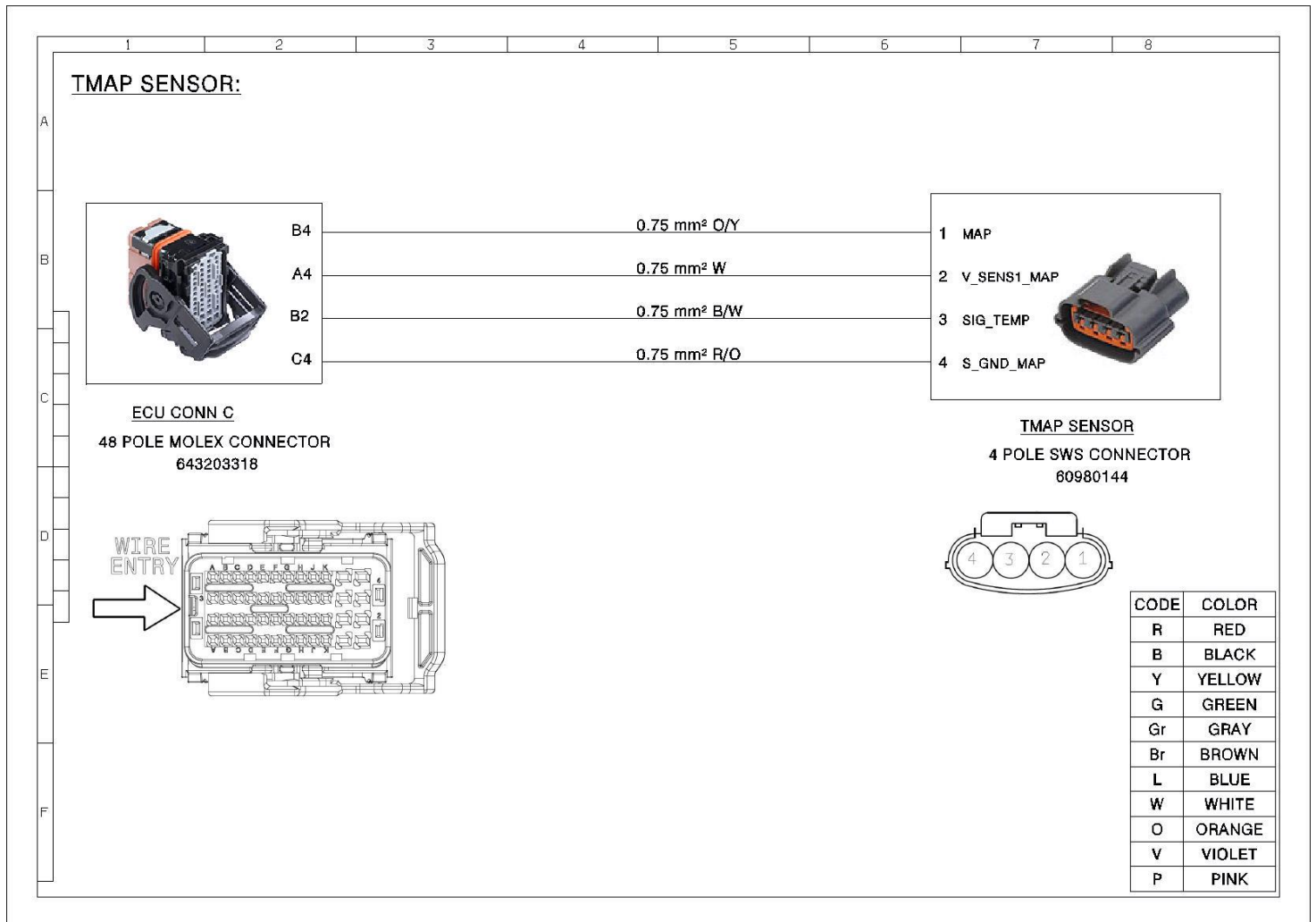
**Checkpoints:**

- 1 Check metering unit connector
- 2 Check wiring harness

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check for back out of pins at metering unit connector and ECU connector	
Step 2	Check for damage of pins at both metering unit connector and ECU connector	
Step 3	Check continuity between metering unit connector pin 2 and ECU connector pin A17.	
Step 4	Check continuity between metering unit fuse & metering unit pin 2	
Step 5	If problem still persists, replace the ECU with new one & recheck again	

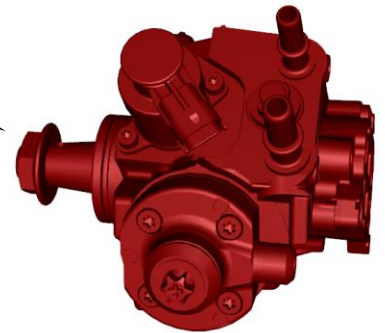
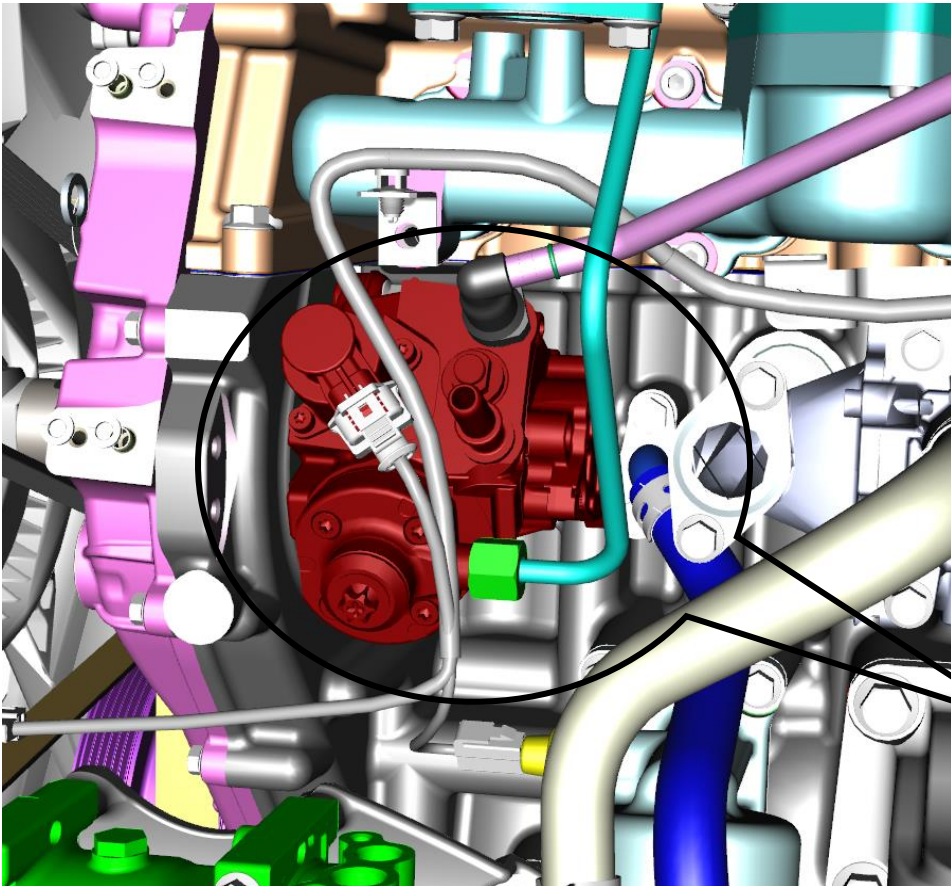
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the pump output thru metering unit. Metering unit has 2-pole connector Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:







**P0335-00: DFC for Crankshaft sensor Open circuit**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0335-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring Harness defect 2. Improper tone wheel mounting 3. Mechanical damage to crank sensor or tone wheel	Vehicle will not start

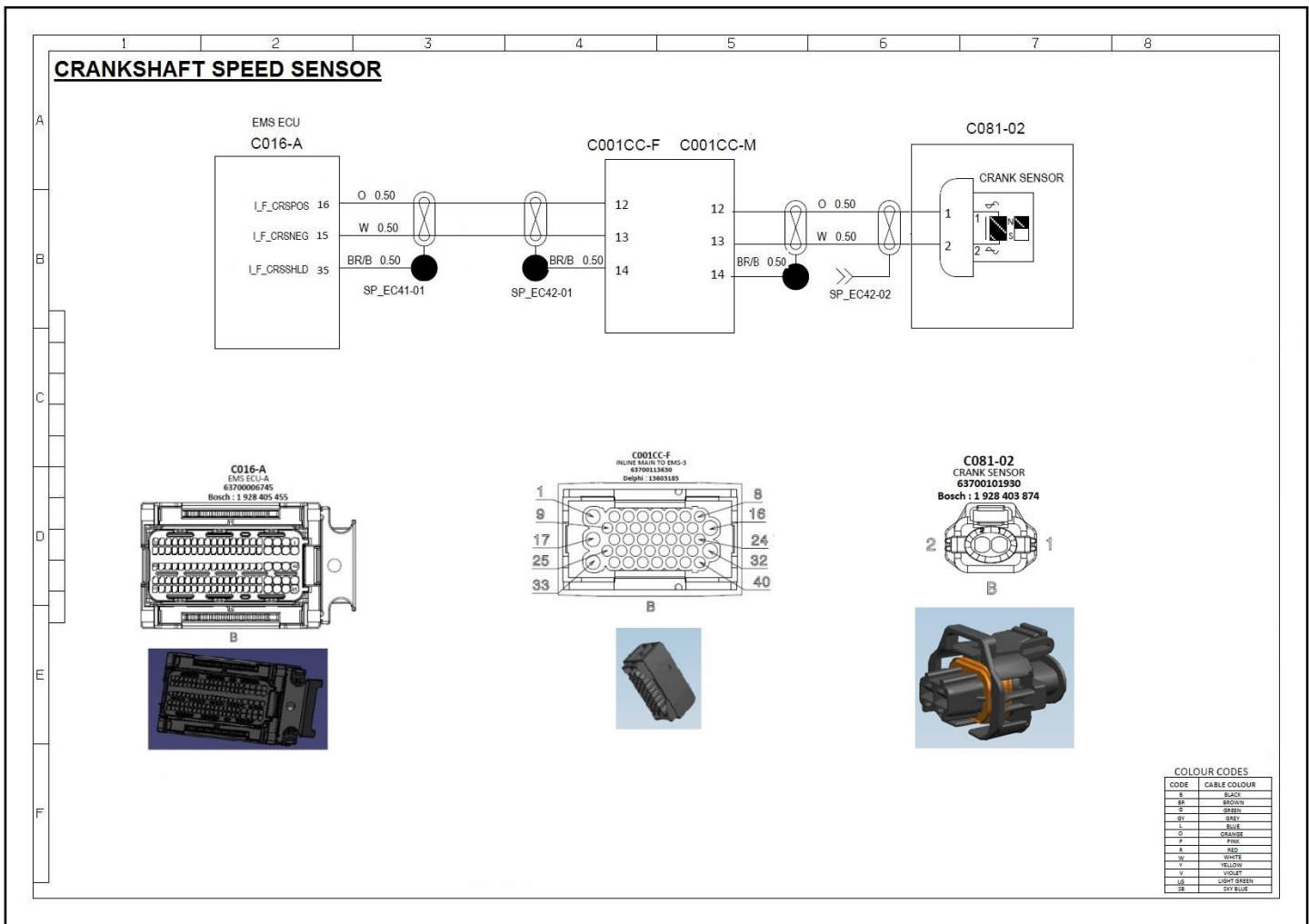
**Checkpoints:**

1. Check wiring harness
2. Check crank sensor
3. Check tone wheel

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness connector is connected properly to the crankshaft sensor	
Step 3	If connector found loose then fix it properly and go to step 13	
Step 4	If the error persists, check the crankshaft sensor for properly mounted (Air gap) on location, physical damage, damaged pins or wire back out	Air gap – 0.5 to 1.5mm
Step 5	Check if crank tone wheel mechanically damage, teeth damage or running out	
Step 6	In case of non-conformity of step 4 & 5, fit the sensor properly, if found damaged change the sensor, fix the tone wheel problem and go to step no 13	
Step 7	If error persists, check the wire harness connector for any pin damage / wire back-out from connector	
Step 8	Change the connector if required, fix the back-out cables in proper positions in connector and go to step 13	
Step 9	If error persists, check the continuity between pin 1 of crankshaft sensor to pin A15 of ECU and pin 2 of crankshaft speed sensor to pin A16 of ECU.	
Step 10	Check / ensure no cross continuity between terminals / pins in step no 9	
Step 11	In case of non-conformity of step 9 & 10 change the wires with new and go to step 13	
Step 12	If error persists, check and change the crankshaft speed sensor with new	
Step 13	Clear and check the DTC	

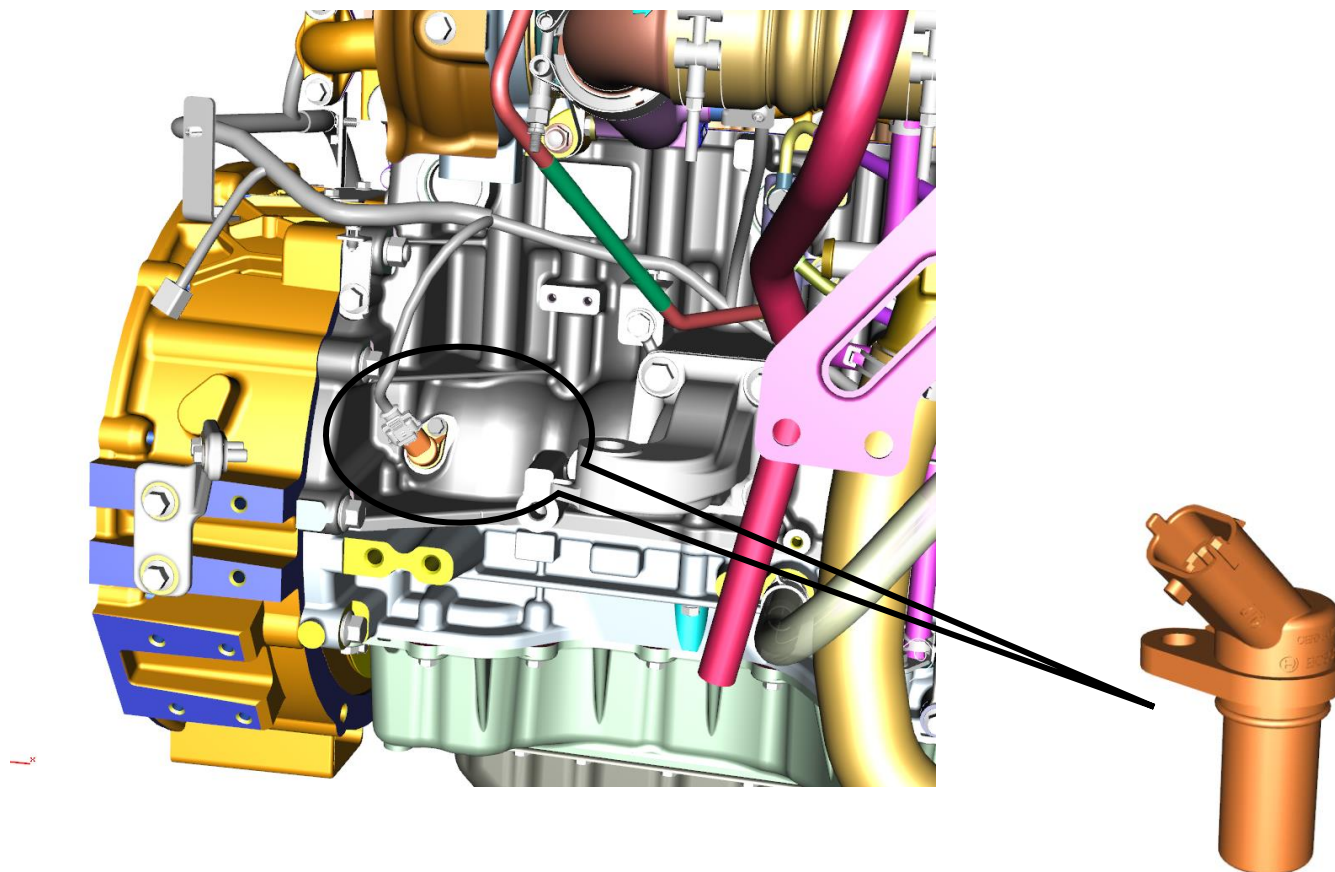
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the engine speed with the help of Crank position sensor. The Sensor is Variable Reluctance type. The slot and teeth present on target wheel alter the gap and hence result in change of magnetic field near sensor. This change in magnetic field causes the sensor to produce voltage which is approximately a sine wave and whose frequency is proportional to engine speed. This information in synchronization with CAM sensor is used by EMS to initiate fuel injection.

Location & Component Image:





**P0336-00: DFC for crankshaft signal diagnose - disturbed signal**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code:P0336-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. Wiring Harness defect 2. Improper tone wheel mounting 3. Mechanical damage to crank sensor or tone wheel	NA.

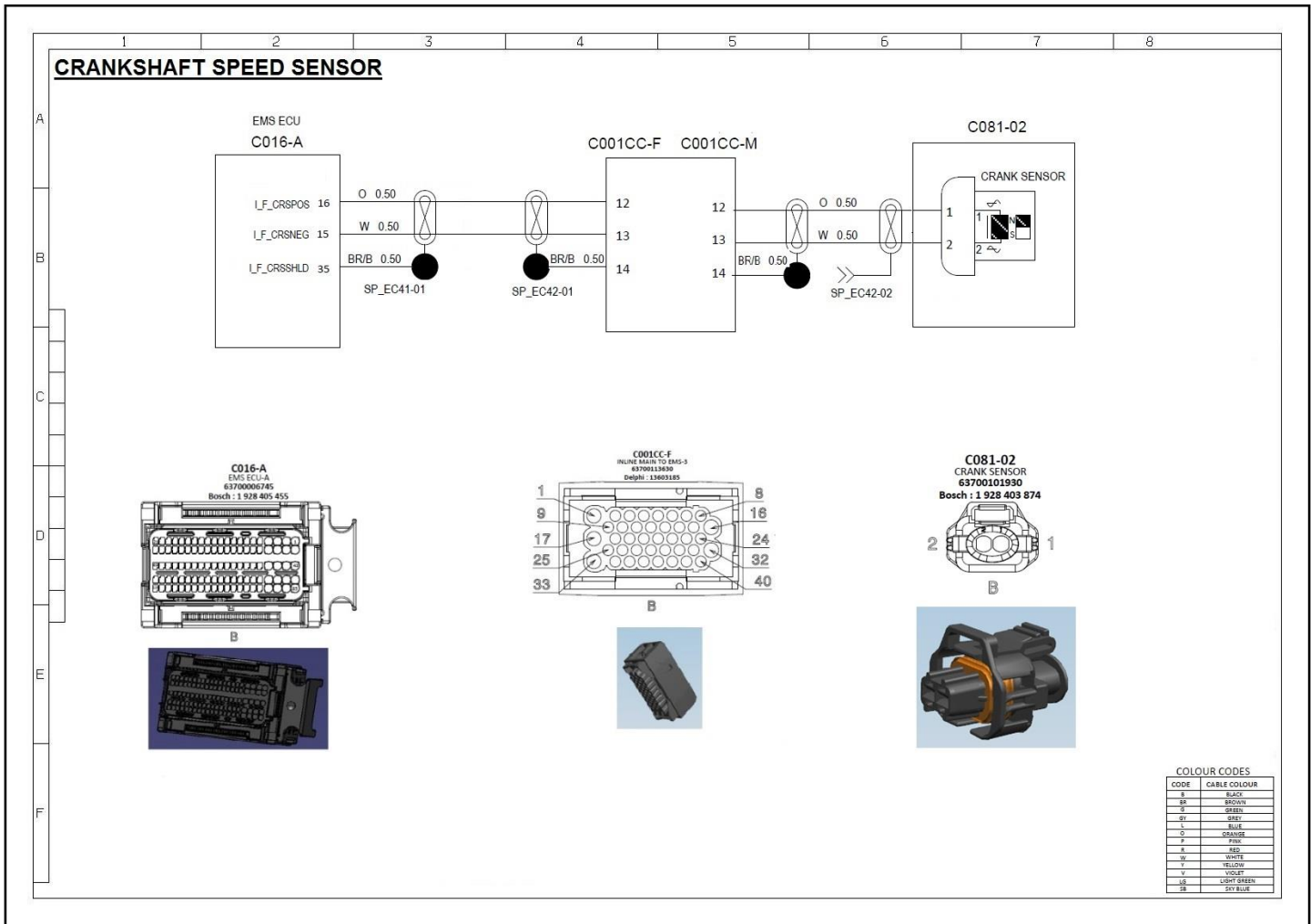
**Checkpoints:**

1. Check wiring harness
2. Check crank sensor
3. Check tone wheel

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness connector is connected properly to the crankshaft sensor	
Step 3	If connector found loose then fix it properly and go to step 13	
Step 4	If the error persists, check the crankshaft sensor for properly mounted (Air gap) on location, physical damage, damaged pins or wire back out	Air gap – 0.5 to 1.5mm
Step 5	Check if crank tone wheel mechanically damage, teeth damage or running out	
Step 6	In case of non-conformity of step 4 & 5, fit the sensor properly, if found damaged change the sensor, fix the tone wheel problem and go to step no 13	
Step 7	If error persists, check the wire harness connector for any pin damage / wire back-out from connector	
Step 8	Change the connector if required, fix the back-out cables in proper positions in connector and go to step 13	
Step 9	If error persists, check the continuity between pin 1 of crankshaft sensor to pin A15 of ECU and pin 2 of crankshaft speed sensor to pin A16 of ECU	
Step 10	Check / ensure no cross continuity between terminals / pins in step no 9	
Step 11	In case of non-conformity of step 9 & 10 change the wires with new and go to step 13	
Step 12	If error persists, check and change the crankshaft speed sensor with new	
Step 13	Clear and check the DTC	

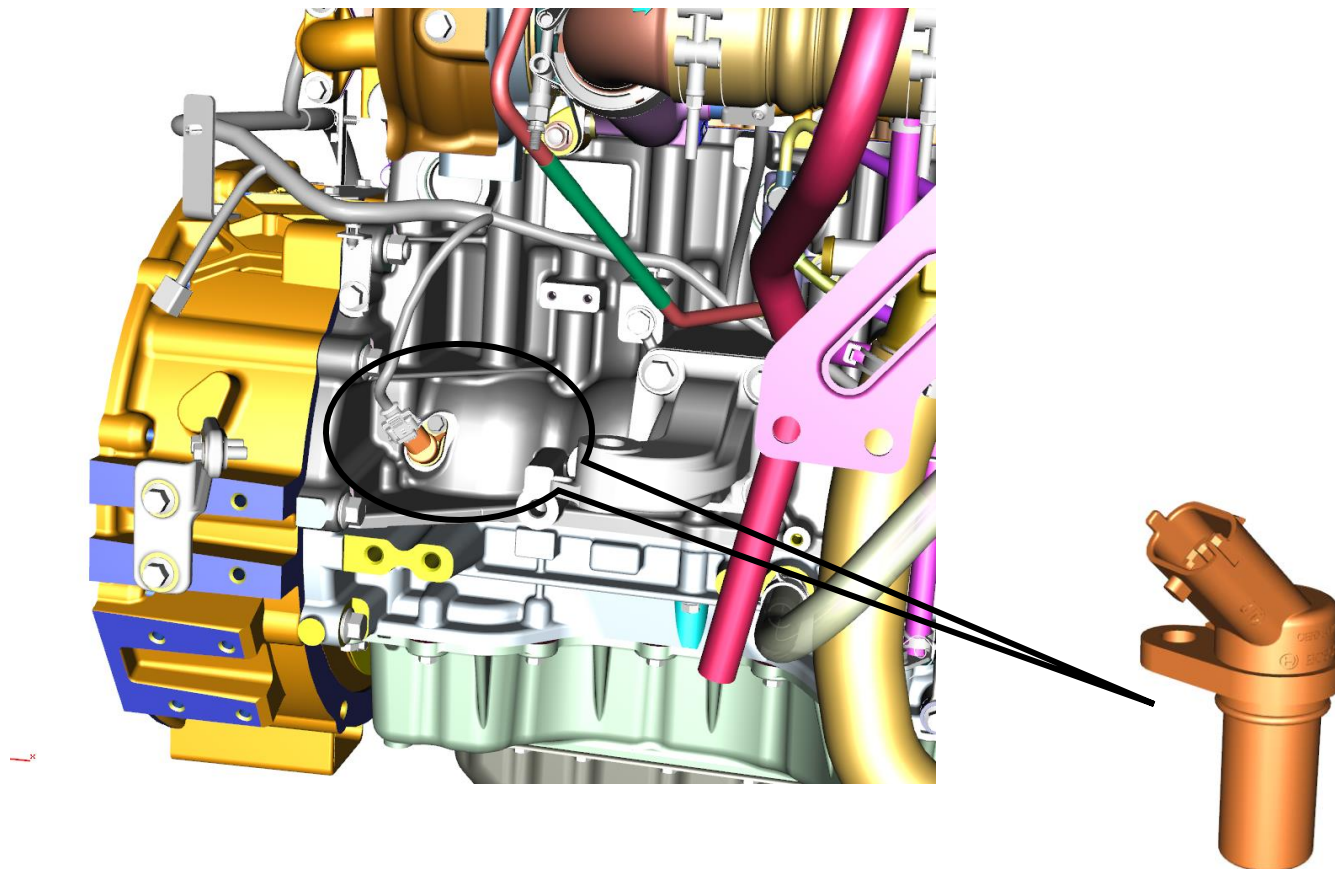
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the engine speed with the help of Crank position sensor. The Sensor is Variable Reluctance type. The slot and teeth present on target wheel alter the gap and hence result in change of magnetic field near sensor. This change in magnetic field causes the sensor to produce voltage which is approximately a sine wave and whose frequency is proportional to engine speed. This information in synchronization with CAM sensor is used by EMS to initiate fuel injection.

Location & Component Image:







**P0340-00: DFC for camshaft signal diagnose - no signal**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code:P0340 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Air gap too high 4. Mechanical damage to the camshaft tone wheel	Vehicle will not start

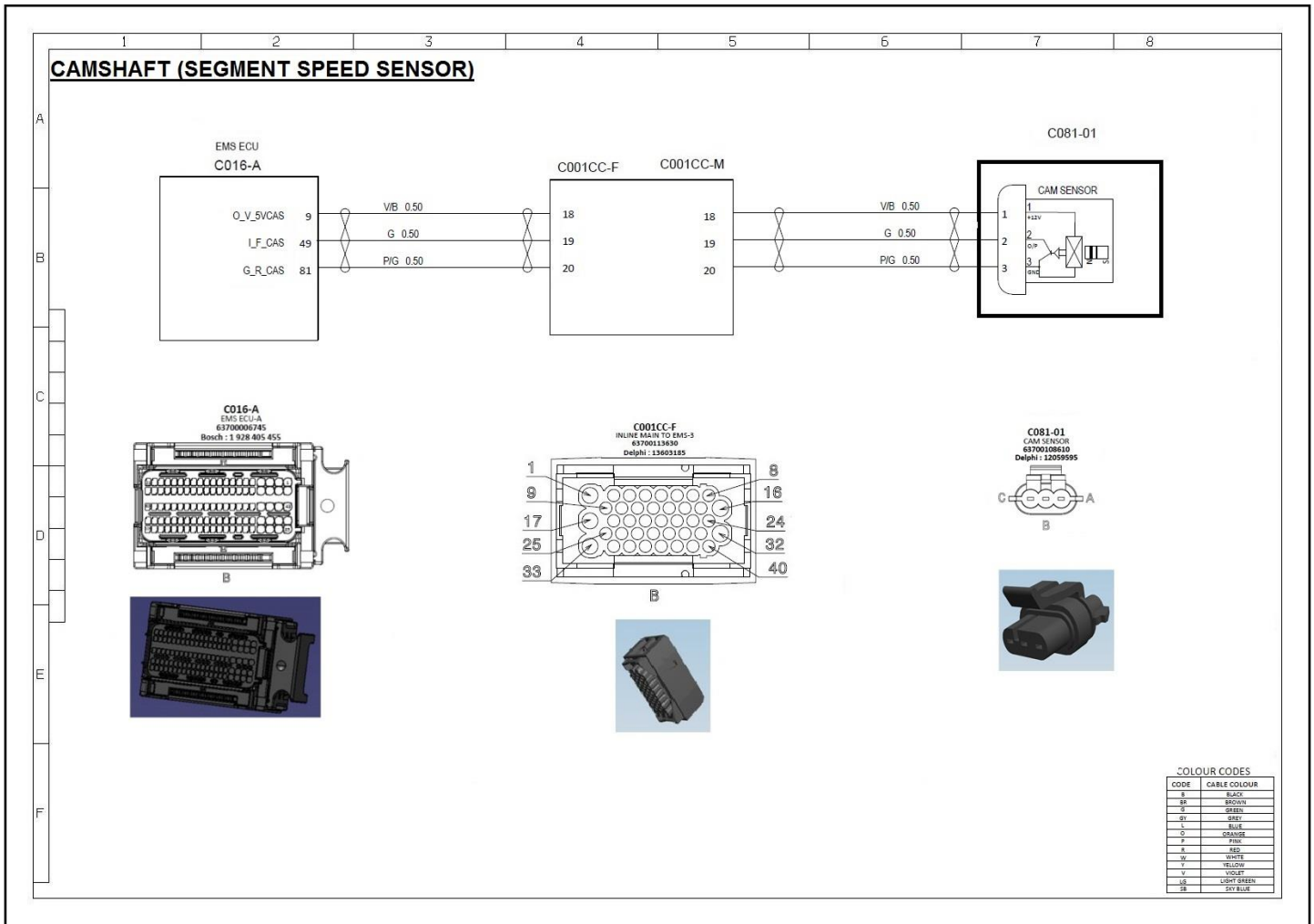
**Checkpoints:**

1. Check Battery Voltage
2. Check the Wire harness connections for pin damage or electrical problems
3. Check the Camshaft Sensor for Air gap & condition or damaged tone wheel.

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 4	If error still present then check the voltage between pin 1 & pin 3 for proper value (keep ignition ON)	<b>5V</b>
Step 5	Check the continuity between the pin 2 & A49 of CAM sensor.	
Step 6	If continuity fails then Check the signal for Open circuit or short circuit to battery or ground.	
Step 7	If Step 6 is true then replace the wire harness cable with new one & go to Step 10	
Step 8	If error still present, check the tone wheel for any mechanical damage or distortion & air gap as per specification.	<b>0.5-1.5 mm</b>
Step 9	If Step 7 fails then change the tone wheel with new one & maintain specified air gap. Go to Step 10	
Step 10	Check the DTC	

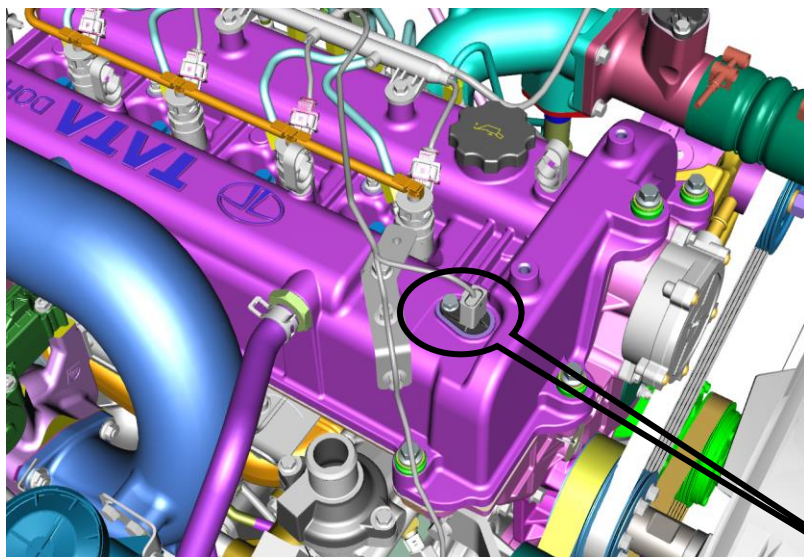
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the position of Cam shaft with the help of Cam Shaft Position Sensor. The sensor is Hall Effect type and provides digital input at A49. Allowable Air gap range between target and sensor mounting is 0.5mm to 1.5mm. Synchronization of CAM and Crank signals will be used to start injection. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





**P0341-00: DFC for camshaft signal diagnose - disturbed signal**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0341-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. Wiring Harness problem 2. Sensor damaged 3. Excess gap between sensor and cam gear 4. Incorrect fitment of cam sensor	Vehicle will not start

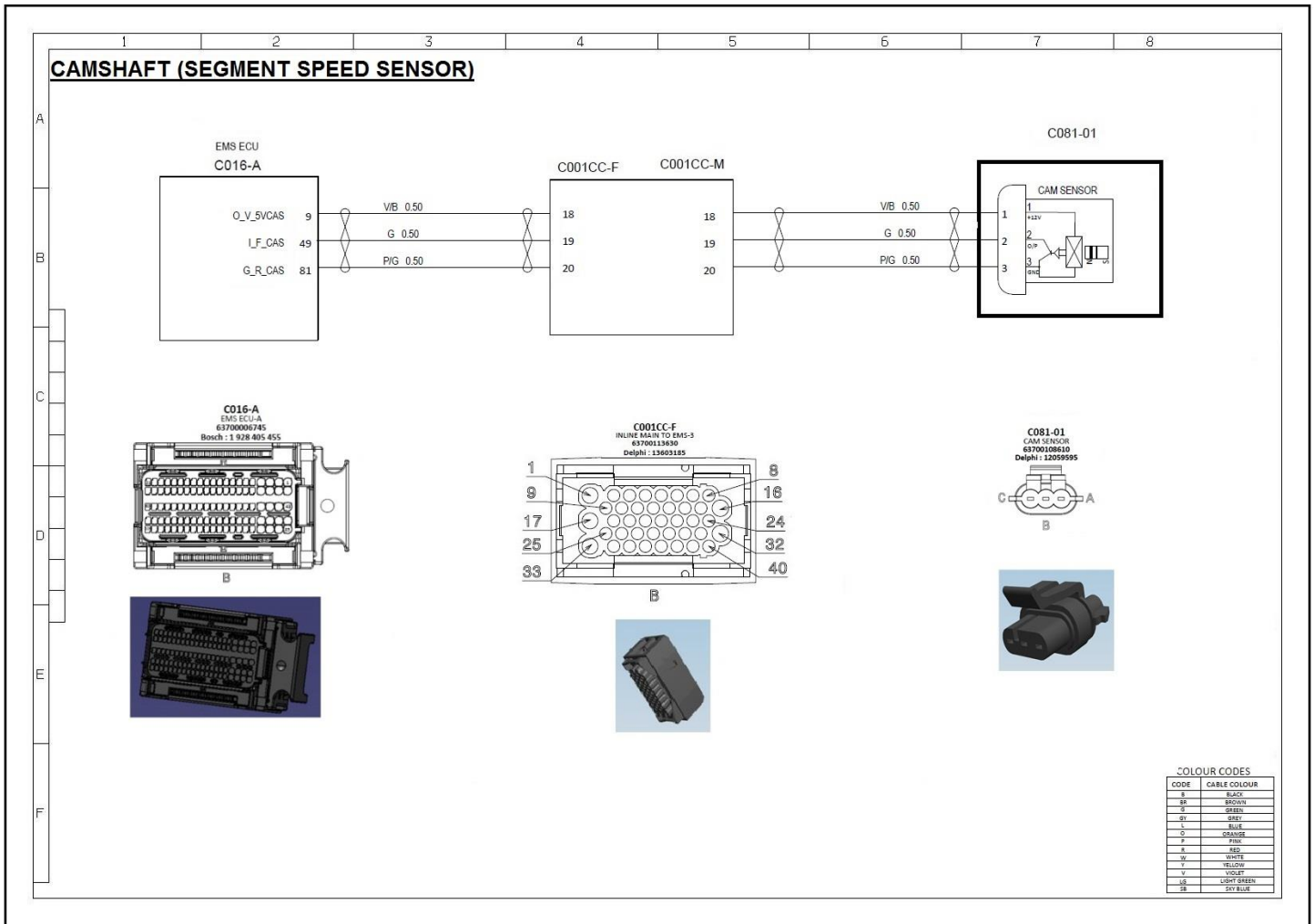
**Checkpoints:**

1. Check Battery Voltage
2. Check the Wire harness connections for pin damage or electrical problems
3. Check the Camshaft Sensor for Air gap & condition or damaged tone wheel.

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check connector is connected properly	
Step 3	Check the gap between the cam sensor tip and cam gear sensing surface.	<b>0.5-1.5 mm</b>
Step 4	Check for the proper fitment of the cam sensor	
Step 5	Replace the sensor if the problem persists	
Step 6	Check the DTC	

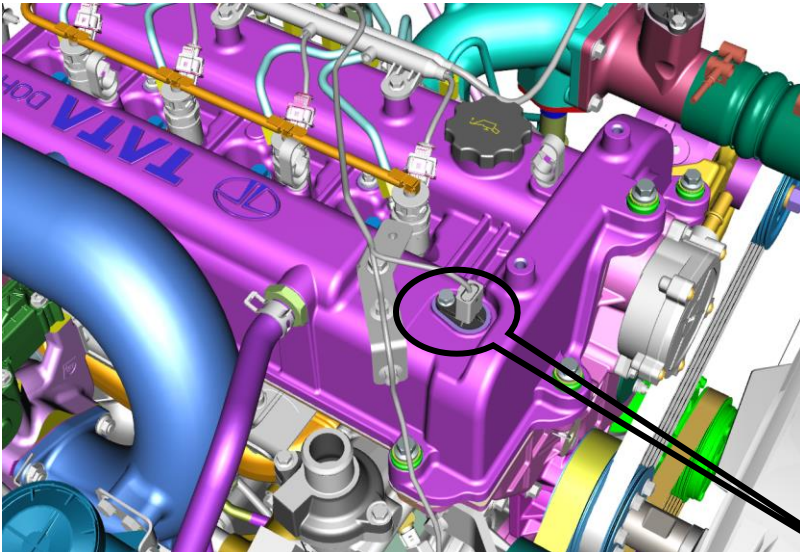
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the position of Cam shaft with the help of Cam Shaft Position Sensor. The sensor is Hall Effect type and provides digital input at A49. Allowable Air gap range between target and sensor mounting is 0.5mm to 1.5mm. Synchronization of CAM and Crank signals will be used to start injection. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:







**P0405-00: DFC for EGR valve position sensor voltage SRC low or Open Circuit**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0405-00 MIL- On CEL – Off AWL - Off	1. Short circuit to ground 2. Wiring harness problem 3. Wrong position sensor in EGR valve	Torque limitation

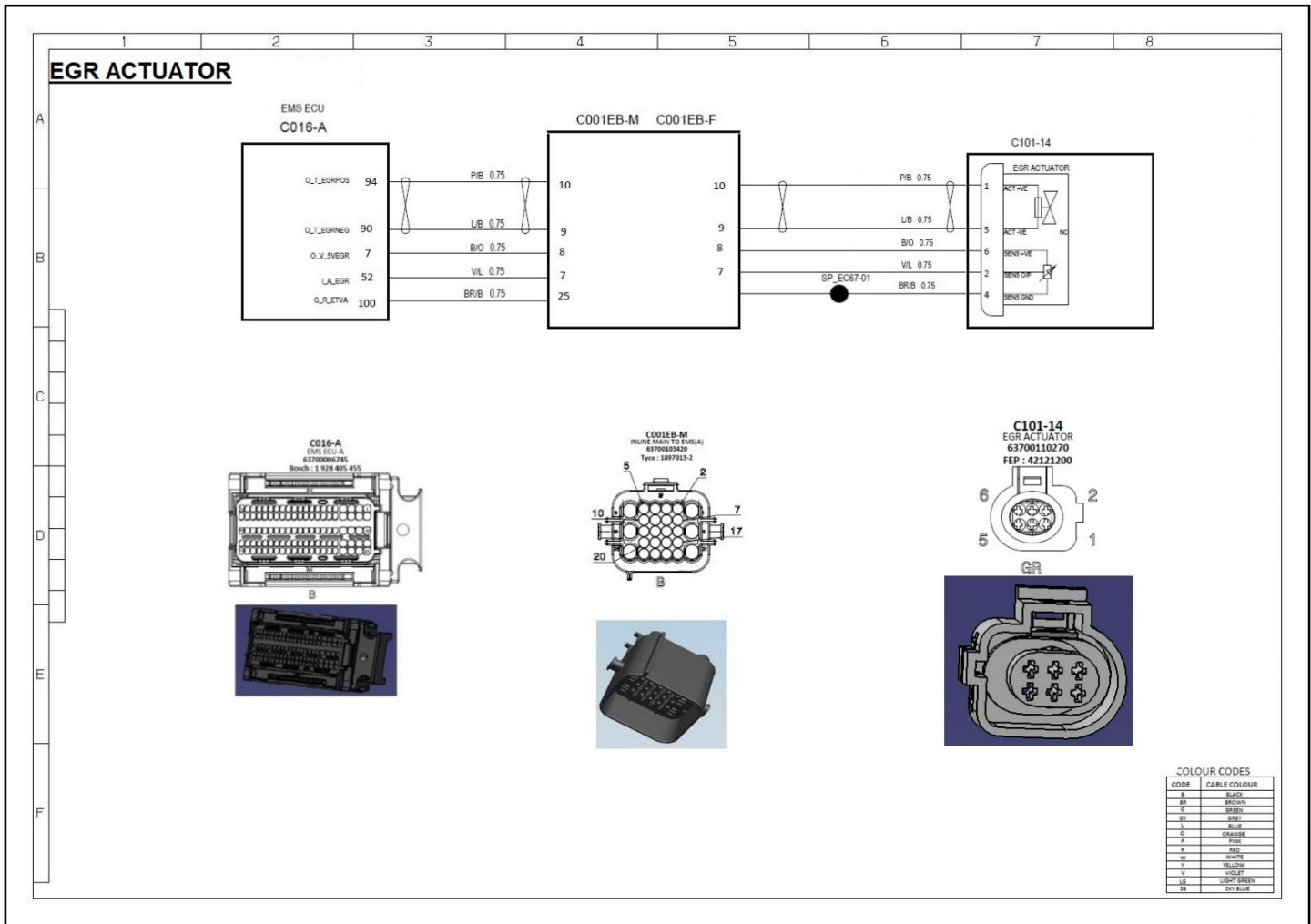
**Checkpoints:**

3. Check Battery Voltage
4. Check the Wire harness connections for pin damage or electrical problems
5. Check the EGR position sensor condition & for any mechanical damage

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 4	If error still present, Check continuity in between pin 4 & A100.	
Step 5	Check continuity in between pin 6 & A07 , & Pin2 & A52	
Step 6	If Step 4 & Step 5 fails then check signal for Open circuit & for continuity between pins in step 4 & 5	
Step 7	If Step 6 is true then replace the wire harness cable with new one & go to Step 10	
Step 8	If error still present then Check EGR valve for stuck. Go to Step 9	
Step 9	Replace EGR Position Sensor with new one & go to Step 10	
Step 10	Check DTC	

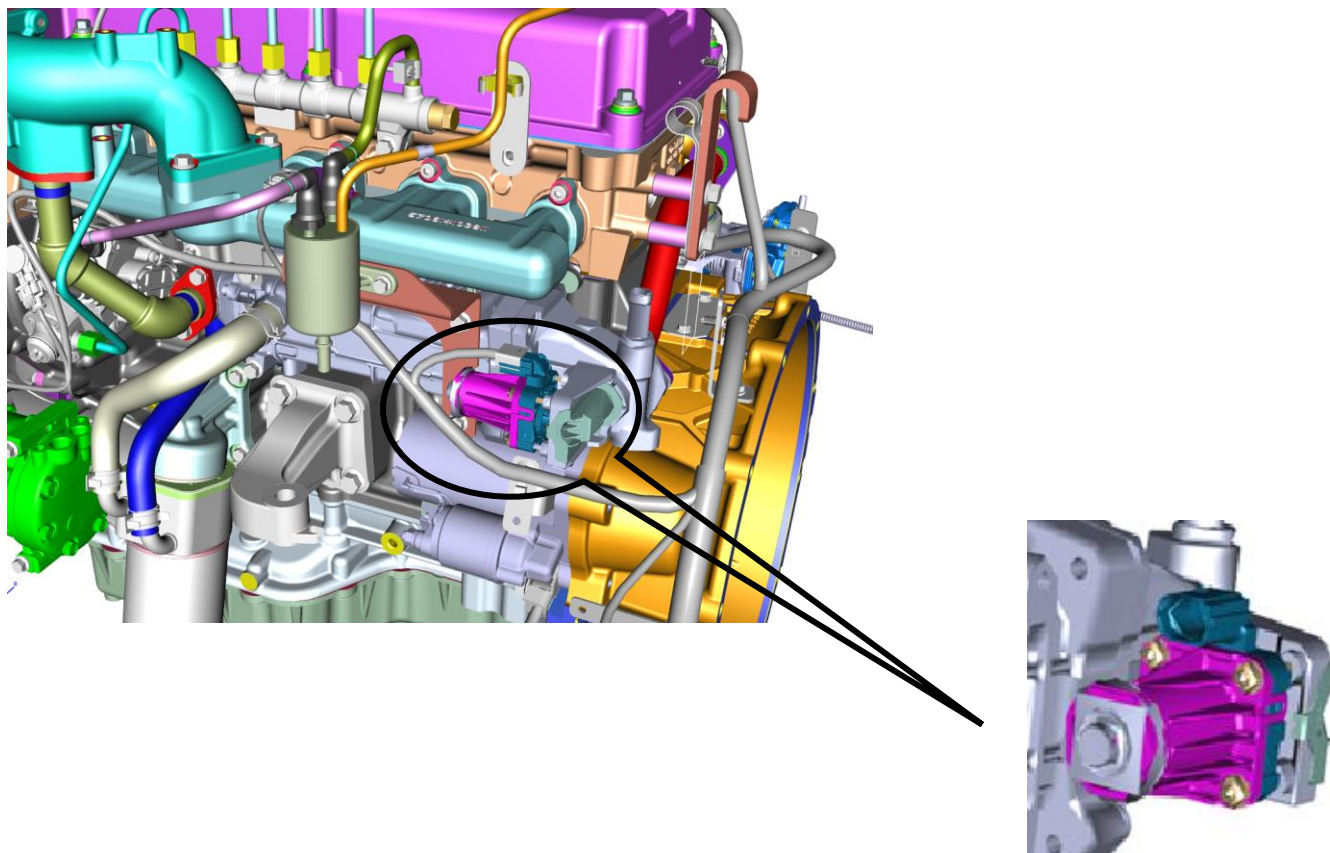
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS actuates EGR valve and measures its position by using EGR position sensor to make it as closed loop feedback process. EGR Actuator has 6-pole connector and provides the Analog input signal at A52. EMS will actuate the valve by using H-bridge driver. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





**P0406-00: DFC for EGR valve position sensor voltage SRC high**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0406-00 MIL- On CEL – Off AWL - Off	1. Sensor not connected 2. Short circuit to battery 3. Wiring harness problem 4. Wrong position sensor in EGR valve	Torque limitation

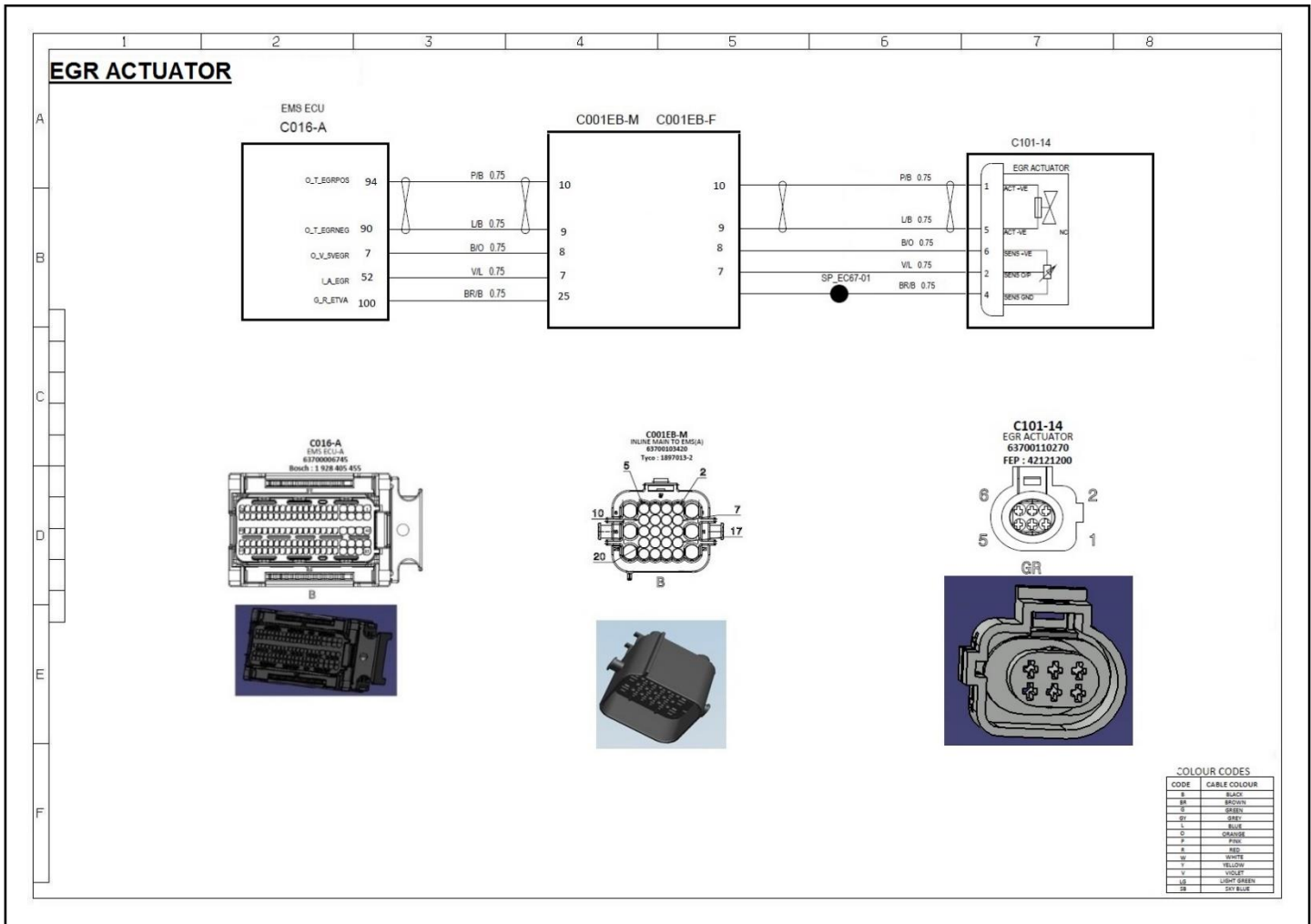
**Checkpoints:**

1. Check Battery Voltage
2. Check the Wire harness connections for pin damage or electrical problems
3. Check the EGR position sensor condition & for any mechanical damage

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 4	If error still present, Check continuity in between pin 4 & A100.	
Step 5	Check continuity in between pin 6 & A07 , & Pin2 & A52	
Step 6	If Step 4 & Step 5 fails then check signal for Open circuit & for continuity between pins in step 4 & 5	
Step 7	If Step 6 is true then replace the wire harness cable with new one & go to Step 10	
Step 8	If error still present then Check EGR valve for stuck. Go to Step 9	
Step 9	Replace EGR Position Sensor with new one & go to Step 10	
Step 10	Check DTC	

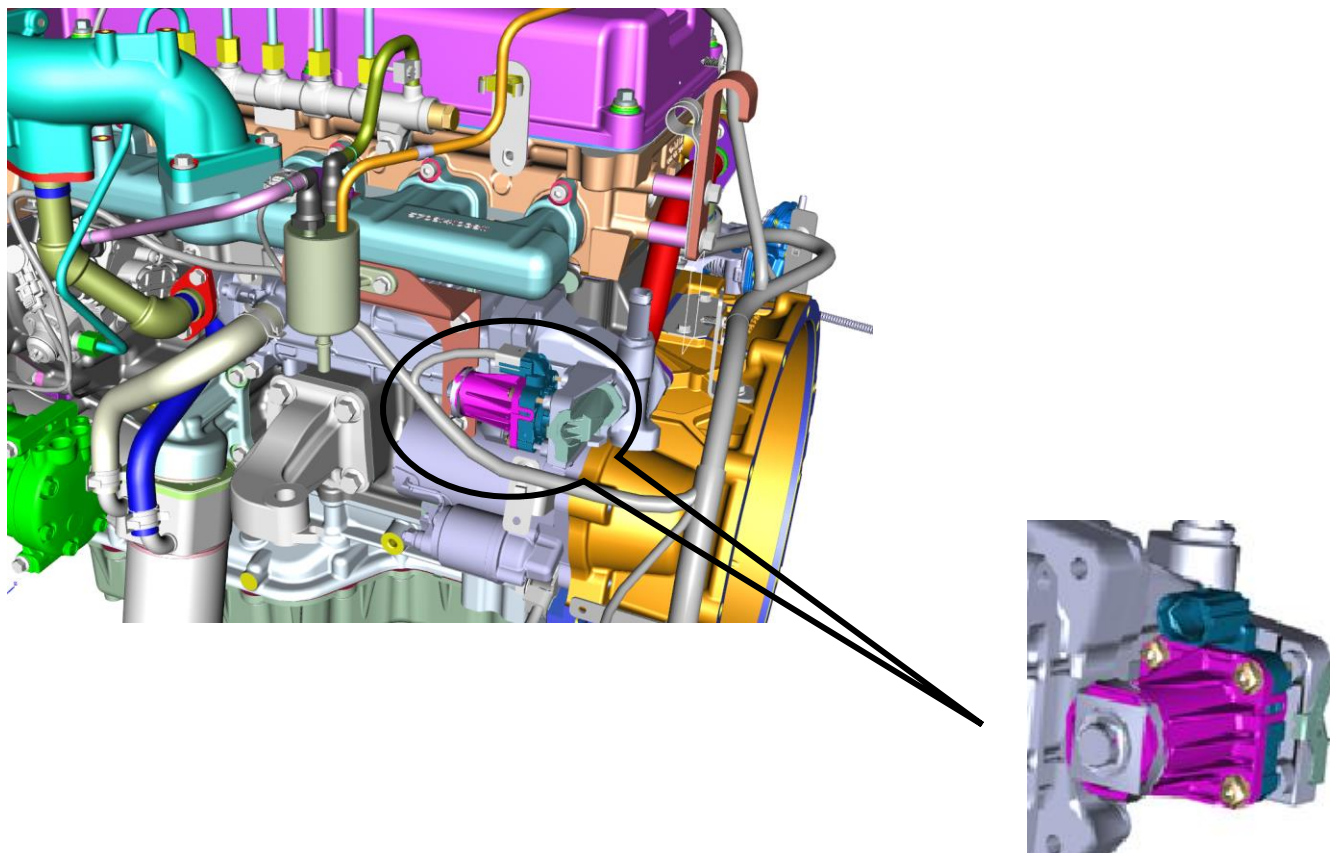
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS actuates EGR valve and measures its position by using EGR position sensor to make it as closed loop feedback process. EGR Actuator has 6-pole connector and provides the Analog input signal at A52. EMS will actuate the valve by using H-bridge driver. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:







**P042F-00: EGR valve jammed at closed position**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P042F-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. EGR valve stuck	Torque limitation

**Checkpoints:**

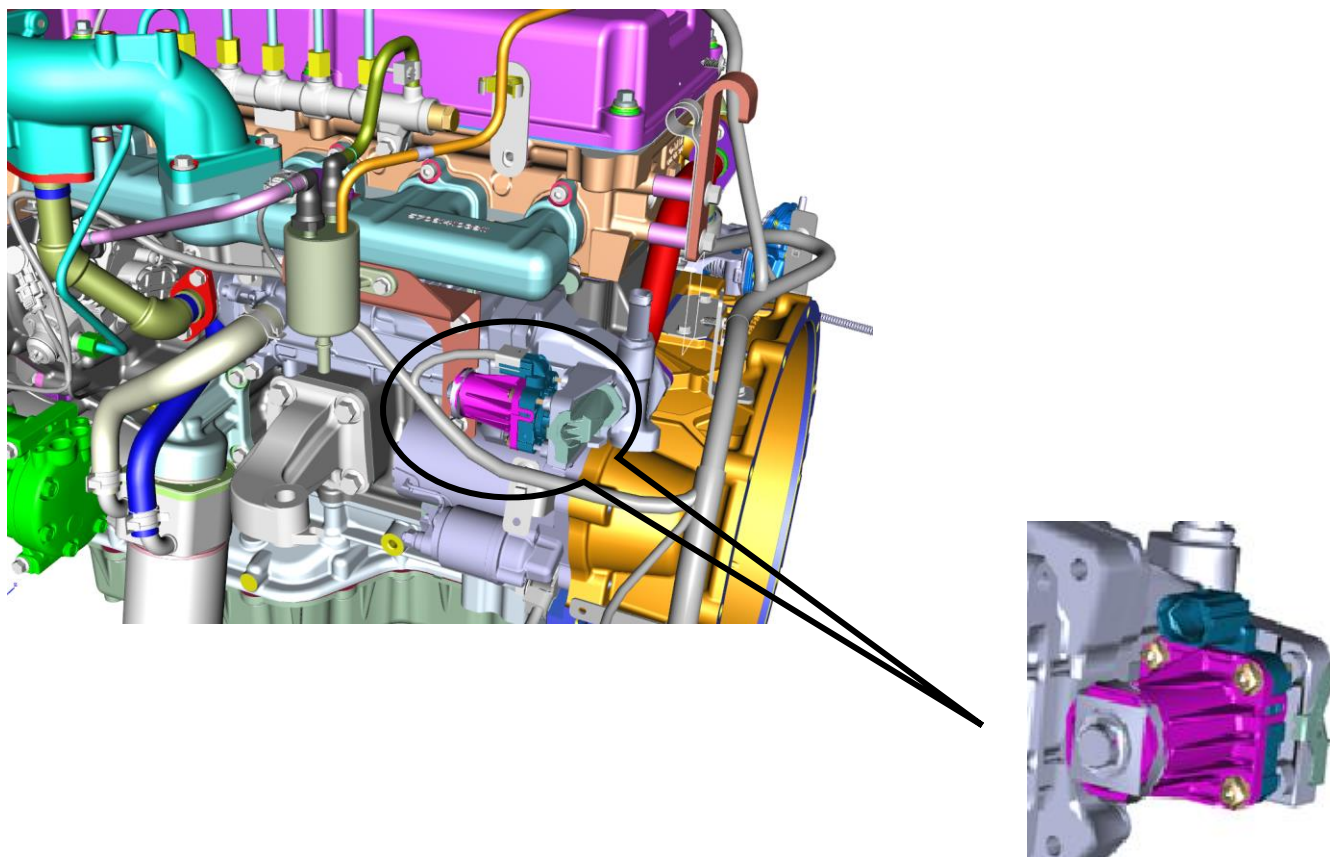
1. Check Battery Voltage
2. Check the Wire harness connections for pin damage or electrical problems
3. Check EGR valve for soot deposition

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check EGR Valve for soot deposition	
Step 3	Clean the EGR valve	
Step 4	Check DTC	
Step 5	If problem still persists replace the EGR valve	



Location & Component Image:





## P042E-00: EGR valve jammed at open position

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P042E-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	2. EGR valve stuck	Torque limitation

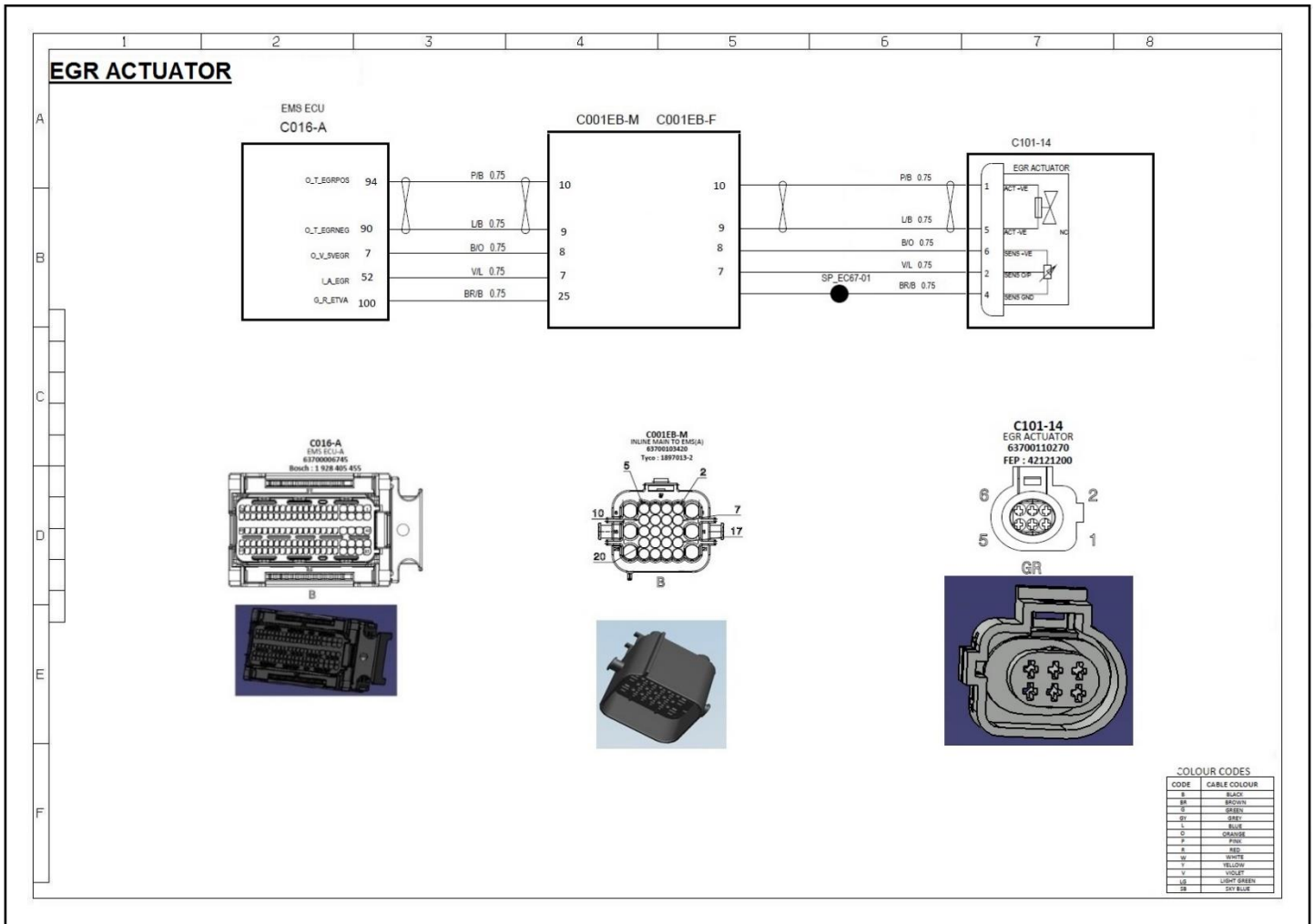
### Checkpoints:

4. Check Battery Voltage
5. Check the Wire harness connections for pin damage or electrical problems
6. Check EGR valve for soot deposition

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check EGR Valve for soot deposition	
Step 3	Clean the EGR valve	
Step 4	Check DTC	
Step 5	If problem still persists replace the EGR valve	

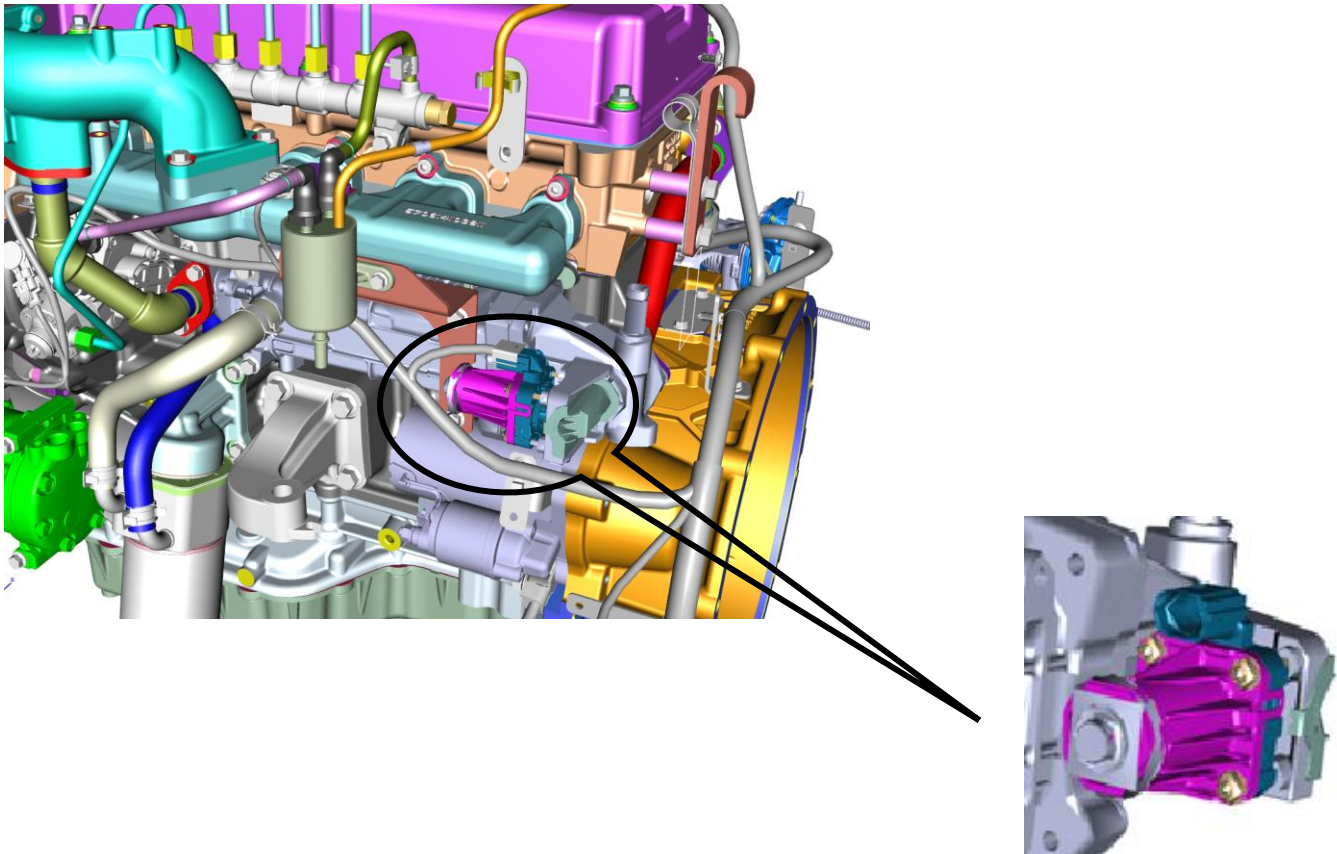
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS actuates EGR valve and measures its position by using EGR position sensor to make it as closed loop feedback process. EGR Actuator has 6-pole connector and provides the Analog input signal at A52. EMS will actuate the valve by using H-bridge driver. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:







**P0489-00: Short circuit to ground on Out1 error for EGR Valve H-bridge**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0489-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty EGR valve 3. Sensor connector problem	Torque Limitation

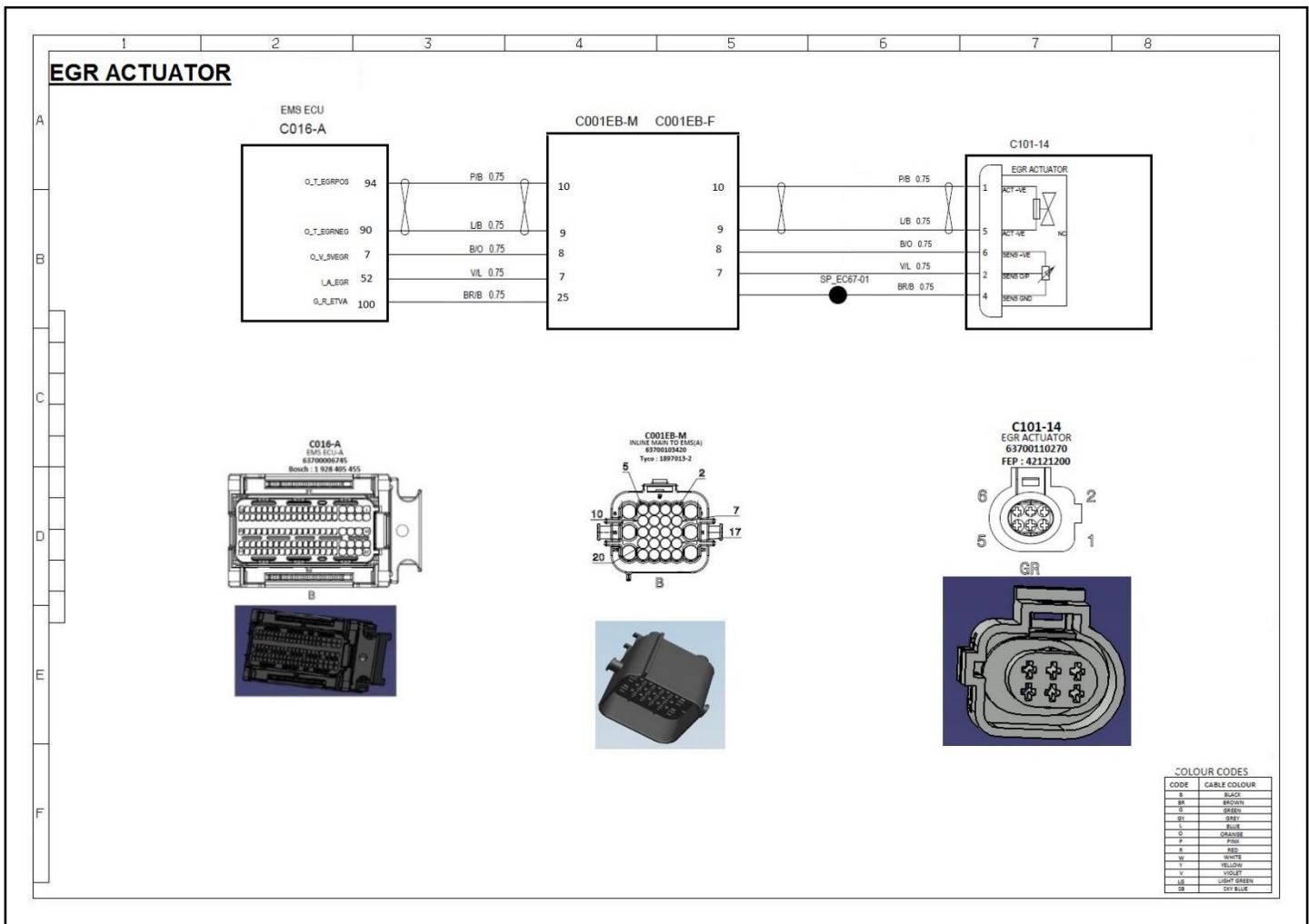
**Checkpoints:**

1. Check Battery Voltage
2. Check the Wire harness connections for pin damage or electrical problems
3. Check the EGR position sensor condition & for any mechanical damage

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 4	If error still present, check continuity in between pin 5 & A90	
Step 5	If error still present, check continuity in between pin 1 & A94	
Step 6	If error still present, check continuity in between pin 2 & A52	
Step 7	If Step 4, Step 5 & Step 6 fails then check pin 1 for short circuit to ground (K02/K04/K06).	
Step 8	If Step 7 is true then replace the wire harness cable with new one & go to Step 10	
Step 9	If still error present replace EGR valve assembly with new one & go to Step 10	
Step 10	Check DTC	

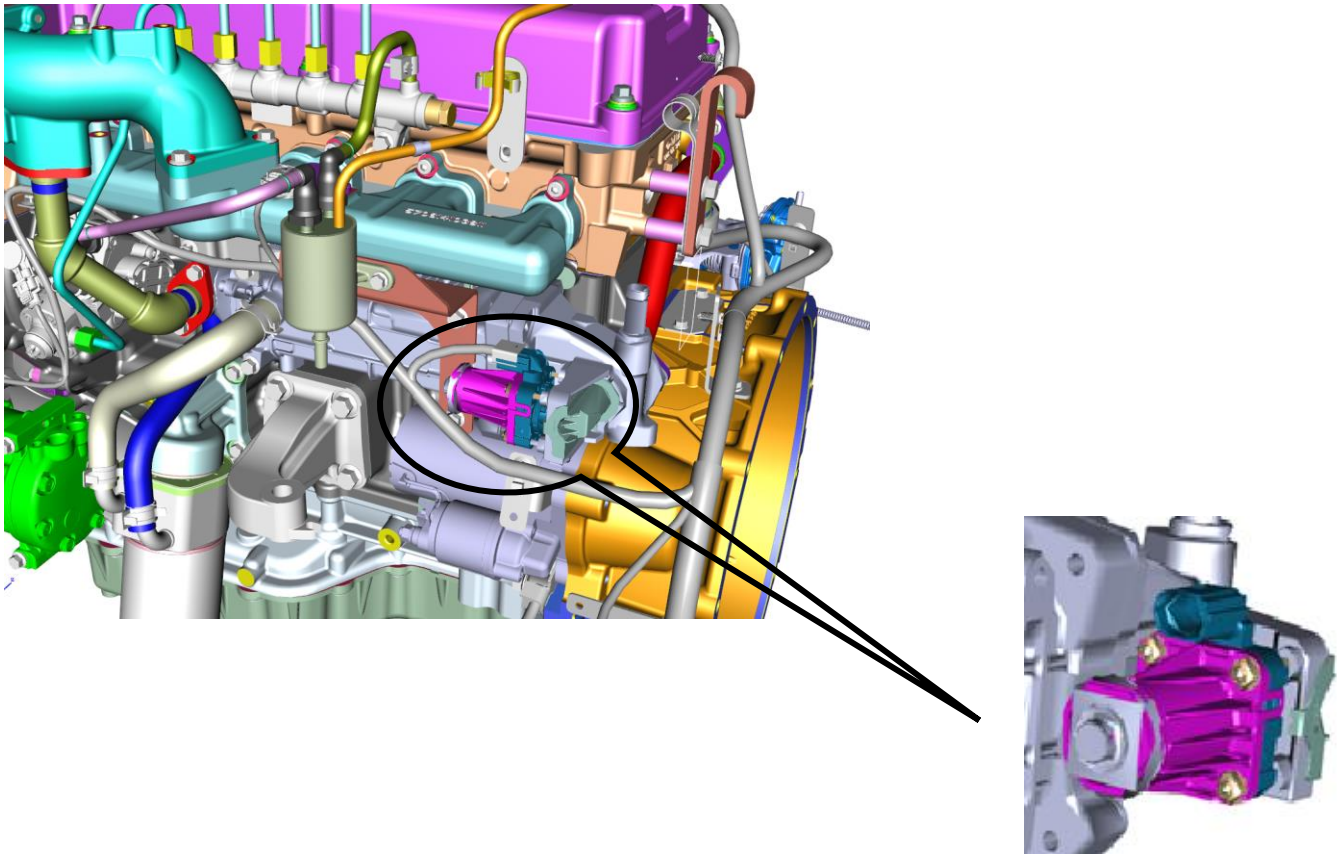
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS actuates EGR valve and measures its position by using EGR position sensor to make it as closed loop feedback process. EGR Actuator has 6-pole connector and provides the Analog input signal at A52. EMS will actuate the valve by using H-bridge driver. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





**P048A-00: Short circuit to Battery on Out1 error for EGR Valve H-bridge**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2142 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty EGR valve 3. Sensor connector problem	Torque Limitation

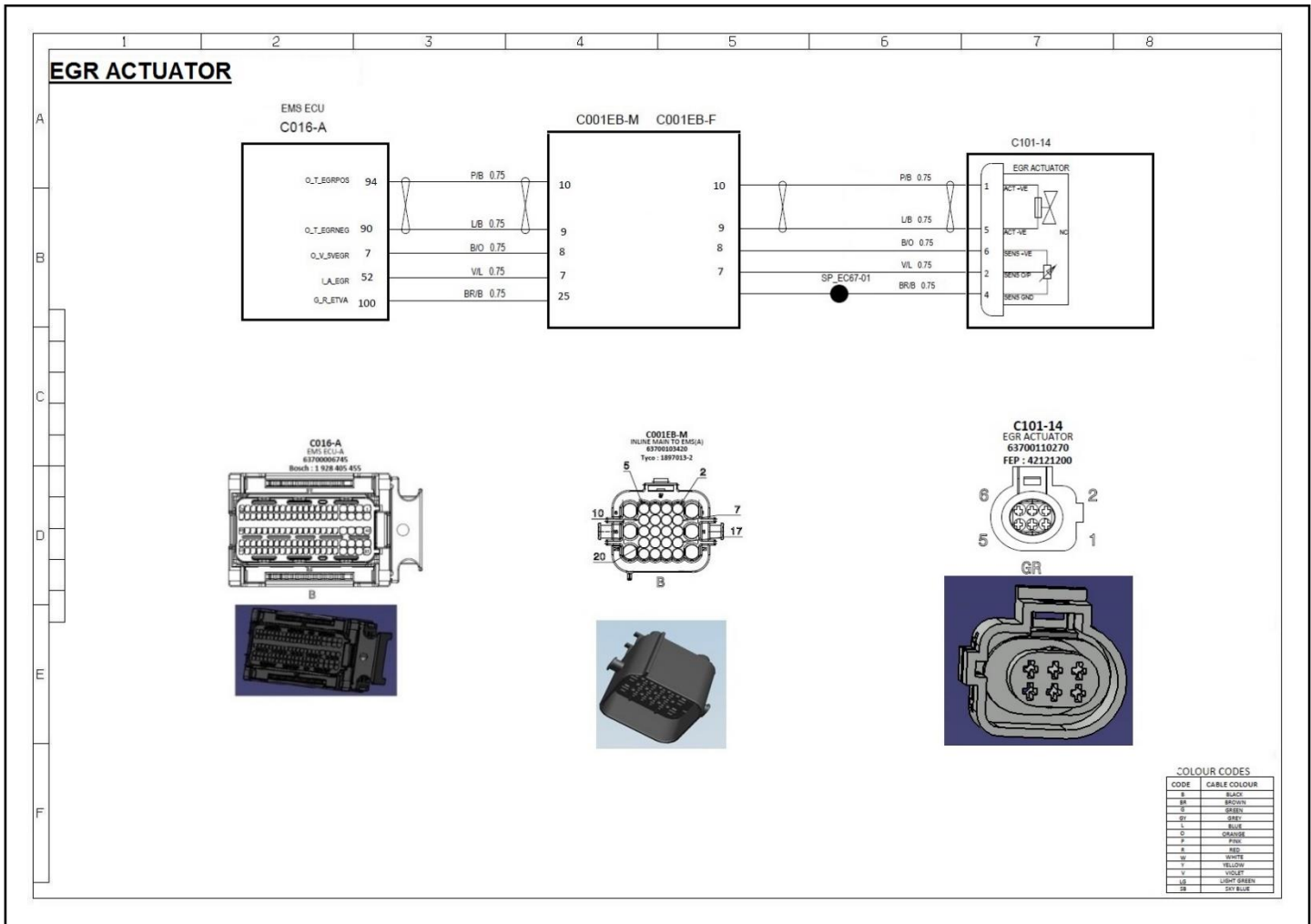
**Checkpoints:**

1. Check Battery Voltage
2. Check the Wire harness connections for pin damage or electrical problems
3. Check the EGR position sensor condition & for any mechanical damage

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 4	If error still present, check continuity in between pin 5 & A90	
Step 5	If error still present, check continuity in between pin 1 & A94	
Step 6	If error still present, check continuity in between pin 2 & A52	
Step 7	If Step 4, Step 5 & Step 6 fails then check pin 1 for short circuit to battery (K01/K03/K05).	
Step 8	If Step 7 is true then replace the wire harness cable with new one & go to Step 10	
Step 9	If still error present replace EGR Position Sensor with new one & go to Step 10	
Step 10	Check DTC	

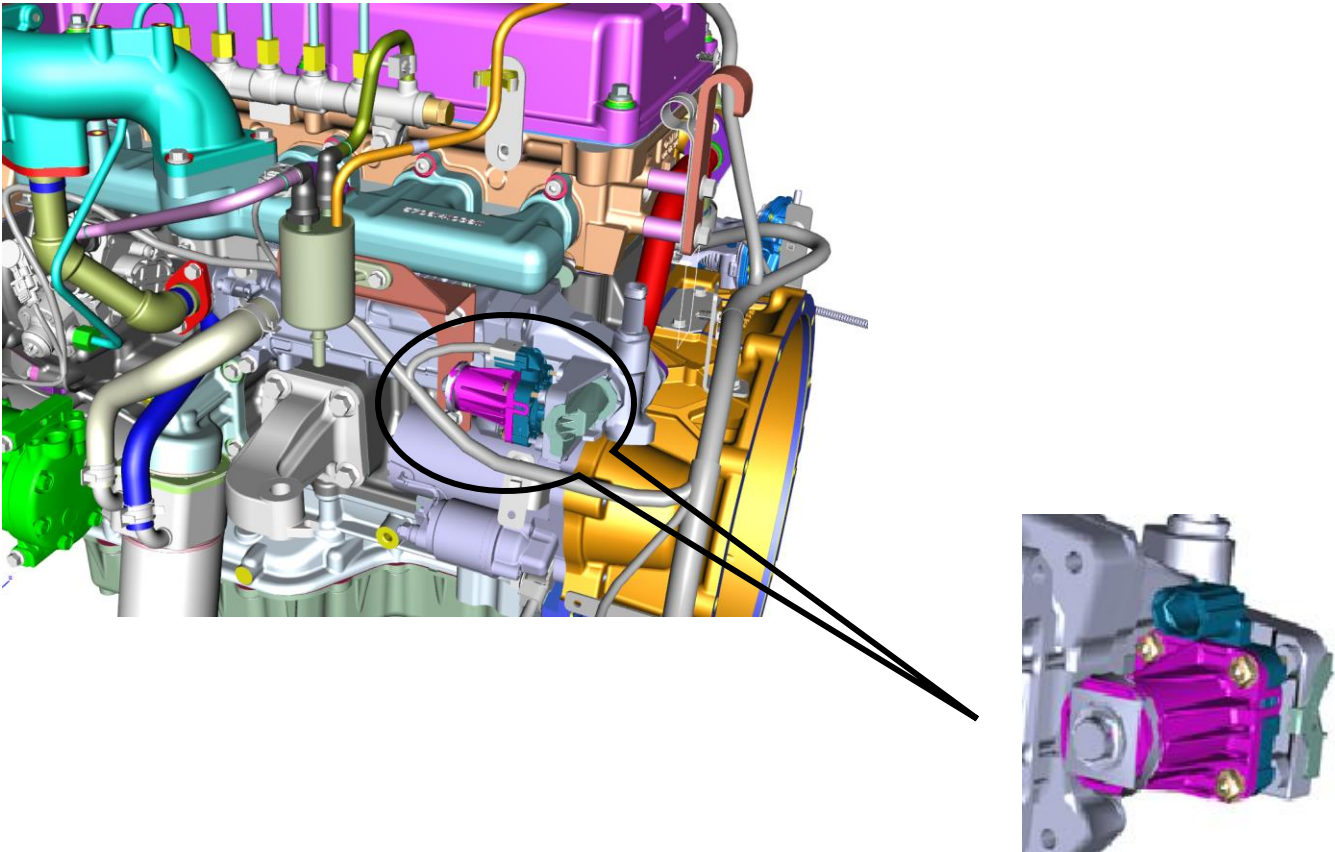
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS actuates EGR valve and measures its position by using EGR position sensor to make it as closed loop feedback process. EGR Actuator has 6-pole connector and provides the Analog input signal at A52. EMS will actuate the valve by using H-bridge driver. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:







**P045C-00: Short circuit to ground on Out2 error for EGR Valve H-bridge**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code:P045C-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty EGR valve 3. Sensor connector problem	Torque Limitation

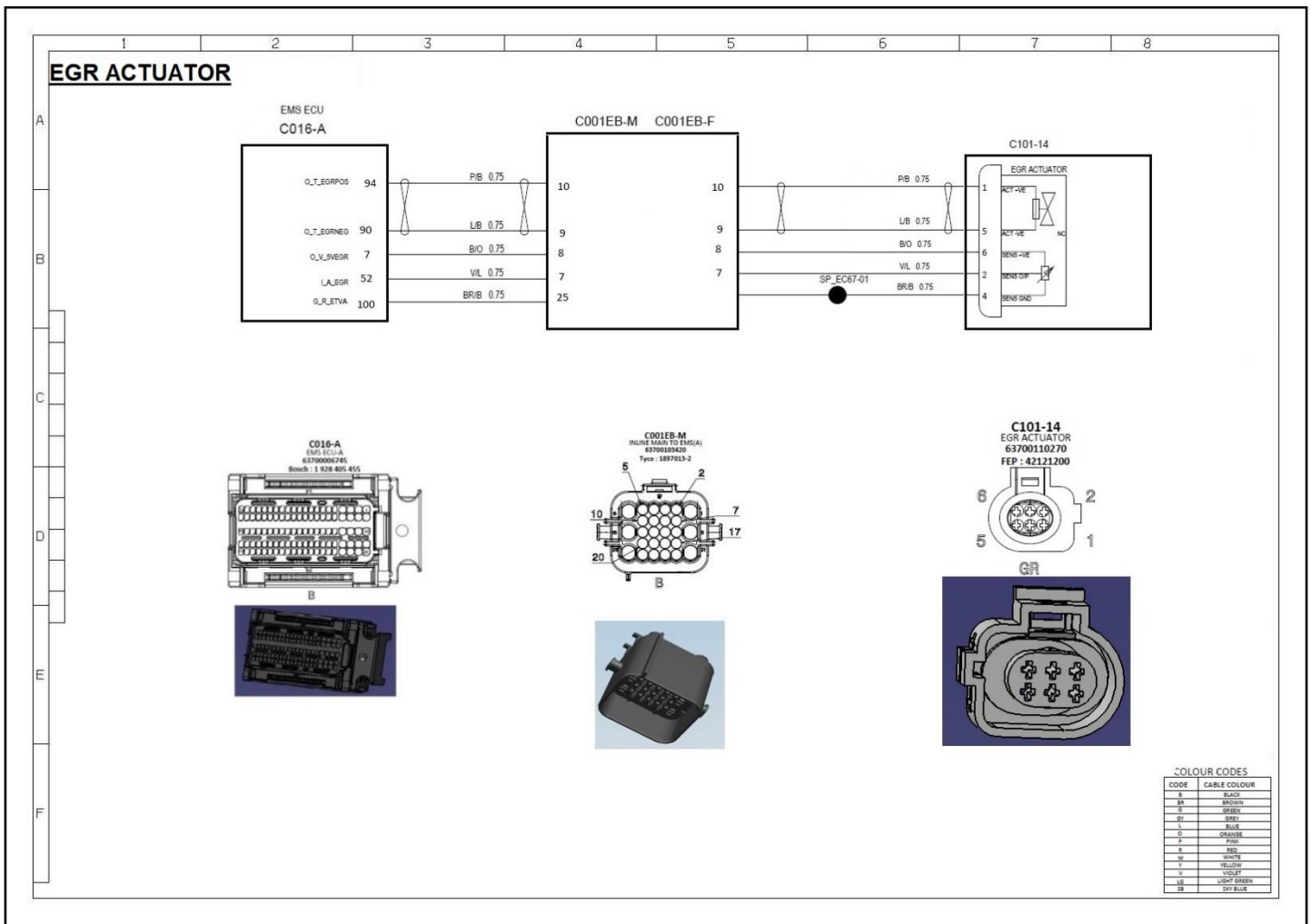
**Checkpoints:**

4. Check Battery Voltage
5. Check the Wire harness connections for pin damage or electrical problems
6. Check the EGR position sensor condition & for any mechanical damage

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 4	If error still present, check continuity in between pin 5 & A90	
Step 5	If error still present, check continuity in between pin 1 & A94	
Step 6	If error still present, check continuity in between pin 2 & A52	
Step 7	If Step 4, Step 5 & Step 6 fails then check pin 5 for short circuit to ground (K02/K04/K06).	
Step 8	If Step 7 is true then replace the wire harness cable with new one & go to Step 10	
Step 9	If still error present replace EGR valve assembly with new one & go to Step 10	
Step 10	Check DTC	

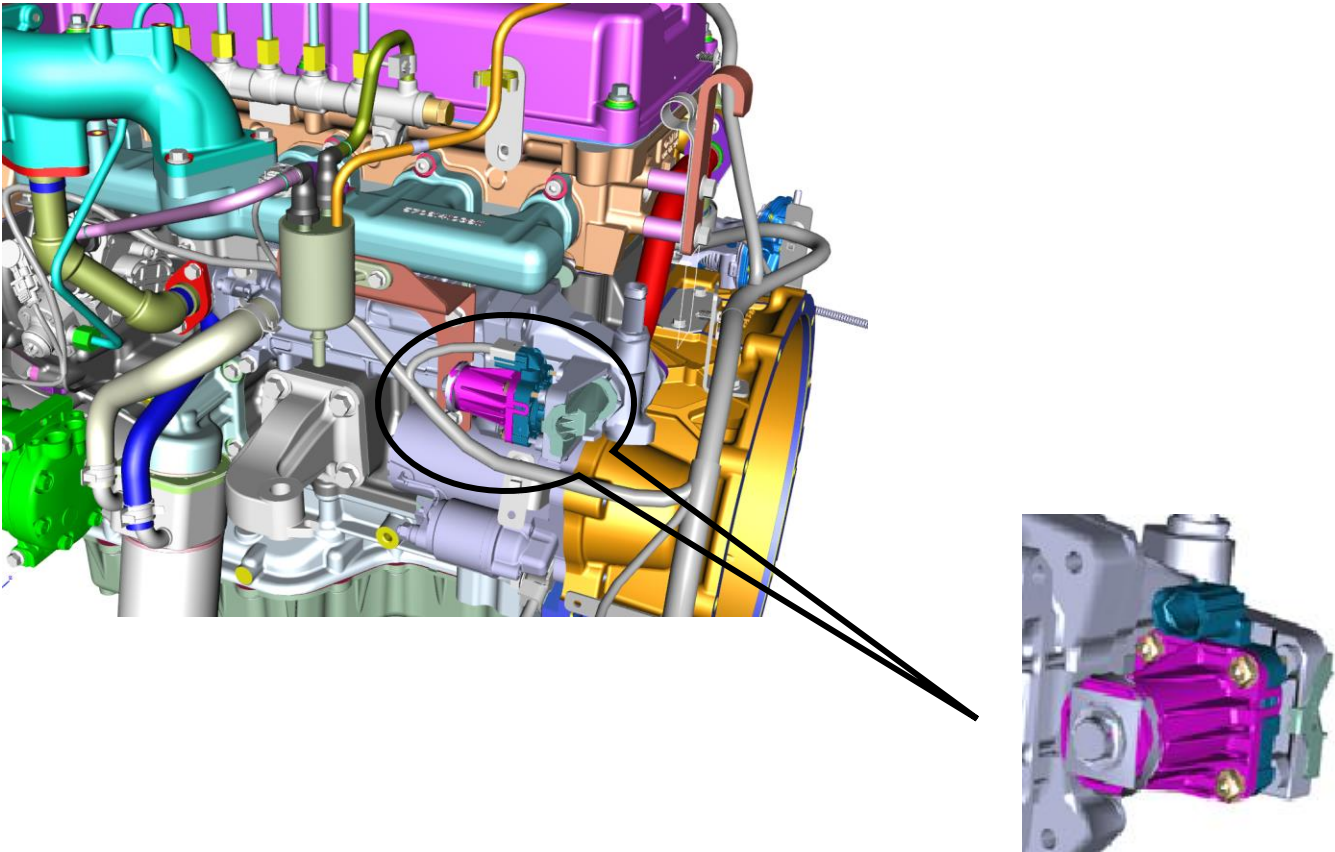
### Circuit Schematic Diagram:



### Circuit Description:

EMS actuates EGR valve and measures its position by using EGR position sensor to make it as closed loop feedback process. EGR Actuator has 6-pole connector and provides the Analog input signal at A52. EMS will actuate the valve by using H-bridge driver. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





**P045D-00: Short circuit to battery on Out2 error for EGR Valve H-bridge**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code:P045D-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty EGR valve 3. Sensor connector problem	Torque Limitation

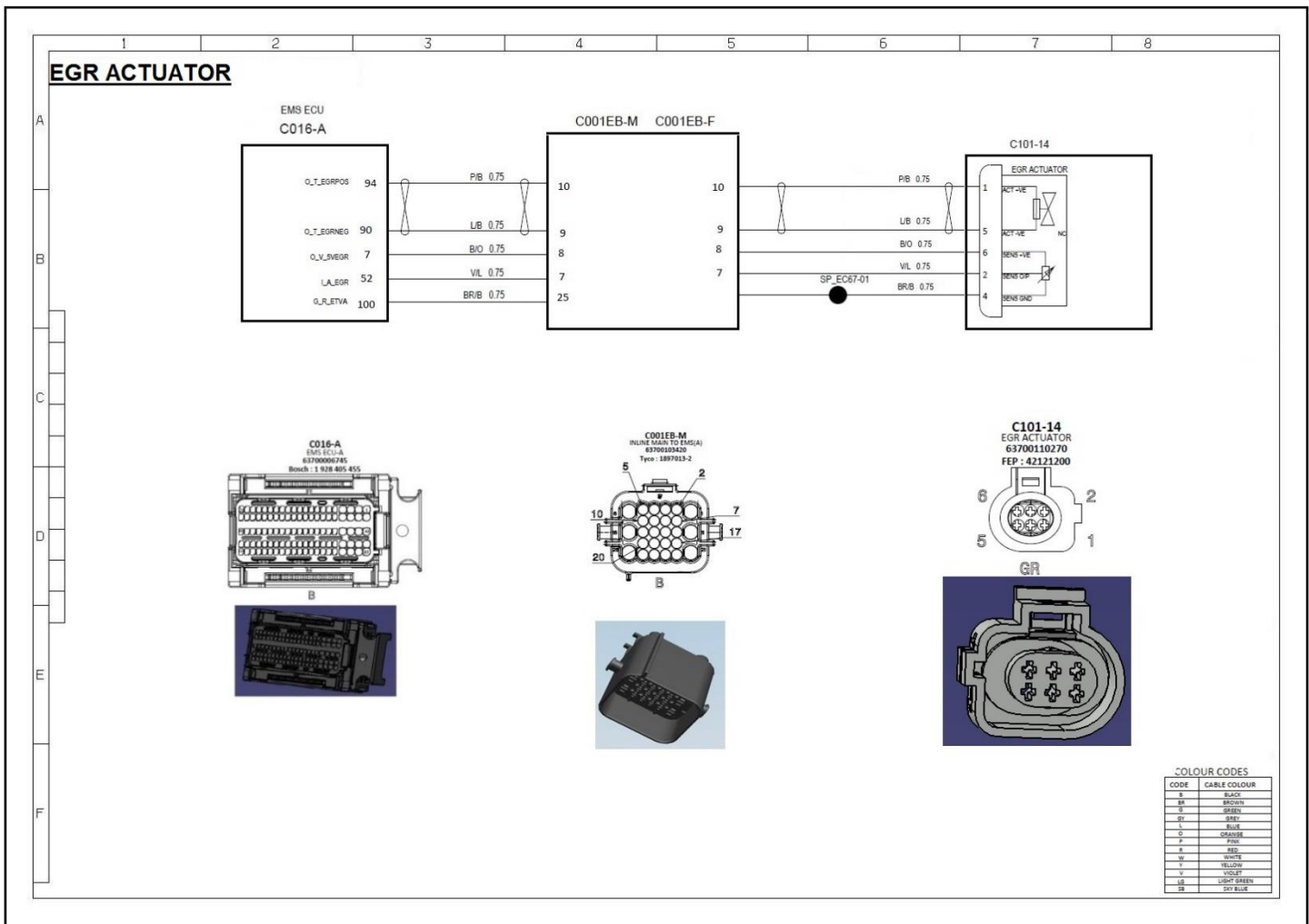
**Checkpoints:**

4. Check Battery Voltage
5. Check the Wire harness connections for pin damage or electrical problems
6. Check the EGR position sensor condition & for any mechanical damage

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 4	If error still present, check continuity in between pin 5 & A90	
Step 5	If error still present, check continuity in between pin 1 & A94	
Step 6	If error still present, check continuity in between pin 2 & A52	
Step 7	If Step 4, Step 5 & Step 6 fails then check pin 2 for short circuit to battery (K01/K03/K05).	
Step 8	If Step 7 is true then replace the wire harness cable with new one & go to Step 10	
Step 9	If still error present replace EGR Position Sensor with new one & go to Step 10	
Step 10	Check DTC	

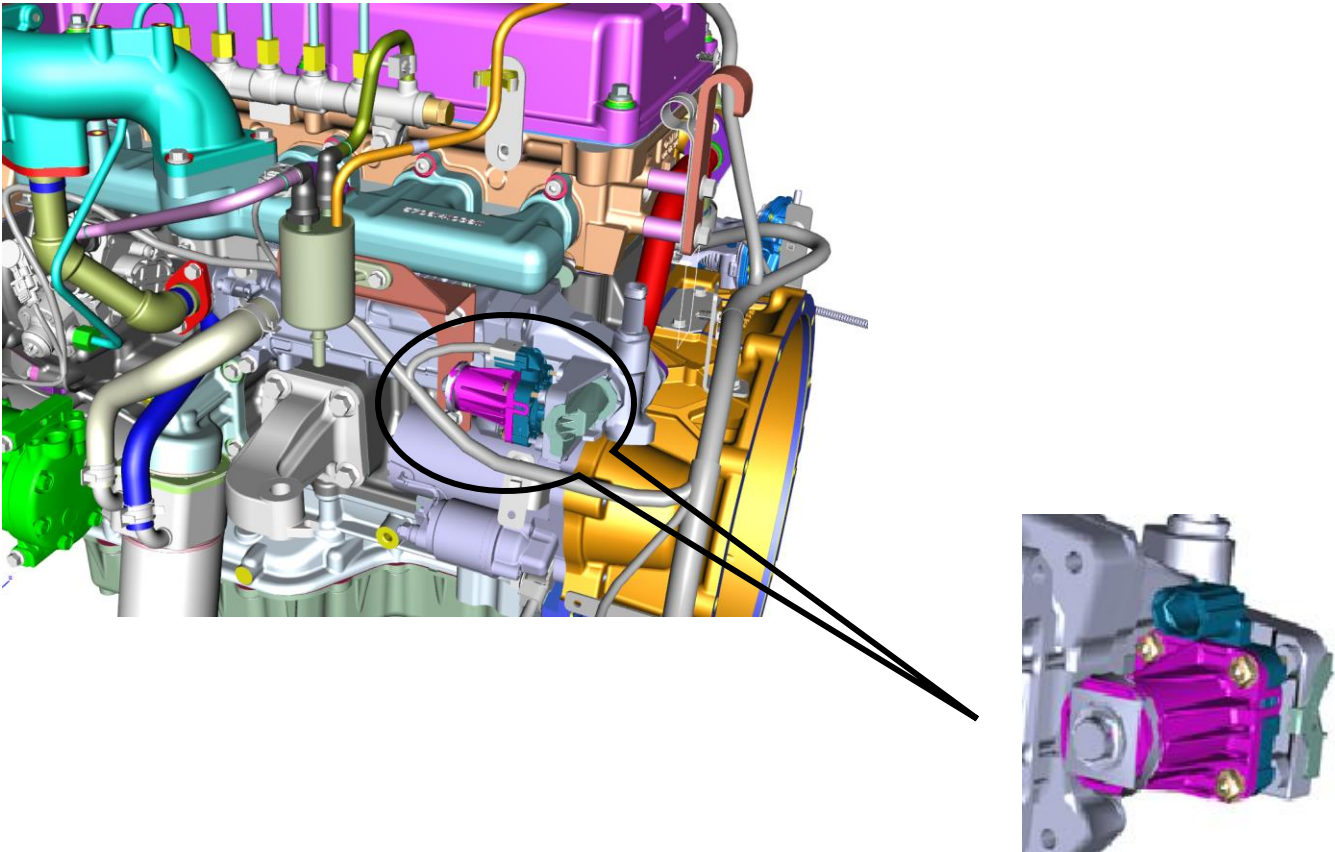
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS actuates EGR valve and measures its position by using EGR position sensor to make it as closed loop feedback process. EGR Actuator has 6-pole connector and provides the Analog input signal at A52. EMS will actuate the valve by using H-bridge driver. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:







**P0403-00: DFC for EGR valve control Signal Open Circuit**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code:P0403-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty EGR valve 3. Sensor connector problem	Torque Limitation

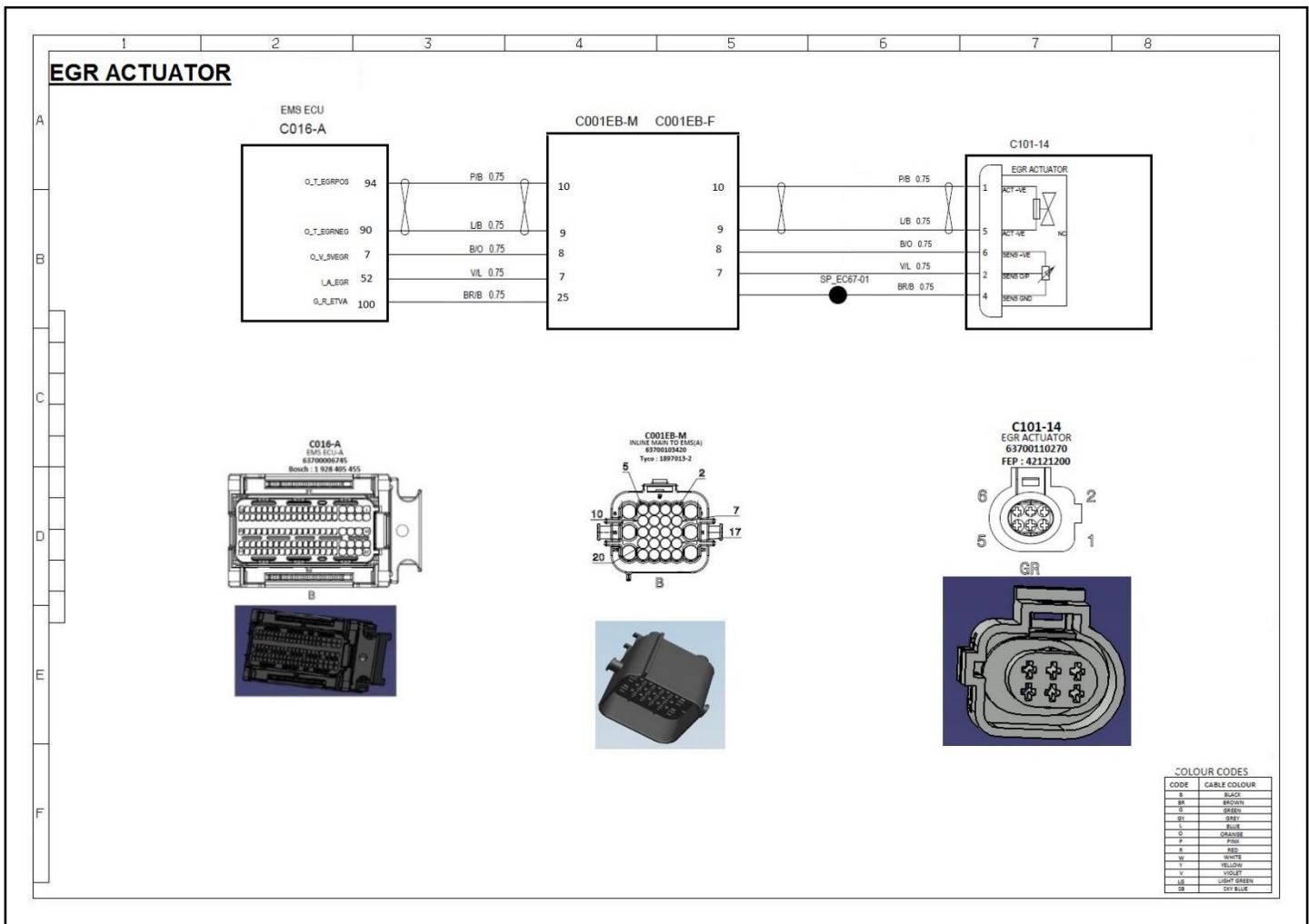
**Checkpoints:**

1. Check Battery Voltage
2. Check the Wire harness connections for pin damage or electrical problems
3. Check the EGR position sensor condition & for any mechanical damage

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 4	If error still present, check continuity in between pin 5 & A90	
Step 5	If error still present, check continuity in between pin 1 & A94	
Step 6	If error still present, check continuity in between pin 2 & A52	
Step 7	If Step 4, Step 5 & Step 6 fails then check pin 2 for short circuit to pin 1	
Step 8	If Step 7 is true then replace the wire harness cable with new one & go to Step 10	
Step 9	If still error present replace EGR Position Sensor with new one & go to Step 10	
Step 10	Check DTC	

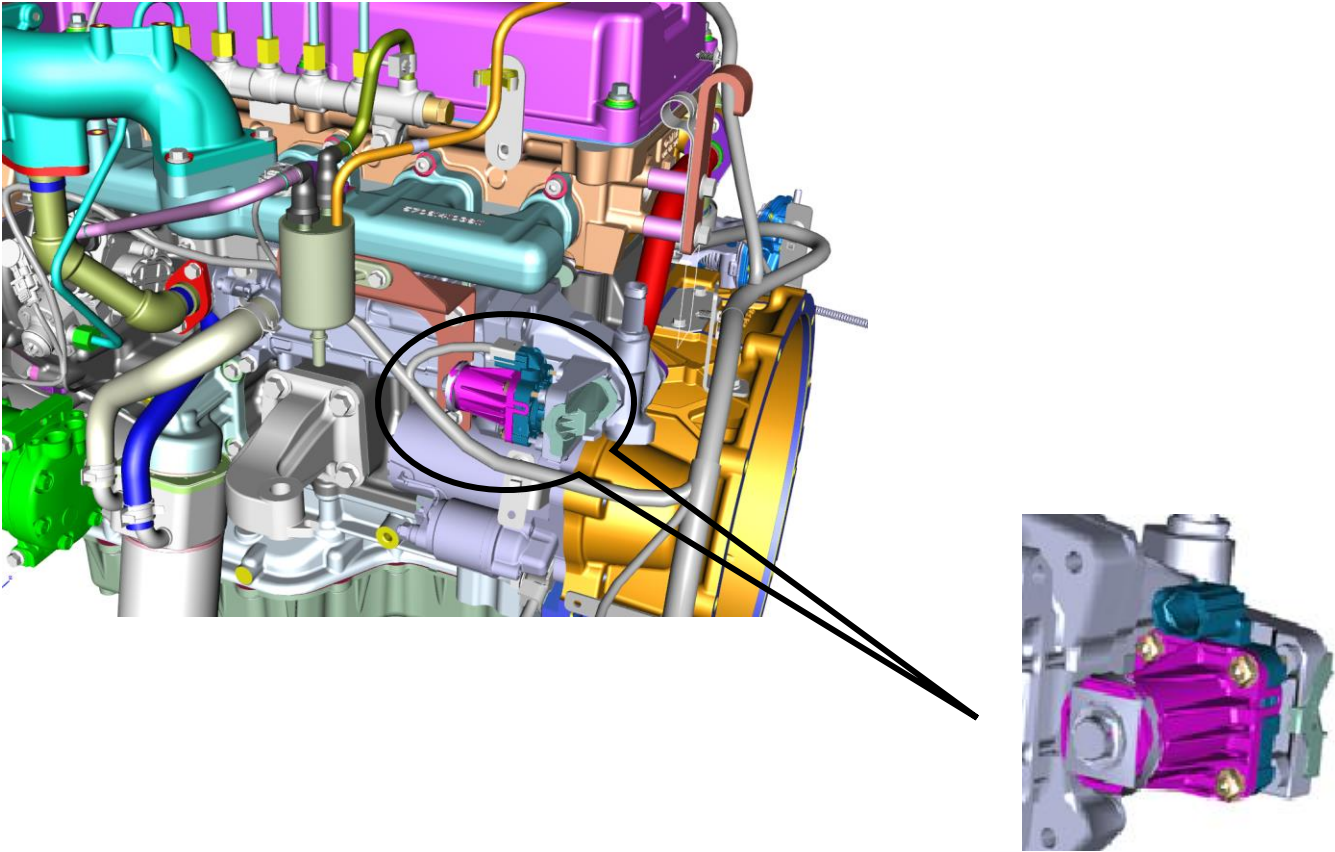
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS actuates EGR valve and measures its position by using EGR position sensor to make it as closed loop feedback process. EGR Actuator has 6-pole connector and provides the Analog input signal at A52. EMS will actuate the valve by using H-bridge driver. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





**P0500-1F: Vehicle speed sensor plausibility error**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code:P0500-1F MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	<ol style="list-style-type: none"> <li>1. Wiring harness defect</li> <li>2. Faulty sensor or connector</li> <li>3. Mechanical damage to the sensor or improper mounting</li> </ol>	NA

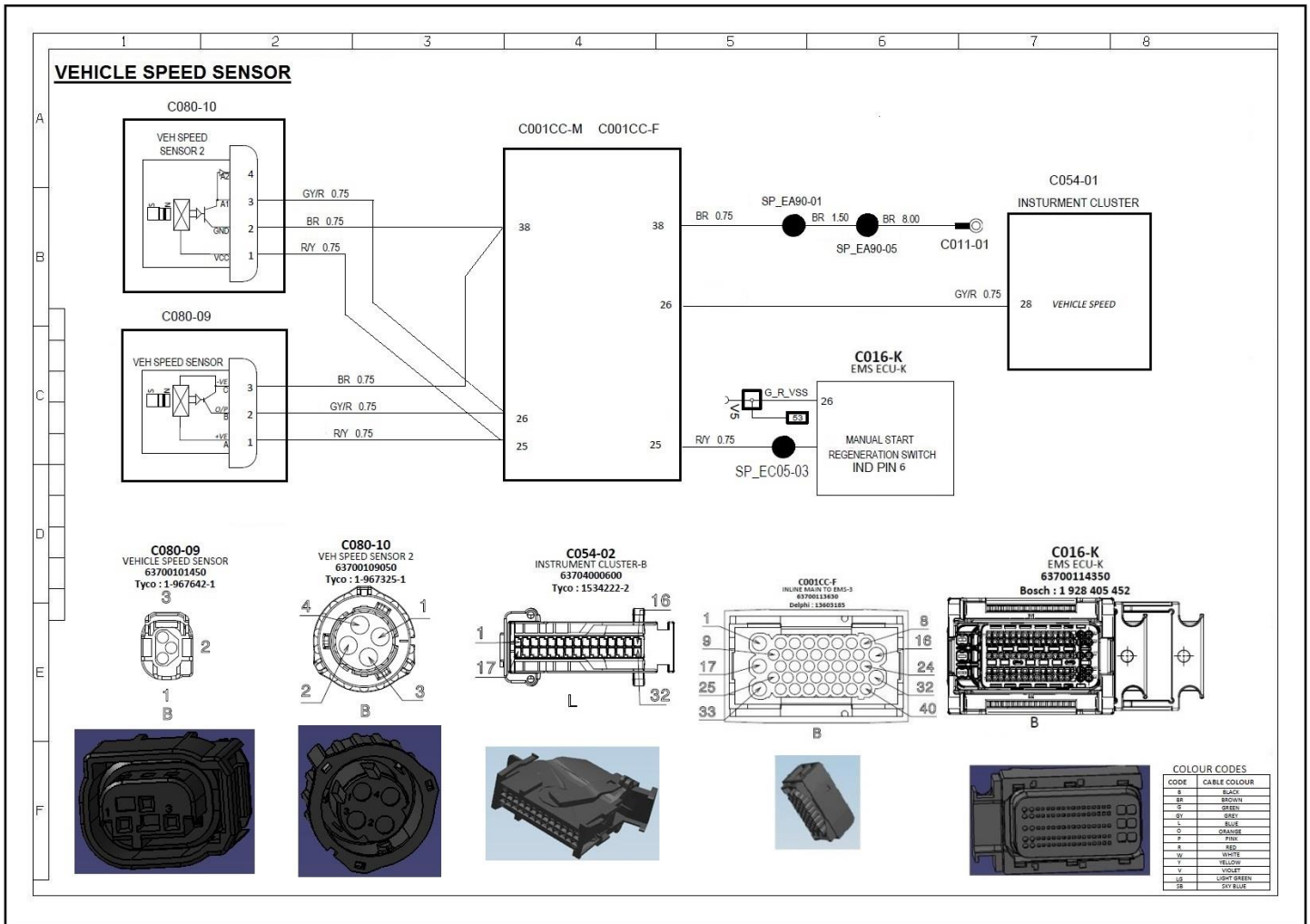
**Checkpoints:**

1. Check battery voltage
2. Check vehicle speed sensor connector
3. Check wiring harness connections

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness connector is connected properly to the vehicle speed sensor	
Step 3	If connector found loose then fix it properly and go to step 13	
Step 4	If the error persists, check the sensor for properly mounted on location, physical damage, damaged pins or wire back out	
Step 5	In case of non-conformity of step 4, fit the sensor properly, if found damaged change the sensor and go to step no 13	
Step 6	If error persists, check the wire harness connector for any pin damage / wire back-out from connector	
Step 7	Change the connector if required, fix the back-out cables in proper positions in connector and go to step 13	
Step 8	If error persists, check the continuity between pin 1 of vehicle speed sensor to pin K90 of ECU, pin 2 of vehicle speed sensor to pin K11 of ECU, Pin 4 to K34	Pin 1 to K90 Pin 2 to K11 Pin 4 to K34
Step 9	Check / ensure no cross continuity between terminals / pins in step no 8	
Step 10	In case of non-conformity of step 7, 8 & 9 change the wires with new and go to step 12	
Step 11	If error persists, check and change the Vehicle speed sensor with new	
Step 12	Clear and check the DTC	

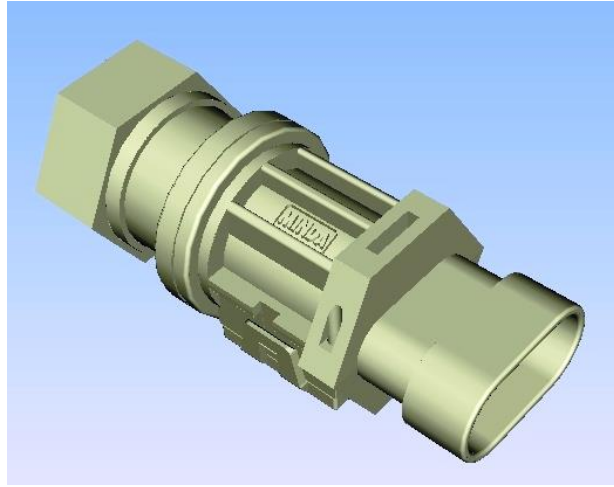
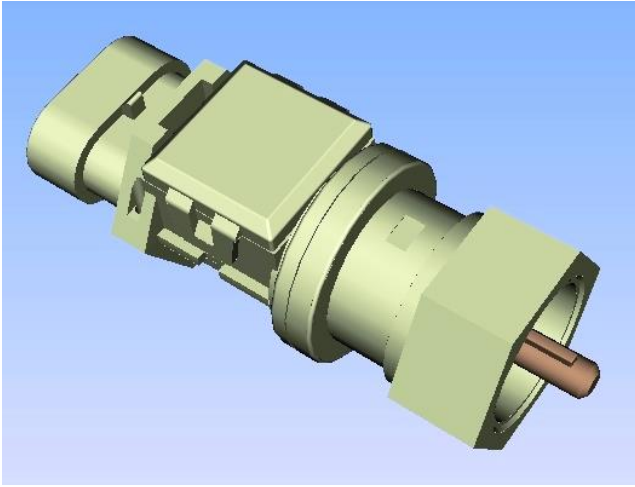
### Circuit Schematic Diagram:



### Circuit Description:

EMS gets the vehicle speed information by using this Sensor. Vehicle Speed sensor is directly connected to Instrument Cluster(IC) and buffer output from IC is connected to EMS. It gives frequency type input at K34. Check for the continuity between EMS and Sensor by referring above schematic.

**Location & Component Image:**







**P0500-1C: Maximum threshold error for vehicle speed**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code:P0500-1C MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	4. Wiring harness defect 5. Faulty sensor or connector 6. Mechanical damage to the sensor or improper mounting	Vehicle Speed limitation

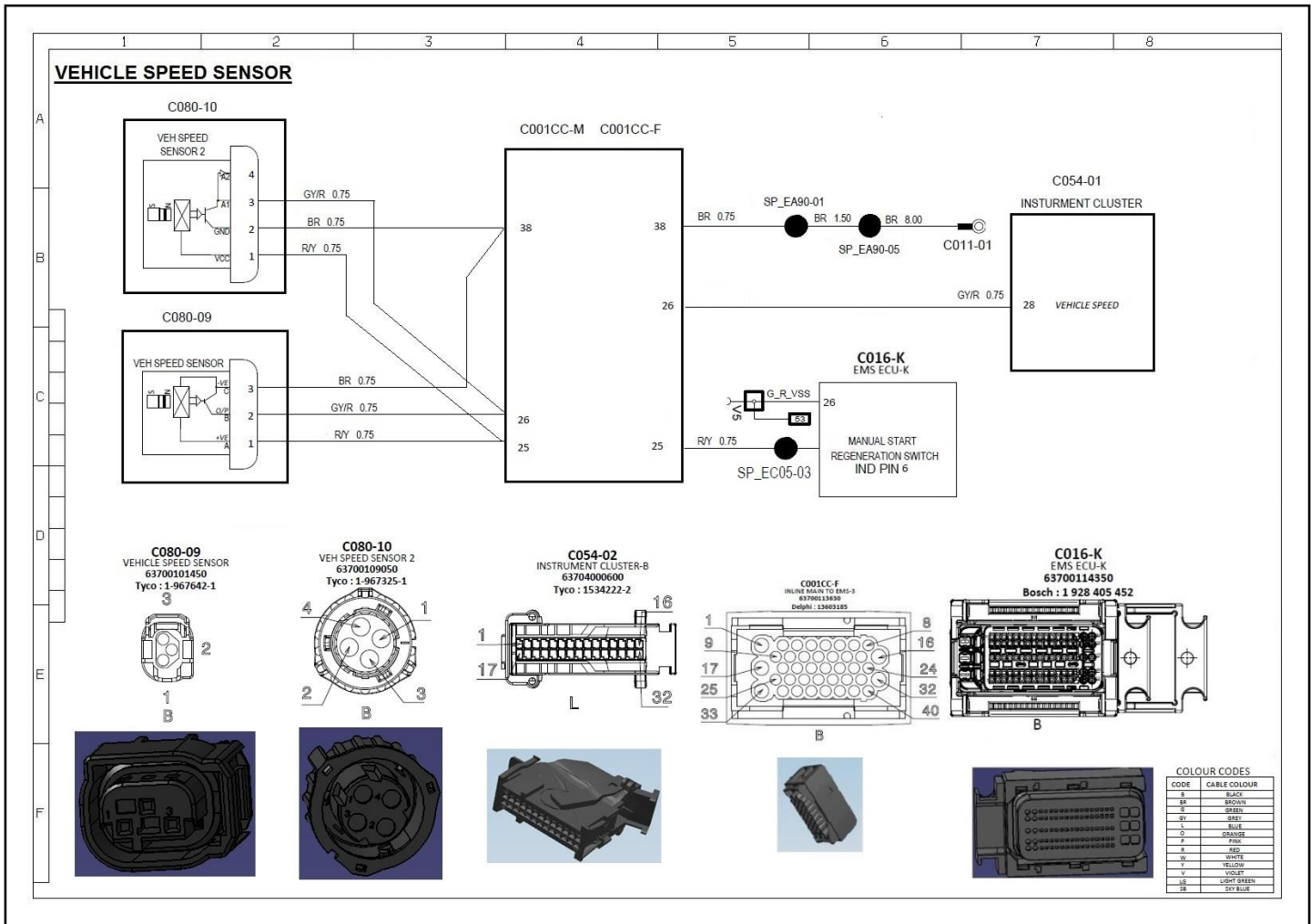
**Checkpoints:**

4. Check battery voltage
5. Check vehicle speed sensor connector
6. Check wiring harness connections

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness connector is connected properly to the vehicle speed sensor	
Step 3	If connector found loose then fix it properly and go to step 13	
Step 4	If the error persists, check the sensor for properly mounted on location, physical damage, damaged pins or wire back out	
Step 5	In case of non-conformity of step 4, fit the sensor properly, if found damaged change the sensor and go to step no 13	
Step 6	If error persists, check the wire harness connector for any pin damage / wire back-out from connector	
Step 7	Change the connector if required, fix the back-out cables in proper positions in connector and go to step 13	
Step 8	If error persists, check the continuity between pin 1 of vehicle speed sensor to pin K90 of ECU, pin 2 of vehicle speed sensor to pin K11 of ECU, Pin 4 to K34	Pin 1 to K90 Pin 2 to K11 Pin 4 to K34
Step 9	Check / ensure no cross continuity between terminals / pins in step no 8	
Step 10	In case of non-conformity of step 7, 8 & 9 change the wires with new and go to step 12	
Step 11	If error persists, check and change the Vehicle speed sensor with new	
Step 12	Clear and check the DTC	

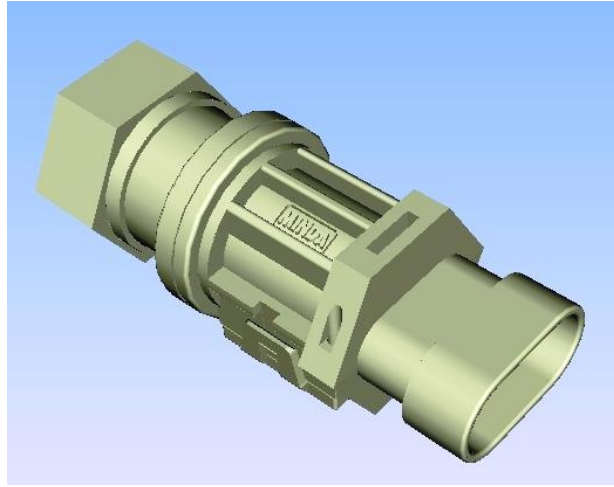
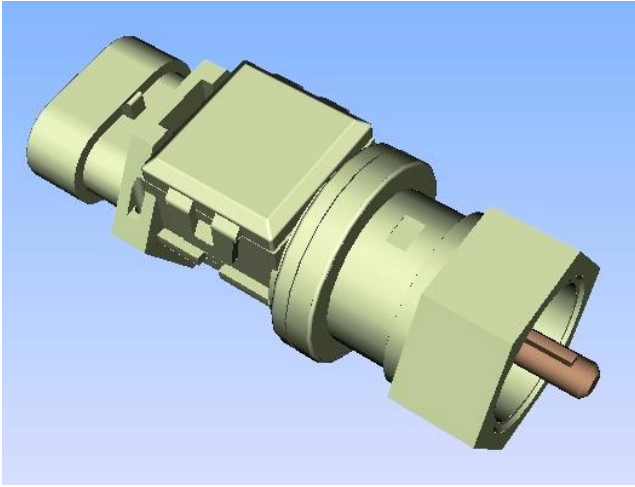
### Circuit Schematic Diagram:



### Circuit Description:

EMS gets the vehicle speed information by using this Sensor. Vehicle Speed sensor is directly connected to Instrument Cluster(IC) and buffer output from IC is connected to EMS. It gives frequency type input at K34. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





**P259F-00: Boost pressure controller at max limit**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P259F-00 MIL- On CEL – Off Immo Lamp – NA Message on IC – NA	1. Leakage in air intake system 2. Turbo actuator linkage broken 3. Exhaust system blocked 4. Turbo failure	NA

**Checkpoints:**

1. Check the air intake system
2. Check turbocharger actuator linkages
3. Check exhaust system
4. Check turbo

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check for any leakages in air intake system	
Step 2	If any leakages observed in the air intake system, rectify the leakages and go to step 8	
Step 3	check turbo actuator linkages	
Step 4	If error persists, check the exhaust system for blockages	
Step 5	If blockages observed in the exh. System , rectify/remove the blockages and go to step 8	
Step 6	If error persists, check the turbocharger for any mechanical damages	
Step 7	If turbocharger found damaged , replace and go to step 8	
Step 8	Clear and check DTC	



## P259E-00: Boost pressure controller at min limit

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P259E-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Leakage in air intake system 2. turbo actuator linkage broken 3. Exhaust system blocked 4. Turbo failure	Torque limitation

### Checkpoints:

1. Check the air intake system
2. Check turbocharger actuator linkages
3. Check exhaust system
4. Check turbo

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check for any leakages in air intake system	
Step 2	If any leakages observed in the air intake system, rectify the leakages and go to step 8	
Step 3	If error persists, check mechanical linkage for turbo actuator	
Step 4	If error persists, check the exhaust system for blockages	
Step 5	If blockages observed in the exh. System , rectify/remove the blockages and go to step 8	
Step 6	If error persists, check the turbocharger for any mechanical damages	
Step 7	If turbocharger found damaged , replace and go to step 8	
Step 8	Clear and check DTC	



**P0627-11: DFC for Fuel pump relay Short circuit to ground**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0627-11 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Blown fuse 3. Faulty relay 4. Faulty electric feed pump	NA

**Checkpoints:**

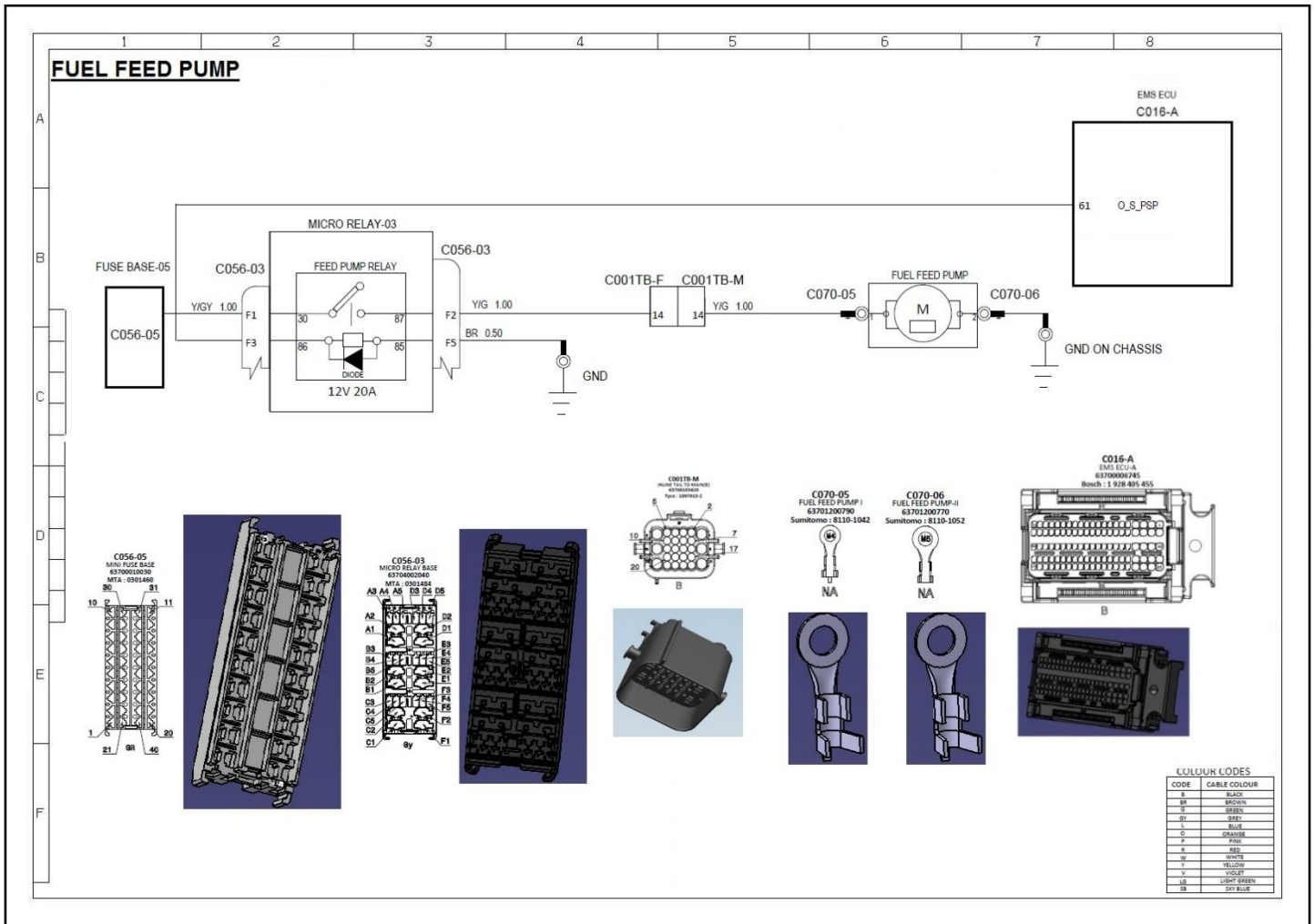
1. Check Battery Voltage
2. Check Wire harness connections for Fuel Pump Relay.
3. Check Fuse condition in the relay circuit.
4. Check the Electric feed pump for electrical continuity & mechanical damage.

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the fuse condition for the fuel pump relay if fuse is not in good condition or blown-up then go to Step No. 3	
Step 3	Replace the blown-up fuse with new one & go to Step 11	
Step 4	If error still present then go to Step 5	
Step 5	Check the wire harness for any pin / wire back-out from connector, if yes go to step 6	
Step 6	Fix the back-out cables in proper positions in connector & go to Step 11	
Step 7	If error still present, check the continuity between pin 86 from relay side & pin A_B1 from ECU side.	
Step 8	If continuity in Step 7 is unavailable then go to Step 9 & 11 else go to Step 9	
Step 9	Check the line from A_B1 for short circuit to ground. If yes then go to Step 10 & 11	
Step 10	Replace the wire harness cable (fuel pump relay specific) with new one.	
Step 11	Check the DTC	



### Circuit Schematic Diagram:



### Circuit Description:

EMS Actuates the Fuel pump relay at A\_B1 and diagnosis the status of same at B\_J4. It provides Low Side Output at A\_B1 after the ignition ON. Signal B\_J4 is used by EMS to monitor if any failure in relay actuation. Check for the continuity between EMS and Relay by referring above schematic.



## P0627-13: DFC for Fuel pump relay Open Circuit

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P0627-13 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Blown fuse 3. Faulty relay 4. Faulty electric feed pump	NA

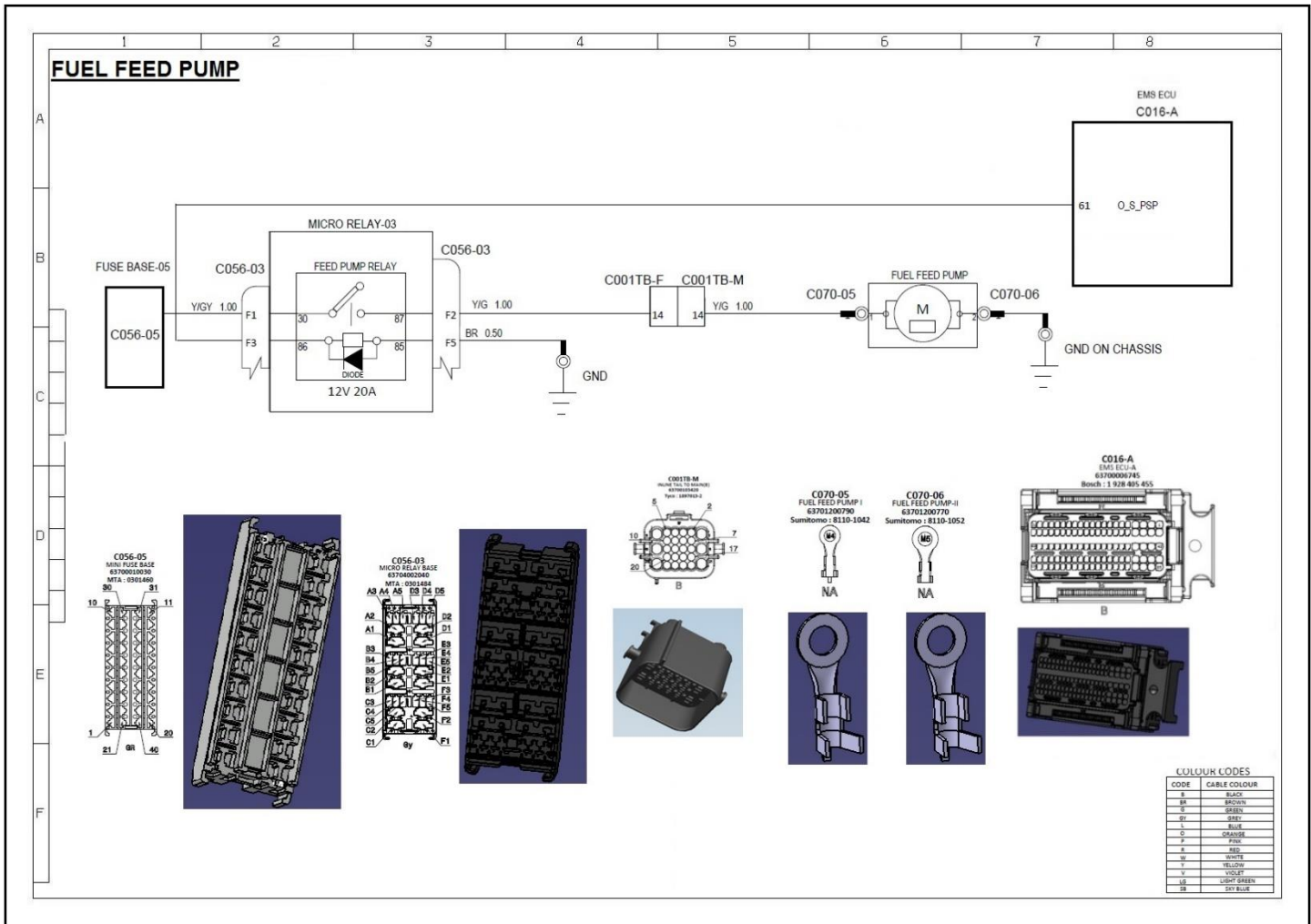
### Checkpoints:

1. Check Battery Voltage
2. Check Wire harness connections for Fuel Pump Relay.
3. Check Fuse condition in the relay circuit.
4. Check the Electric feed pump for electrical continuity & mechanical damage

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the fuse condition for the fuel pump relay if fuse is not in good condition or blown-up then go to Step No. 3	
Step 3	Replace the blown-up fuse with new one & go to Step 11	
Step 4	If error still present then go to Step 5	
Step 5	Check the wire harness for any pin / wire back-out from connector, if yes go to step 6	
Step 6	Fix the back-out cables in proper positions in connector & go to Step 11	
Step 7	If error still present, check the continuity between pin 86 from relay side & pin A_B1 from ECU side.	
Step 8	If continuity in Step 7 is unavailable then go to Step 9 & 11 else go to Step 9	
Step 9	Check the line from A_B1 for Open circuit. If yes then go to Step 10 & 11	
Step 10	Replace the wire harness cable (fuel pump relay specific) with new one.	
Step 11	Check the DTC	

### Circuit Schematic Diagram:



### Circuit Description:

EMS Actuates the Fuel pump relay at A\_B1 and diagnosis the status of same at B\_J4. It provides Low Side Output at A\_B1 after the ignition ON. Signal B\_J4 is used by EMS to monitor if any failure in relay actuation. Check for the continuity between EMS and Relay by referring above schematic.



**P0627-12: DFC for Fuel pump relay Short Circuit to Battery**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0627-12 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Blown fuse 3. Faulty relay 4. Faulty electric feed pump	NA

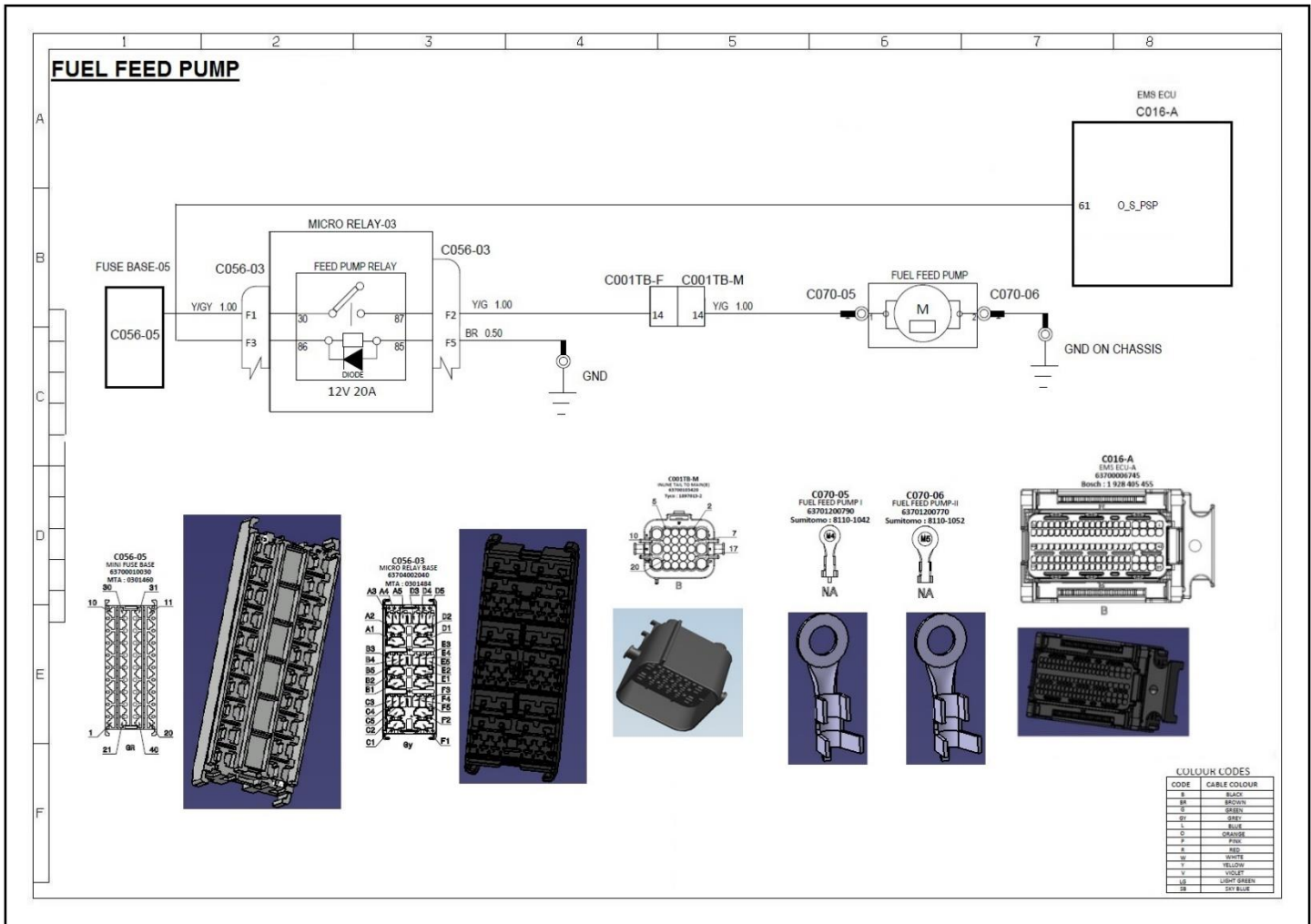
**Checkpoints:**

1. Check Battery Voltage
2. Check Wire harness connections for Fuel Pump Relay.
3. Check Fuse condition in the relay circuit.
4. Check the Electric feed pump for electrical continuity & mechanical damage

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the fuse condition for the fuel pump relay if fuse is not in good condition or blown-up then go to Step No. 3	
Step 3	Replace the blown-up fuse with new one & go to Step 10	
Step 4	If error still present then Check the wire harness for any pin / wire back-out from connector, if yes go to step 5	
Step 5	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 6	If error still present, check the continuity between pin 87 from relay side & pin B_J4 from ECU side.	
Step 7	If continuity in Step 6 is unavailable then go to Step 8 & 10 else go to Step 9	
Step 8	Check the line to B_J4 for short to battery. If yes then go to Step 9 & 10	
Step 9	Replace the wire harness cable (fuel pump relay specific) with new one.	
Step 10	Check the DTC	

#### Circuit Schematic Diagram:



#### Circuit Description:

EMS Actuates the Fuel pump relay at A\_B1 and diagnosis the status of same at B\_J4. It provides Low Side Output at A\_B1 after the ignition ON. Signal B\_J4 is used by EMS to monitor if any failure in relay actuation. Check for the continuity between EMS and Relay by referring above schematic.



**P2264-12: DFC for Water in fuel sensor input line Open circuit or water in fuel detected or Short circuit to battery**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2264-13 MIL- Off CEL – Off Immo Lamp – NA Message on IC - NA	1. Water in fuel 2. Wiring harness defect 3. Faulty water in fuel sensor	Torque Limitation

**Checkpoints:**

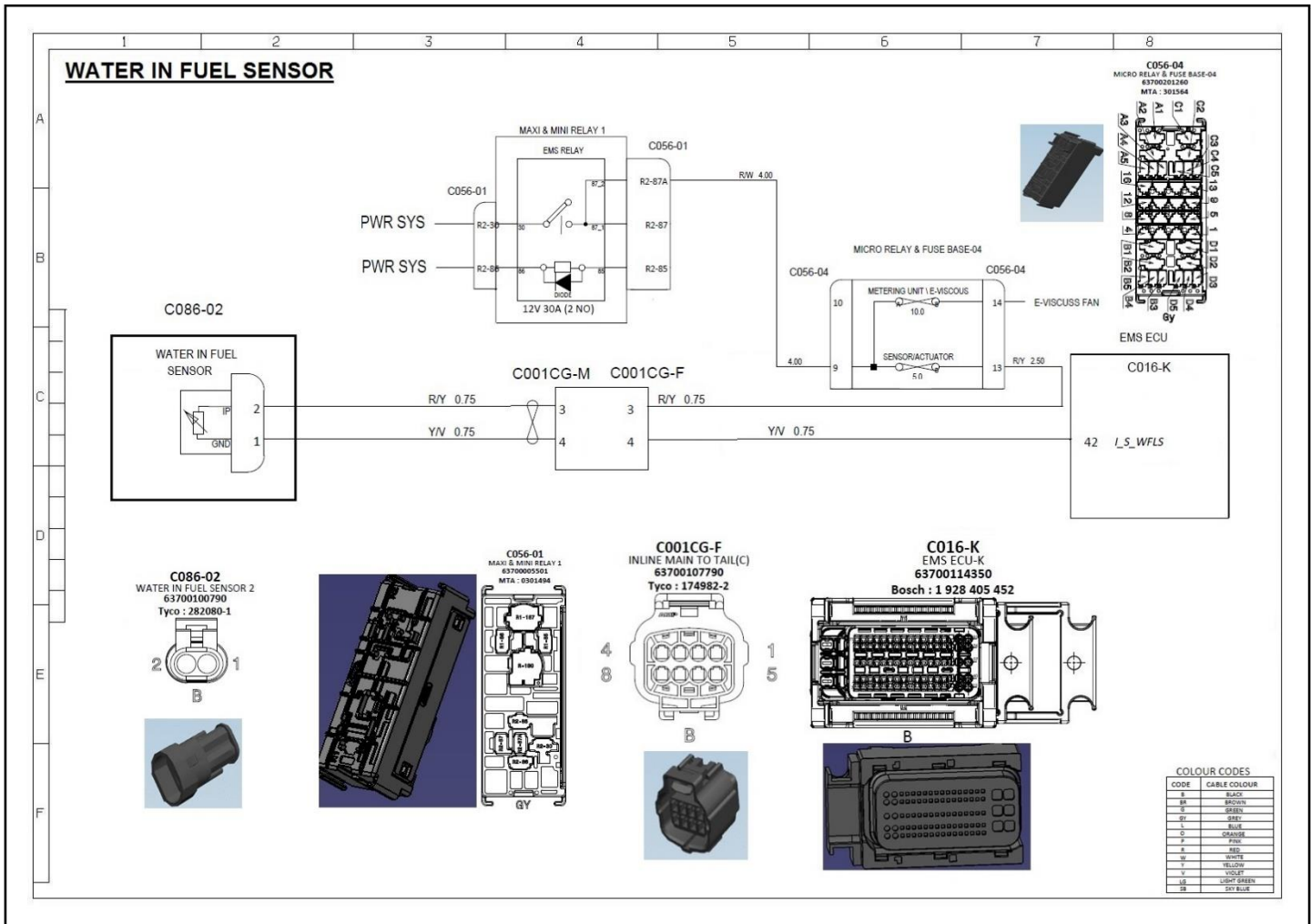
1. Check Battery Voltage
2. Check wire harness connections
3. Check sensor condition & any mechanical damage to sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 4	If error is still present then check the continuity between K17 & the signal line in water in fuel sensor.	
Step 5	If continuity in Step 4 is unavailable then check signal line is short to battery or open circuit.	
Step 6	If Step 5 is true, replace the wire harness cable with new one & go to Step 10	
Step 7	If error is still present, check fuel supply for water presence & go to Step 8	
Step 8	Replace the water mixed fuel with new fuel (w/o water presence) & go to Step 10	
Step 9	If error is still present replace WIF sensor with new one & go to Step 10	
Step 10	Check the DTC	



### Circuit Schematic Diagram:



### Circuit Description:

EMS monitors the status of WIF signal at K17. WIF sensor has 3-pole connector and it gives Active High input, Whenever water is detected in fuel. Check for the continuity between EMS and Sensor by referring above schematic.



**P2264-11: DFC for Water in fuel sensor input line Short circuit to ground**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2264-13 MIL- Off CEL – Off Immo Lamp – NA Message on IC - NA	1. Water in fuel 2. Wiring harness defect 3. Faulty water in fuel sensor	Torque Limitation

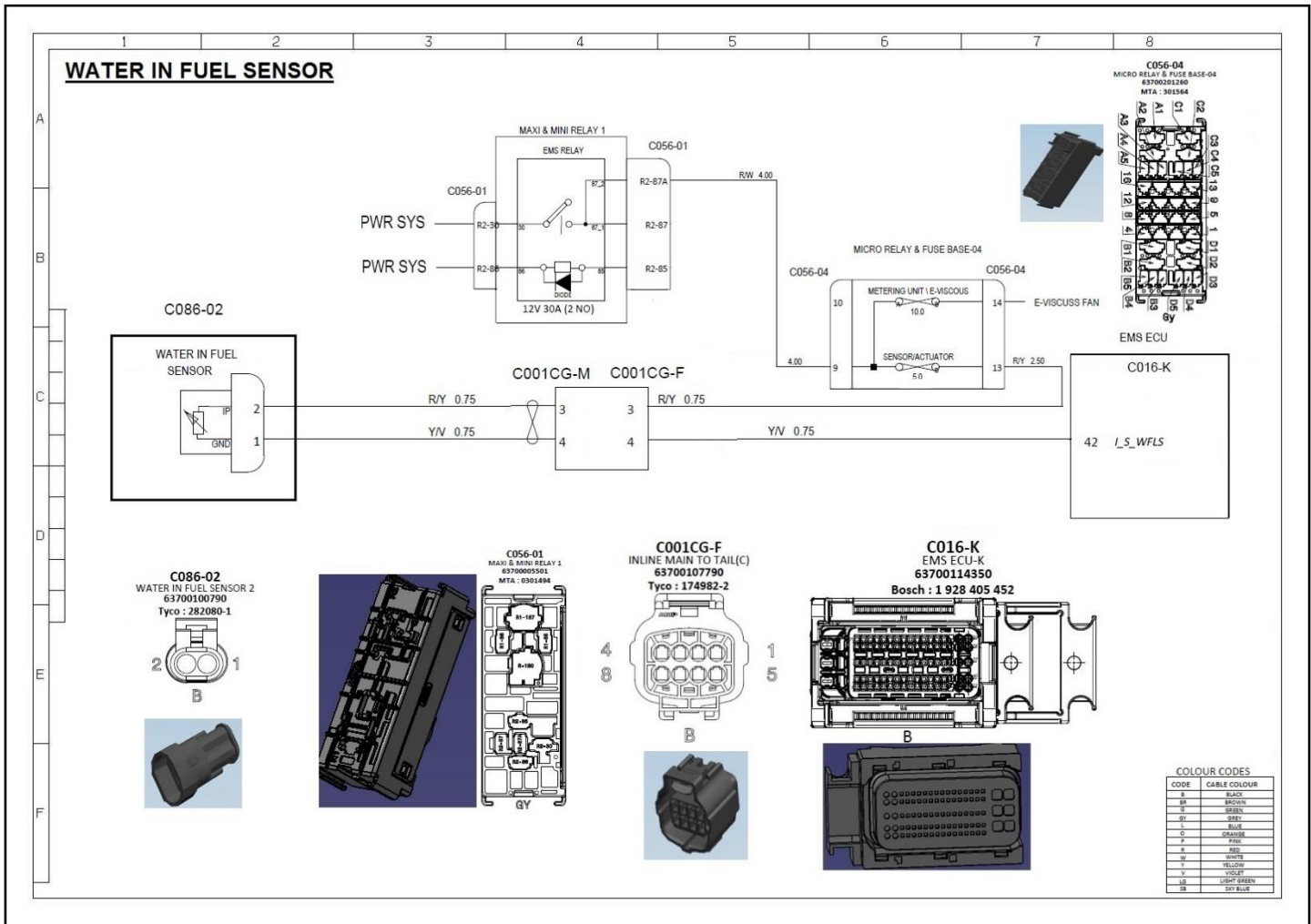
**Checkpoints:**

1. Check Battery Voltage
2. Check wire harness connections
3. Check sensor condition & any mechanical damage to sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 4	If error is still present then check the continuity between K17 & the signal line in water in fuel sensor.	
Step 5	If continuity in Step 4 is unavailable then check signal line is short to battery or open circuit.	
Step 6	If Step 5 is true, replace the wire harness cable with new one & go to Step 10	
Step 7	If error is still present, check fuel supply for water presence & go to Step 8	
Step 8	Replace the water mixed fuel with new fuel (w/o water presence) & go to Step 10	
Step 9	If error is still present replace WIF sensor with new one & go to Step 10	
Step 10	Check the DTC	

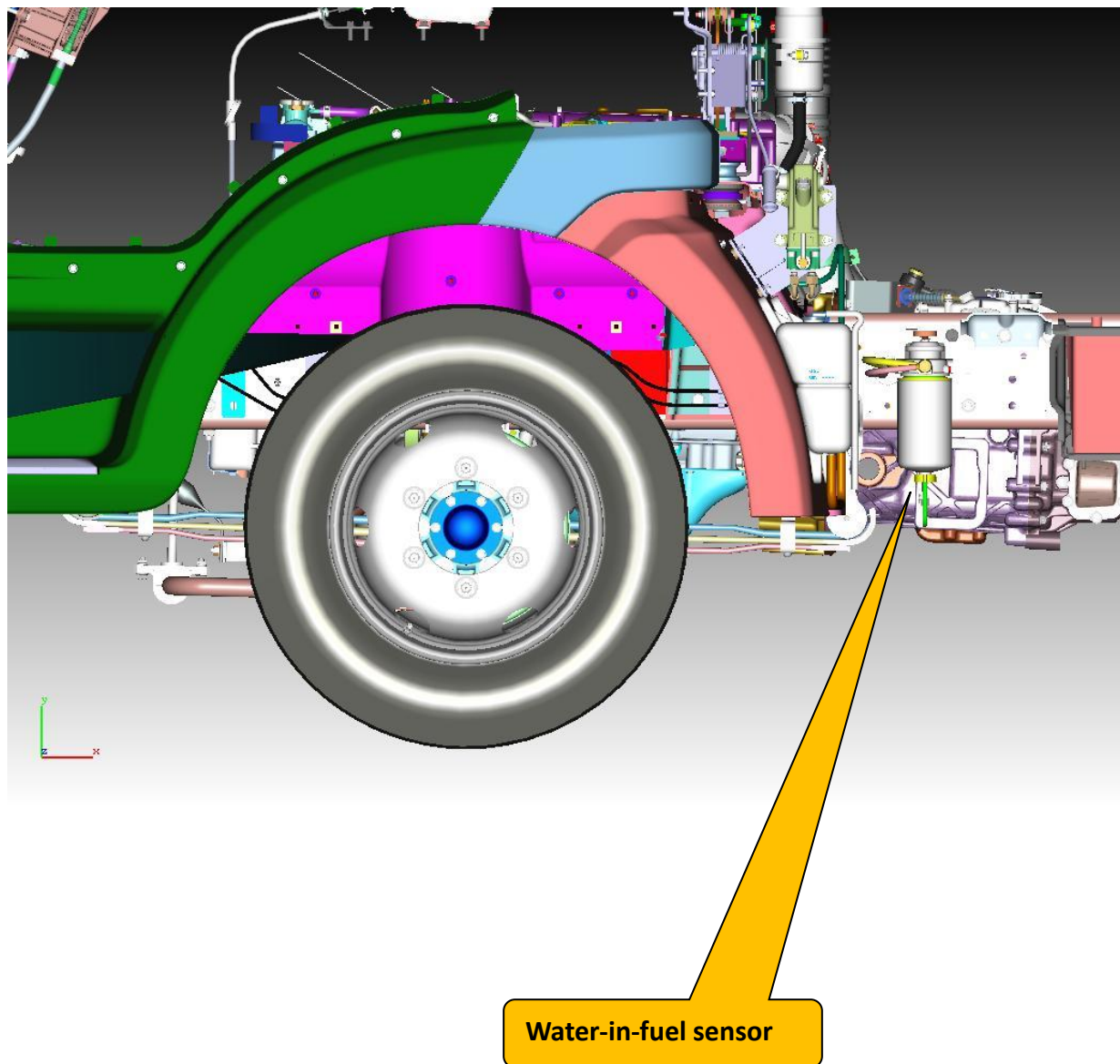
### Circuit Schematic Diagram:



### Circuit Description:

EMS monitors the status of WIF signal at K17. WIF sensor has 3-pole connector and it gives Active High input, Whenever water is detected in fuel. Check for the continuity between EMS and Sensor by referring above schematic.

**Location & Component Image**





**P0180-11: DFC for Fuel temperature sensor signal Short circuit to ground**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0180-11 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	Torque Limitation

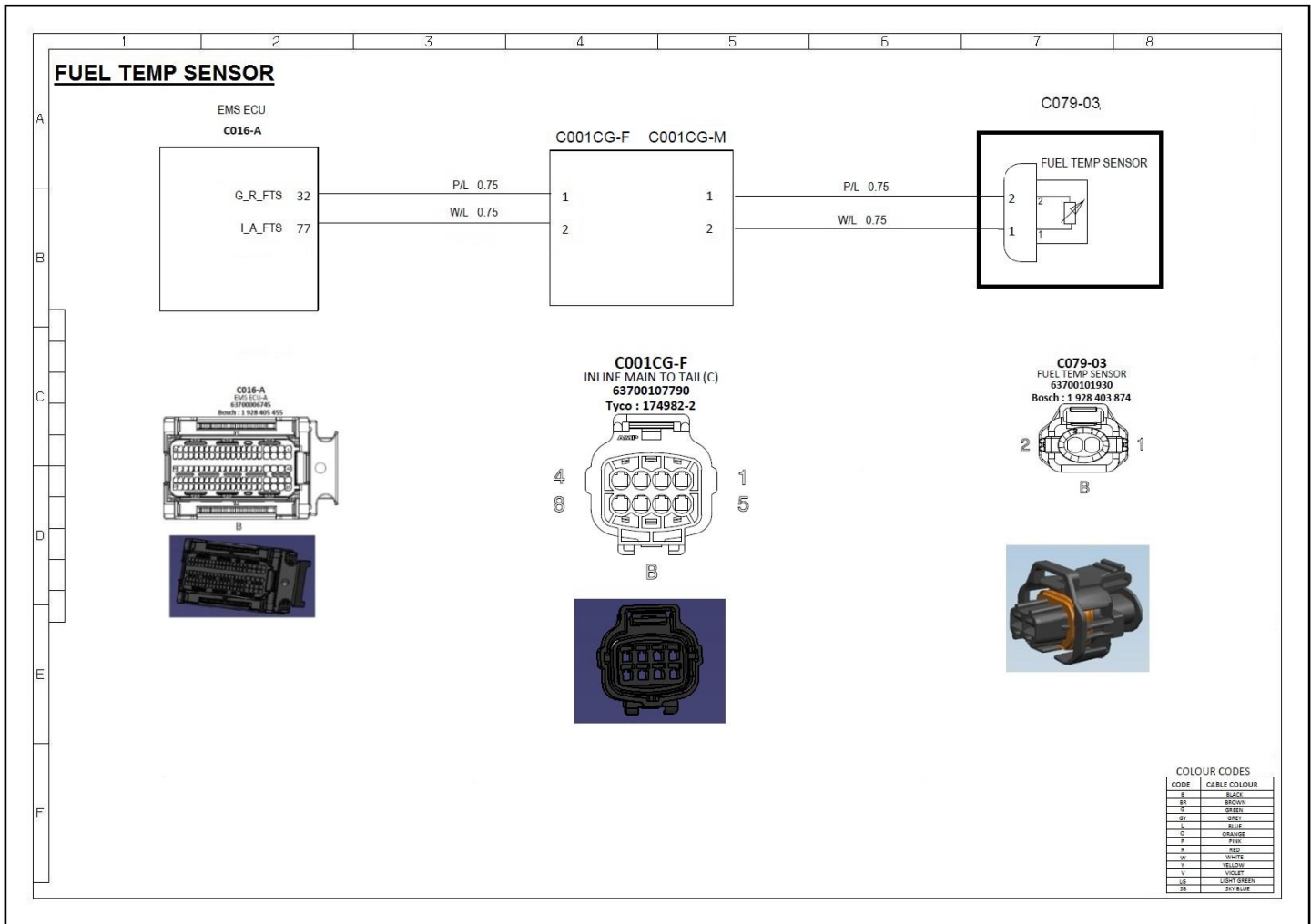
**Checkpoints:**

1. Check Battery Voltage
2. Check wire harness connections
3. Check sensor condition & any mechanical damage to sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 8	
Step 4	If error still present, check the continuity between sensor pin1 & A11 & continuity between sensor pin2 & A29. Go to Step 5	
Step 5	If continuity is unavailable from Step 4 then check the signal line short to ground & go to Step 8	
Step 6	If Step 5 is true then replace the wire harness cable with new one & go to Step 8	
Step 7	If error still present then replace Fuel Temp sensor with new one & go to Step 8	
Step 8	Check DTC	

#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of fuel by using this sensor. Fuel Temperature sensor has 2-pole connector and provides the analog input signal at A11. It is thermistor type and resistance of it changes according to fuel temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.





**P0180-12: DFC for Fuel temperature sensor signal Open circuit or Short circuit to battery**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0180-12 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	Torque Limitation

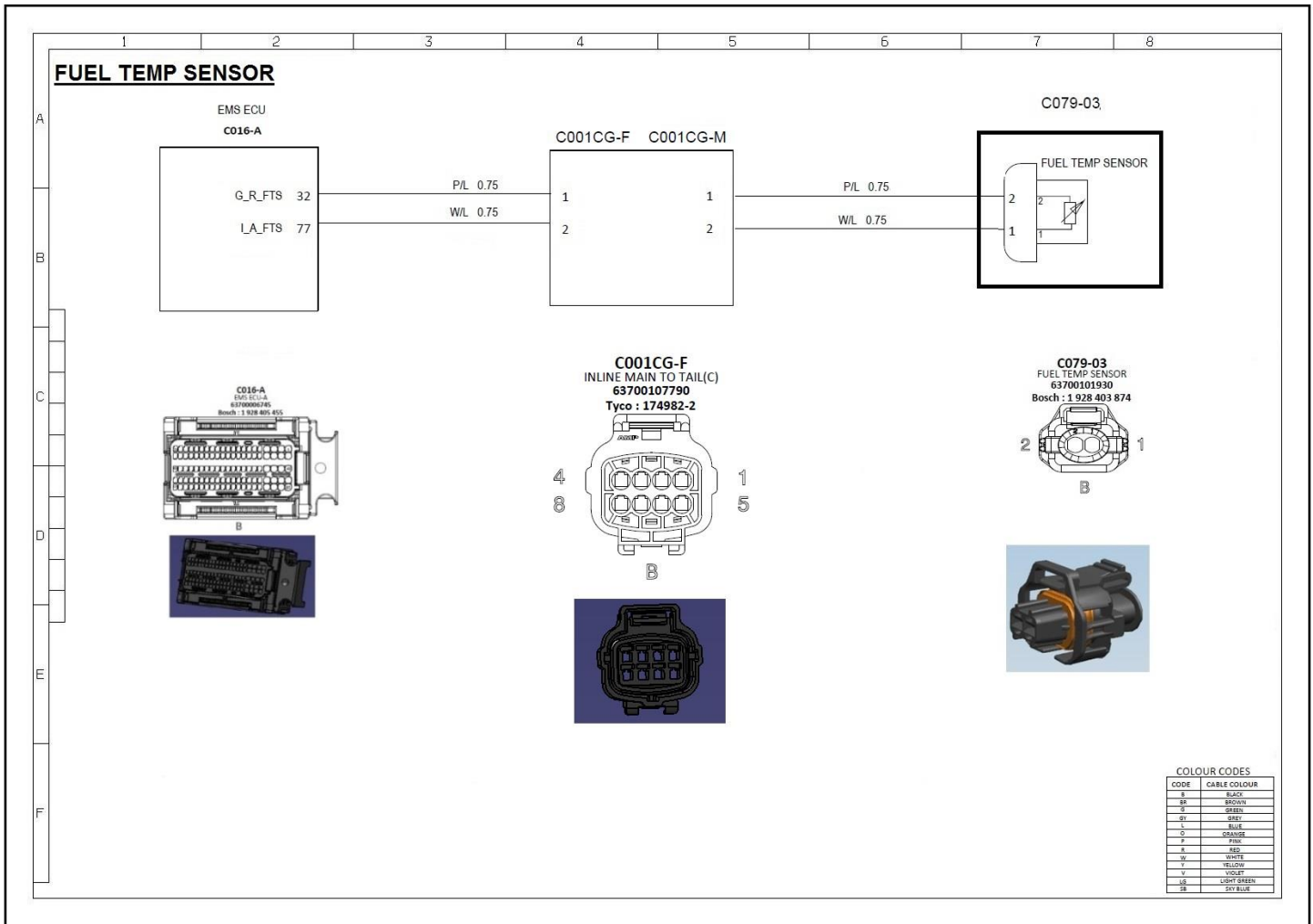
**Checkpoints:**

1. Check Battery Voltage
2. Check wire harness connections
3. Check sensor condition & any mechanical damage to sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 8	
Step 4	If error still present, check the continuity between sensor pin1 & A11 & continuity between sensor pin2 & A29. Go to Step 5	
Step 5	If continuity is unavailable from Step 4 then check the signal line short to battery or Open circuit & go to Step 8	
Step 6	If Step 5 is true then replace the wire harness cable with new one & go to Step 8	
Step 7	If error still present then replace Fuel Temp sensor with new one & go to Step 8	
Step 8	Check DTC.	

#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of fuel by using this sensor. Fuel Temperature sensor has 2-pole connector and provides the analog input signal at A11. It is thermistor type and resistance of it changes according to fuel temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.



**P0180-1C: DFC for Fuel temperature Sensor signal gradient implausible or intermittent signal**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code:P0180-1C MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	Torque Limitation

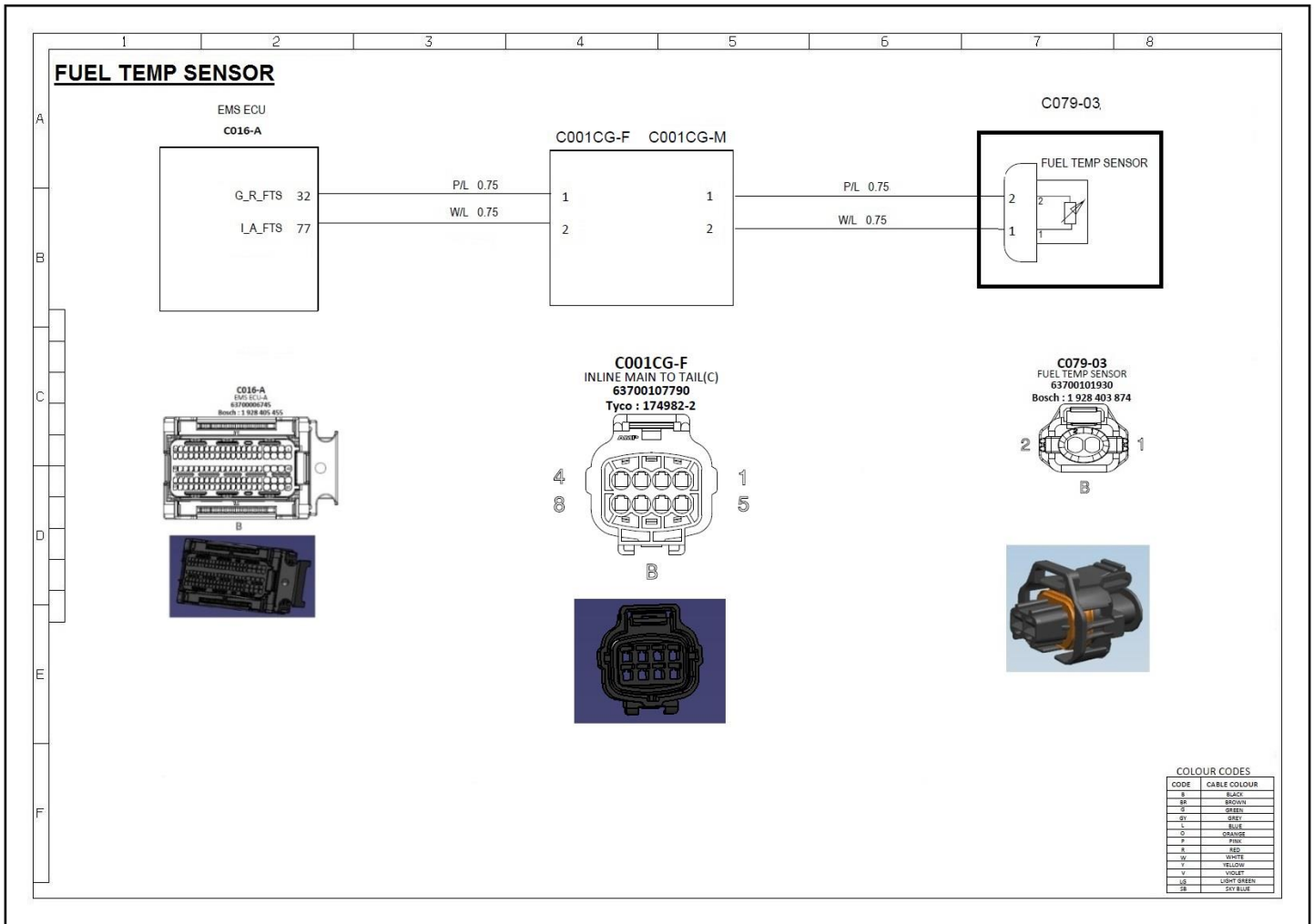
**Checkpoints:**

1. Check Battery Voltage
2. Check wire harness connections
3. Check sensor condition & any mechanical damage to sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 9	
Step 4	If error still present, check the continuity between sensor pin1 & A11 & continuity between sensor pin2 & A29. Go to Step 5	
Step 5	If continuity is unavailable from Step 4 then check the signal line short to battery or Open circuit & go to Step 9	
Step 6	If Step 5 is true then replace the wire harness cable with new one & go to Step 9	
Step 7	Check the proper mounting of the sensor & for mechanical damage. If Step 7 is true then go to Step 8	
Step 8	If error still present then replace Fuel Temp sensor with new one & go to Step 9	
Step 9	Check DTC	

#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of fuel by using this sensor. Fuel Temperature sensor has 2-pole connector and provides the analog input signal at A11. It is thermistor type and resistance of it changes according to fuel temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.



**P0180-1F: DFC for Fuel temperature sensor signal not plausible**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0180-1F MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	Torque Limitation

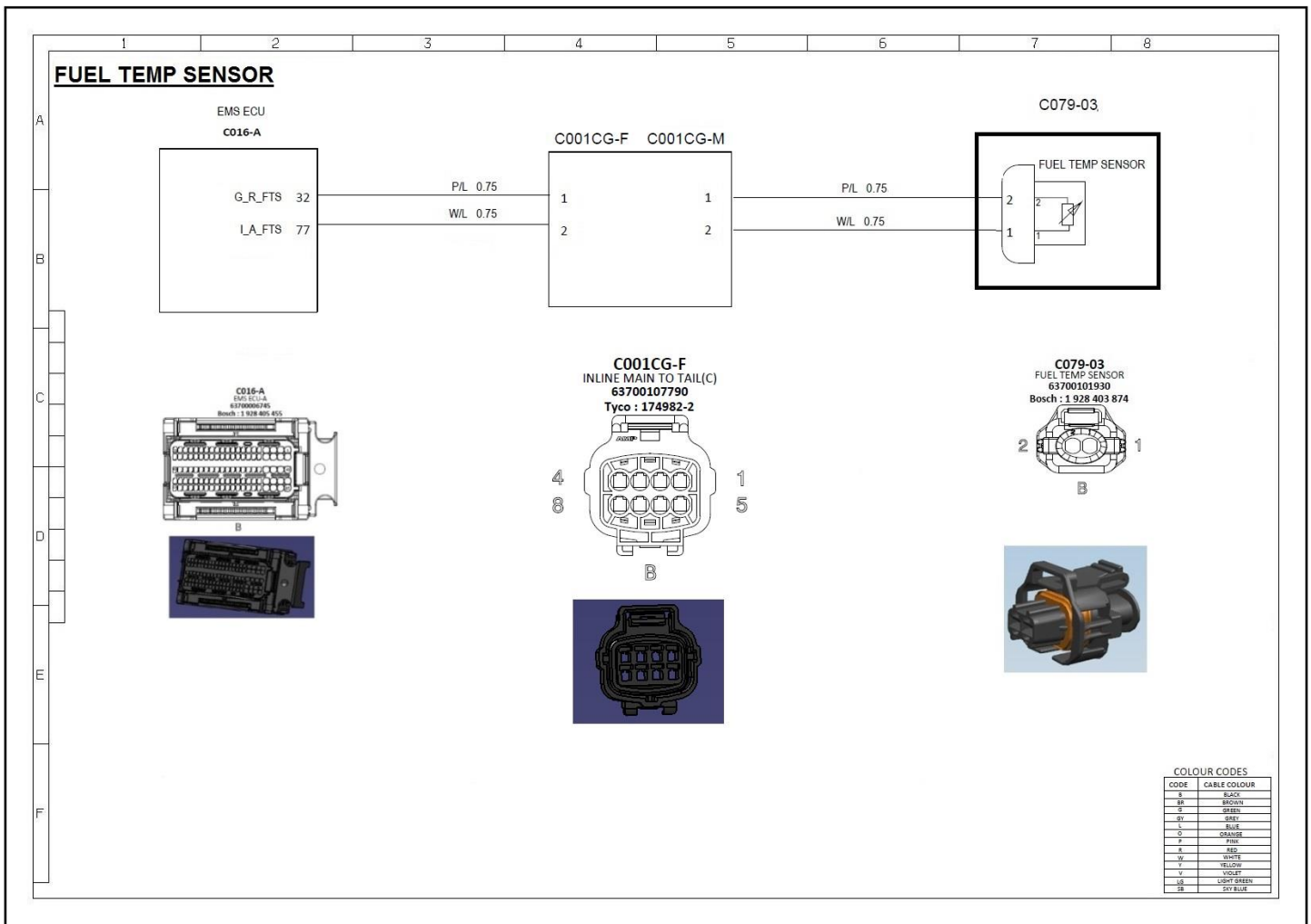
**Checkpoints:**

1. Check Battery Voltage
2. Check wire harness connections
3. Check sensor condition & any mechanical damage to sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 9	
Step 4	If error still present, check the continuity between sensor pin1 & A11 & continuity between sensor pin2 & A29. Go to Step 5	
Step 5	If continuity is unavailable from Step 4 then check the signal line short to battery or Open circuit & go to Step 9	
Step 6	If Step 5 is true then replace the wire harness cable with new one & go to Step 9	
Step 7	Check the proper mounting of the sensor & for mechanical damage. If Step 7 is true then go to Step 8	
Step 8	If error still present then replace Fuel Temp sensor with new one & go to Step 9	
Step 9	Check DTC	

#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of fuel by using this sensor. Fuel Temperature sensor has 2-pole connector and provides the analog input signal at A11. It is thermistor type and resistance of it changes according to fuel temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.





**P0504-00: DFC for Pedal/brake plausibility check**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0504-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	Torque Limitation

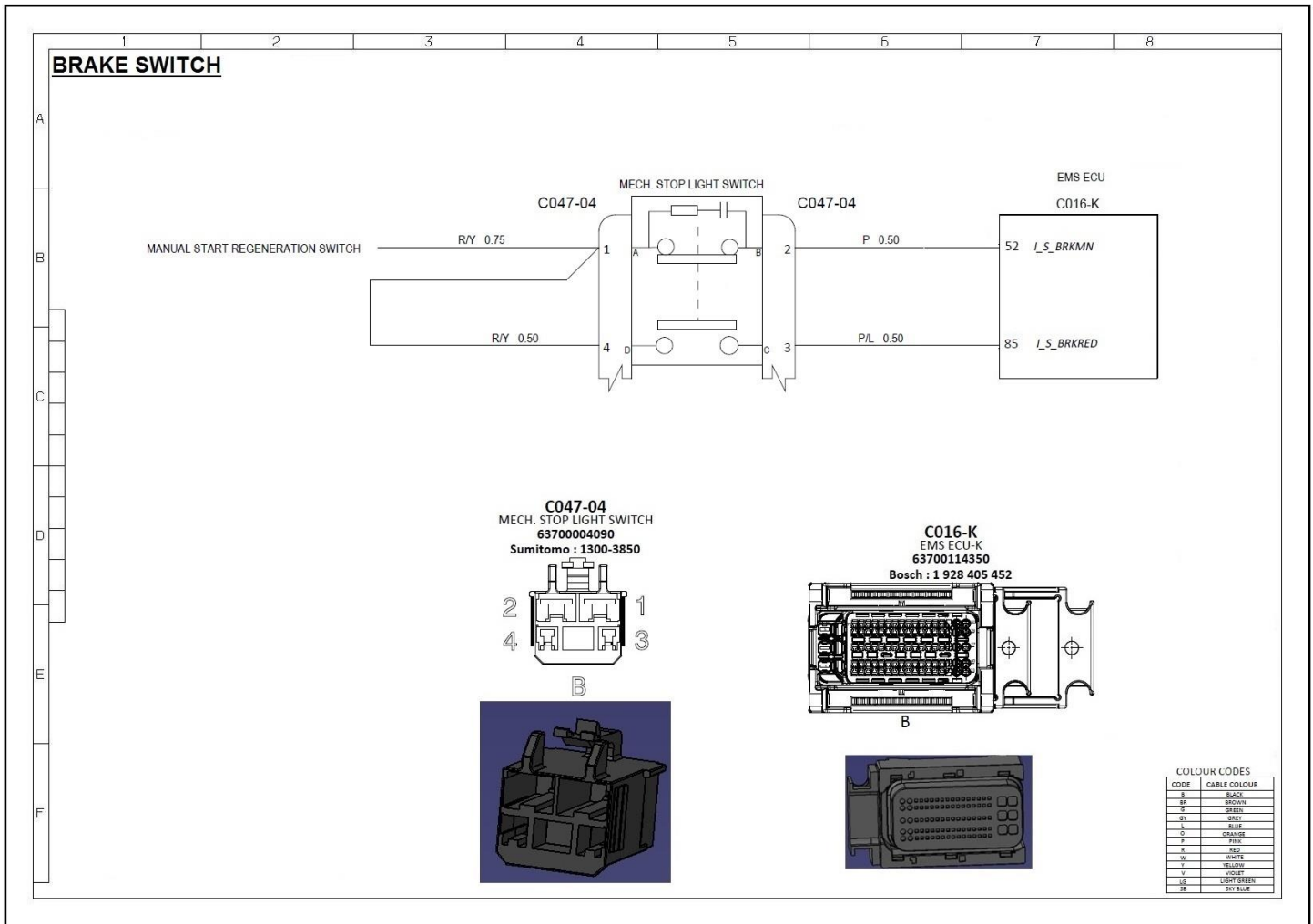
**Checkpoints:**

1. Check Battery Voltage
2. Check the Wire harness connections for pin damage or electrical problems
3. Check the Pedal Sensor condition & for any mechanical damage

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 11	
Step 4	If error still present, check continuity in between pin 2 & B_A4.	
Step 5	If error still present, check continuity in between pin 3 & B_C4	
Step 6	If error still present, check continuity in between pin 4 & B_B4	
Step 7	If Step 4, Step 5 & Step 6 fails then check signal for short circuit to battery or ground or open circuit.	
Step 8	If Step 7 is true then replace the wire harness cable with new one & go to Step 11	
Step 9	If error still present check the mounting of the Pedal sensor is proper or not, if not make it right & go to Step 11	
Step 10	If still error present replace Pedal sensor with new one & go to Step 11	
Step 11	Check DTC	

#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the Acc. Pedal position which gives driver requested acceleration by using this sensor. Accelerator Pedal sensor has two potentiometer sensors with 6-pole connector and provides the Analog input signals at B\_B4 and B-B3 which corresponds to sensor 1 and sensor 2 positions. It is mounted on the Accelerator Pedal. Check for the continuity between EMS and Sensor by referring above schematic.



**P0704-29: DFC for Clutch switch plausibility check**

**Overview:**

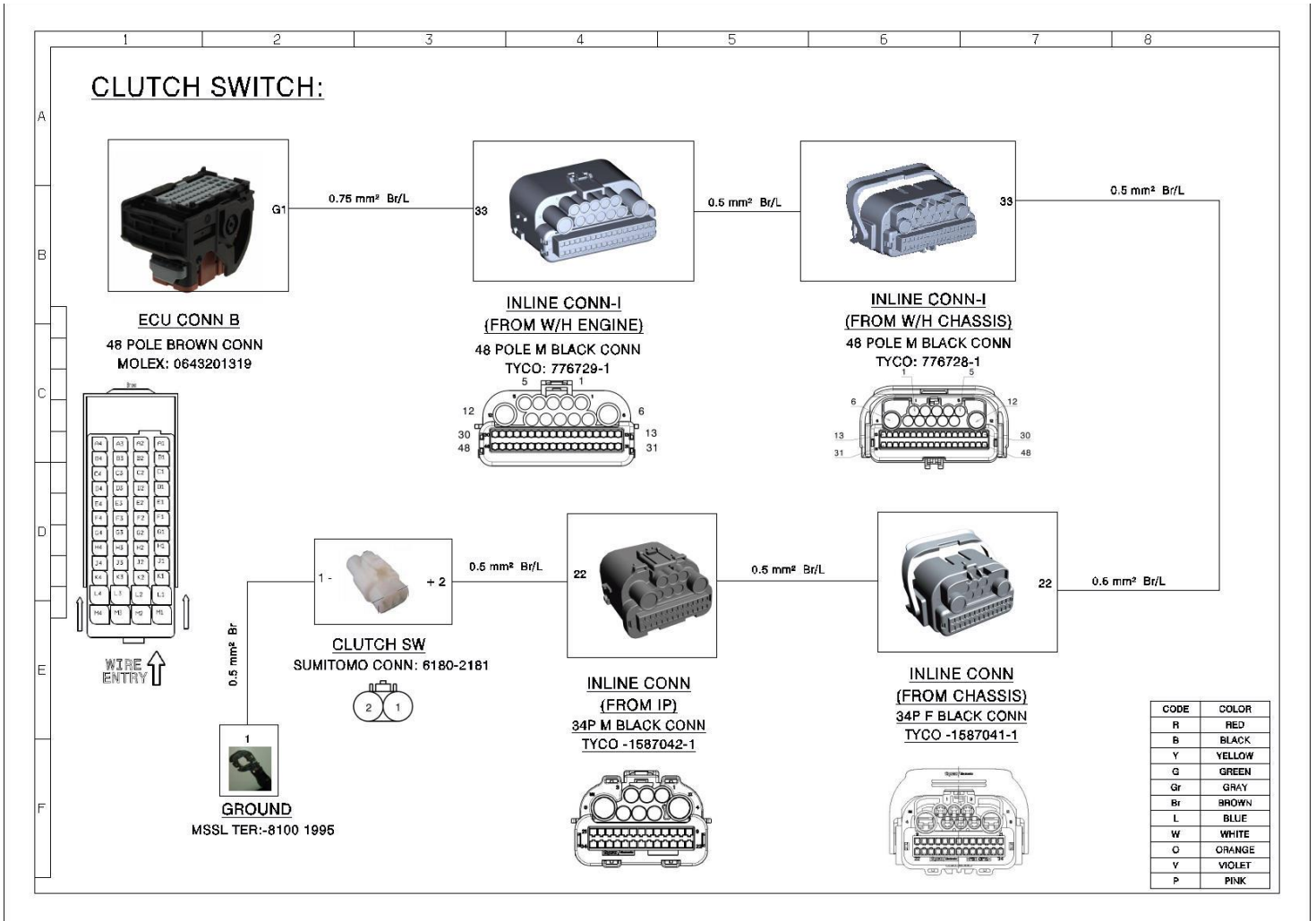
Code	Cause	Effect on Vehicle
Fault Code:P0704-29 MIL- Off CEL – Off Immo Lamp – NA Message on IC - NA	<ul style="list-style-type: none"> <li>1. Wiring Harness defect</li> <li>2. Switch failure</li> <li>3. Improper mounting</li> </ul>	NA

**Checkpoints:**

1. Check clutch switch
2. Check wiring harness

**Trouble Shooting Steps:**

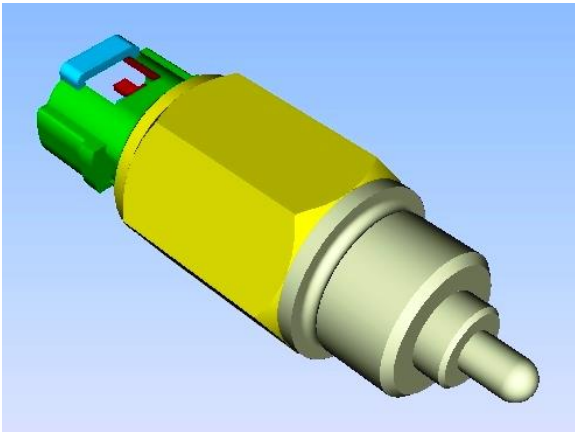
Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check wire harness connector is connected properly to the clutch switch	
Step 3	If connectors found loose then fix it properly and go to step 9	
Step 4	If the error persists check the connector pins / wire back-out from both side i.e. clutch switch & wire harness side	
Step 5	Fix any pin damage, fix the back-out cables in proper positions in connector and go to step 9	
Step 6	Check the continuity between clutch switch and ECU pin no B_G1	Clutch switch to B_G1
Step 7	In case of non conformity of step 6, fix the continuity by using new wire and go to step 9	
Step 8	If error persists, change the clutch switch and go to step 9	
Step 9	Clear and check DTC	



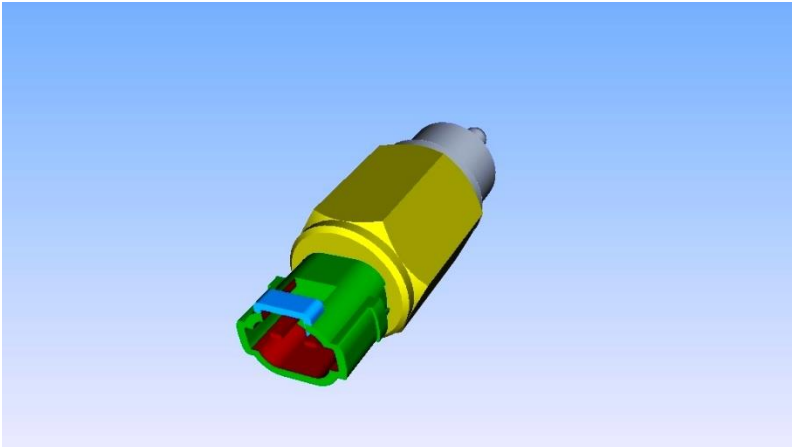
#### Circuit Description:

EMS gets the status of Clutch pedal (Pressed/Un pressed) by using this Clutch Switch. It provides the digital input at B\_G1 and mounted on Clutch pedal. Check for the continuity between EMS and Relay by referring above schematic.

Location & Component Image:



Clutch Switch



Clutch Switch



**P0A1B-13: DFC for Starter Motor Control Signal Open Circuit.**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code:P0A1B-13 MIL- Off CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring Harness defect 2. Blown fuse 3. Relay failure	NA

**Checkpoints:**

1. Check fuse
2. Check relay
3. Check wiring harness

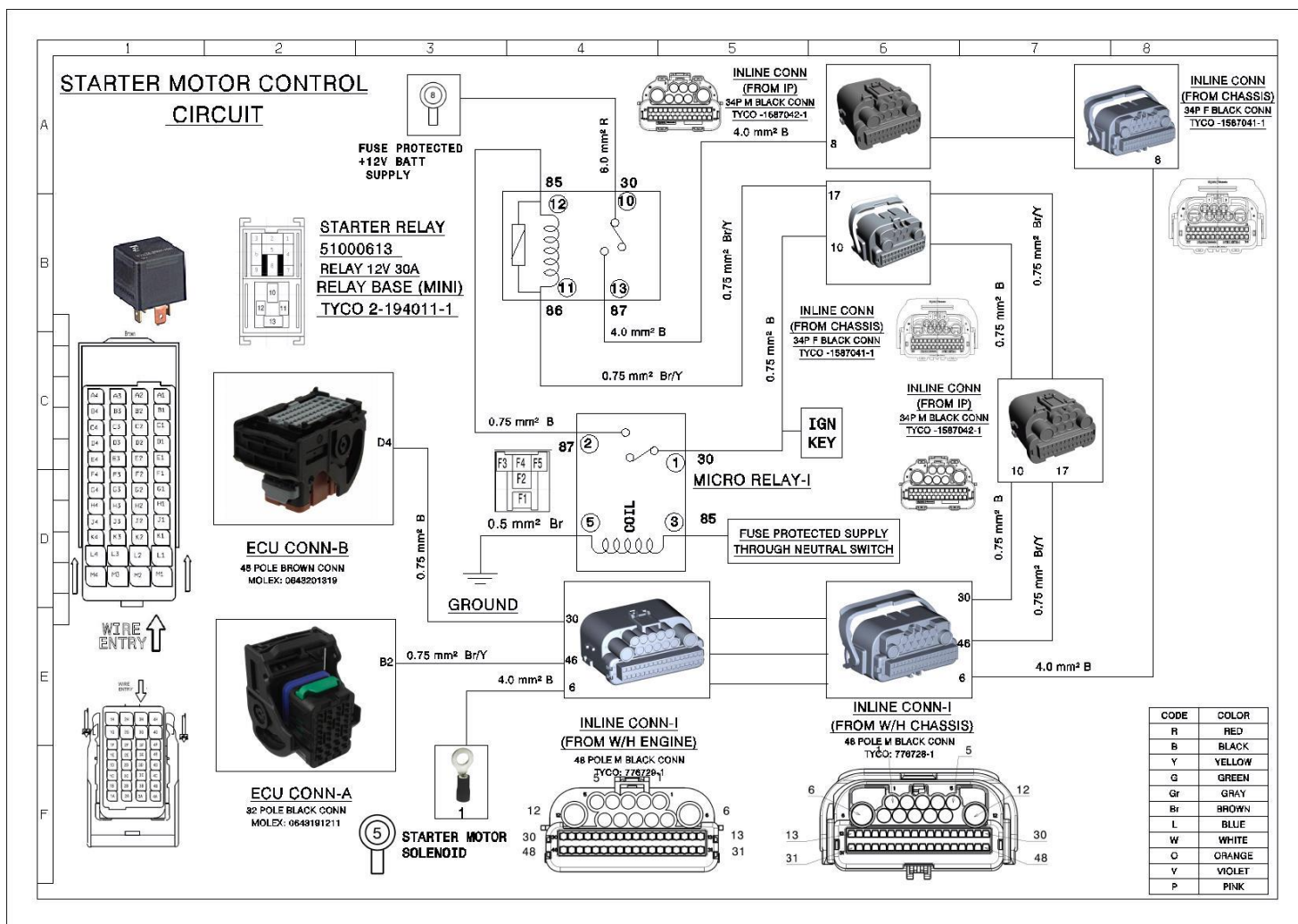
**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the fuse for Starter motor, if found blown, change and go to step 15	
Step 3	Check wire harness connector is connected properly to the starter motor relay connector	
Step 4	If connector found loose then fix it properly and go to step 15	
Step 5	If the error persists check the connector pins / wire back-out from both side i.e. starter motor relay side & wire harness side	
Step 6	Fix any pin damage, fix the back-out cables in proper positions in connector and go to step 15	
Step 7	If error persists, check the continuity between ECU side connector pin A_B2 to pin 86 of Glow plug relay	86 to A_B2
Step 8	In case of non-conformity of step 7, restore continuity and go to step 15	
Step 9	Check if the Starter motor relay wire from 86 to A_B2 is not short to battery i.e. line 30 or line 85 from relay towards battery	
Step 10	Check if the starter motor relay wire from 86 to A_B2 is not short to engine or vehicle body	
Step 11	In case of non-conformity of step 9 & 10, restore continuity and go to step 15	
Step 12	If error persists, check the power supply to the starter motor relay	
Step 13	Check the starter motor relay for malfunctioning	



Step 14	If starter motor relay found defective, replace it & go to step 15	
Step 15	Clear and check DTC	

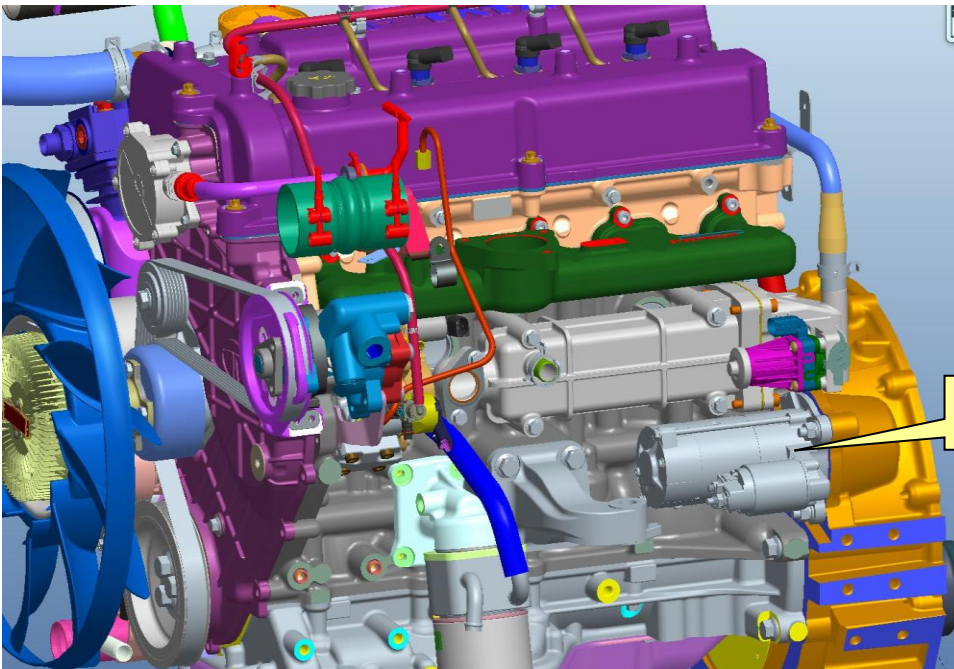
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS Controls the starter relay based on the starter inhibit strategy implemented in ECU. When ever Crank signal comes to ECU, EMS checks for other parameters like Engine Speed, Engaged gear status etc and provide Low side output at pin B\_D4 to initiate the start process. Check for the continuity between EMS and Relay by referring above schematic.

#### Location & Component Image:



Starter Motor



**P0A1B-12: DFC for Starter Motor Control Signal Short circuit to battery.**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code:P0A1B-12 MIL- Off CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring Harness defect 2. Blown fuse 3. Relay failure	NA

**Checkpoints:**

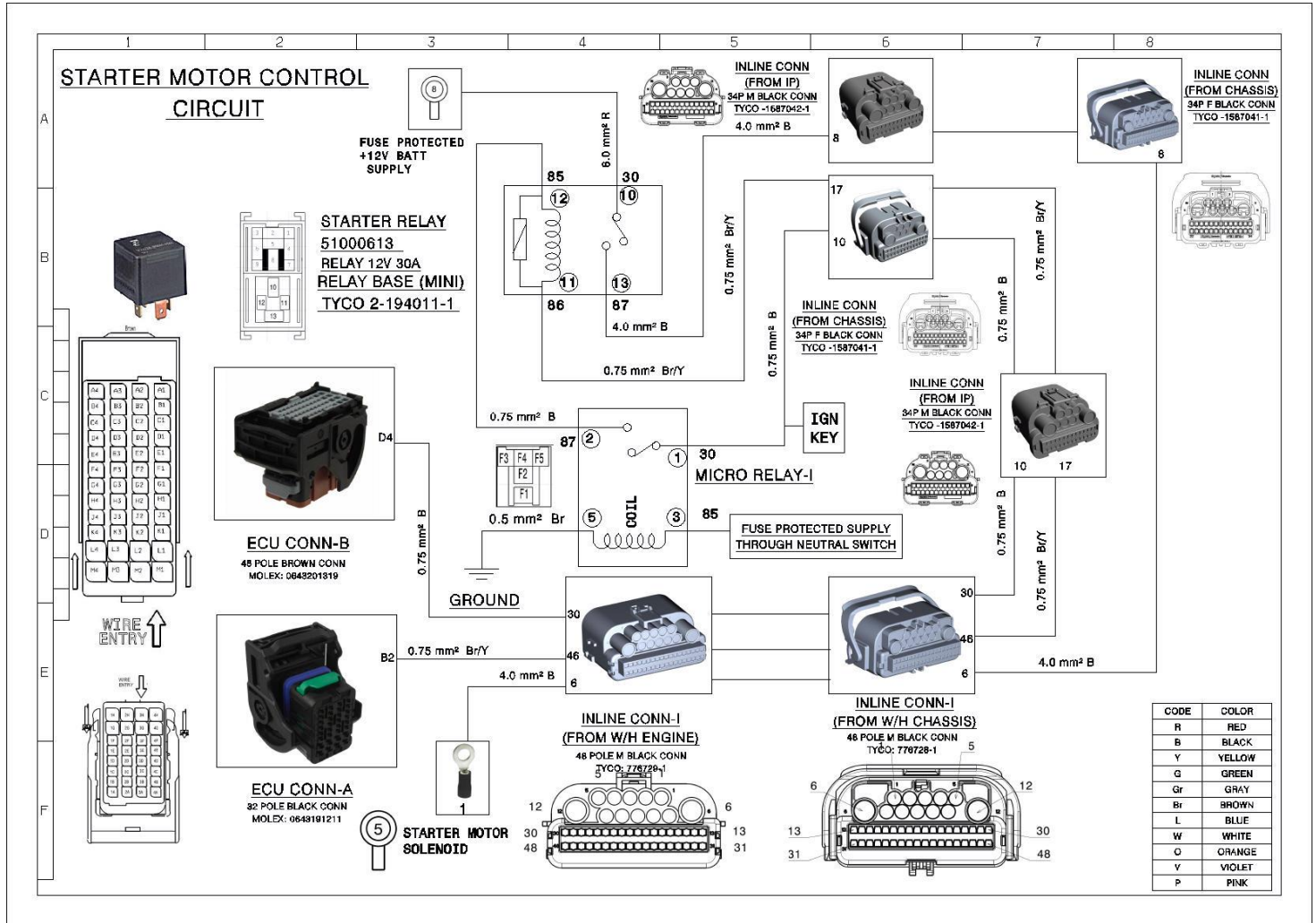
1. Check fuse
2. Check relay
3. Check wiring harness

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the fuse for Starter motor, if found blown, change and go to step 15	
Step 3	Check wire harness connector is connected properly to the starter motor relay connector	
Step 4	If connector found loose then fix it properly and go to step 15	
Step 5	If the error persists check the connector pins / wire back-out from both side i.e. starter motor relay side & wire harness side	
Step 6	Fix any pin damage, fix the back-out cables in proper positions in connector and go to step 15	
Step 7	If error persists, check the continuity between ECU side connector pin A_B2 to pin 86 of Glow plug relay	86 to A_B2
Step 8	In case of non conformity of step 7, restore continuity and go to step 15	
Step 9	Check if the Starter motor relay wire from 86 to A_B2 is not short to battery i.e. line 30 or line 85 from relay towards battery	
Step 10	Check if the starter motor relay wire from 86 to A_B2 is not short to engine or vehicle body	
Step 11	In case of non-conformity of step 9 & 10, restore continuity and go to step 15	
Step 12	If error persists, check the power supply to the starter motor relay	
Step 13	Check the starter motor relay for malfunctioning	
Step 14	If starter motor relay found defective, replace it & go to step 15	

Step 15	Clear and check DTC
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#### Circuit Schematic Diagram:

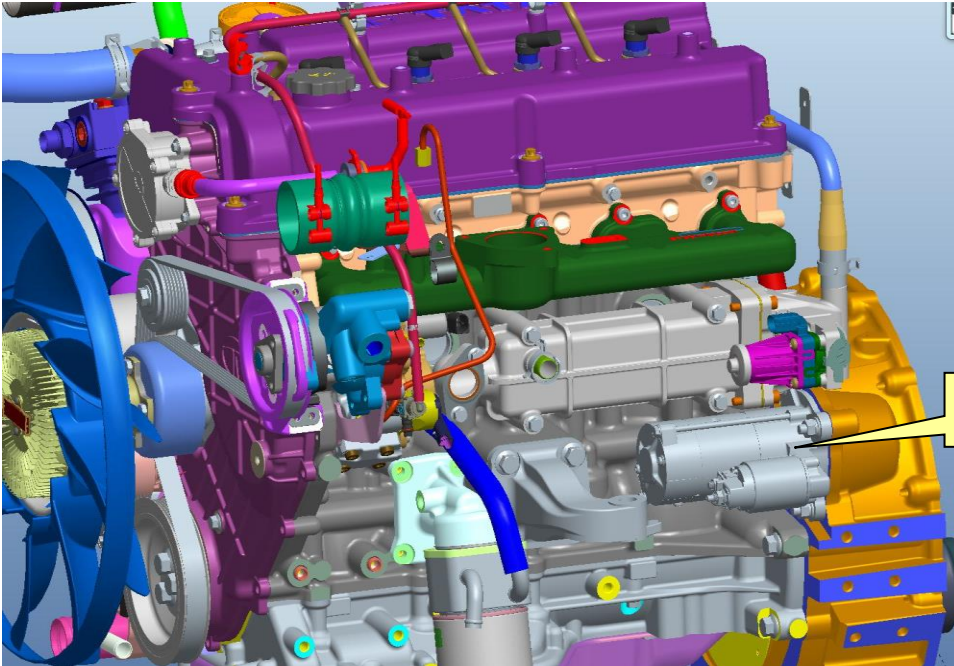


#### Circuit Description:

EMS Controls the starter relay based on the starter inhibit strategy implemented in ECU. When ever Crank signal comes to ECU, EMS checks for other parameters like Engine Speed, Engaged gear status etc and provide Low side output at pin B\_D4 to initiate the start process. Check for the continuity between EMS and Relay by referring above schematic.

#### Location & Component Image:





Starter Motor



**P2229-00: DFC for Ambient Pressure Signal Over voltage**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2229-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. ECU failure	No

**Checkpoints:**

1. Check the ECU
2. Check if AMP is set to 900hPa as substitute value.

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Change the ECU and go to step 2	
Step 2	Clear and check DTC	





**P2228-00: DFC for Ambient Pressure Signal under voltage**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2228-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. ECU failure	No

**Checkpoints:**

1. Check the ECU
2. Check if AMP is set to 900hPa as substitute value.

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Change the ECU and go to step 2	
Step 2	Clear and check DTC	



**P0219-00: DFC for Engine speed above max limit**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0219-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. Mechanical damage to engine	NA

**Checkpoints:**

1. Check the engine

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check for any mechanical damage to the engine	
Step 2	Rectify the mechanical damage/s to the engine and proceed to step 3	
Step 3	Clear and check DTC	



## P061C-00: DFC for Engine Speed Monitoring

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P061C-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	NA

### Checkpoints:

1. Check the ECU

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Change the ECU and go to step 2	
Step 2	Clear and check DTC	



**P062B-00: DFC for Fuel cut off monitoring**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P062B-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	NA

**Checkpoints:**

1. Check the ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Change the ECU and go to step 2	
Step 2	Clear and check DTC	



## P061A-00: DFC for torque monitoring

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P061A-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	NA

### Checkpoints:

1. Check the ECU

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Change the ECU and go to step 2	
Step 2	Clear and check DTC	



## P060A-49: DFC for energizing time monitoring

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P060A-49 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	NA

### Checkpoints:

1. Check the ECU

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Change the ECU and go to step 2	
Step 2	Clear and check DTC	





**U0102-00: DFC for Overall disconnection to CAN bus**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: U0102-00 MIL- On CEL – NA Driver Warning Lamp – On	1. Internal ECU HW failure	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check for damaged ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check ECU for any damage	
Step 2	If found damaged for persistent error change the ECU and go to step 3	
Step 3	Clear and check DTC	



**U011A-00: DFC for CAN internal Hardware failed**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: U011A-00 MIL- On CEL – Off Driver Warning Lamp – ON	1. Internal ECU HW failure	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check ECU for any damage	
Step 2	If found damaged for persistent error change the ECU and go to step 3	
Step 3	Clear and check DTC	



**U011A-89: DFC for CAN internal Hardware connection failed**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: U011A-89 MIL- On CEL – Off Driver Warning Lamp – ON	1. Internal ECU HW failure	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check ECU for any damage	
Step 2	If found damaged for persistent error change the ECU and go to step 3	
Step 3	Clear and check DTC	



**P0425-85: DFC for Temperature upstream of DOC too high**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0425-85 MIL- On CEL – Off Driver Warning Lamp – Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	NA

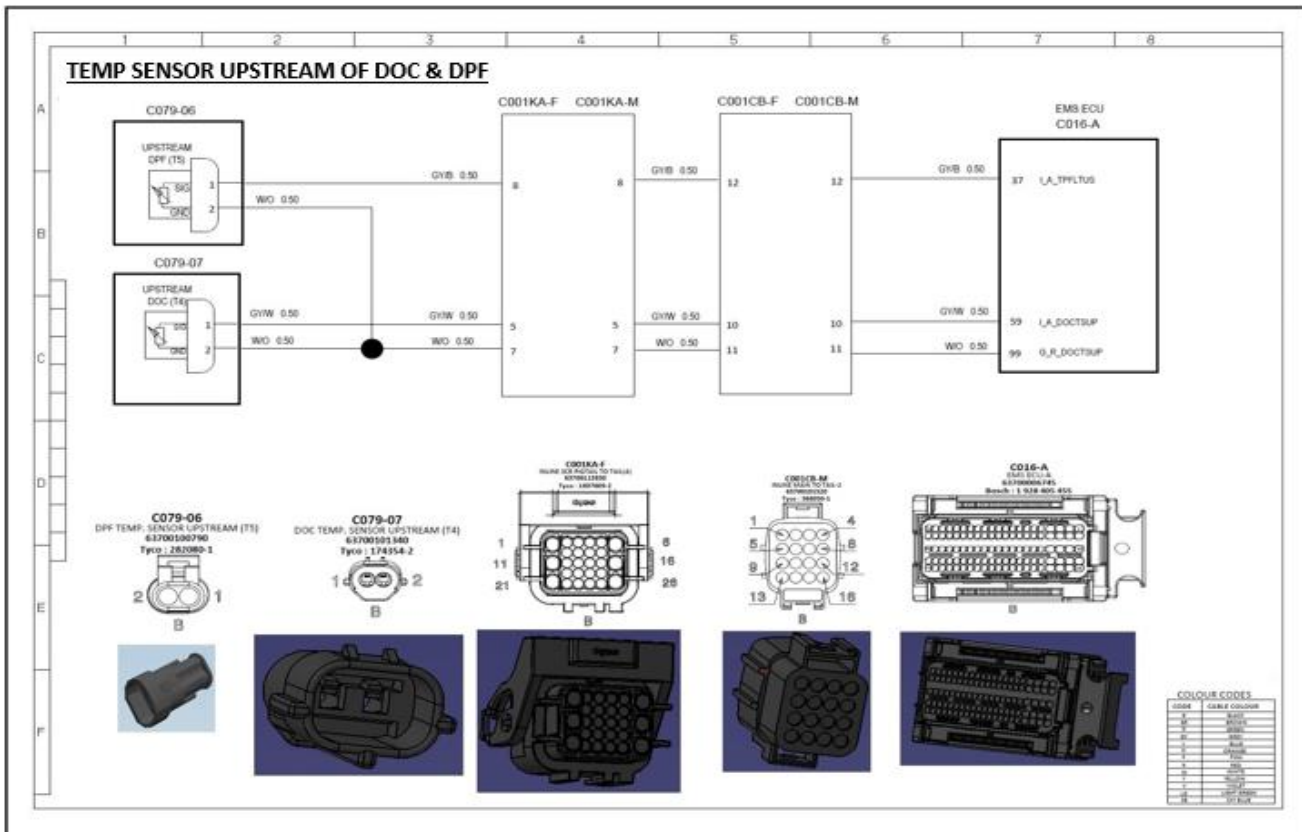
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 8	
Step 4	Check continuity between Pin 1 & A59 & Pin 2 & A99.	
Step 5	If continuity is found ok proceed to step 8	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 8	
Step 8	Clear and check DTC	

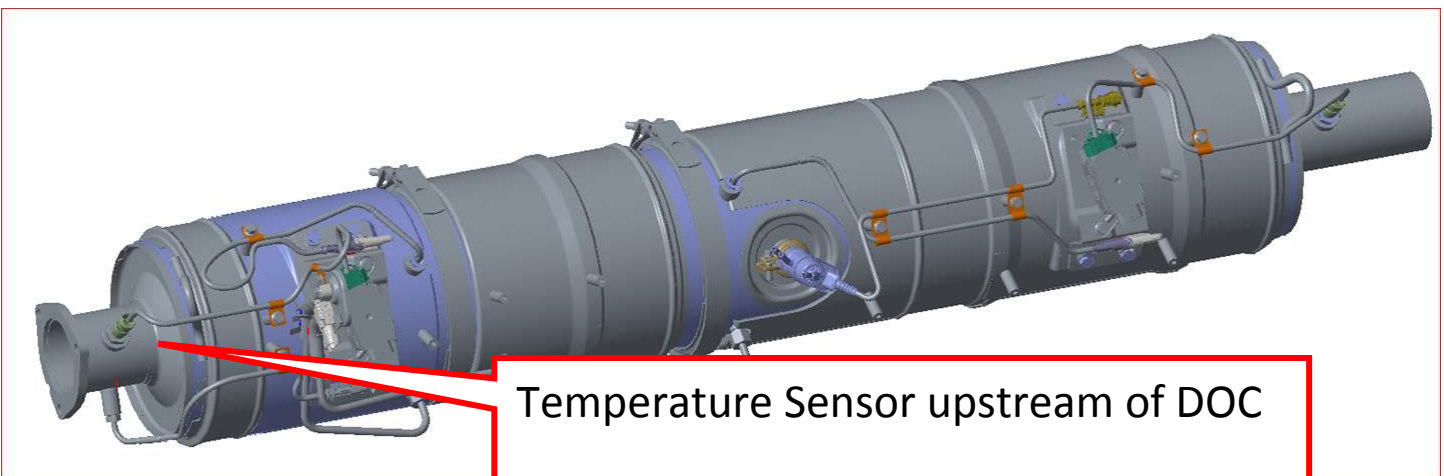
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of fuel by using this sensor. Fuel Temperature sensor has 2-pole connector and provides the analog input signal at A59. The sensing element is a thin film Pt resistor resistance of it changes according to exhaust temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.

#### Location & Component Image:





**P0425-84: DFC for Temperature upstream of DOC too low**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0425-84 MIL- On CEL – Off Driver Warning Lamp – Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	NA

**Checkpoints:**

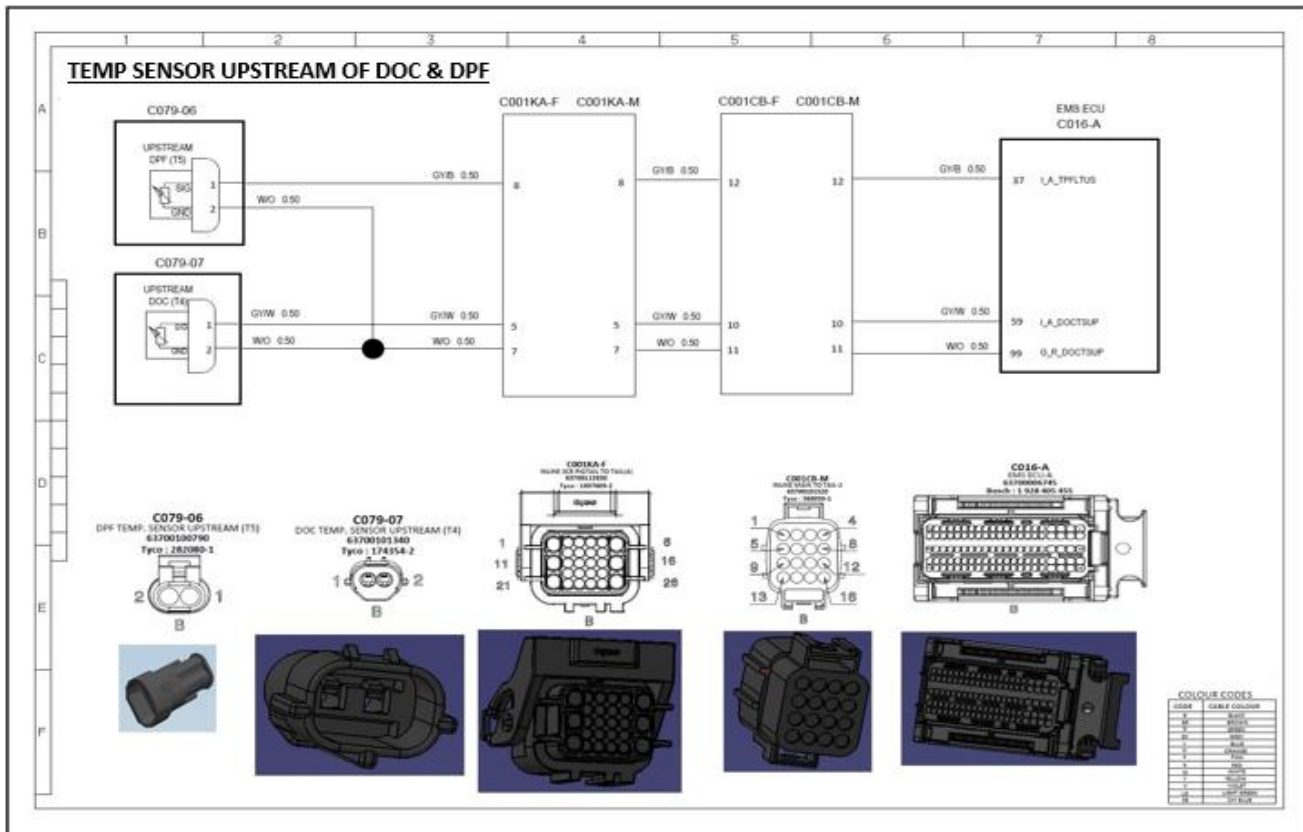
1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 8	
Step 4	Check continuity between Pin 1 & A59 & Pin 2 & A99.	
Step 5	If continuity is found ok proceed to step 8	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 8	
Step 8	Clear and check DTC	



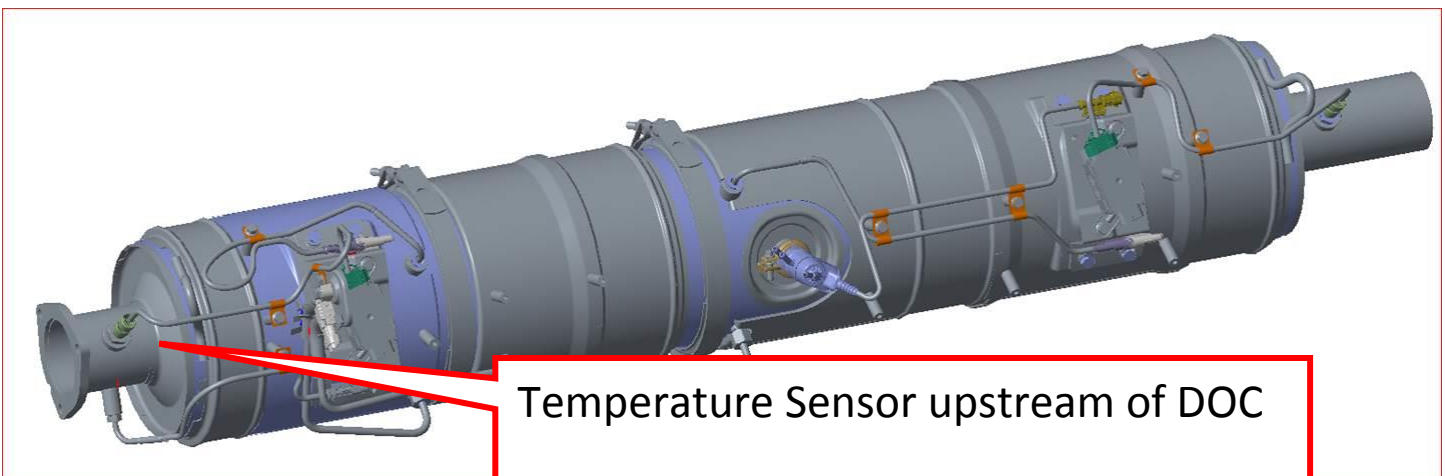
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of fuel by using this sensor. Fuel Temperature sensor has 2-pole connector and provides the analog input signal at A59. The sensing element is a thin film Pt resistor resistance of it changes according to exhaust temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.

#### Location & Component Image:





**P0428-00: DFC for Temperature sensor upstream of DOC Circuit open or shorted to Battery**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0428-00 MIL- On CEL – Off Driver Warning Lamp – Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	NA

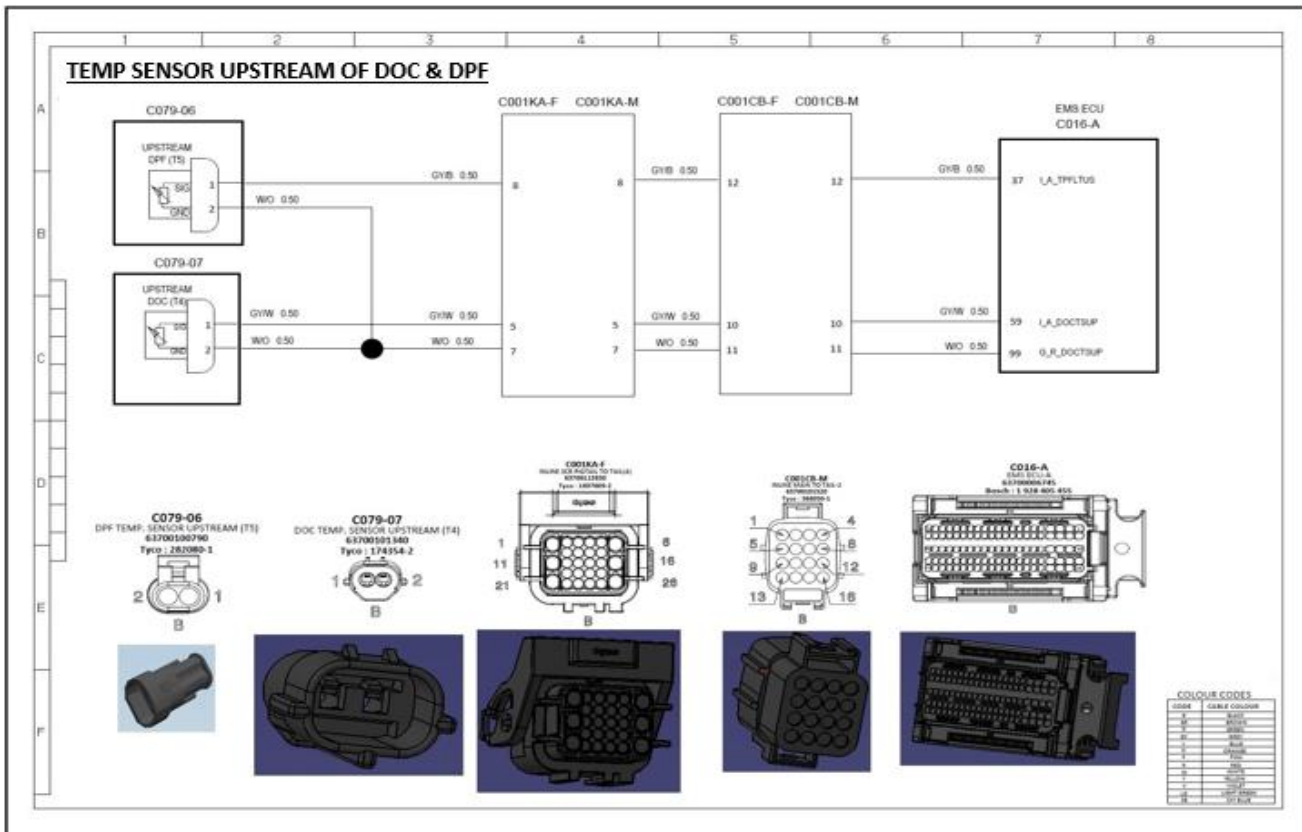
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 8	
Step 4	Check continuity between Pin 1 & A59 & Pin 2 & A99.	
Step 5	If continuity is found ok proceed to step 8	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 8	
Step 8	Clear and check DTC	

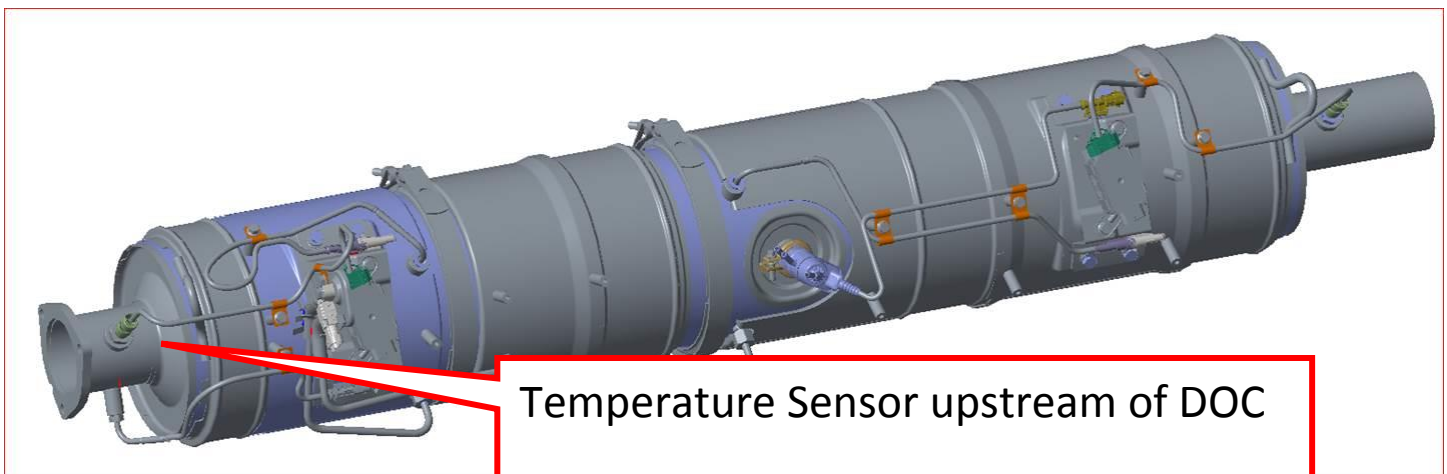
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of fuel by using this sensor. Fuel Temperature sensor has 2-pole connector and provides the analog input signal at A59. The sensing element is a thin film Pt resistor resistance of it changes according to exhaust temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.

#### Location & Component Image:





**P0427-00: DFC for Temperature sensor upstream of DOC Circuit shorted to ground**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0427-00 MIL- On CEL – Off Driver Warning Lamp – Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	NA

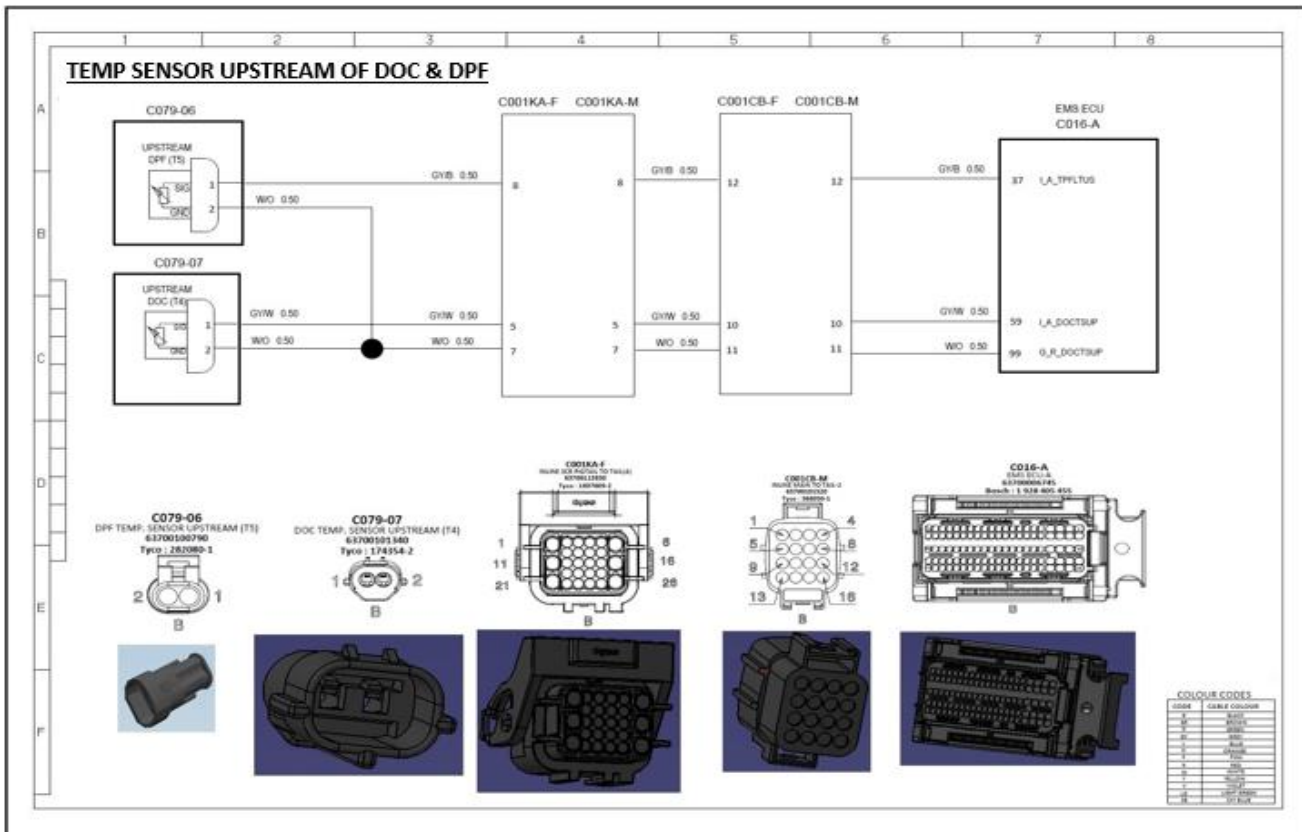
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 8	
Step 4	Check continuity between Pin 1 & A59 & Pin 2 & A99.	
Step 5	If continuity is found ok proceed to step 8	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 8	
Step 8	Clear and check DTC	

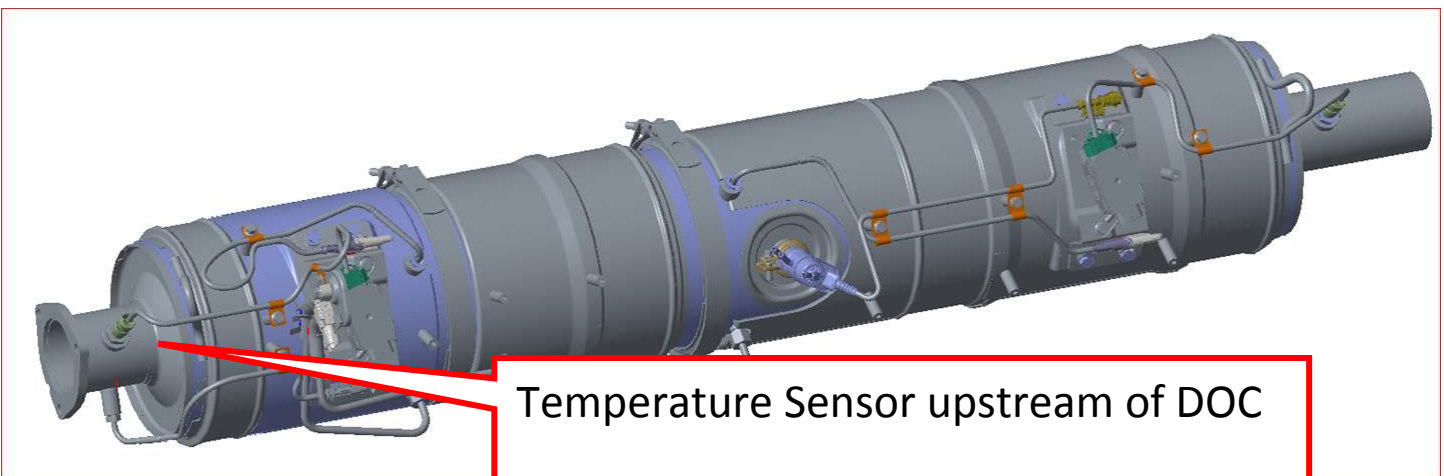
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of fuel by using this sensor. Fuel Temperature sensor has 2-pole connector and provides the analog input signal at A59. The sensing element is a thin film Pt resistor resistance of it changes according to exhaust temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.

#### Location & Component Image:





**P042A-85: DFC for Temperature upstream of DPF too high**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P042A-85 MIL- On CEL – Off Driver Warning Lamp – Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	NA

**Checkpoints:**

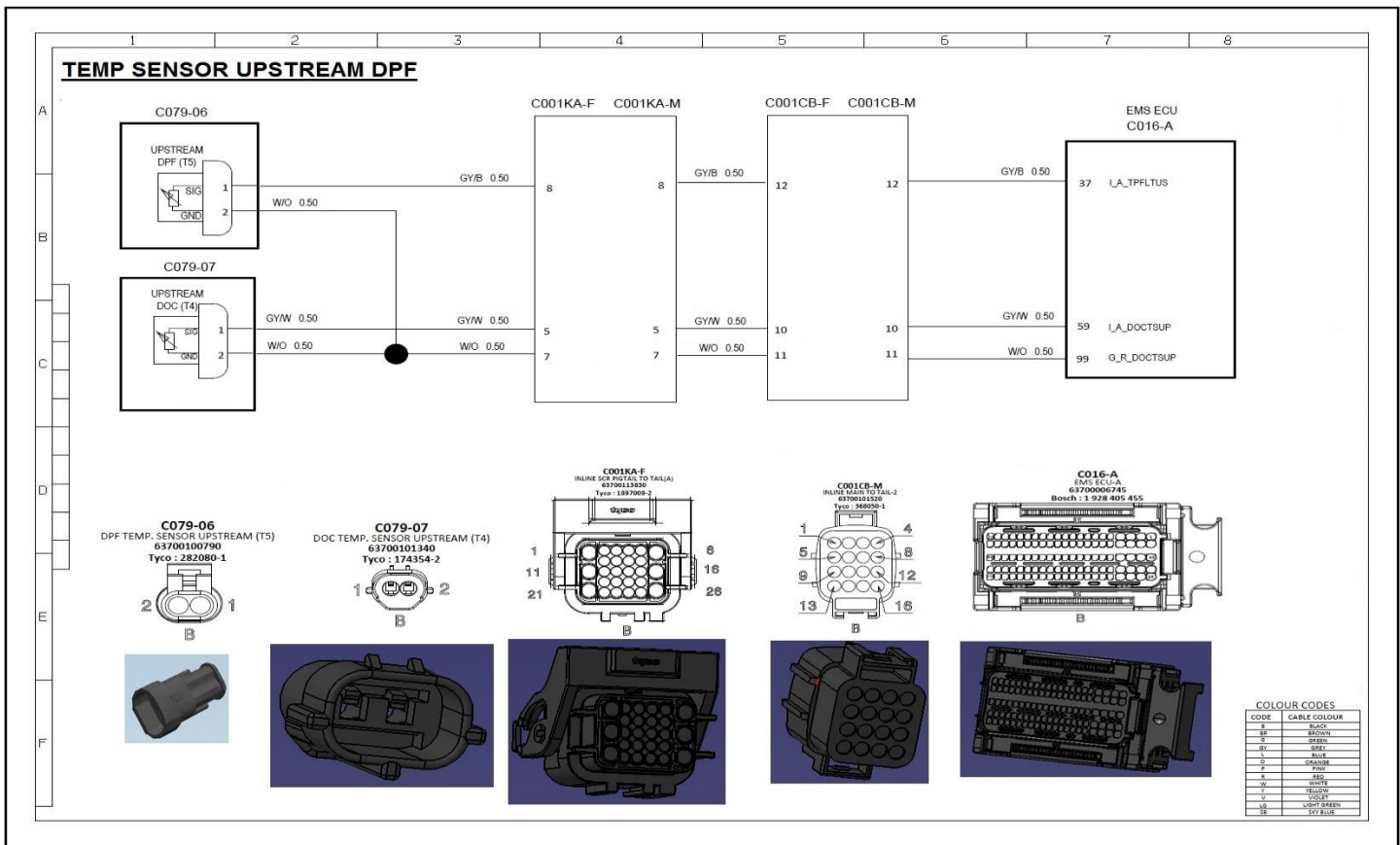
1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 8	
Step 4	Check continuity between Pin 1 & A37 & Pin 2 & A99.	
Step 5	If continuity is found ok proceed to step 8	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 8	
Step 8	Clear and check DTC	



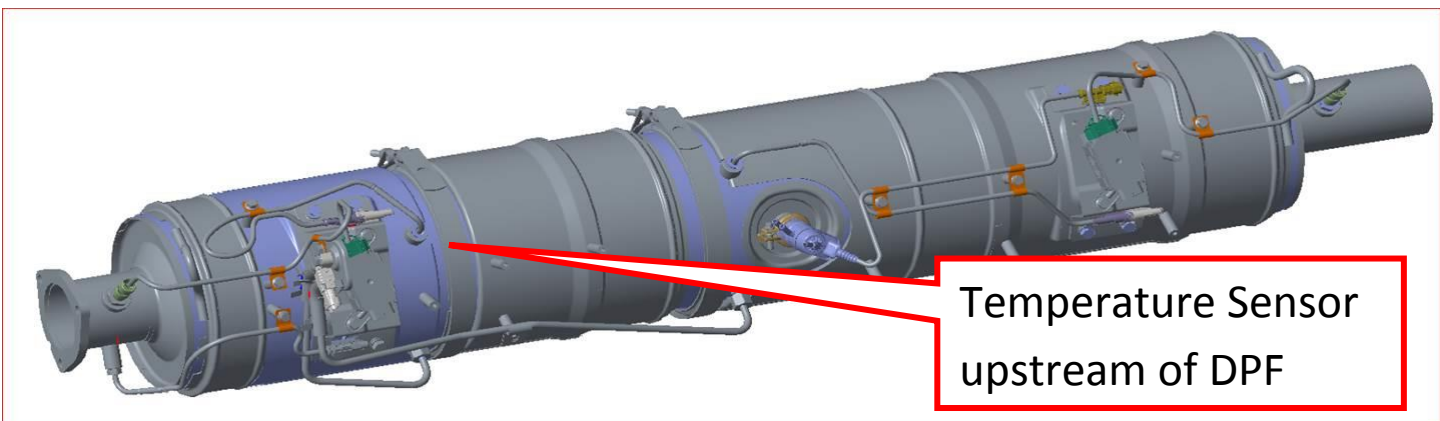
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of fuel by using this sensor. Fuel Temperature sensor has 2-pole connector and provides the analog input signal at A37. The sensing element is a thin film Pt resistor resistance of it changes according to exhaust temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.

#### Location & Component Image:







**P042A-84: DFC for Temperature upstream of DPF too low**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P042A-84 MIL- On CEL – Off Driver Warning Lamp – Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	NA

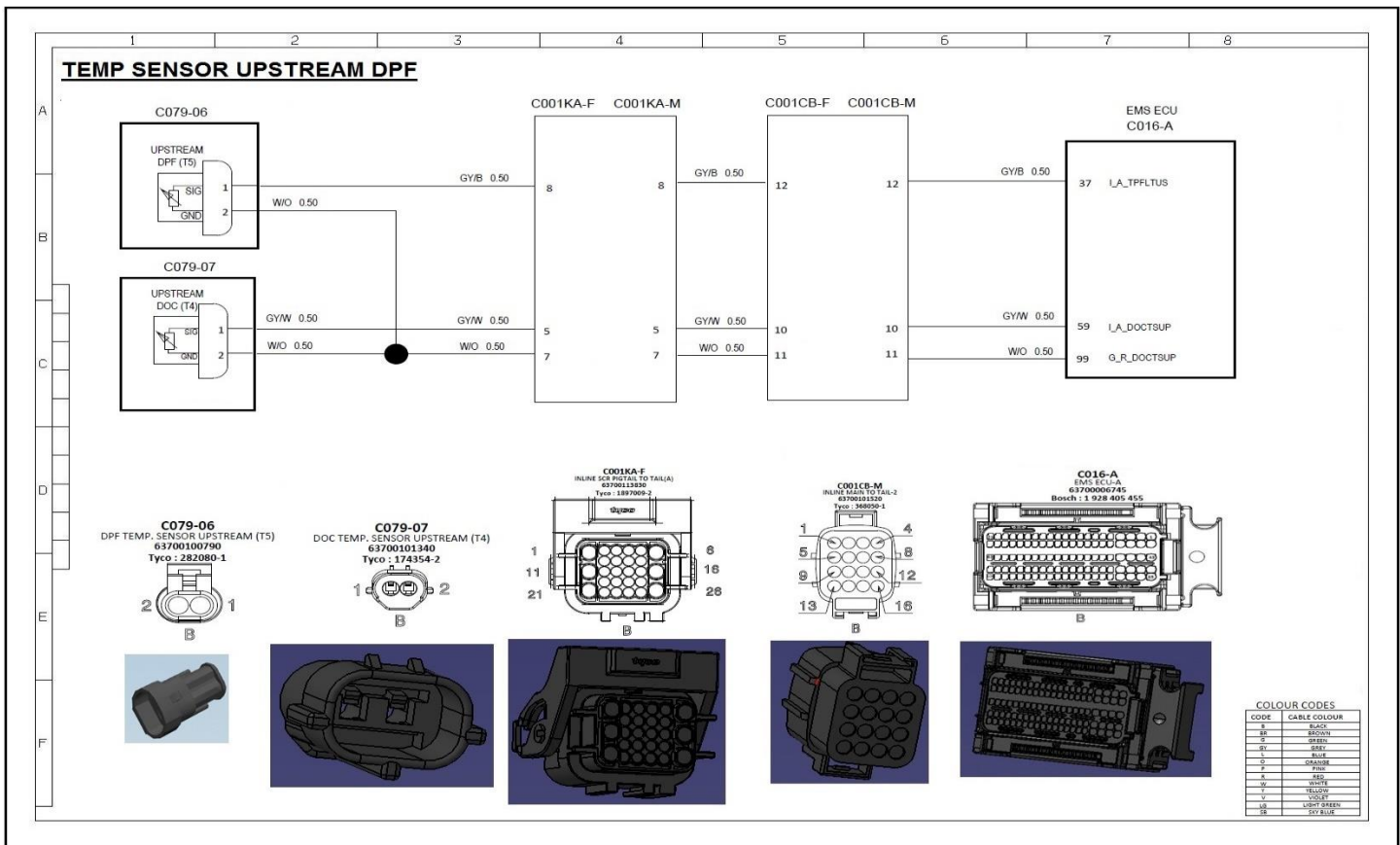
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 8	
Step 4	Check continuity between Pin 1 & A37 & Pin 2 & A99.	
Step 5	If continuity is found ok proceed to step 8	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 8	
Step 8	Clear and check DTC	

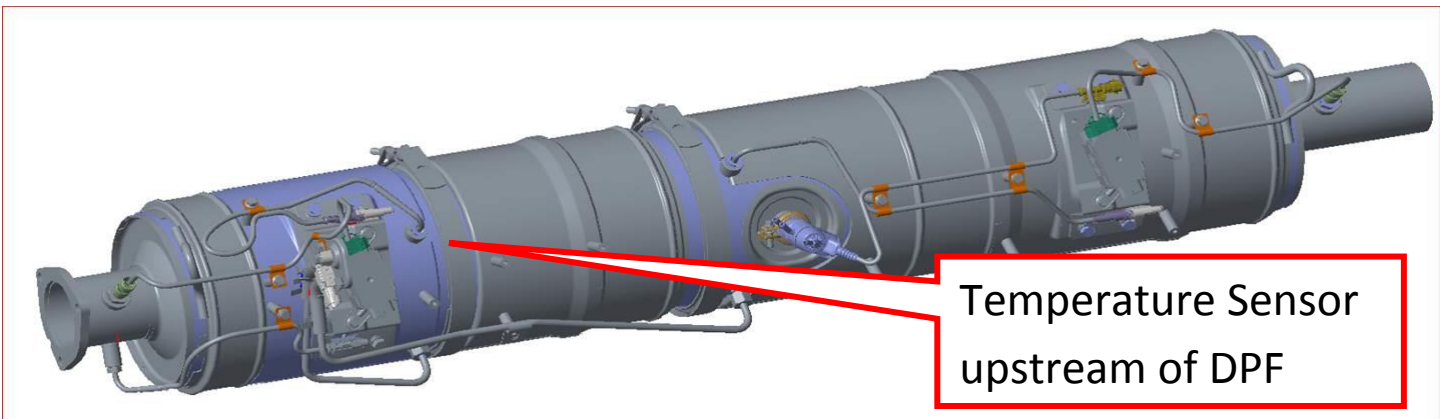
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of fuel by using this sensor. Fuel Temperature sensor has 2-pole connector and provides the analog input signal at A37. The sensing element is a thin film Pt resistor resistance of it changes according to exhaust temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.

#### Location & Component Image:





**P042D-00: DFC for Temperature sensor upstream of DPF Circuit open or shorted to Battery**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P042D-00 MIL- On CEL – Off Driver Warning Lamp – Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	NA

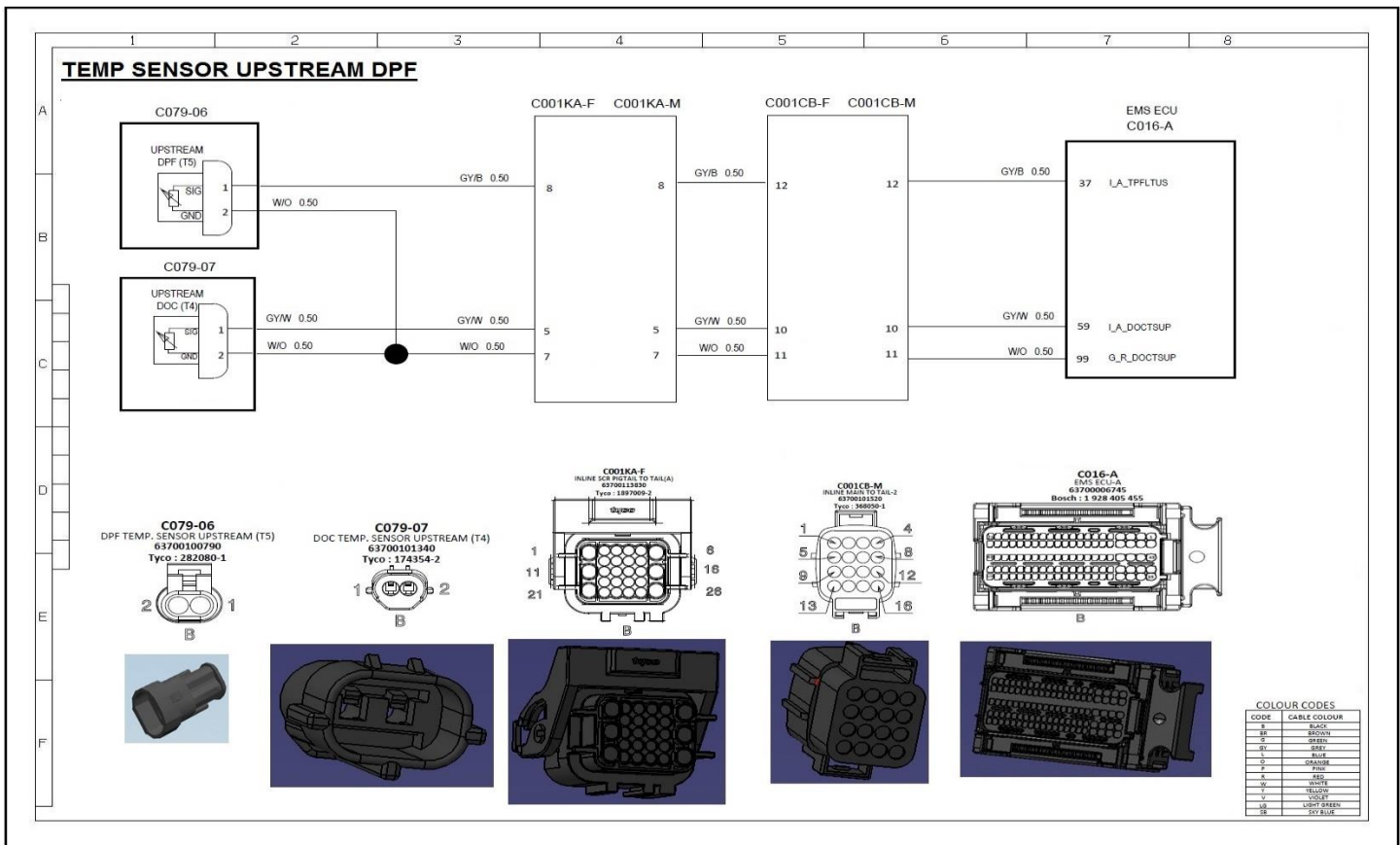
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 8	
Step 4	Check continuity between Pin 1 & A37 & Pin 2 & A99.	
Step 5	If continuity is found ok proceed to step 8	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 8	
Step 8	Clear and check DTC	

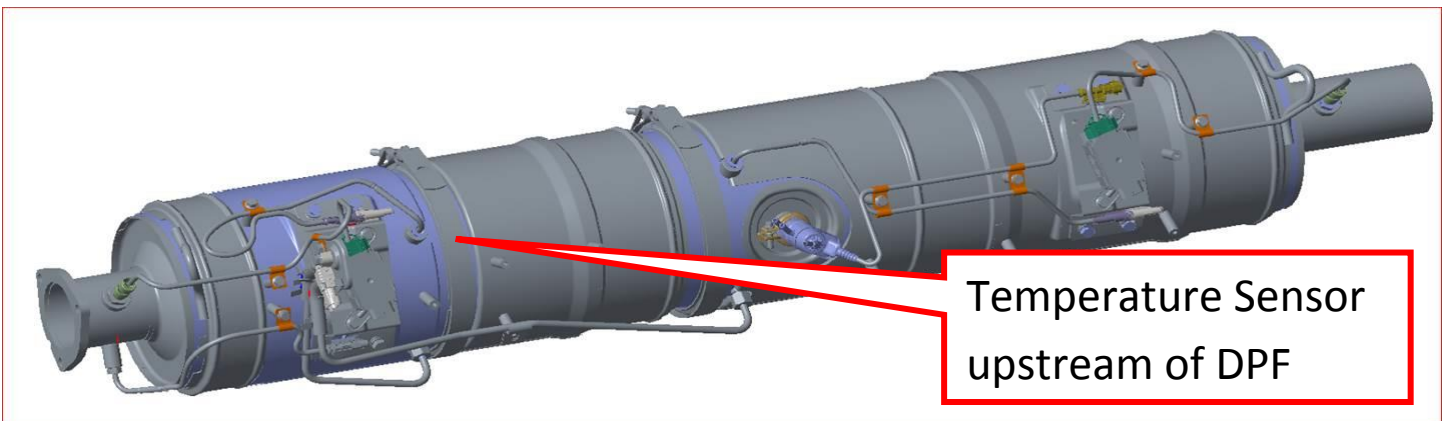
### Circuit Schematic Diagram:



### Circuit Description:

EMS measures the temperature of fuel by using this sensor. Fuel Temperature sensor has 2-pole connector and provides the analog input signal at A37. The sensing element is a thin film Pt resistor resistance of it changes according to exhaust temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.

### Location & Component Image:





**P042C-00: DFC for Temperature sensor upstream of DPF Circuit shorted to ground**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P042C-00 MIL- On CEL – Off Driver Warning Lamp – Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	NA

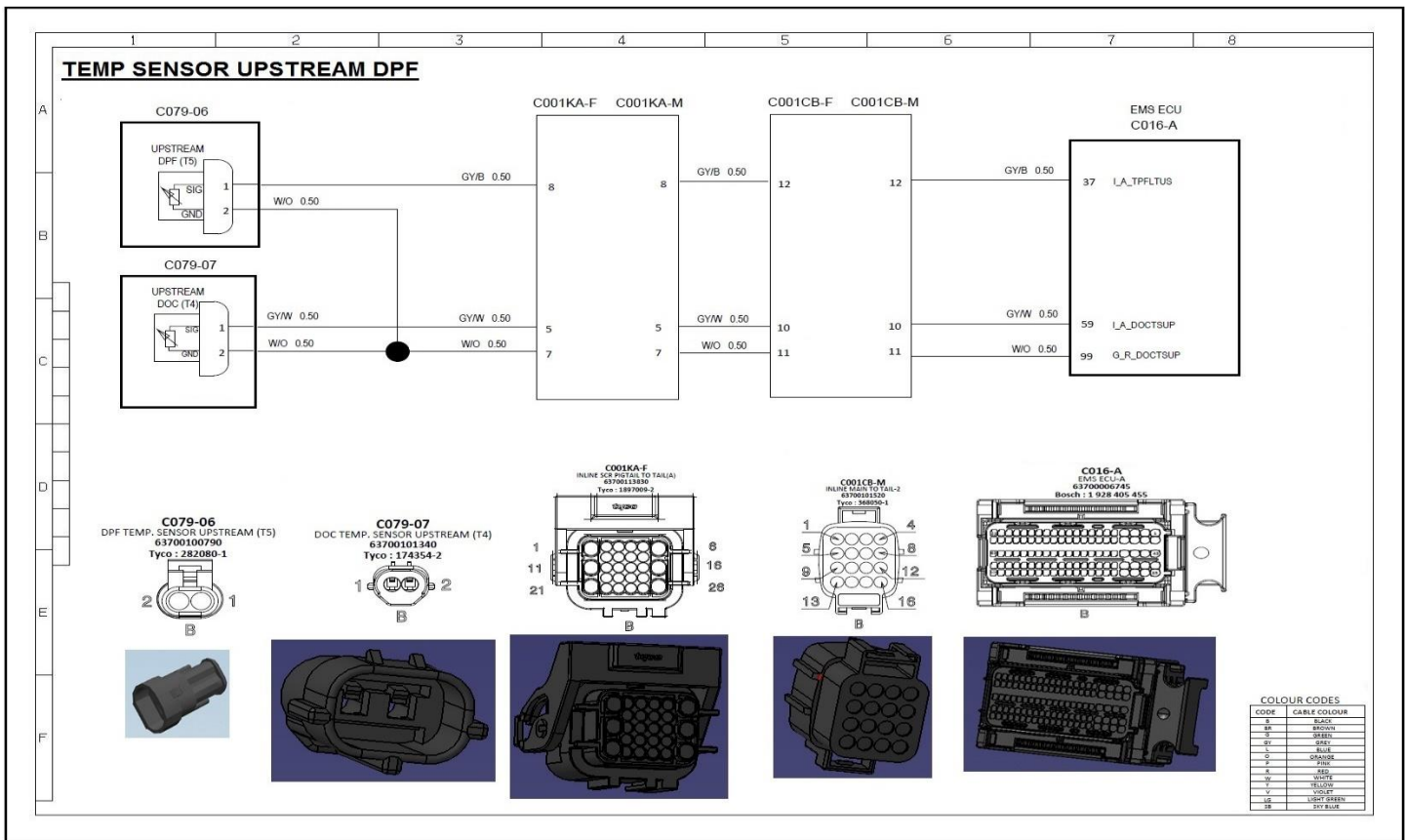
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 8	
Step 4	Check continuity between Pin 1 & A37 & Pin 2 & A99.	
Step 5	If continuity is found ok proceed to step 8	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 8	
Step 8	Clear and check DTC	

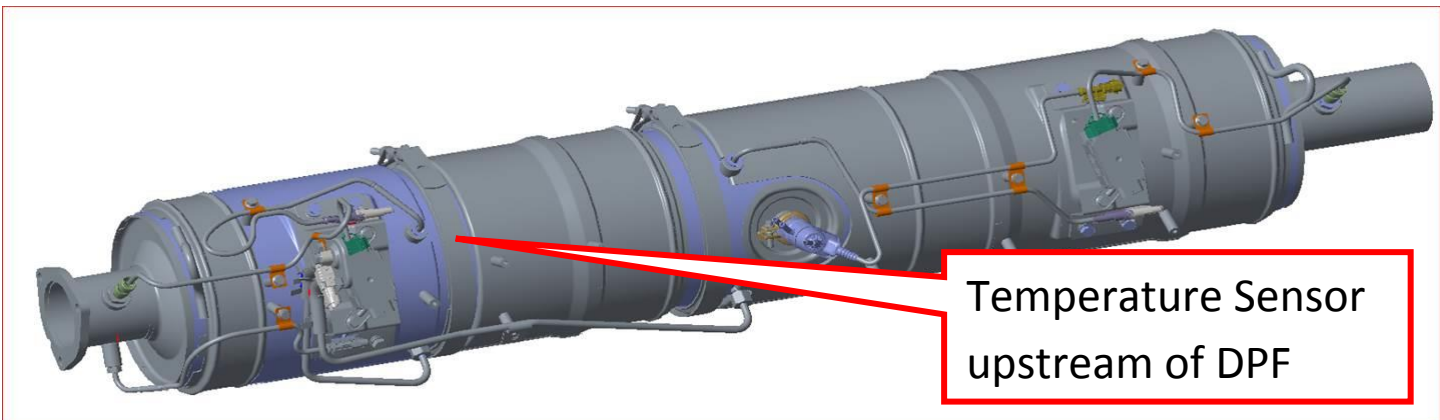
### Circuit Schematic Diagram:



### Circuit Description:

EMS measures the temperature of fuel by using this sensor. Fuel Temperature sensor has 2-pole connector and provides the analog input signal at A37. The sensing element is a thin film Pt resistor resistance of it changes according to exhaust temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.

### Location & Component Image:





**P242A-85: DFC for Temperature upstream of SCR too high**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P242A-85 MIL- On CEL – Off Driver Warning Lamp – Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	NA

**Checkpoints:**

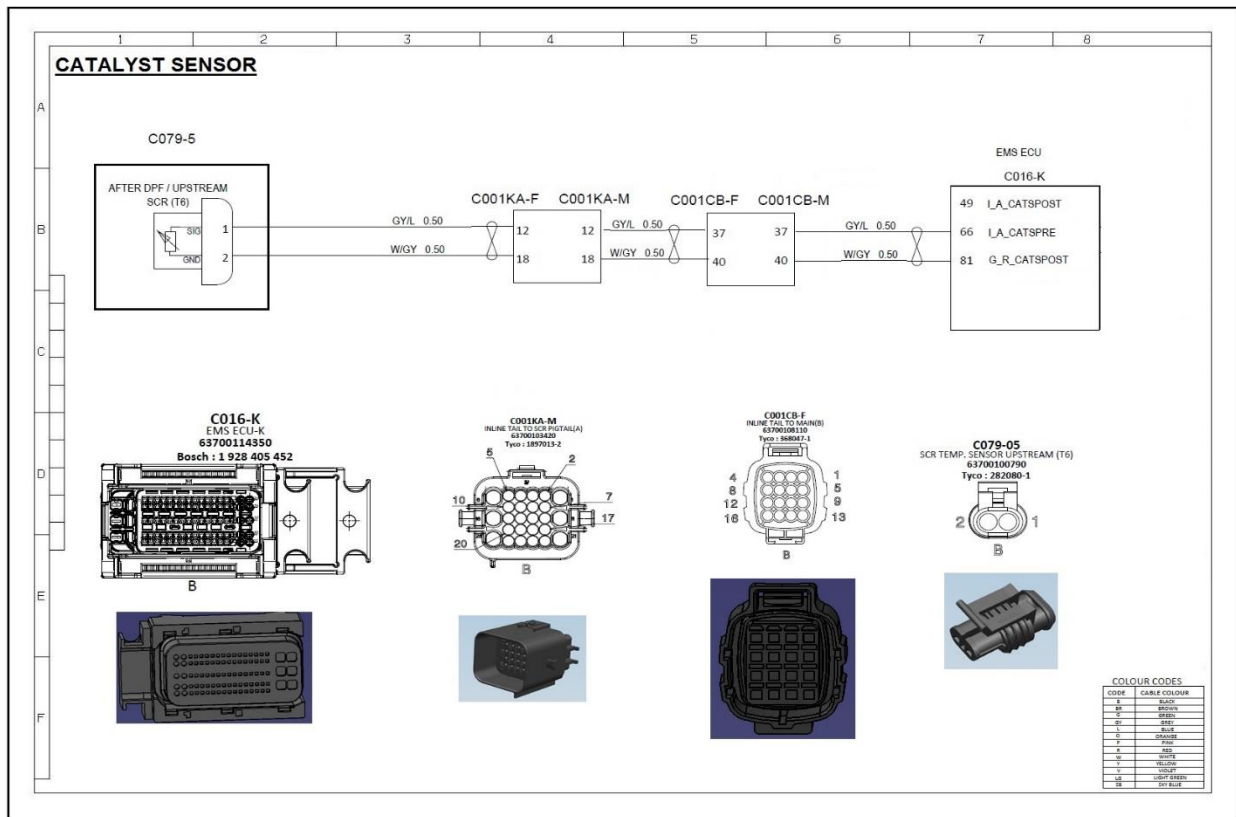
1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & K66, Pin 2 & K81.	
Step 3	If continuity is found ok proceed to step 8	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 8	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 8	
Step 8	Clear and check DTC	



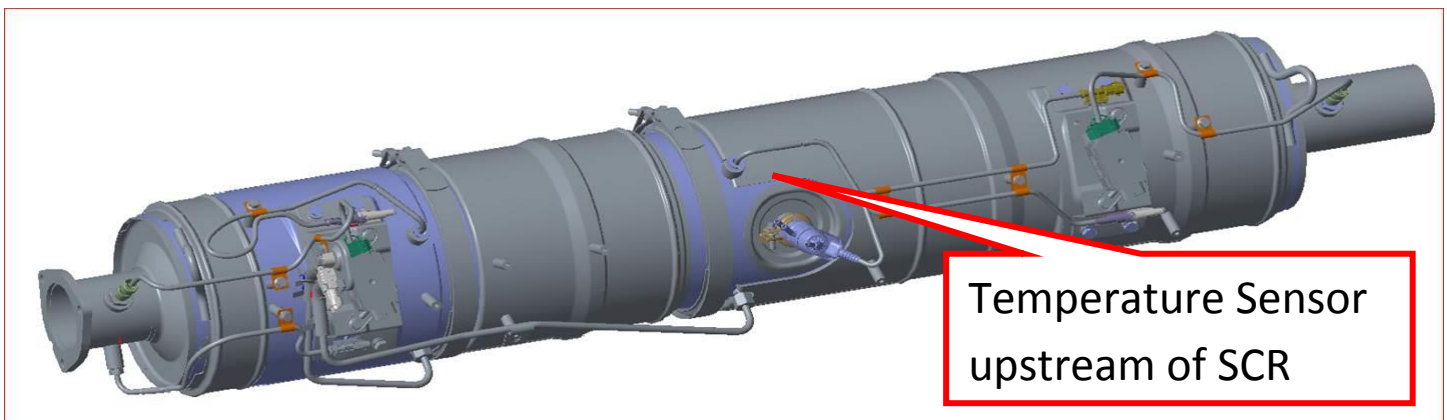
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of fuel by using this sensor. Fuel Temperature sensor has 2-pole connector and provides the analog input signal at K66. The sensing element is a thin film Pt resistor resistance of it changes according to exhaust temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.

#### Location & Component Image:





**P242A-84: DFC for Temperature upstream of SCR too low**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P242A-84 MIL- On CEL – Off Driver Warning Lamp – Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	NA

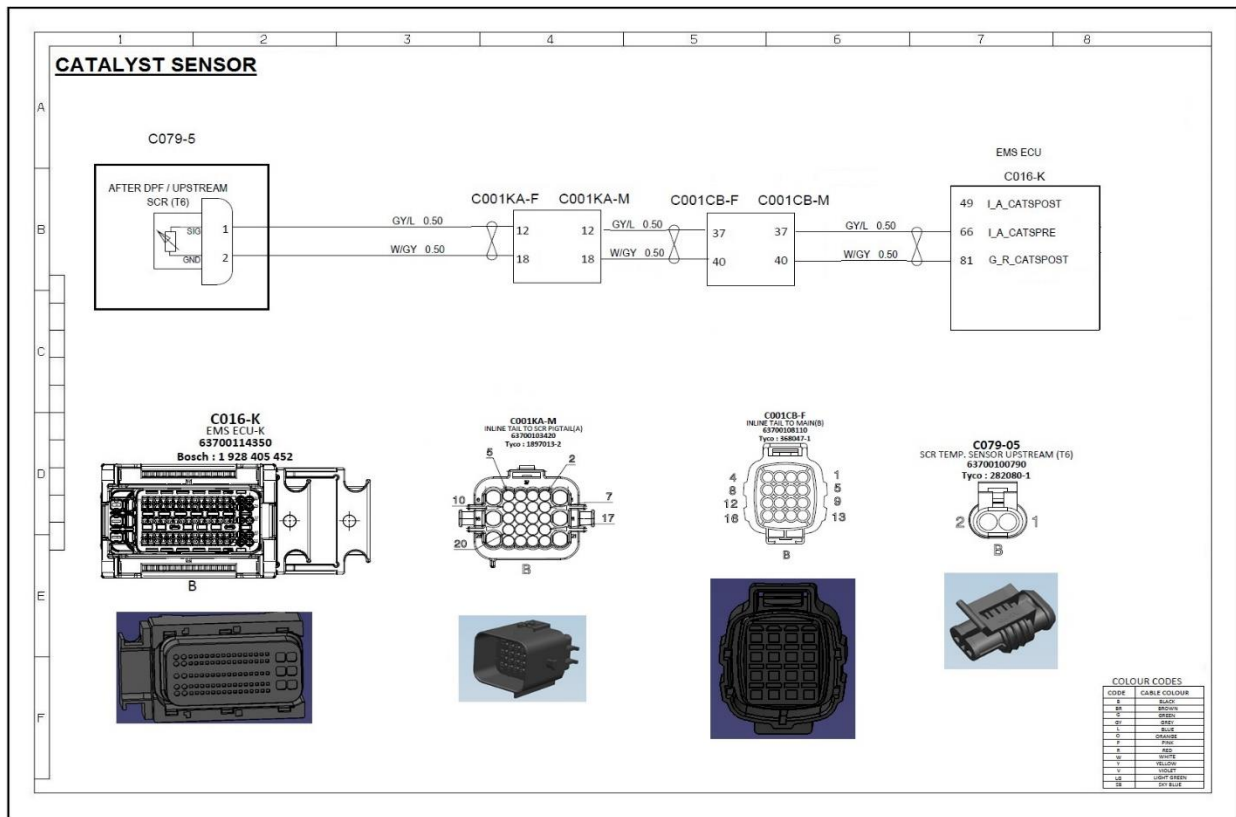
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & K66, Pin 2 & K81.	
Step 3	If continuity is found ok proceed to step 8	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 8	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 8	
Step 8	Clear and check DTC	

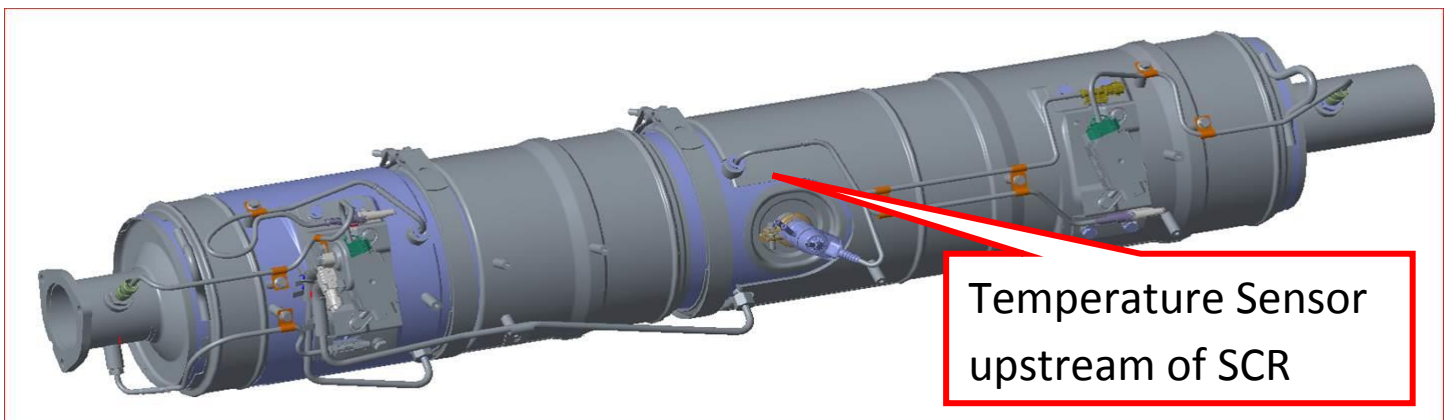
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of fuel by using this sensor. Fuel Temperature sensor has 2-pole connector and provides the analog input signal at K66. The sensing element is a thin film Pt resistor resistance of it changes according to exhaust temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.

#### Location & Component Image:





**P242D-00: DFC for Temperature sensor upstream of SCR Circuit open or shorted to Battery**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P242A-00 MIL- On CEL – Off Driver Warning Lamp – Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	NA

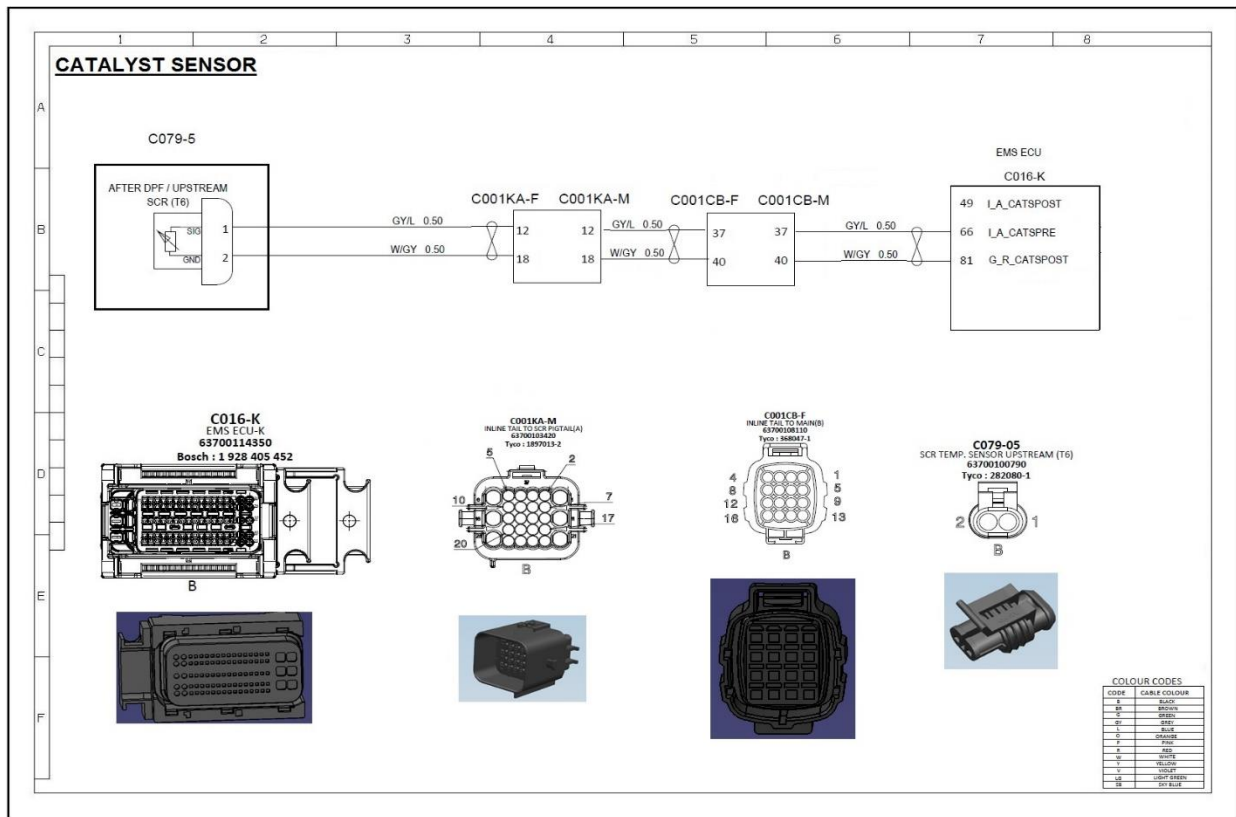
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & K66, Pin 2 & K81.	
Step 3	If continuity is found ok proceed to step 8	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 8	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 8	
Step 8	Clear and check DTC	

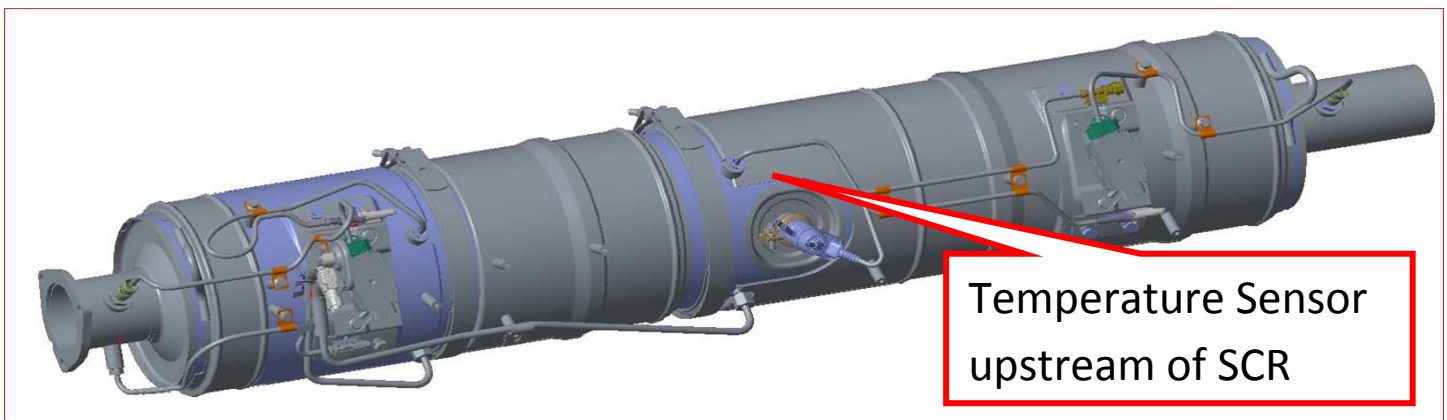
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of fuel by using this sensor. Fuel Temperature sensor has 2-pole connector and provides the analog input signal at K66. The sensing element is a thin film Pt resistor resistance of it changes according to exhaust temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.

#### Location & Component Image:





**P242C-00: DFC for Temperature sensor upstream of SCR Circuit shorted to ground**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P242C-00 MIL- On CEL – Off Driver Warning Lamp – Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	NA

**Checkpoints:**

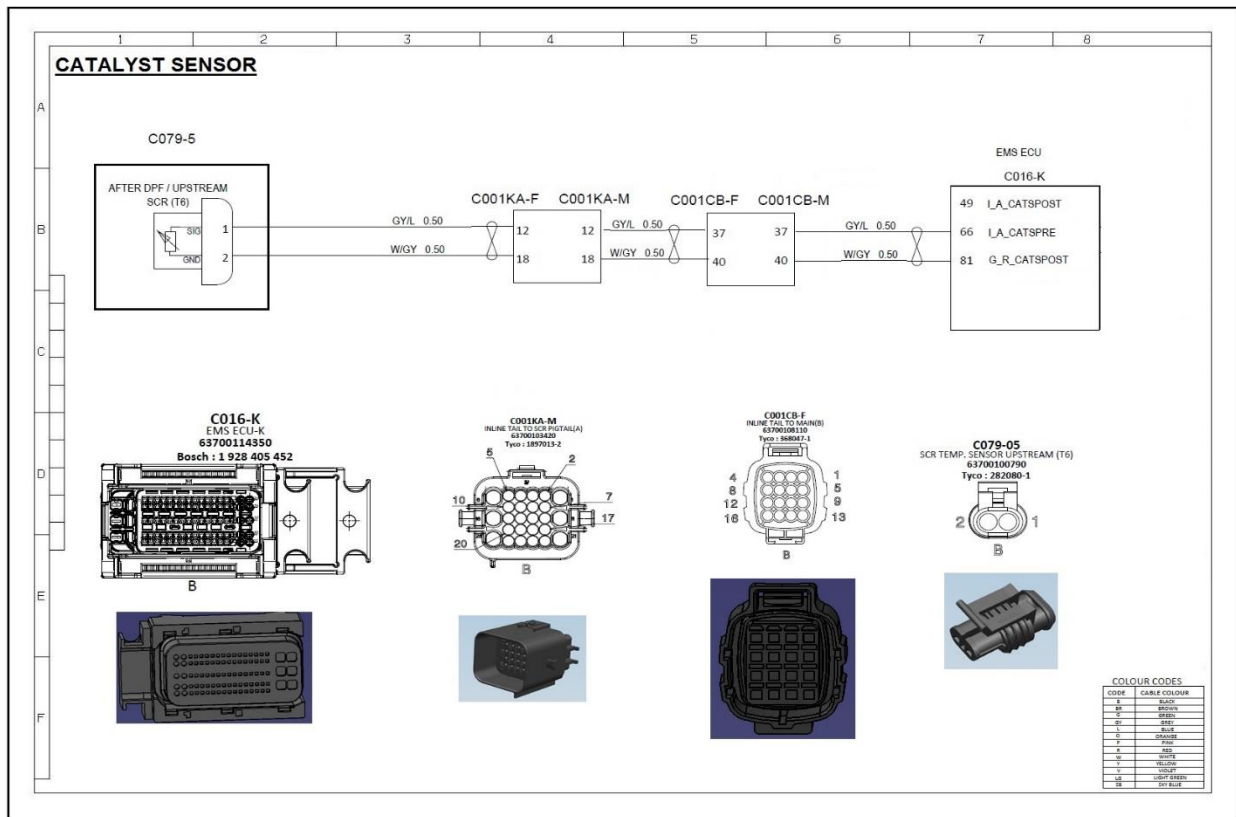
1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & K66, Pin 2 & K81.	
Step 3	If continuity is found ok proceed to step 8	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 8	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 8	
Step 8	Clear and check DTC	



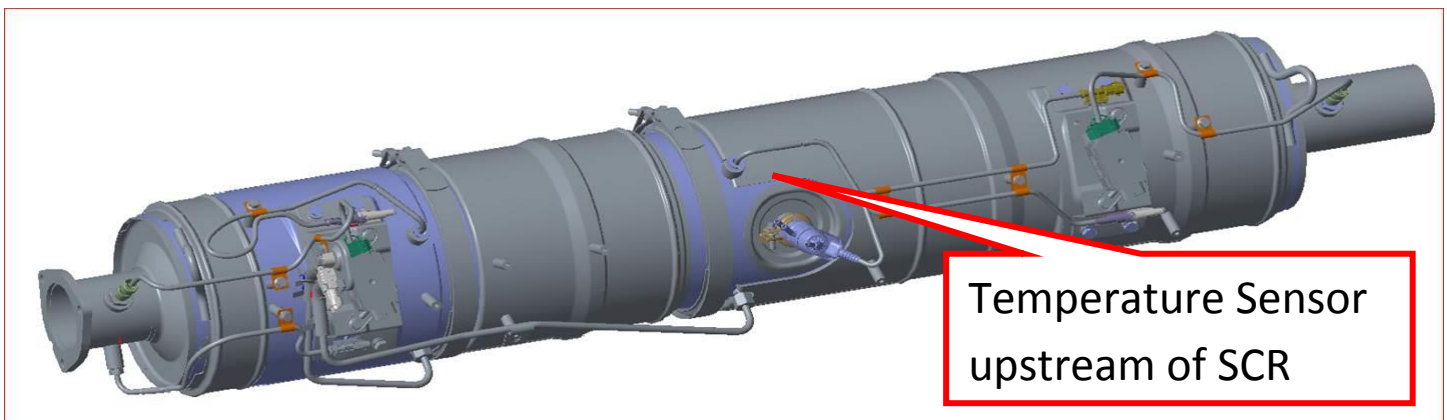
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of fuel by using this sensor. Fuel Temperature sensor has 2-pole connector and provides the analog input signal at K66. The sensing element is a thin film Pt resistor resistance of it changes according to exhaust temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.

#### Location & Component Image:







## P2452-85: DFC for Delta Pressure Sensor physical range high

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P2452-85 MIL- On CEL – Off Driver Warning Lamp – Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	NA

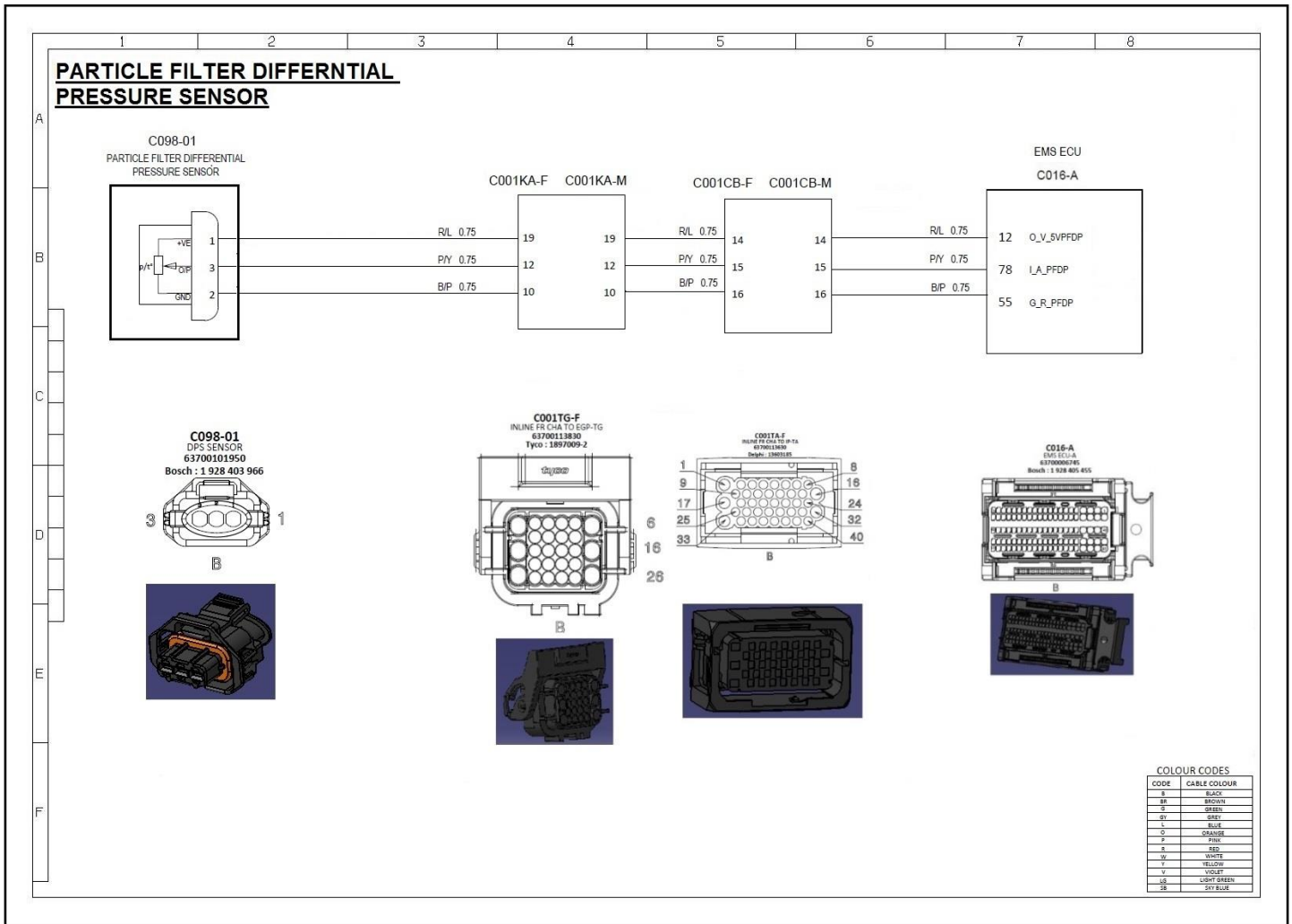
### Checkpoints:

1. Check the wiring harness
2. Check sensor
3. Check connector

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & A12, Pin 2 & A70, Pin 3 & A55.	
Step 3	If continuity is found ok proceed to step 9	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 6	If found loose, retain proper fitment and go to step 9	
Step 7	If error persists, check the sensor for any damage/failure	
Step 8	If found damaged or failed change the sensor and go to step 9	
Step 9	Clear and check DTC	

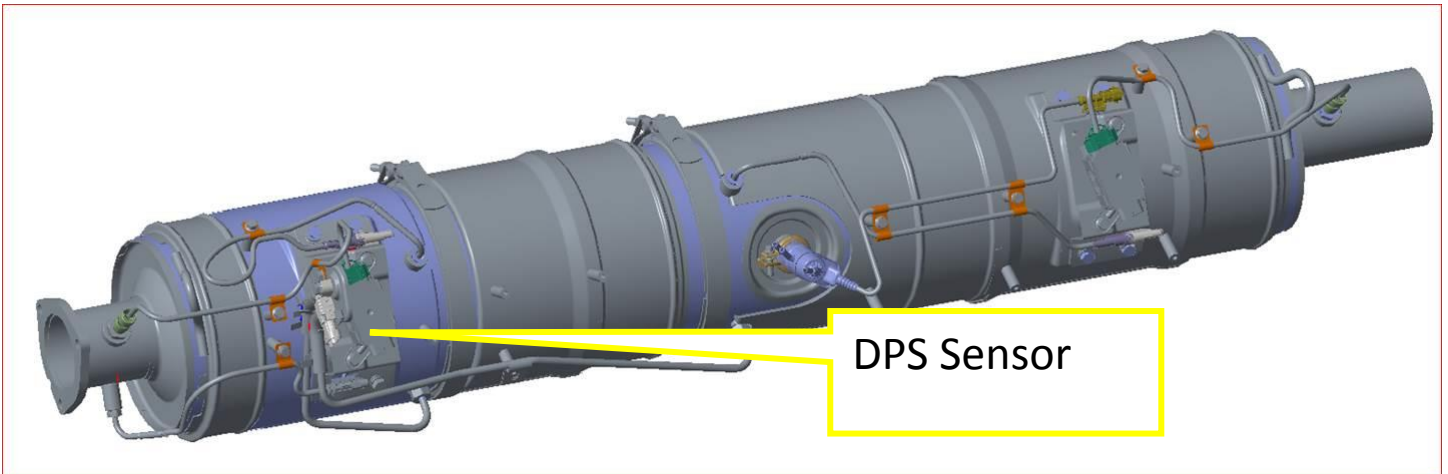
### Circuit Schematic Diagram:



### Circuit Description:

Differential Pressure Sensor used to infer the exhaust gas flow through the diesel particle filter by measuring the differential pressure across the filter. The exhaust gas flow is a function of the amount of blockage due to particulate matter (PM) accumulation within the diesel particle filter. As the filter accumulates PM the flow decreases, resulting in an increased pressure drop across the filter. P2 represents the upstream (intake) side of the filter and P1 represents the downstream (exhaust) side of the filter. This sensor will provide an analog output voltage proportional to the differential pressure across the filter ( $dP = P2 - P1$ ). At a predefined pressure the ECU will initiate a regenerative process to burn-off the PM from the filter, restoring its flow.

Location & Component Image:





**P2452-84: DFC for Delta Pressure Sensor physical range low**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2452-84 MIL- On CEL – Off Driver Warning Lamp – Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	NA

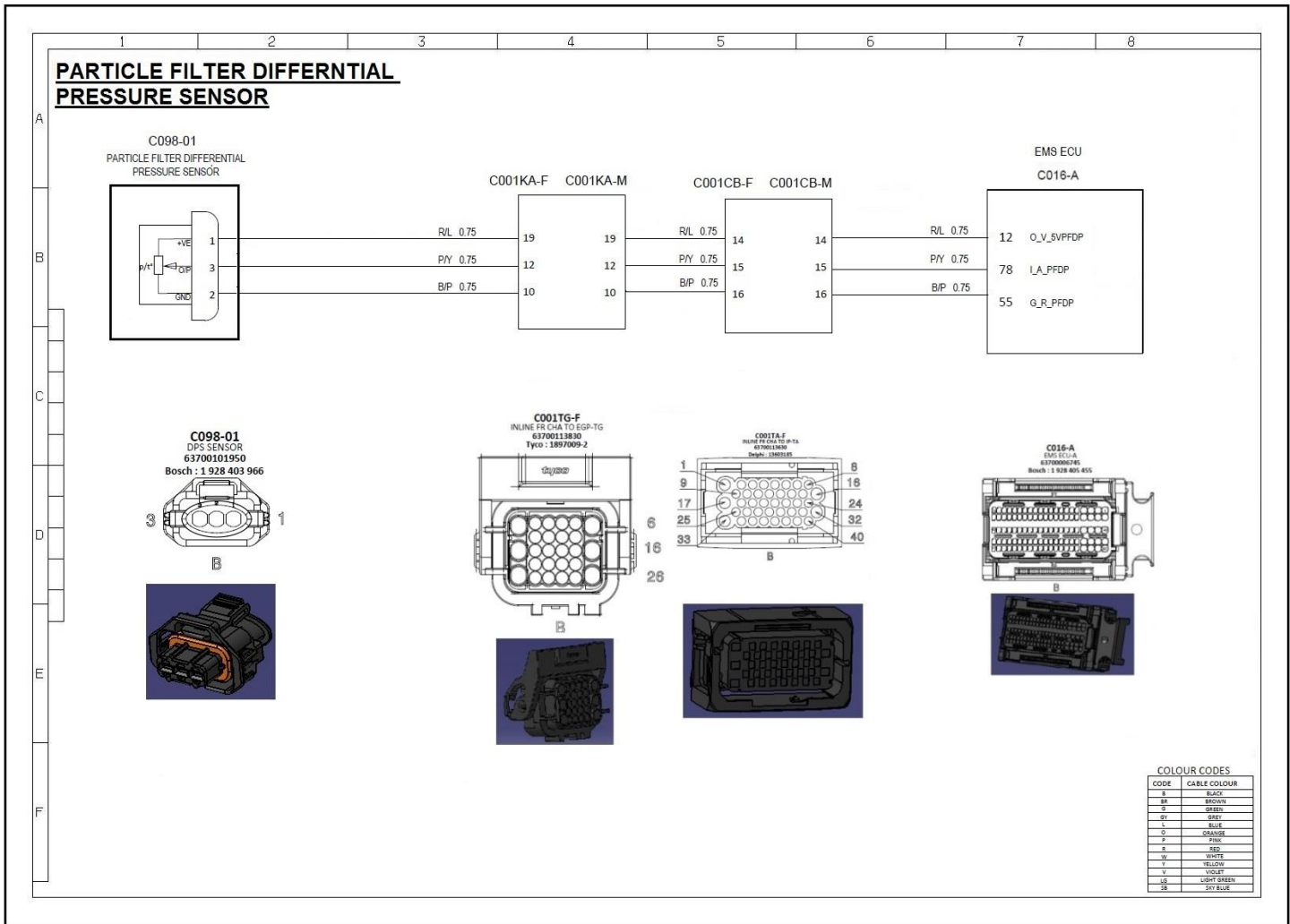
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & A12, Pin 2 & A70, Pin 3 & A55.	
Step 3	If continuity is found ok proceed to step 9	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 6	If found loose, retain proper fitment and go to step 9	
Step 7	If error persists, check the sensor for any damage/failure	
Step 8	If found damaged or failed change the sensor and go to step 9	
Step 9	Clear and check DTC	

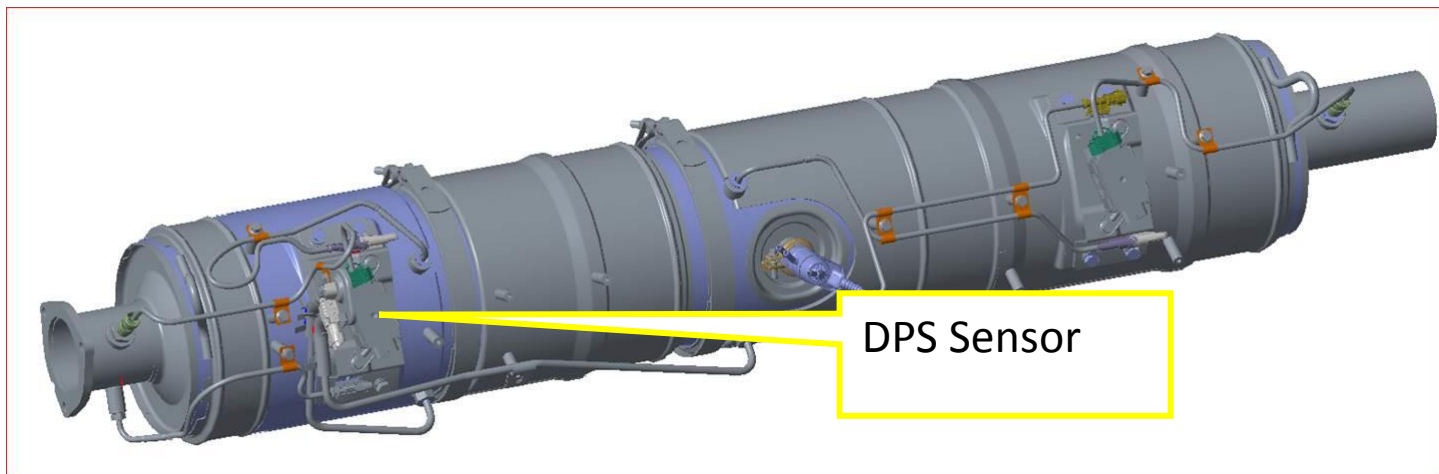
#### Circuit Schematic Diagram:



#### Circuit Description:

Differential Pressure Sensor used to infer the exhaust gas flow through the diesel particle filter by measuring the differential pressure across the filter. The exhaust gas flow is a function of the amount of blockage due to particulate matter (PM) accumulation within the diesel particle filter. As the filter accumulates PM the flow decreases, resulting in an increased pressure drop across the filter. P2 represents the upstream (intake) side of the filter and P1 represents the downstream (exhaust) side of the filter. This sensor will provide an analog output voltage proportional to the differential pressure across the filter ( $dP = P2 - P1$ ). At a predefined pressure the ECU will initiate a regenerative process to burn-off the PM from the filter, restoring its flow.

Location & Component Image:





**P2455-00: DFC for Delta Pressure Sensor Circuit open or shorted to Battery**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2455-00 MIL- On CEL – Off Driver Warning Lamp – Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	NA

**Checkpoints:**

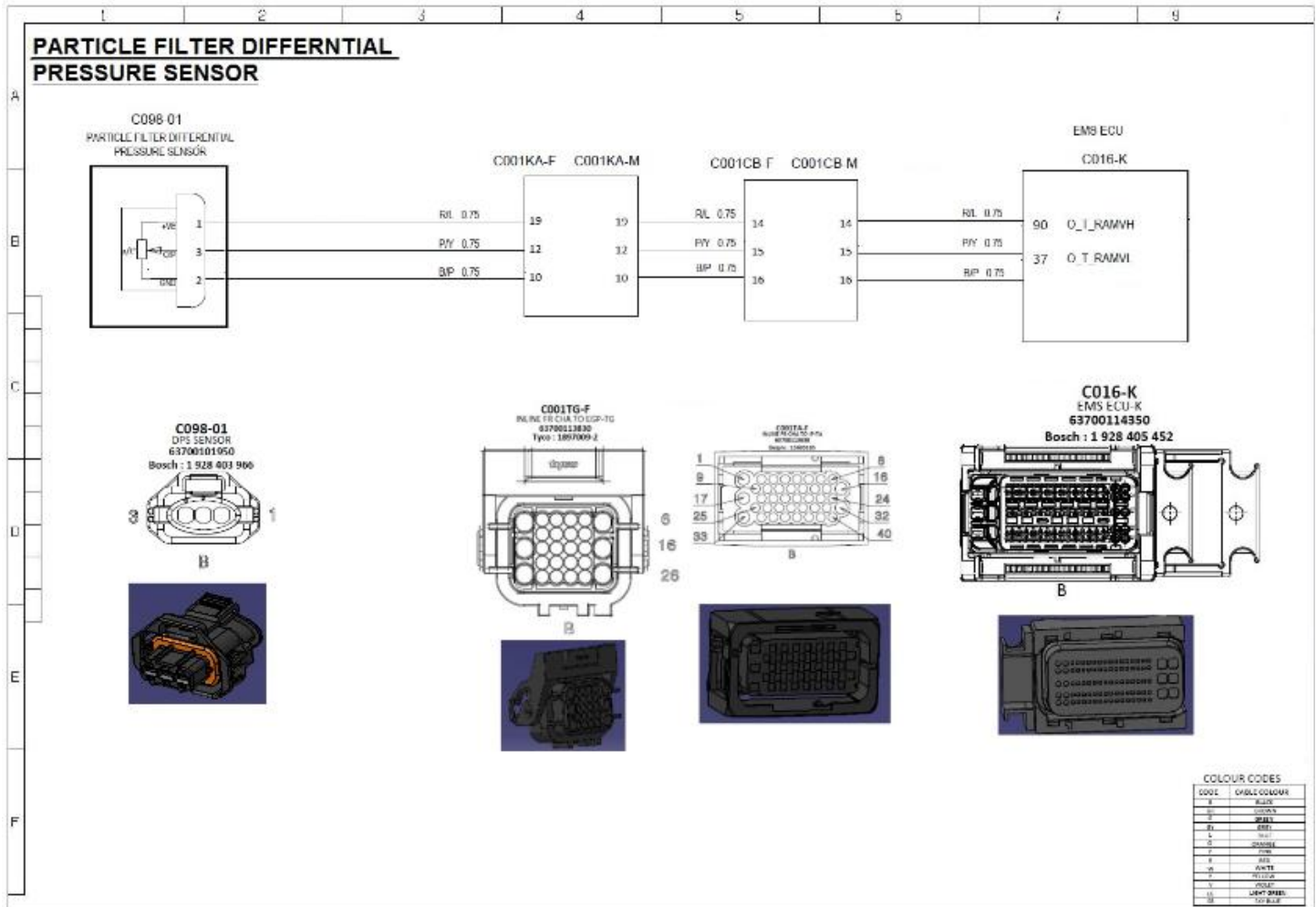
1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & A12, Pin 2 & A70, Pin 3 & A55.	
Step 3	If continuity is found ok proceed to step 8	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 8	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 8	
Step 8	Clear and check DTC	



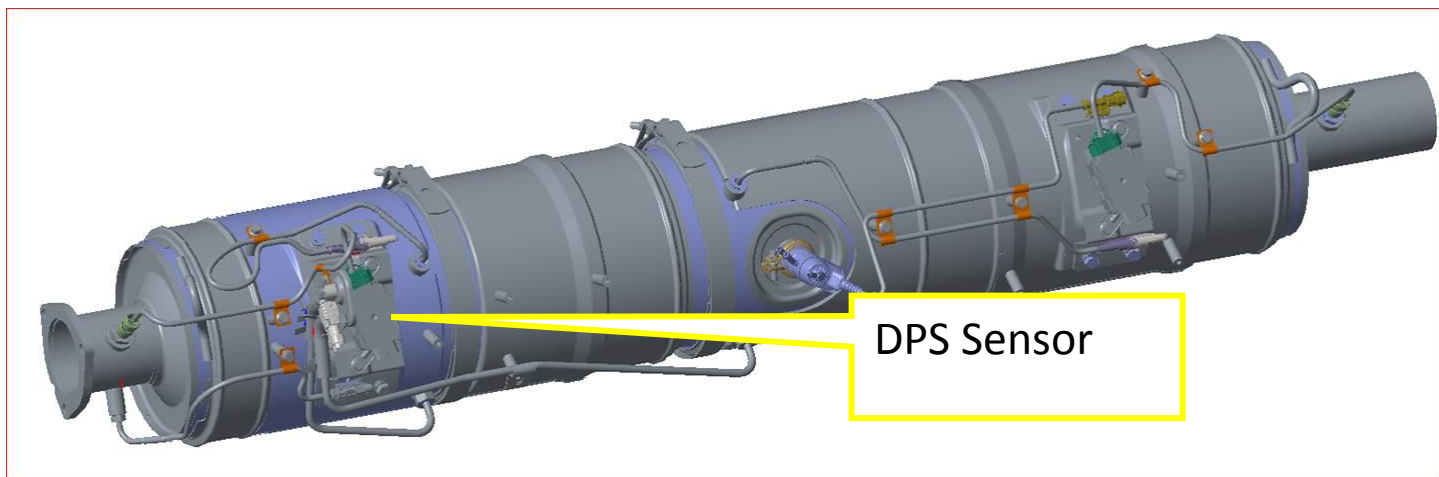
#### Circuit Schematic Diagram:



#### Circuit Description:

Differential Pressure Sensor used to infer the exhaust gas flow through the diesel particle filter by measuring the differential pressure across the filter. The exhaust gas flow is a function of the amount of blockage due to particulate matter (PM) accumulation within the diesel particle filter. As the filter accumulates PM the flow decreases, resulting in an increased pressure drop across the filter. P2 represents the upstream (intake) side of the filter and P1 represents the downstream (exhaust) side of the filter. This sensor will provide an analog output voltage proportional to the differential pressure across the filter ( $dP = P2 - P1$ ). At a predefined pressure the ECU will initiate a regenerative process to burn-off the PM from the filter, restoring its flow.

Location & Component Image:





**P2454-00: DFC for Differential Pressure Sensor Circuit shorted to ground**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2454-00 MIL- On CEL – Off Driver Warning Lamp – Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	NA

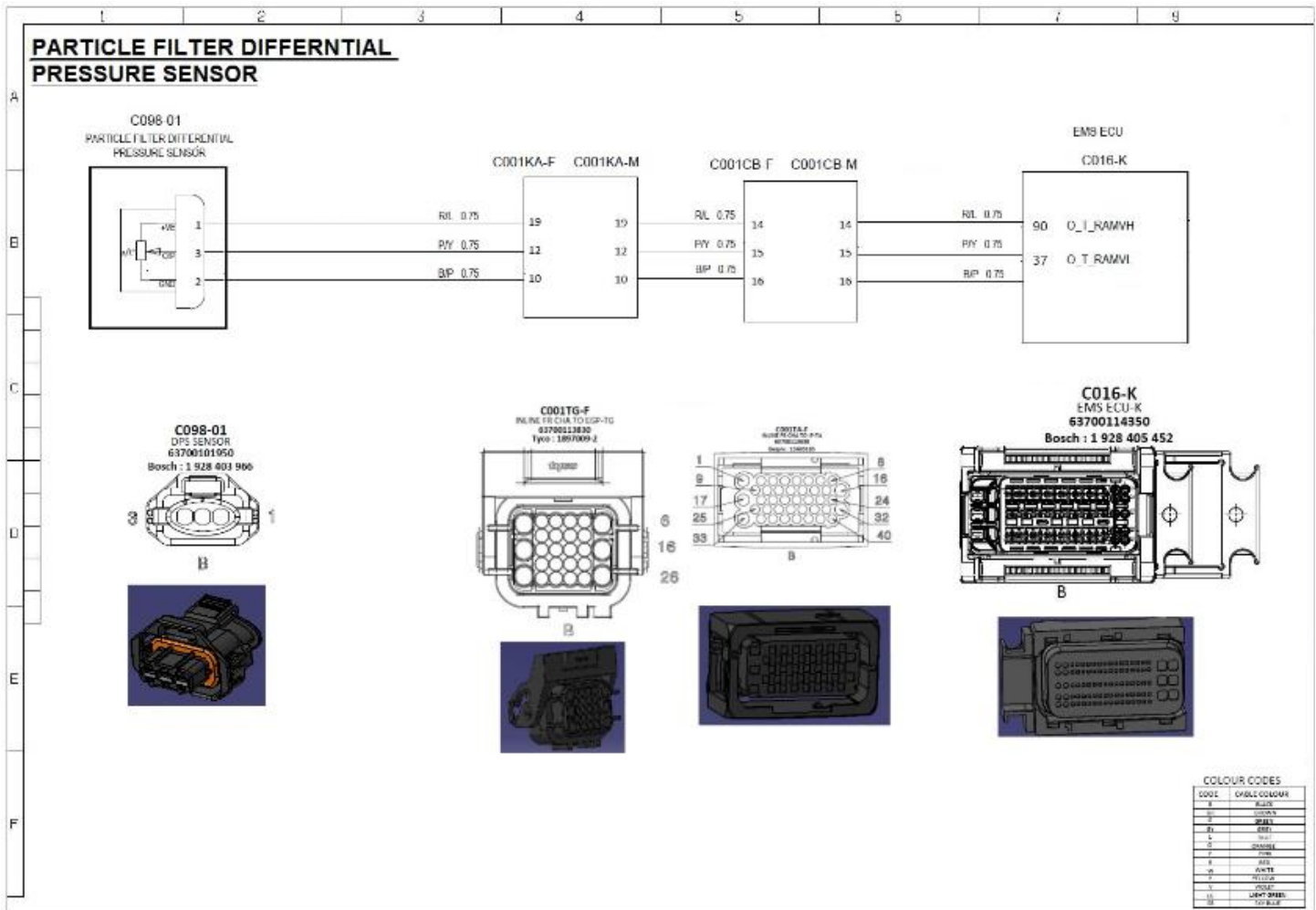
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & A12, Pin 2 & A70, Pin 3 & A55.	
Step 3	If continuity is found ok proceed to step 8	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 8	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 8	
Step 8	Clear and check DTC	

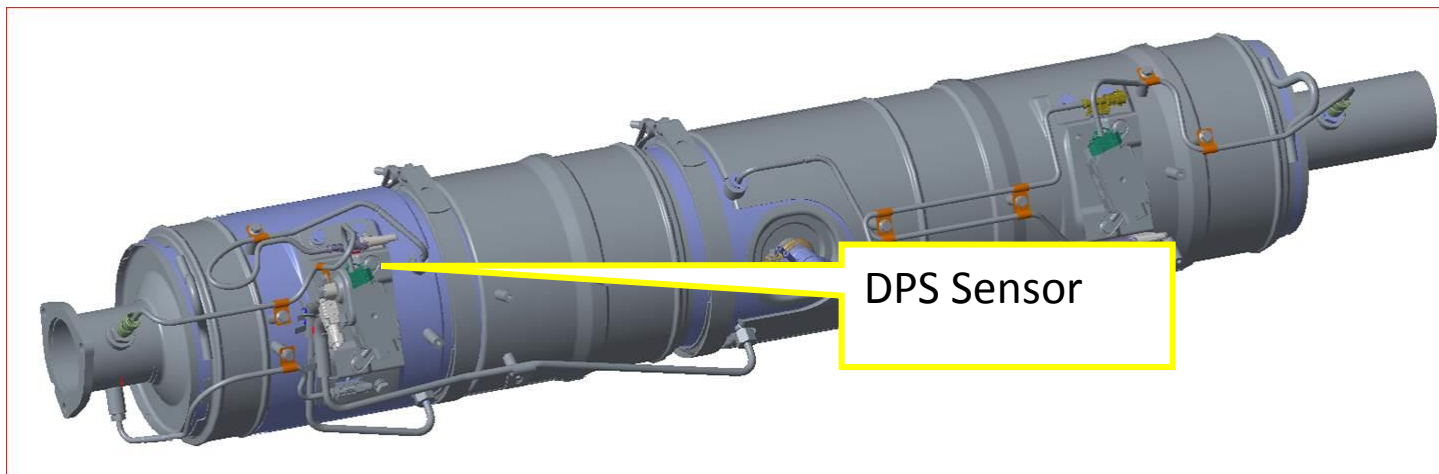
#### Circuit Schematic Diagram:



#### Circuit Description:

Differential Pressure Sensor used to infer the exhaust gas flow through the diesel particle filter by measuring the differential pressure across the filter. The exhaust gas flow is a function of the amount of blockage due to particulate matter (PM) accumulation within the diesel particle filter. As the filter accumulates PM the flow decreases, resulting in an increased pressure drop across the filter. P2 represents the upstream (intake) side of the filter and P1 represents the downstream (exhaust) side of the filter. This sensor will provide an analog output voltage proportional to the differential pressure across the filter ( $dP = P2 - P1$ ). At a predefined pressure the ECU will initiate a regenerative process to burn-off the PM from the filter, restoring its flow.

Location & Component Image:





## P2200-86: DFC for NOx Sensor Circuit Upstream Sensor Signal Incorrect

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P2200-86 MIL- On CEL – Off Driver Warning Lamp – ON	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

### Checkpoints:

1. Check the wiring harness
2. Check sensor
3. Check connector

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 6	
Step 4	If error persists, check the sensor for any damage/failure	
Step 5	If found damaged or failed change the sensor and go to step 6	
Step 6	Clear and check DTC	



**P2200-13: DFC for NOx Sensor Circuit Upstream Sensor Signal not received**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2200-13 MIL- On CEL – Off Driver Warning Lamp – ON	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 6	
Step 4	If error persists, check the sensor for any damage/failure	
Step 5	If found damaged or failed change the sensor and go to step 6	
Step 6	Clear and check DTC	





**P2201-76: DFC for NOx Sensor Circuit Upstream Sensor Signal not plausible**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2201-76 MIL- On CEL – Off Driver Warning Lamp – ON	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 6	
Step 4	If error persists, check the sensor for any damage/failure	
Step 5	If found damaged or failed change the sensor and go to step 6	
Step 6	Clear and check DTC	



## P229E-86: DFC for NOx Sensor Circuit Downstream Sensor Signal Incorrect

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P229E-86 MIL- On CEL – Off Driver Warning Lamp – ON	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

### Checkpoints:

1. Check the wiring harness
2. Check sensor
3. Check connector

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 6	
Step 4	If error persists, check the sensor for any damage/failure	
Step 5	If found damaged or failed change the sensor and go to step 6	
Step 6	Clear and check DTC	



**P229E-13: DFC for NOx Sensor Circuit Downstream Sensor Signal not received**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P229E-13 MIL- On CEL – Off Driver Warning Lamp – ON	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 6	
Step 4	If error persists, check the sensor for any damage/failure	
Step 5	If found damaged or failed change the sensor and go to step 6	
Step 6	Clear and check DTC	



**P229F-76: DFC for NOx Sensor Circuit Downstream Sensor Signal not plausible**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P229F-76 MIL- On CEL – Off Driver Warning Lamp – ON	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 6	
Step 4	If error persists, check the sensor for any damage/failure	
Step 5	If found damaged or failed change the sensor and go to step 6	
Step 6	Clear and check DTC	

**P203B-85: DFC for Urea Level signal incorrect: too high**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P203B-85 MIL- On CEL – Off Driver Warning Lamp – ON	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

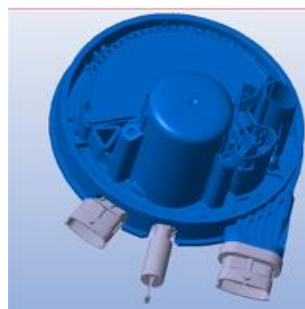
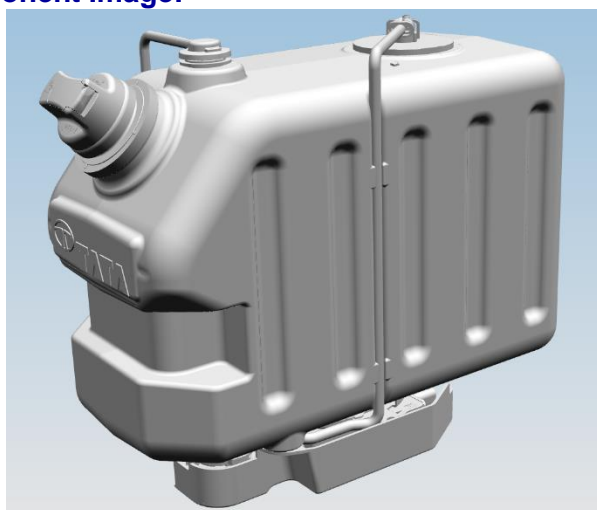
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

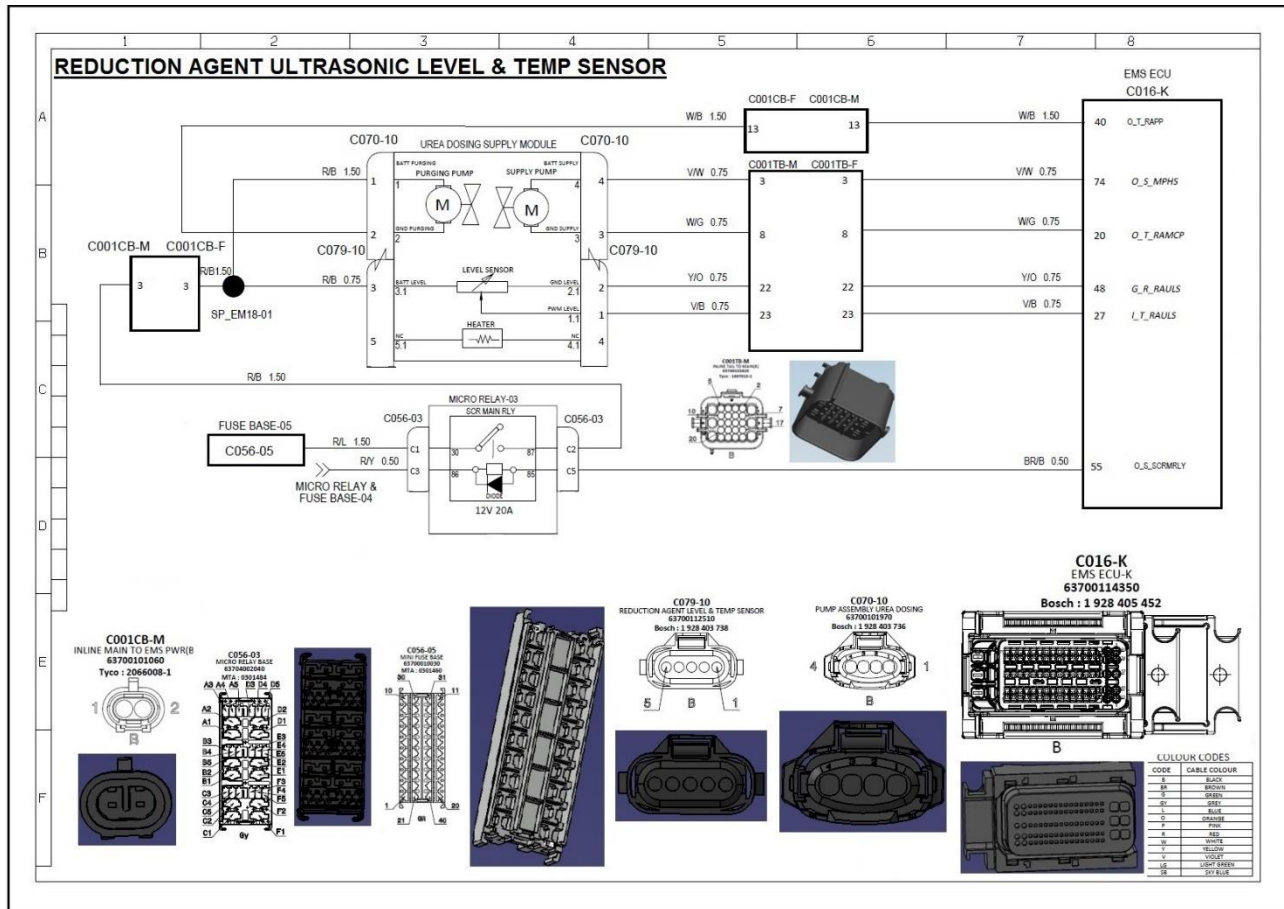
**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & K27, & Pin 2 & A48	
Step 3	If continuity is found ok proceed to step 8	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 8	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 9	
Step 8	Clear and check DTC	

**Location & Component Image:**



### Circuit Schematic Diagram:



### Circuit Description:

Ultrasonic level sensors work by emitting sound waves at a very high frequency, level is sensed by calculating distance based on time required for waves to reflect back.

**P203B-84: DFC for Urea Level signal incorrect: too low**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P203B-84 MIL- On CEL – Off Driver Warning Lamp – ON	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

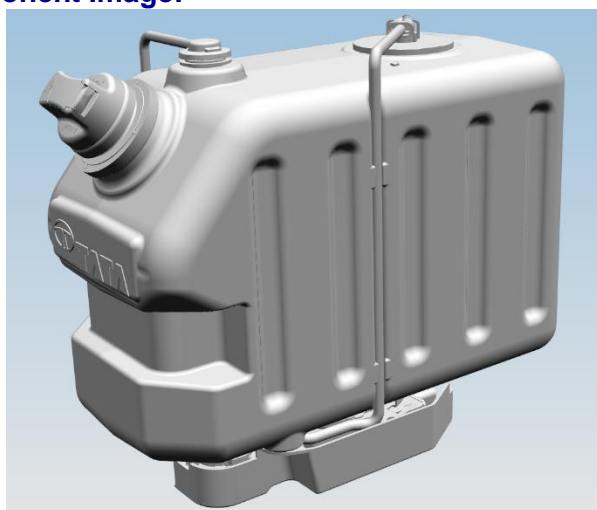
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

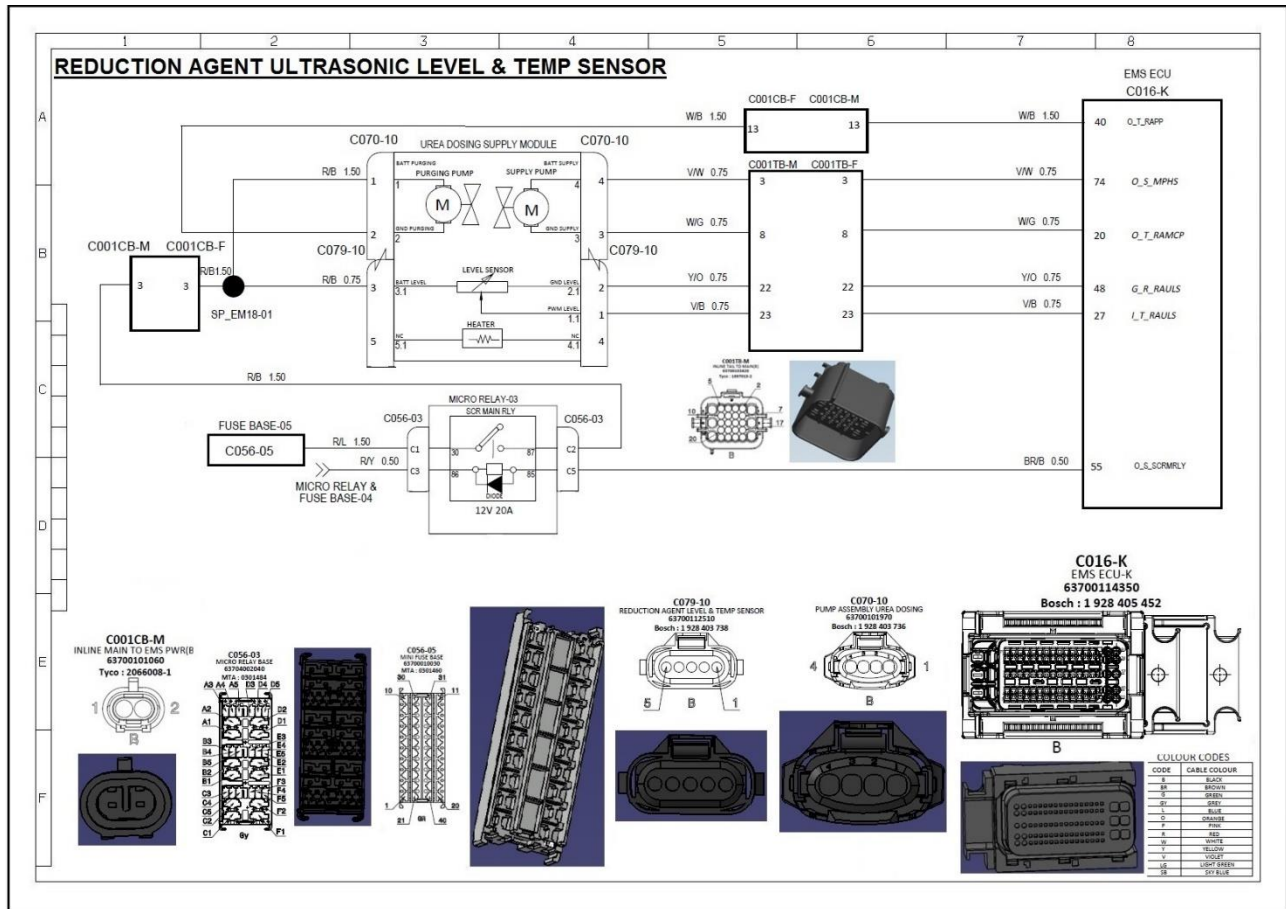
Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & K27, & Pin 2 & A48	
Step 3	If continuity is found ok proceed to step 8	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 8	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 9	
Step 8	Clear and check DTC	

**Location & Component Image:**





### Circuit Schematic Diagram:



### Circuit Description:

Ultrasonic level sensors work by emitting sound waves at a very high frequency, level is sensed by calculating distance based on time required for waves to reflect back.

**P203F-00: DFC for Urea Level signal- Ad blue level too low**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P203F-00 MIL- On CEL – Off Driver Warning Lamp – ON	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

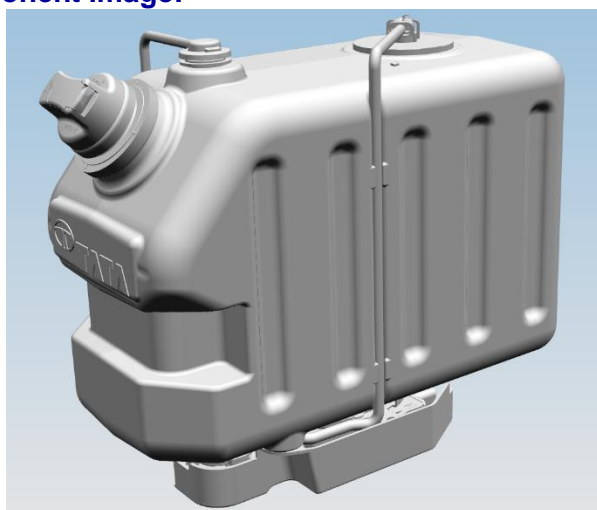
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

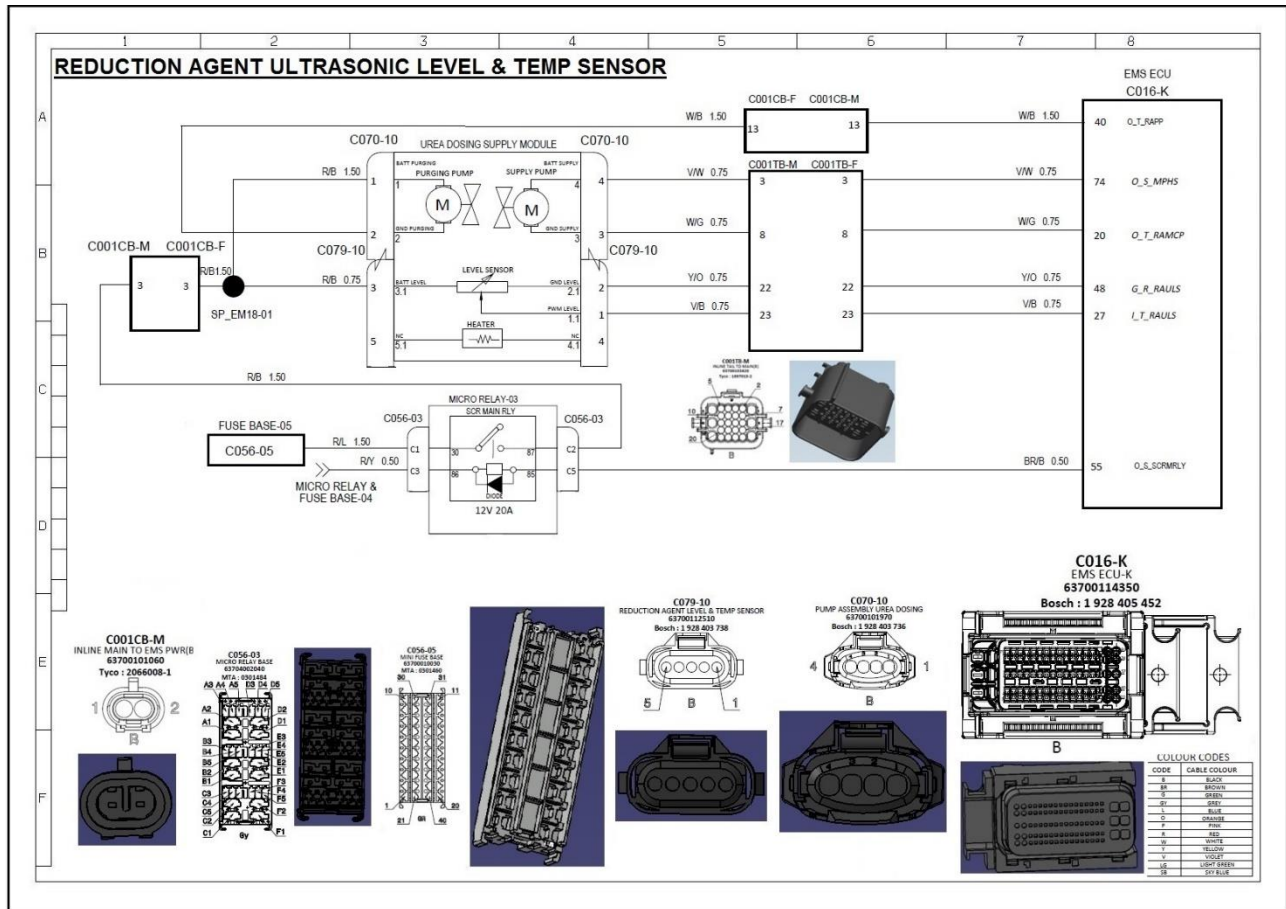
**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & K27, & Pin 2 & A48	
Step 3	If continuity is found ok proceed to step 8	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 8	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 9	
Step 8	Clear and check DTC	

**Location & Component Image:**



### Circuit Schematic Diagram:



### Circuit Description:

Ultrasonic level sensors work by emitting sound waves at a very high frequency, level is sensed by calculating distance based on time required for waves to reflect back.

**P2043-85: DFC for Urea tank temperature sensor circuit high**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2043-85 MIL- On CEL – Off Driver Warning Lamp – ON	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

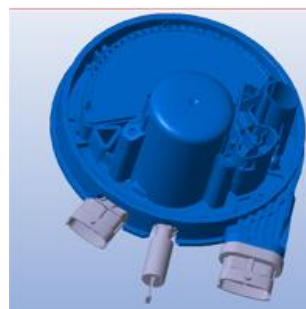
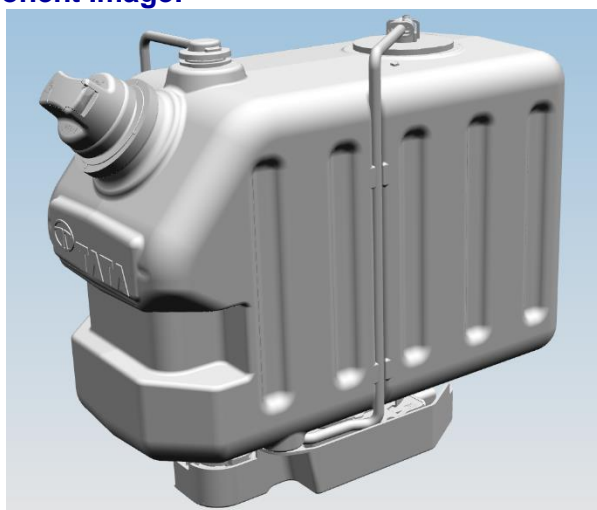
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

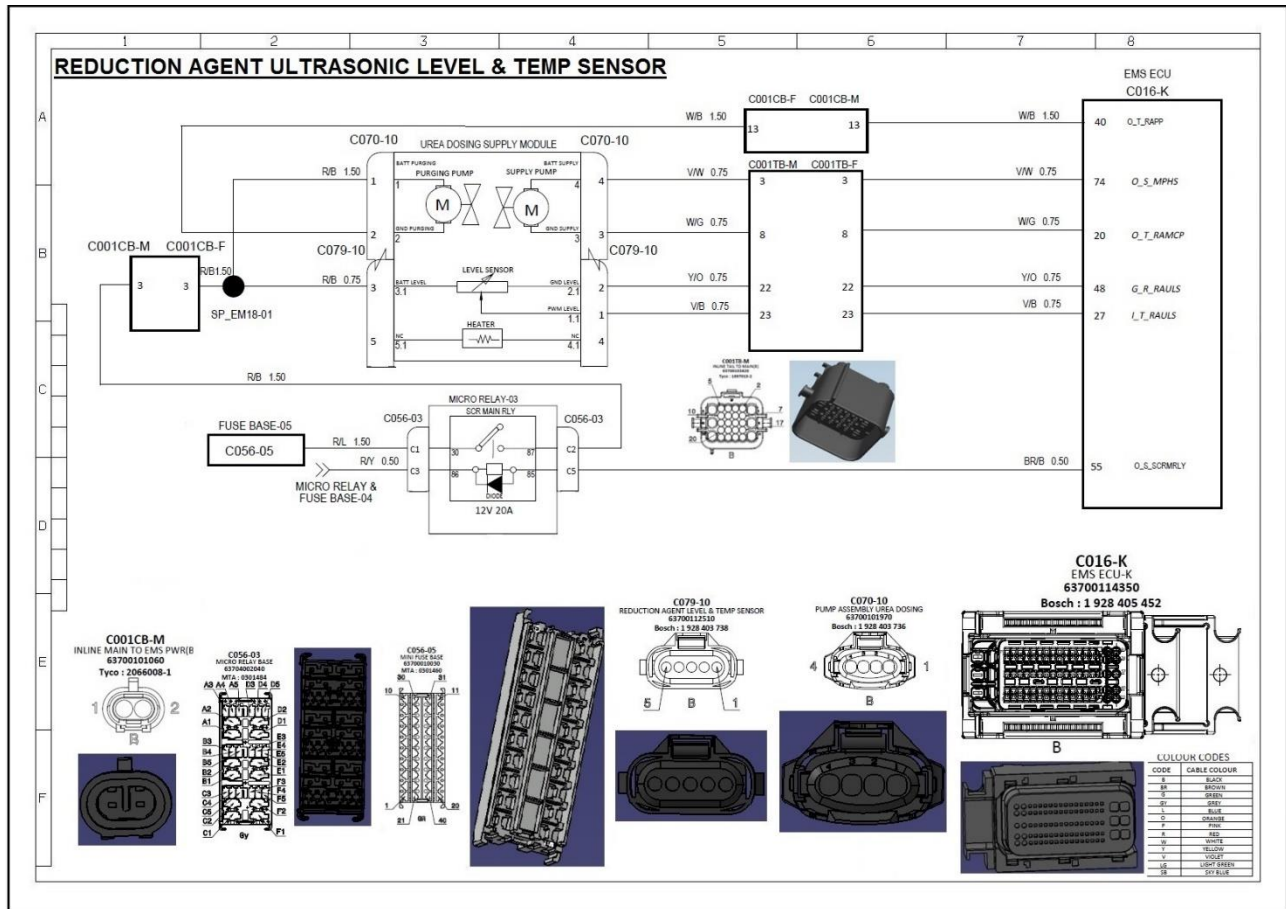
**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & K27, & Pin 2 & A48	
Step 3	If continuity is found ok proceed to step 8	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 8	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 9	
Step 8	Clear and check DTC	

**Location & Component Image:**



### Circuit Schematic Diagram:



### Circuit Description:

Ultrasonic level sensors work by emitting sound waves at a very high frequency, level is sensed by calculating distance based on time required for waves to reflect back.

**P2043-84: DFC for Urea tank temperature sensor circuit low**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2043-84 MIL- On CEL – Off Driver Warning Lamp – ON	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

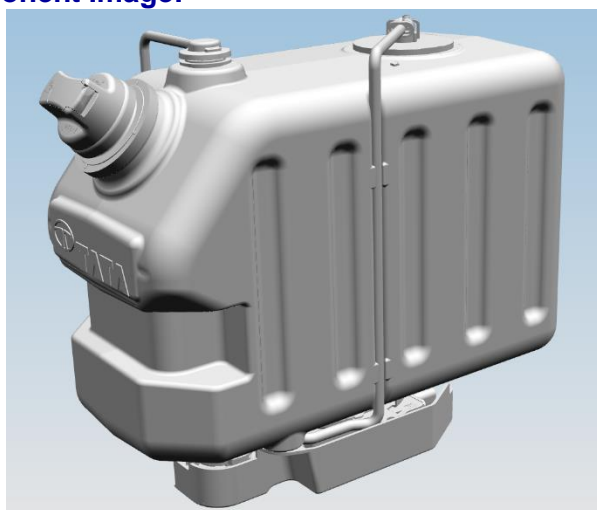
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

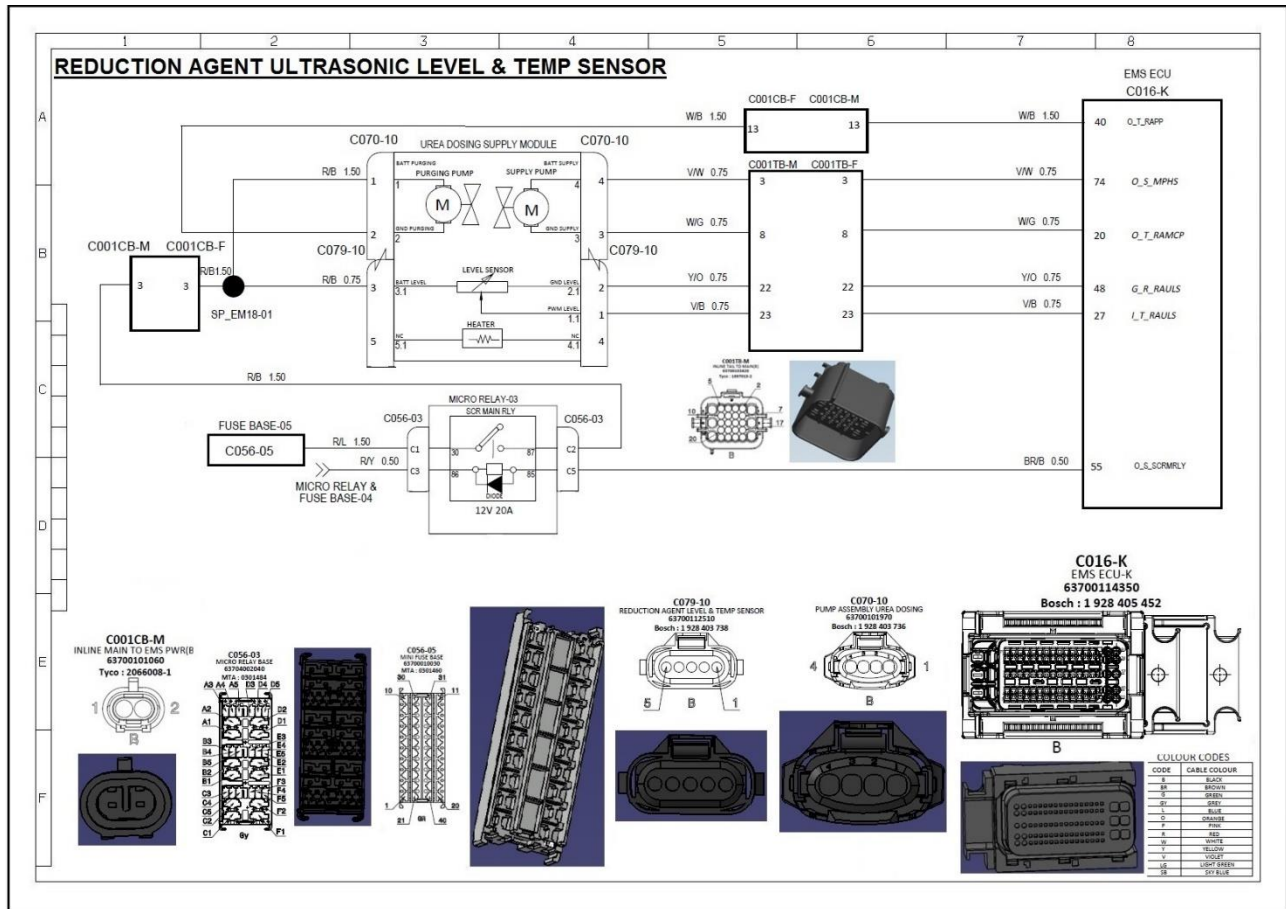
Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & K27, & Pin 2 & A48	
Step 3	If continuity is found ok proceed to step 8	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 8	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 9	
Step 8	Clear and check DTC	

**Location & Component Image:**





### Circuit Schematic Diagram:



### Circuit Description:

Ultrasonic level sensors work by emitting sound waves at a very high frequency, level is sensed by calculating distance based on time required for waves to reflect back.



**P203A-24: DFC for Electrical failure of Urea tank Combined sensor high level line error**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P203A-24 MIL- On CEL – Off Driver Warning Lamp – ON	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

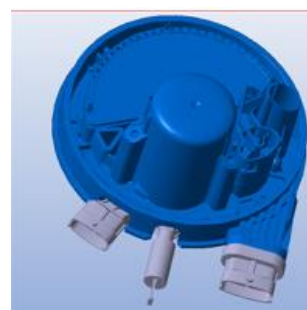
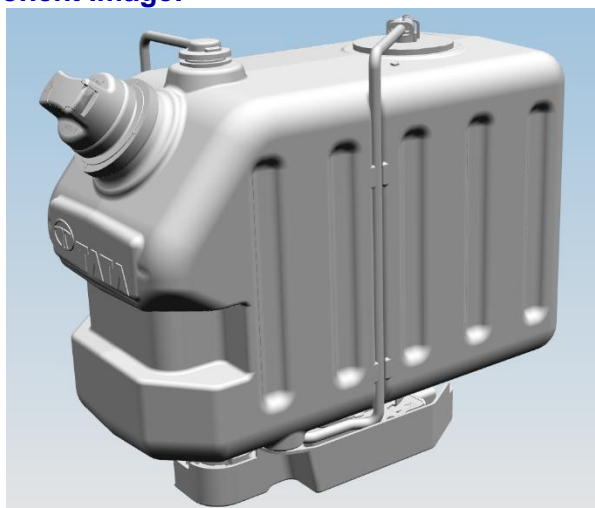
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

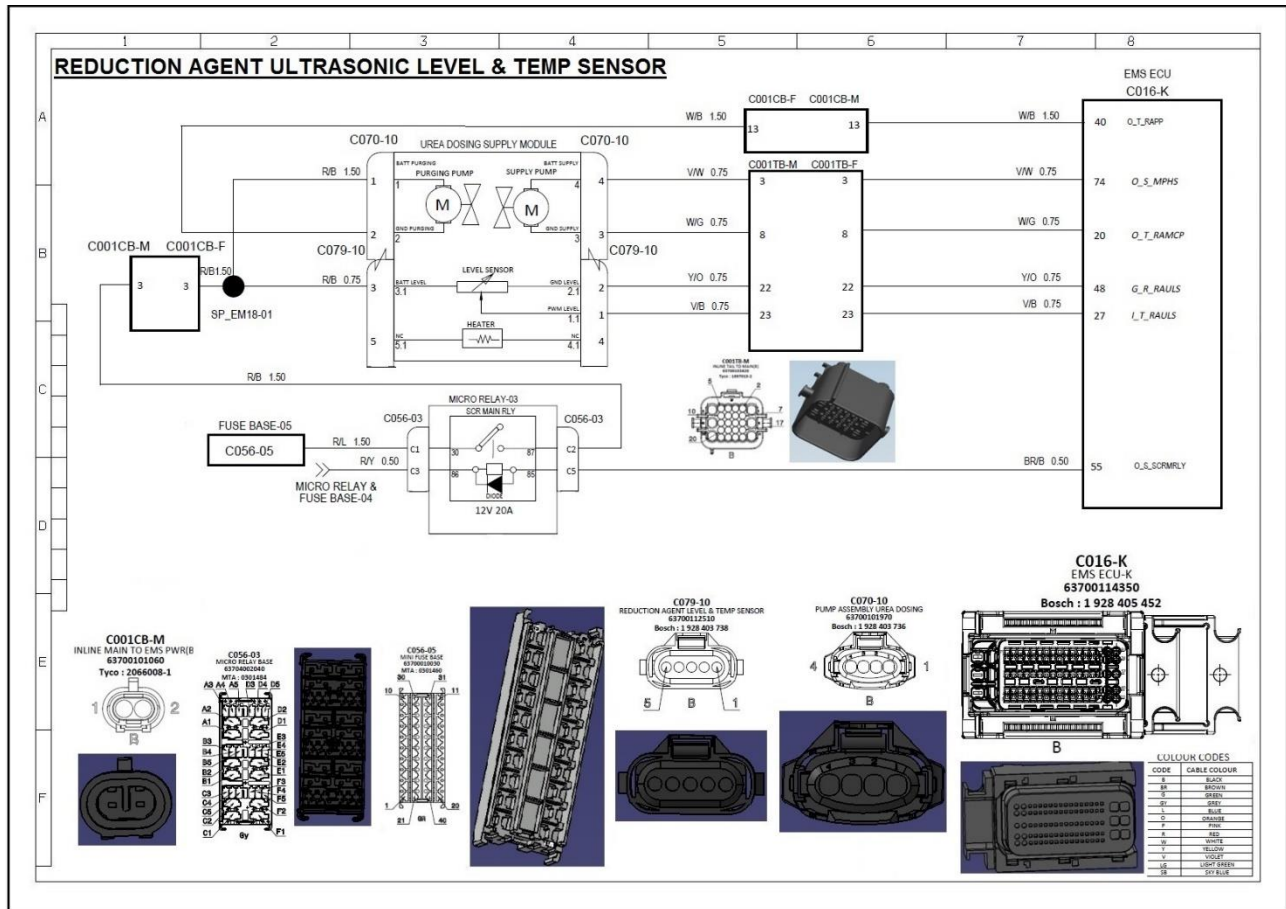
**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & K27, & Pin 2 & A48	
Step 3	If continuity is found ok proceed to step 8	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 8	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 9	
Step 8	Clear and check DTC	

**Location & Component Image:**



### Circuit Schematic Diagram:



### Circuit Description:

Ultrasonic level sensors work by emitting sound waves at a very high frequency, level is sensed by calculating distance based on time required for waves to reflect back.

**P203A-23: DFC for Electrical failure of Urea tank Combined sensor low level line error**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P203A-23 MIL- On CEL – Off Driver Warning Lamp – ON	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

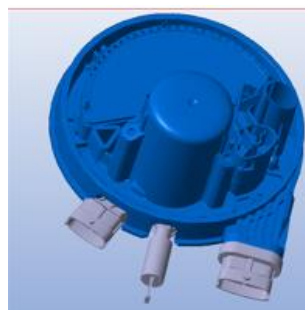
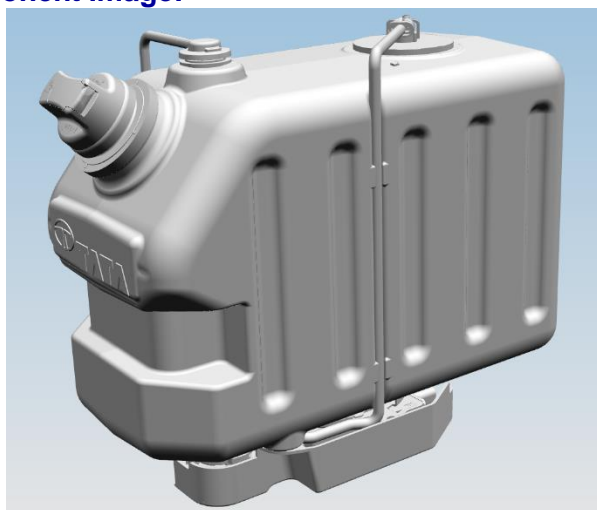
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

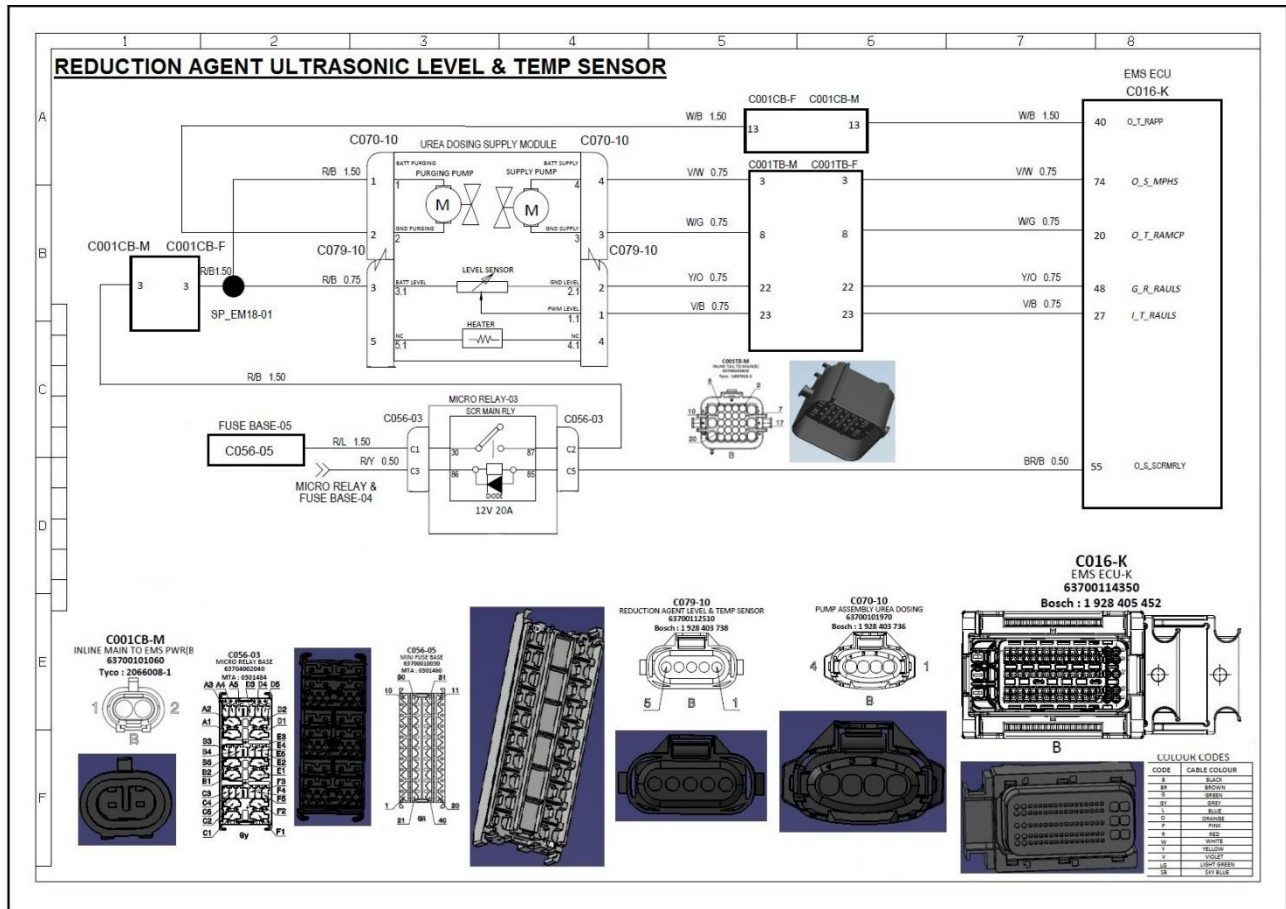
**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & K27, & Pin 2 & A48	
Step 3	If continuity is found ok proceed to step 8	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 8	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 9	
Step 8	Clear and check DTC	

**Location & Component Image:**



### Circuit Schematic Diagram:



### Circuit Description:

Ultrasonic level sensors work by emitting sound waves at a very high frequency, level is sensed by calculating distance based on time required for waves to reflect back.

**P206A-86: DFC for Diesel Exhaust Fluid DEF (Urea) Quality Sensor Signal Incorrect**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P206A-86 MIL- On CEL – Off Driver Warning Lamp – ON	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

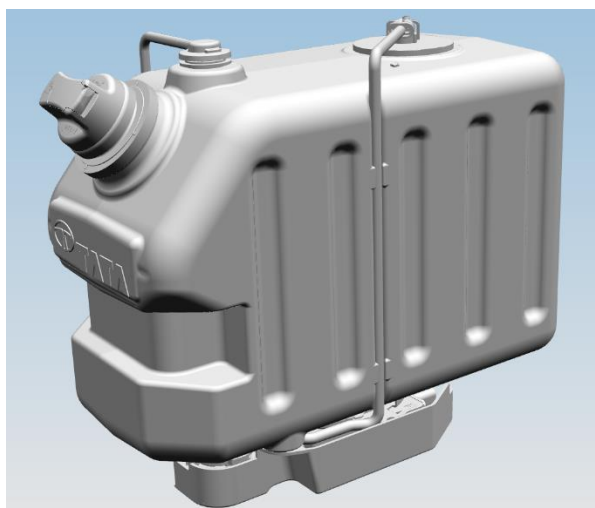
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 6	
Step 4	If error persists, check the sensor for any damage/failure	
Step 5	If found damaged or failed change the sensor and go to step 6	
Step 6	Clear and check DTC	

**Location & Component Image:**



**P206A-13: DFC for Diesel Exhaust Fluid DEF (Urea) Quality Sensor Signal not received**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P206A-13 MIL- On CEL – Off Driver Warning Lamp – ON	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

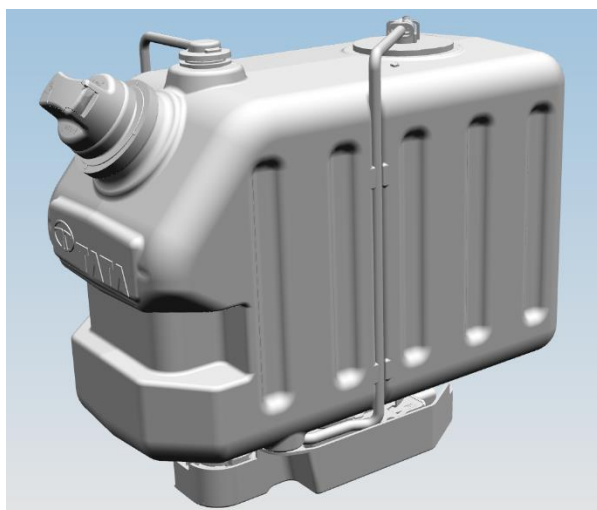
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 6	
Step 4	If error persists, check the sensor for any damage/failure	
Step 5	If found damaged or failed change the sensor and go to step 6	
Step 6	Clear and check DTC	

**Location & Component Image:**





**P2BA9-00: DFC for Diesel Exhaust Fluid DEF (Urea) concentration too low**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P206A-13 MIL- On CEL – Off Driver Warning Lamp – ON	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem 4. Wrong DEF	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

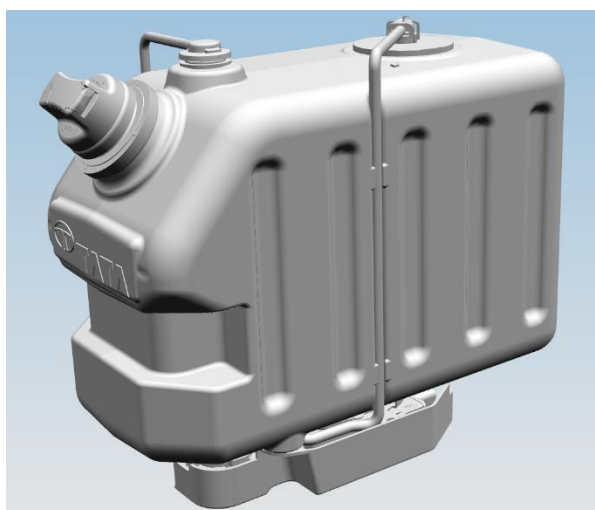
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 7	
Step 4	If error persists, check the sensor for any damage/failure	
Step 5	If found damaged or failed change the sensor and go to step 7	
Step 6	If error persists, DEF used is not as per standard Quality having standard concentration. Kindly fill in standard DEF & go to step 7	
Step 7	Clear and check DTC	

**Location & Component Image:**







**P244B-00: DFC for Diesel Particulate Filter clogged**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P244B-00 MIL- ON CEL – Off AWL - Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem 4. DPF is clogged	NA

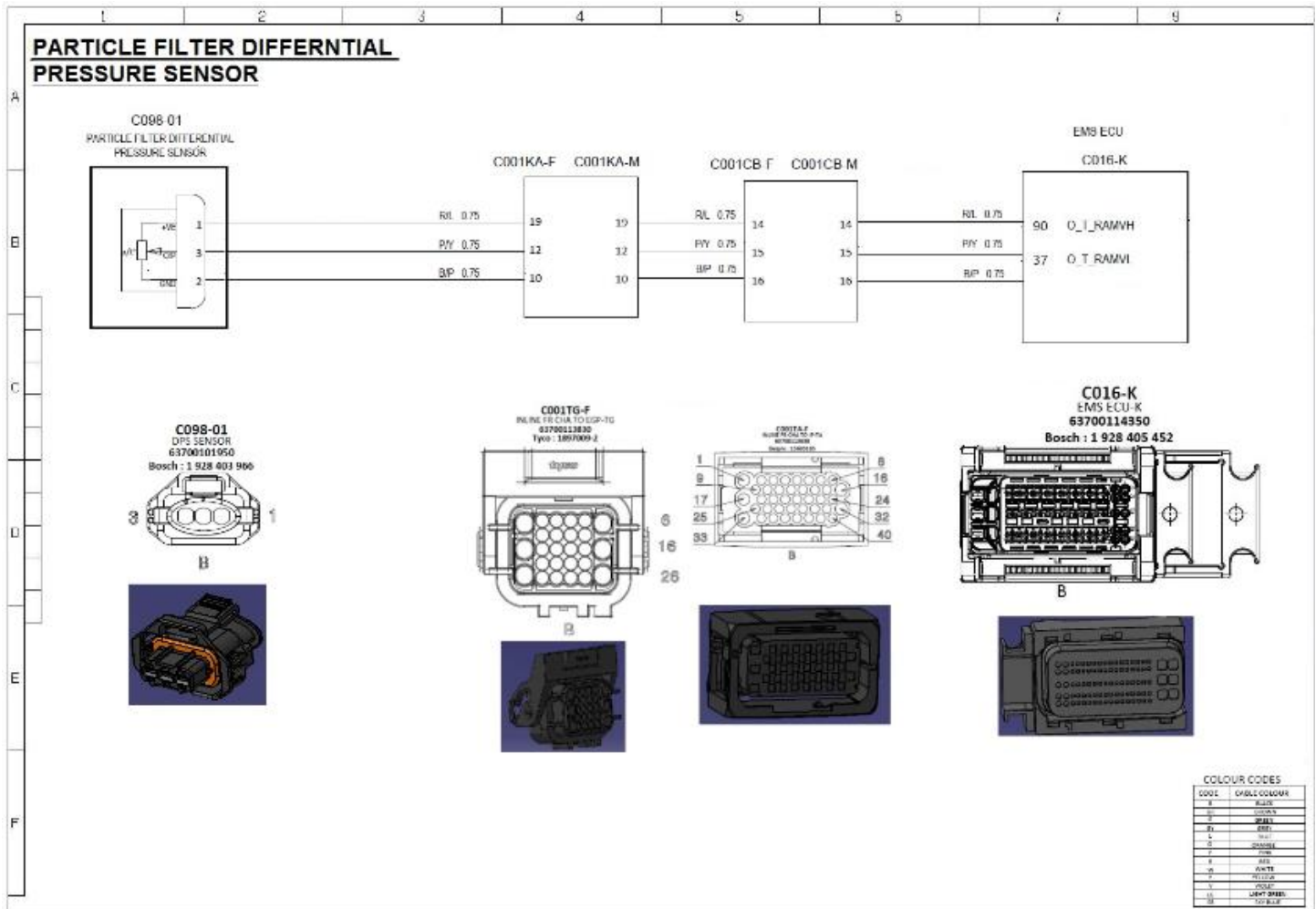
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & A22, Pin 2 & A40, Pin 3 & A44.	
Step 3	If continuity is found ok proceed to step 10	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 10	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 10	
Step 8	Check for any leakages around DPF including hose-lines, if exists arrest all leakages & go to step 10	
Step 9	If error still persist, DPF has reached to its maximum clogging capacity. Kindly clean the DPF, mount & go to step 10	
Step 10	Clear and check DTC in running condition	1700 – 1900 Engine rpm

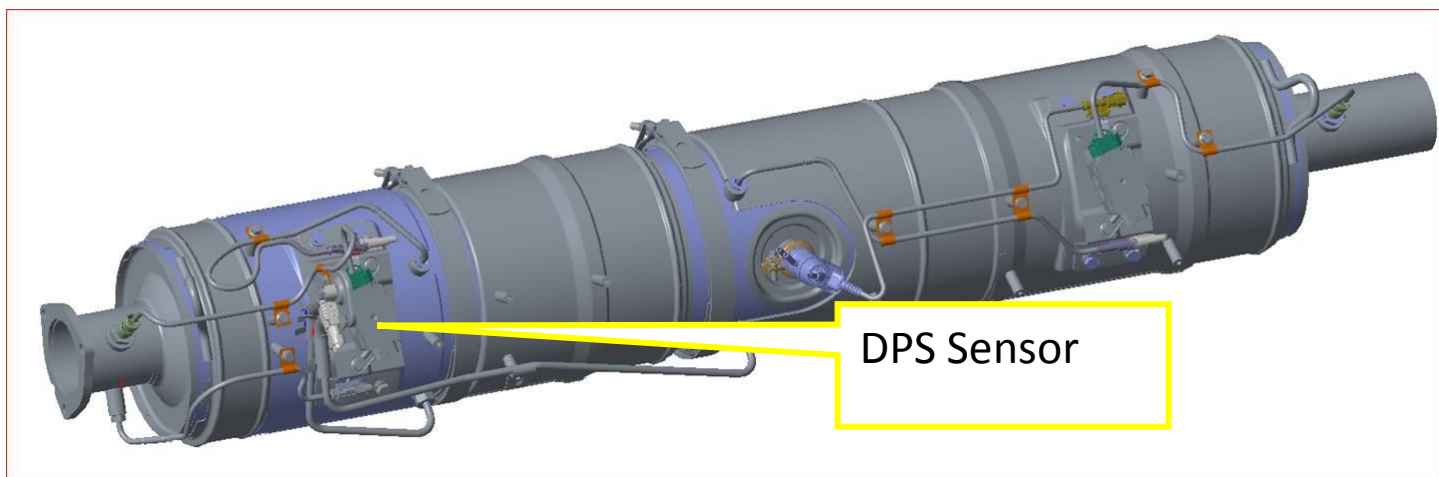
### Circuit Schematic Diagram:



### Circuit Description:

Differential Pressure Sensor used to infer the exhaust gas flow through the diesel particle filter by measuring the differential pressure across the filter. The exhaust gas flow is a function of the amount of blockage due to particulate matter (PM) accumulation within the diesel particle filter. As the filter accumulates PM the flow decreases, resulting in an increased pressure drop across the filter. P2 represents the upstream (intake) side of the filter and P1 represents the downstream (exhaust) side of the filter. This sensor will provide an analog output voltage proportional to the differential pressure across the filter ( $dP = P2 - P1$ ). At a predefined pressure the ECU will initiate a regenerative process to burn-off the PM from the filter, restoring its flow.

Location & Component Image:





**P244A-00: DFC for Diesel Particulate Filter deteriorated**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P244A-00 MIL- ON CEL – Off AWL -	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	NA

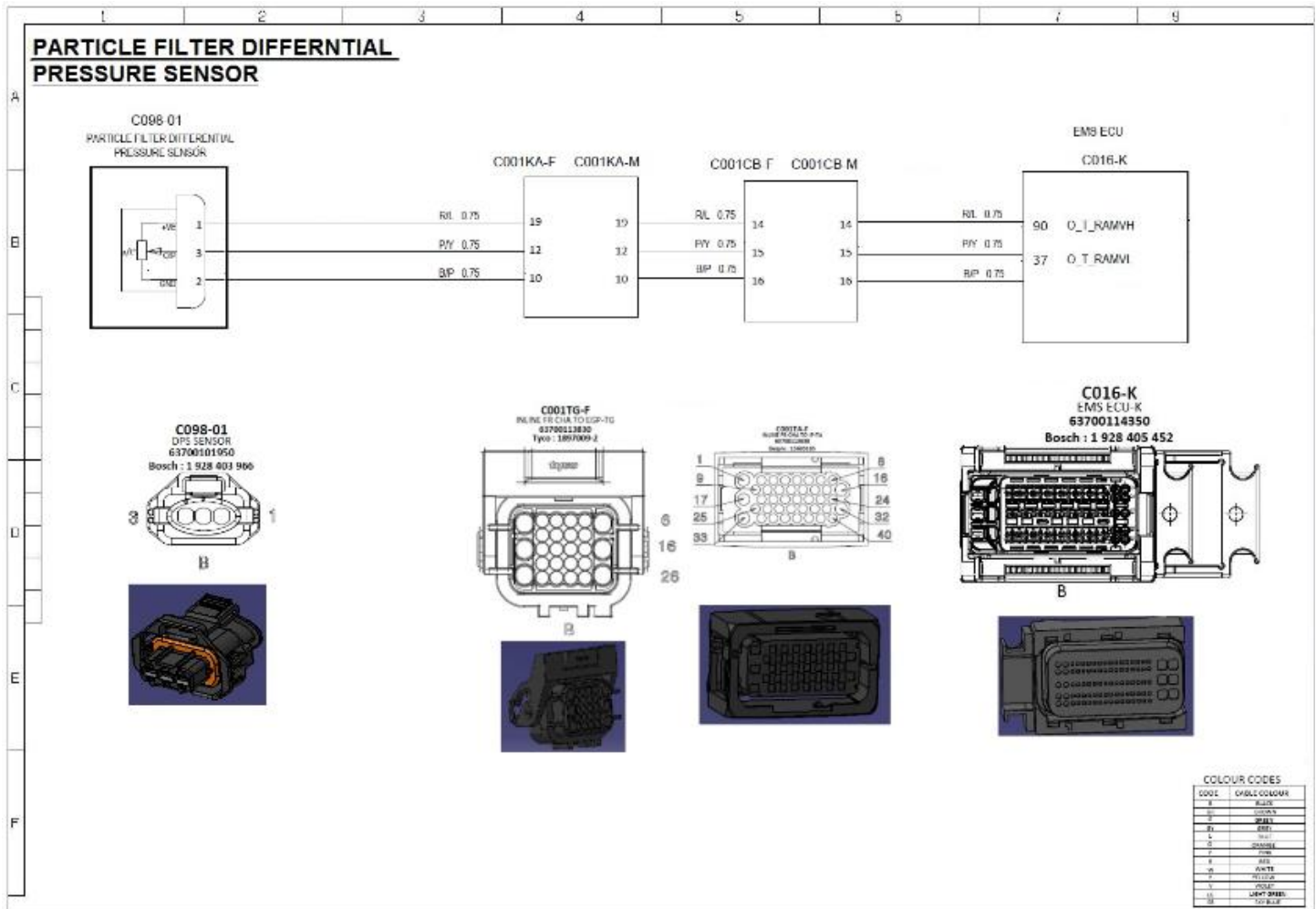
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & A22, Pin 2 & A40, Pin 3 & A44.	
Step 3	If continuity is found ok proceed to step 11	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 11	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 11	
Step 8	Check for any leakages around DPF including hose-lines, if exists arrest all leakages & go to step 11	
Step 9	Check for Delta Pressure offset value, if specification exceeds, replace Delta Pressure sensor & go to step 11	Should be less than 6 hPa
Step 10	Check if DPF brick is damaged , if Yes, replace DPF & go to step 11	
Step 11	Clear and check DTC in engine running condition	1700 – 1900 engine rpm

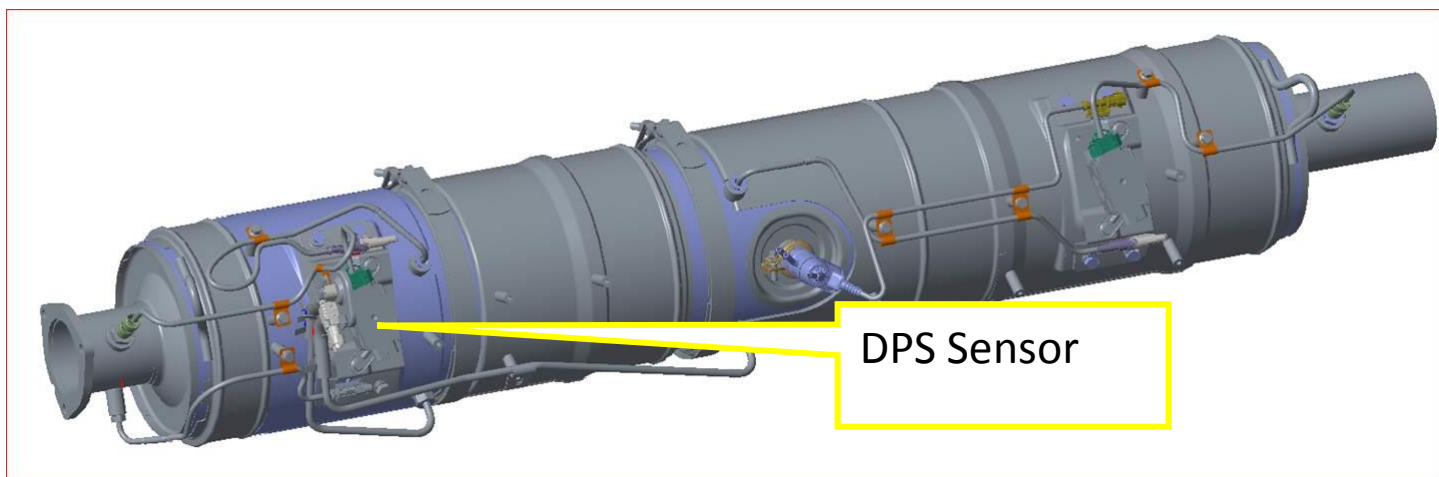
### Circuit Schematic Diagram:



### Circuit Description:

Differential Pressure Sensor used to infer the exhaust gas flow through the diesel particle filter by measuring the differential pressure across the filter. The exhaust gas flow is a function of the amount of blockage due to particulate matter (PM) accumulation within the diesel particle filter. As the filter accumulates PM the flow decreases, resulting in an increased pressure drop across the filter. P2 represents the upstream (intake) side of the filter and P1 represents the downstream (exhaust) side of the filter. This sensor will provide an analog output voltage proportional to the differential pressure across the filter ( $dP = P2 - P1$ ). At a predefined pressure the ECU will initiate a regenerative process to burn-off the PM from the filter, restoring its flow.

Location & Component Image:





**P226D-00: DFC for Diesel Particulate Filter destroyed or removed**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P226D-00 MIL- On CEL – Off AWL - Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem 4. DPF removal	NA

**Checkpoints:**

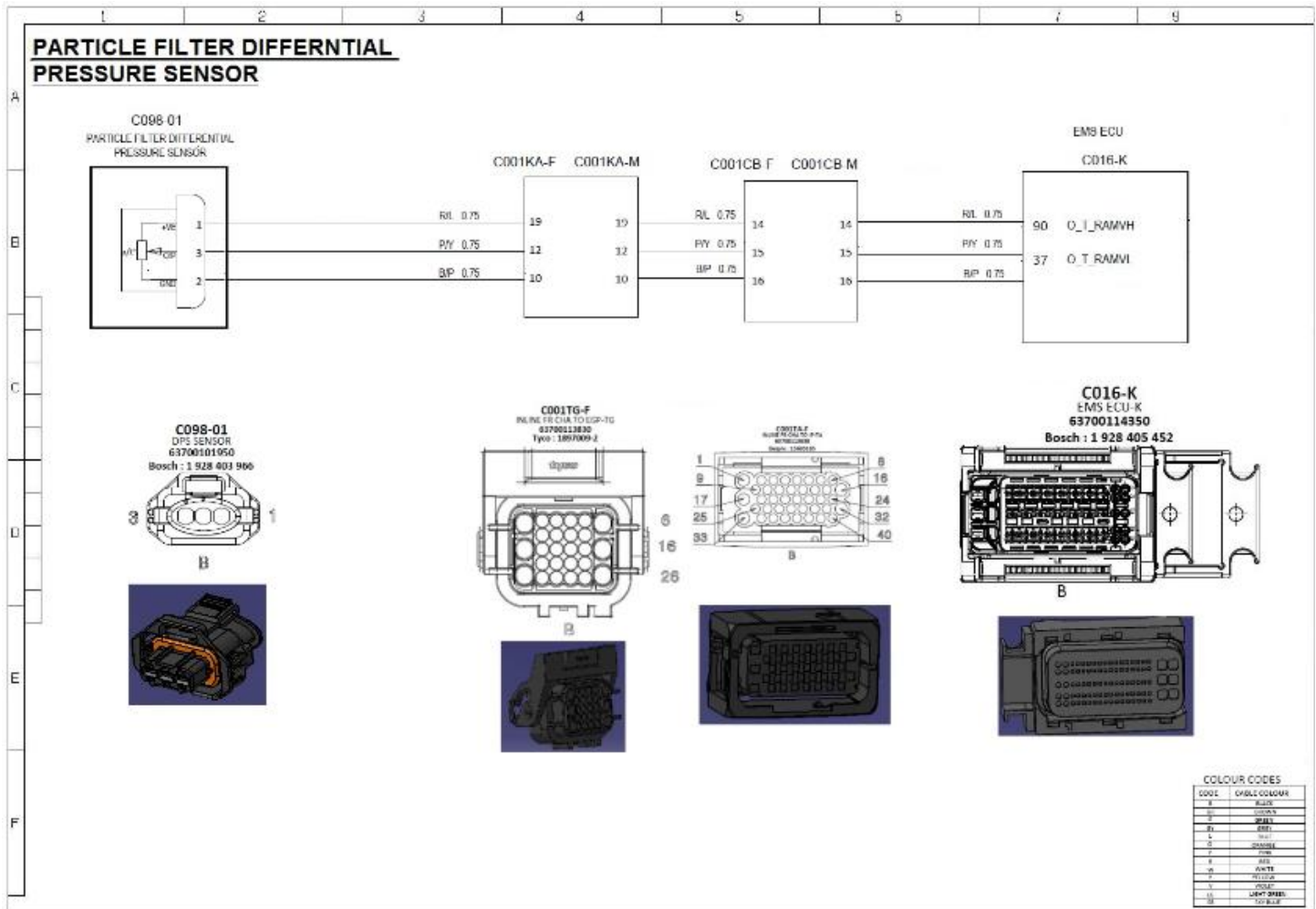
1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & A22, Pin 2 & A40, Pin 3 & A44.	
Step 3	If continuity is found ok proceed to step 10	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 10	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 10	
Step 8	Check for any leakages around DPF including hose-lines, if exists arrest all leakages & go to step 10	
Step 9	Check if DPF brick is damaged or its absence , if Yes, replace DPF & go to step 10	
Step 10	Clear and check DTC in engine running condition	1700 – 1900 engine rpm



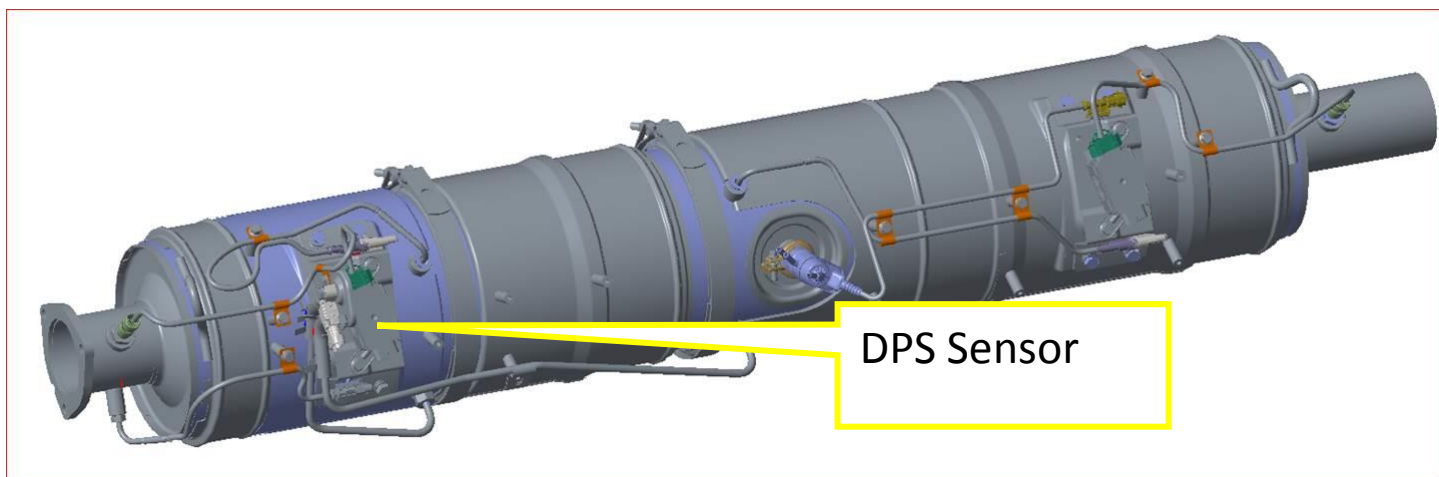
#### Circuit Schematic Diagram:



#### Circuit Description:

Differential Pressure Sensor used to infer the exhaust gas flow through the diesel particle filter by measuring the differential pressure across the filter. The exhaust gas flow is a function of the amount of blockage due to particulate matter (PM) accumulation within the diesel particle filter. As the filter accumulates PM the flow decreases, resulting in an increased pressure drop across the filter. P2 represents the upstream (intake) side of the filter and P1 represents the downstream (exhaust) side of the filter. This sensor will provide an analog output voltage proportional to the differential pressure across the filter ( $dP = P2 - P1$ ). At a predefined pressure the ECU will initiate a regenerative process to burn-off the PM from the filter, restoring its flow.

Location & Component Image:





## P0421-00: DFC for Diesel Oxidation Catalyst (DOC) Passive Monitoring

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P0421-00 MIL- On CEL – Off AWL - Off	1. Wiring Harness problem 2. DOC downstream temperature Sensor failure 3. Sensor connector problem 4. aged DOC	NA

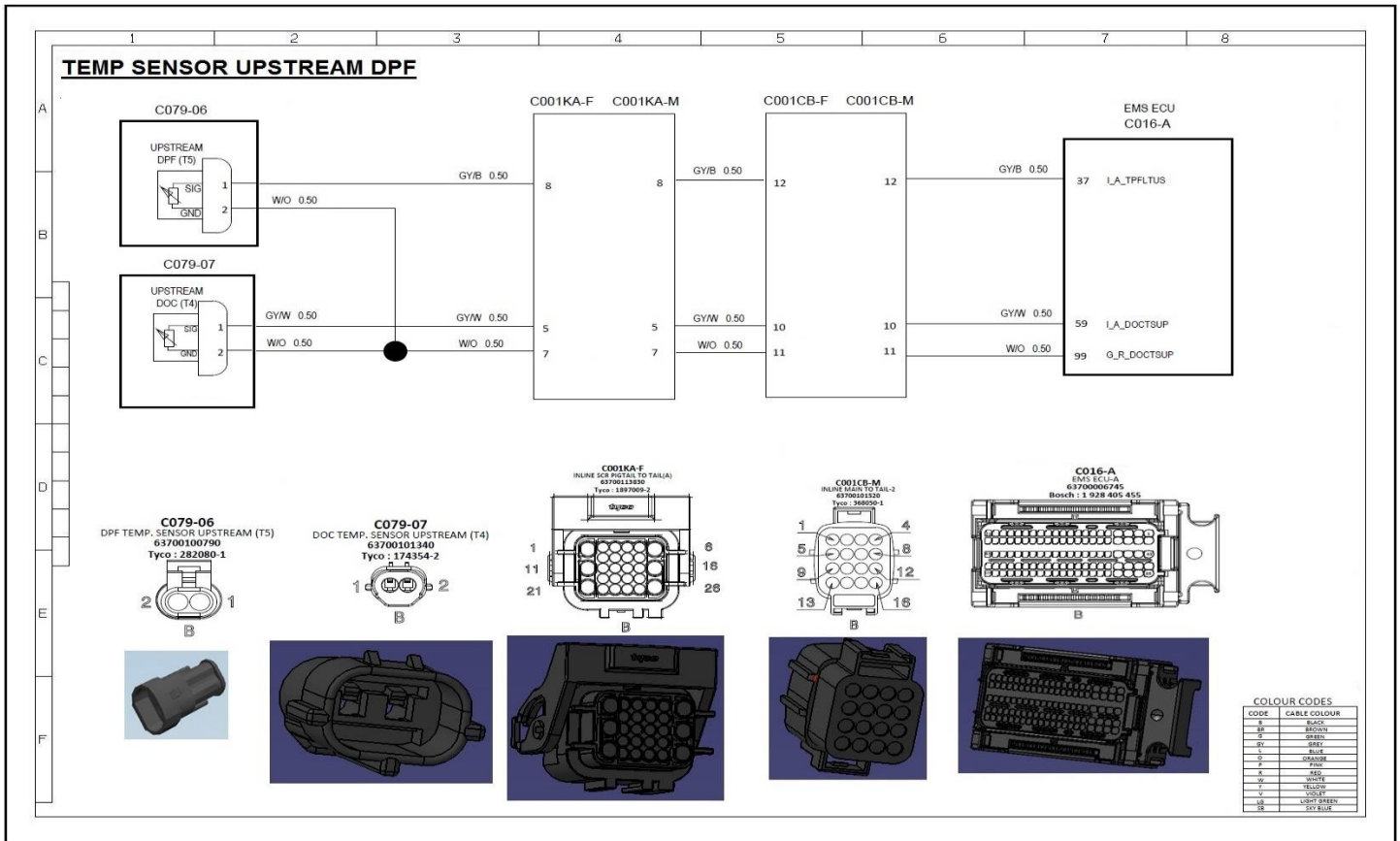
### Checkpoints:

1. Check the wiring harness
2. Check sensor
3. Check connector
4. Check DOC

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the DOC downstream temperature sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 8	
Step 4	Check continuity between Pin 1 & A37, & between Pin 2 & A99	
Step 5	If continuity is found ok proceed to step 8	
Step 6	Check for wiring Harness, If found damaged or failed change the sensor and go to step 8	
Step 7	Check for DOC removal or if its damaged, replace DOC & go to step 8	
Step 8	Clear and check DTC in running condition & in regeneration mode	

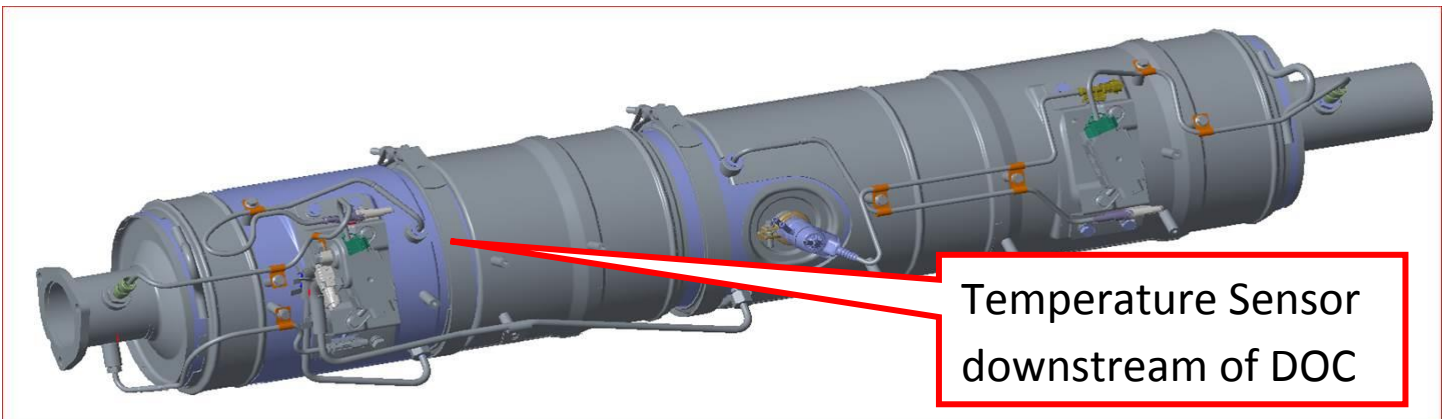
### Circuit Schematic Diagram:



### Circuit Description:

EMS measures the temperature of fuel by using this sensor. Fuel Temperature sensor has 2-pole connector and provides the analog input signal at A37. The sensing element is a thin film Pt resistor resistance of it changes according to exhaust temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.

### Location & Component Image:





## P20EE-00: DFC for Deteriorated SCR catalyst

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P20EE-00 MIL- On CEL – Off AWL - On	1. Wiring Harness problem 2. SCR catalyst inefficient 2. Downstream Nox sensor faulty/drifted	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

### Checkpoints:

1. Check the wiring harness
2. Check sensor
3. Check connector

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the NOX sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 7	
Step 4	If error persists, check the sensor for any damage/failure	
Step 5	If found damaged or failed change the sensor and go to step 7	
Step 6	Check if SCR block is damaged, if yes change SCR block & go to step 7	
Step 7	Clear and check DTC	



## P2047-00: DFC for Urea Dosing Valve Disconnected

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P2047-00 MIL- On CEL – Off AWL - On	1. Wiring Harness problem 2. Urea Dosing valve not connected	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

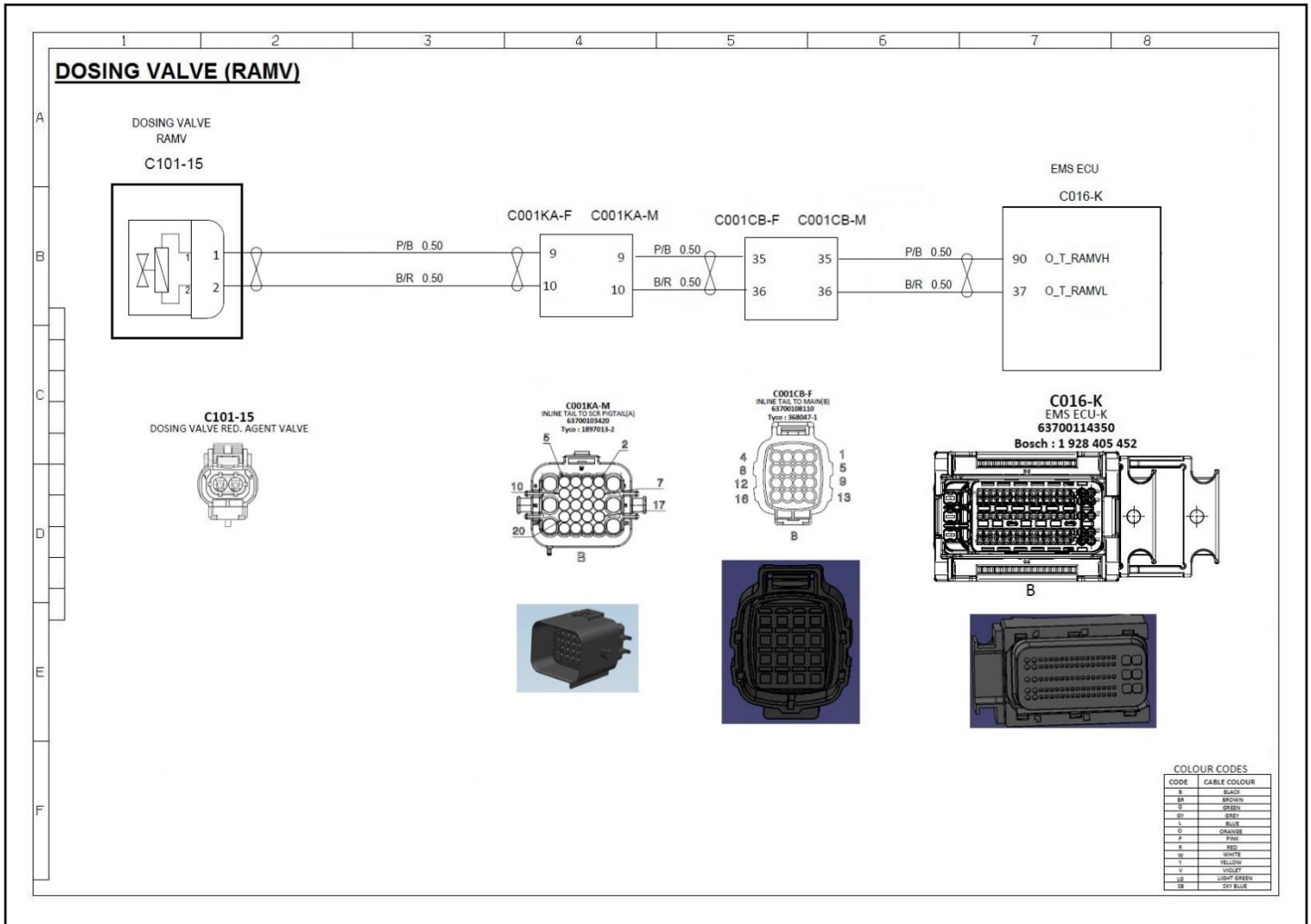
### Checkpoints:

1. Check the wiring harness
2. Check connector

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between sensor pin 1 & K90 (EMS), sensor Pin 2 & K37 (EMS).	
Step 3	If continuity is found ok proceed to step 8	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 8	
Step 6	If error persists, check the connector/dosing valve for any damage/failure	
Step 7	If found damaged or failed change the Dosing valve and go to step 8	
Step 8	Clear and check DTC	

#### Circuit Schematic Diagram:







**P2047-4B: DFC for Urea Dosing Valve control overheated**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2047-4B MIL- On CEL – Off AWL - On	1. Wiring Harness problem 2. Permanent short circuit to battery	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

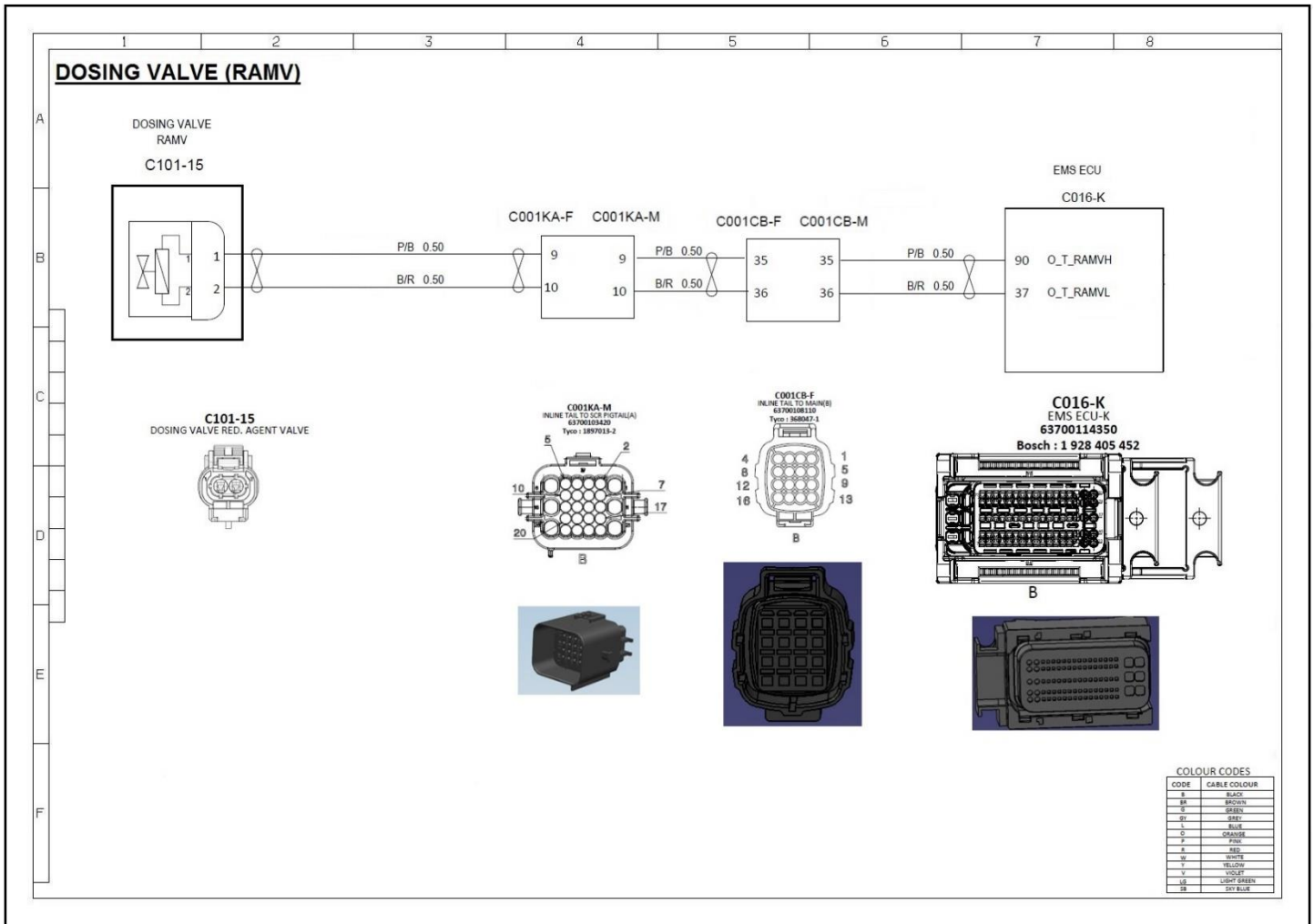
**Checkpoints:**

1. Check the wiring harness
2. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between sensor pin 1 & K90 (EMS), sensor Pin 2 & K37 (EMS).	
Step 3	If continuity is found ok proceed to step 9	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 9	
Step 6	If error persists, check the connector/dosing valve for any damage/failure	
Step 7	If found damaged or failed change the Dosing valve and go to step 9	
Step 8	If error persists, change ECU & go to step 9	
Step 9	Clear and check DTC	

### Circuit Schematic Diagram:





**P2049-00: DFC for Urea Dosing valve short to battery**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2049-00 MIL- On CEL – Off AWL - On	1. Wiring Harness problem 2. Urea dosing valve short circuit to battery	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

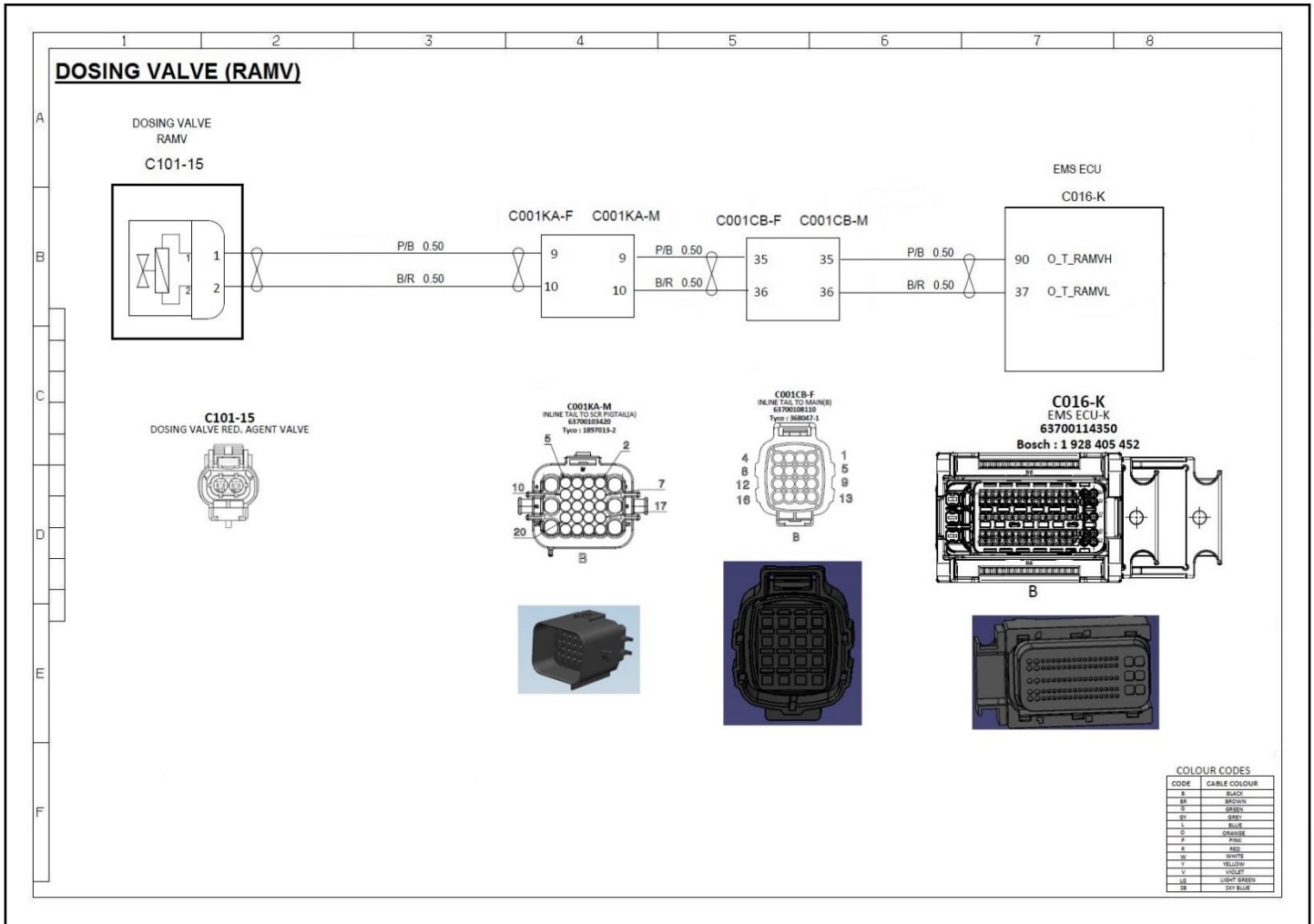
**Checkpoints:**

1. Check the wiring harness
2. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between sensor pin 1 & K90 (EMS), sensor Pin 2 & K37 (EMS).	
Step 3	If continuity is found ok proceed to step 8	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections, if loose retain proper fitment & go to step 8	
Step 5	If error persists, check if Input signal is shorted to battery, if yes arrest issue & go to step 8	
Step 6	If error persists, check the connector/dosing valve for any damage/failure	
Step 7	If found damaged or failed change the Dosing valve and go to step 8	
Step 8	Clear and check DTC	

### Circuit Schematic Diagram:





**P2048-00: DFC for Urea Dosing valve shorted to ground**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2048-00 MIL- On CEL – Off AWL - On	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

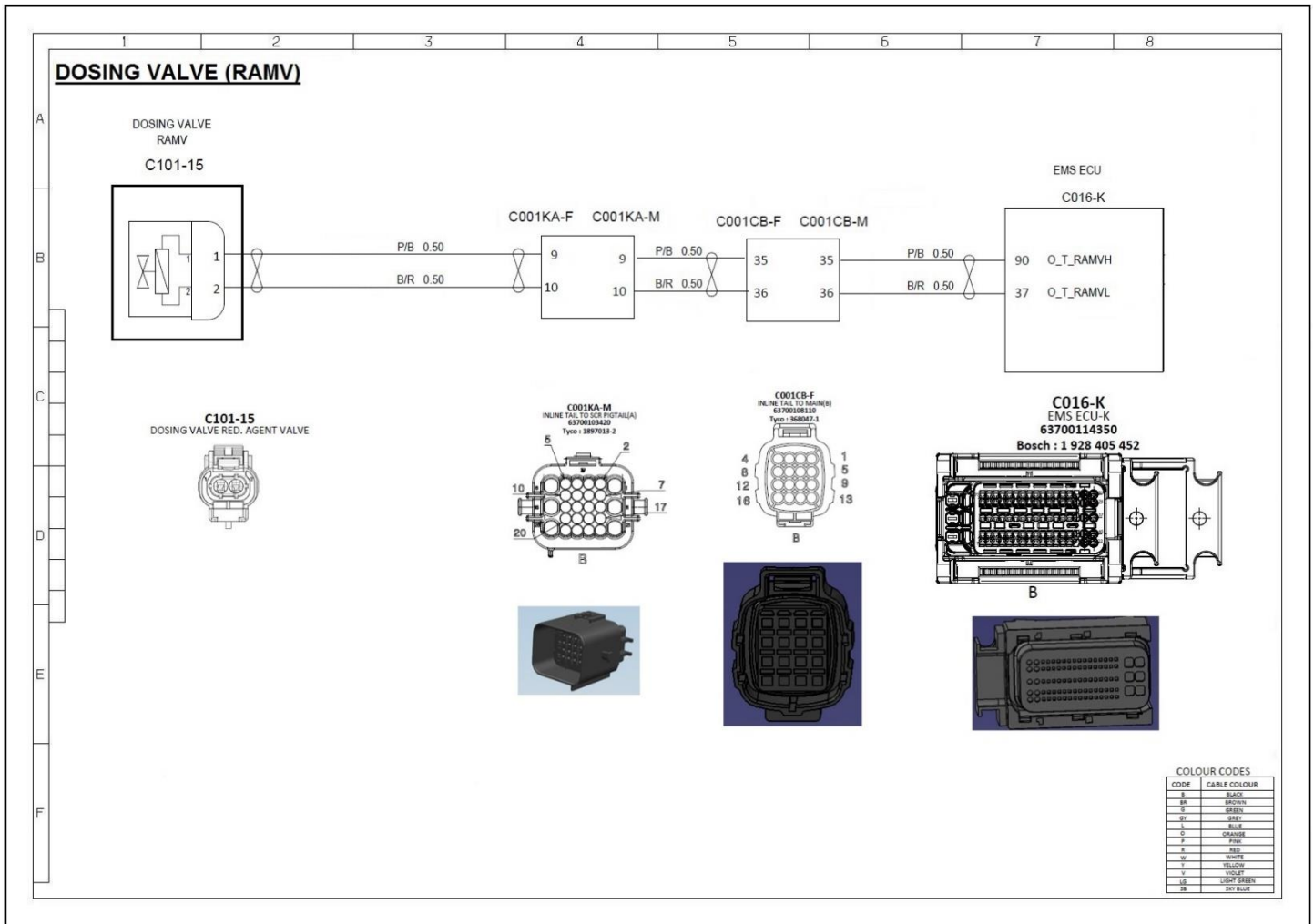
**Checkpoints:**

1. Check the wiring harness
2. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between sensor pin 1 & K90 (EMS), sensor Pin 2 & K37 (EMS).	
Step 3	If continuity is found ok proceed to step 8	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections, if loose retain proper fitment & go to step 8	
Step 5	If error persists, check if Input signal is shorted to ground, if yes arrest issue & go to step 8	
Step 6	If error persists, check the connector/dosing valve for any damage/failure	
Step 7	If found damaged or failed change the Dosing valve and go to step 8	
Step 8	Clear and check DTC	

#### Circuit Schematic Diagram:





## P2047-7F: DFC for Urea Dosing valve Defective

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P2047-7F MIL- On CEL – Off AWL - On	1. Dosing valve driver faulty 2. Dosing valve is blocked	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

### Checkpoints:

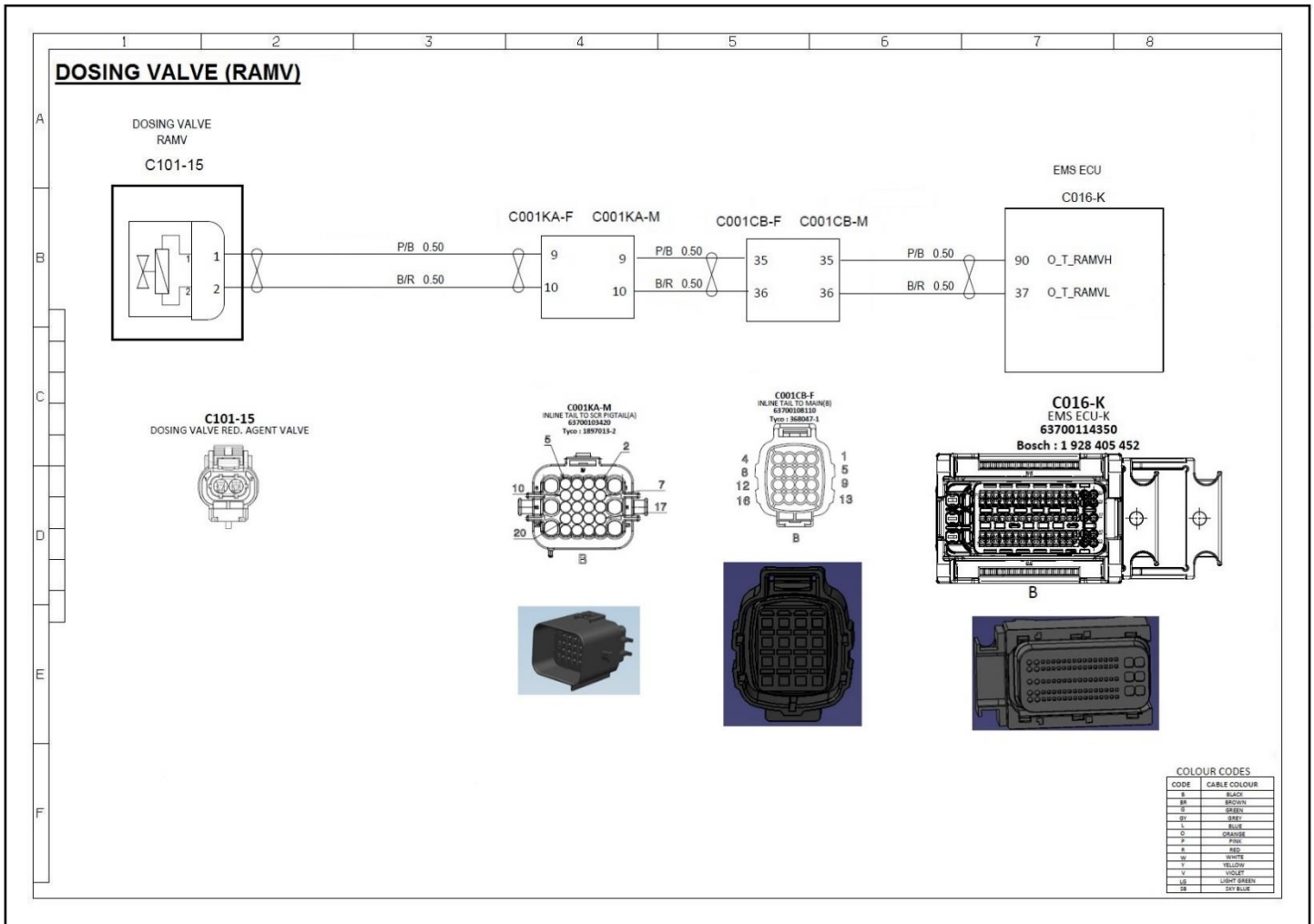
1. Check the wiring harness
2. Check connector

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between sensor pin 1 & K90 (EMS), sensor Pin 2 & K37 (EMS).	
Step 3	If continuity is found ok proceed to step 8	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections, if loose retain proper fitment & go to step 8	
Step 5	If error persists, check if Input signal is shorted to ground, if yes arrest issue & go to step 8	
Step 6	If error persists, check the Dosing valve for any damage/failure	
Step 7	If found damaged or failed change the Dosing valve and go to step 8	
Step 8	Clear and check DTC	



#### Circuit Schematic Diagram:





## P20A0-00: DFC for Urea Backflow Pump Disconnected

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P20A0-00 MIL- On CEL – Off AWL - On	1.The connector/wires to the backflow pump is disconnected/loosely connected 2.Backflow pump is damaged	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

### Checkpoints:

1. Check the wiring harness
2. Check connector

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & pin 87 of SCR main relay, Pin 2 & K40.	
Step 3	If continuity is found ok proceed to step 8	
Step 4	If error persists check the fitment of the connector on the backflow pump for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 8	
Step 6	If error persists, check the continuity between Pin 1 & Pin2, if yes, motor winding could be damaged.	
Step 7	If found damaged or failed change the Supply module and go to step 8	
Step 8	Clear and check DTC	



**P20A0-4B: DFC for Urea Backflow Pump control overheated**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P20A0-4B MIL- On CEL – Off AWL - On	1. Permanent Short Circuit to Battery 2. Urea leakage into the pump	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & pin 87 of SCR main relay, & between Pin 2 & K40.	
Step 3	If continuity is found ok proceed to step 6	
Step 4	If error persists check the fitment of the connector on the backflow pump for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 6	
Step 6	Clear and check DTC	



**P20A3-00: DFC for Urea Backflow pump shorted to battery**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P20A3-00 MIL- On CEL – Off AWL - On	1. Short circuit to battery error on low power stage for Urea back flow pump	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & pin 87 of SCR main relay, & between Pin 2 & K40.	
Step 3	If continuity is found ok proceed to step 6	
Step 4	If error persists check the fitment of the connector on the backflow pump for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 6	
Step 6	Clear and check DTC	



**P20A2-00: DFC for Urea Backflow pump shorted to ground**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P20A2-00 MIL- On CEL – Off AWL - On	1. The SCR relay is disconnected. 2.The wires to the backflow pump are short circuited to ground 3.Backflow pump is damaged	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & pin 87 of SCR main relay, & between Pin 2 & K40.	
Step 3	If continuity is found ok proceed to step 6	
Step 4	If error persists check the fitment of the connector on the backflow pump for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 6	
Step 6	Clear and check DTC	



## P208A-00: DFC for Urea Main Pump Disconnected

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P208A-00 MIL- On CEL – Off AWL - On	1. The connector/wires to the Urea Main pump is disconnected/loosely connected 2.Urea main pump is damaged	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

### Checkpoints:

1. Check the wiring harness
2. Check connector

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 4 & K74, Pin 3 & K20	
Step 3	If continuity is found ok proceed to step 9	
Step 4	If error persists check the fitment of the connector on the Main supply pump for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 9	
Step 6	If error persists, check the continuity between Pin 3 & Pin 4, if yes, motor winding could be damaged.	
Step 7	If found damaged or failed change the Supply module and go to step 8	
Step 8	Clear and check DTC	



**P208A-4B: DFC for Urea Main Pump control overheated**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P208A-4B MIL- On CEL – Off AWL - On	1. Permanent Short Circuit to Battery 2. Urea leakage into the pump	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 4 & K74, Pin 3 & K20	
Step 3	If continuity is found ok proceed to step 9	
Step 4	If error persists check the fitment of the connector on the Main supply pump for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 9	
Step 6	If error persists, check the continuity between Pin 3 & Pin 4, if yes, motor winding could be damaged.	
Step 7	If found damaged or failed change the Supply module and go to step 8	
Step 8	Clear and check DTC	





**P208D-00: DFC for Urea Main pump shorted to battery**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P208D-00 MIL- On CEL – Off AWL -On	1. Supply pump is Short Circuit to Battery	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 4 & K74, Pin 3 & K20	
Step 3	If continuity is found ok proceed to step 9	
Step 4	If error persists check the fitment of the connector on the Main supply pump for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 9	
Step 6	If error persists, check the continuity between Pin 3 & Pin 4, if yes, motor winding could be damaged.	
Step 7	If found damaged or failed change the Supply module and go to step 8	
Step 8	Clear and check DTC	



**P208C-00: DFC for Urea Main pump shorted to ground**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P208C-00 MIL- On CEL – Off AWL - On	1. Supply pump is Short Circuit to Ground	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 4 & K74, Pin 3 & K20	
Step 3	If continuity is found ok proceed to step 9	
Step 4	If error persists check the fitment of the connector on the Main supply pump for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 9	
Step 6	If error persists, check the continuity between Pin 3 & Pin 4, if yes, motor winding could be damaged.	
Step 7	If found damaged or failed change the Supply module and go to step 8	
Step 8	Clear and check DTC	



## P20F5-7A: DFC for Reductant Consumption Too High Level 2

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P20F5-7A MIL- On CEL – Off AWL - On	1. Leakage in the pressure line 2. Air trapped in the system 3. Battery Voltage fluctuation to the system 4. Dosing valve stuck open	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

### Checkpoints:

1. Check the wiring harness
2. Check connector for SCR pump & dosing valve
3. Check for any leakages in pressure lines

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 4 & K74, Pin 3 & K20	
Step 3	If continuity is found ok proceed to step 9	
Step 4	Check continuity between pin 1 & pin 87 of SCR main relay, & between Pin 2 & K40.	
Step 5	If continuity is found ok proceed to step 9	
Step 6	Check for leakages in the pressure lines and connectors visually and rectify, go to step 9	
Step 7	Perform pressure preparation checks through diagnostic tool (ignition off and then pressure buildup)	
Step 8	If error still persists, replace dosing valve	
Step 9	Clear and check DTC	



**P20F5-00: DFC for Reductant Consumption Too High Level 1**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P20F5-00 MIL- On CEL – Off AWL - On	1. Leakage in the pressure line 2. Air trapped in the system 3. Battery Voltage fluctuation to the system 4. Dosing valve stuck open	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check connector for SCR pump & dosing valve
3. Check for any leakages in pressure lines

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 4 & K74, Pin 3 & K20	
Step 3	If continuity is found ok proceed to step 8	
Step 4	Check continuity between pin 1 & pin 87 of SCR main relay, & between Pin 2 & K40.	
Step 5	If continuity is found ok proceed to step 8	
Step 6	Check for leakages in the pressure lines and connectors visually and rectify, go to step 8	
Step 7	Perform pressure preparation checks through diagnostic tool (ignition off and then pressure buildup)	
Step 8	If error still persists, replace dosing valve	



**P20F4-9B: DFC for Reductant Consumption Too Low Level 2**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P20F4-9B MIL- On CEL – Off AWL - On	1. Blockage in the system 2. DEF is frozen in pressure line. 3. Dosing valve is blocked.	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Urea Pressure line
2. Check Dosing Valve
3. Check DEF

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between sensor pin 1 & K90 (EMS), sensor Pin 2 & K37 (EMS).	
Step 3	If continuity is found ok proceed to step 8	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections, if loose retain proper fitment & go to step 8	
Step 5	Flush out the hose and replace and check if pressure buildup is happening & go to step 8	
Step 6	If error persists, check the dosing valve for any damage/failure	
Step 7	If found damaged or failed change the dosing valve and go to step 8	
Step 8	Clear and check DTC	



## P20F4-00: DFC for Reductant Consumption Too Low Level 1

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P20F4-00 MIL- On CEL – Off AWL - On	1. Blockage in the system 2. DEF is frozen in pressure line. 3. Dosing valve is blocked.	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

### Checkpoints:

1. Check the wiring harness
2. Check sensor
3. Check connector

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between sensor pin 1 & K90 (EMS), sensor Pin 2 & K37 (EMS).	
Step 3	If continuity is found ok proceed to step 8	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections, if loose retain proper fitment & go to step 8	
Step 5	Flush out the hose and replace and check if pressure buildup is happening & go to step 8	
Step 6	If error persists, check the dosing valve for any damage/failure	
Step 7	If found damaged or failed change the dosing valve and go to step 8	
Step 8	Clear and check DTC	



## P204F-7C: DFC for SCR Monitoring Pressure BuildUp Error

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P204F-7C MIL- On CEL – Off AWL - On	1. Air in SCR system 2. DEF level almost empty/blocked tank filter 3. Main supply pump malfunction. 4. Leakage in the system 5. DEF is frozen at the pump inlet and outlet.	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

### Checkpoints:

1. Check leakage in SCR system
2. Check DEF if frozen
3. Check Main supply pump

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check for Blockages/leakage in SCR system pressure line	
Step 2	Check for dosing valve leakage	
Step 3	Check if Backflow non-return valve is faulty/open	
Step 4	Check if Main pump filter is blocked	
Step 5	After above checks are ensured & rectified go to step 7	
Step 6	If error persists, Change Supply module & go to step 7	
Step 7	Clear and check DTC	





**P05EE-00: DFC for SCR supply pump not plausible**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P05EE-00 MIL- On CEL – Off AWL - On	1. Battery voltage fluctuations to the supply module 2. Supply pump and back flow pump faulty	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check supply module

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 4 & K74, Pin 3 & K20	
Step 3	If continuity is found ok proceed to step 8	
Step 4	Check continuity between pin 1 & pin 87 of SCR main relay, & between Pin 2 & K40.	
Step 5	If continuity is found ok proceed to step 8	
Step 6	Actuate supply and back flow pump through tester	
Step 7	If issues, change supply module & go to step 8	
Step 8	Clear and check DTC	



## P048B-11: DFC for Exhaust throttle valve position sensor voltage SRC low

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P048B-11 MIL- On CEL – Off AWL - Off	1. Short circuit to ground 2. Wiring harness problem 3. Wrong position sensor in ETV	NA

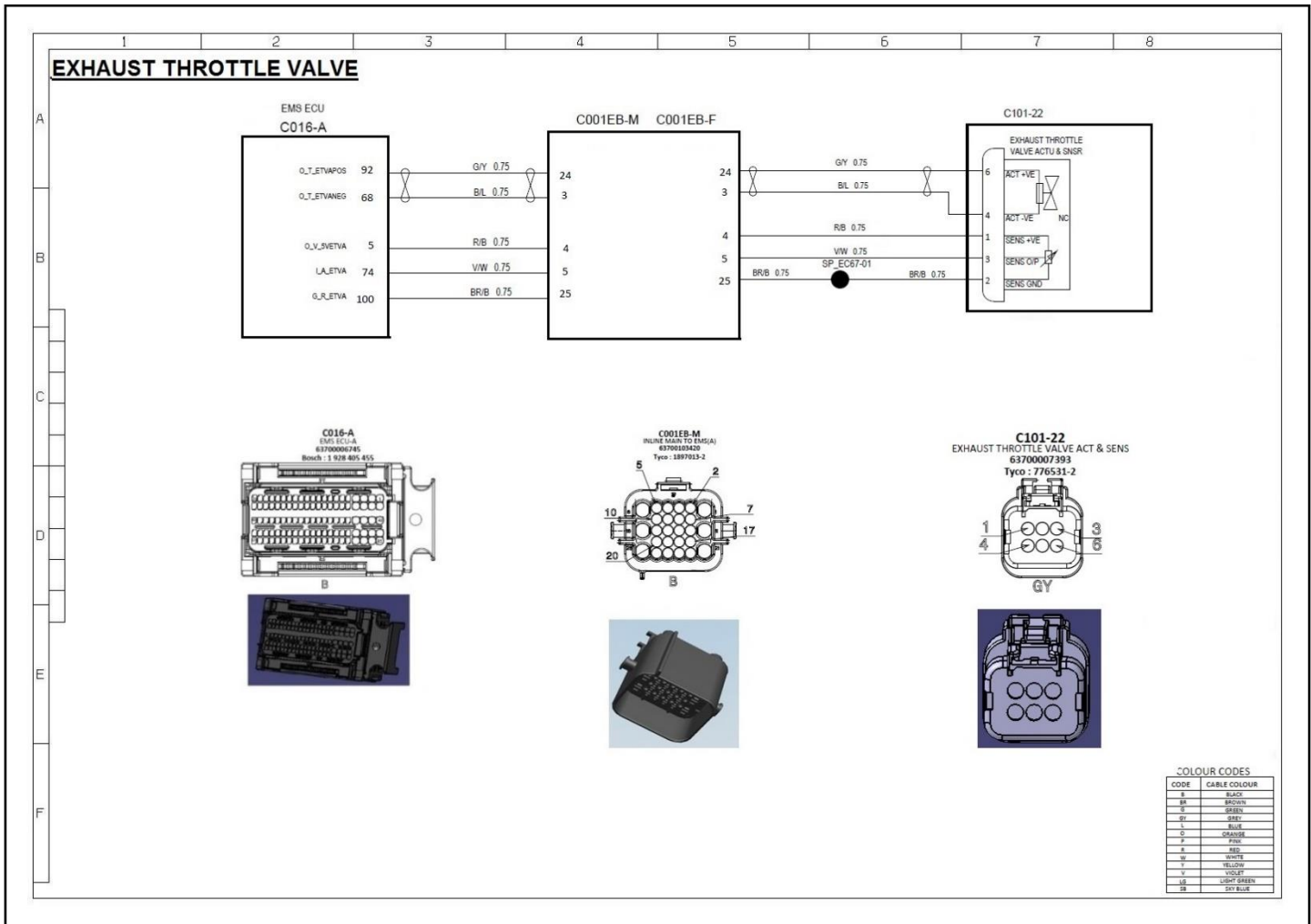
### Checkpoints:

6. Check Battery Voltage
7. Check the Wire harness connections for pin damage or electrical problems
8. Check the ETV position sensor condition & for any mechanical damage

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 8	
Step 4	If error still present, Check continuity in between pin 3 & A74.	
Step 5	Check continuity in between pin 4 & A100	
Step 6	If Step 4 & Step 5 fails then check signal for cross continuity between pin 3 & 4.	
Step 7	If Step 6 is true then replace the wire harness cable with new one & go to Step 8	
Step 8	Check DTC	

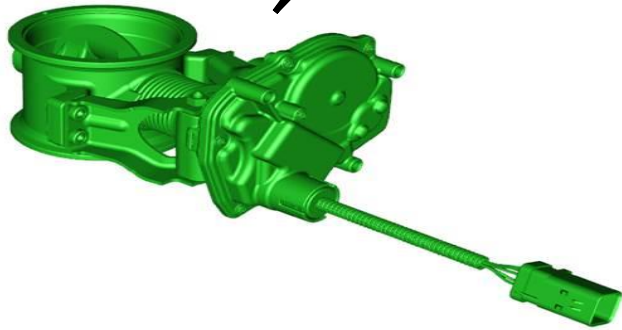
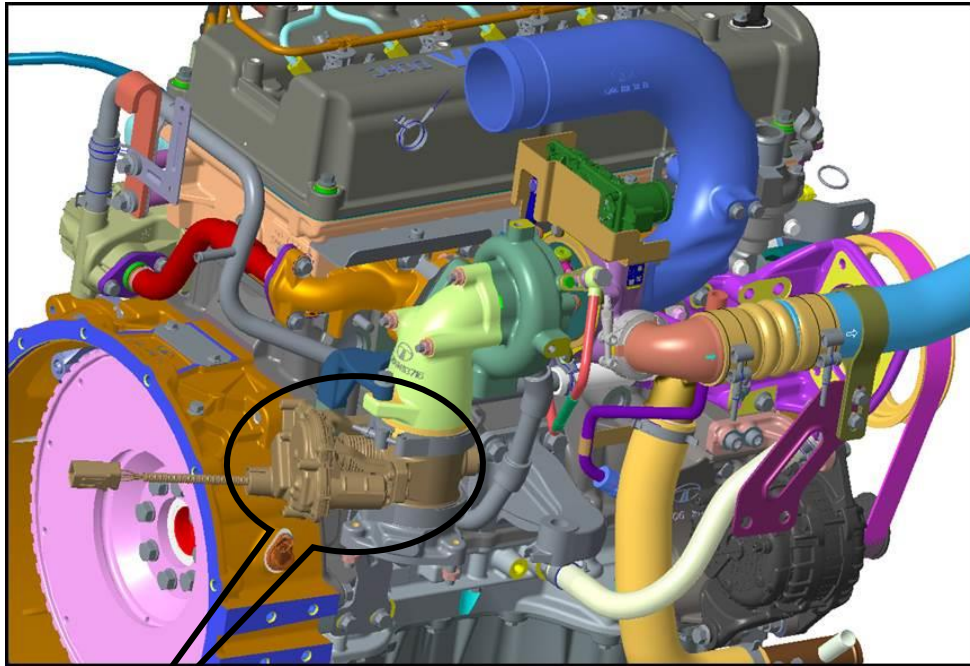
### Circuit Schematic Diagram:



### Circuit Description:

EMS actuates ETV valve and measures its position by using ETV position sensor to make it as closed loop feedback process. ETV Actuator/sensor has 6-pole connector and provides the Analog input signal at A52. EMS will actuate the valve by using H-bridge driver. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





**P048B-12: DFC for Exhaust throttle valve position sensor voltage SRC high**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P048B-12 MIL- On CEL – Off AWL-Off	1. Short circuit to ground 2. Wiring harness problem 3. Wrong position sensor in ETV	NA

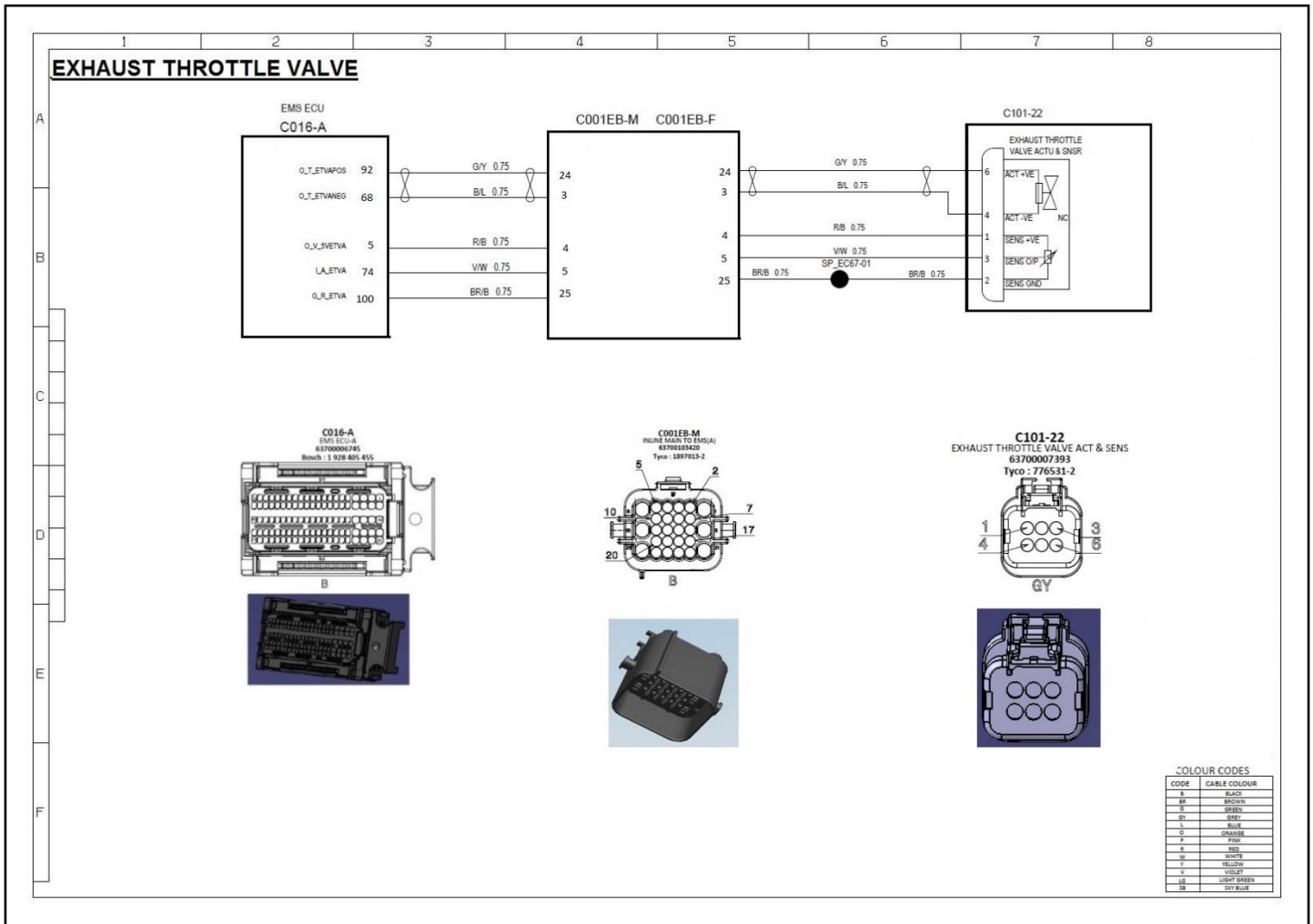
**Checkpoints:**

1. Check Battery Voltage
2. Check the Wire harness connections for pin damage or electrical problems
3. Check the ETV position sensor condition & for any mechanical damage

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 8	
Step 4	If error still present, Check continuity in between pin 3 & A74.	
Step 5	Check continuity in between pin 1 & A5	
Step 6	If Step 4 & Step 5 fails then check for Open circuit	
Step 7	If Step 6 is true then replace the wire harness cable with new one & go to Step 8	
Step 8	Check DTC	

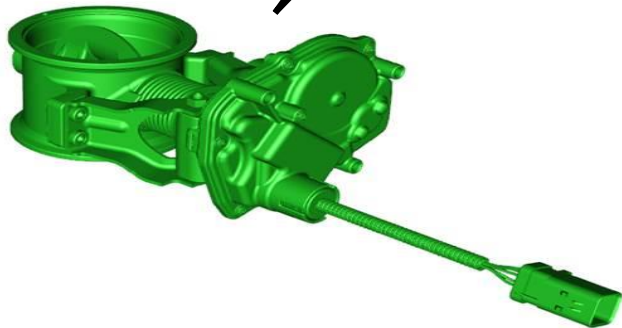
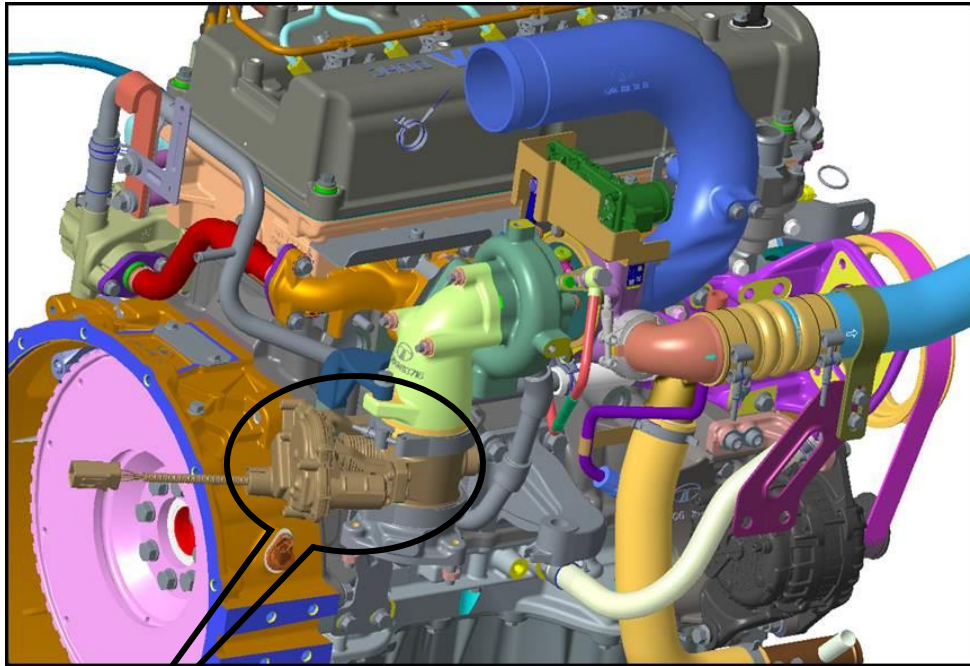
**Circuit Schematic Diagram:**



### Circuit Description:

EMS actuates ETV valve and measures its position by using ETV position sensor to make it as closed loop feedback process. ETV Actuator/sensor has 6-pole connector and provides the Analog input signal at A52. EMS will actuate the valve by using H-bridge driver. Check for the continuity between EMS and Sensor by referring above schematic.

### Location & Component Image:







**P04A5-00: Exhaust throttle Valve jammed at closed position**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P04A5-00 MIL- On CEL – Off AWL - Off	1. ETV valve stuck	Torque limitation

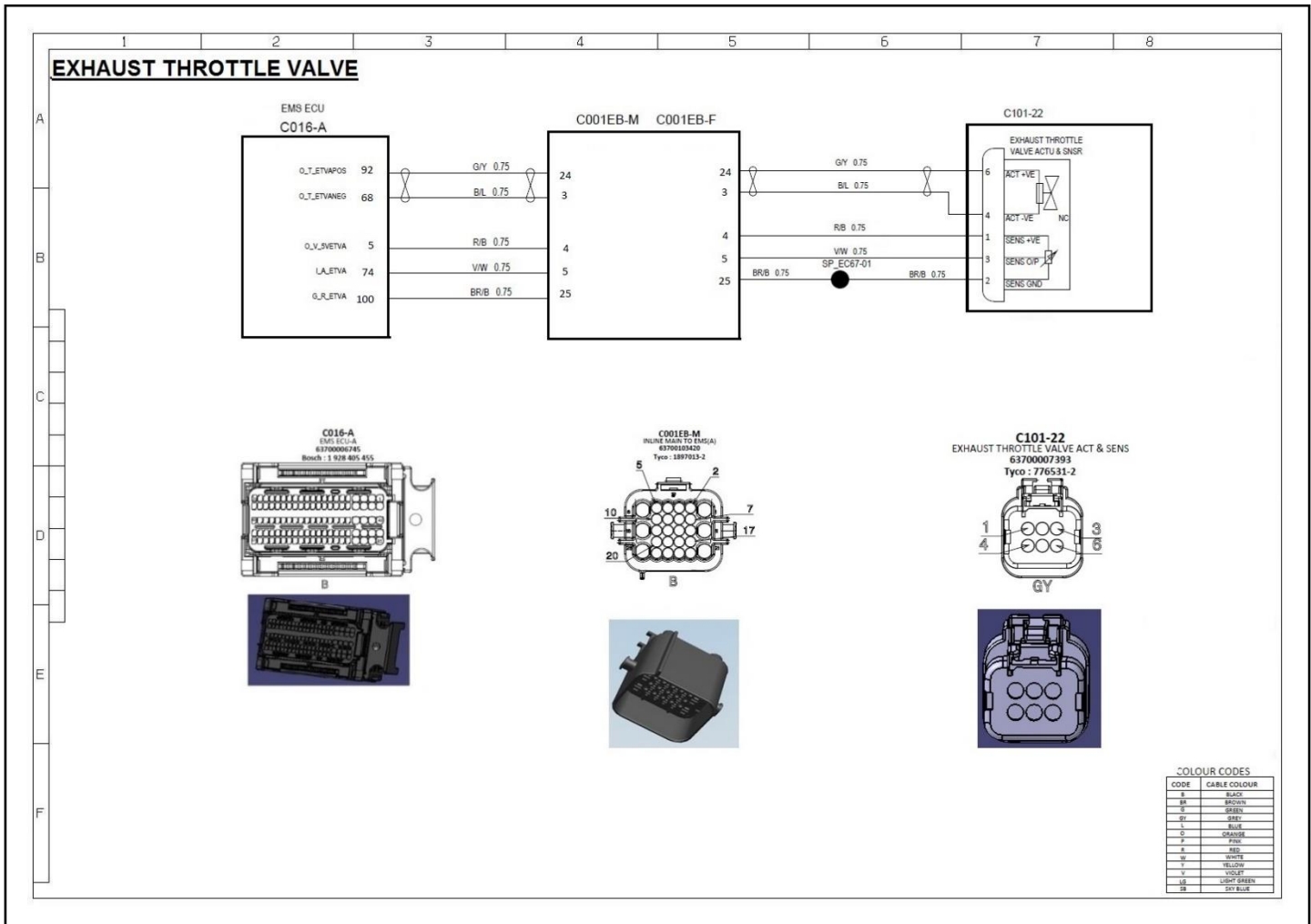
**Checkpoints:**

1. Check Battery Voltage
2. Check the Wire harness connections for pin damage or electrical problems
3. Check ETV valve for soot deposition

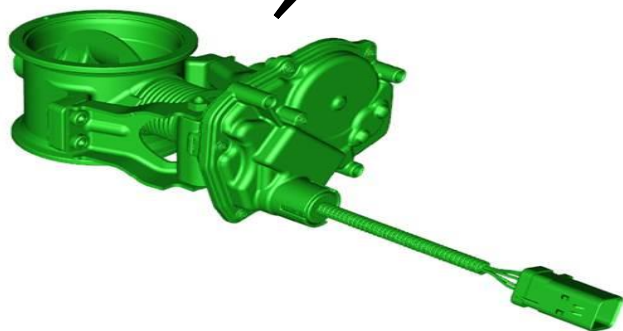
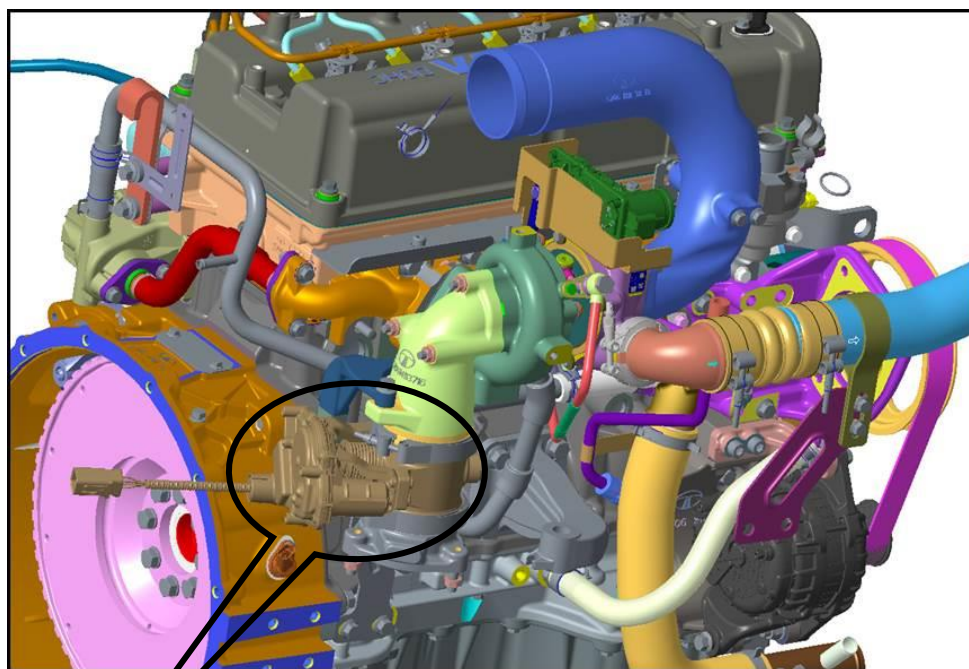
**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check ETV Valve for soot deposition	
Step 3	Clean the ETV valve	
Step 4	Check DTC	
Step 5	If problem still persists replace the ETV valve	

### Circuit Schematic Diagram:



Location & Component Image:





## P04A4-00: Exhaust throttle Valve jammed at Open position

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P04A4-00 MIL- On CEL – Off AWL - Off	2. ETV valve stuck	Torque limitation

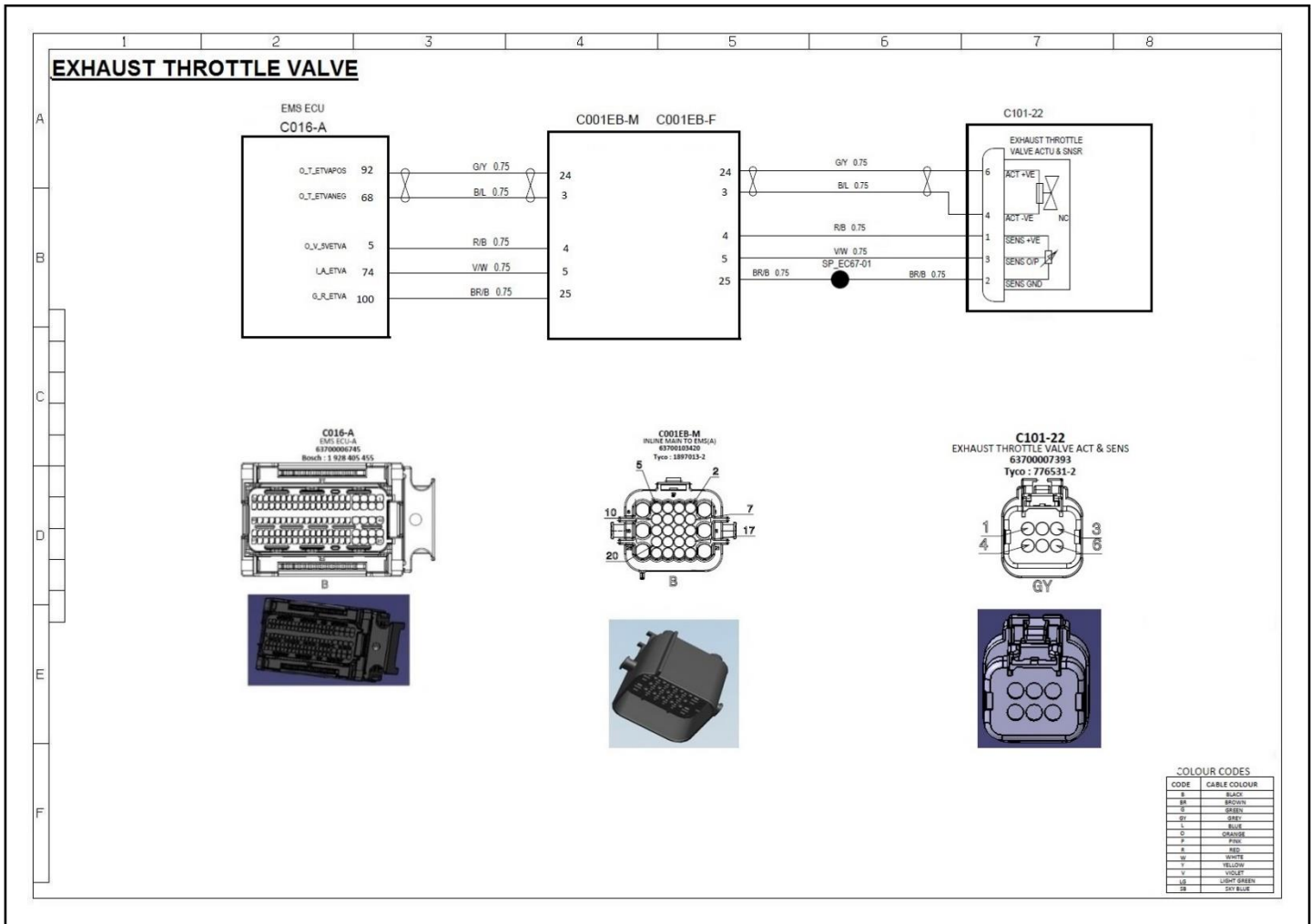
### Checkpoints:

4. Check Battery Voltage
5. Check the Wire harness connections for pin damage or electrical problems
6. Check ETV valve for soot deposition

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check ETV Valve for soot deposition	
Step 3	Clean the ETV valve	
Step 4	Check DTC	
Step 5	If problem still persists replace the ETV valve	

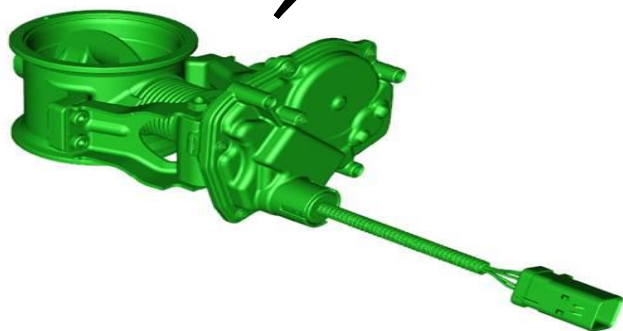
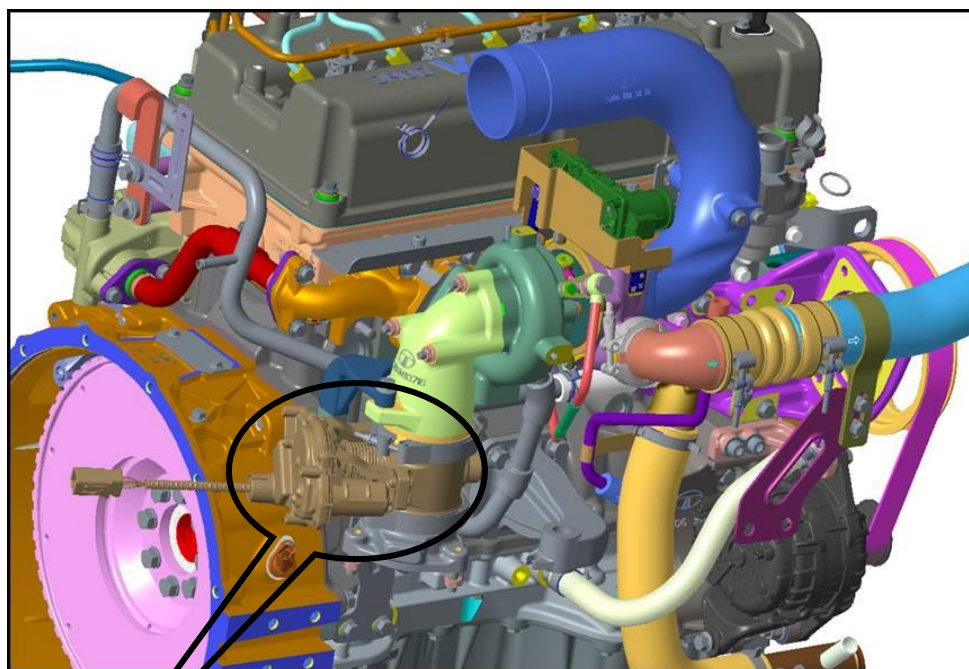
### Circuit Schematic Diagram:



### Circuit Description:

EMS actuates ETV valve and measures its position by using ETV position sensor to make it as closed loop feedback process. ETV Actuator/sensor has 6-pole connector and provides the Analog input signal at A52. EMS will actuate the valve by using H-bridge driver. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





**P048D-00: Short circuit to ground on Out1 error for ETV Valve H-bridge**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P048D-00 MIL- On CEL – Off AWL - Off	1. Wiring harness defect 2. Faulty ETV valve 3. Sensor connector problem	NA

**Checkpoints:**

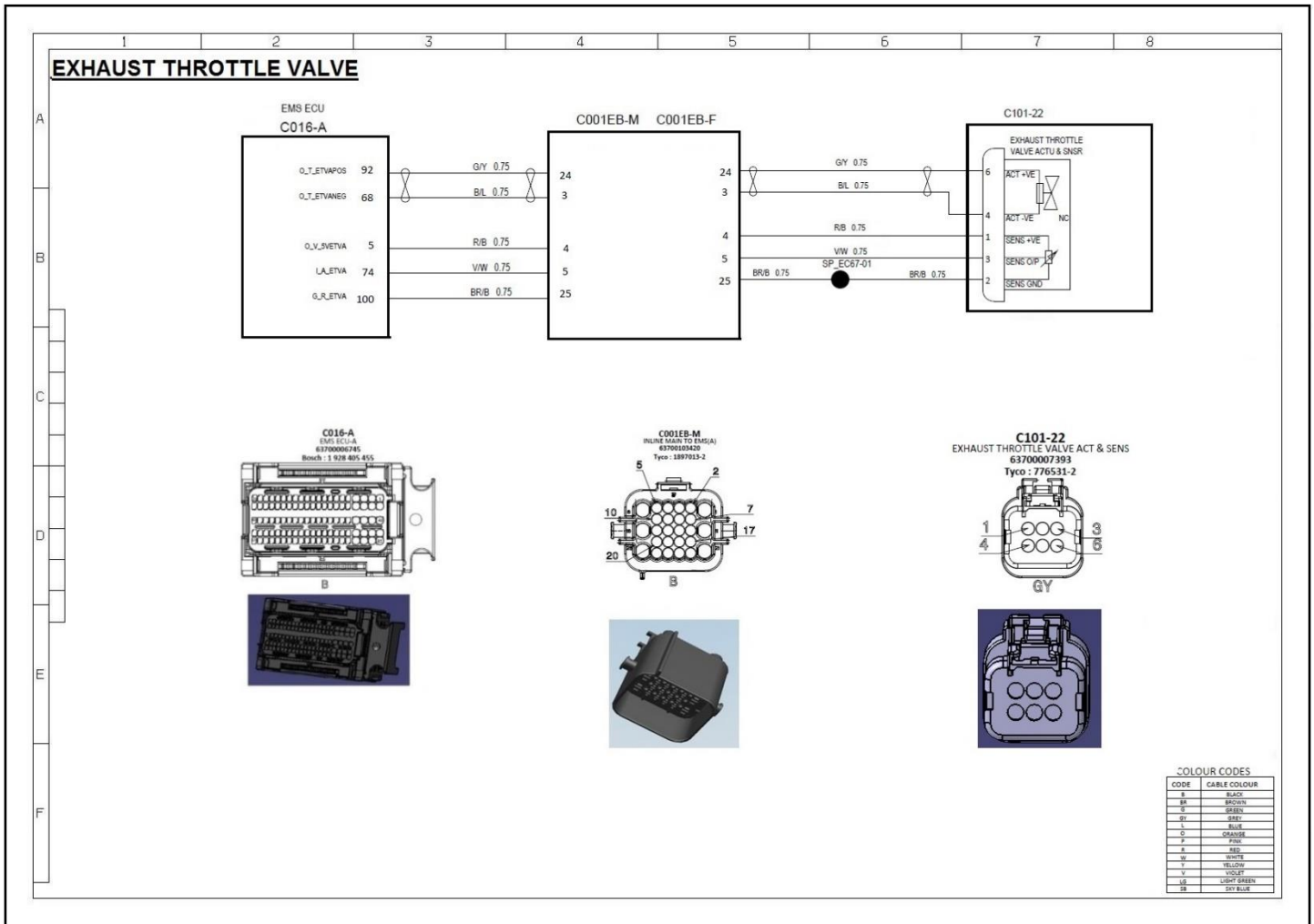
1. Check Battery Voltage
2. Check the Wire harness connections for pin damage or electrical problems
3. Check the ETV assembly condition & for any mechanical damage

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 4	If error still present, check continuity in between pin 6 & A92	
Step 5	If error still present, check continuity in between pin 3 & A74	
Step 6	If error still present, check continuity in between pin 4 & A68	
Step 7	If Step 4, Step 5 & Step 6 fails then check pin 6 for short circuit to ground (K02/K04/K06).	
Step 8	If Step 7 is true then replace the wire harness cable with new one & go to Step 10	
Step 9	If still error present replace ETV assembly with new one & go to Step 10	
Step 10	Check DTC	



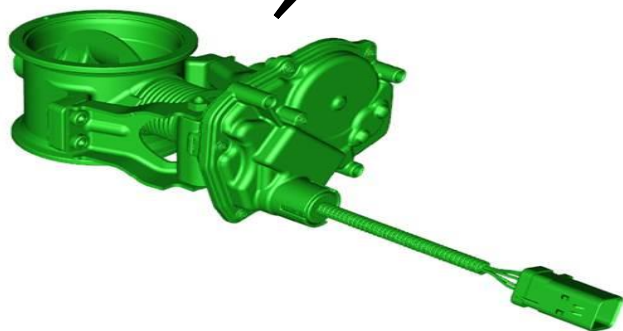
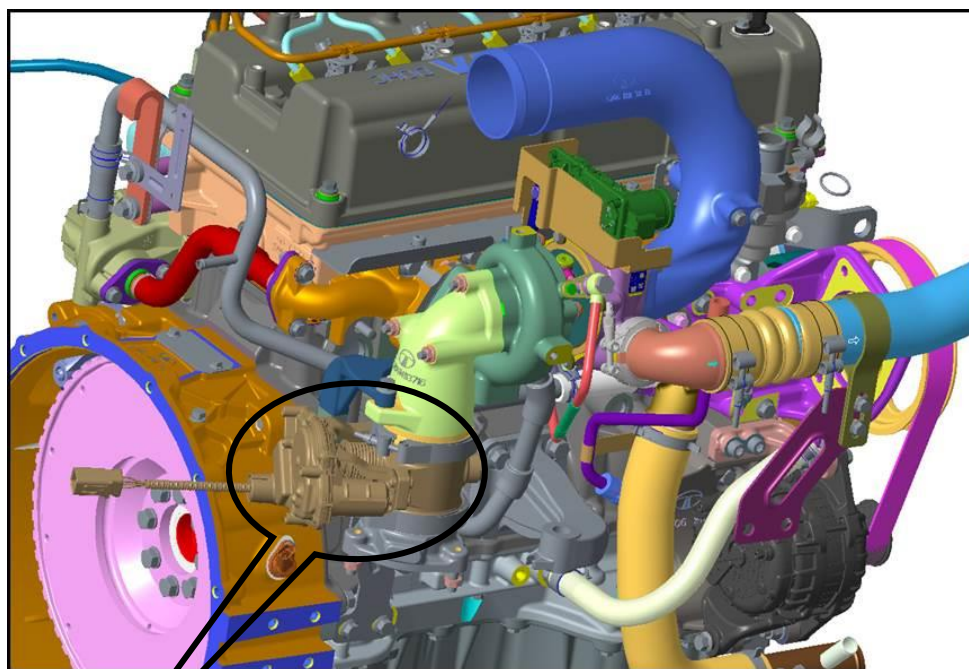
### Circuit Schematic Diagram:



### Circuit Description:

EMS actuates ETV valve and measures its position by using ETV position sensor to make it as closed loop feedback process. ETV Actuator/sensor has 6-pole connector and provides the Analog input signal at A52. EMS will actuate the valve by using H-bridge driver. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





**P048E-00: Short circuit to Battery on Out1 error for ETV Valve H-bridge**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P048E-00 MIL- On CEL – Off AWL - Off	1. Wiring harness defect 2. Faulty ETV valve 3. Sensor connector problem	NA

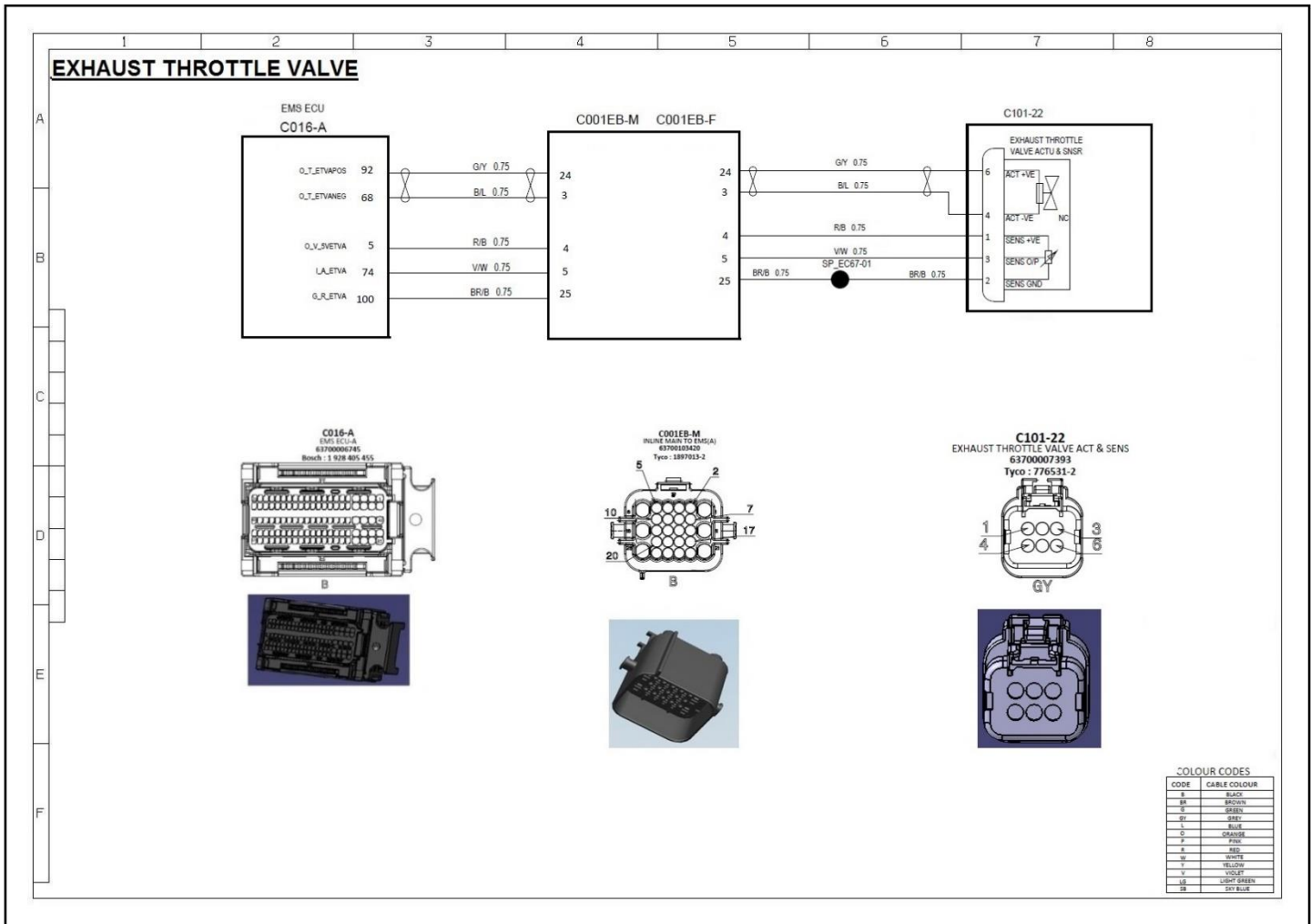
**Checkpoints:**

7. Check Battery Voltage
8. Check the Wire harness connections for pin damage or electrical problems
9. Check the ETV assembly condition & for any mechanical damage

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 4	If error still present, check continuity in between pin 6 & A92	
Step 5	If error still present, check continuity in between pin 3 & A74	
Step 6	If error still present, check continuity in between pin 4 & A68	
Step 7	If Step 4, Step 5 & Step 6 fails then check pin 6 for short circuit to battery (K01/K03/K05).	
Step 8	If Step 7 is true then replace the wire harness cable with new one & go to Step 10	
Step 9	If still error present replace ETV assembly with new one & go to Step 10	
Step 10	Check DTC	

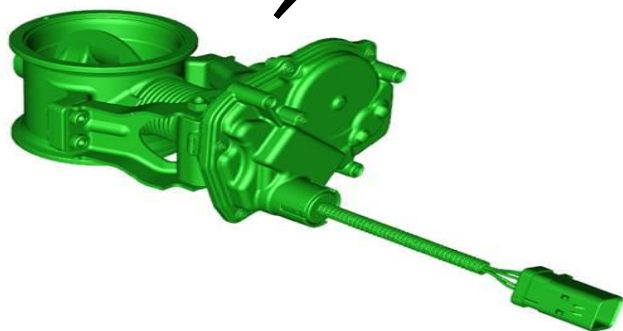
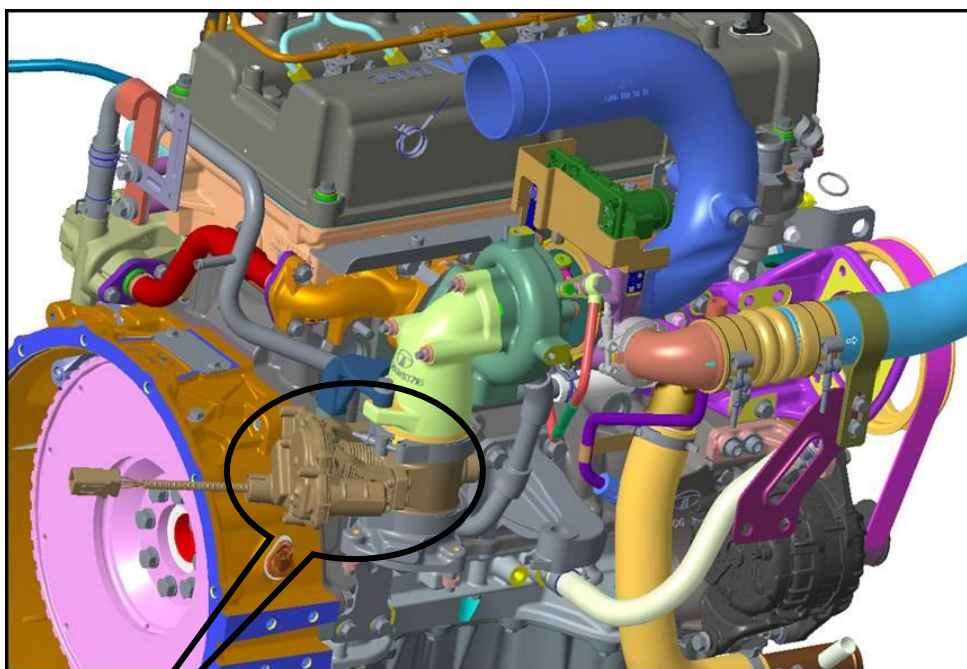
### Circuit Schematic Diagram:



### Circuit Description:

EMS actuates ETV valve and measures its position by using ETV position sensor to make it as closed loop feedback process. ETV Actuator/sensor has 6-pole connector and provides the Analog input signal at A52. EMS will actuate the valve by using H-bridge driver. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





**P04A8-00: Short circuit to ground on Out2 error for ETV Valve H-bridge**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code:P04A8-00 MIL- On CEL – Off AWL - Off	1. Wiring harness defect 2. Faulty EGR valve 3. Sensor connector problem	Torque Limitation

**Checkpoints:**

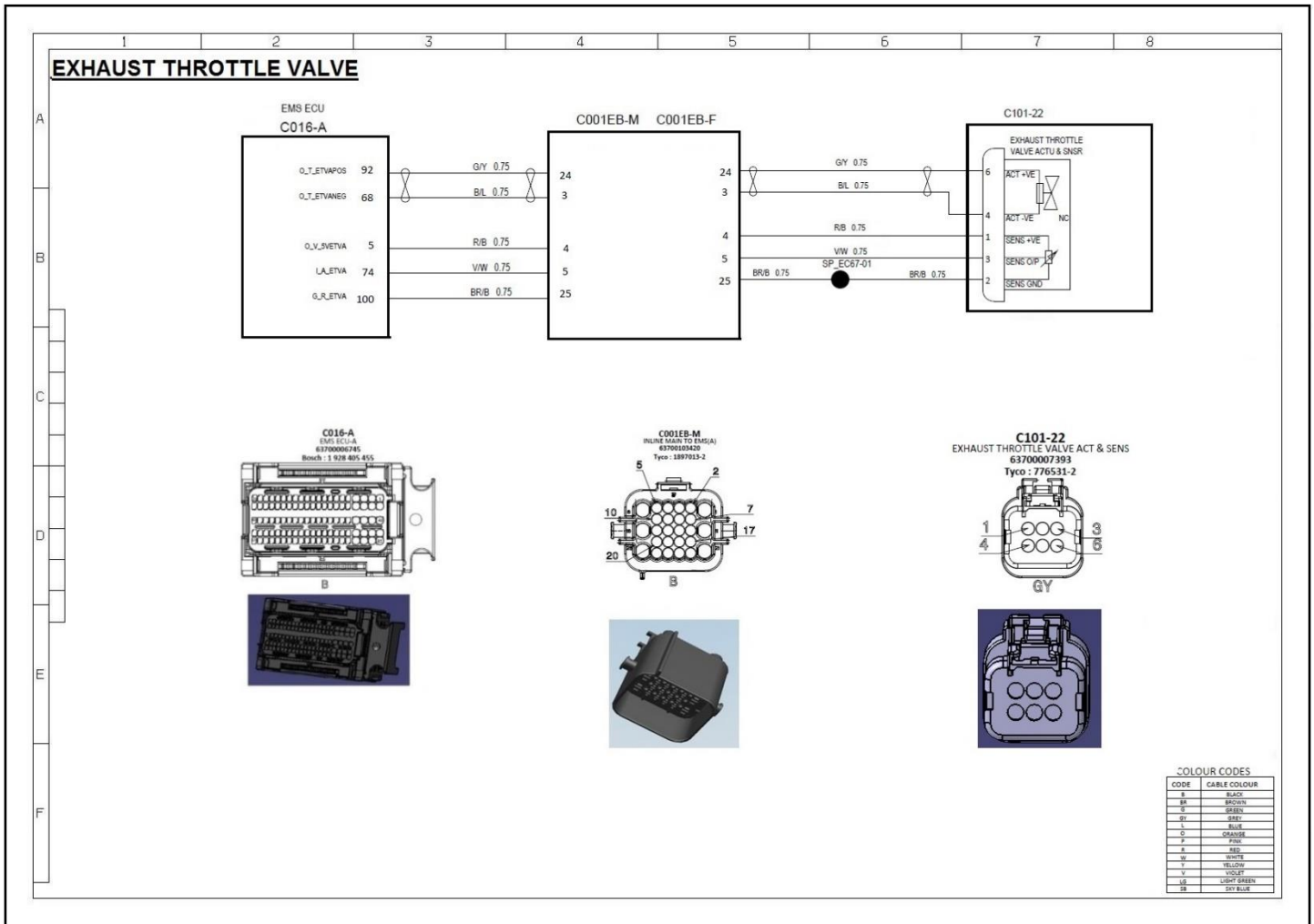
4. Check Battery Voltage
5. Check the Wire harness connections for pin damage or electrical problems
6. Check the ETV assembly condition & for any mechanical damage

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 4	If error still present, check continuity in between pin 6 & A92	
Step 5	If error still present, check continuity in between pin 3 & A74	
Step 6	If error still present, check continuity in between pin 4 & A68	
Step 7	If Step 4, Step 5 & Step 6 fails then check pin 4 for short circuit to ground (K02/K04/K06).	
Step 8	If Step 7 is true then replace the wire harness cable with new one & go to Step 10	
Step 9	If still error present replace EGR valve assembly with new one & go to Step 10	
Step 10	Check DTC	



### Circuit Schematic Diagram:

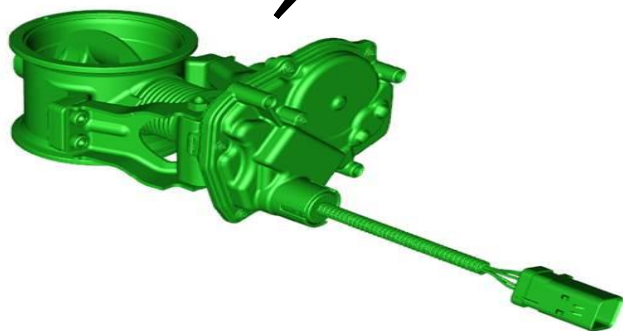
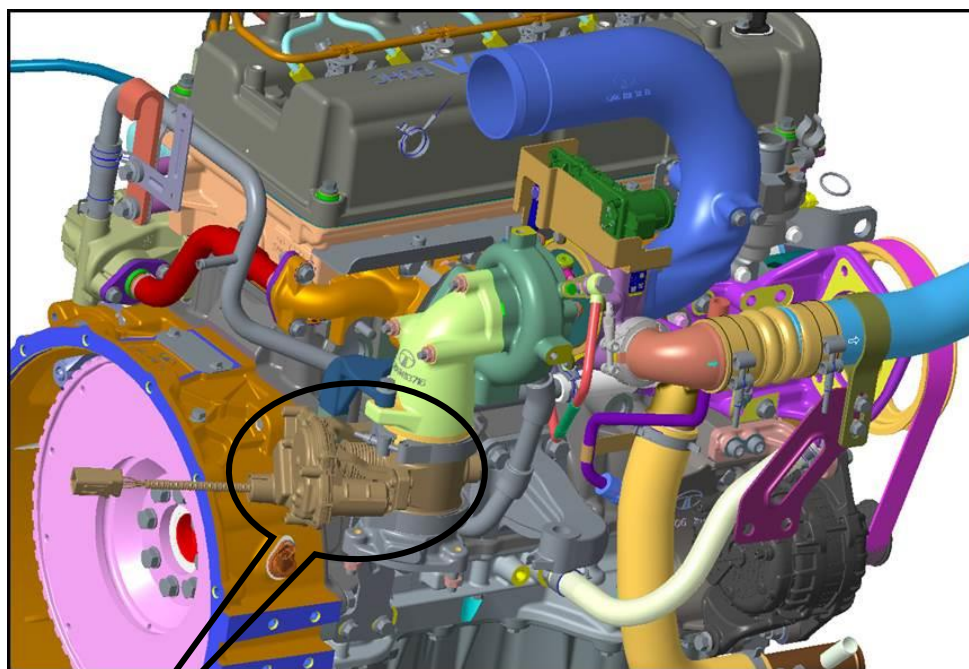


### Circuit Description:

EMS actuates ETV valve and measures its position by using ETV position sensor to make it as closed loop feedback process. ETV Actuator/sensor has 6-pole connector and provides the Analog input signal at A52. EMS will actuate the valve by using H-bridge driver. Check for the continuity between EMS and Sensor by referring above schematic.



Location & Component Image:





**P04A9-00: Short circuit to battery on Out2 error for ETV valve H-bridge**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code:P04A9-00 MIL- On CEL – Off AWL - Off	1. Wiring harness defect 2. Faulty ETV valve 3. Sensor connector problem	NA

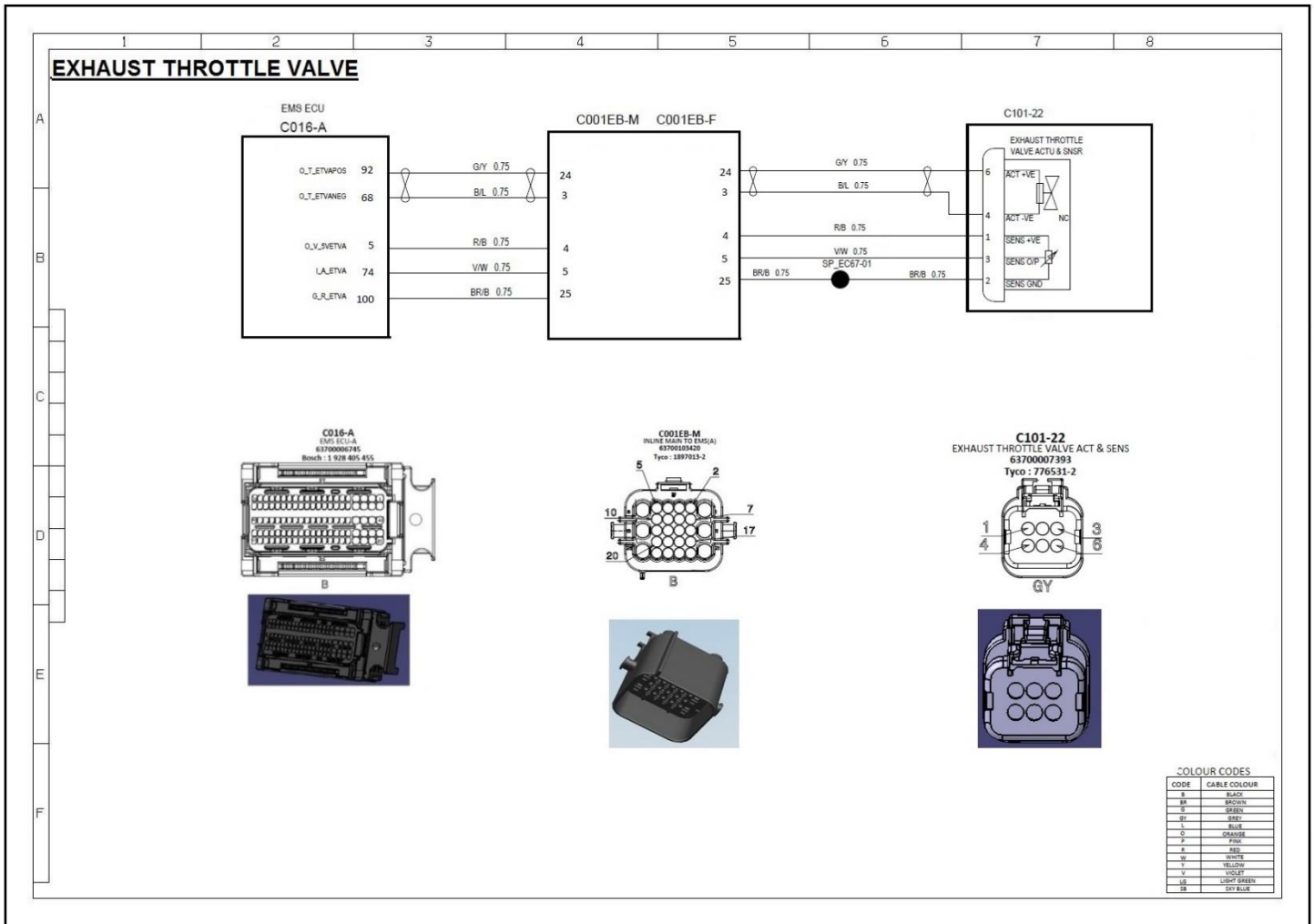
**Checkpoints:**

1. Check Battery Voltage
2. Check the Wire harness connections for pin damage or electrical problems
3. Check the ETV assembly condition & for any mechanical damage

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 4	If error still present, check continuity in between pin 6 & A92	
Step 5	If error still present, check continuity in between pin 3 & A74	
Step 6	If error still present, check continuity in between pin 4 & A68	
Step 7	If Step 4, Step 5 & Step 6 fails then check pin 4 for short circuit to battery (K01/K03/K05).	
Step 8	If Step 7 is true then replace the wire harness cable with new one & go to Step 10	
Step 9	If still error present replace EGR Position Sensor with new one & go to Step 10	
Step 10	Check DTC	

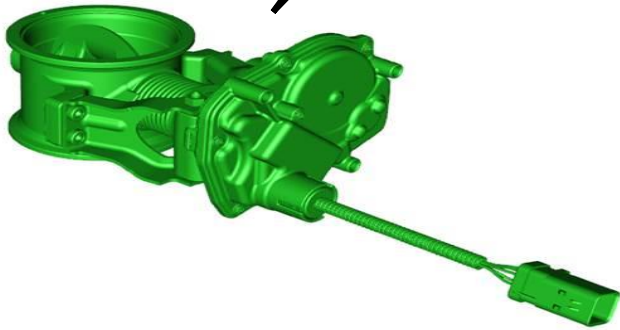
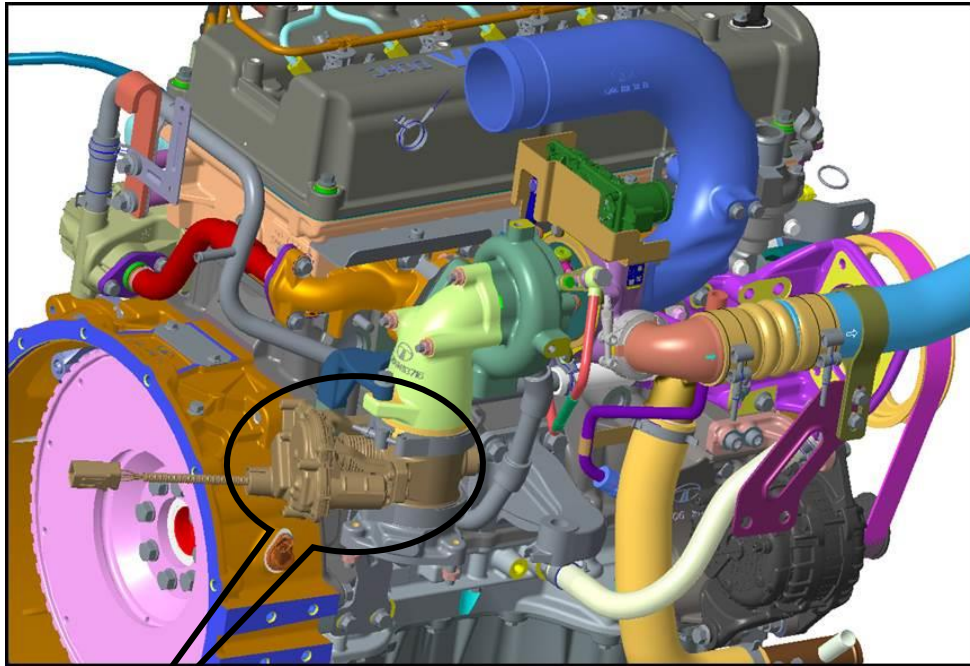
### Circuit Schematic Diagram:



### Circuit Description:

EMS actuates ETV valve and measures its position by using ETV position sensor to make it as closed loop feedback process. ETV Actuator/sensor has 6-pole connector and provides the Analog input signal at A52. EMS will actuate the valve by using H-bridge driver. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





## P04A0-00: DFC for ETV governing Deviation

### Overview:

Code	Cause	Effect on Vehicle
Fault Code:P04A0-00 MIL- On CEL – Off Immo Lamp – NA Message on IC - NA	1. Wiring harness defect 2. Faulty ETV valve 3. Sensor connector problem	Torque Limitation

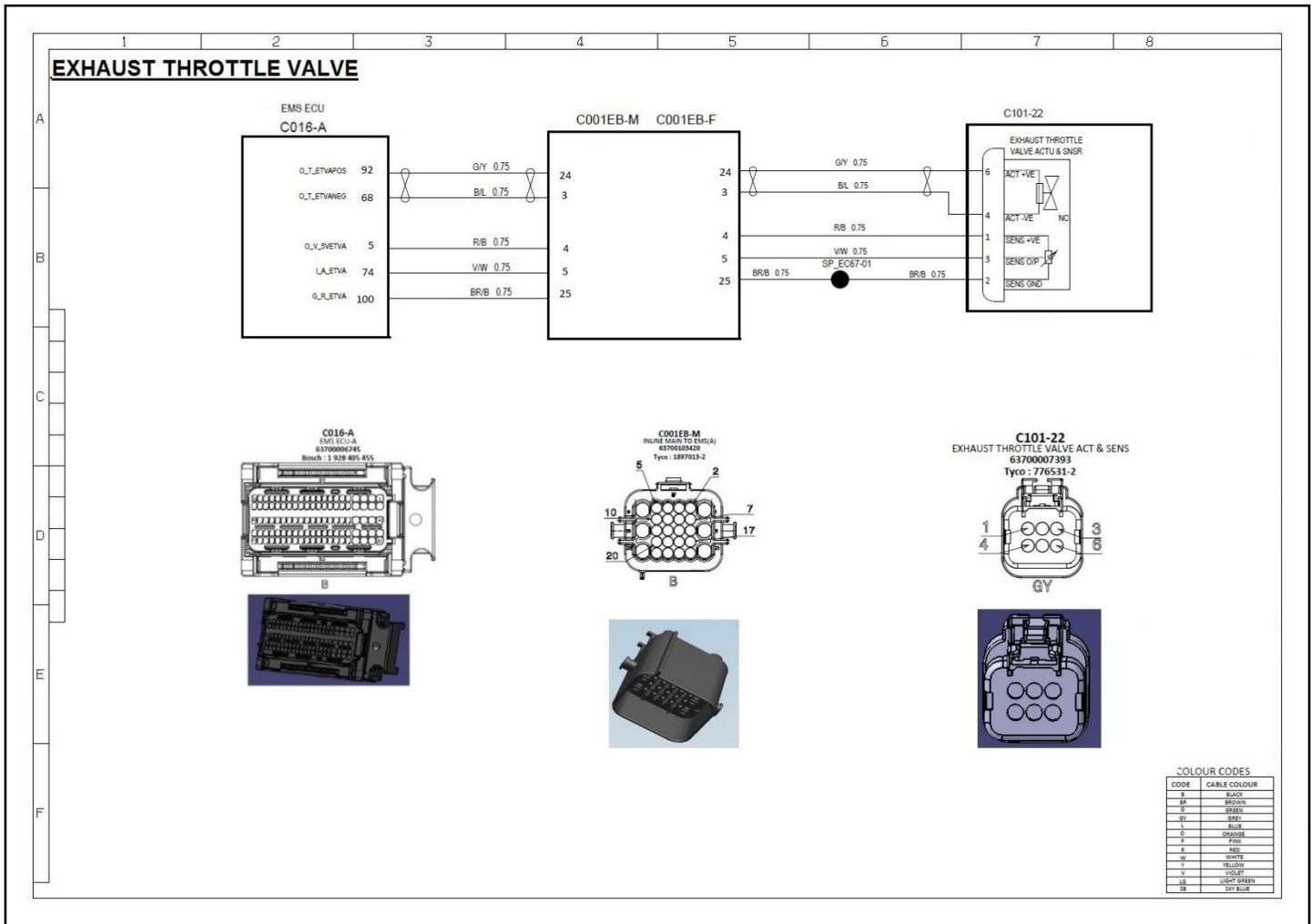
### Checkpoints:

4. Check Battery Voltage
5. Check the Wire harness connections for pin damage or electrical problems
6. Check the ETV position sensor condition & for any mechanical damage

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 4	If error still present, check continuity in between pin 6 & A92	
Step 5	If error still present, check continuity in between pin 3 & A74	
Step 6	If error still present, check continuity in between pin 4 & A68	
Step 7	If Step 4, Step 5 & Step 6 fails then check pin 6 for short circuit to pin 4	
Step 8	If Step 7 is true then replace the wire harness cable with new one & go to Step 10	
Step 9	If still error present replace ETV Position Sensor with new one & go to Step 10	
Step 10	Check DTC	

### Circuit Schematic Diagram:

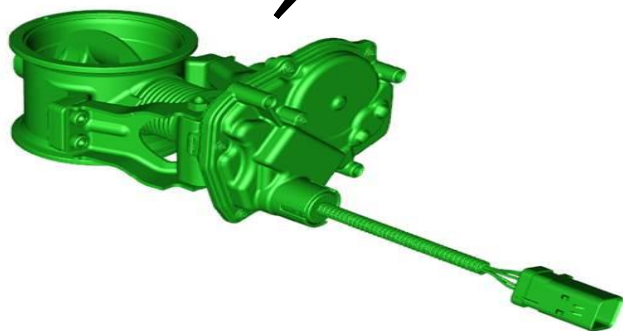
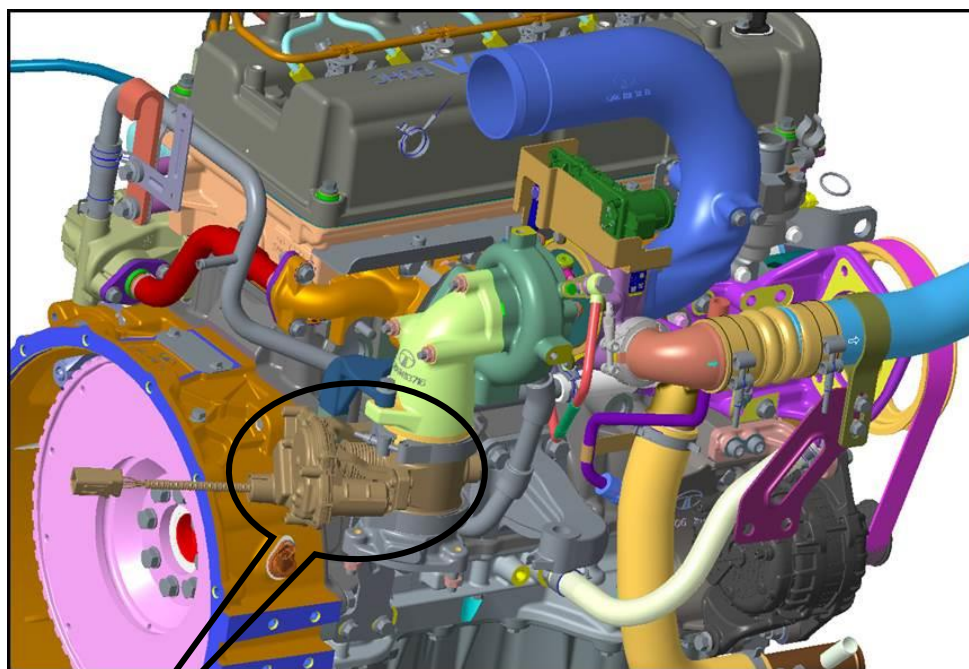


### Circuit Description:

EMS actuates ETV valve and measures its position by using ETV position sensor to make it as closed loop feedback process. ETV Actuator/sensor has 6-pole connector and provides the Analog input signal at A52. EMS will actuate the valve by using H-bridge driver. Check for the continuity between EMS and Sensor by referring above schematic.



Location & Component Image:







**P040C-00: DFC for EGR cooler downstream temperature Sensor Short circuit to ground**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P040C-00 MIL- On CEL – Off AWL - Off	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

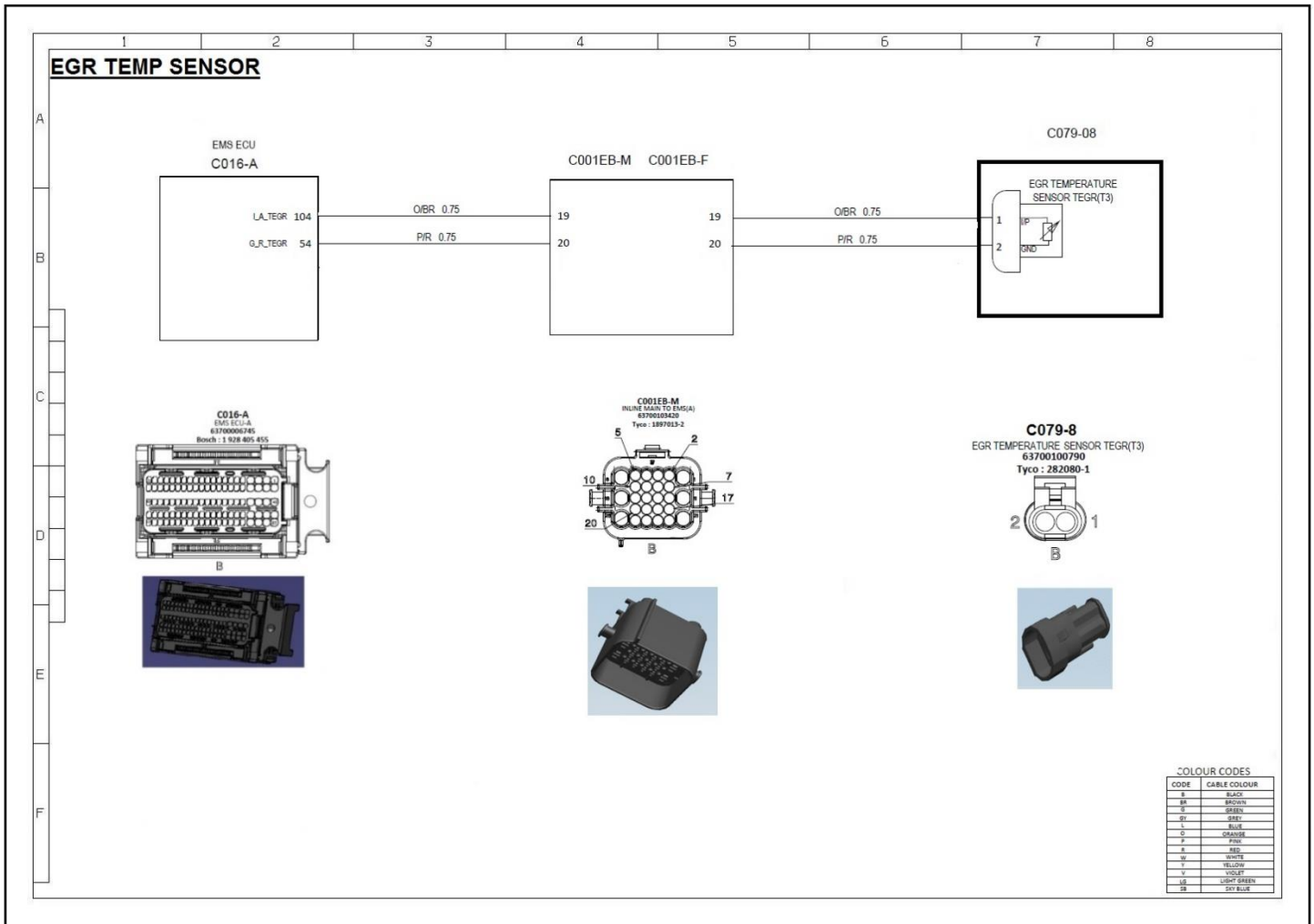
**Checkpoints:**

4. Check Battery Voltage
5. Check wire harness connections
6. Check sensor condition & any mechanical damage to sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 8	
Step 4	If error still present, check the continuity between sensor pin1 & A104 & continuity between sensor pin2 & A54. Go to Step 5	
Step 5	If continuity is unavailable from Step 4 then check the signal line short to ground & go to Step 8	
Step 6	If Step 5 is true then replace the wire harness cable with new one & go to Step 8	
Step 7	If error still present then replace Temp sensor with new one & go to Step 8	
Step 8	Check DTC	

#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of fuel by using this sensor. EGR cooler downstream temperature sensor has 2-pole connector and provides the analog input signal at A104. It is thermistor type and resistance of it changes according to fuel temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.

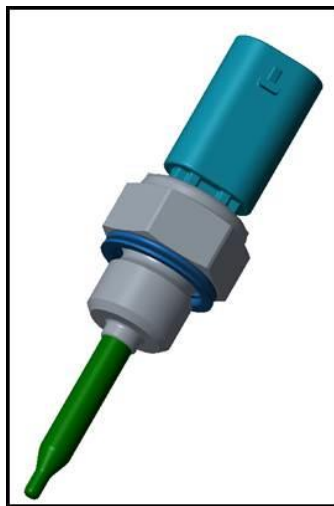
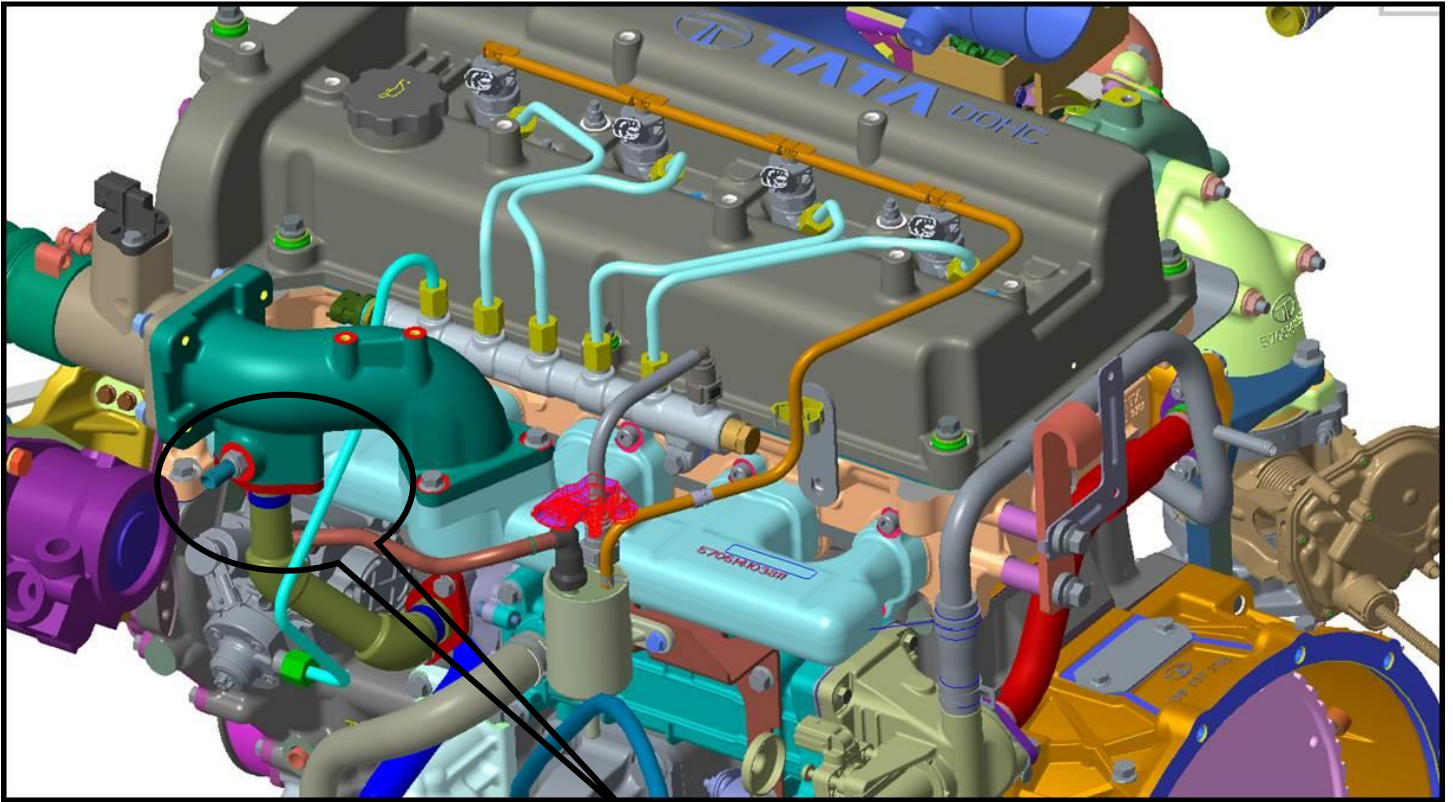


### 3.3L\_NGE\_BSVI & ECU MD1CS018 DTC Troubleshooting Data

Ver : 1.0

Date: 15/08/2019

Location & Component Image:





**P040D-00: DFC for EGR cooler downstream temperature Sensor signal Open circuit or Short circuit to battery**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P040D-00 MIL- Off CEL – On AWL - Off	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

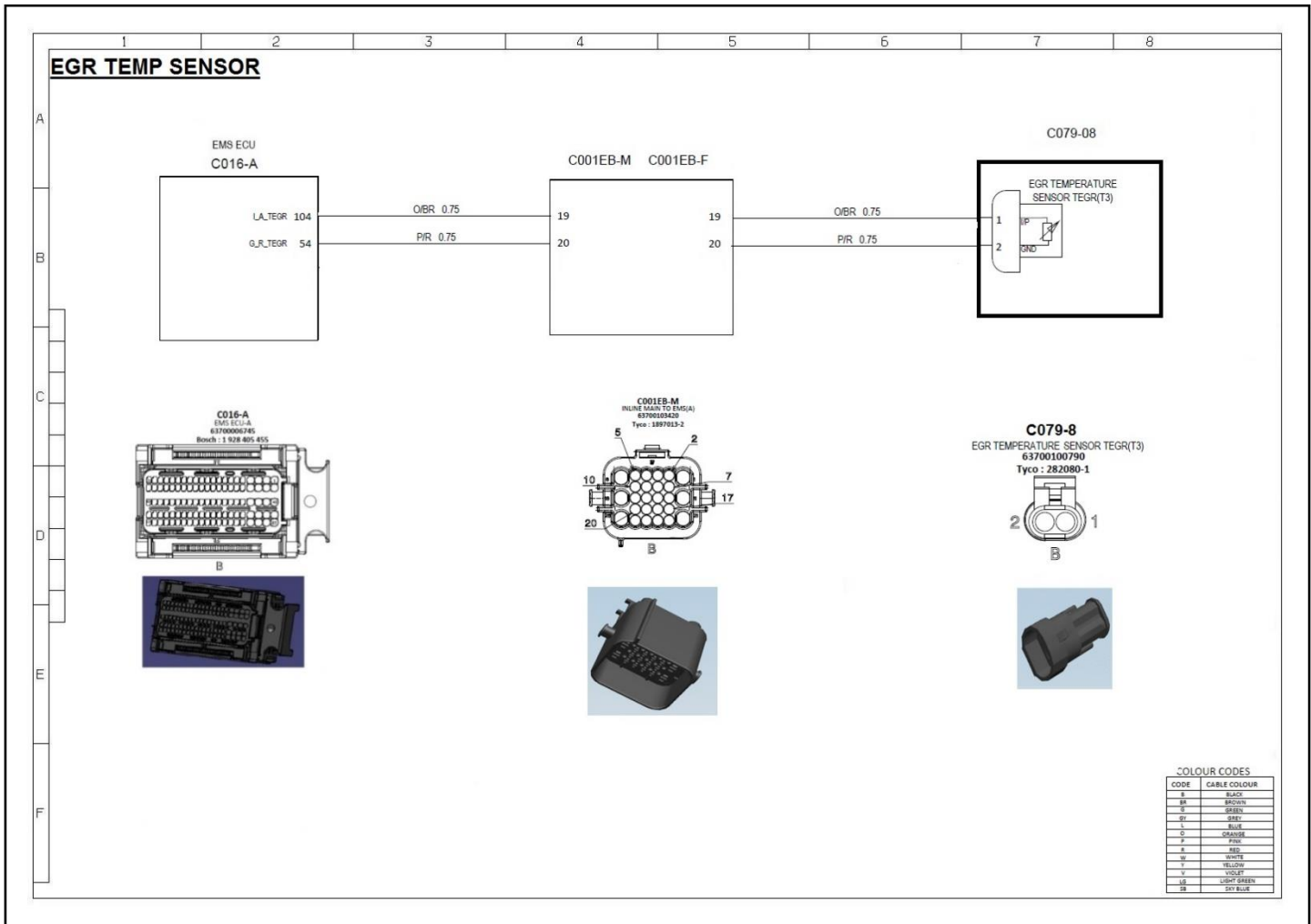
**Checkpoints:**

4. Check Battery Voltage
5. Check wire harness connections
6. Check sensor condition & any mechanical damage to sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 8	
Step 4	If error still present, check the continuity between sensor pin1 & A104 & continuity between sensor pin2 & A54. Go to Step 5	
Step 5	If continuity is unavailable from Step 4 then check the signal line short to battery or Open circuit & go to Step 8	
Step 6	If Step 5 is true then replace the wire harness cable with new one & go to Step 8	
Step 7	If error still present then replace Fuel Temp sensor with new one & go to Step 8	
Step 8	Check DTC.	

#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of fuel by using this sensor. EGR cooler downstream temperature sensor has 2-pole connector and provides the analog input signal at A104. It is thermistor type and resistance of it changes according to fuel temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.



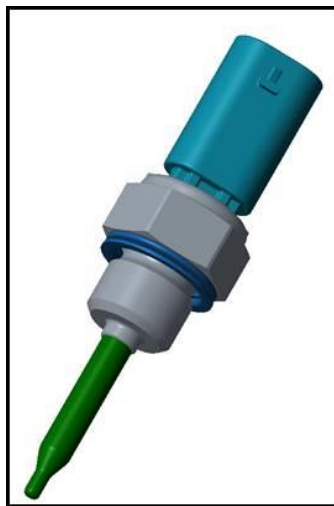
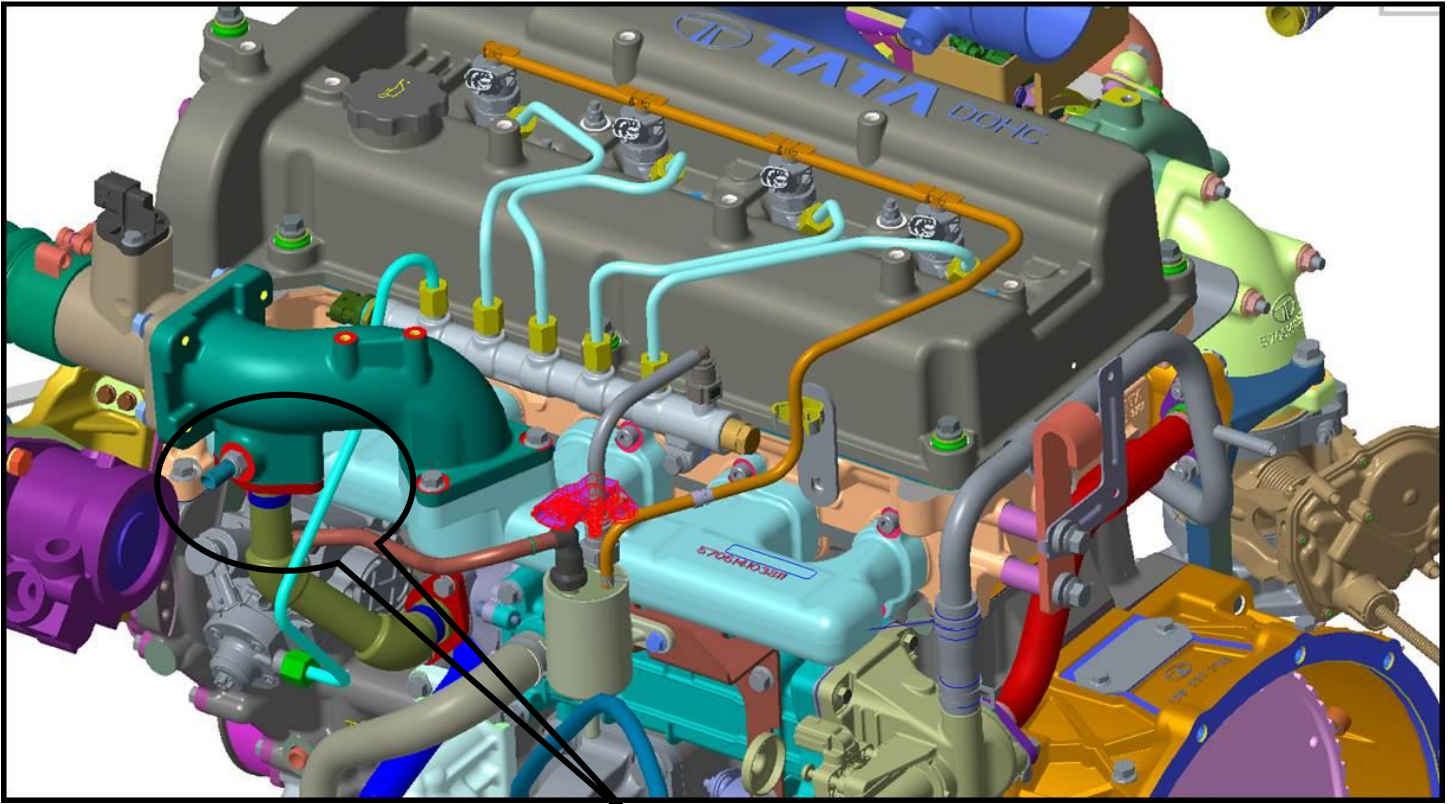


### 3.3L\_NGE\_BSVI & ECU MD1CS018 DTC Troubleshooting Data

Ver : 1.0

Date: 15/08/2019

Location & Component Image:





**P040B-00: DFC for EGR cooler downstream Temperature Sensor Circuit Range High**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code:P040B-00 MIL- Off CEL – On AWL - Off	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem 4. Damaged EGR cooler	NA

**Checkpoints:**

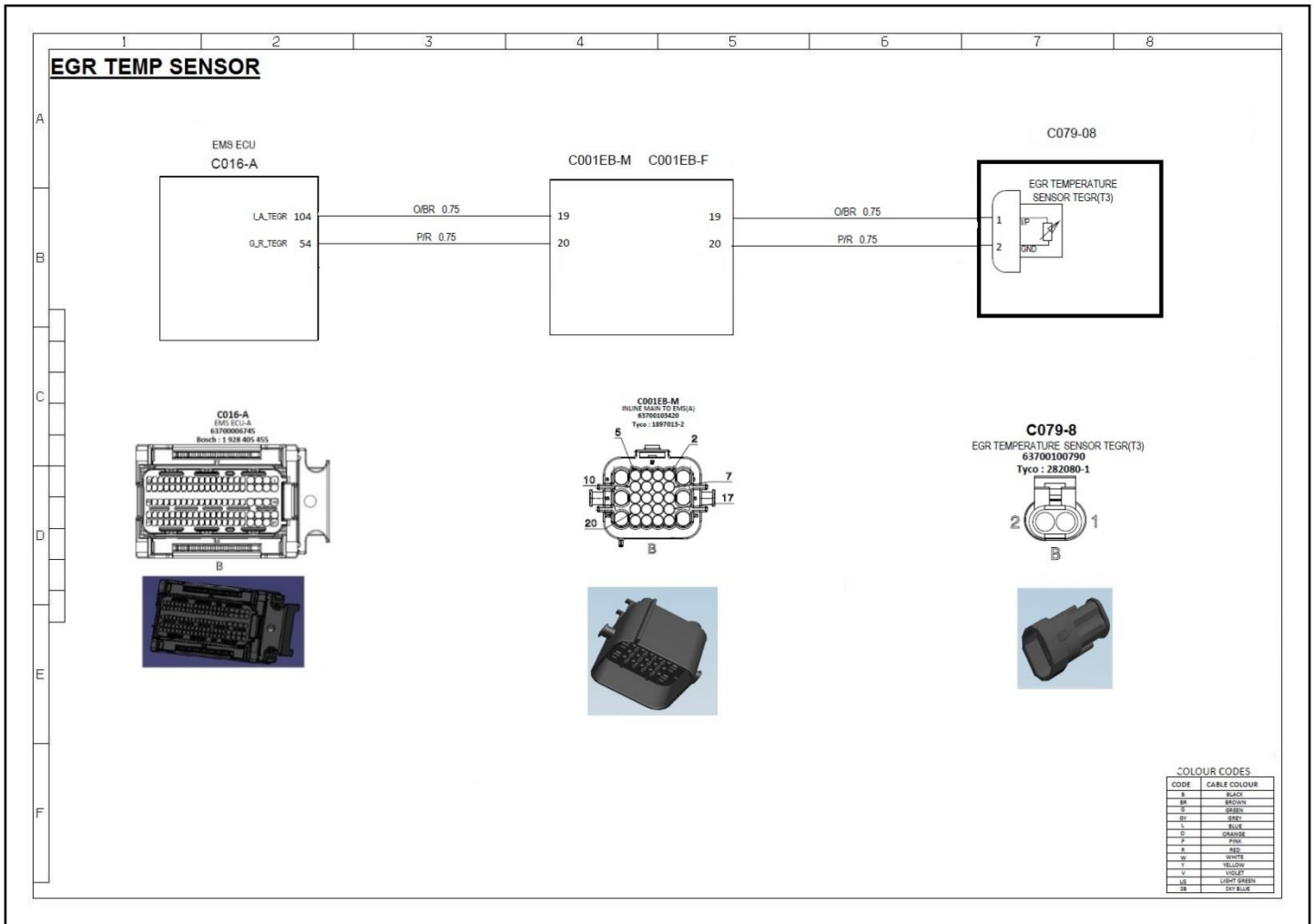
1. Check Battery Voltage
2. Check wire harness connections
3. Check sensor condition & any mechanical damage to sensor
4. Check EGR cooler for Physical damage

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 9	
Step 4	Check out for sensor connector in open condition, fix it go to step 9	
Step 5	If error still present, check the continuity between sensor pin1 & A104 & continuity between sensor pin2 & A54. Go to Step 5	
Step 6	If continuity is found ok, check for any physical damage to sensor, if damaged replace sensor & go to step 9	
Step 7	If Step 5 is found ok then check for EGR cooler for any physical damage.	
Step 8	If found damaged then replace cooler and go to step 9	
Step 9	Check DTC	



#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of fuel by using this sensor. EGR cooler downstream temperature sensor has 2-pole connector and provides the analog input signal at A104. It is thermistor type and resistance of it changes according to fuel temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.

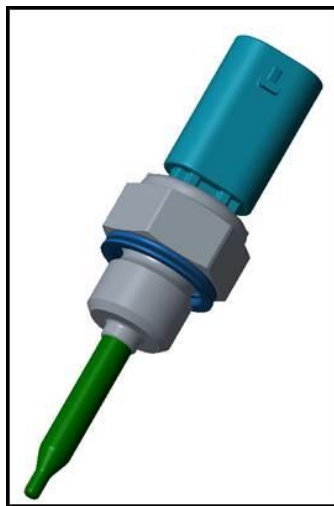
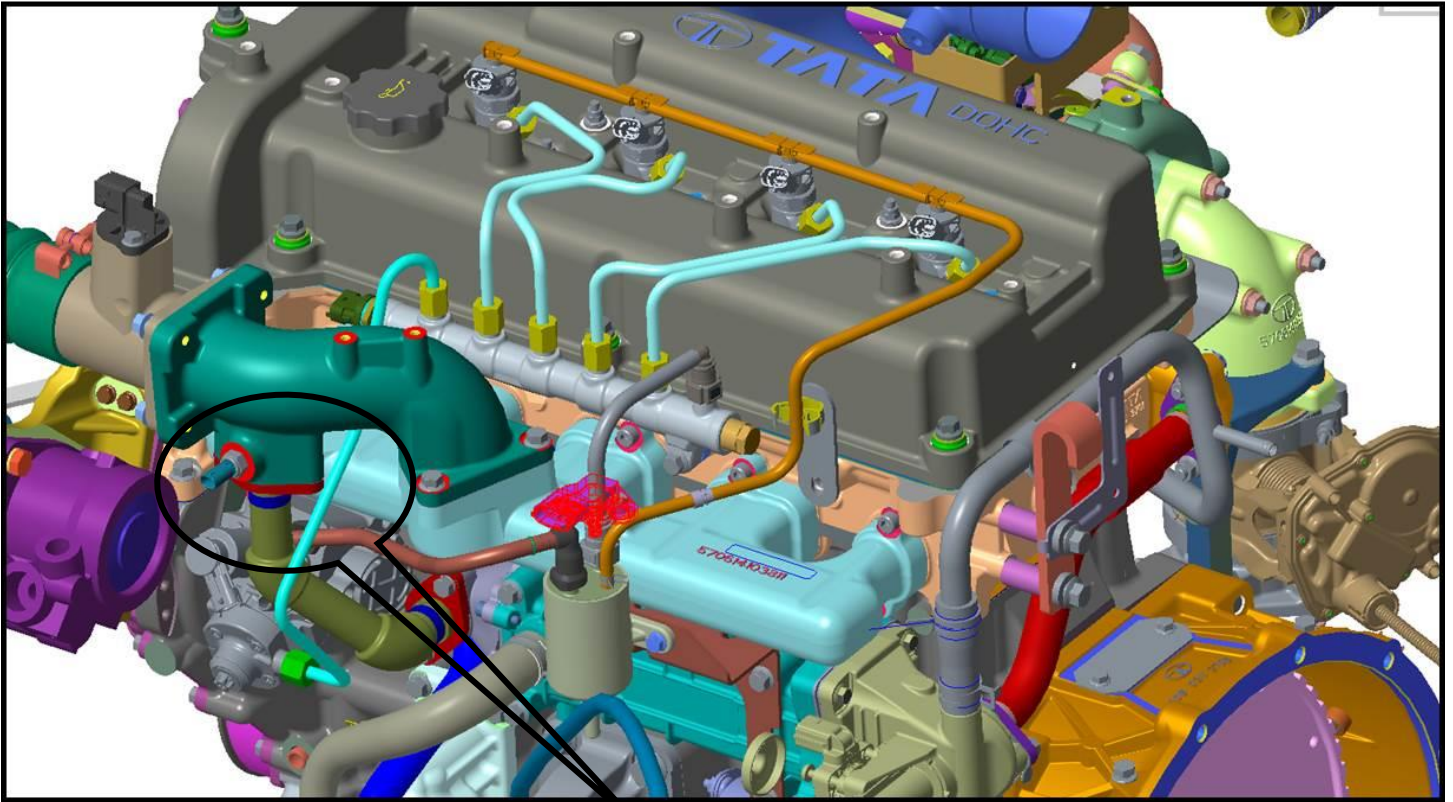


### 3.3L\_NGE\_BSVI & ECU MD1CS018 DTC Troubleshooting Data

Ver : 1.0

Date: 15/08/2019

Location & Component Image:





**P2457-00: DFC for EGR Cooler Efficiency Below Threshold**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2457-00 MIL- Off CEL – On AWL - Off	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem 4. Damaged EGR cooler	Torque Limitation

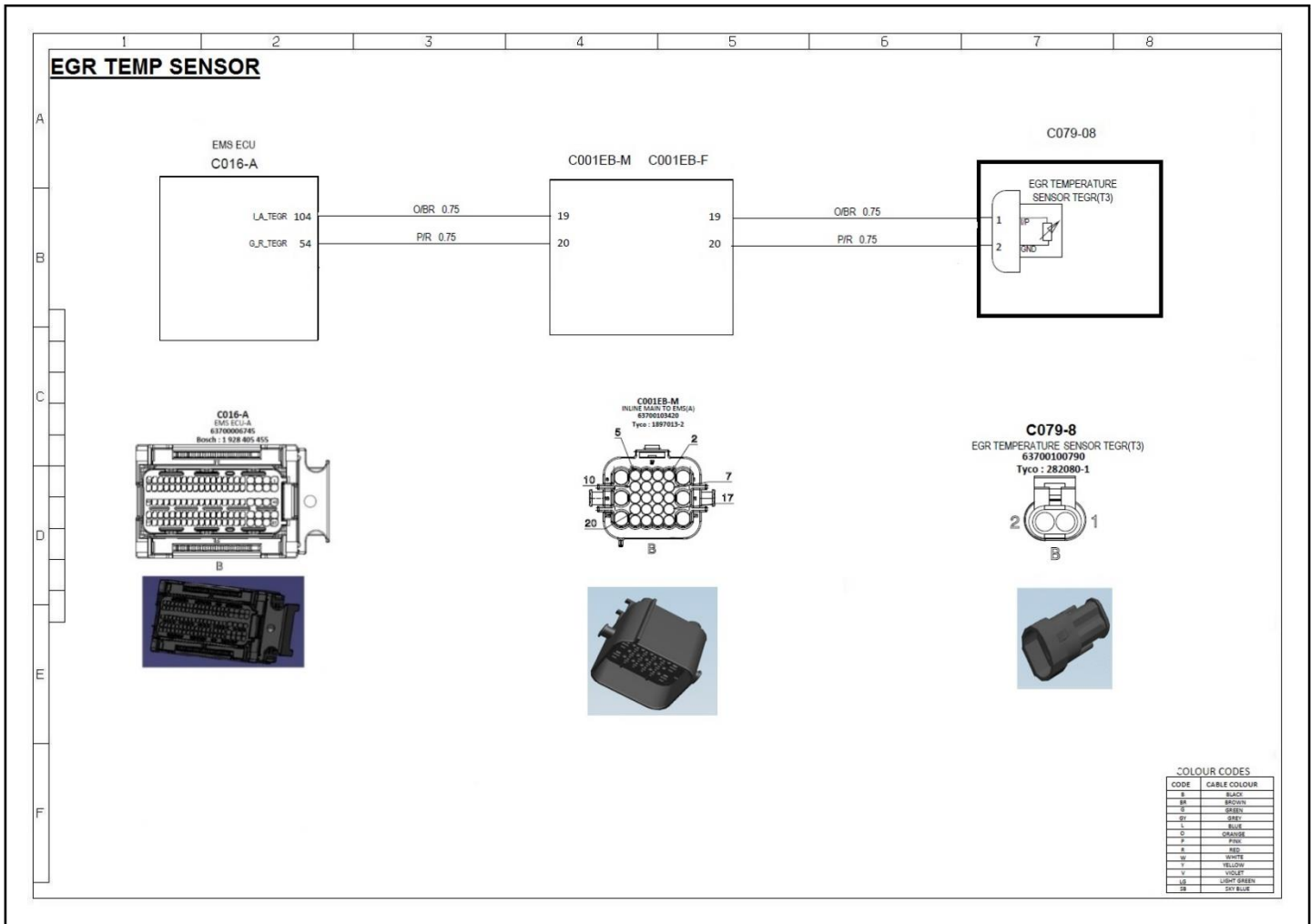
**Checkpoints:**

1. Check Battery Voltage
2. Check wire harness connections
3. Check sensor condition & any mechanical damage to sensor
4. Check EGR cooler for Physical damage

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 9	
Step 4	Check out for sensor connector in open condition, fix it go to step 9	
Step 5	If error still present, check the continuity between sensor pin1 & A104 & continuity between sensor pin2 & A54. Go to Step 5	
Step 6	If continuity is found ok, check for any physical damage to sensor, if damaged replace sensor & go to step 9	
Step 7	If Step 5 is found ok then check for EGR cooler for any physical damage.	
Step 8	If found damaged then replace cooler and go to step 9	
Step 9	Check DTC	

#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of fuel by using this sensor. EGR cooler downstream temperature sensor has 2-pole connector and provides the analog input signal at A104. It is thermistor type and resistance of it changes according to fuel temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.

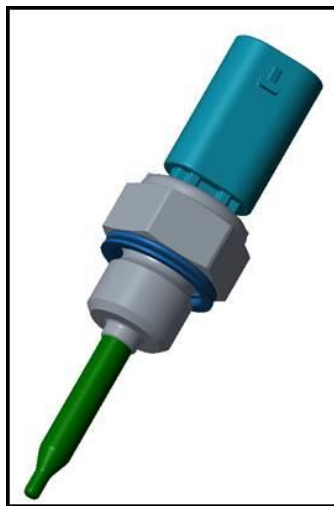
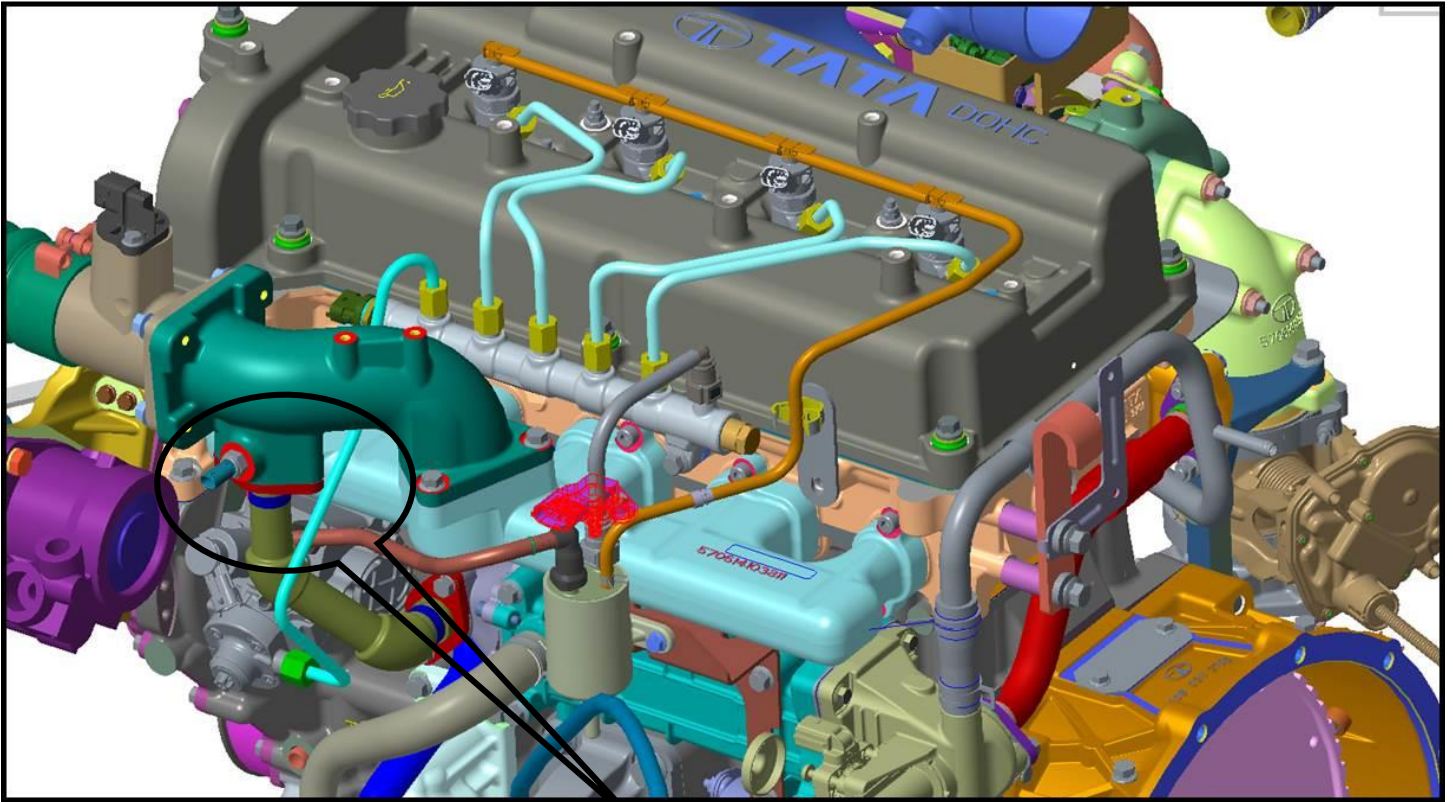


### 3.3L\_NGE\_BSVI & ECU MD1CS018 DTC Troubleshooting Data

Ver : 1.0

Date: 15/08/2019

Location & Component Image:







**P026A-00: DFC for Charge Air Cooler Efficiency Below Threshold**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P026A-00 MIL- Off CEL – On AWL - Off	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem 4. Damaged charged Intercooler	NA

**Checkpoints:**

1. Check Battery Voltage
2. Check wire harness connections
3. Check PFM sensor condition & any mechanical damage to sensor
4. Check Charged inter cooler for Physical damage

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the intercooler connections & check for any leakages	
Step 3	If yes , arrest all leakages & go to step 6	
Step 4	If Step 3 is found ok then check for charged intercooler for any physical damage or if dummy in mounted	
Step 5	If found damaged then replace cooler and go to step 6	
Step 6	Check DTC	



**P0562-00: DFC for Signal Range Max Check of Battery Voltage**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0562-00 MIL- On CEL – Off AWL - Off	1. ECU failure 2. Cluster Failure 3. Wiring Harness Failure	NA

**Checkpoints:**

1. Check the Wiring Harness
2. Check Instrument cluster.
3. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	If any Issues, check for battery connection, if loose connect & check if battery is charging in running condition.	
Step 3	If issue still persists, check for alternator connection, if found loose connect & check if battery is overcharging	
Step 4	If issue still persists change alternator & go to step 5	
Step 5	Clear and check DTC	





## P0563-00: DFC for Signal Range Min Check of Battery Voltage

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P0563-00 MIL- On CEL – Off AWL - Off	1. ECU failure 2. Cluster Failure 3. Wiring Harness Failure	NA

### Checkpoints:

1. Check the Wiring Harness
2. Check Instrument cluster.
3. Check ECU

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	If any Issues, check for battery connection, if loose connect & check if battery is charging in running condition.	
Step 3	If issue still persists, check for alternator connection, if found loose connect & check if battery is charging	
Step 4	If issue still persists change battery & go to step 6	
Step 5	If Issue still persists change alternator & go to step 6	
Step 6	Clear and check DTC	



## P2264-00: DFC for Detection of water in fuel filter

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P2264-00 MIL- Off CEL – Off AWL - Off	1. Water in fuel 2. Wiring harness defect 3. Faulty water in fuel sensor	Torque Limitation

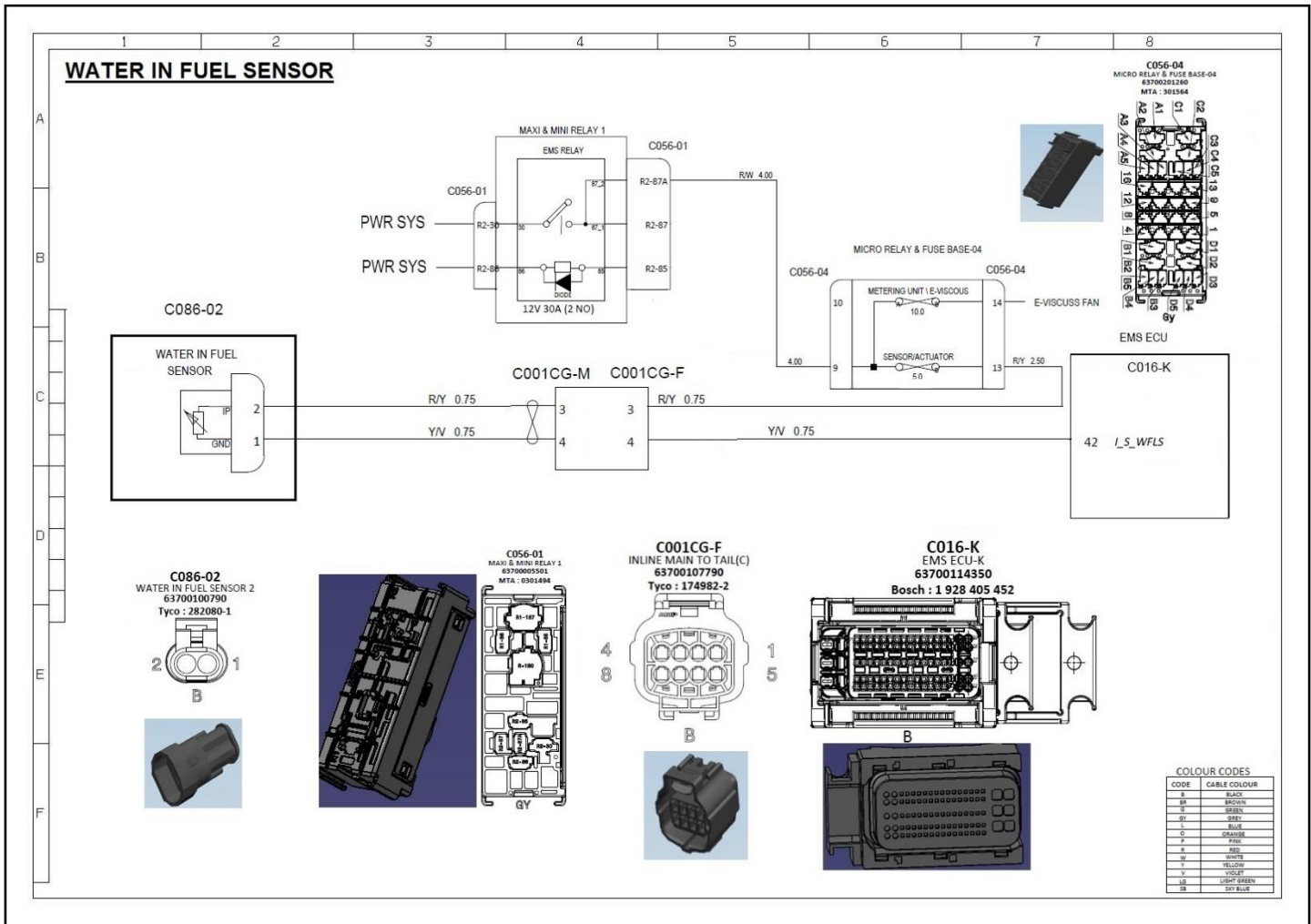
### Checkpoints:

1. Check Battery Voltage
2. Check wire harness connections
3. Check sensor condition & any mechanical damage to sensor

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 10	
Step 4	If error is still present then check the continuity between K17 & the signal line in water in fuel sensor.	
Step 5	If continuity in Step 4 is unavailable then check signal line is short to battery or open circuit.	
Step 6	If Step 5 is true, replace the wire harness cable with new one & go to Step 10	
Step 7	If error is still present, check fuel supply for water presence & go to Step 8	
Step 8	Replace the water mixed fuel with new fuel (w/o water presence) & go to Step 10	
Step 9	If error is still present replace WIF sensor with new one & go to Step 10	
Step 10	Check the DTC	

### Circuit Schematic Diagram:



### Circuit Description:

EMS monitors the status of WIF signal at K17. WIF sensor has 3-pole connector and it gives Active High input, whenever water is detected in fuel. Check for the continuity between EMS and Sensor by referring above schematic.



**P0072-00: DFC for Ambient temperature Sensor Short circuit to ground**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0072-00 MIL- On CEL – Off AWL - Off	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

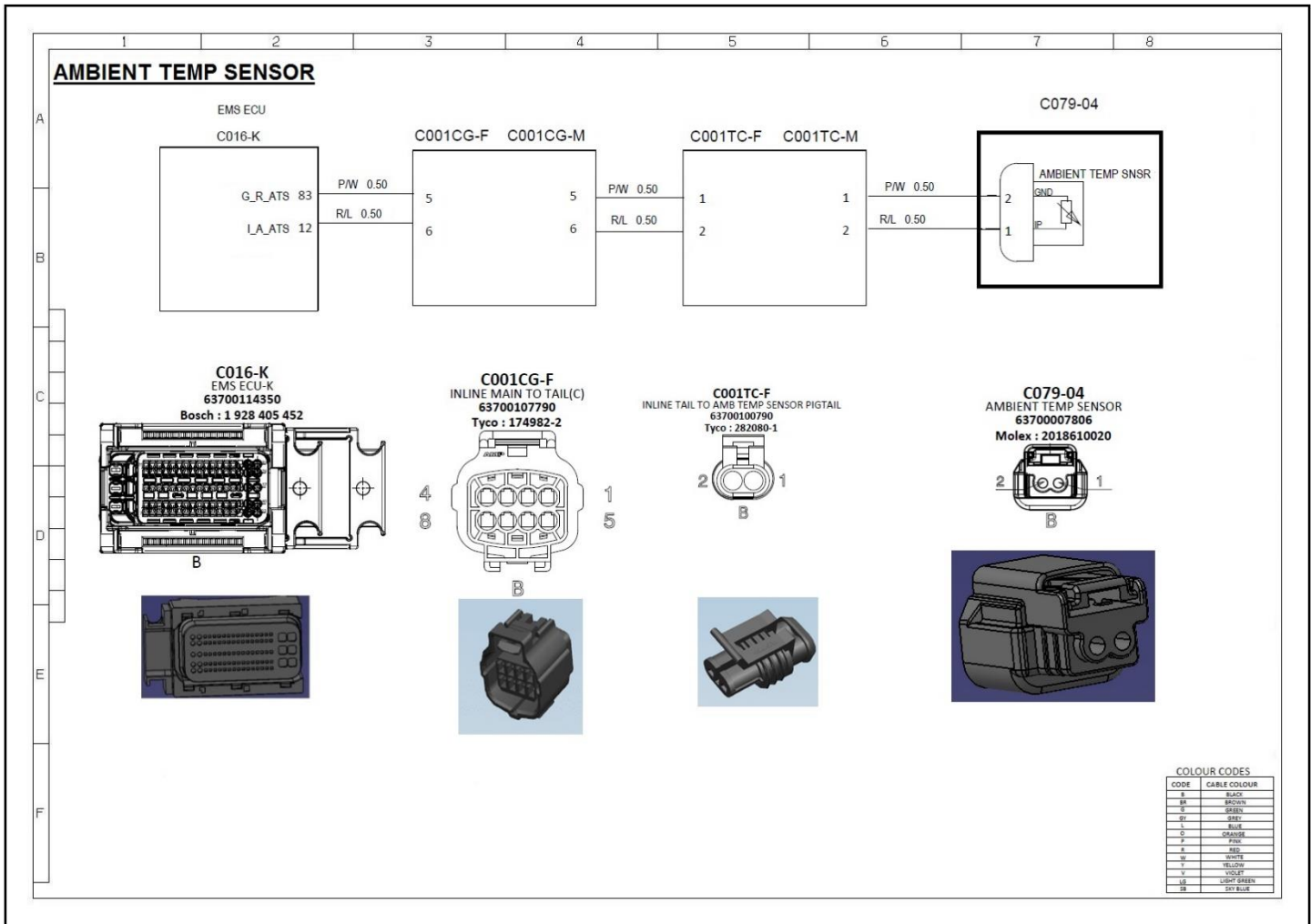
**Checkpoints:**

1. Check Battery Voltage
2. Check wire harness connections
3. Check sensor condition & any mechanical damage to sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 8	
Step 4	If error still present, check the continuity between sensor pin1 & K12 & continuity between sensor pin2 & K83. Go to Step 5	
Step 5	If continuity is unavailable from Step 4 then check the signal line short to ground & go to Step 8 after arresting any issue	
Step 6	If Step 5 is true then replace the wire harness cable with new one & go to Step 8	
Step 7	If error still present then replace Temp sensor with new one & go to Step 8	
Step 8	Check DTC	

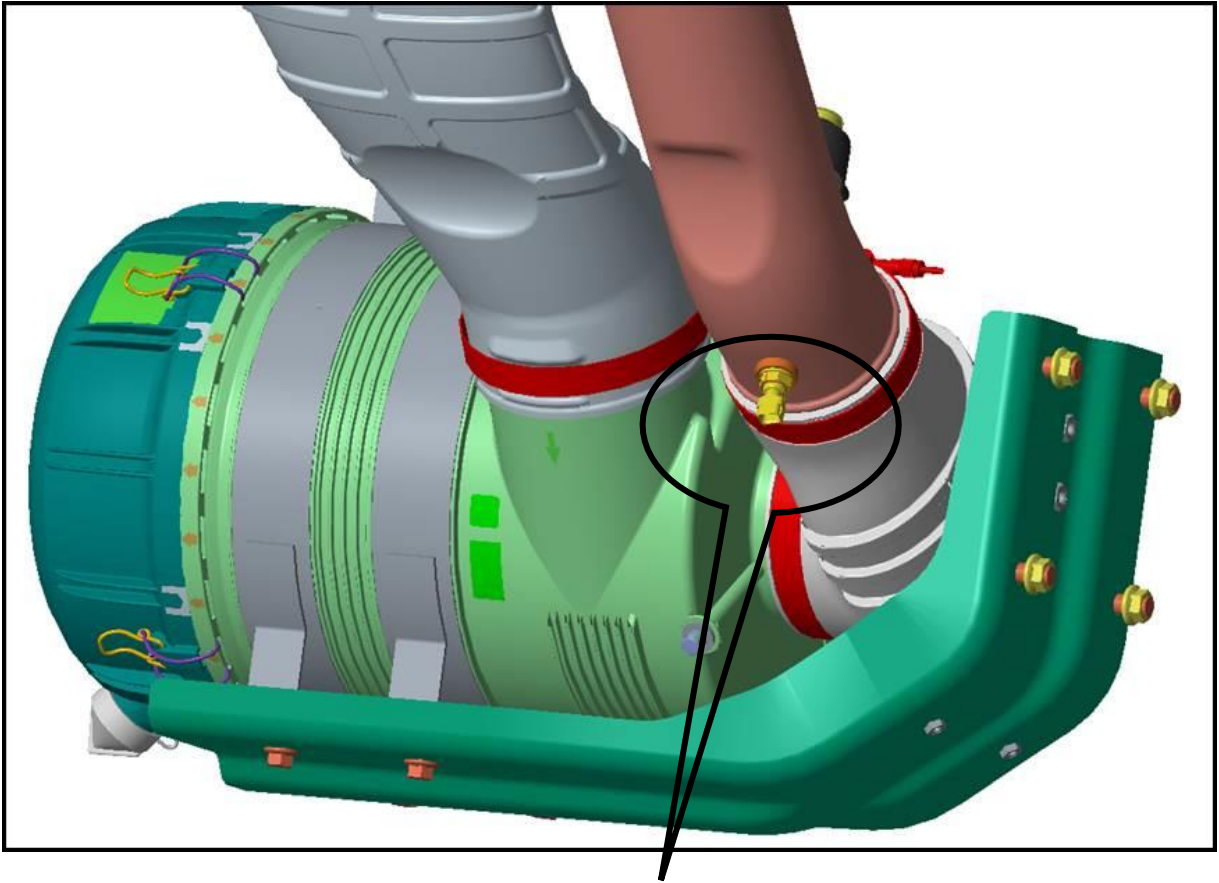
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of fuel by using this sensor. Ambient temperature sensor has 2-pole connector and provides the analog input signal at K12. It is thermistor type and resistance of it changes according to fuel temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





**P0073-00: DFC for Ambient temperature Sensor Open Circuit or Short circuit to battery**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0073-00 MIL- On CEL – Off AWL - Off	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

**Checkpoints:**

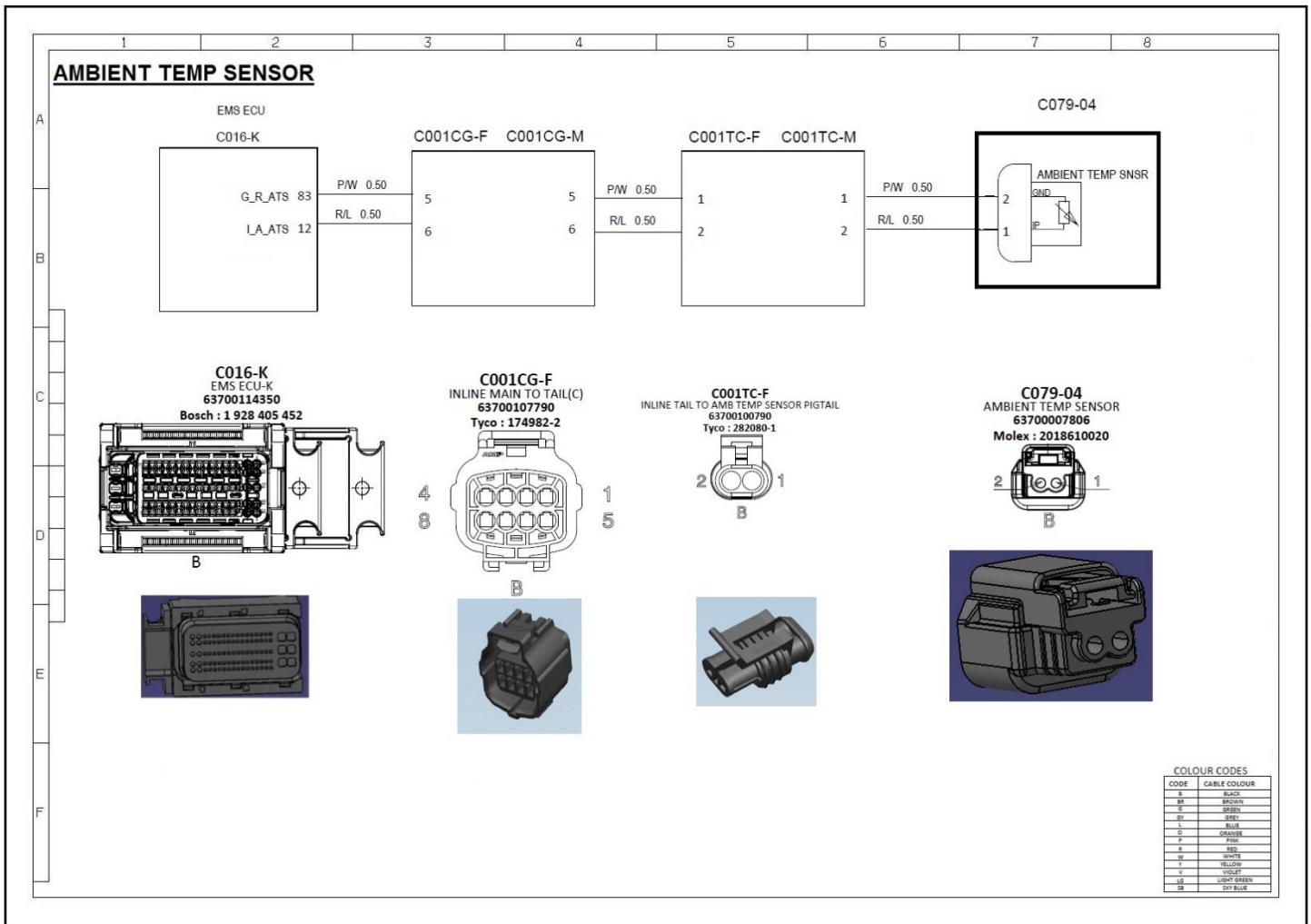
1. Check Battery Voltage
2. Check wire harness connections
3. Check sensor condition & any mechanical damage to sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 8	
Step 4	If error still present, check the continuity between sensor pin1 & K12 & continuity between sensor pin2 & K83. Go to Step 5	
Step 5	If continuity is unavailable from Step 4 then check the signal line short to battery or connector is open & go to Step 8 after arresting any issue	
Step 6	If Step 5 is true then replace the wire harness cable with new one & go to Step 8	
Step 7	If error still present then replace Temp sensor with new one & go to Step 8	
Step 8	Check DTC	



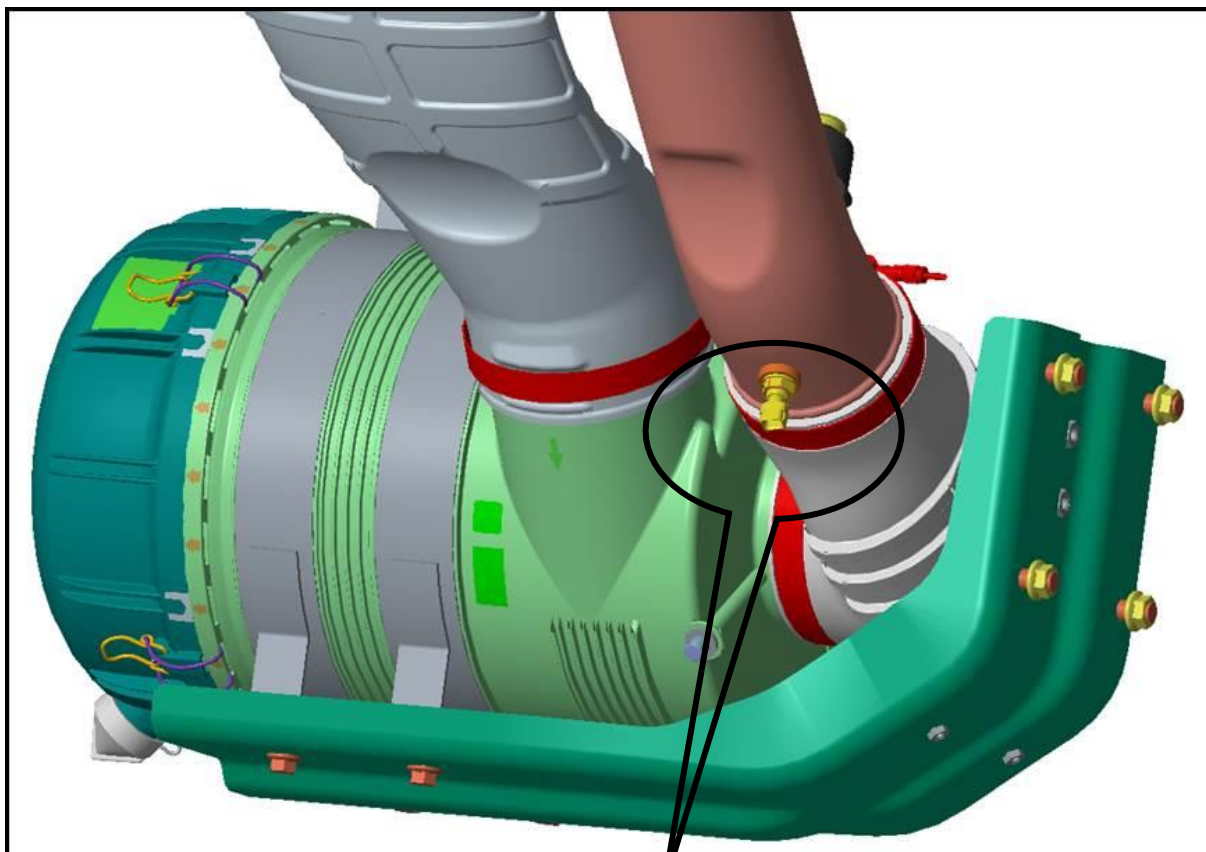
#### Circuit Schematic Diagram:



#### Circuit Description:

EMS measures the temperature of fuel by using this sensor. Ambient temperature sensor has 2-pole connector and provides the analog input signal at K12. It is thermistor type and resistance of it changes according to fuel temperature. EMS will have internal pull up for this sensor. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





**P0071-00: DFC for Ambient temperature Sensor Physical Range High**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0071-00 MIL- On CEL – Off AWL - Off	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

**Checkpoints:**

1. Check Battery Voltage
2. Check wire harness connections
3. Check sensor condition & any mechanical damage to sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 8	
Step 4	If error still present, check the continuity between sensor pin1 & K12 & continuity between sensor pin2 & K83. Go to Step 5	
Step 5	If continuity is unavailable from Step 4 then check the signal line short to battery or connector is open & go to Step 8 after arresting any issue	
Step 6	If Step 5 is true then replace the wire harness cable with new one & go to Step 8	
Step 7	If error still present then replace Temp sensor with new one & go to Step 8	
Step 8	Check DTC	



**P1000-00: DFC for Air temperature monitoring plausibility check for ambient temperature sensor**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1000-00 MIL- On CEL – Off AWL - Off	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

**Checkpoints:**

1. Check Battery Voltage
2. Check wire harness connections
3. Check sensor condition & any mechanical damage to sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 8	
Step 4	If error still present, check the continuity between sensor pin1 & K12 & continuity between sensor pin2 & K83. Go to Step 5	
Step 5	If continuity is unavailable from Step 4 then check the signal line short to battery or connector is open & go to Step 8 after arresting any issue	
Step 6	If Step 5 is true then replace the wire harness cable with new one & go to Step 8	
Step 7	If error still present then replace Temp sensor with new one & go to Step 8	
Step 8	Check DTC	



**P1001-00: DFC for Air temperature monitoring plausibility check for PFM temperature sensor**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1001-00 MIL- On CEL – Off AWL - Off	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

**Checkpoints:**

1. Check Battery Voltage
2. Check wire harness connections
3. Check sensor condition & any mechanical damage to sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 8	
Step 4	If error still present, check the continuity between sensor pin1 & K12 & continuity between sensor pin2 & K83. Go to Step 5	
Step 5	If continuity is unavailable from Step 4 then check the signal line short to battery or connector is open & go to Step 8 after arresting any issue	
Step 6	If Step 5 is true then replace the wire harness cable with new one & go to Step 8	
Step 7	If error still present then replace Temp sensor with new one & go to Step 8	
Step 8	Check DTC	



**P1002-00: DFC for Air temperature monitoring plausibility check for Boost temperature sensor**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1002-00 MIL- On CEL – Off AWL - Off	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

**Checkpoints:**

1. Check Battery Voltage
2. Check wire harness connections
3. Check sensor condition & any mechanical damage to sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 8	
Step 4	If error still present, check the continuity between sensor pin1 & K12 & continuity between sensor pin2 & K83. Go to Step 5	
Step 5	If continuity is unavailable from Step 4 then check the signal line short to battery or connector is open & go to Step 8 after arresting any issue	
Step 6	If Step 5 is true then replace the wire harness cable with new one & go to Step 8	
Step 7	If error still present then replace Temp sensor with new one & go to Step 8	
Step 8	Check DTC	



**P1003-00: DFC for Air temperature monitoring plausibility check for EGR cooler downstream temperature sensor**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1003-00 MIL- On CEL – Off AWL - Off	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

**Checkpoints:**

1. Check Battery Voltage
2. Check wire harness connections
3. Check sensor condition & any mechanical damage to sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 8	
Step 4	If error still present, check the continuity between sensor pin1 & K12 & continuity between sensor pin2 & K83. Go to Step 5	
Step 5	If continuity is unavailable from Step 4 then check the signal line short to battery or connector is open & go to Step 8 after arresting any issue	
Step 6	If Step 5 is true then replace the wire harness cable with new one & go to Step 8	
Step 7	If error still present then replace Temp sensor with new one & go to Step 8	
Step 8	Check DTC	





## P1004-00: DFC for Air temperature monitoring plausibility total sensor

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P1004-00 MIL- On CEL – Off AWL - Off	1. Wiring harness defect 2. Faulty sensor 3. Sensor connector problem	NA

### Checkpoints:

1. Check Battery Voltage
2. Check wire harness connections
3. Check sensor condition & any mechanical damage to sensor

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check the wire harness for any pin / wire back-out from connector, if yes go to step 3	
Step 3	Fix the back-out cables in proper positions in connector & go to Step 8	
Step 4	If error still present, check the continuity between sensor pin1 & K12 & continuity between sensor pin2 & K83. Go to Step 5	
Step 5	If continuity is unavailable from Step 4 then check the signal line short to battery or connector is open & go to Step 8 after arresting any issue	
Step 6	If Step 5 is true then replace the wire harness cable with new one & go to Step 8	
Step 7	If error still present then replace Temp sensor with new one & go to Step 8	
Step 8	Check DTC	



**P2147-00: DFC for Injector short circuit high side and main supply for cylinder 1**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2147-00 MIL- Off CEL – On AWL - Off	1. Wiring Harness problem 2. Connector problem 3. Injector failure	Torque limitation

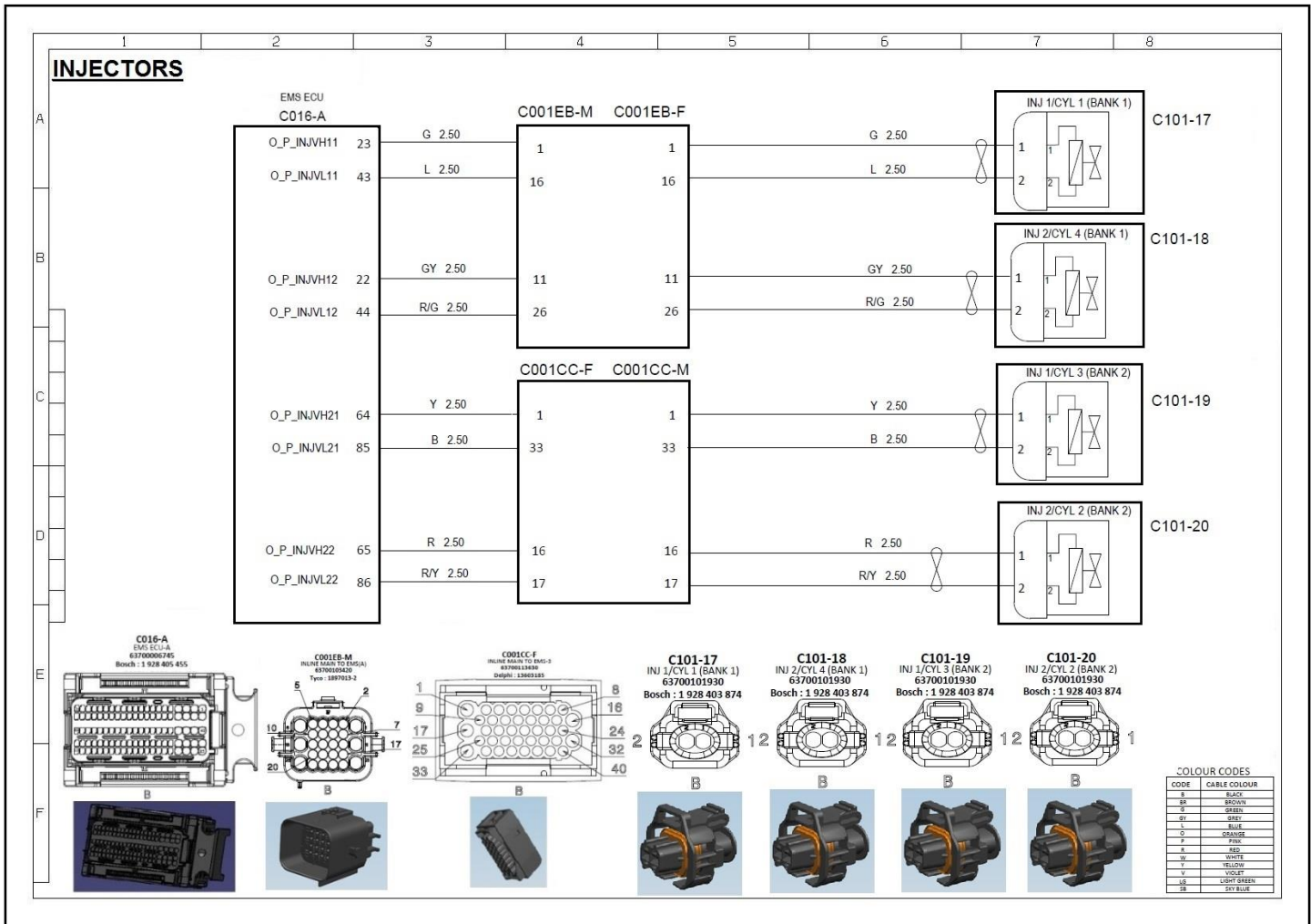
**Checkpoints:**

1. Check Battery Voltage
2. Check the wiring harness
3. Check injector side connector in wiring harness
4. Check the continuity between 1<sup>st</sup> cylinder injector connector to ECU side connector in wiring harness

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check if the wiring harness connector connected properly to 1 <sup>st</sup> cylinder injector, if not fix it and go to step 10	
Step 3	Check the wiring harness side connector for any damage, pin damage or wire back-out	
Step 4	Check the injector side connector for any damage, pin damage, rotated form the body	
Step 5	In case of non-conformity in step 3 & 4, fix the injector connector problem, wiring harness connector problem, fix the back-out cables in proper positions in connector and go to step 10	
Step 6	If error persists, check the continuity of injector connector pin 1 to ECU terminal A23 & injector connector pin 2 to ECU terminal A43 & between A23 & A43.	
Step 7	Check / ensure no cross continuity between terminals / pins in step no 6 & between Pin1 & main supply (K01/K03/K05)	
Step 8	In case of non-conformity in step 6 & 7 change the wires with new and go to step 10	
Step 9	If error persists change the injector with new and go to step 10	
Step 10	Clear and check the DTC	

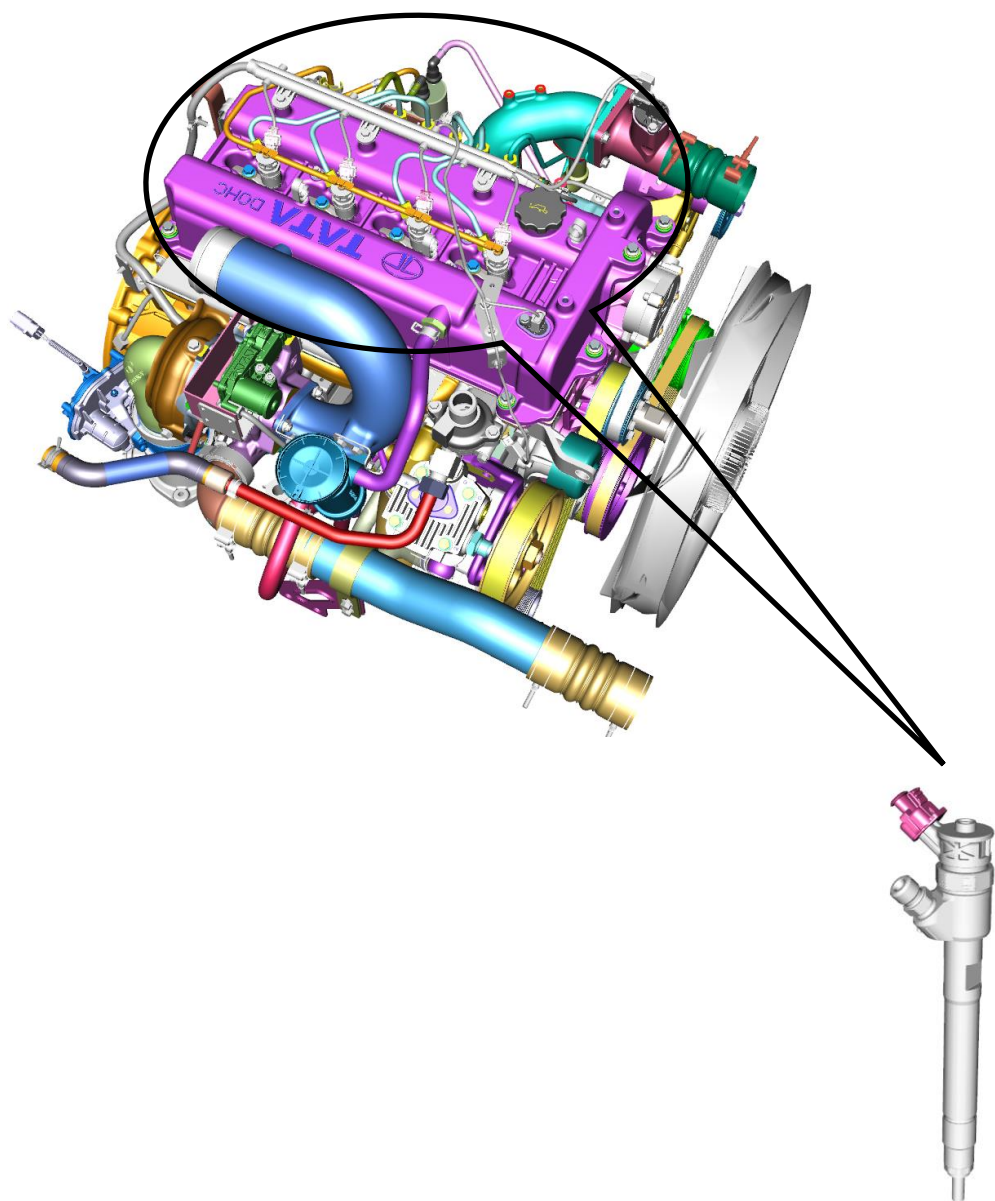
### Circuit Schematic Diagram:



### Circuit Description:

The rail and the injectors are connected to each other through the high-pressure pipes. The piezo injectors allow extremely short response times and enable a free selection of the injection beginning and the fuel quantity according to the demands of the ECU. EMS turns the injector ON for a precise amount of time referred to as injection pulse width to deliver the calculated fuel in cylinder. Injector is turned on through high side driver (supply) as well as low side driver (ground) present in the EMS. EMS is configured for 4 injectors by two bank arrangement with 2 injectors per bank. Check for the continuity between EMS and Injector by referring above schematic.

Location & Component Image:





**P2150-00: DFC for Injector short circuit high side and main supply for cylinder 2**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2150-00 MIL- Off CEL – On AWL- Off	1. Wiring Harness problem 2. Connector problem 3. Injector failure	NA

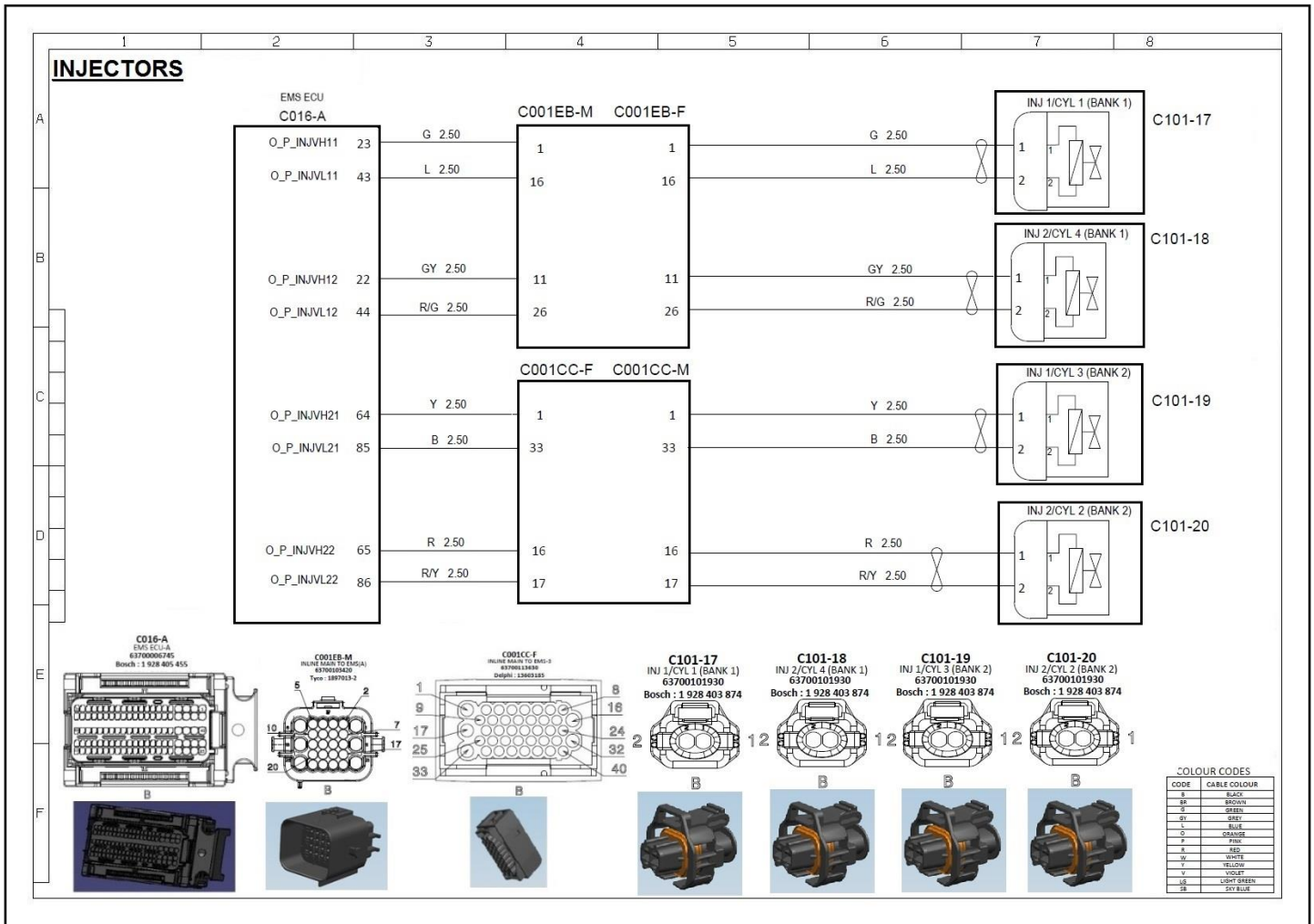
**Checkpoints:**

1. Check Battery Voltage
2. Check the wiring harness
3. Check injector side connector in wiring harness
4. Check the continuity between 2<sup>nd</sup> cylinder injector connector to ECU side connector in wiring harness

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check if the wiring harness connector connected properly to 2 <sup>nd</sup> cylinder injector, if not fix it and go to step 10	
Step 3	Check the wiring harness side connector for any damage, pin damage or wire back-out	
Step 4	Check the injector side connector for any damage, pin damage, rotated from the body	
Step 5	In case of non-conformity in step 3 & 4, fix the injector connector problem, wiring harness connector problem, fix the back-out cables in proper positions in connector and go to step 10	
Step 6	If error persists, check the continuity of injector connector pin 1 to ECU terminal A65 & injector connector pin 2 to ECU terminal A86 & between A65 & A83.	
Step 7	Check / ensure no cross continuity between terminals / pins in step no 6 & between Pin1 & main supply (K01/K03/K05)	
Step 8	In case of non-conformity in step 6 & 7 change the wires with new and go to step 10	
Step 9	If error persists change the injector with new and go to step 10	
Step 10	Clear and check the DTC	

### Circuit Schematic Diagram:

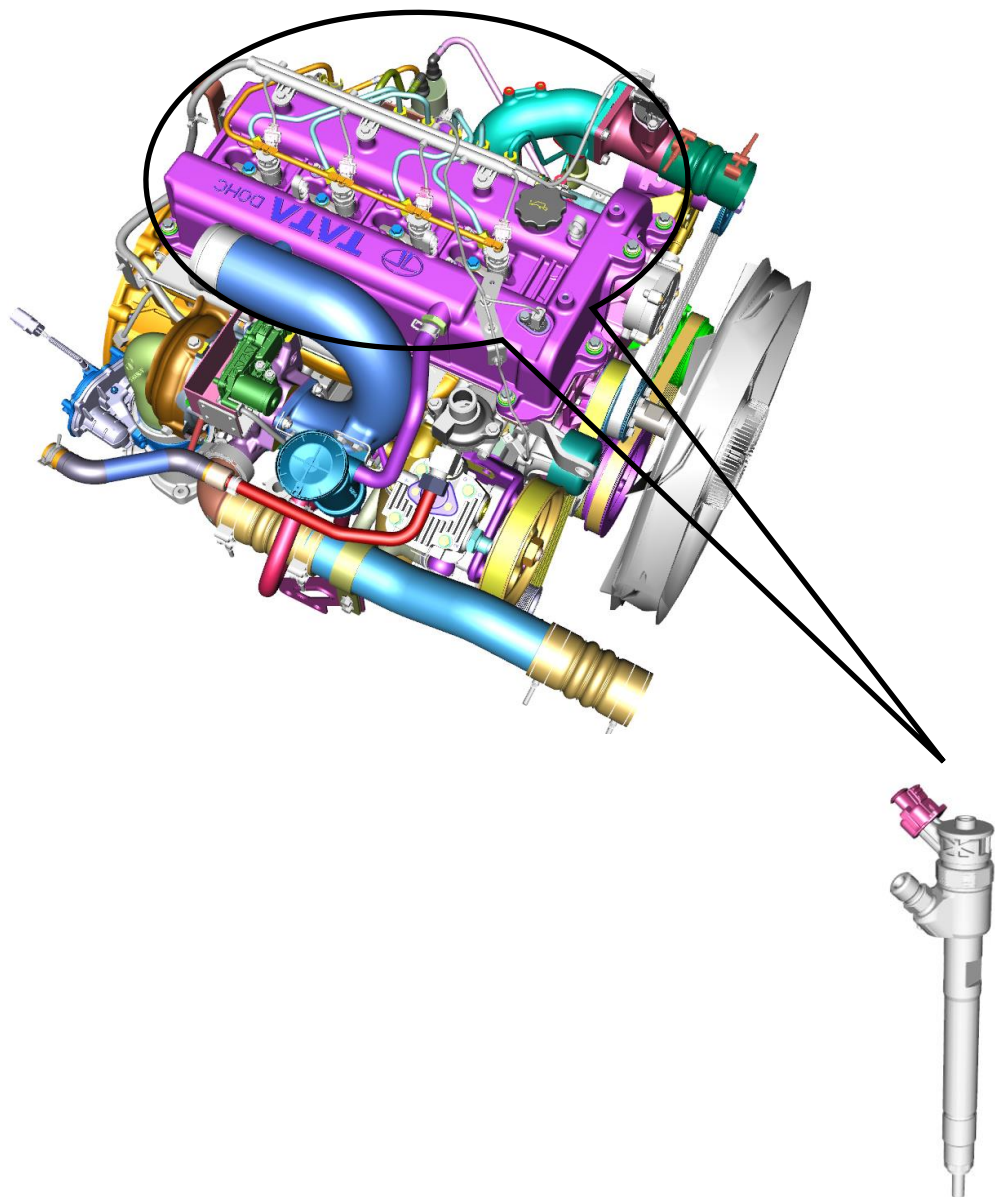


### Circuit Description:

The rail and the injectors are connected to each other through the high-pressure pipes. The piezo injectors allow extremely short response times and enable a free selection of the injection beginning and the fuel quantity according to the demands of the ECU. EMS turns the injector ON for a precise amount of time referred to as injection pulse width to deliver the calculated fuel in cylinder. Injector is turned on through high side driver (supply) as well as low side driver (ground) present in the EMS. EMS is configured for 4 injectors by two bank arrangement with 2 injectors per bank. Check for the continuity between EMS and Injector by referring above schematic.



Location & Component Image:







**P2153-00: DFC for Injector short circuit high side and main supply for cylinder 3**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2153-00 MIL- Off CEL – On AWL - Off	1. Wiring Harness problem 2. Connector problem 3. Injector failure	Torque limitation

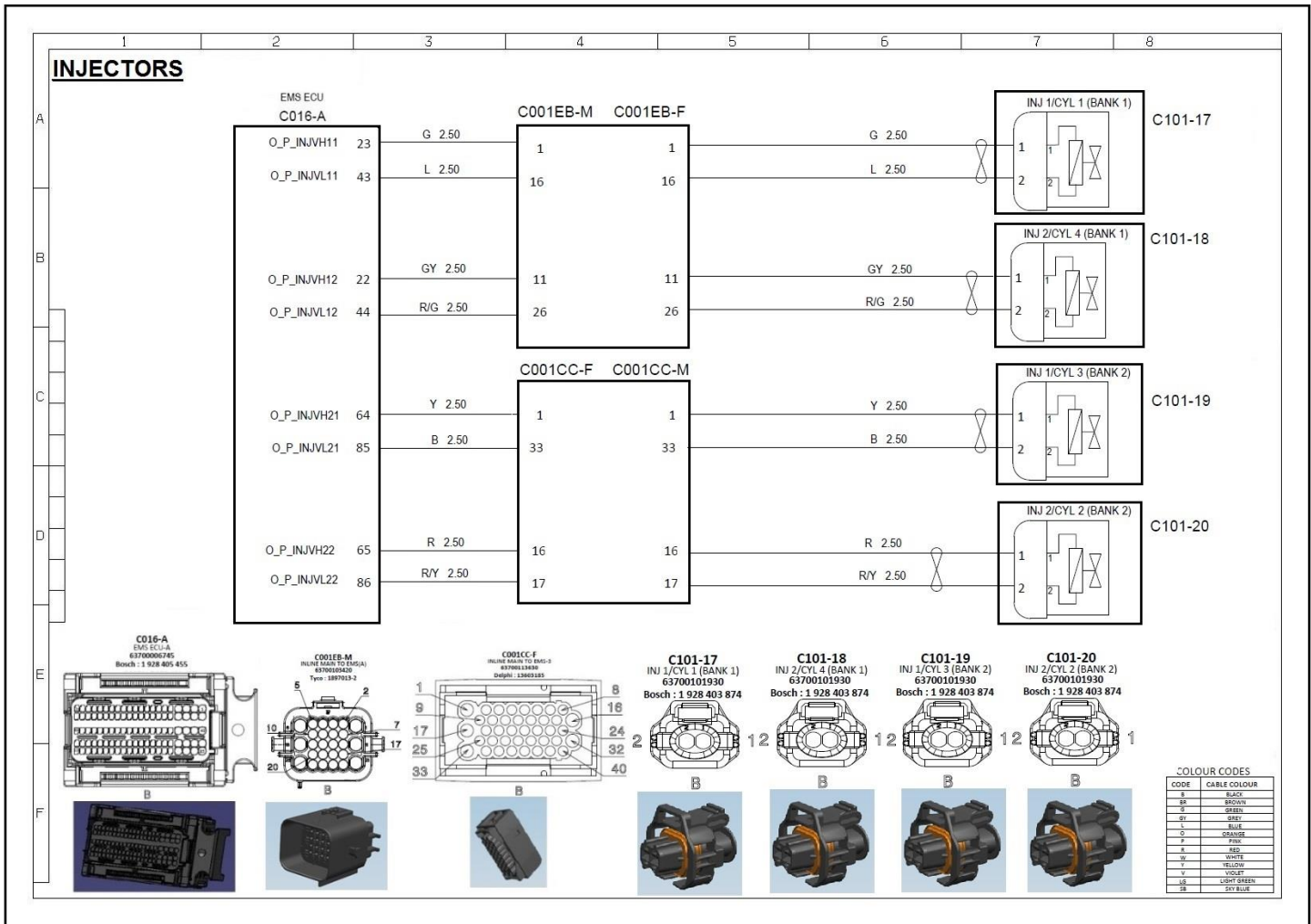
**Checkpoints:**

1. Check Battery Voltage
2. Check the wiring harness
3. Check injector side connector in wiring harness
4. Check the continuity between 3<sup>rd</sup> cylinder injector connector to ECU side connector in wiring harness

**Trouble Shooting Steps:**

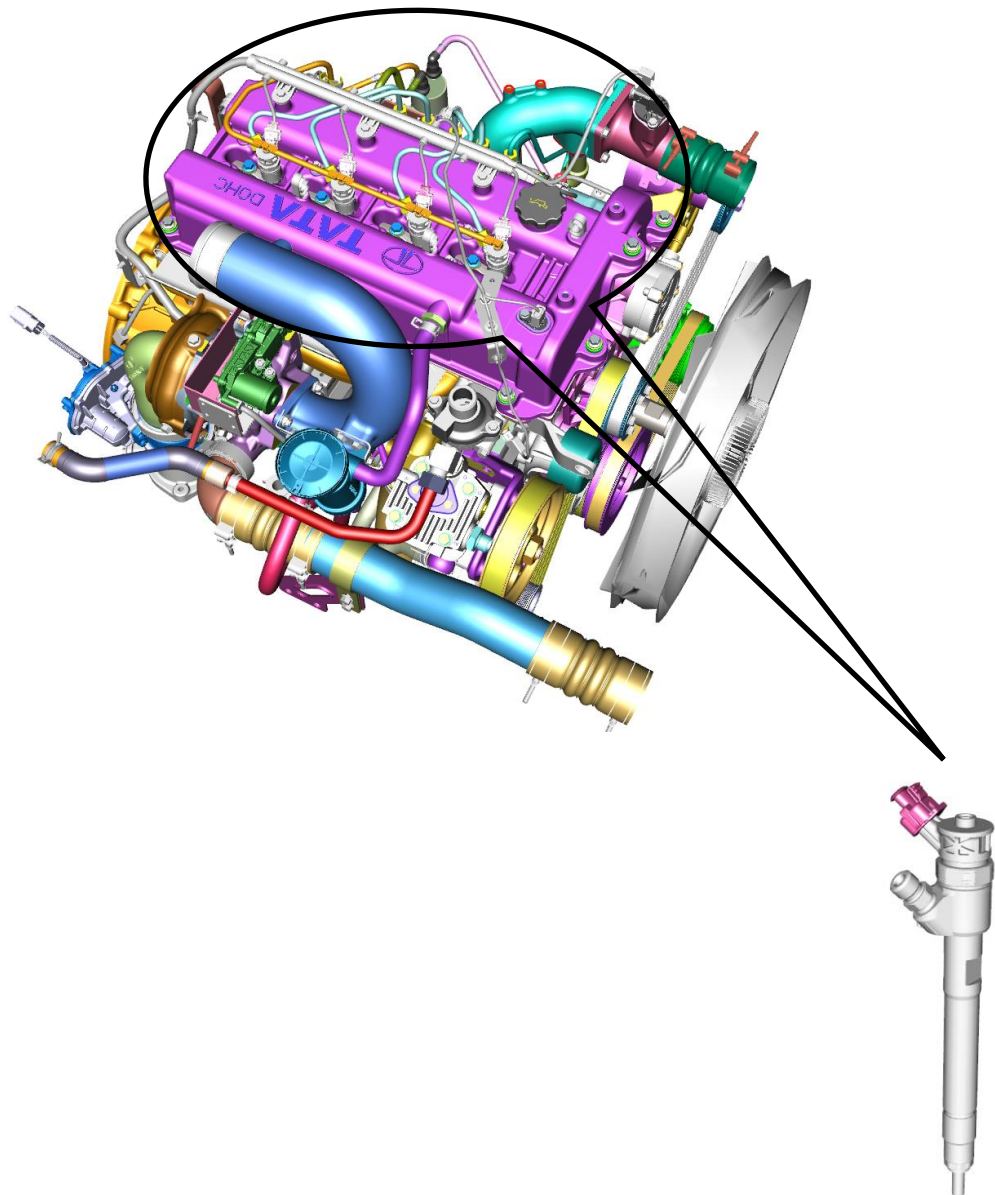
Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check if the wiring harness connector connected properly to 2 <sup>nd</sup> cylinder injector, if not fix it and go to step 10	
Step 3	Check the wiring harness side connector for any damage, pin damage or wire back-out	
Step 4	Check the injector side connector for any damage, pin damage, rotated from the body	
Step 5	In case of non-conformity in step 3 & 4, fix the injector connector problem, wiring harness connector problem, fix the back-out cables in proper positions in connector and go to step 10	
Step 6	If error persists, check the continuity of injector connector pin 1 to ECU terminal A64 & injector connector pin 2 to ECU terminal A85	
Step 7	Check / ensure no cross continuity between terminals / pins in step no 6 & between Pin1 & main supply (K01/K03/K05)	
Step 8	In case of non-conformity in step 6 & 7 change the wires with new and go to step 10	
Step 9	If error persists change the injector with new and go to step 10	
Step 10	Clear and check the DTC	

### Circuit Schematic Diagram:



**Circuit Description:** The rail and the injectors are connected to each other through the high-pressure pipes. EMS turns the injector ON for a precise amount of time referred to as injection pulse width to deliver the calculated fuel in cylinder. Injector is turned on through high side driver (supply) as well as low side driver (ground) present in the EMS. EMS is configured for 4 injectors by two bank arrangement with 2 injectors per bank. Check for the continuity between EMS and Injector by referring above schematic.

Location & Component Image:





**P2156-00: DFC for Injector short circuit high side and main supply for cylinder 4**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2156-00 MIL- Off CEL – On AWL- Off	1. Wiring Harness problem 2. Connector problem 3. Injector failure	Torque limitation

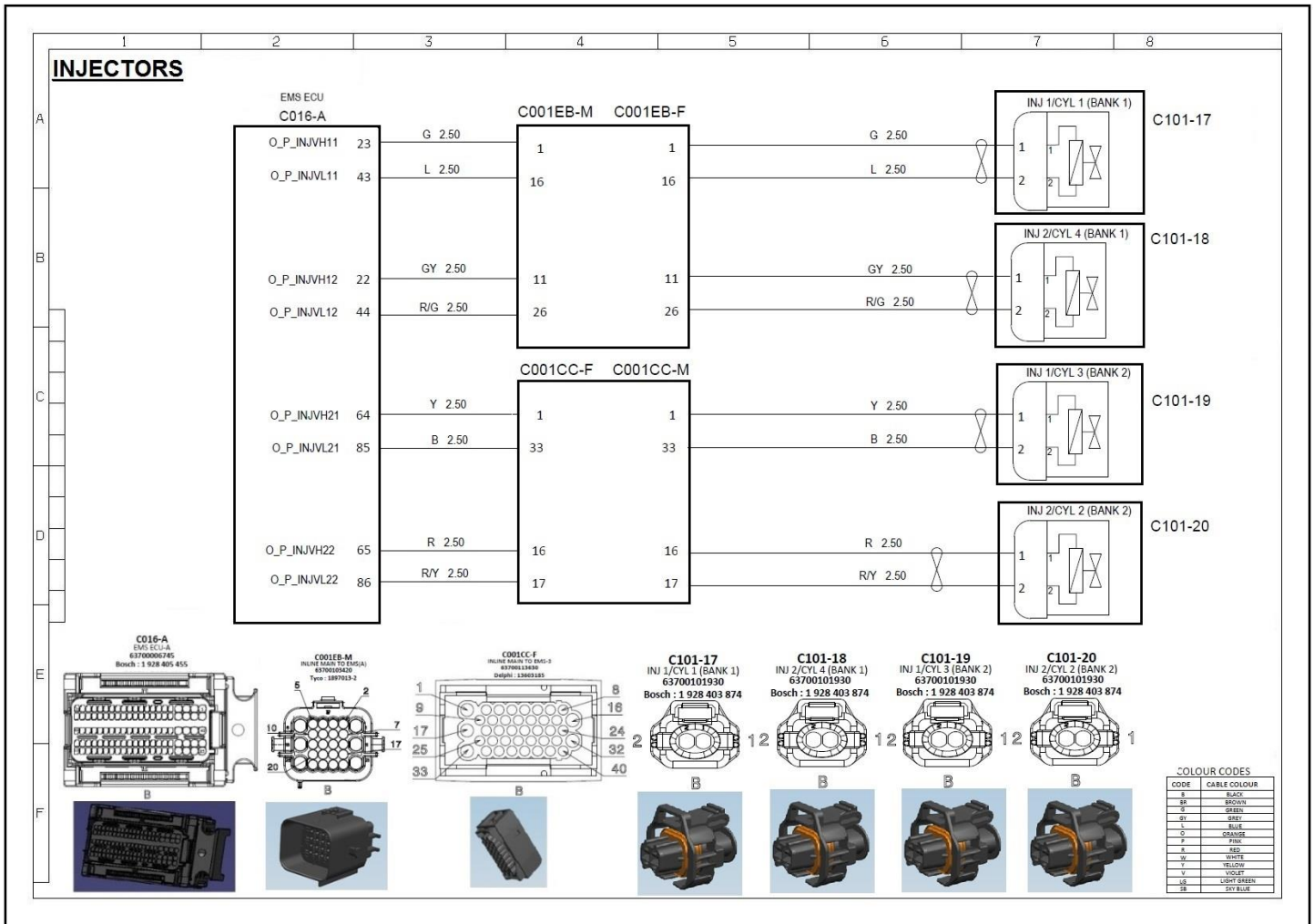
**Checkpoints:**

5. Check Battery Voltage
6. Check the wiring harness
7. Check injector side connector in wiring harness
8. Check the continuity between 3<sup>rd</sup> cylinder injector connector to ECU side connector in wiring harness

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Check if the wiring harness connector connected properly to 4 <sup>th</sup> cylinder injector, if not fix it and go to step 10	
Step 3	Check the wiring harness side connector for any damage, pin damage or wire back-out	
Step 4	Check the injector side connector for any damage, pin damage, rotated form the body	
Step 5	In case of non-conformity in step 3 & 4, fix the injector connector problem, wiring harness connector problem, fix the back-out cables in proper positions in connector and go to step 10	
Step 6	If error persists, check the continuity of injector connector pin 1 to ECU terminal A22 & injector connector pin 2 to ECU terminal A44 & between A22 & A44.	
Step 7	Check / ensure no cross continuity between terminals / pins in step no 6 & between Pin1 & main supply (K01/K03/K05)	
Step 8	In case of non-conformity in step 6 & 7 change the wires with new and go to step 10	
Step 9	If error persists change the injector with new and go to step 10	
Step 10	Clear and check the DTC	

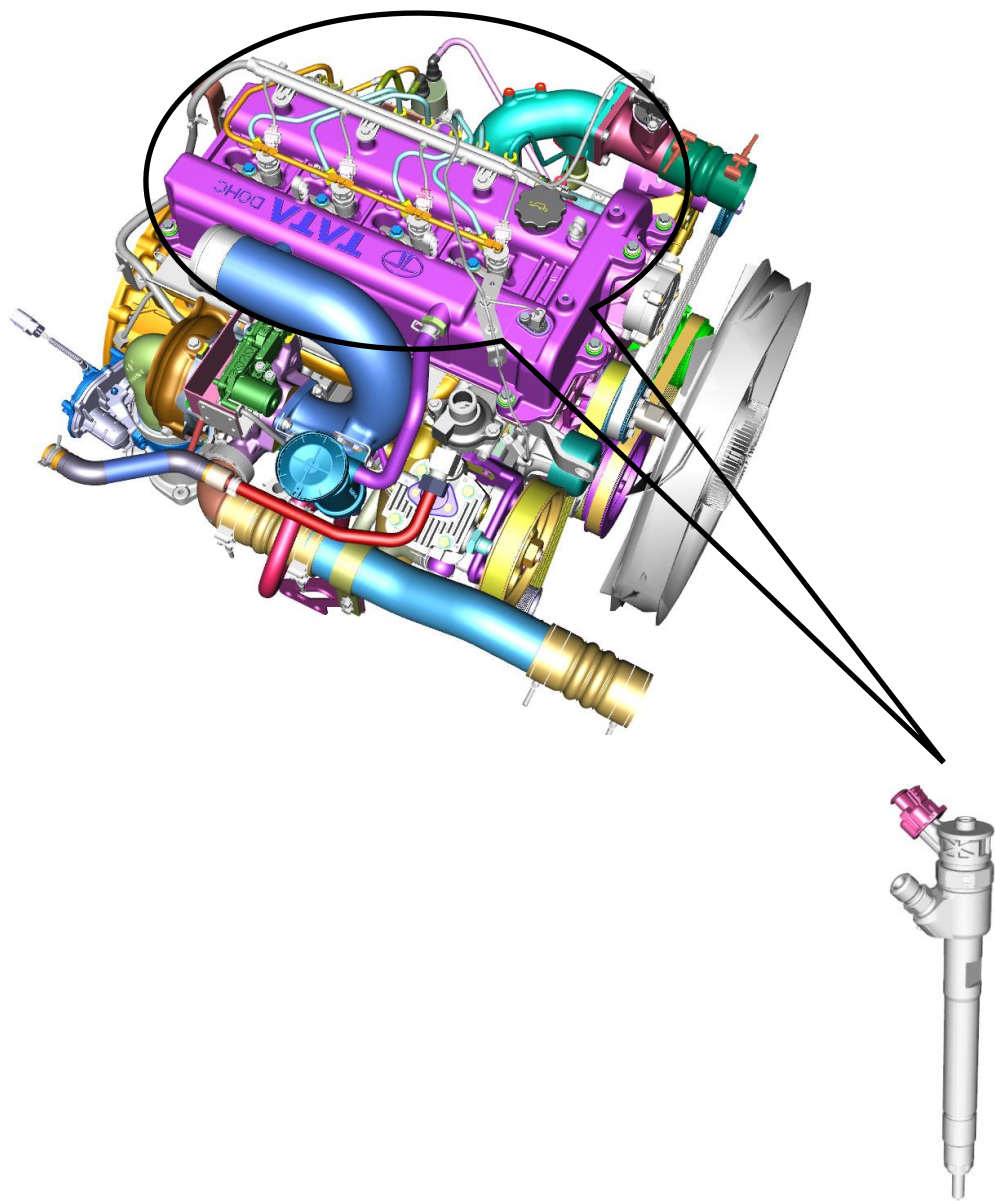
### Circuit Schematic Diagram:



**Circuit Description:** The rail and the injectors are connected to each other through the high-pressure pipes. The piezo injectors allow extremely short response times and enable a free selection of the injection beginning and the fuel quantity according to the demands of the ECU. EMS turns the injector ON for a precise amount of time referred to as injection pulse width to deliver the calculated fuel in cylinder. Injector is turned on through high side driver (supply) as well as low side driver (ground) present in the EMS. EMS is configured for 4 injectors by two bank arrangement with 2 injectors per bank. Check for the continuity between EMS and Injector by referring above schematic.



Location & Component Image:





## P0045-13: Turbocharger Boost Control Circuit Open Load

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P0045-13 MIL- On CEL – Off AWL- Off	1. Turbo Connector loose 2. Wiring harness issue	NA

### Checkpoints:

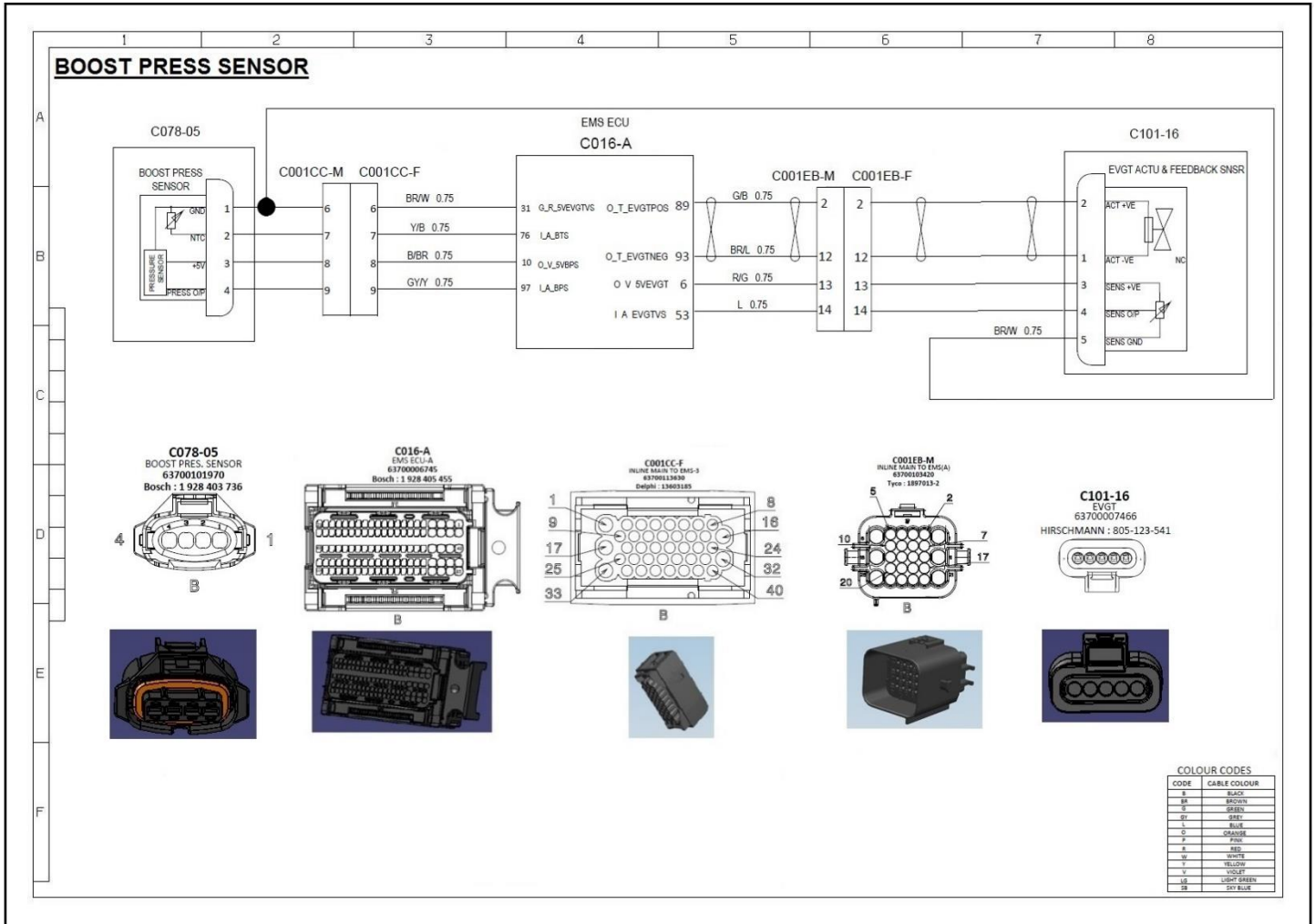
1. Check EVGT Connector
2. Check wiring harness

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check battery voltage	<b>12.5 +/- 0.3 Volts</b>
Step 2	Check Turbocharger Connector for damage	
Step 3	Check for back out terminals of wiring harness, If yes fix the connections	
Step 4	Check continuity between EVGT connector pin 2 & ECU pin A89	
Step 5	Check continuity between EVGT connector pin 1 & ECU pin A93	
Step 6	If Step 4 & Step5 is true then check if pin1 & pin 2 is open.	
Step 7	If step 6 is true, replace the wire harness cable with new one & go to Step 9	
Step 8	If step7 is false change the ECU/EVGT & go to step 9	
Step 9	Check DTC	

### Circuit Schematic Diagram:

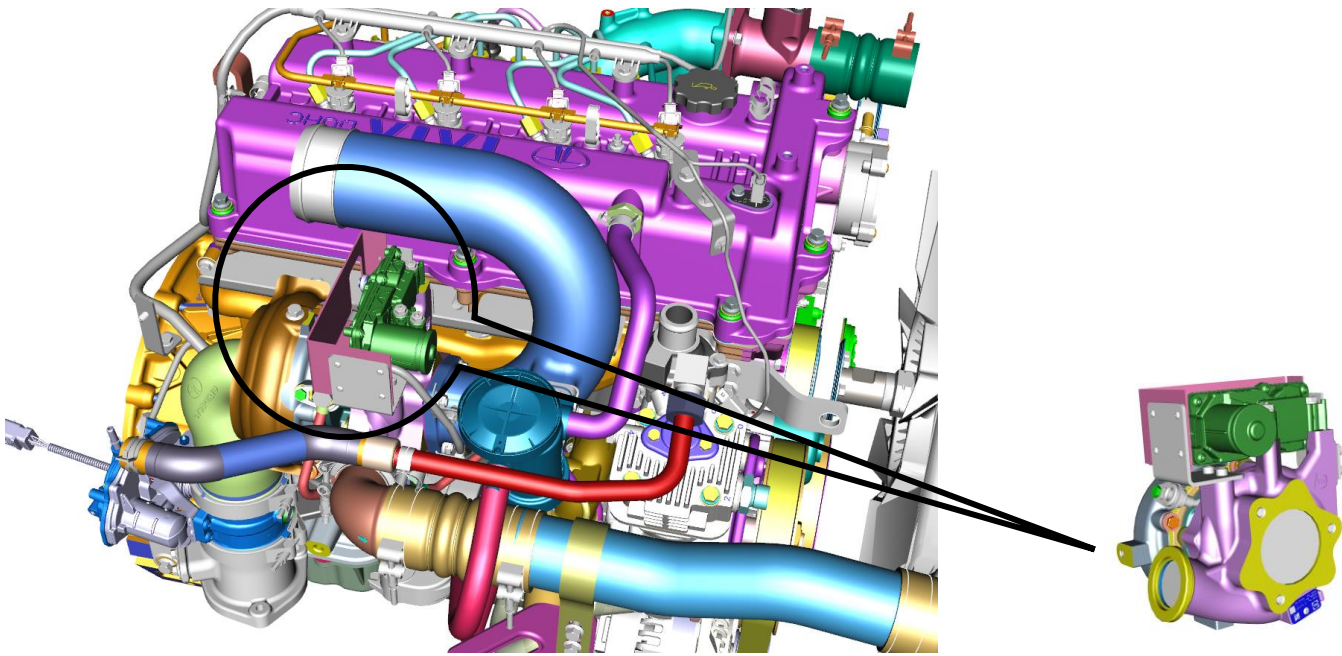




### Circuit Description:

EMS measures the Turbo actuator position by Analog input signal at A53, which corresponds, to the vane position. Check for the continuity between EMS and Sensor by referring above schematic.

### Location & Component Image:





**P22CF-73: Turbocharger Boost Control actuator valve jammed at closed position**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P22CF-73 MIL- On CEL – Off AWL- Off	1. Turbo Connector loose 2. Wiring harness issue	NA

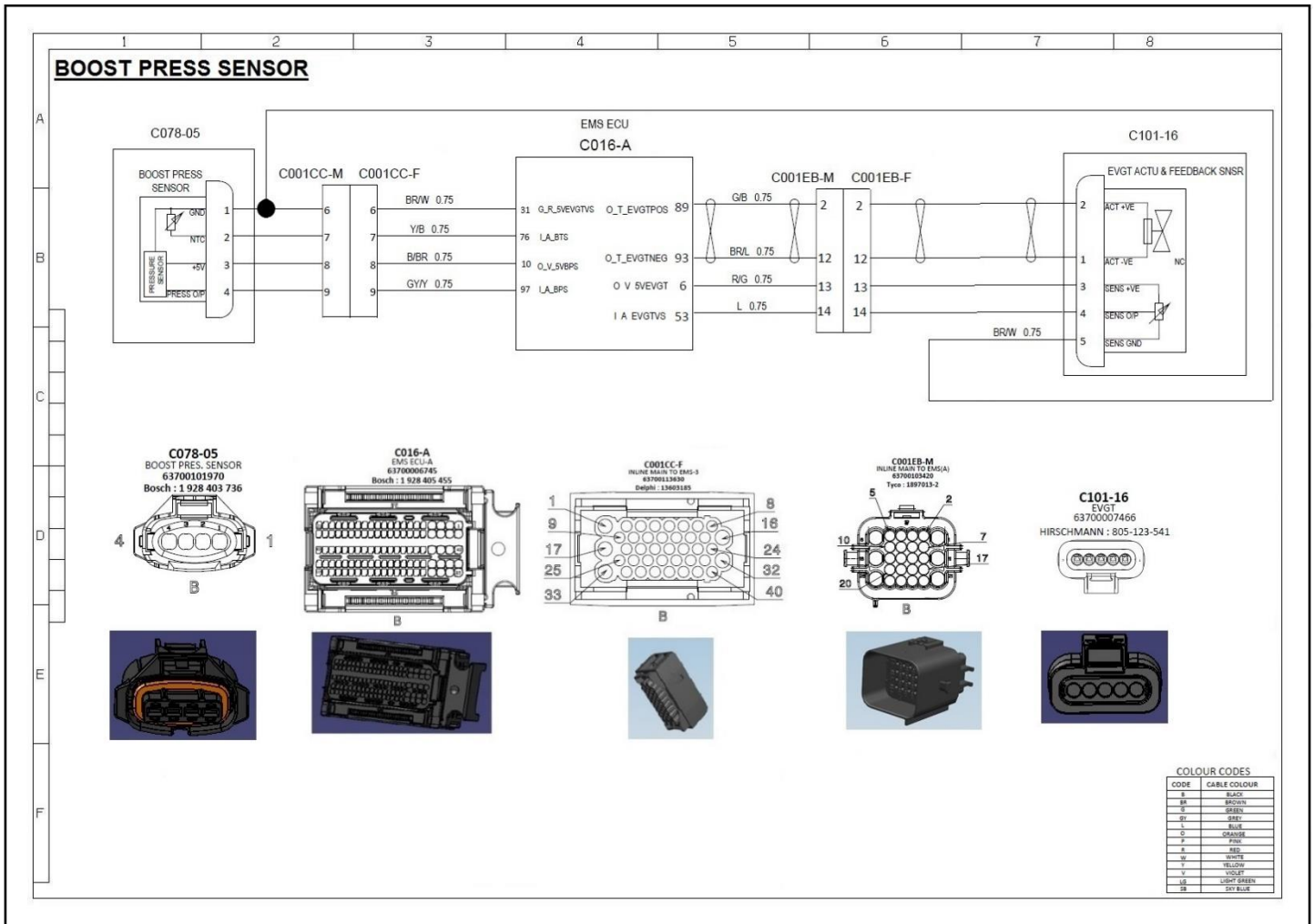
**Checkpoints:**

1. Check EVGT Connector
2. Check wiring harness

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery voltage	<b>12.5 +/- 0.3 Volts</b>
Step 2	Check Turbocharger Connector for damage	
Step 3	Check for back out terminals of wiring harness, If yes fix the connections	
Step 4	Check continuity between EVGT connector pin 2 & ECU pin A89	
Step 5	Check continuity between EVGT connector pin 1 & ECU pin A93	
Step 6	If Step 4 & Step5 is true then check if pin1 & pin 2 is open.	
Step 7	If step 6 is true, replace the wire harness cable with new one & go to Step 9	
Step 8	Check actuator Valve for soot deposition, Clean the valve	
Step 9	If step8 is false change the ECU/EVGT & go to step 9	
Step 9	Check DTC	

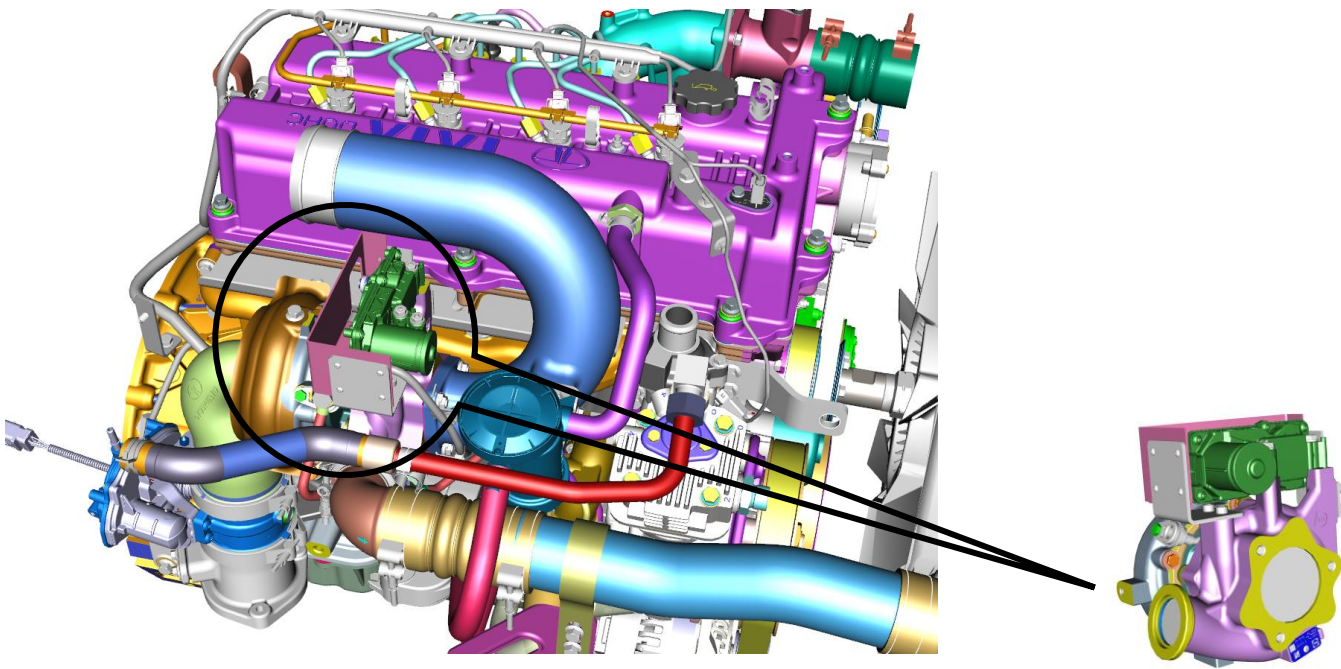
### Circuit Schematic Diagram:



### Circuit Description:

EMS measures the Turbo actuator position by Analog input signal at A53, which corresponds, to the vane position. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





**P22CF-72: Turbocharger Boost Control actuator valve jammed at open position**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P22CF-72 MIL- On CEL – Off AWL- Off	1. Turbo Connector loose 2. Wiring harness issue	NA

**Checkpoints:**

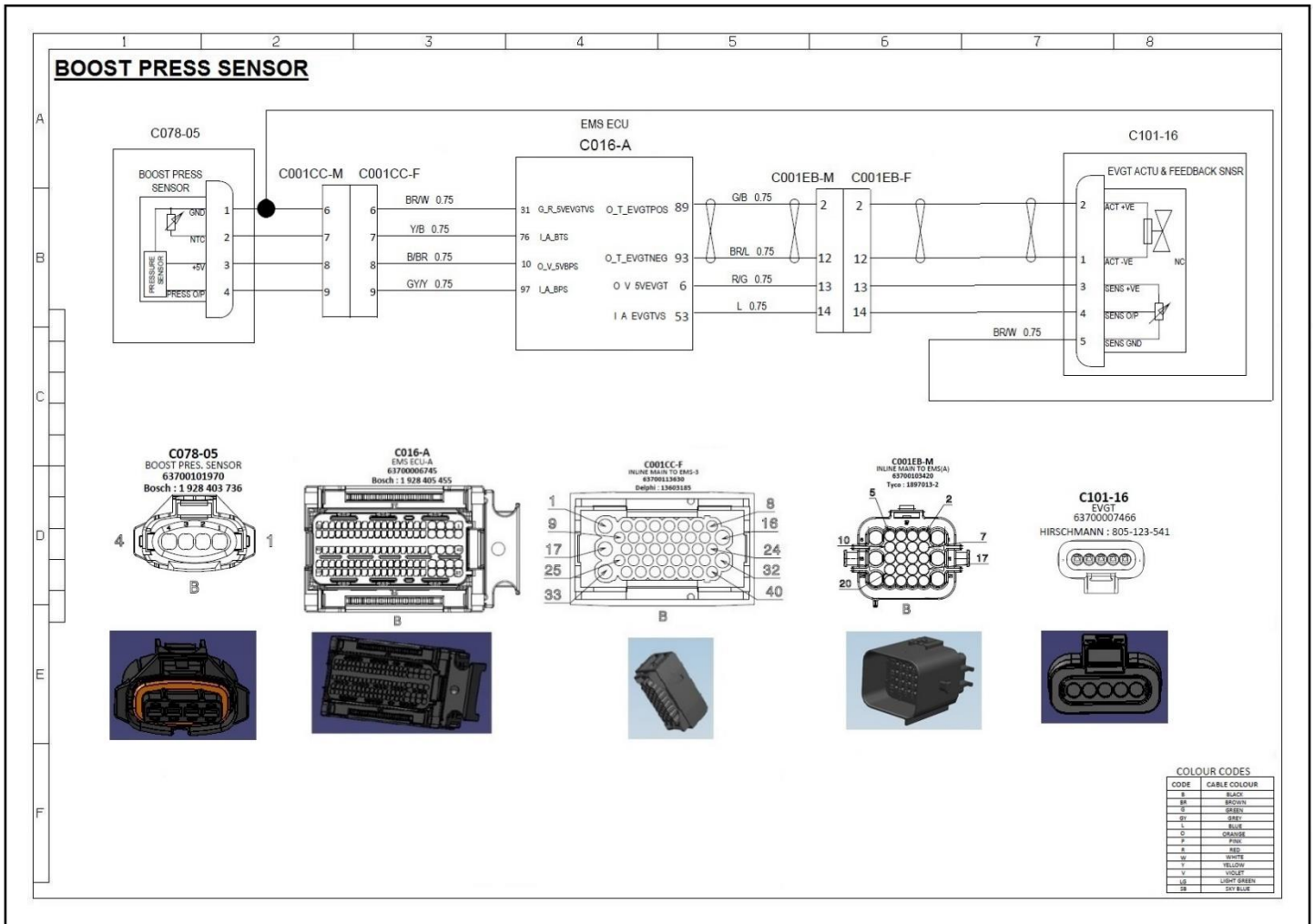
1. Check EVGT Connector
2. Check wiring harness

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery voltage	<b>12.5 +/- 0.3 Volts</b>
Step 2	Check Turbocharger Connector for damage	
Step 3	Check for back out terminals of wiring harness, If yes fix the connections	
Step 4	Check continuity between EVGT connector pin 2 & ECU pin A89	
Step 5	Check continuity between EVGT connector pin 1 & ECU pin A93	
Step 6	If Step 4 & Step5 is true then check if pin1 & pin 2 is open.	
Step 7	If step 6 is true, replace the wire harness cable with new one & go to Step 9	
Step 8	Check actuator Valve for soot deposition, Clean the valve	
Step 9	If step8 is false change the ECU/EVGT & go to step 9	
Step 9	Check DTC	



### Circuit Schematic Diagram:

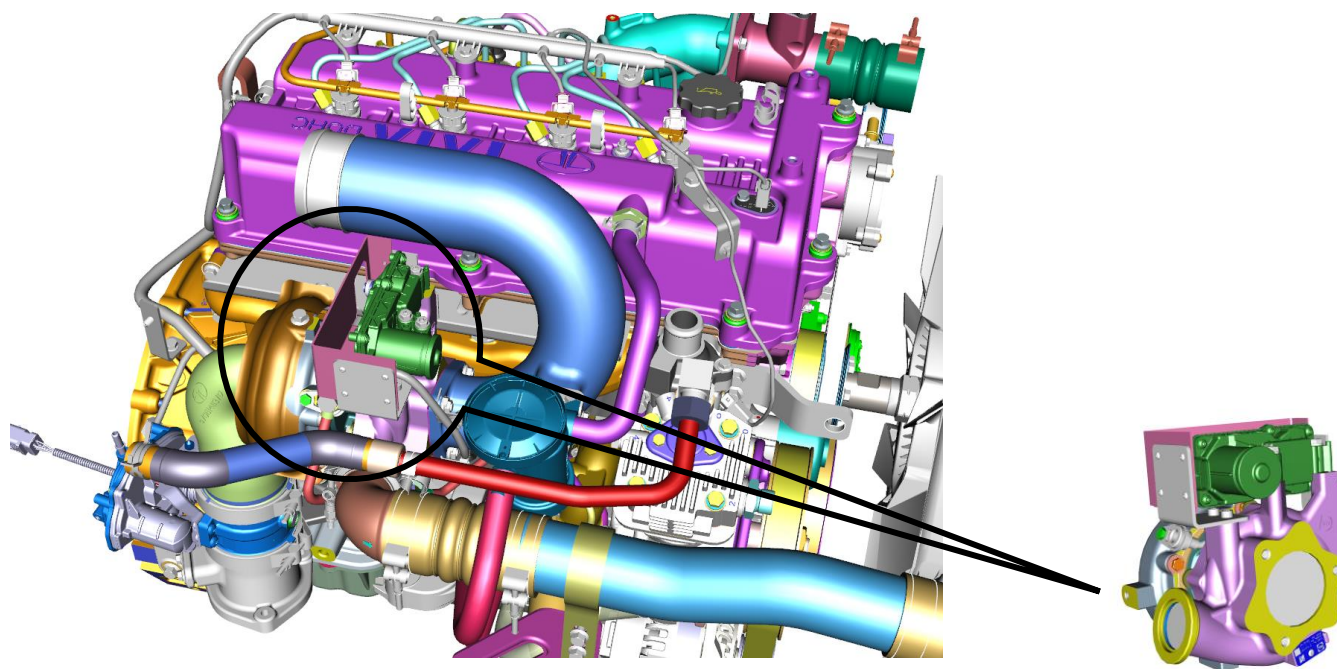


### Circuit Description:

EMS measures the Turbo actuator position by Analog input signal at A53, which corresponds, to the vane position. Check for the continuity between EMS and Sensor by referring above schematic.



Location & Component Image:





**P003A-00: Turbocharger Boost Control "A" Position Exceeded Learning Limit**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P003A-00 MIL- On CEL – Off AWL- Off	1. Turbo Connector loose 2. Wiring harness issue	NA

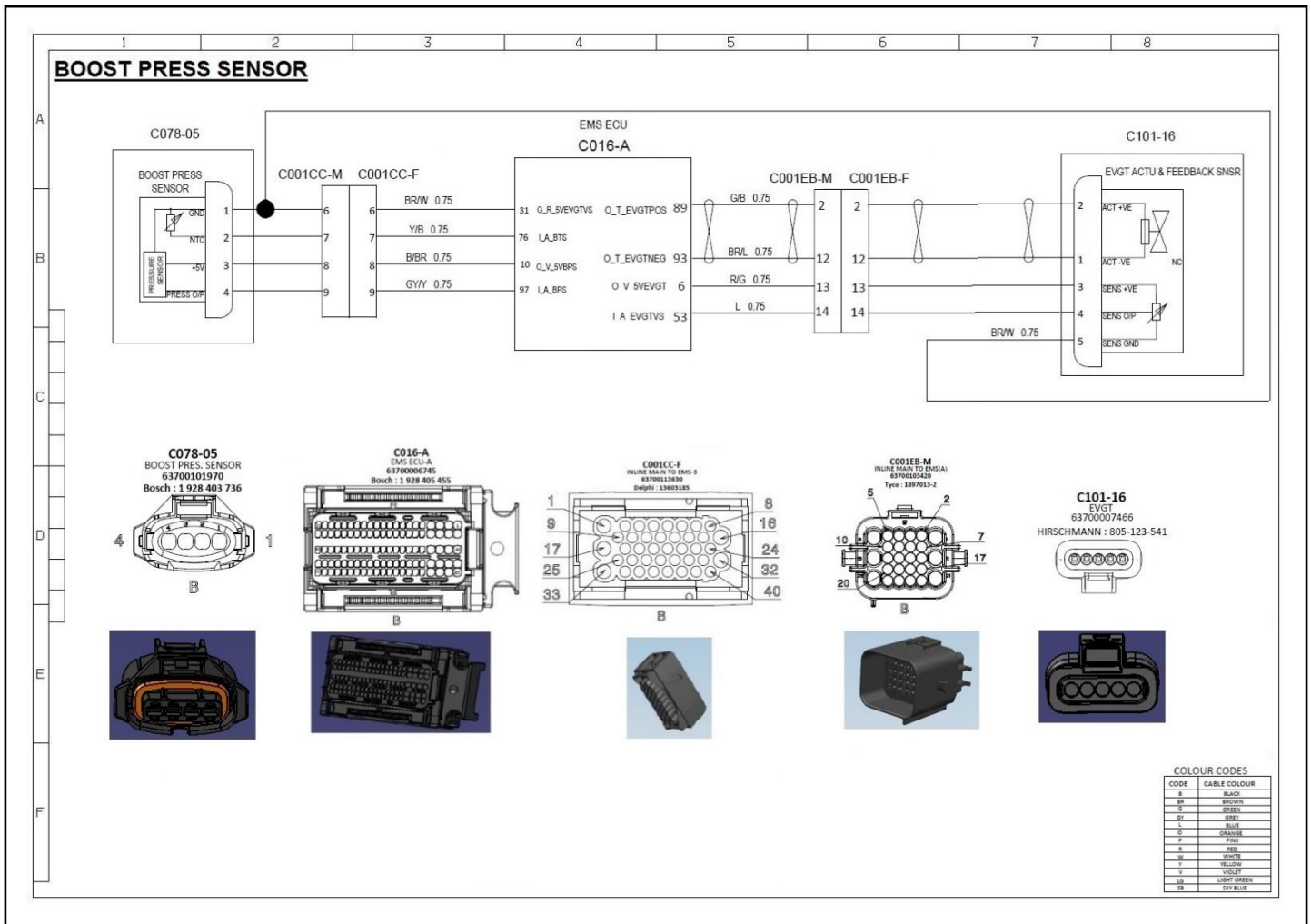
**Checkpoints:**

1. Check EVGT Connector
2. Check wiring harness

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery voltage	<b>12.5 +/- 0.3 Volts</b>
Step 2	Check Turbocharger Connector for damage	
Step 3	Check for back out terminals of wiring harness, If yes fix the connections	
Step 4	Check continuity between EVGT connector pin 2 & ECU pin A89	
Step 5	Check continuity between EVGT connector pin 1 & ECU pin A93	
Step 6	Check continuity between EVGT connector pin 4 & ECU pin A53	
Step 7	If step 6 is true, replace the wire harness cable with new one & go to Step 10	
Step 8	Check actuator Valve for soot deposition, Clean the valve	
Step 9	If step8 is false change the ECU/EVGT & go to step 10	
Step 10	Check DTC	

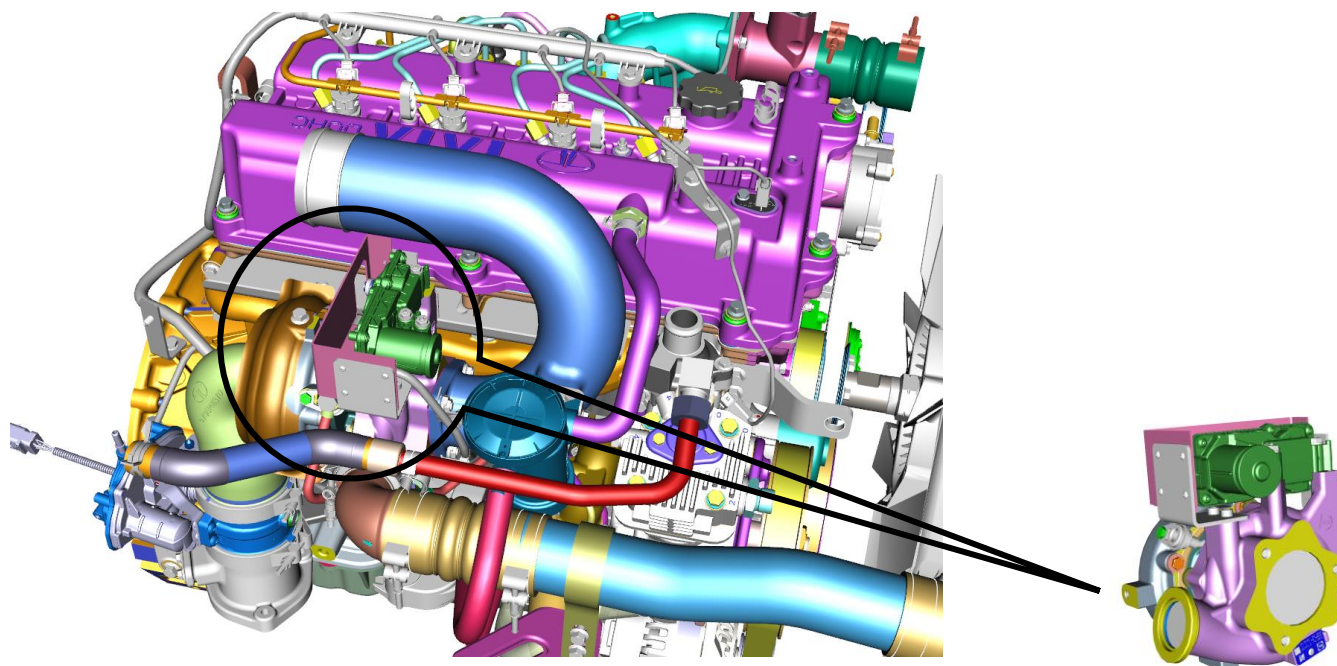
### Circuit Schematic Diagram:



### Circuit Description:

EMS measures the Turbo actuator position by Analog input signal at A53, which corresponds, to the vane position. Check for the continuity between EMS and Sensor by referring above schematic.

Location & Component Image:





## P003B-00: Turbocharger Boost Control "B" Position Exceeded Learning Limit

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P003B-00 MIL- On CEL – Off AWL- Off	1. Turbo Connector loose 2. Wiring harness issue	NA

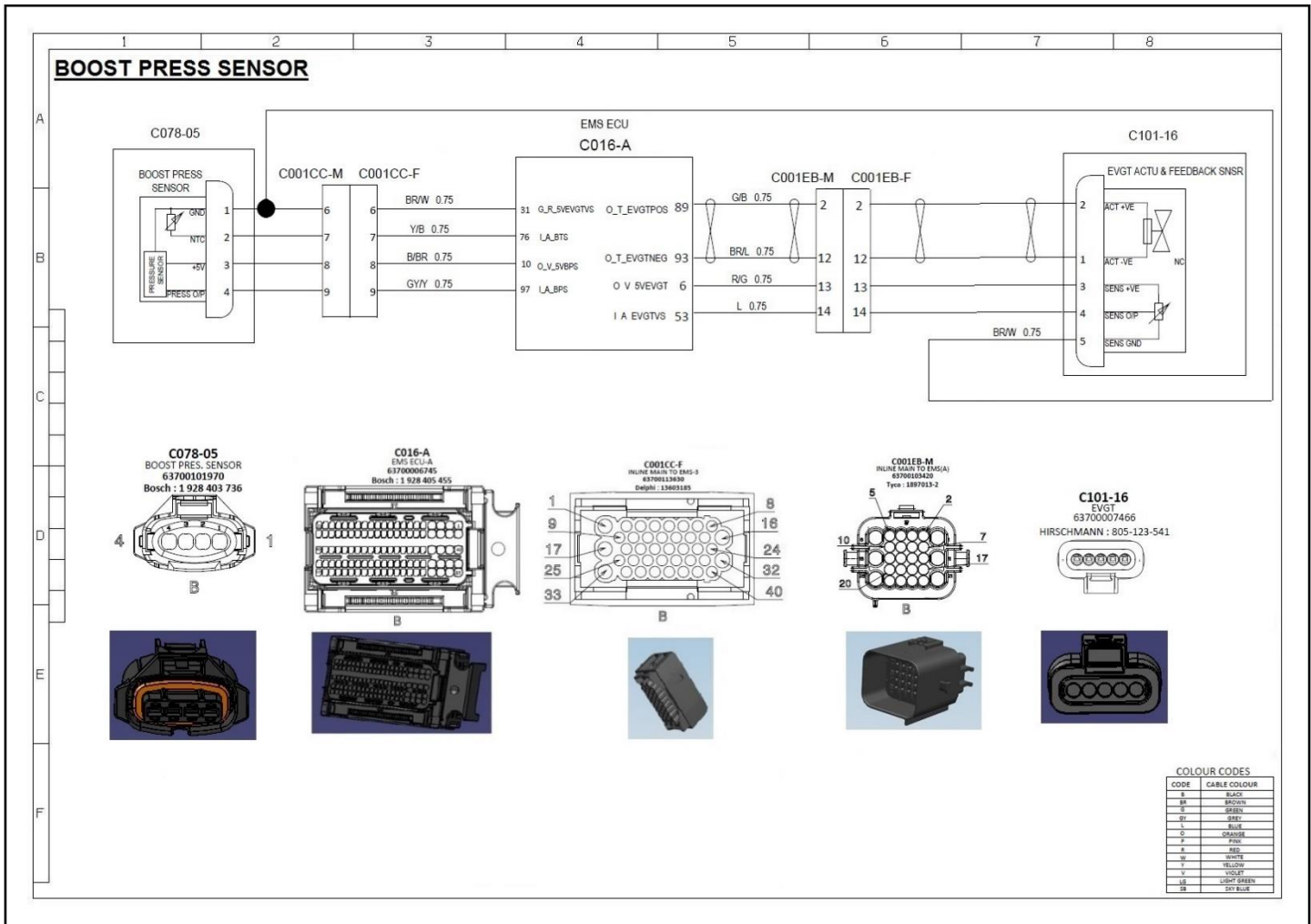
### Checkpoints:

1. Check EVGT Connector
2. Check wiring harness

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check battery voltage	12.5 +/- 0.3 Volts
Step 2	Check Turbocharger Connector for damage	
Step 3	Check for back out terminals of wiring harness, If yes fix the connections	
Step 4	Check continuity between EVGT connector pin 2 & ECU pin A89	
Step 5	Check continuity between EVGT connector pin 1 & ECU pin A93	
Step 6	Check continuity between EVGT connector pin 4 & ECU pin A53	
Step 7	If step 6 is true, replace the wire harness cable with new one & go to Step 10	
Step 8	Check actuator Valve for soot deposition, Clean the valve	
Step 9	If step8 is false change the ECU/EVGT & go to step 10	
Step 10	Check DTC	

### Circuit Schematic Diagram:

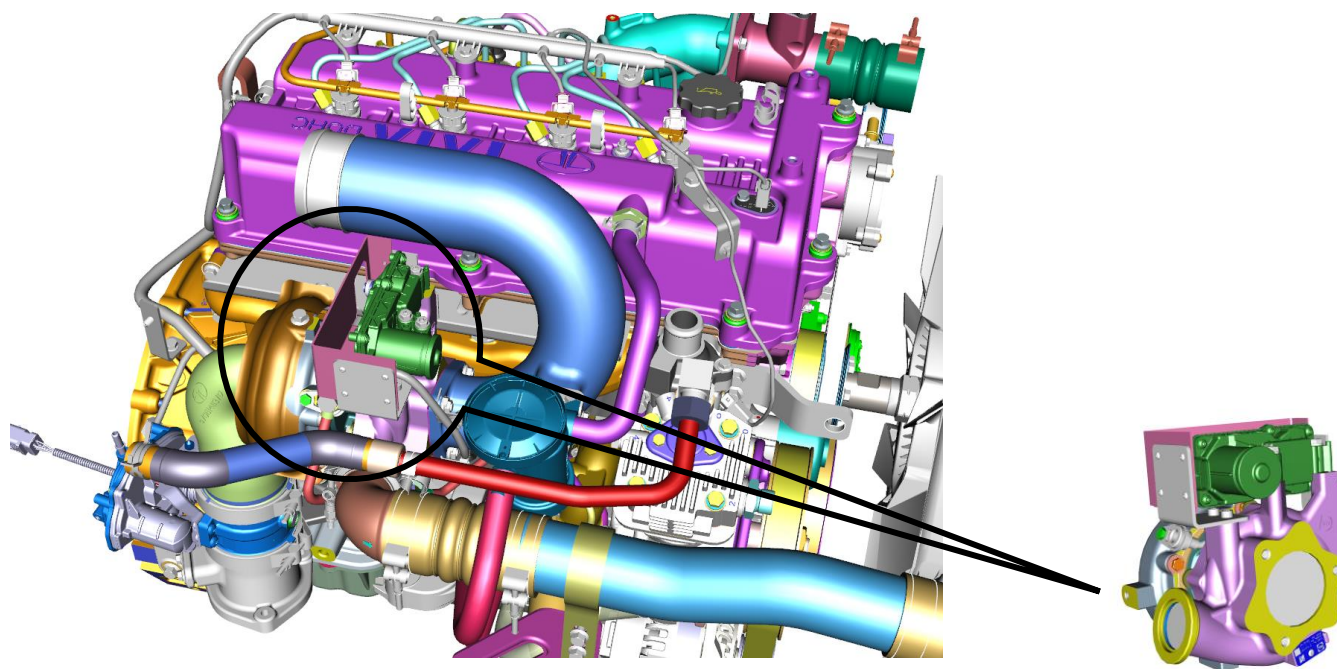


### Circuit Description:

EMS measures the Turbo actuator position by Analog input signal at A53, which corresponds, to the vane position. Check for the continuity between EMS and Sensor by referring above schematic.



Location & Component Image:







**P204F-73: DFC for Defective pressure reduction in SCR**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P204F-73 MIL- On CEL – Off AWL - On	1.Blockages in the backflow path 2.Backflow pump not effective	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check supply module

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 4 & K74, Pin 3 & K20	
Step 3	If continuity is found ok proceed to step 8	
Step 4	Check continuity between pin 1 & pin 87 of SCR main relay, & between Pin 2 & K40.	
Step 5	If continuity is found ok proceed to step 8	
Step 6	Check for blockages in Backflow path, backflow pump connection, clear & go to step 8	
Step 7	If issues, change supply module & go to step 8	
Step 8	Clear and check DTC	



## P2452-95: DFC for Hose line connection

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P2452-95 MIL- On CEL – Off AWL - On	1.Hoseline interchanged	NA

### Checkpoints:

1. Check DPF hose lines

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 4 & K74, Pin 3 & K20	
Step 3	If continuity is found ok proceed to step 8	
Step 4	Check continuity between pin 1 & pin 87 of SCR main relay, & between Pin 2 & K40.	
Step 5	If continuity is found ok proceed to step 8	
Step 6	Check for blockages in Backflow path, backflow pump connection, clear & go to step 8	
Step 7	If issues, change supply module & go to step 8	
Step 8	Clear and check DTC	



## P2453-64: DFC for the Delta pressure sensor plausibility

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P2453-64 MIL- On CEL – Off AWL - On	1.Delta Pressure Sensor Faulty	NA

### Checkpoints:

1. Check DPS

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 4 & K74, Pin 3 & K20	
Step 3	If continuity is found ok proceed to step 8	
Step 4	Check continuity between pin 1 & pin 87 of SCR main relay, & between Pin 2 & K40.	
Step 5	If continuity is found ok proceed to step 8	
Step 6	Check for blockages in Backflow path, backflow pump connection, clear & go to step 8	
Step 7	If issues, change supply module & go to step 8	
Step 8	Clear and check DTC	



**P2205-00: DFC for heater unavailability for upstream NOx sensor**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2205-00 MIL- On CEL – Off AWL - On	1.Wiring Harness issue 2.Faulty Heater for NOx sensor	NA

**Checkpoints:**

1. Check wiring harness

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check the appropriate heater connected to the system	
Step 3	If the communication is via CAN, check for the proper CAN connections	
Step 4	Heater to be changed	
Step 5	Clear and check DTC	



**P2205-29: DFC for heater readiness diagnosis of upstream NOx sensor**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2205-29 MIL- On CEL – Off AWL - On	1.Wiring Harness issue 2.Faulty Heater for NOx sensor	NA

**Checkpoints:**

1. Check wiring harness

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check the appropriate heater connected to the system	
Step 3	If the communication is via CAN, check for the proper CAN connections	
Step 4	Replace NOx sensor	
Step 5	Clear and check DTC	



**P2200-F0: DFC for NOx availability diagnosis of NOx sensor upstream**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2200-F0 MIL- On CEL – Off AWL - On	1. The NOx sensor is faulty/drifted 2. The NOx sensor is sluggish	NA

**Checkpoints:**

1. Check NOx sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check the appropriate heater connected to the system	
Step 3	If the communication is via CAN, check for the proper CAN connections	
Step 4	Replace NOx sensor	
Step 5	Clear and check DTC	



**P2200-85: DFC for NOx signal range check of NOx sensor upstream(maximum)**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2200-85 MIL- On CEL – Off AWL - On	1. WH of US NOx sensor open load/short to battery. 2. Poisoning in the 2nd chamber or/and Clogging or cracking of diffusion Barriers	NA

**Checkpoints:**

1. Check NOx sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check alternator	
Step 4	Check for blown fuses	
Step 5	Check for loose connections at Battery & Alternator +Ve terminal.	
Step 6	Replace the US sensor	
Step 7	Clear and check DTC	





**P2200-84: DFC for NOx signal range check of Nox sensor upstream(minimum)**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2200-84 MIL- On CEL – Off AWL - On	1. WH of US NOx sensor short to ground 2. Poisoning in the 2nd chamber or/and Clogging or cracking of diffusion Barriers	NA

**Checkpoints:**

1. Check NOx sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check alternator	
Step 4	Check for blown fuses	
Step 5	Check for loose connections at Battery & Alternator +Ve terminal.	
Step 6	Replace the US sensor	
Step 7	Clear and check DTC	



**P2200-0D: DFC for all open circuit errors of NOx sensor in NOx sensor 1 Bank 1**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2200-0D MIL- On CEL – Off AWL - On	1. NOx upstream sensor connector disconnected	NA

**Checkpoints:**

1. Check NOx sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check alternator	
Step 4	Check for blown fuses	
Step 5	Check for loose connections at Battery & Alternator +Ve terminal.	
Step 6	Replace the US sensor	
Step 7	Clear and check DTC	



**P2200-01: DFC for all short circuit errors of Nox sensor in NOx sensor 1 Bank 1**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2200-01 MIL- On CEL – Off AWL - On	1. NOx upstream sensor connector shorted	NA

**Checkpoints:**

1. Check NOx sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check alternator	
Step 4	Check for blown fuses	
Step 5	Check for loose connections at Battery & Alternator +Ve terminal.	
Step 6	Replace the US sensor	
Step 7	Clear and check DTC	



**P2200-29: DFC for Sensor signal readiness diagnosis of upstream NOx sensor**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2200-29 MIL- On CEL – Off AWL - On	1. Upstream NOx sensor open circuit or sensor not connected 2. Upstream NOx sensor faulty 3. CAN communication failure	NA

**Checkpoints:**

1. Check NOx sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check wiring harness of NOx sensor	
Step 2	Check the proper working of the NOx sensor	
Step 3	Check CAN communication	
Step 4	Clear and check DTC	



**P2200-22: DFC for linear lambda signal range check of upstream NOx sensor (maximum)**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2200-22 MIL- On CEL – Off AWL - On	1. Battery Voltage 2. Wiring harness of US NOx sensor (O2 signal) open load/short to battery	NA

**Checkpoints:**

1. Check NOx sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check alternator	
Step 4	Check for blown fuses	
Step 5	Check for loose connections at Battery & Alternator +Ve terminal.	
Step 6	Replace Upstream NOx Sensor	
Step 7	Clear and check DTC	



**P2200-21: DFC for linear lambda signal range check of upstream NOx sensor (minimum)**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2200-21 MIL- On CEL – Off AWL - On	1. Wiring harness of NOx sensor (O2 signal) short to ground	NA

**Checkpoints:**

1. Check NOx sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check the wiring harness for proper connection of the Linear lambda NOx sensor	
Step 4	If the communication is via CAN, check for proper CAN connection.	
Step 5	US sensor has to be changed	
Step 6	Clear and check DTC	



**P2200-0A: DFC for Wire diagnosis of upstream NOx sensor**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2200-0A MIL- On CEL – Off AWL - On	1. Resistance in the line between battery and upstream sensor. 2. Battery voltage is not in defined range for the NOx sensor 3. Improper CAN connection	NA

**Checkpoints:**

1. Check NOx sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check the wiring harness for proper connection of the Linear lambda NOx sensor	
Step 4	If the communication is via CAN, check for proper CAN connection.	
Step 5	US sensor has to be changed	
Step 6	Clear and check DTC	





**P2200-27: DFC for NOx offset max error detection upstream**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2200-27 MIL- On CEL – Off AWL - On	1. Aging/driftin in the NOx sensor upstream the SCR catalyst	NA

**Checkpoints:**

1. Check NOx sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check the wiring harness for proper connection of the Linear lambda NOx sensor	
Step 4	If the communication is via CAN, check for proper CAN connection.	
Step 5	Check if any leaks in the exhaust layout	
Step 6	Upstream sensor has to be changed	
Step 7	Clear and check DTC	



**P2200-26: DFC for NOx offset min error detection upstream**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2200-26 MIL- On CEL – Off AWL - On	1. Aging/driftin in the NOx sensor upstream the SCR catalyst	NA

**Checkpoints:**

1. Check NOx sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check the wiring harness for proper connection of the Linear lambda NOx sensor	
Step 4	If the communication is via CAN, check for proper CAN connection.	
Step 5	Check if any leaks in the exhaust layout	
Step 6	Upstream sensor has to be changed	
Step 7	Clear and check DTC	



**P22A3-00: DFC for heater unavailability for downstream NOx sensor**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P22A3-00 MIL- On CEL – Off AWL - On	1.Wiring Harness issue 2.Faulty Heater for NOx sensor	NA

**Checkpoints:**

2. Check wiring harness

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check the appropriate heater connected to the system	
Step 3	If the communication is via CAN, check for the proper CAN connections	
Step 4	Heater to be changed	
Step 5	Clear and check DTC	



**P22A3-29: DFC for heater readiness diagnosis of downstream NOx sensor**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P22A3-29 MIL- On CEL – Off AWL - On	1.Wiring Harness issue 2.Faulty Heater for NOx sensor	NA

**Checkpoints:**

1. Check wiring harness

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check the appropriate heater connected to the system	
Step 3	If the communication is via CAN, check for the proper CAN connections	
Step 4	Replace NOx sensor	
Step 5	Clear and check DTC	



**P229E-F0: DFC for NOx availability diagnosis of NOx sensor upstream**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P229E-F0 MIL- On CEL – Off AWL - On	1. The NOx sensor is faulty/drifted 2. The NOx sensor is sluggish	NA

**Checkpoints:**

2. Check NOx sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check the appropriate heater connected to the system	
Step 3	If the communication is via CAN, check for the proper CAN connections	
Step 4	Replace NOx sensor	
Step 5	Clear and check DTC	



**P229E-85: DFC for NOx signal range check of NOx sensor downstream(maximum)**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P229E-85 MIL- On CEL – Off AWL - On	1. Wiring Harness of downstream NOx sensor open load/short to battery. 2. Poisoning in the 2nd chamber or/and Clogging or cracking of diffusion Barriers	NA

**Checkpoints:**

1. Check NOx sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check alternator	
Step 4	Check for blown fuses	
Step 5	Check for loose connections at Battery & Alternator +Ve terminal.	
Step 6	Replace the downstream NOx sensor	
Step 7	Clear and check DTC	



**P229E-84: DFC for NOx signal range check of Nox sensor upstream(minimum)**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P229E-84 MIL- On CEL – Off AWL - On	1. Wiring Harness of downstream NOx sensor short to ground 2. Poisoning in the 2nd chamber or/and Clogging or cracking of diffusion Barriers	NA

**Checkpoints:**

1. Check NOx sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check alternator	
Step 4	Check for blown fuses	
Step 5	Check for loose connections at Battery & Alternator +Ve terminal.	
Step 6	Replace the downstream NOx sensor	
Step 7	Clear and check DTC	





**P229E-0D: DFC for all open circuit errors of NOx sensor in NOx sensor 4 Bank 1**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P229E-0D MIL- On CEL – Off AWL - On	1. NOx downstream sensor connector disconnected	NA

**Checkpoints:**

1. Check NOx sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check alternator	
Step 4	Check for blown fuses	
Step 5	Check for loose connections at Battery & Alternator +Ve terminal.	
Step 6	Replace the downstream NOx sensor	
Step 7	Clear and check DTC	



**P229E-01: DFC for all short circuit errors of NOx sensor in NOx sensor 4 Bank 1**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P229E-01 MIL- On CEL – Off AWL - On	1. NOx downstream sensor connector shorted	NA

**Checkpoints:**

1. Check NOx sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check alternator	
Step 4	Check for blown fuses	
Step 5	Check for loose connections at Battery & Alternator +Ve terminal.	
Step 6	Replace the downstream NOx sensor	
Step 7	Clear and check DTC	



**P229E-29: DFC for Sensor signal readiness diagnosis of downstream NOx sensor**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P229E-29 MIL- On CEL – Off AWL - On	1. Downstream NOx sensor open circuit or sensor not connected 2. Downstream NOx sensor faulty 3. CAN communication failure	NA

**Checkpoints:**

1. Check NOx sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check wiring harness of NOx sensor	
Step 2	Check the proper working of the NOx sensor	
Step 3	Check CAN communication	
Step 4	Clear and check DTC	



**P229E-22: DFC for linear lambda signal range check of downstream NOx sensor (maximum)**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P229E-22 MIL- On CEL – Off AWL - On	1. Battery Voltage 2. Wiring harness of downstream NOx sensor (O2 signal) open load/short to battery	NA

**Checkpoints:**

1. Check NOx sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check alternator	
Step 4	Check for blown fuses	
Step 5	Check for loose connections at Battery & Alternator +Ve terminal.	
Step 6	Replace downstream NOx Sensor	
Step 7	Clear and check DTC	



**P229E-21: DFC for linear lambda signal range check of downstream NOx sensor (minimum)**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P229E-21 MIL- On CEL – Off AWL - On	1. Wiring harness of NOx sensor (O2 signal) short to ground	NA

**Checkpoints:**

1. Check NOx sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check the wiring harness for proper connection of the Linear lambda NOx sensor	
Step 4	If the communication is via CAN, check for proper CAN connection.	
Step 5	Downstream NOx sensor has to be changed	
Step 6	Clear and check DTC	



**P229E-0A: DFC for Wire diagnosis of downstream NOx sensor**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P229E-0A MIL- On CEL – Off AWL - On	1. Resistance in the line between battery and downstream sensor. 2. Battery voltage is not in defined range for the NOx sensor 3. Improper CAN connection	NA

**Checkpoints:**

1. Check NOx sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check the wiring harness for proper connection of the Linear lambda NOx sensor	
Step 4	If the communication is via CAN, check for proper CAN connection.	
Step 5	downstream NOx sensor has to be changed	
Step 6	Clear and check DTC	



**P229E-27: DFC for NOx offset max error detection downstream**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P229E-27 MIL- On CEL – Off AWL - On	1. Aging/drift in the NOx sensor downstream the SCR catalyst	NA

**Checkpoints:**

1. Check NOx sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check the wiring harness for proper connection of the Linear lambda NOx sensor	
Step 4	If the communication is via CAN, check for proper CAN connection.	
Step 5	Check if any leaks in the exhaust layout	
Step 6	Downstream NOx sensor has to be changed	
Step 7	Clear and check DTC	





**P229E-26: DFC for NOx offset min error detection downstream**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P229E-26 MIL- On CEL – Off AWL - On	1. Aging/driftin in the NOx sensor downstream the SCR catalyst	NA

**Checkpoints:**

1. Check NOx sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check the wiring harness for proper connection of the Linear lambda NOx sensor	
Step 4	If the communication is via CAN, check for proper CAN connection.	
Step 5	Check if any leaks in the exhaust layout	
Step 6	Downstream NOx sensor has to be changed	
Step 7	Clear and check DTC	



**P203A-29: DFC for No echo error in the Continuous Urea Level Sensor**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P203A-29 MIL- On CEL – Off AWL - On	1. Continuous level sensor is not mounted properly 2. Sensor not working	NA

**Checkpoints:**

1. Check continuous level sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check the level sensor if mounted properly	
Step 4	Rectify & go to step	
Step 5	Change the Sensor and go to step 6	
Step 6	Clear and check DTC	



**P203F-84: DFC for Status of tank level for the detection of tank capacity on spare fluid level**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P203F-84 MIL- On CEL – Off AWL - On	1. Continuous level sensor is not mounted properly	NA

**Checkpoints:**

1. Check continuous level sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check the level sensor if mounted properly	
Step 4	Rectify & go to step	
Step 5	Change the Sensor and go to step 6	
Step 6	Clear and check DTC	



**P203F-7B: DFC for Status of minimum tank level for function guaranty**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P203F-7B MIL- On CEL – Off AWL - On	1. Continuous level sensor is not mounted properly	NA

**Checkpoints:**

1. Check continuous level sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check the level sensor if mounted properly	
Step 4	Rectify & go to step	
Step 5	Change the Sensor and go to step 6	
Step 6	Clear and check DTC	



**P206A-F1: Diagnostic Fault Check for fluid property type is diesel error**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P206A-F1 MIL- On CEL – Off AWL - On	1. Diesel Exhaust Fluid (DEF) in urea tank is diesel.	NA

**Checkpoints:**

1. Check DEF

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check the DEF quality sensor if mounted properly	
Step 4	Rectify & go to step	
Step 5	Change DEF as per specification and go to step 6	
Step 6	Clear and check DTC	



**P206A-F2: Diagnostic Fault Check for DEF property detection error**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P206A-F2 MIL- On CEL – Off AWL - On	1. Diesel Exhaust Fluid (DEF) in urea tank is not as per specification.	NA

**Checkpoints:**

1. Check DEF

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check the DEF quality sensor if mounted properly	
Step 4	Rectify & go to step	
Step 5	Change DEF as per specification and go to step 6	
Step 6	Clear and check DTC	



**P206A-F3: Diagnostic fault check for concentration stuck-in-range error**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P206A-F3 MIL- On CEL – Off AWL - On	1. Diesel Exhaust Fluid (DEF) in urea tank is not as per specification. 2. Sensor Issue	NA

**Checkpoints:**

1. Check DEF
2. Check Quality Sensor

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check battery	
Step 2	Check wiring harness	
Step 3	Check the DEF quality sensor if mounted properly	
Step 4	Rectify & go to step	
Step 5	Change DEF as per specification and go to step 6	
Step 6	Clear and check DTC	





**P2463-85: Diagnostic fault check for Maximum soot mass**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2463-85 MIL- ON CEL – Off AWL - Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem 4. DPF is clogged	NA

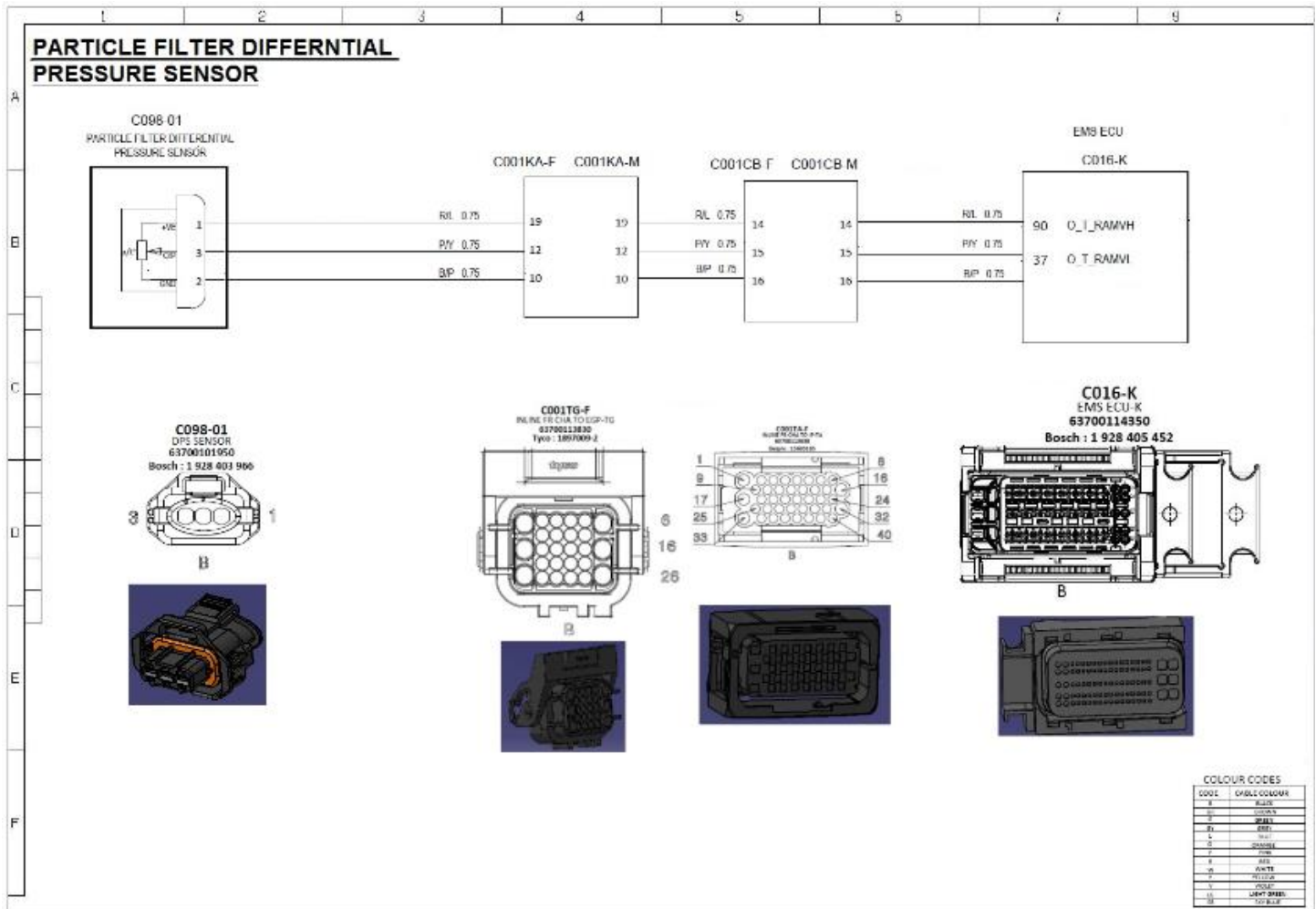
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & A22, Pin 2 & A40, Pin 3 & A44.	
Step 3	If continuity is found ok proceed to step 10	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 10	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 10	
Step 8	Check for any leakages around DPF including hose-lines, if exists arrest all leakages & go to step 10	
Step 9	If error still persist, DPF has reached to its maximum clogging capacity. Kindly clean the DPF, mount & go to step 10	
Step 10	Clear and check DTC in running condition	1700 – 1900 Engine rpm

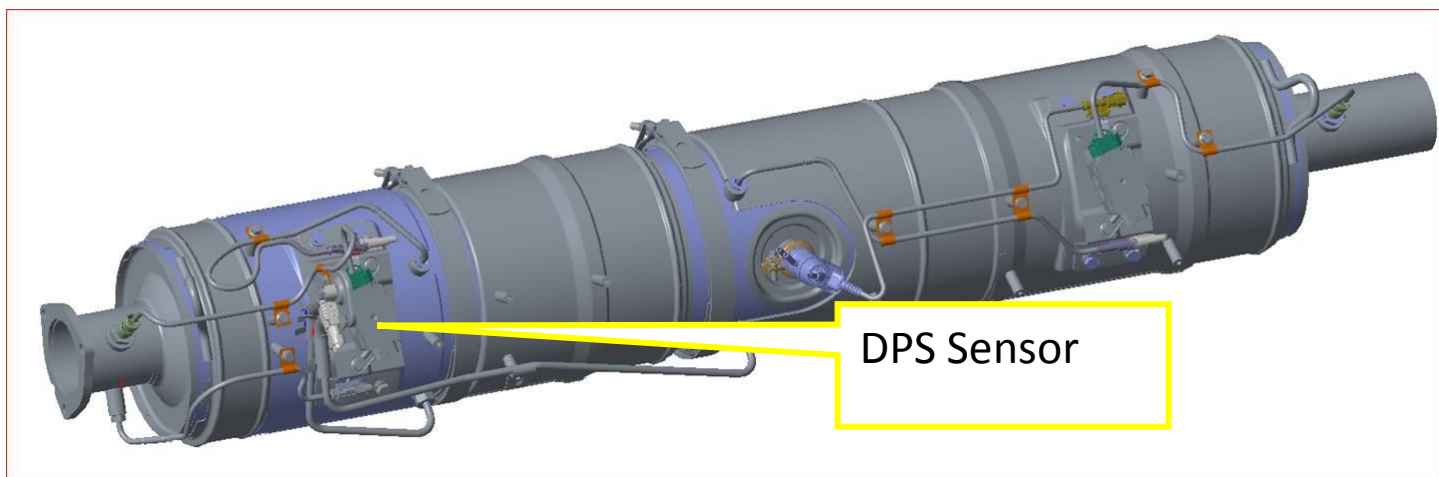
### Circuit Schematic Diagram:



### Circuit Description:

Differential Pressure Sensor used to infer the exhaust gas flow through the diesel particle filter by measuring the differential pressure across the filter. The exhaust gas flow is a function of the amount of blockage due to particulate matter (PM) accumulation within the diesel particle filter. As the filter accumulates PM the flow decreases, resulting in an increased pressure drop across the filter. P2 represents the upstream (intake) side of the filter and P1 represents the downstream (exhaust) side of the filter. This sensor will provide an analog output voltage proportional to the differential pressure across the filter ( $dP = P2 - P1$ ). At a predefined pressure the ECU will initiate a regenerative process to burn-off the PM from the filter, restoring its flow.

Location & Component Image:





**P243F-F0: Diagnostic fault check for Maximum soot mass during torque limitation**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P243F-F0 MIL- ON CEL – Off AWL - Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem 4. DPF is clogged	NA

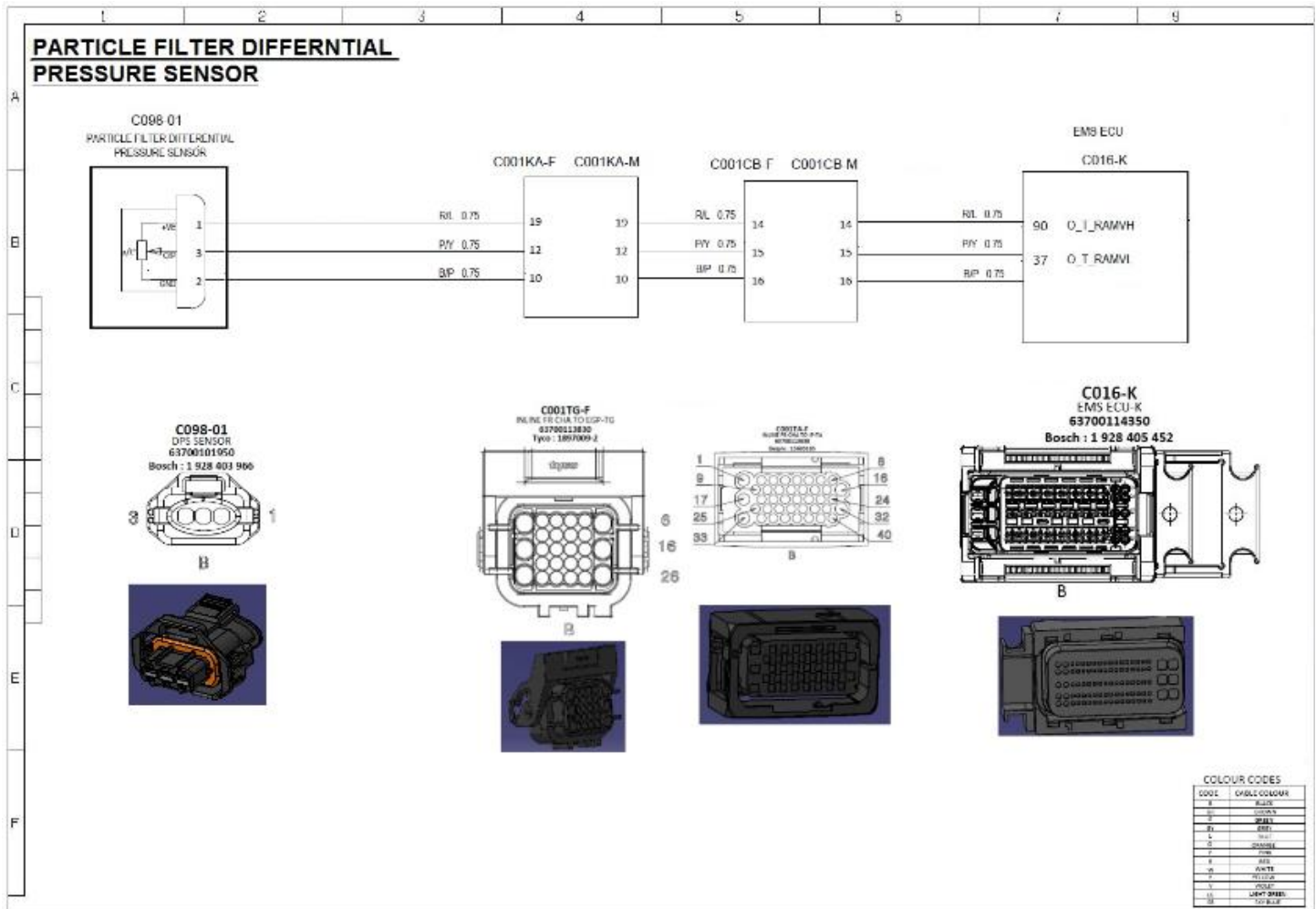
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & A22, Pin 2 & A40, Pin 3 & A44.	
Step 3	If continuity is found ok proceed to step 10	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 10	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 10	
Step 8	Check for any leakages around DPF including hose-lines, if exists arrest all leakages & go to step 10	
Step 9	If error still persist, DPF has reached to its maximum clogging capacity. Kindly clean the DPF, mount & go to step 10	
Step 10	Clear and check DTC in running condition	1700 – 1900 Engine rpm

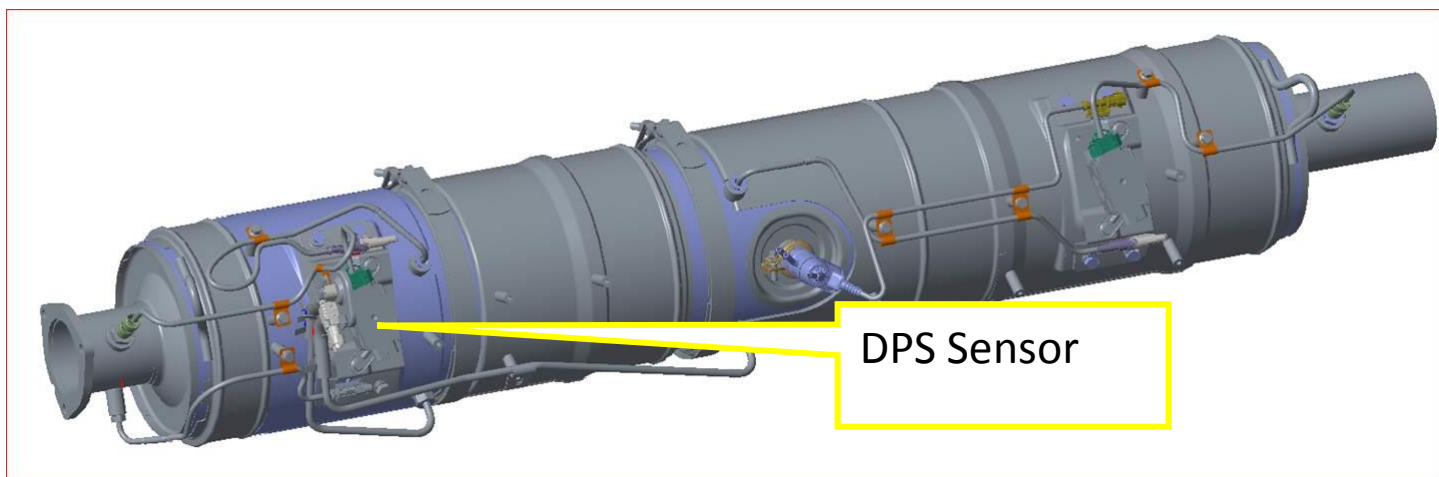
#### Circuit Schematic Diagram:



#### Circuit Description:

Differential Pressure Sensor used to infer the exhaust gas flow through the diesel particle filter by measuring the differential pressure across the filter. The exhaust gas flow is a function of the amount of blockage due to particulate matter (PM) accumulation within the diesel particle filter. As the filter accumulates PM the flow decreases, resulting in an increased pressure drop across the filter. P2 represents the upstream (intake) side of the filter and P1 represents the downstream (exhaust) side of the filter. This sensor will provide an analog output voltage proportional to the differential pressure across the filter ( $dP = P2 - P1$ ). At a predefined pressure the ECU will initiate a regenerative process to burn-off the PM from the filter, restoring its flow.

Location & Component Image:





**P242F-00: Diagnostic fault check To check if volume of Ash load has exceeded the limit**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P242F-00 MIL- ON CEL – Off AWL - Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem 4. DPF is clogged	NA

**Checkpoints:**

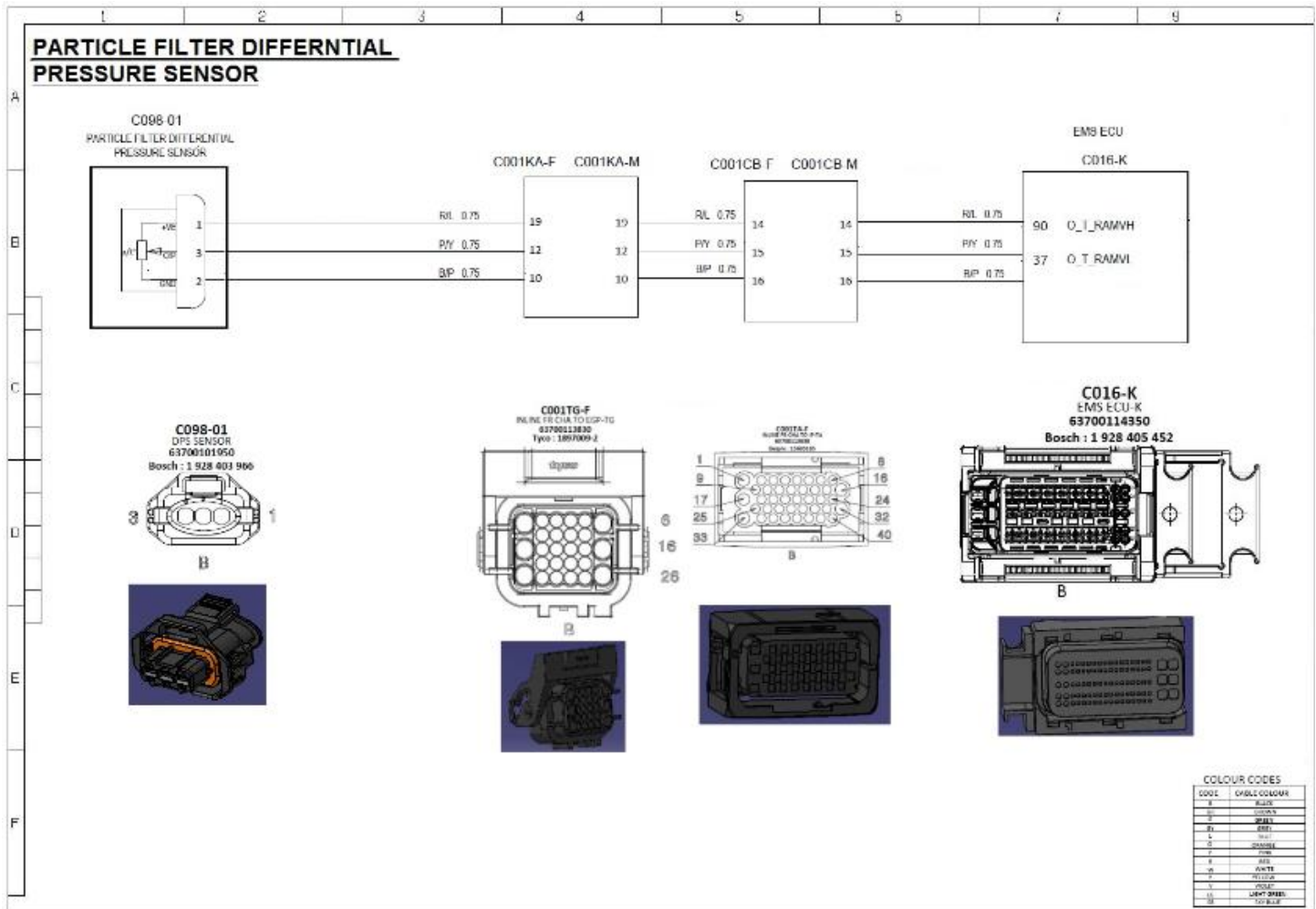
1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & A22, Pin 2 & A40, Pin 3 & A44.	
Step 3	If continuity is found ok proceed to step 10	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 10	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 10	
Step 8	Check for any leakages around DPF including hose-lines, if exists arrest all leakages & go to step 10	
Step 9	If error still persist, DPF has reached to its maximum clogging capacity. Kindly clean the DPF, mount & go to step 10	
Step 10	Clear and check DTC in running condition	1700 – 1900 Engine rpm



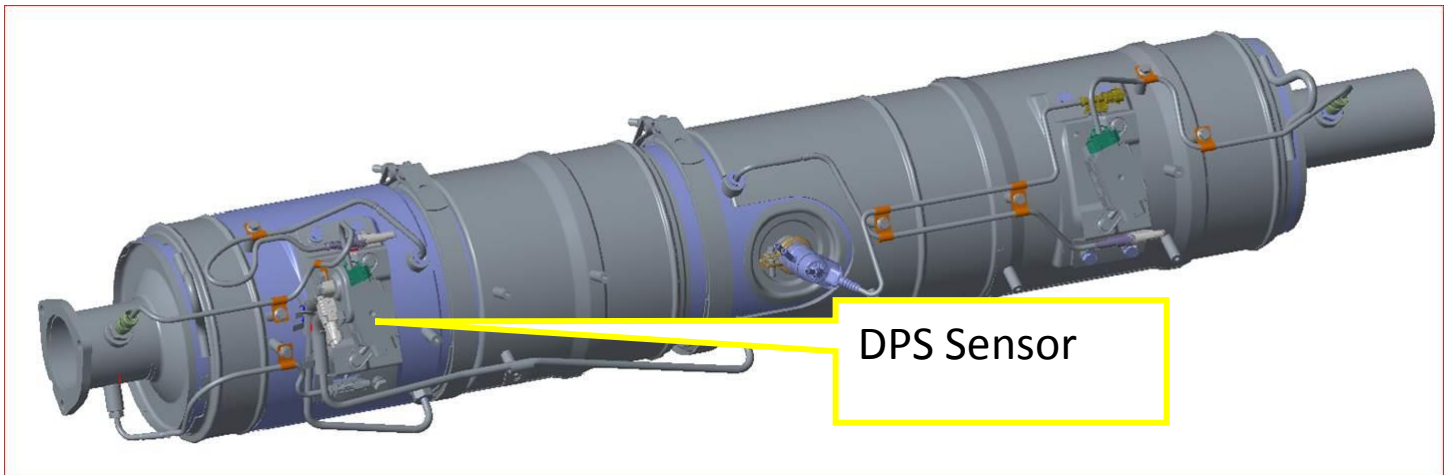
#### Circuit Schematic Diagram:



#### Circuit Description:

Differential Pressure Sensor used to infer the exhaust gas flow through the diesel particle filter by measuring the differential pressure across the filter. The exhaust gas flow is a function of the amount of blockage due to particulate matter (PM) accumulation within the diesel particle filter. As the filter accumulates PM the flow decreases, resulting in an increased pressure drop across the filter. P2 represents the upstream (intake) side of the filter and P1 represents the downstream (exhaust) side of the filter. This sensor will provide an analog output voltage proportional to the differential pressure across the filter ( $dP = P2 - P1$ ). At a predefined pressure the ECU will initiate a regenerative process to burn-off the PM from the filter, restoring its flow.

Location & Component Image:





## P2458-00: Diagnostic fault check for a locked regeneration

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P2458-00 MIL- ON CEL – Off AWL - Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem 4. DPF is clogged	NA

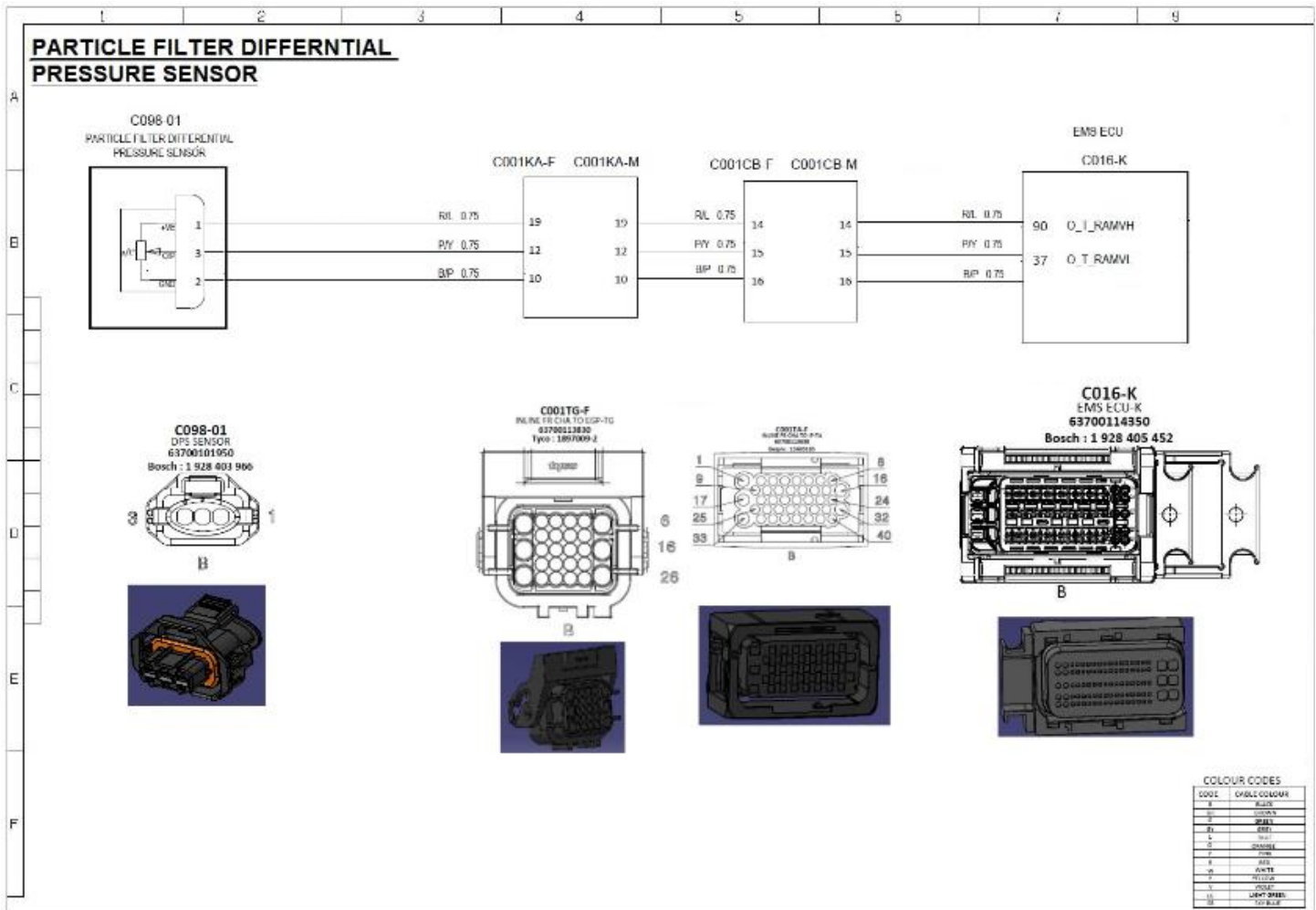
### Checkpoints:

1. Check the wiring harness
2. Check sensor
3. Check connector

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & A22, Pin 2 & A40, Pin 3 & A44.	
Step 3	If continuity is found ok proceed to step 10	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 10	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 10	
Step 8	Check for any leakages around DPF including hose-lines, if exists arrest all leakages & go to step 10	
Step 9	If error still persist, DPF has reached to its maximum clogging capacity. Kindly clean the DPF, mount & go to step 10	
Step 10	Clear and check DTC in running condition	1700 – 1900 Engine rpm

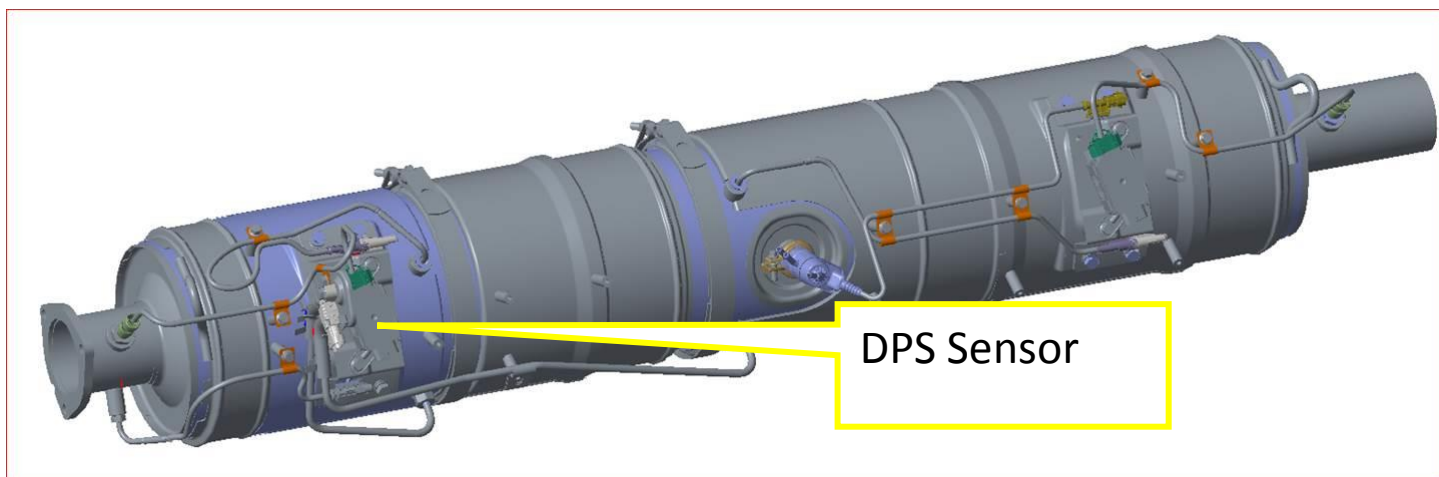
### Circuit Schematic Diagram:



### Circuit Description:

Differential Pressure Sensor used to infer the exhaust gas flow through the diesel particle filter by measuring the differential pressure across the filter. The exhaust gas flow is a function of the amount of blockage due to particulate matter (PM) accumulation within the diesel particle filter. As the filter accumulates PM the flow decreases, resulting in an increased pressure drop across the filter. P2 represents the upstream (intake) side of the filter and P1 represents the downstream (exhaust) side of the filter. This sensor will provide an analog output voltage proportional to the differential pressure across the filter ( $dP = P2 - P1$ ). At a predefined pressure the ECU will initiate a regenerative process to burn-off the PM from the filter, restoring its flow.

Location & Component Image:





**P243C-00: Diagnostic fault check for too frequent regeneration of the particulate filter**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P243C-00 MIL- ON CEL – Off AWL - Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem 4. DPF is clogged	NA

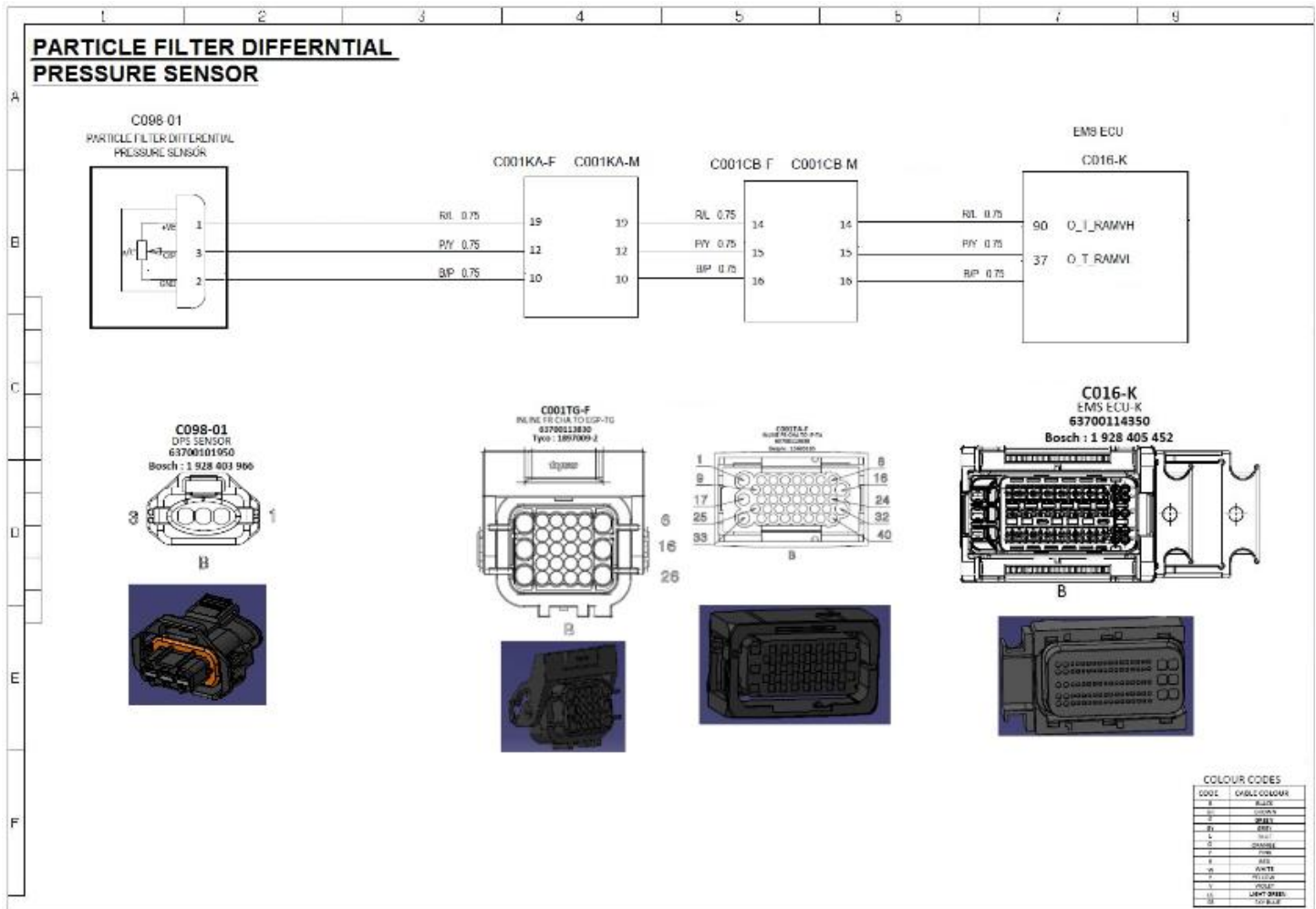
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & A22, Pin 2 & A40, Pin 3 & A44.	
Step 3	If continuity is found ok proceed to step 10	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 10	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 10	
Step 8	Check for any leakages around DPF including hose-lines, if exists arrest all leakages & go to step 10	
Step 9	If error still persist, DPF has reached to its maximum clogging capacity. Kindly clean the DPF, mount & go to step 10	
Step 10	Clear and check DTC in running condition	1700 – 1900 Engine rpm

### Circuit Schematic Diagram:

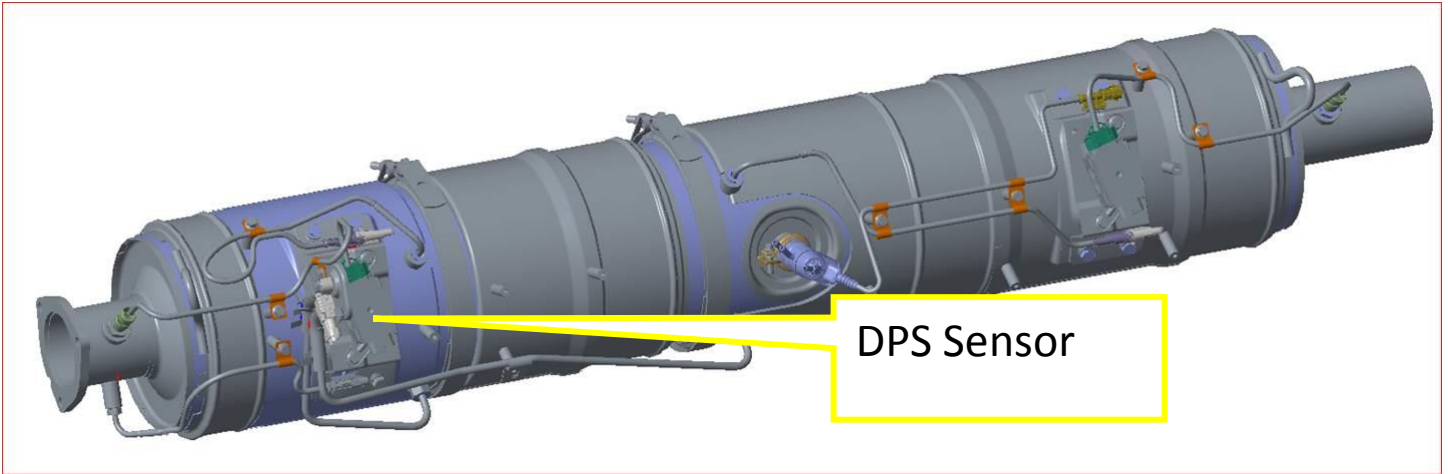


### Circuit Description:

Differential Pressure Sensor used to infer the exhaust gas flow through the diesel particle filter by measuring the differential pressure across the filter. The exhaust gas flow is a function of the amount of blockage due to particulate matter (PM) accumulation within the diesel particle filter. As the filter accumulates PM the flow decreases, resulting in an increased pressure drop across the filter. P2 represents the upstream (intake) side of the filter and P1 represents the downstream (exhaust) side of the filter. This sensor will provide an analog output voltage proportional to the differential pressure across the filter ( $dP = P2 - P1$ ). At a predefined pressure the ECU will initiate a regenerative process to burn-off the PM from the filter, restoring its flow.



Location & Component Image:





**P2458-09: Diagnostic fault check for driver demand regeneration button stuck**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P2458-09 MIL- ON CEL – Off AWL - Off	1. Wiring Harness problem 2. Sensor failure 3. Sensor connector problem 4. DPF is clogged	NA

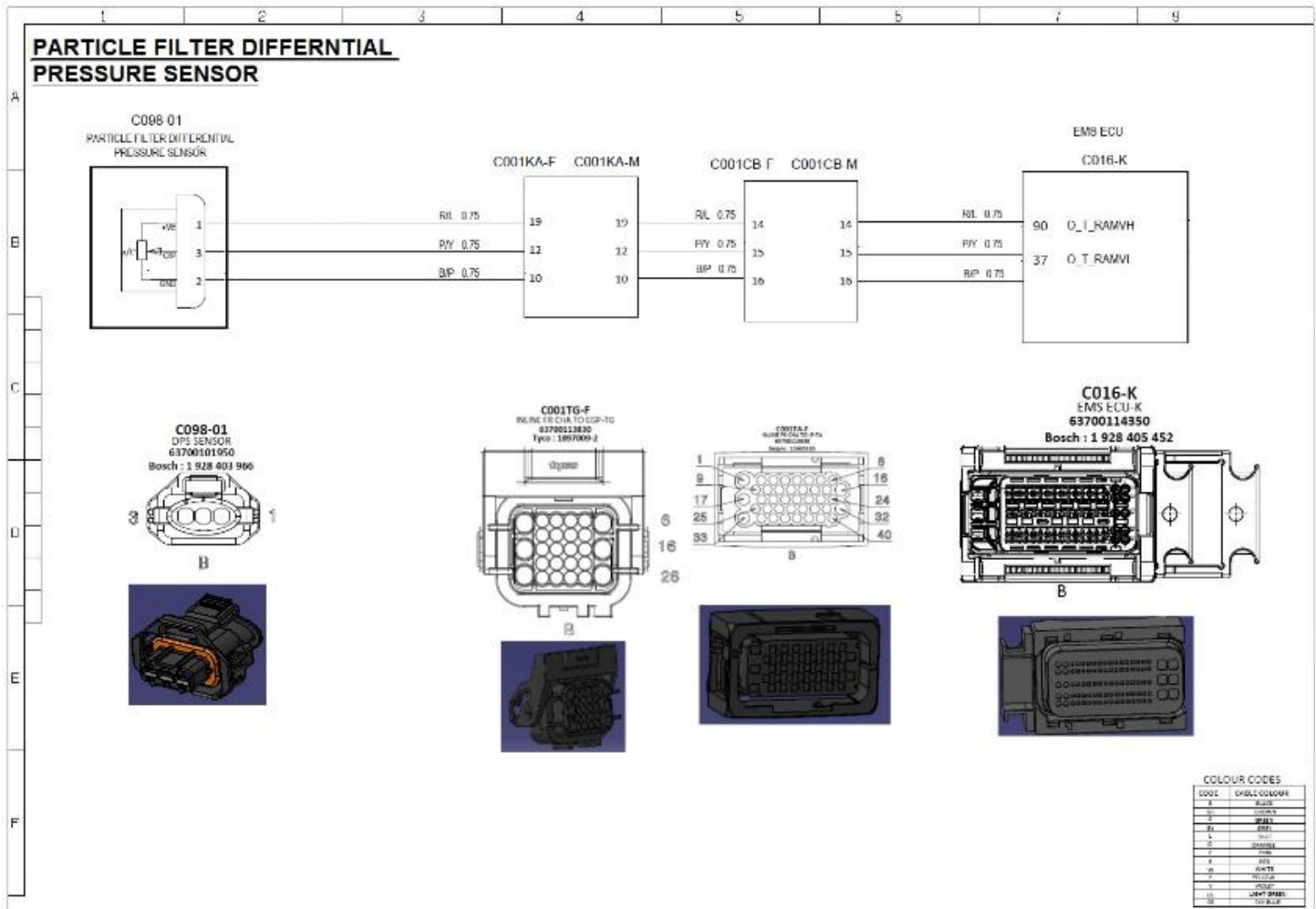
**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	Check continuity between pin 1 & A22, Pin 2 & A40, Pin 3 & A44.	
Step 3	If continuity is found ok proceed to step 10	
Step 4	If error persists check the fitment of the connector on the sensor for any loose connections	
Step 5	If found loose, retain proper fitment and go to step 10	
Step 6	If error persists, check the sensor for any damage/failure	
Step 7	If found damaged or failed change the sensor and go to step 10	
Step 8	Check for any leakages around DPF including hose-lines, if exists arrest all leakages & go to step 10	
Step 9	If error still persist, DPF has reached to its maximum clogging capacity. Kindly clean the DPF, mount & go to step 10	
Step 10	Clear and check DTC in running condition	1700 – 1900 Engine rpm

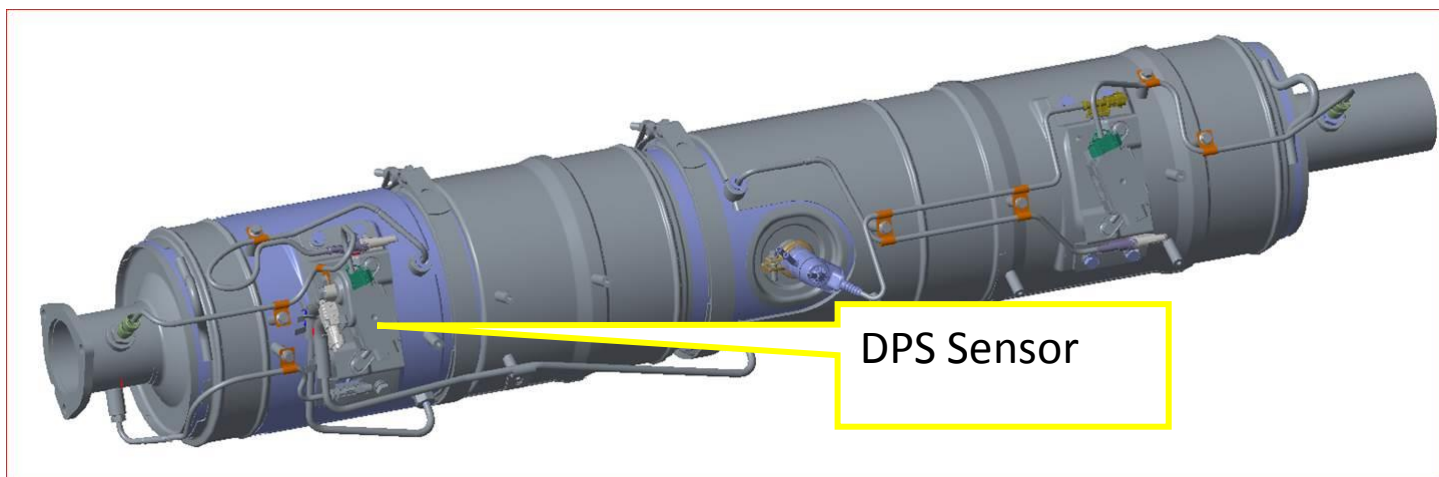
#### Circuit Schematic Diagram:



#### Circuit Description:

Differential Pressure Sensor used to infer the exhaust gas flow through the diesel particle filter by measuring the differential pressure across the filter. The exhaust gas flow is a function of the amount of blockage due to particulate matter (PM) accumulation within the diesel particle filter. As the filter accumulates PM the flow decreases, resulting in an increased pressure drop across the filter. P2 represents the upstream (intake) side of the filter and P1 represents the downstream (exhaust) side of the filter. This sensor will provide an analog output voltage proportional to the differential pressure across the filter ( $dP = P2 - P1$ ). At a predefined pressure the ECU will initiate a regenerative process to burn-off the PM from the filter, restoring its flow.

Location & Component Image:





**P24FE-85: DFC for SCR Monitoring of the upper limit of the adaption factor**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P24FE-85 MIL- On CEL – Off AWL - On	1. Wiring Harness problem 2. SCR catalyst inefficient 2. Downstream Nox sensor faulty/drifted	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the NOX sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 7	
Step 4	If error persists, check the sensor for any damage/failure	
Step 5	If found damaged or failed change the sensor and go to step 7	
Step 6	Check if SCR block is damaged, if yes change SCR block & go to step 7	
Step 7	Clear and check DTC	



**P24FE-84: DFC for SCR Monitoring of the lower limit of the adaption factor**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P24FE-84 MIL- On CEL – Off AWL - On	1. Wiring Harness problem 2. SCR catalyst inefficient 2. Downstream Nox sensor faulty/drifted	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the NOX sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 7	
Step 4	If error persists, check the sensor for any damage/failure	
Step 5	If found damaged or failed change the sensor and go to step 7	
Step 6	Check if SCR block is damaged, if yes change SCR block & go to step 7	
Step 7	Clear and check DTC	



**P0425-64: DFC for Model based plausibility check of exhaust-gas temperature sensor T4**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0425-64 MIL- On CEL – Off AWL - On	1. Wiring Harness problem 2. SCR catalyst inefficient 2. Downstream Nox sensor faulty/drifted	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the NOX sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 7	
Step 4	If error persists, check the sensor for any damage/failure	
Step 5	If found damaged or failed change the sensor and go to step 7	
Step 6	Check if SCR block is damaged, if yes change SCR block & go to step 7	
Step 7	Clear and check DTC	





**P042A-64: DFC for Model based plausibility check of exhaust-gas temperature sensor T5**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0425-64 MIL- On CEL – Off AWL - On	1. Wiring Harness problem 2. SCR catalyst inefficient 2. Downstream Nox sensor faulty/drifted	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the NOX sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 7	
Step 4	If error persists, check the sensor for any damage/failure	
Step 5	If found damaged or failed change the sensor and go to step 7	
Step 6	Check if SCR block is damaged, if yes change SCR block & go to step 7	
Step 7	Clear and check DTC	



**P242A-64: DFC for Model based plausibility check of exhaust-gas temperature sensor T6**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P242A-64 MIL- On CEL – Off AWL - On	1. Wiring Harness problem 2. SCR catalyst inefficient 2. Downstream Nox sensor faulty/drifted	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the NOX sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 7	
Step 4	If error persists, check the sensor for any damage/failure	
Step 5	If found damaged or failed change the sensor and go to step 7	
Step 6	Check if SCR block is damaged, if yes change SCR block & go to step 7	
Step 7	Clear and check DTC	



**P202E-85: DFC for SCR System Model Pressure Error due to positive pressure offset**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P202E-85 MIL- On CEL – Off AWL - On	1. Wiring Harness problem 2. SCR catalyst inefficient 2. Downstream Nox sensor faulty/drifted	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the NOX sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 7	
Step 4	If error persists, check the sensor for any damage/failure	
Step 5	If found damaged or failed change the sensor and go to step 7	
Step 6	Check if SCR block is damaged, if yes change SCR block & go to step 7	
Step 7	Clear and check DTC	



**P202E-84: DFC for SCR System Model Pressure Error due to negative pressure offset**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P202E-84 MIL- On CEL – Off AWL - On	1. Wiring Harness problem 2. SCR catalyst inefficient 2. Downstream Nox sensor faulty/drifted	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the NOX sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 7	
Step 4	If error persists, check the sensor for any damage/failure	
Step 5	If found damaged or failed change the sensor and go to step 7	
Step 6	Check if SCR block is damaged, if yes change SCR block & go to step 7	
Step 7	Clear and check DTC	



**P20A0-13: DFC for SCR Open load error of the external relay**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P20A0-13 MIL- On CEL – Off AWL - On	1. Wiring Harness problem 2. SCR catalyst inefficient 2. Downstream Nox sensor faulty/drifted	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the NOX sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 7	
Step 4	If error persists, check the sensor for any damage/failure	
Step 5	If found damaged or failed change the sensor and go to step 7	
Step 6	Check if SCR block is damaged, if yes change SCR block & go to step 7	
Step 7	Clear and check DTC	



**P20A1-4B: DFC for SCR Over temperature error of the external relay**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P20A1-4B MIL- On CEL – Off AWL - On	1. Wiring Harness problem 2. SCR catalyst inefficient 2. Downstream Nox sensor faulty/drifted	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the NOX sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 7	
Step 4	If error persists, check the sensor for any damage/failure	
Step 5	If found damaged or failed change the sensor and go to step 7	
Step 6	Check if SCR block is damaged, if yes change SCR block & go to step 7	
Step 7	Clear and check DTC	



**P20A3-12: DFC for SCR Short circuit to battery of the external relay**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P20A3-12 MIL- On CEL – Off AWL - On	1. Wiring Harness problem 2. SCR catalyst inefficient 2. Downstream Nox sensor faulty/drifted	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the NOX sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 7	
Step 4	If error persists, check the sensor for any damage/failure	
Step 5	If found damaged or failed change the sensor and go to step 7	
Step 6	Check if SCR block is damaged, if yes change SCR block & go to step 7	
Step 7	Clear and check DTC	





**P20A2-11: DFC for SCR Short circuit to ground of the external relay**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P20A2-11 MIL- On CEL – Off AWL - On	1. Wiring Harness problem 2. SCR catalyst inefficient 2. Downstream Nox sensor faulty/drifted	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

**Checkpoints:**

1. Check the wiring harness
2. Check sensor
3. Check connector

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the NOX sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 7	
Step 4	If error persists, check the sensor for any damage/failure	
Step 5	If found damaged or failed change the sensor and go to step 7	
Step 6	Check if SCR block is damaged, if yes change SCR block & go to step 7	
Step 7	Clear and check DTC	



## P10FF-00: DFC for frozen DEF

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P10FF-00 MIL- On CEL – Off AWL - On	1. Wiring Harness problem 2. SCR catalyst inefficient 2. Downstream Nox sensor faulty/drifted	Low Level Inducement:- Torque reduction by 25% Sever Inducement:- Vehicle in creep mode max speed 20Kmph

### Checkpoints:

1. Check the wiring harness
2. Check sensor
3. Check connector

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the wiring harness	
Step 2	If error persists check the fitment of the connector on the NOX sensor for any loose connections	
Step 3	If found loose, retain proper fitment and go to step 7	
Step 4	If error persists, check the sensor for any damage/failure	
Step 5	If found damaged or failed change the sensor and go to step 7	
Step 6	Check if SCR block is damaged, if yes change SCR block & go to step 7	
Step 7	Clear and check DTC	



**P0215-00: DFC for Injection cut off request**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0215-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P0611-F5: DFC for Fuel Injector Control Module Performance -1**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0611-F5 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P0611-F8: DFC for Fuel Injector Control Module Performance -2**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0611-F8 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P060B-00: DFC for Internal Control Module A/D Processing Performance**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P060B-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



## P061E-00: DFC for Internal Control Module Brake Signal Performance

### Overview:

Code	Cause	Effect on Vehicle
Fault Code: P061E-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

### Checkpoints:

1. Check ECU

### Trouble Shooting Steps:

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	





**P061C-00: DFC for Internal Control Module Engine RPM Performance**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P061C-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1014-00: DFC to report the plausibility error between level 1 & level 2 energizing time**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1014-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	2. ECU failure	Vehicle will halt

**Checkpoints:**

2. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1015-00: DFC to report the error due to plausibility between the injection begin v/s injection type**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1015-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1111-00: DFC to report the error in the plausibility of ITC-energizing time**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1111-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1112-00: DFC to report the error in the plausibility of VCC-energizing time**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1112-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1113-00: DFC to report the error in the plausibility of ZFC-energizing time**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1113-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1018-00: DFC to report the Error in the Pol2 efficiency received from level 1**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1018-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	





**P1019-00: DFC to report the Error in the Pol3 efficiency received from level 1**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1019-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1080-00: DFC to report the Error in the operating mode received from level 1**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1080-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1081-00: DFC to report the error in plausibility check of the quantity correction in level 1**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1081-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P101B-00: DFC to report the error if QWC quantity calculated in level 1 is not plausible**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P101B-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P101C-00: DFC to report the plausibility error in rail pressure monitoring**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P101C-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1082-00: DFC to report the fault in Remote APP plausibility check**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1082-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1083-00: DFC to report error if start requested in level 1, but not released in level 2**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1083-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	





**P0184-00: DFC to report error for Internal Control Module Torque Calculation Performance**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P0184-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1114-00: DFC to report the fault in energizing time comparison during overheat protection**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1114-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1085-00: DFC to report error in the post-build selectable monitoring**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1085-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P060C-00: DFC for error due to Internal Control Module Main Processor Performance**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P060C-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1668-00: DFC for Status of the EMM alarm FCCU0 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1668-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P165D-00: DFC for Status of the EMM alarm FCCU103 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P165D-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1656-00: DFC for Status of the EMM alarm FCCU10 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1656-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	





**P164E-00: DFC for Status of the EMM alarm FCCU111 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P164E-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1646-00: DFC for Status of the EMM alarm FCCU115 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1646-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1652-00: DFC for Status of the EMM alarm FCCU12 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1652-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1647-00: DFC for Status of the EMM alarm FCCU18 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1647-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P164D-00: DFC for Status of the EMM alarm FCCU19 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P164D-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1666-00: DFC for Status of the EMM alarm FCCU1 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1666-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P164B-00: DFC for Status of the EMM alarm FCCU20 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P164B-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	





**P1675-00: DFC for Status of the EMM alarm FCCU22 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1675-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P166F-00: DFC for Status of the EMM alarm FCCU25 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P166F-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1673-00: DFC for Status of the EMM alarm FCCU28 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1673-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1641-00: DFC for Status of the EMM alarm FCCU2 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1641-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1650-00: DFC for Status of the EMM alarm FCCU31 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1650-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P165C-00: DFC for Status of the EMM alarm FCCU32 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P165C-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1667-00: DFC for Status of the EMM alarm FCCU33 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1667-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	





**P1664-00: DFC for Status of the EMM alarm FCCU34 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1664-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1665-00: DFC for Status of the EMM alarm FCCU35 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1665-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1669-00: DFC for Status of the EMM alarm FCCU36 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1669-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1642-00: DFC for Status of the EMM alarm FCCU37 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1642-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P164C-00: DFC for Status of the EMM alarm FCCU38 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P164C-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1648-00: DFC for Status of the EMM alarm FCCU39 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1648-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P164A-00: DFC for Status of the EMM alarm FCCU3 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P164A-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P165A-00: DFC for Status of the EMM alarm FCCU40 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P165A-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	





**P166C-00: DFC for Status of the EMM alarm FCCU41 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P166C-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1655-00: DFC for Status of the EMM alarm FCCU42 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1655-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1670-00: DFC for Status of the EMM alarm FCCU43 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1670-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1649-00: DFC for Status of the EMM alarm FCCU44 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1649-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1658-00: DFC for Status of the EMM alarm FCCU45 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1658-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P165F-00: DFC for Status of the EMM alarm FCCU46 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P165F-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1654-00: DFC for Status of the EMM alarm FCCU49 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1654-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1643-00: DFC for Status of the EMM alarm FCCU50 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1643-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	





**P1653-00: DFC for Status of the EMM alarm FCCU51 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1653-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1672-00: DFC for Status of the EMM alarm FCCU52 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1672-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P164F-00: DFC for Status of the EMM alarm FCCU53 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P164F-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1674-00: DFC for Status of the EMM alarm FCCU54 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1674-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1657-00: DFC for Status of the EMM alarm FCCU55 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1657-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1644-00: DFC for Status of the EMM alarm FCCU56 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1644-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P166D-00: DFC for Status of the EMM alarm FCCU57 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P166D-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1671-00: DFC for Status of the EMM alarm FCCU58 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1671-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	





**P1660-00: DFC for Status of the EMM alarm FCCU59 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1660-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1677-00: DFC for Status of the EMM alarm FCCU5 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1677-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1640-00: DFC for Status of the EMM alarm FCCU63 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1640-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P166B-00: DFC for Status of the EMM alarm FCCU64 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P166B-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1676-00: DFC for Status of the EMM alarm FCCU65 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1676-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P165E-00: DFC for Status of the EMM alarm FCCU6 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P165E-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1661-00: DFC for Status of the EMM alarm FCCU70 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1661-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P165B-00: DFC for Status of the EMM alarm FCCU71 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P165B-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	





**P1651-00: DFC for Status of the EMM alarm FCCU74 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1651-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1663-00: DFC for Status of the EMM alarm FCCU75 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1663-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P166E-00: DFC for Status of the EMM alarm FCCU78 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P166E-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1645-00: DFC for Status of the EMM alarm FCCU79 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1645-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1662-00: DFC for Status of the EMM alarm FCCU80 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1662-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P1659-00: DFC for Status of the EMM alarm FCCU81 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P1659-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	



**P166A-00: DFC for Status of the EMM alarm FCCU85 which is read out of the FCCU hardware module**

**Overview:**

Code	Cause	Effect on Vehicle
Fault Code: P166A-00 MIL- Off CEL – On Immo Lamp – NA Message on IC - NA	1. ECU failure	Vehicle will halt

**Checkpoints:**

1. Check ECU

**Trouble Shooting Steps:**

Sr. No.	Steps	Specifications
Step 1	Check the battery voltage	12.5±3 volts
Step 2	Reprogram the ECU & check again in running condition	
Step 3	If issue still persists, change the ECU	
Step 4	Check DTC	