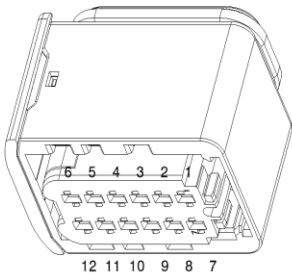


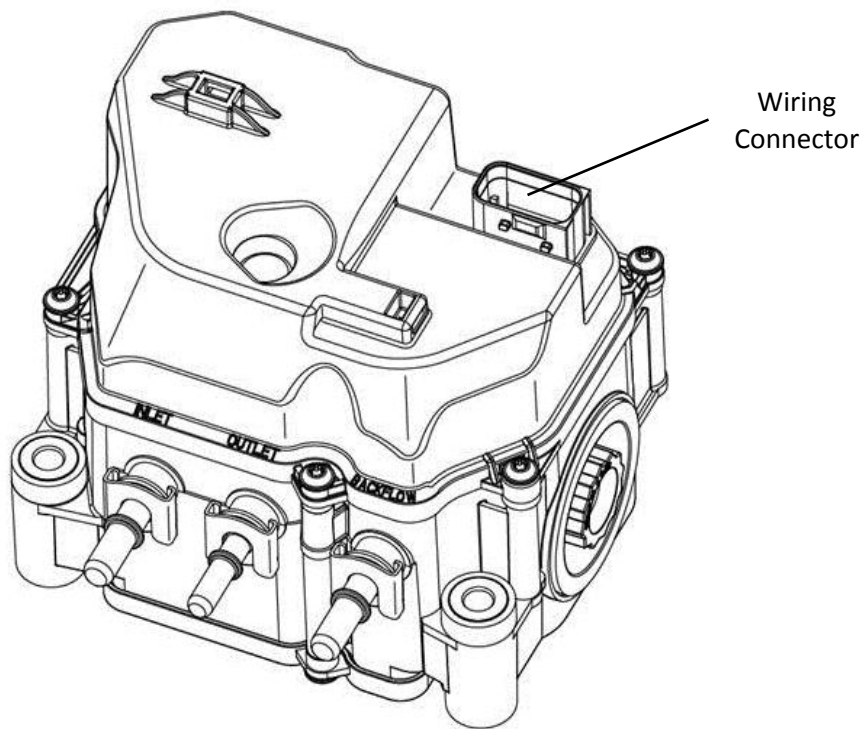
Fault Code	Fault Name
P2A8C	DEF Pump Motor Speed Duty Low

1) Overview

CODE	REASON	EFFECT
U004374-24	Pump motor speed Duty cycle below Minimum range	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

When pump motor is normal

4) Condition for Setting the Fault Code

When the sensor value (raw duty cycle) is less than 4%

5) Condition for Clearing the Fault Code

When the sensor value (raw duty cycle) is greater than 4%

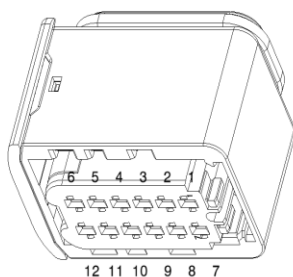
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2A8C is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Supply module	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P2A8D	DEF Pump Motor Speed Duty High

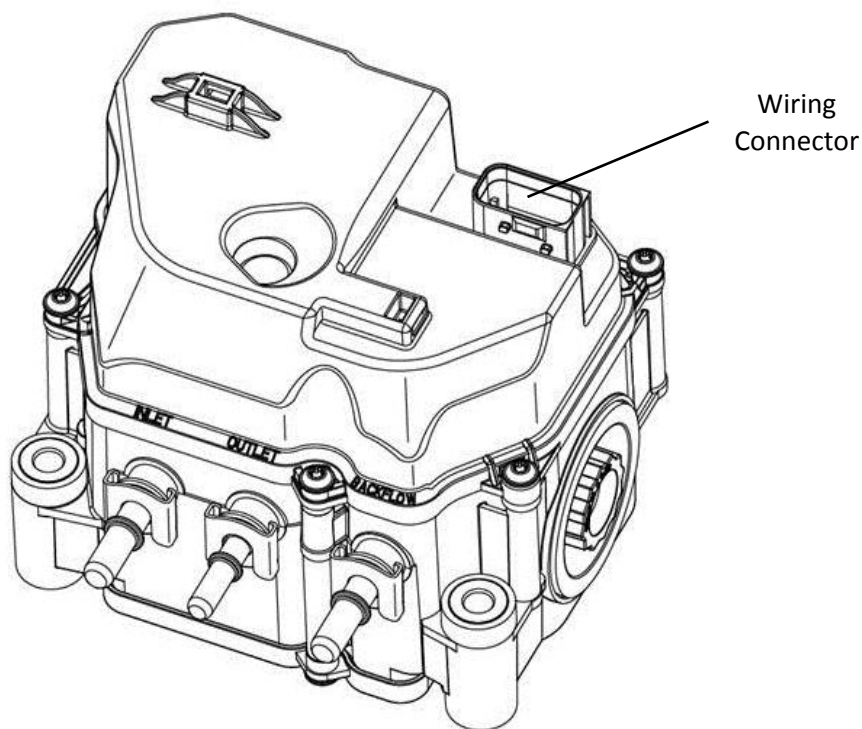
1) Overview

CODE	REASON	EFFECT
U004374-23	Pump motor speed Duty cycle above Maximum range	



No.	DCU Pin	PIN description
1	Reserve	
2	76	Pump motor control signal
3	55	Pump motor Ubat+
4	54	Pump motor GND
5	77	Purging pump Ubat+
6	78	Purging pump GND
7	Reserve	
8	40	Pressure sensor GND
9	39	Pressure sensor signal
10	17	Pressure sensor Ubat+
11	4	Heater Ubat+
12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

When pump motor is normal

4) Condition for Setting the Fault Code

When the sensor value (raw duty cycle) is greater than 86%

5) Condition for Clearing the Fault Code

When the sensor value (raw duty cycle) is less than 86%

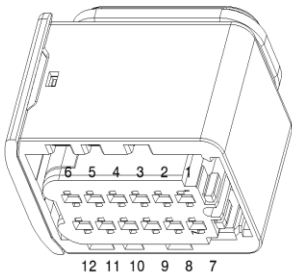
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2A8D is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Supply module	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

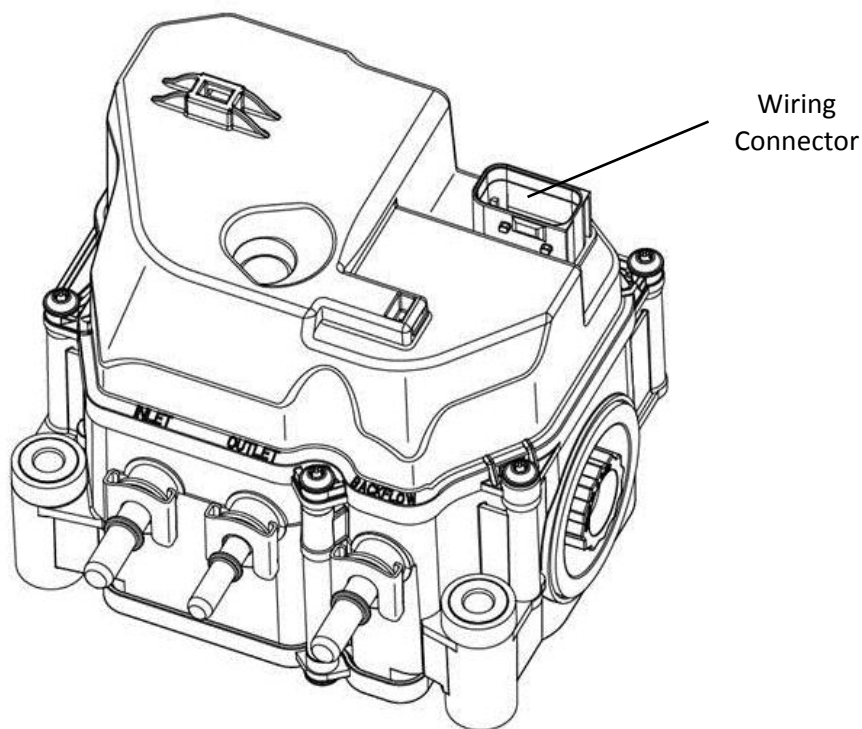
Fault Code	Fault Name
P2B8C	DEF Pump Motor Internal Duty Low

1) Overview

CODE	REASON	EFFECT
U004375-24	Pump motor internal Duty cycle below Minimum range	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

When pump motor is normal

4) Condition for Setting the Fault Code

When the sensor value (raw duty cycle) is less than 4%

5) Condition for Clearing the Fault Code

When the sensor value (raw duty cycle) is greater than 4%

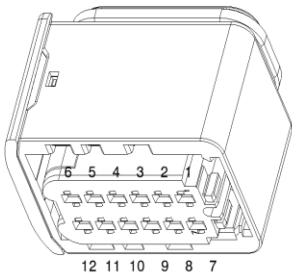
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2B8C is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Supply module	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

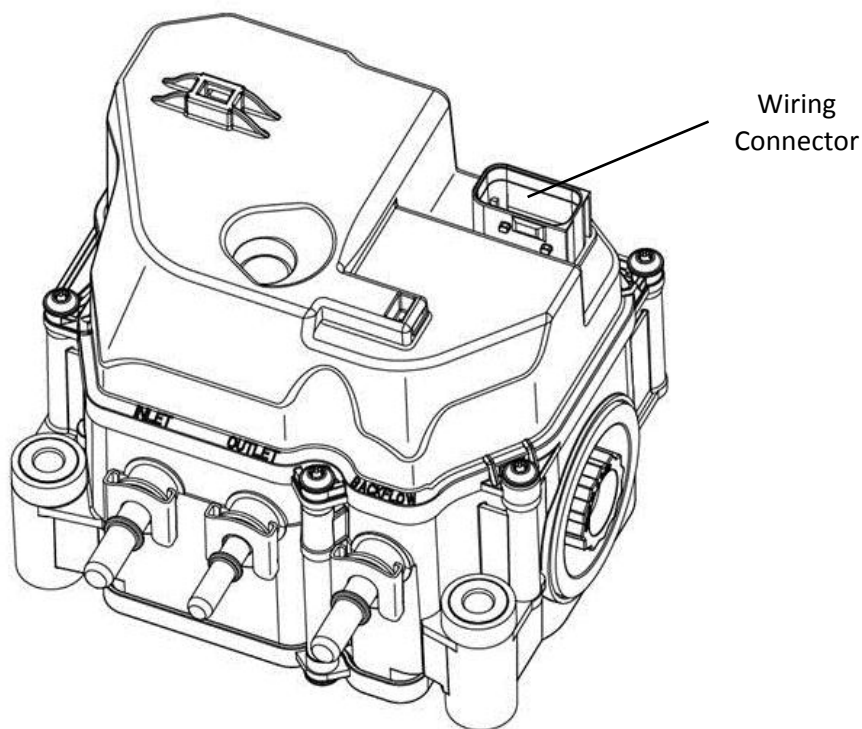
Fault Code	Fault Name
P2B8D	DEF Pump Motor Internal Duty High

1) Overview

CODE	REASON	EFFECT
U004375-23	Pump motor internal Duty cycle above Maximum range	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

When pump motor is normal

4) Condition for Setting the Fault Code

When the sensor value (raw duty cycle) is greater than 86%

5) Condition for Clearing the Fault Code

When the sensor value (raw duty cycle) is less than 86%

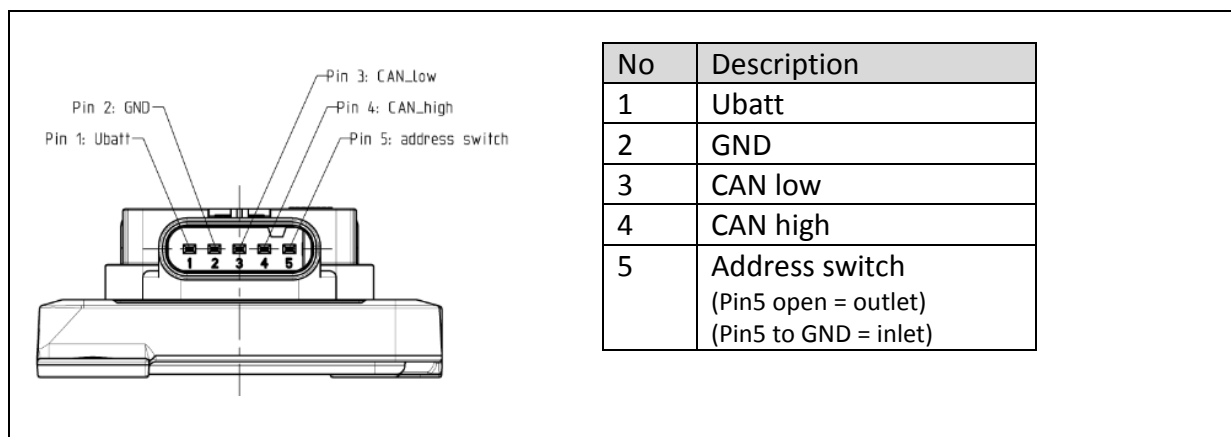
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2B8D is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Supply module	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

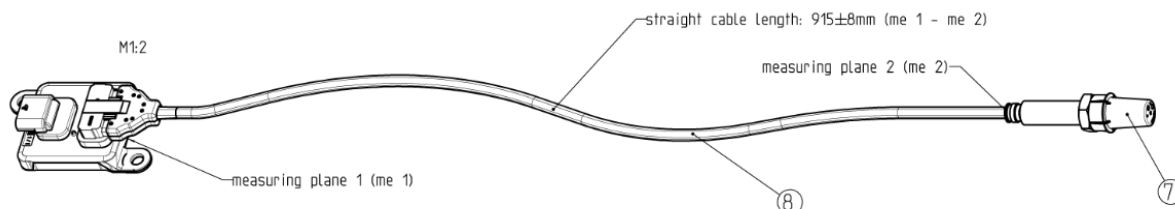
Fault Code	Fault Name
P06EA	Inlet NOx Sensor Self-Diagnosis

1) Overview

CODE	REASON	EFFECT
U005714-02	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Non-continuous diagnosis in post-drive

4) Condition for Setting the Fault Code

The average of relative sensor NOx curve slope read from the sensor is outside the tolerance band and the debouncing has expired the limits

5) Condition for Clearing the Fault Code

The average of relative sensor NOx curve slopes read from the sensor is inside the tolerance band and the debouncing has expired the limits

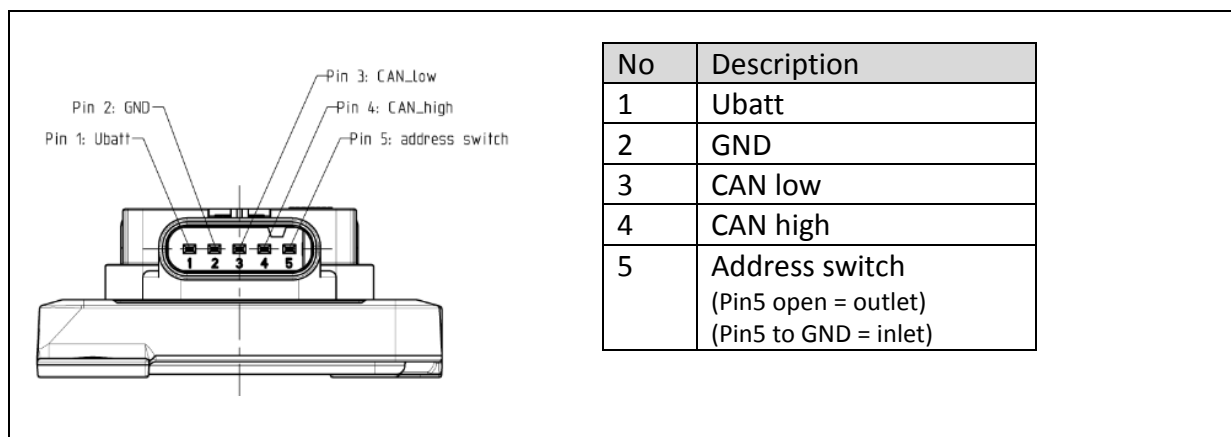
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P06EA is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

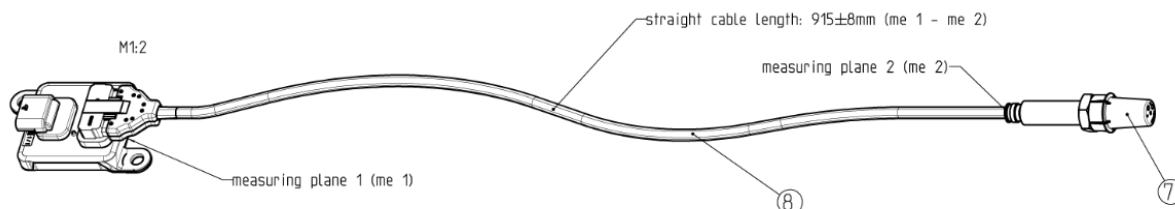
Fault Code	Fault Name
P06EA	Inlet NOx Sensor Self-Diagnosis abort

1) Overview

CODE	REASON	EFFECT
U005714-07	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

The diagnosis is done on each self-diagnosis request

4) Condition for Setting the Fault Code

The amount of subsequent diagnosis crosses the threshold and debouncing has expired the limits

5) Condition for Clearing the Fault Code

A self-diagnosis result is evaluated and the debouncing threshold has exited the limit

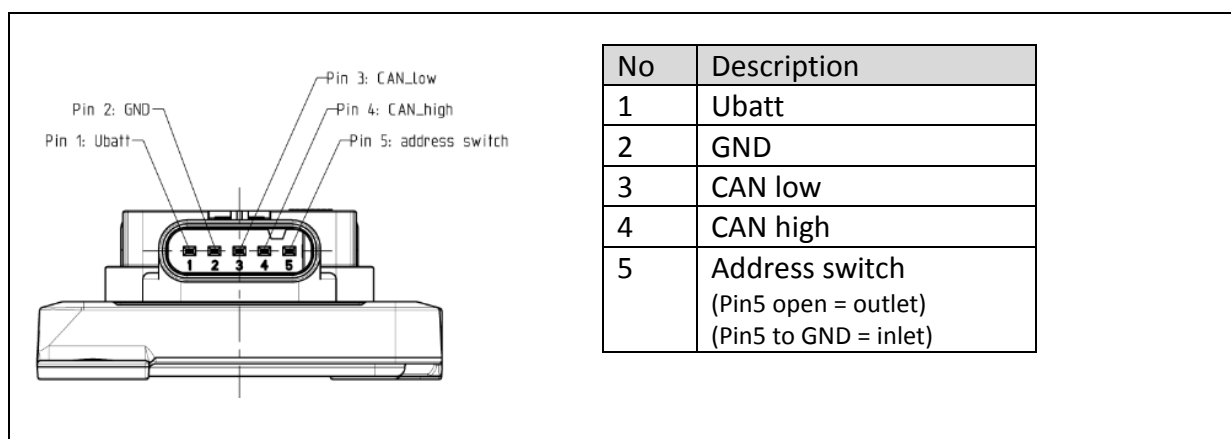
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P06EA is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

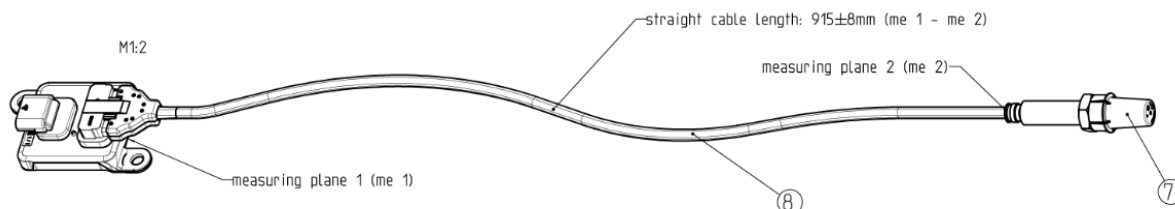
Fault Code	Fault Name
P06EA	Inlet NOx Sensor timeout to self-Diagnosis

1) Overview

CODE	REASON	EFFECT
U005714-19	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

The diagnosis is done on each self-diagnosis request

4) Condition for Setting the Fault Code

Sensor does not respond to diagnosis request or violates the timings

5) Condition for Clearing the Fault Code

Sensor response to diagnosis request within calibrated time with "active"

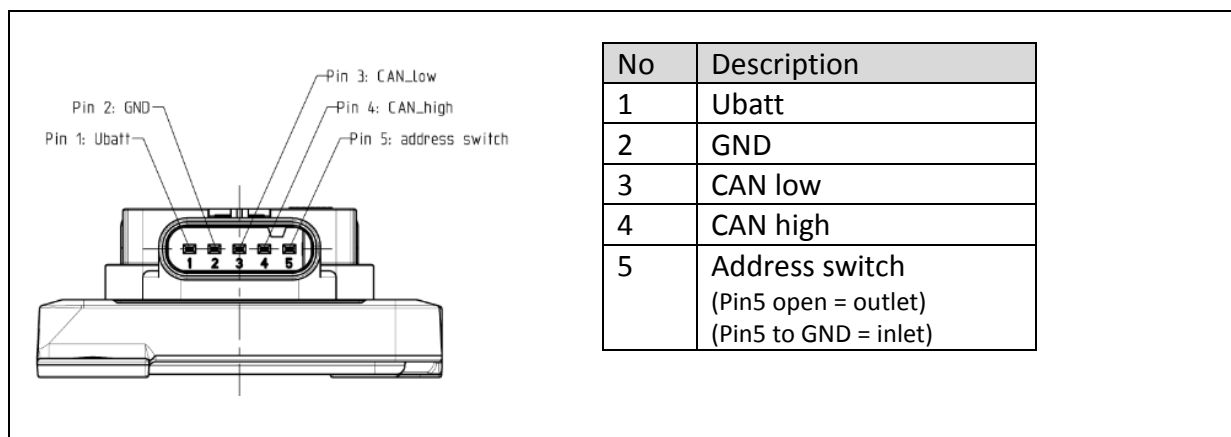
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P06EA is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

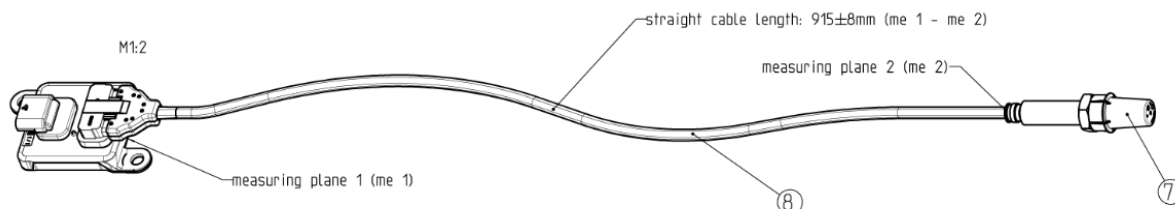
Fault Code	Fault Name
P06EB	Outlet NOx Sensor Self-Diagnosis

1) Overview

CODE	REASON	EFFECT
U005713-02	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Non-continuous diagnosis in post-drive

4) Condition for Setting the Fault Code

The average of relative sensor NOx curve slope read from the sensor is outside the tolerance band and the debouncing has expired the limits

5) Condition for Clearing the Fault Code

The average of relative sensor NOx curve slopes read from the sensor is inside the tolerance band and the debouncing has expired the limits

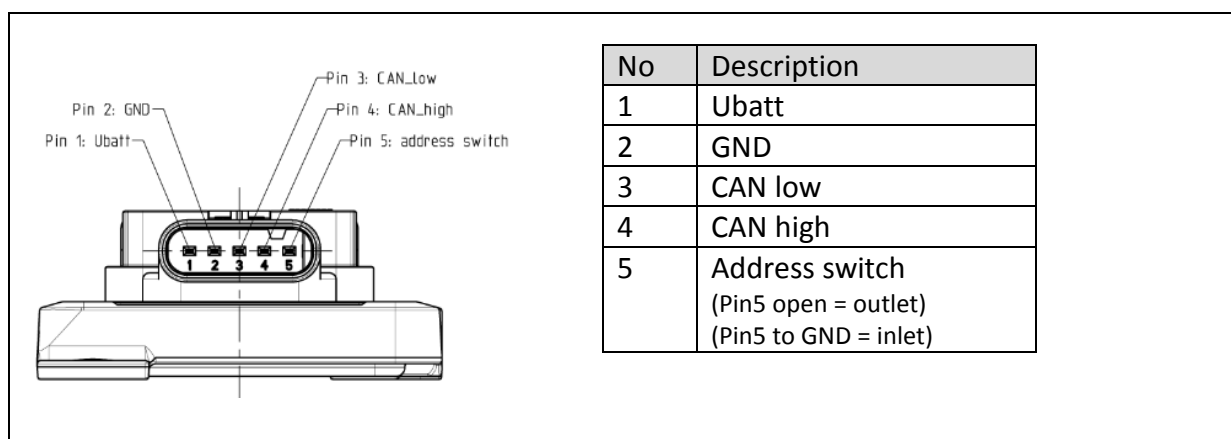
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P06EB is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

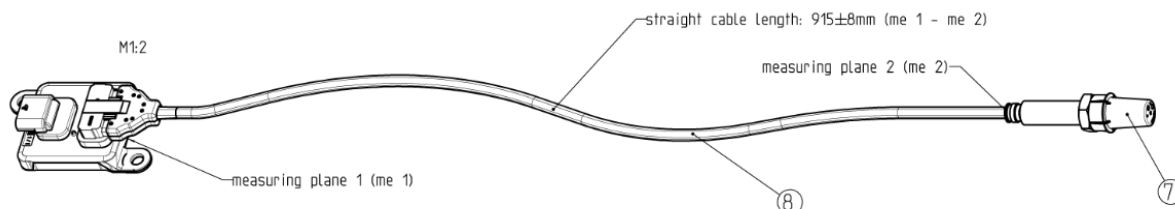
Fault Code	Fault Name
P06EB	Outlet NOx Sensor Self-Diagnosis abort

1) Overview

CODE	REASON	EFFECT
U005713-07	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

The diagnosis is done on each self-diagnosis request

4) Condition for Setting the Fault Code

The amount of subsequent diagnosis crosses the threshold and debouncing has expired the limits

5) Condition for Clearing the Fault Code

A self-diagnosis result is evaluated and the debouncing threshold has exited the limit

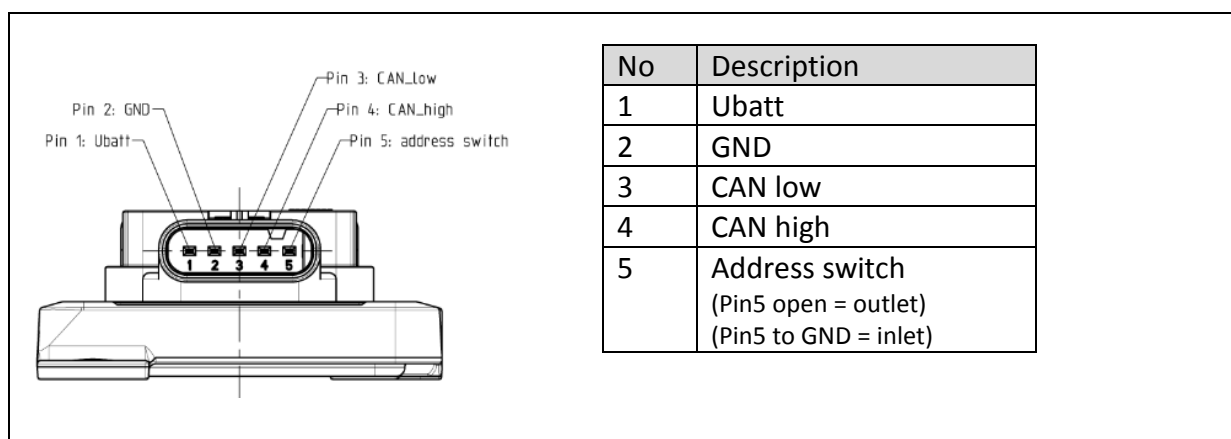
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P06EB is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

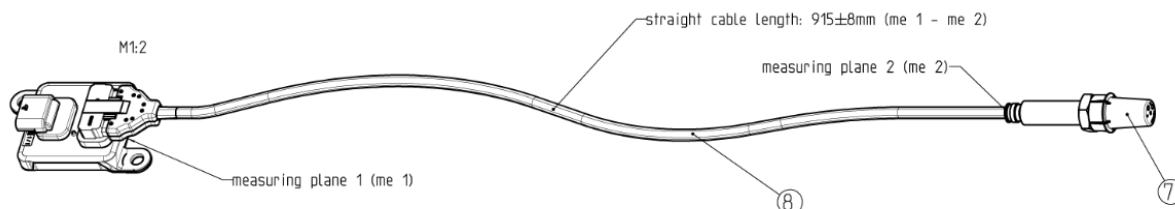
Fault Code	Fault Name
P06EB	Outlet NOx Sensor timeout to self-Diagnosis

1) Overview

CODE	REASON	EFFECT
U005713-19	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

The diagnosis is done on each self-diagnosis request

4) Condition for Setting the Fault Code

Sensor does not respond to diagnosis request or violates the timings

5) Condition for Clearing the Fault Code

Sensor response to diagnosis request within calibrated time with "active"

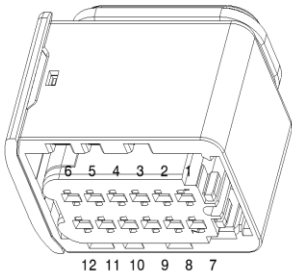
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P06EB is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

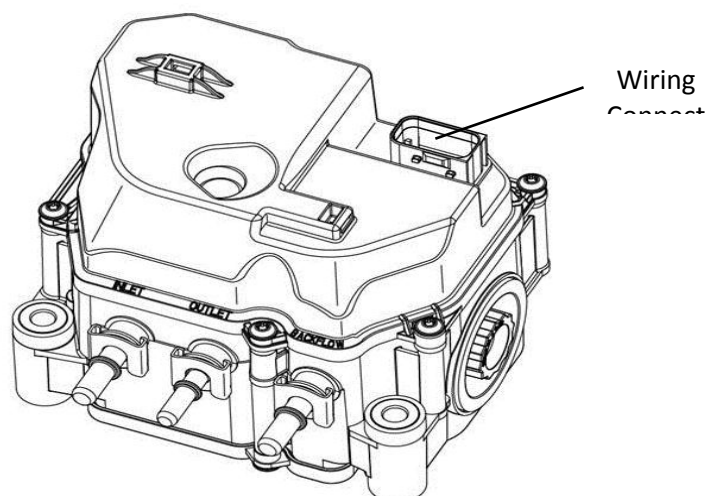
Fault Code	Fault Name
P20B9	Supply Module Heater Open

1) Overview

CODE	REASON	EFFECT
U005707-05	DFC for Open Load error of Urea Supply Module Heater Actuator powerstage	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

Continuously corresponding to the process raster (10ms). This error can only be detected if the power stage is not actuated..

4) Condition for Setting the Fault Code

The power stage hardware reports a "no load" error.

5) Condition for Clearing the Fault Code

No defect detection.

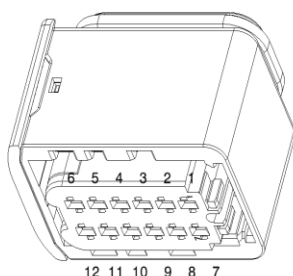
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20B9 is occurred on diagnostic tool?		Step2	O.K
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P20BA	Supply Module Heater Over-temperature

1) Overview

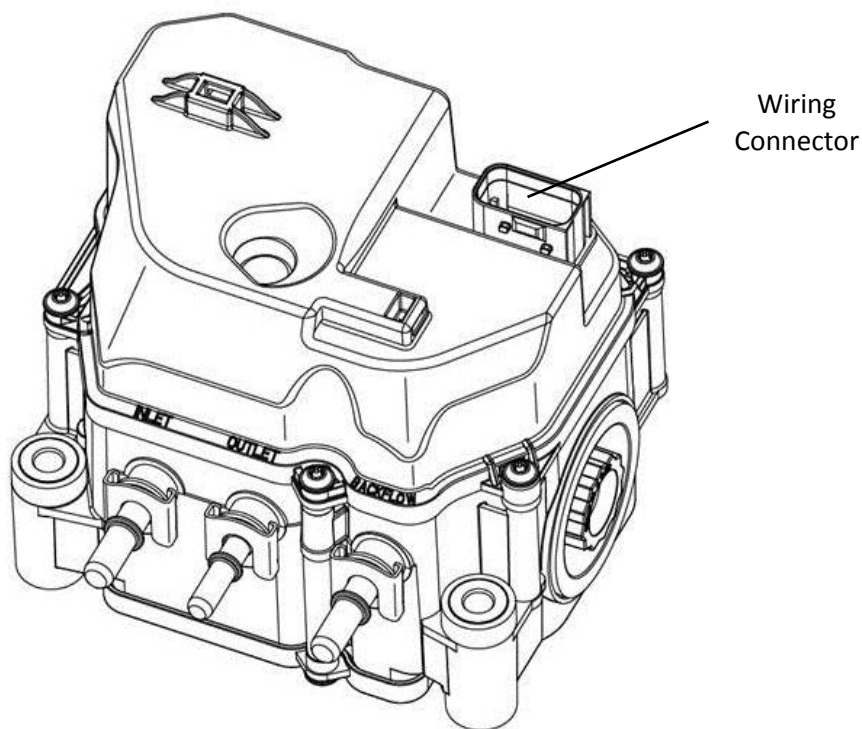
CODE	REASON	EFFECT
U005707-12	DFC for Over Temperature error of Urea Supply Module Heater Actuator powerstage	



No.	DCU Pin	PIN description
1	Reserve	
2	76	Pump motor control signal
3	55	Pump motor Ubat+
4	54	Pump motor GND
5	77	Purging pump Ubat+
6	78	Purging pump GND
7	Reserve	
8	40	Pressure sensor GND
9	39	Pressure sensor signal
10	17	Pressure sensor Ubat+
11	4	Heater Ubat+
12	3	Heater GND

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Continuously corresponding to the process raster(10ms). This error can only be detected if the power stage is actuated.

4) Condition for Setting the Fault Code

The power stage hardware reports a "over temperature" error.

5) Condition for Clearing the Fault Code

No defect detection

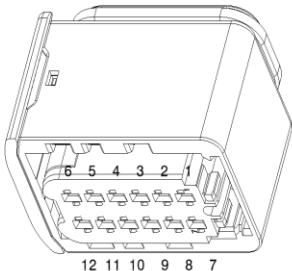
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20BA is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change Heater actuator or supply module	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

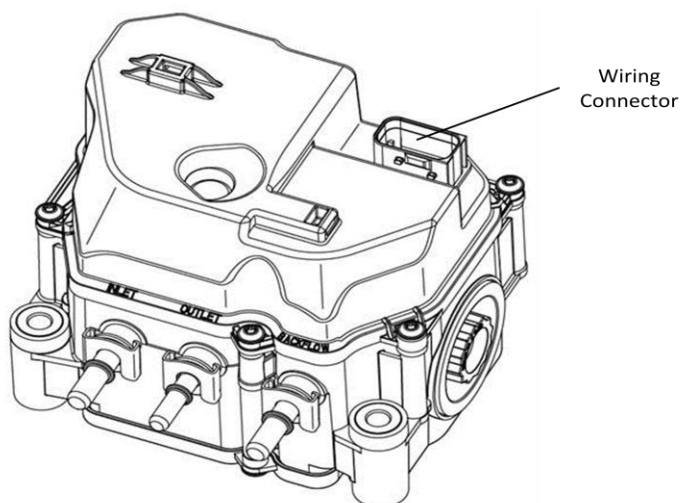
Fault Code	Fault Name
P20BB	Supply Module Heater SCG

1) Overview

CODE	REASON	EFFECT
U005707-04	DFC for Short Circuit to Ground of Urea Supply Module Heater Actuator powerstage	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

Continuously corresponding to the process raster (10ms). This error can only be detected if the power stage is not actuated.

4) Condition for Setting the Fault Code

The power stage hardware reports a "short circuit to ground" error.

5) Condition for Clearing the Fault Code

No defect detection.

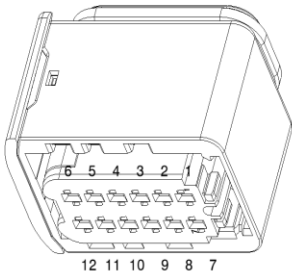
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20BB is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

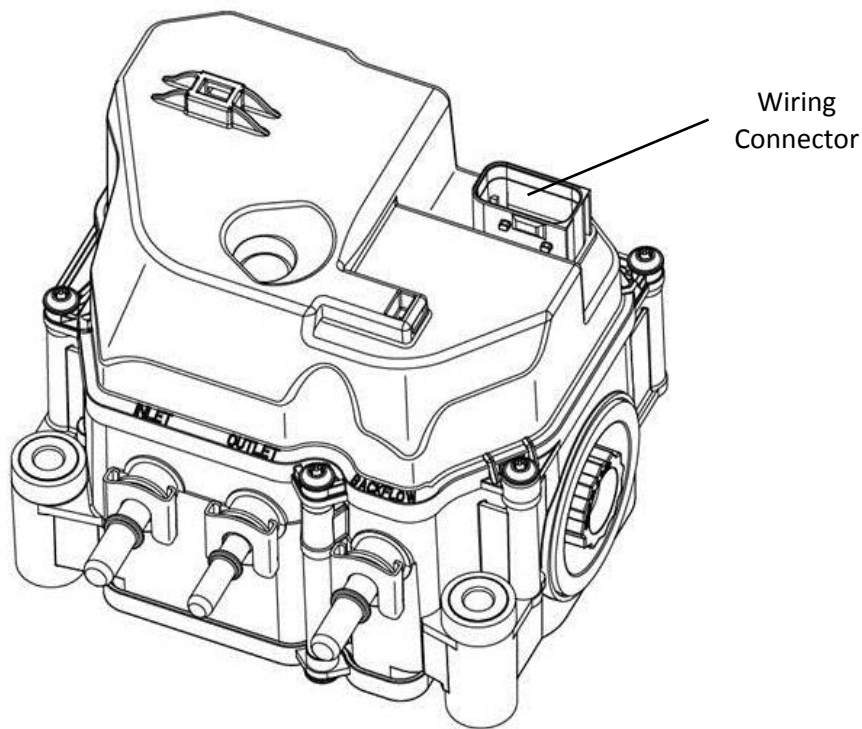
Fault Code	Fault Name
P20BC	Supply Module Heater SCB

1) Overview

CODE	REASON	EFFECT
U005707-03	DFC for Short Circuit to Battery of Urea Supply Module Heater Actuator powerstage	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

Continuously corresponding to the process raster (10ms). This error can only be detected if the power stage is energized.

4) Condition for Setting the Fault Code

The power stage hardware reports a "short circuit to battery" error.

5) Condition for Clearing the Fault Code

No defect detection.

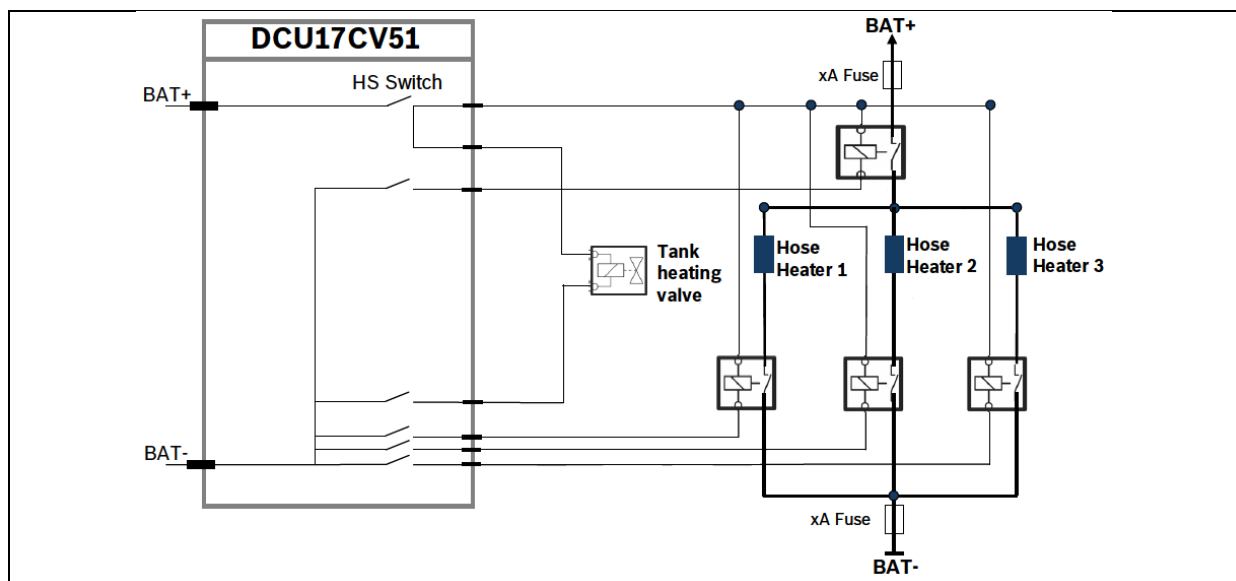
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20BC is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

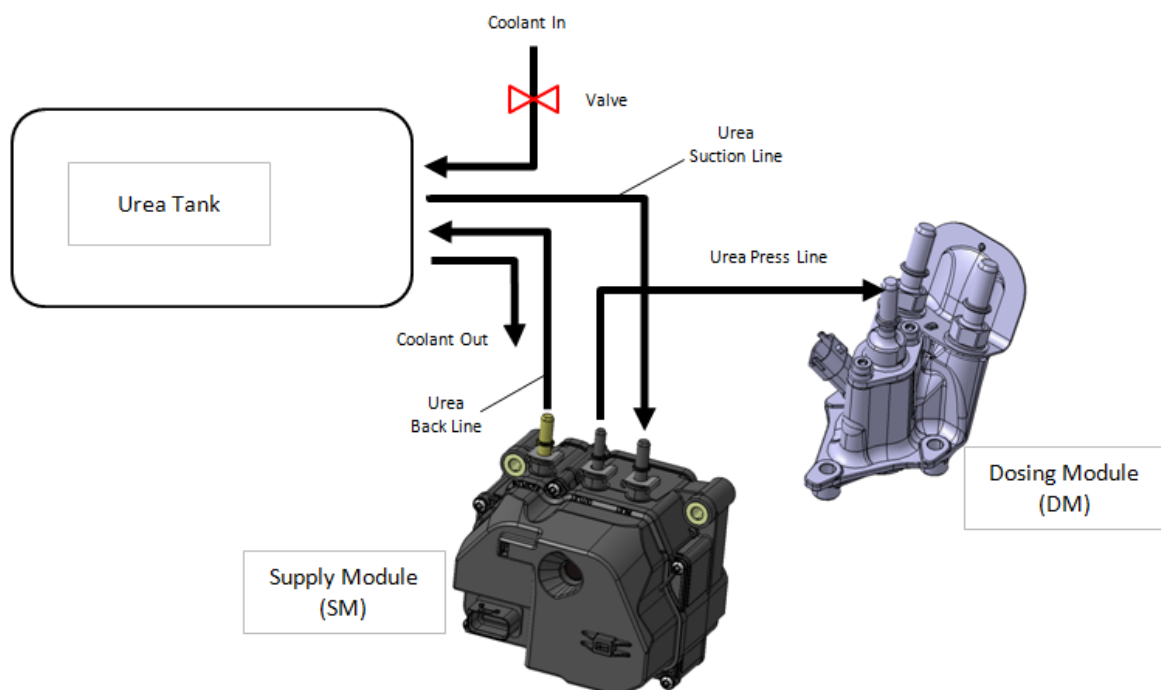
Fault Code	Fault Name
P20BD	DEF Line Heater 3 SCG or Open

1) Overview

CODE	REASON	EFFECT
U004342-05	Short circuit to ground or open load of pressure line heater	



2) Component Location



3) Condition for Running Diagnostic

Power-stage is actuated

4) Condition for Setting the Fault Code

The power-stage hardware reports a “no load” or “SCG” error

5) Condition for Clearing the Fault Code

When no error is detected

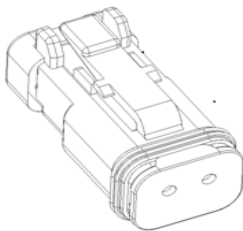
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20BD is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check the actuator connection Connection problem?		Do necessary repair	Step4
4	Check the DCU voltage related pin connection and harness. Pin or connection problem?		Do necessary repair	Stop5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P20BD	Pressure Line Heater Open

1) Overview

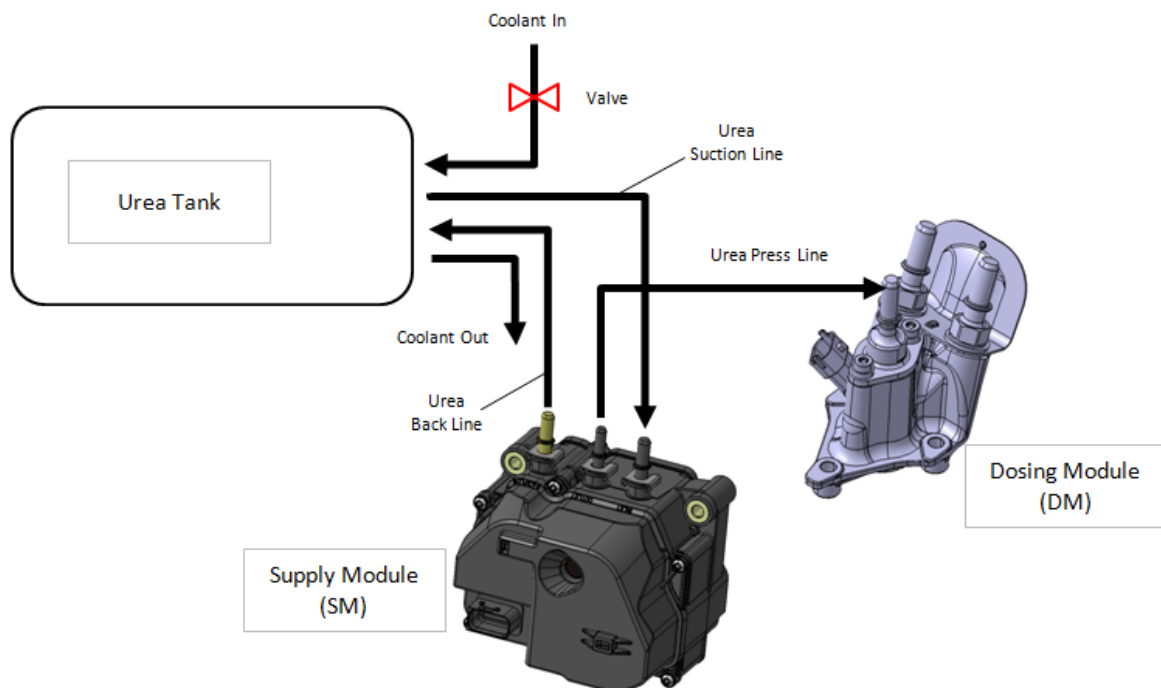
CODE	REASON	EFFECT
U004355-05	DFC for Short Circuit to Battery of Urea Backflow Line Heater Actuator powerstage	



No.	DCU Pin	PIN description
1	72	Pressure hose heater A
2	94	Pressure hose heater S

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Continuously corresponding to the process raster (10ms). This error can only be detected if the power stage is energized.

4) Condition for Setting the Fault Code

The power stage hardware reports a "short circuit to battery" error.

5) Condition for Clearing the Fault Code

No defect detection

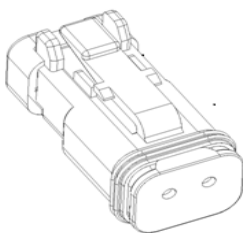
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20BD is occurred on diagnostic tool?		Step2	O.K
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P20BE	Pressure Line Heater Plausibility Error

1) Overview

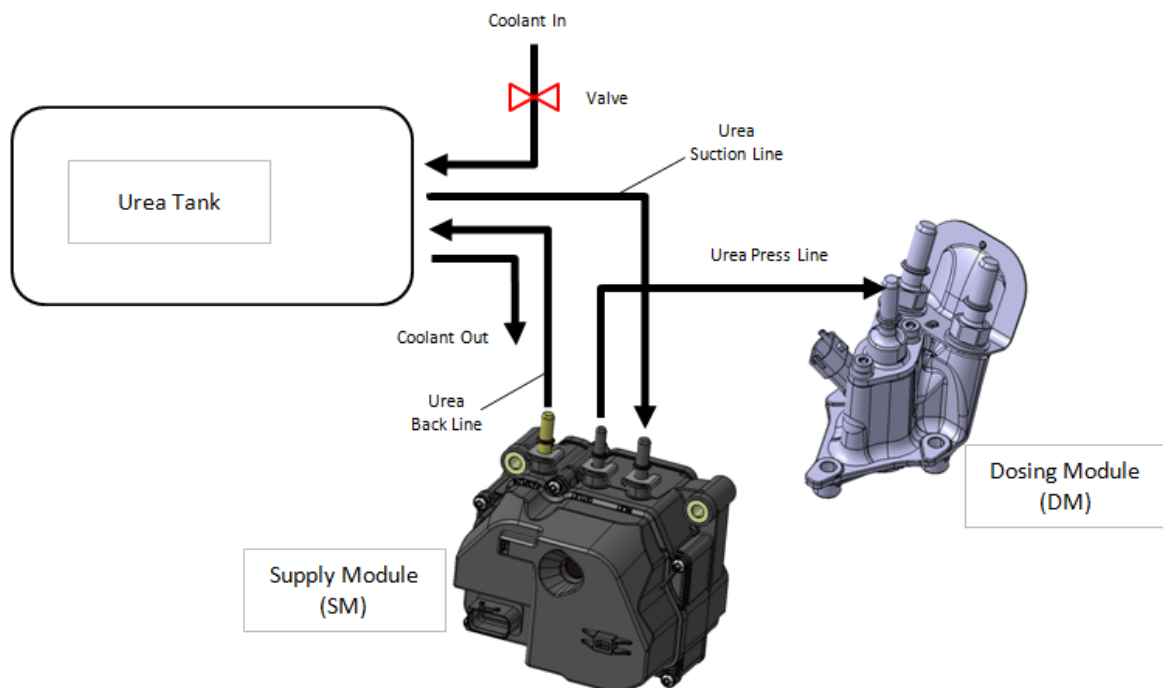
CODE	REASON	EFFECT
U004355-02	DFC for ADC(Analogue Digital Converter) Plausibility of Urea Pressure Line heater feedback	



No.	DCU Pin	PIN description
1	72	Pressure hose heater A
2	94	Pressure hose heater S

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Continuously corresponding to the process raster (10ms). This error can only be detected if the power stage is energized.

4) Condition for Setting the Fault Code

The power stage hardware reports a "ADC(Analogue Digital Converter) Plausibility" error.

5) Condition for Clearing the Fault Code

No defect detection

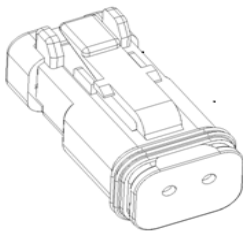
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20BE is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P20BE	Pressure Line Heater Over-temperature

1) Overview

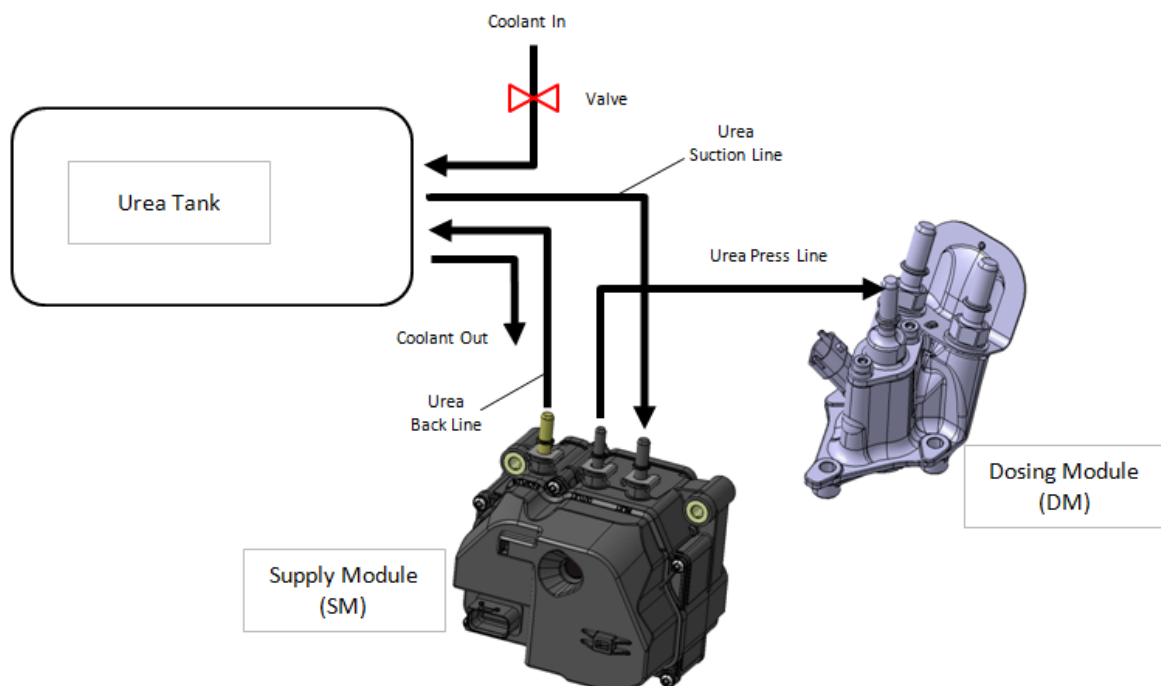
CODE	REASON	EFFECT
U004355-12	DFC for Over Temperature error of Urea Pressure Line Heater Actuator power stage	



No.	DCU Pin	PIN description
1	72	Pressure hose heater A
2	94	Pressure hose heater S

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Continuously corresponding to the process raster(10ms). This error can only be detected if the power stage is actuated.

4) Condition for Setting the Fault Code

The power stage hardware reports a "over temperature" error.

5) Condition for Clearing the Fault Code

No defect detection

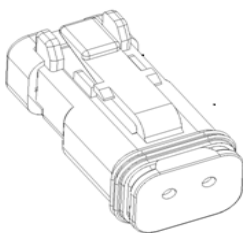
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20BE is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change Line heater	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P20BE	Pressure Line Heater Error

1) Overview

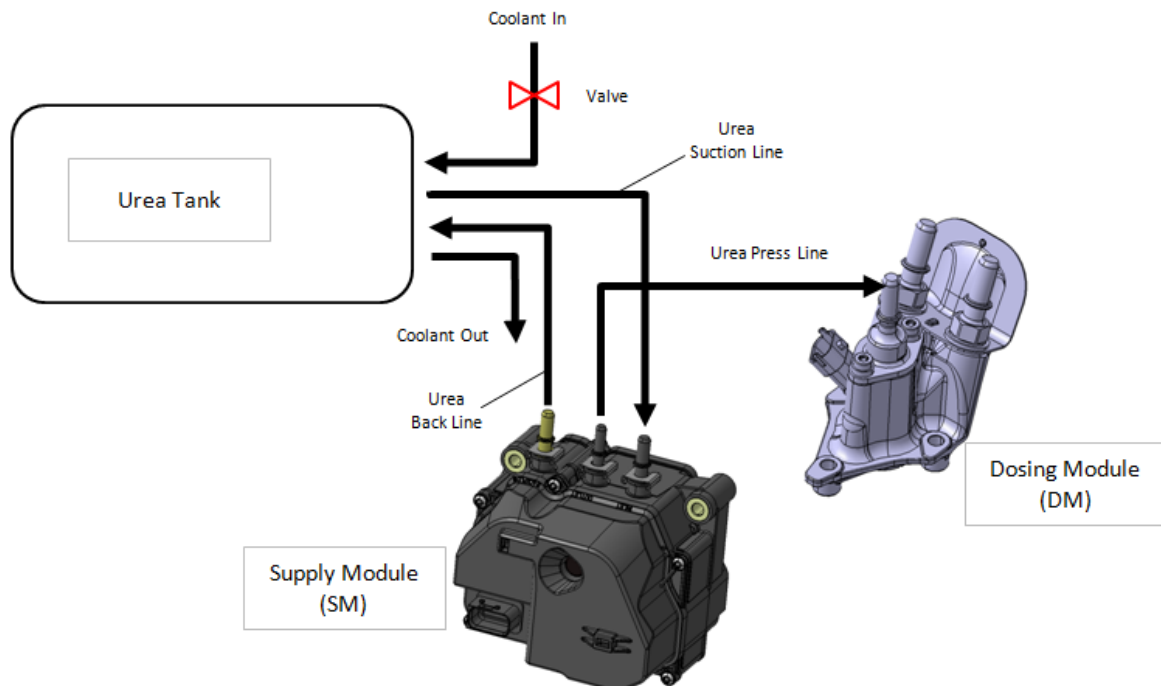
CODE	REASON	EFFECT
U004355-14	Pressure line heater error and temperature condition to perform an afterrun	



No.	DCU Pin	PIN description
1	72	Pressure hose heater A
2	94	Pressure hose heater S

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

N/A.

4) Condition for Setting the Fault Code

The DFC gets set, when pressure line cannot be heated and the temperature conditions are fulfilled to perform an afterrun. Furthermore is the DFC set, when the tank temperature falls below the defreezing value.

5) Condition for Clearing the Fault Code

The DFC is not getting healed in the same driving cycle.

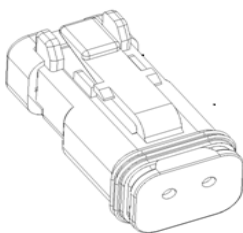
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20BE is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change Pressure line & heater	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 7

Fault Code	Fault Name
P20BF	Pressure Line Heater SCG

1) Overview

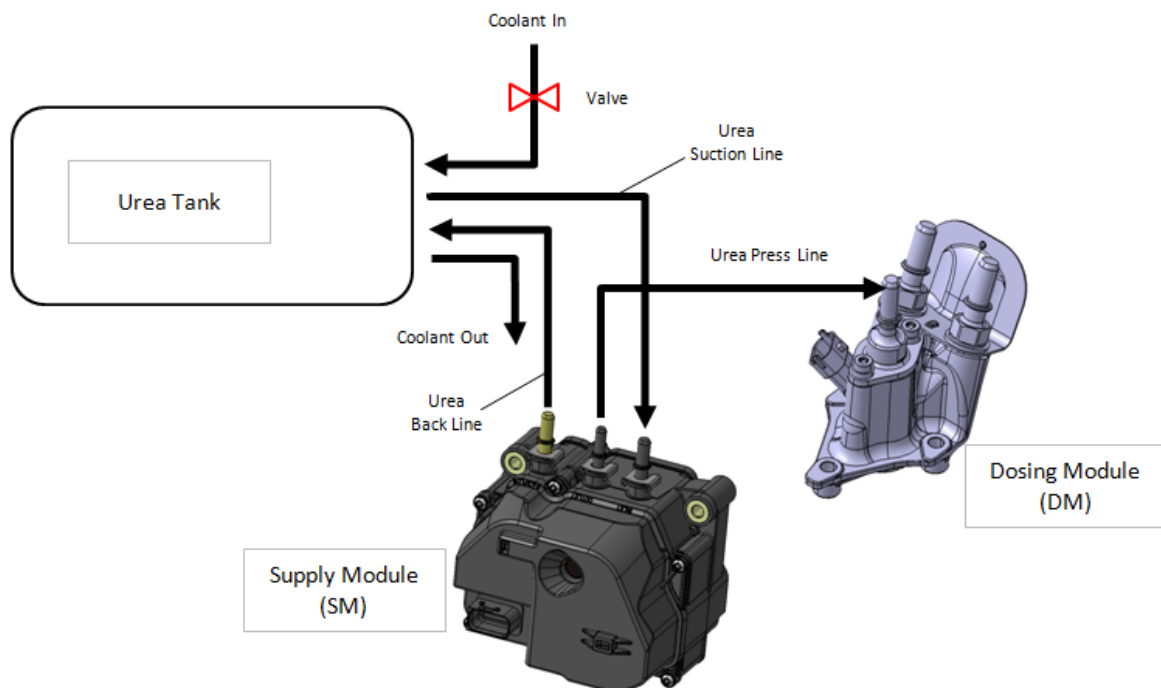
CODE	REASON	EFFECT
U004355-04	DFC for Short Circuit to Ground of Urea Pressure Line heater Actuator powerstage	



No.	DCU Pin	PIN description
1	72	Pressure hose heater A
2	94	Pressure hose heater S

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Continuously corresponding to the process raster (10ms). This error can only be detected if the power stage is energized.

4) Condition for Setting the Fault Code

The power stage hardware reports a "short circuit to ground" error.

5) Condition for Clearing the Fault Code

No defect detection

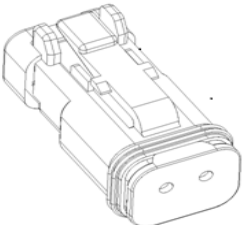
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20BF is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P20C0	Pressure Line Heater SCB

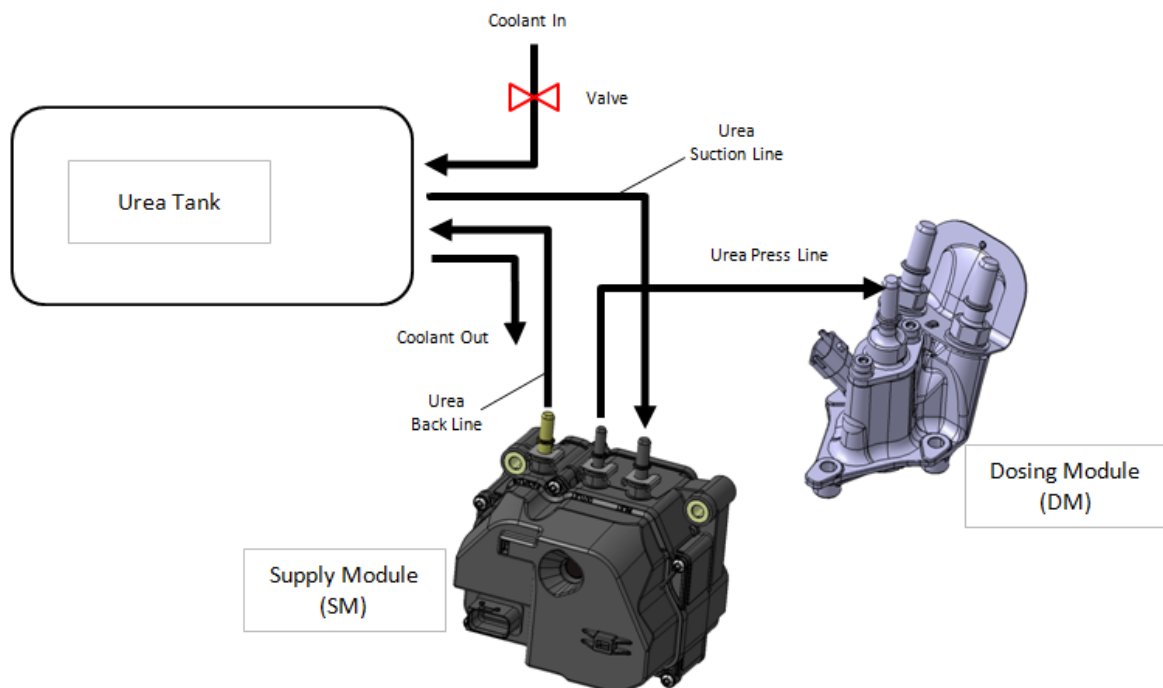
1) Overview

CODE	REASON	EFFECT
U004355-03	DFC for Short Circuit to Battery of Urea Pressure Line heater Actuator powerstage	

	No.	DCU Pin	PIN description
	1	72	Pressure hose heater A
	2	94	Pressure hose heater S

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Continuously corresponding to the process raster (10ms). This error can only be detected if the power stage is energized.

4) Condition for Setting the Fault Code

The power stage hardware reports a "short circuit to battery" error.

5) Condition for Clearing the Fault Code

No defect detection

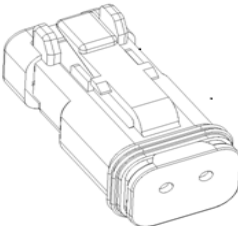
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20C0 is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

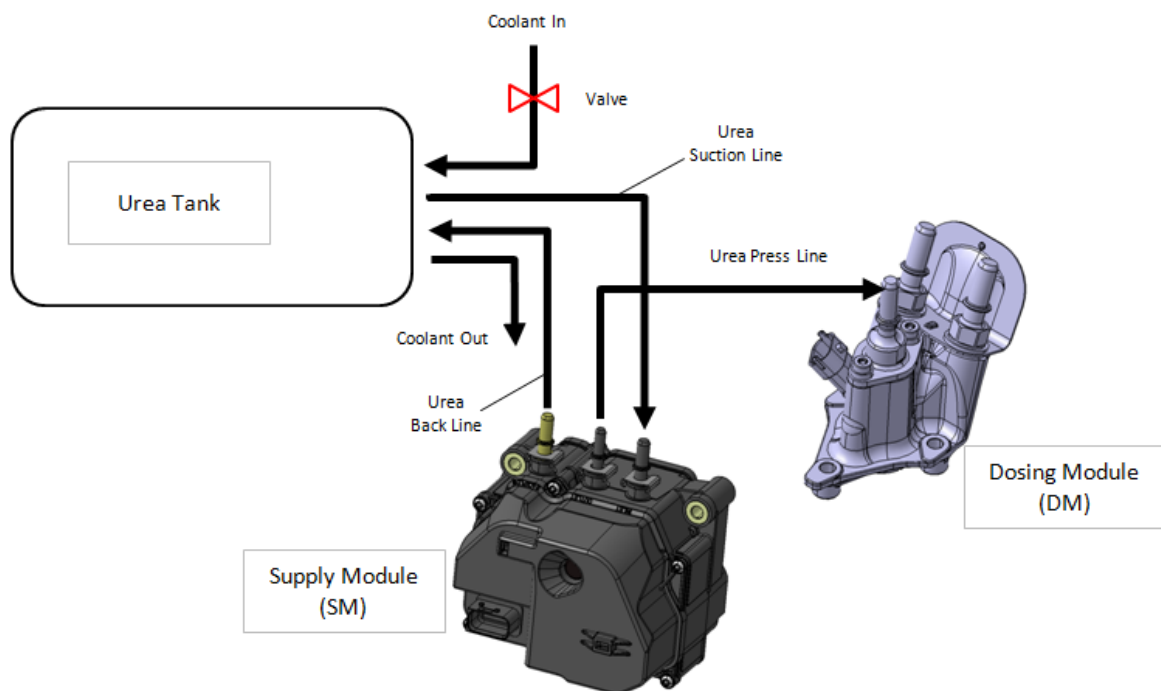
Fault Code	Fault Name
P20C1	DEF Line Heater 4 SCG or Open

1) Overview

CODE	REASON	EFFECT
U004344-05	Short circuit to ground or open load of backflow line heater	

	No.	DCU Pin	PIN description
	1	49	Back flow hose heater A
	2	50	Back flow hose heater S

2) Component Location



3) Condition for Running Diagnostic

Power-stage is actuated

4) Condition for Setting the Fault Code

The power-stage hardware reports a "no load" or "SCG" error

5) Condition for Clearing the Fault Code

When no error is detected

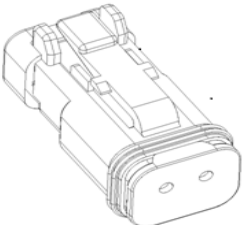
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20C1 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check the actuator connection Connection problem?		Do necessary repair	Step4
4	Check the DCU voltage related pin connection and harness. Pin or connection problem?		Do necessary repair	Stop5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P20C1	Backflow Line Heater Open

1) Overview

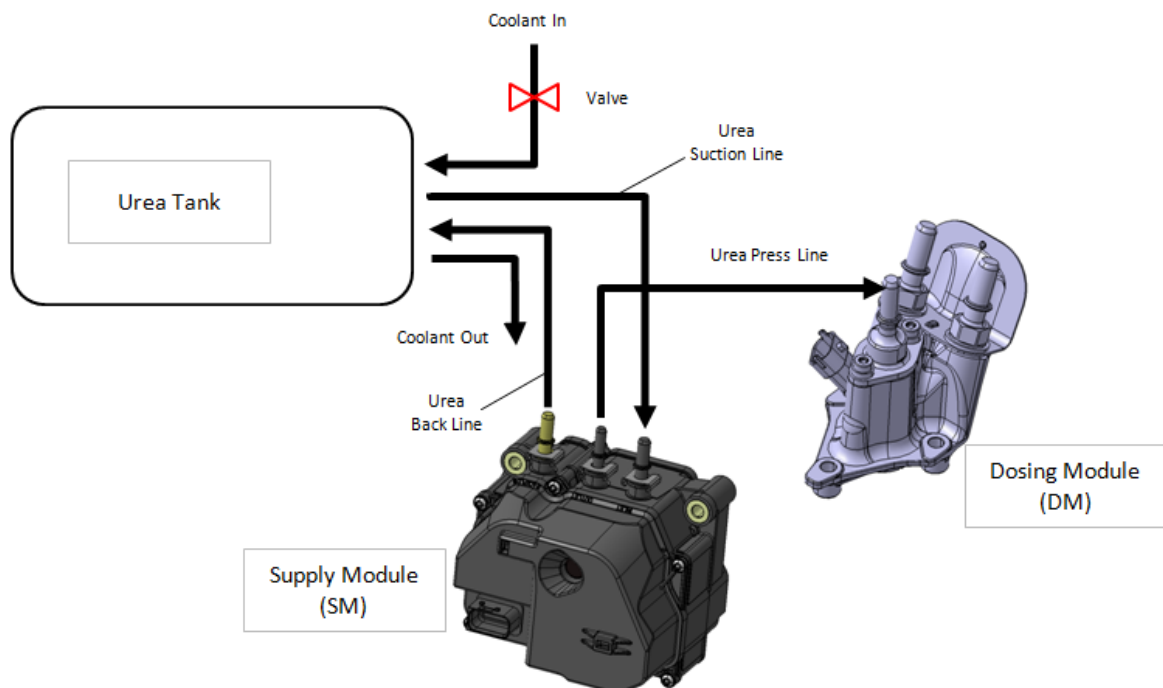
CODE	REASON	EFFECT
U4356-05	DFC for Open Load error of Urea Backflow Line Heater Actuator powerstage	

		
	No.	DCU Pin
	1	49
	2	50

No.	DCU Pin	PIN description
1	49	Back flow line heater A
2	50	Back flow line heater S

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Continuously corresponding to the process raster (10ms). This error can only be detected if the power stage is not actuated.

4) Condition for Setting the Fault Code

The power stage hardware reports a "no load" error.

5) Condition for Clearing the Fault Code

No defect detection

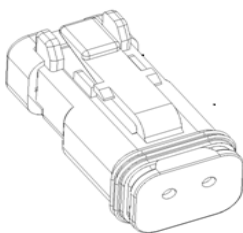
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20C1 is occurred on diagnostic tool?		Step2	O.K
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P20C2	Backflow Line Heater Over-temperature

1) Overview

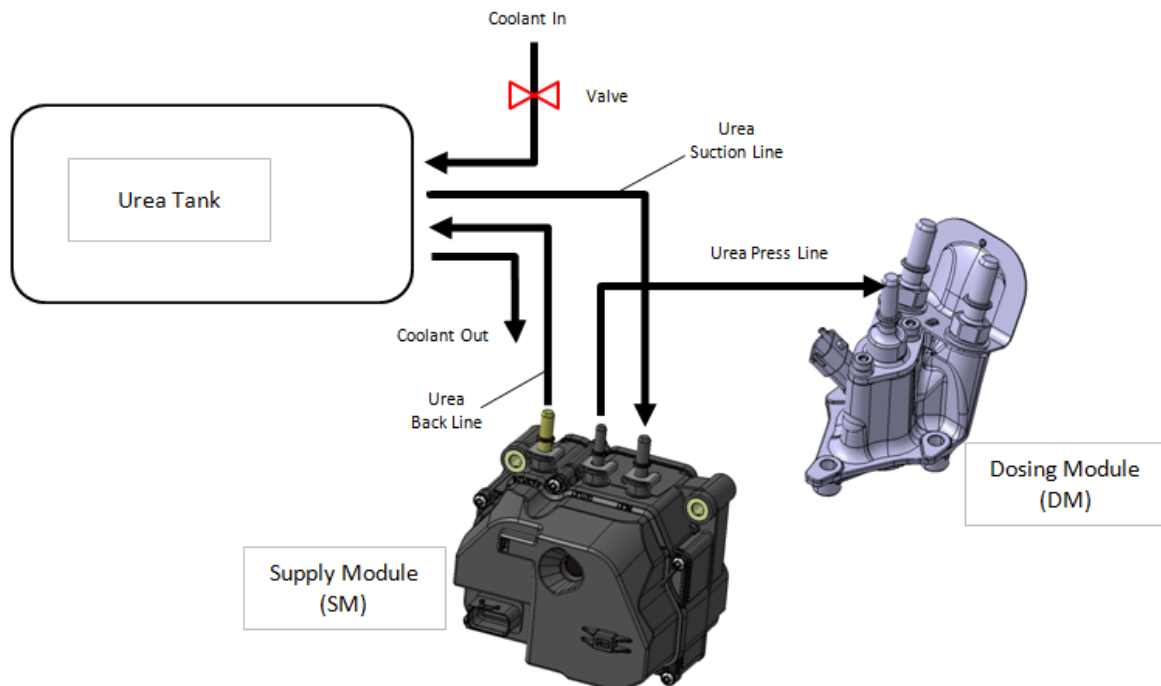
CODE	REASON	EFFECT
U004356-12	DFC for Over Temperature error of Urea Backflow Line Heater Actuator power stage	



No.	DCU Pin	PIN description
1	49	Back flow hose heater A
2	50	Back flow hose heater S

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Continuously corresponding to the process raster(10ms). This error can only be detected if the power stage is actuated.

4) Condition for Setting the Fault Code

The power stage hardware reports a "over temperature" error.

5) Condition for Clearing the Fault Code

No defect detection

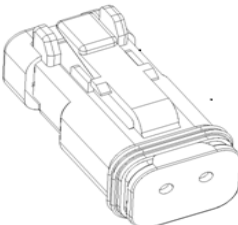
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20C2 is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change Line heater	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P20C2	General Backflow Line Plausibility Error

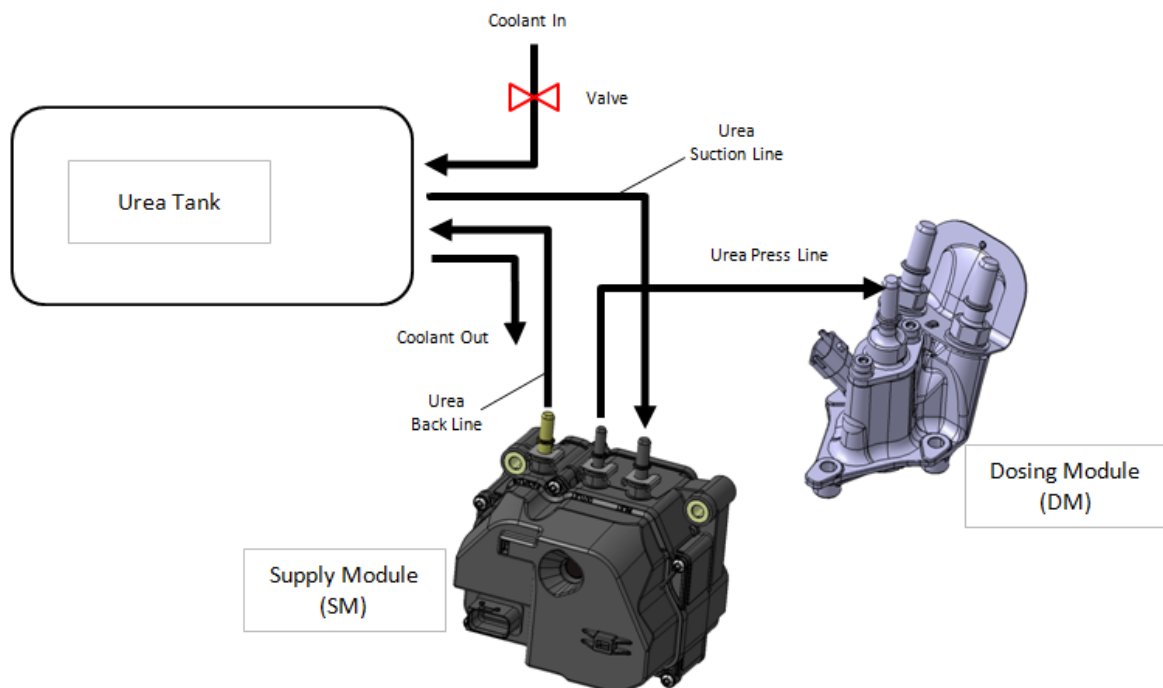
1) Overview

CODE	REASON	EFFECT
U004344-02	General backflow line plausibility error (Supply module monitoring)	Inducement Group5

	No.	DCU Pin	PIN description
	1	49	Back flow hose heater A
	2	50	Back flow hose heater S

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Check in the DETECTIONMODE state.

4) Condition for Setting the Fault Code

If function BLPlaus does not detect a pressure drop after entering DETECTIONMODE for 50sec(300sec in case of frozen urea). Export variable from function BLPlaus.

5) Condition for Clearing the Fault Code

The error will be healed at restart when the heating timer has run out.

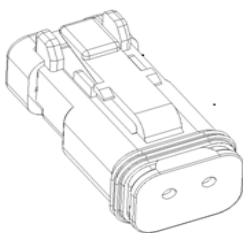
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20C2 is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check back flow line of tank side Back flow line of tank side problem?		Fix or change level sender of urea tank	Step 4
4	Check back flow line stocked Back flow line problem?		Fix or change back flow line	Step 5
5	Check back flow line throttle of Supply module Throttle problem?		Change Supply module	Call Hot-line

Fault Code	Fault Name
P20C2	Backflow Line Heater Plausibility Error

1) Overview

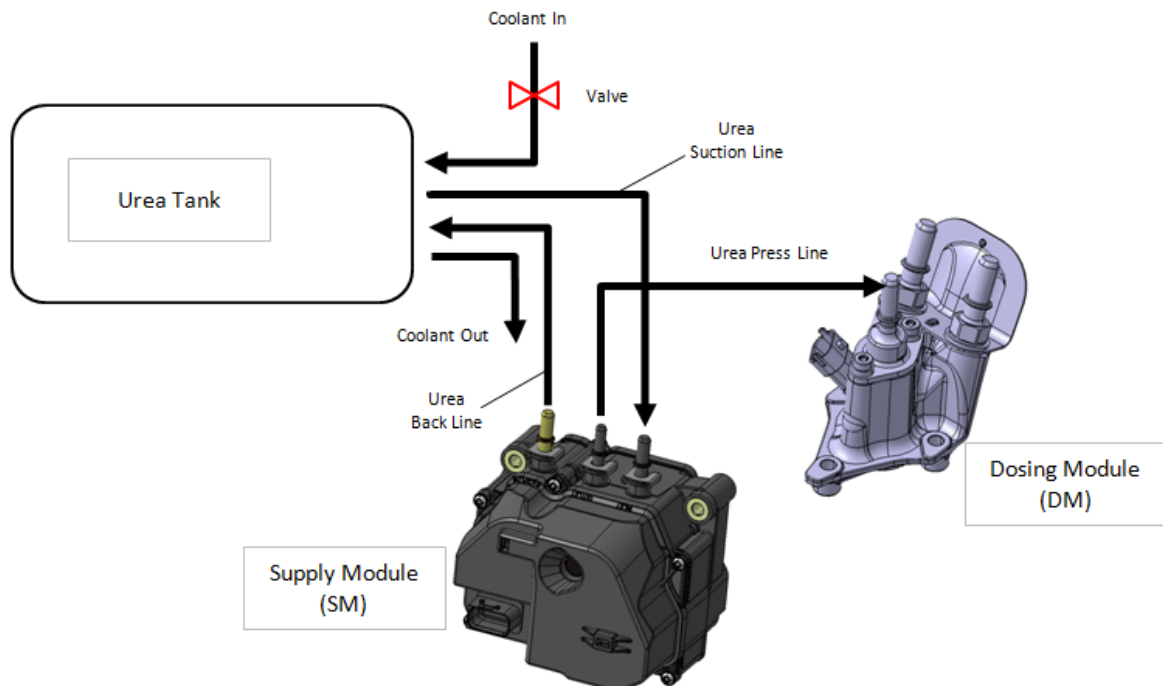
CODE	REASON	EFFECT
U004356-02	DFC for ADC(Analogue Digital Converter) Plausibility of Urea Backflow Line Heater feedback	



No.	DCU Pin	PIN description
1	49	Back flow line heater A
2	50	Back flow line heater S

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Continuously corresponding to the process raster (10ms). This error can only be detected if the power stage is energized.

4) Condition for Setting the Fault Code

The power stage hardware reports a " ADC(Analogue Digital Converter) Plausibility " error.

5) Condition for Clearing the Fault Code

No defect detection

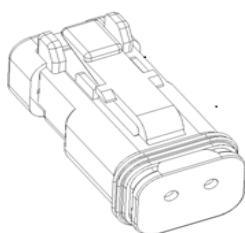
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20C2 is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P20C3	Backflow Line Heater SCG

1) Overview

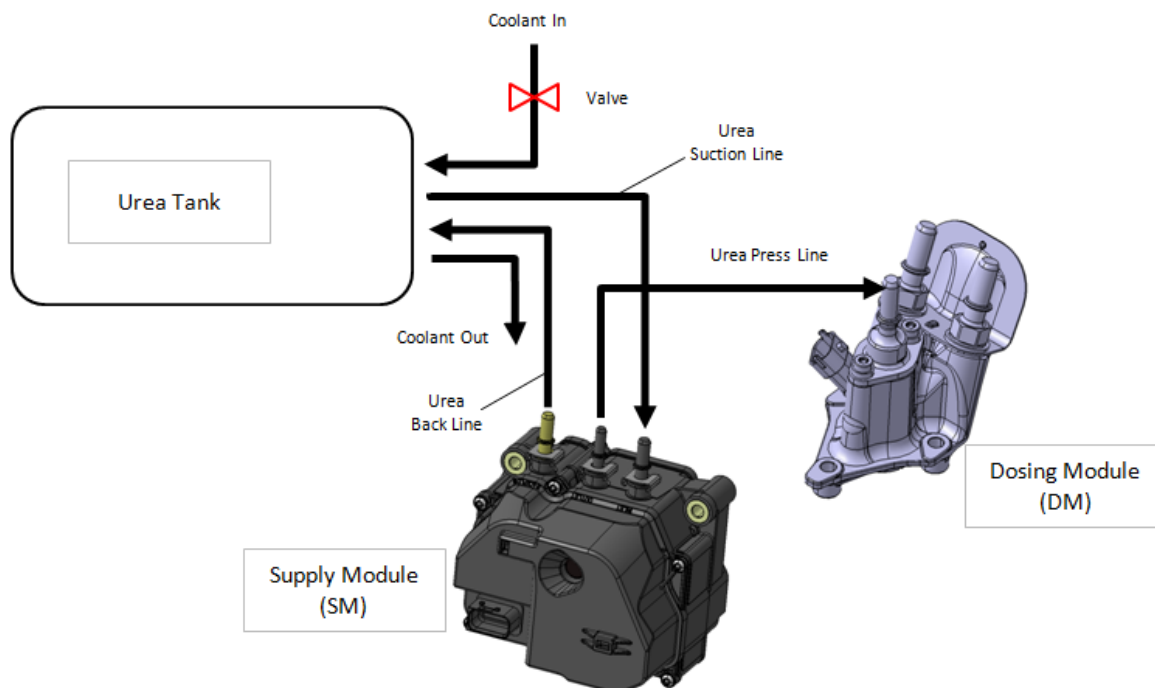
CODE	REASON	EFFECT
U004356-04	DFC for Short Circuit to Ground of Urea Backflow Line Heater Actuator powerstage	



No.	DCU Pin	PIN description
1	49	Back flow line heater A
2	50	Back flow line heater S

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Continuously corresponding to the process raster (10ms). This error can only be detected if the power stage is energized.

4) Condition for Setting the Fault Code

The power stage hardware reports a "short circuit to ground" error.

5) Condition for Clearing the Fault Code

No defect detection

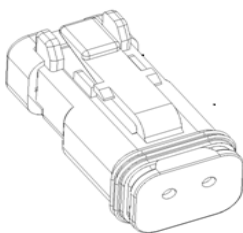
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20C3 is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P20C4	Backflow Line Heater SCB

1) Overview

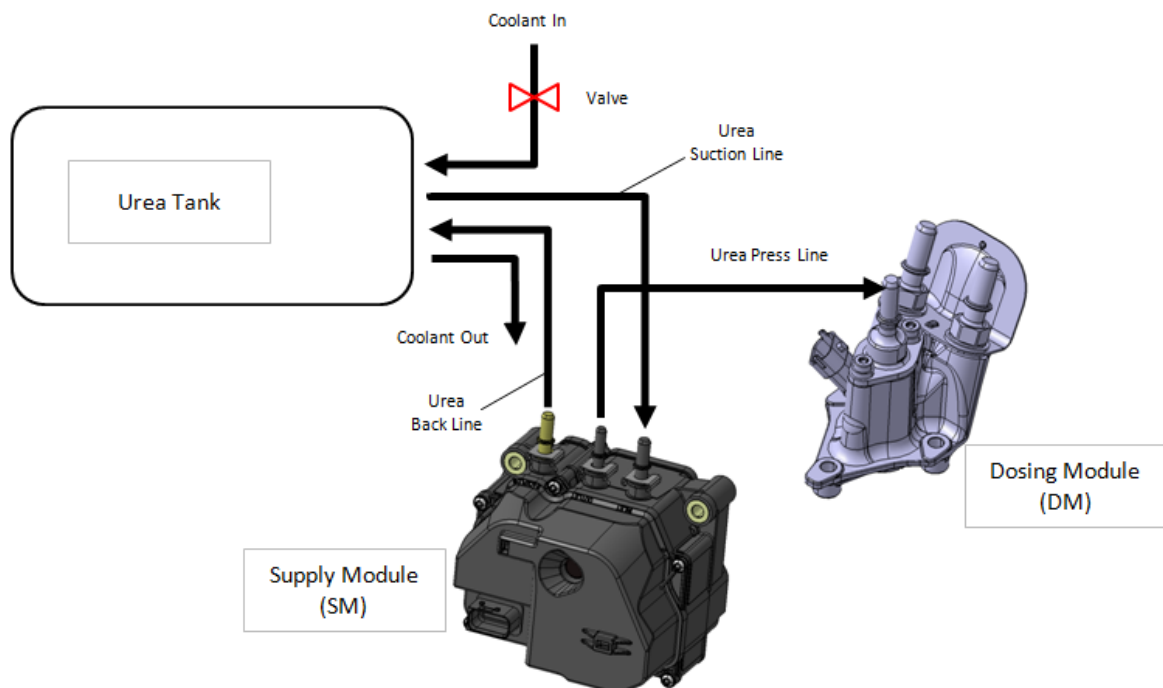
CODE	REASON	EFFECT
U004356-03	DFC for Short Circuit to Battery of Urea Backflow Line Heater Actuator powerstage	



No.	DCU Pin	PIN description
1	49	Back flow line heater A
2	50	Back flow line heater S

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Continuously corresponding to the process raster (10ms). This error can only be detected if the power stage is energized.

4) Condition for Setting the Fault Code

The power stage hardware reports a "short circuit to battery" error.

5) Condition for Clearing the Fault Code

No defect detection

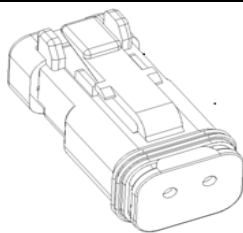
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20C4 is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P20C5	Suction Line Heater Open

1) Overview

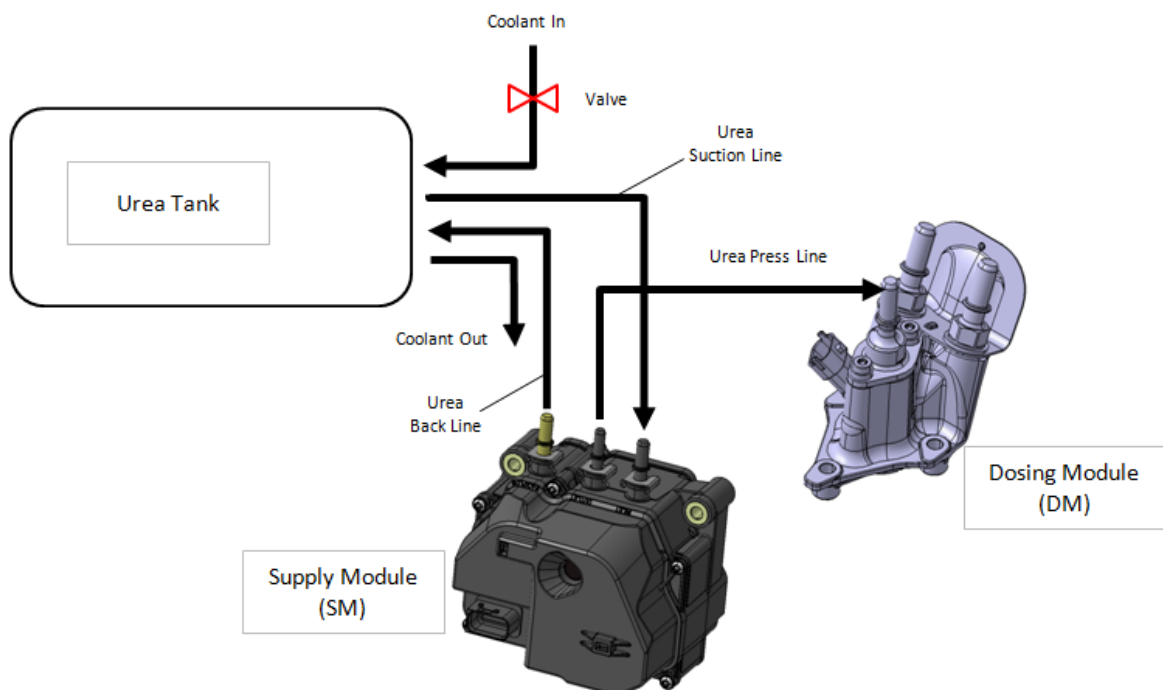
CODE	REASON	EFFECT
U004357-05	DFC for Open Load error of Urea Suction Line Heater Actuator powerstage	



No.	DCU Pin	PIN description
1	27	Suction hose heater A
2	28	Suction hose heater S

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Continuously corresponding to the process raster (10ms). This error can only be detected if the power stage is energized.

4) Condition for Setting the Fault Code

The power stage hardware reports a "no load" error

5) Condition for Clearing the Fault Code

No defect detection

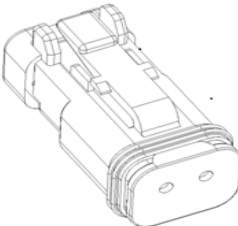
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20C5 is occurred on diagnostic tool?		Step2	O.K
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

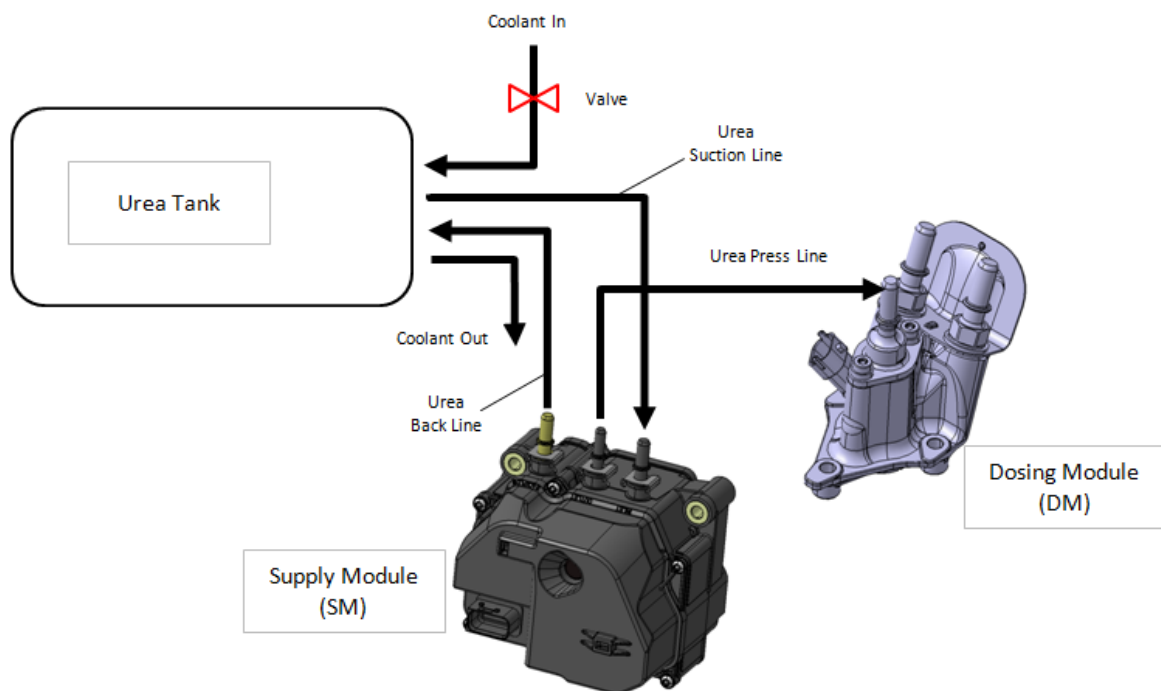
Fault Code	Fault Name
P20C5	DEF Line Heater 5 SCG or Open

1) Overview

CODE	REASON	EFFECT
U004346-05	Short circuit to ground or open load of suction line heater	

	No.	DCU Pin	PIN description
	1	27	Suction hose heater A
	2	28	Suction hose heater S

2) Component Location



3) Condition for Running Diagnostic

Power-stage is actuated

4) Condition for Setting the Fault Code

The power-stage hardware reports a "no load" or "SCG" error

5) Condition for Clearing the Fault Code

When no error is detected

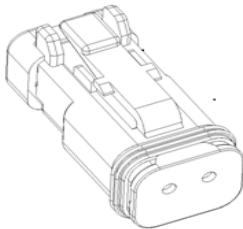
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20C5 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check the actuator connection Connection problem?		Do necessary repair	Step4
4	Check the DCU voltage related pin connection and harness. Pin or connection problem?		Do necessary repair	Stop5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P20C6	Suction Line Heater Plausibility Error

1) Overview

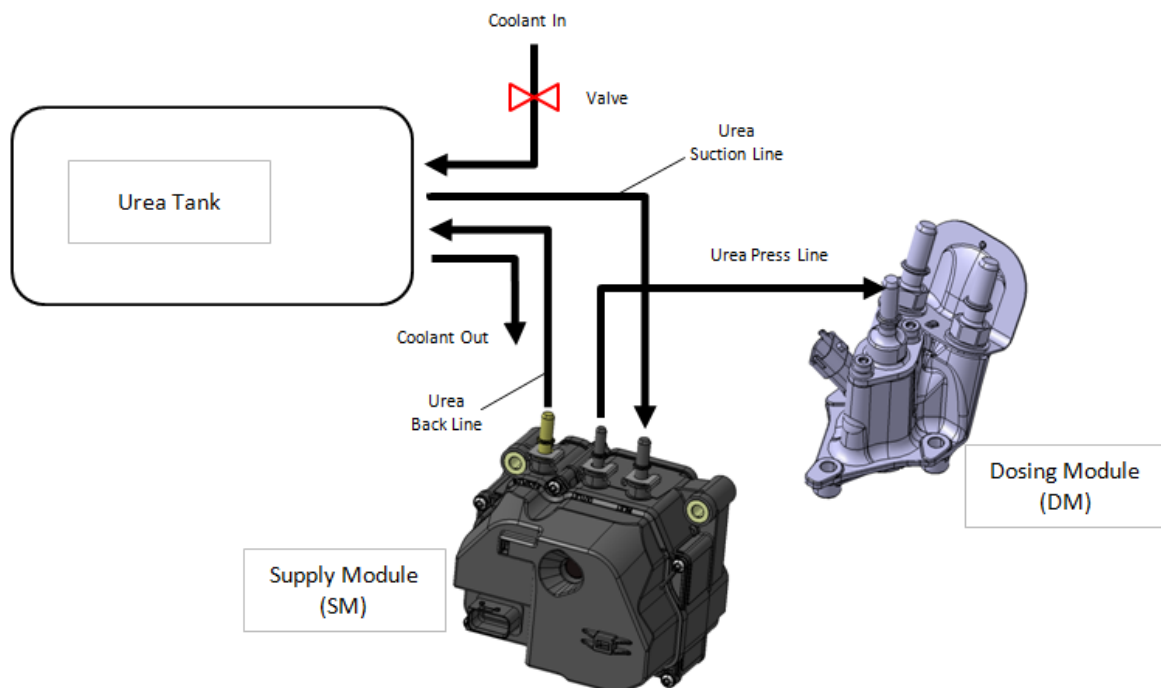
CODE	REASON	EFFECT
U004357-02	The power stage hardware reports a "ADC(Analogue Digital Converter) Plausibility " error.	



No.	DCU Pin	PIN description
1	27	Suction hose heater A
2	28	Suction hose heater S

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Continuously corresponding to the process raster (10ms). This error can only be detected if the power stage is energized.

4) Condition for Setting the Fault Code

The power stage hardware reports a " ADC(Analogue Digital Converter) Plausibility " error.

5) Condition for Clearing the Fault Code

No defect detection

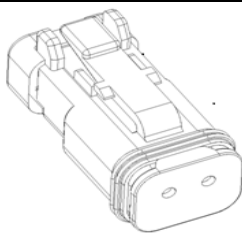
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20C6 is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P20C6	Suction Line Heater Over-temperature

1) Overview

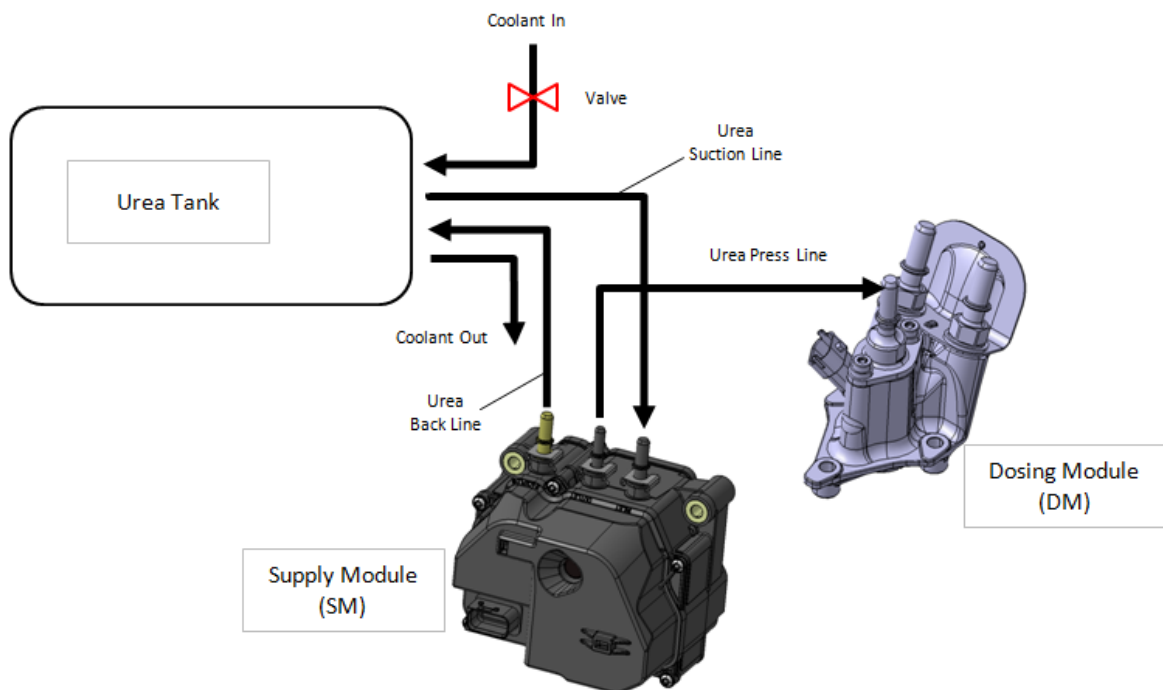
CODE	REASON	EFFECT
U004357-12	DFC for Over Temperature error of Urea Suction Line Heater Actuator powerstage	



No.	DCU Pin	PIN description
1	27	Suction hose heater
2	28	Ground

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Continuously corresponding to the process raster(10ms). This error can only be detected if the power stage is actuated.

4) Condition for Setting the Fault Code

The power stage hardware reports a "over temperature" error.

5) Condition for Clearing the Fault Code

No defect detection

6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20C6 is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change Line heater	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

4) Condition for Setting the Fault Code

The power stage hardware reports a "short circuit to ground" error.

5) Condition for Clearing the Fault Code

No defect detection

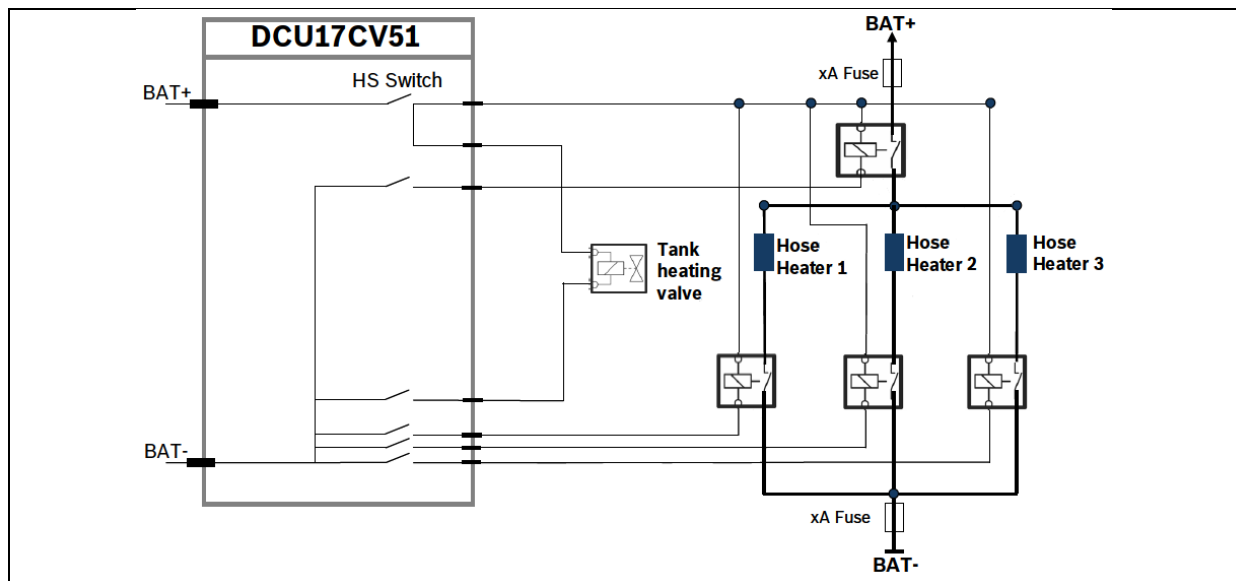
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20C7 is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

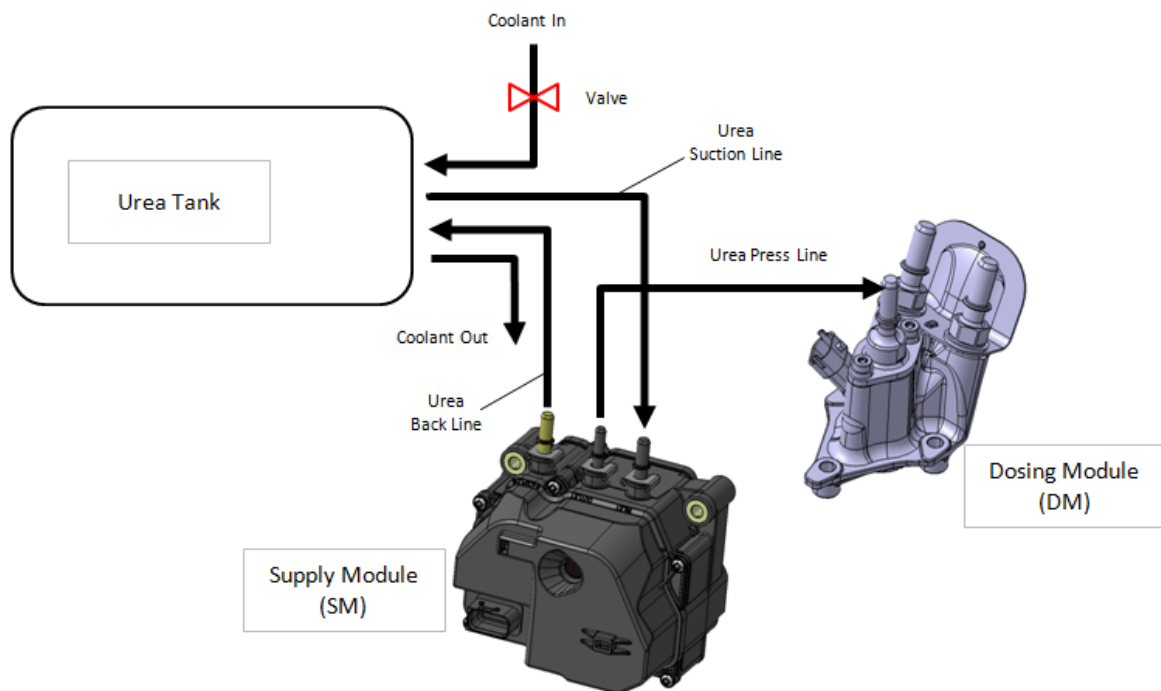
Fault Code	Fault Name
P20C8	DEF Line Heater SCB

1) Overview

CODE	REASON	EFFECT
U004340-03	Short circuit to battery of urea line heater (pressure/backflow/suction)	



2) Component Location



3) Condition for Running Diagnostic

Power-stage is not actuated

4) Condition for Setting the Fault Code

The power-stage hardware reports a "SCB" error

5) Condition for Clearing the Fault Code

When no error is detected

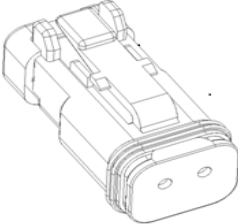
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20C8 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check the actuator connection Connection problem?		Do necessary repair	Step4
4	Check the DCU voltage related pin connection and harness. Pin or connection problem?		Do necessary repair	Stop5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P20C8	Suction Line Heater SCB

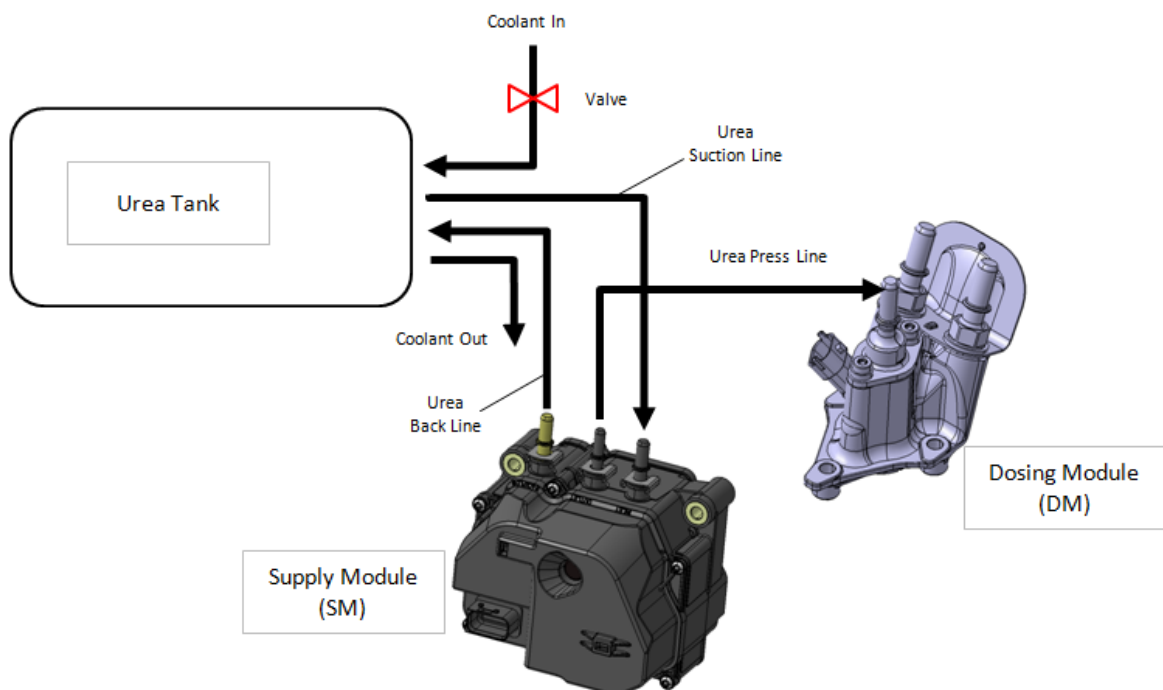
1) Overview

CODE	REASON	EFFECT
U004357-03	The power stage hardware reports a "short circuit to battery" error.	

	No.	DCU Pin	PIN description
	1	27	Suction hose heater A
	2	28	Suction hose heater S

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Continuously corresponding to the process raster (10ms). This error can only be detected if the power stage is energized.

4) Condition for Setting the Fault Code

The power stage hardware reports a "short circuit to battery" error.

5) Condition for Clearing the Fault Code

No defect detection

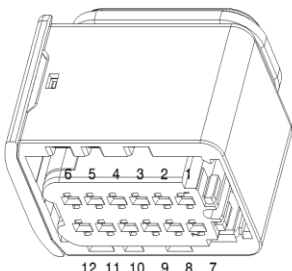
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20C8 is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

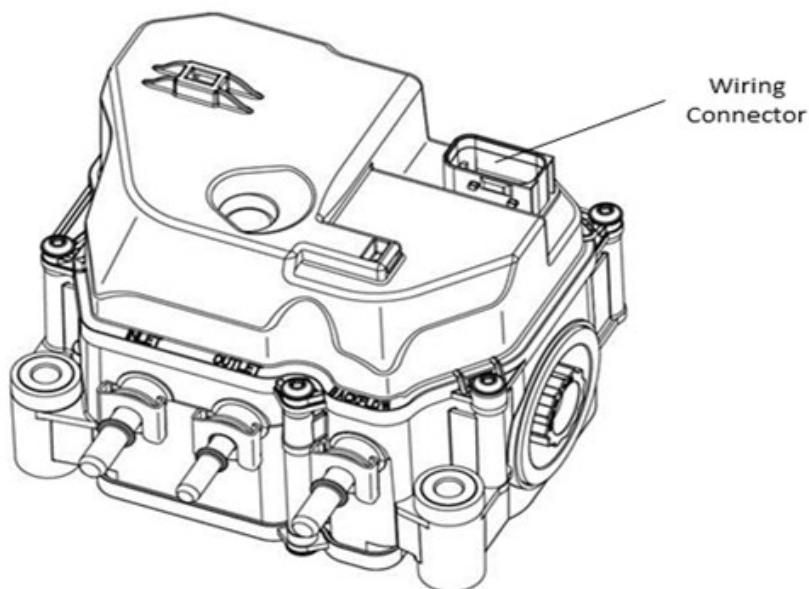
Fault Code	Fault Name
P20E8	DEF Pump Pressure Too Low

1) Overview

CODE	REASON	EFFECT
U004334-01	Electrical problem Connection problem Harness problem Sensor problem	

	No.	DCU Pin	PIN description(Supply module)
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

Key on or engine running

4) Condition for Setting the Fault Code

If the urea pressure signal is less than – 900 [hPa] for the duration of 1000 ms, the error "physical range check: too low" will be debounced and reported to a fault.

5) Condition for Clearing the Fault Code

If the urea pressure signal is greater than or equal to -900 [hPa] for the duration of 1000 ms, the error will be healed.

6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20E8 is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check Supply module Supply module problem?		Do necessary repair	Step 4
4	Check urea hose line Urea hose line problem?		Do necessary repair	Step 5
5	Check sensor connection Connection problem?		Do necessary repair	Step 6
6	Check DCU connection Connection problem?		Do necessary repair	Step 7
7	Check sensor resistance Resistance problem?		Change Sensor	Step 8
8	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

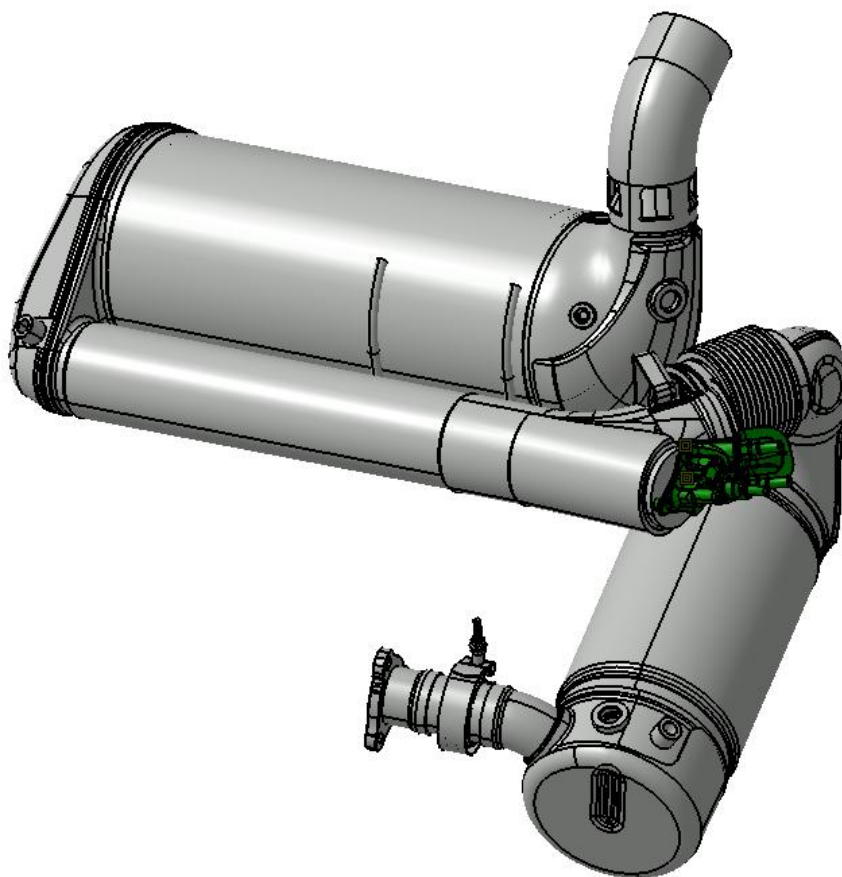
Fault Code	Fault Name
P20EE	SCR Efficiency Monitoring

1) Overview

CODE	REASON	EFFECT
U004364-21	SCR Efficiency is below threshold	Torque Reduction Lv3.

2) Component Location

After treatment system including DOC, SCR, NOx sensors, exhaust gas temp sensors and Dosing modules.



3) Condition for Running Diagnostic

During engine running, NOx sensor is active, Dosing is active and so on.

4) Condition for Setting the Fault Code

If SCR efficiency is below threshold, fault code is raised.

5) Condition for Clearing the Fault Code

If SCR efficiency is above threshold with diagnostic condition, fault code is cleared.

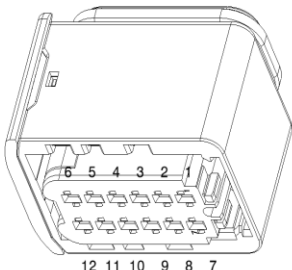
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20EE is occurred on diagnostic tool?		Step2	O.K
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	If other codes happened together, check the other codes prior to this code		Step4	Step4-
4	Check exhaust pipe line. Is there any leakage ?		Do necessary repair	Step 5
5	Check after treatment system, DOC, SCR, Dosing module, NOx sensor and so on. Is there any damage or leakage?		Do necessary repair	Call Hot line

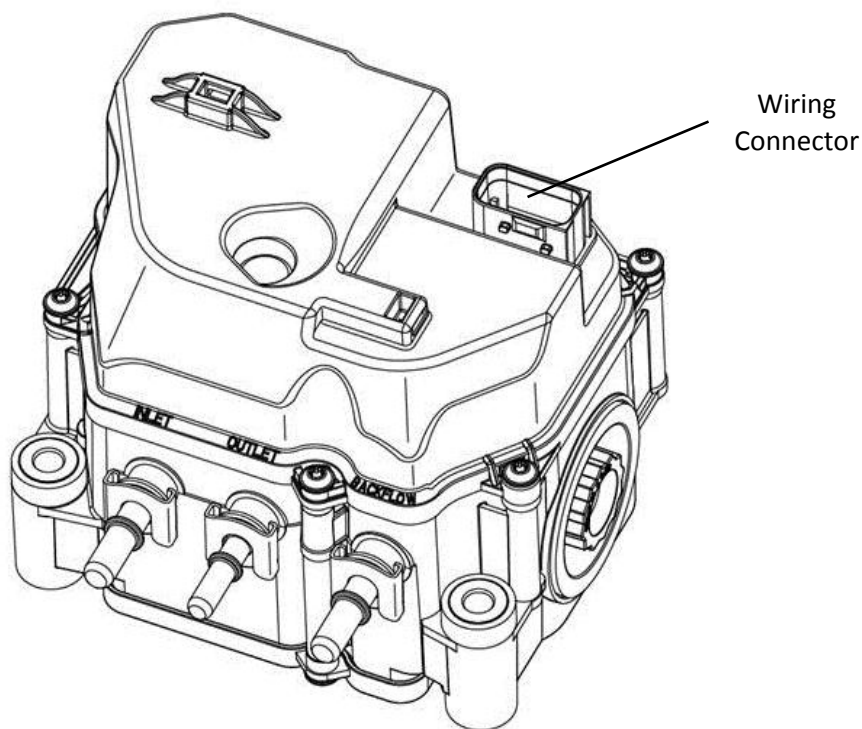
Fault Code	Fault Name
P20FA	DEF Backflow Pump Open

1) Overview

CODE	REASON	EFFECT
U004376-05	DFC for Open Load error of the PWM output power stage of the Urea back flow pump	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging(backflow) pump Ubat+
	6	78	Purging(backflow) pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

The error can be detected only when the power stage is not actuated and the diagnosis is active

4) Condition for Setting the Fault Code

The hardware detects on an open load at the power stage

5) Condition for Clearing the Fault Code

The hardware detects is a load at the power stage

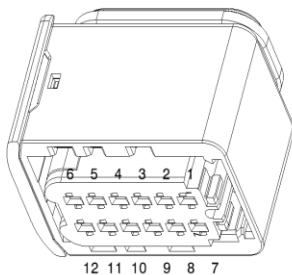
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20FA is occurred on diagnostic tool?		Step2	O.K
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P20FB	DEF Backflow Pump Overtemperature

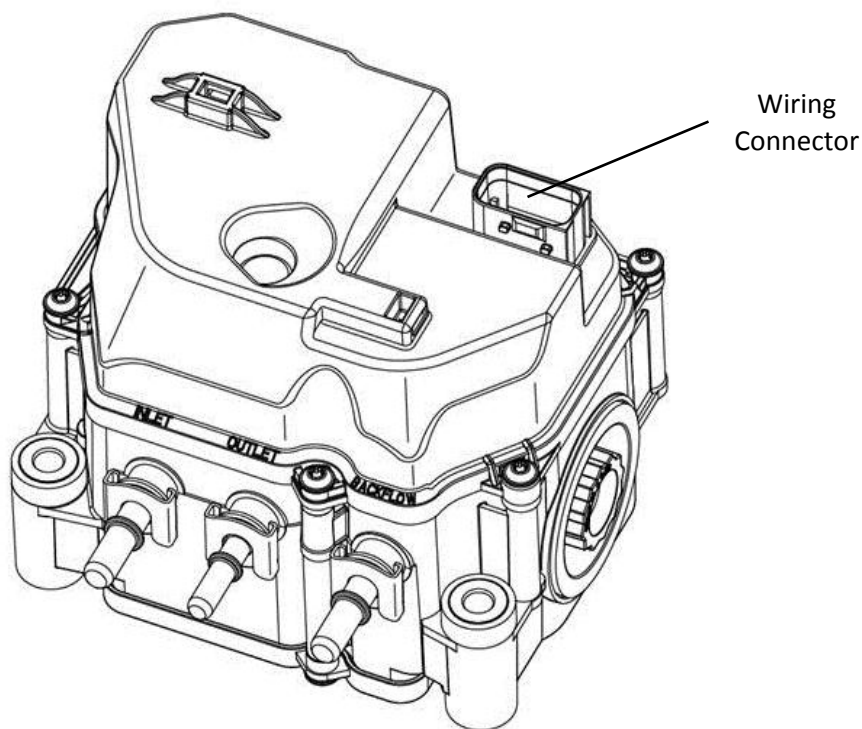
1) Overview

CODE	REASON	EFFECT
U004376-12	DFC for Over temperature error of the PWM output power stage of the Urea back flow pump	



No.	DCU Pin	PIN description
1	Reserve	
2	76	Pump motor control signal
3	55	Pump motor Ubat+
4	54	Pump motor GND
5	77	Purging(backflow) pump Ubat+
6	78	Purging(backflow) pump GND
7	Reserve	
8	40	Pressure sensor GND
9	39	Pressure sensor signal
10	17	Pressure sensor Ubat+
11	4	Heater Ubat+
12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

The error can be detected only when the power stage is not actuated and the diagnosis is active

4) Condition for Setting the Fault Code

The hardware detects an over temperature at the power stage

5) Condition for Clearing the Fault Code

The hardware detects no over temperature at the power stage

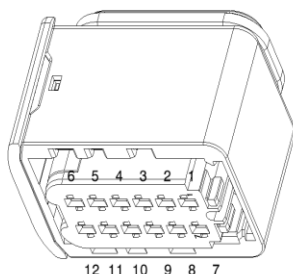
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20FB is occurred on diagnostic tool?		Step2	O.K
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P20FC	DEF Backflow Pump SCG

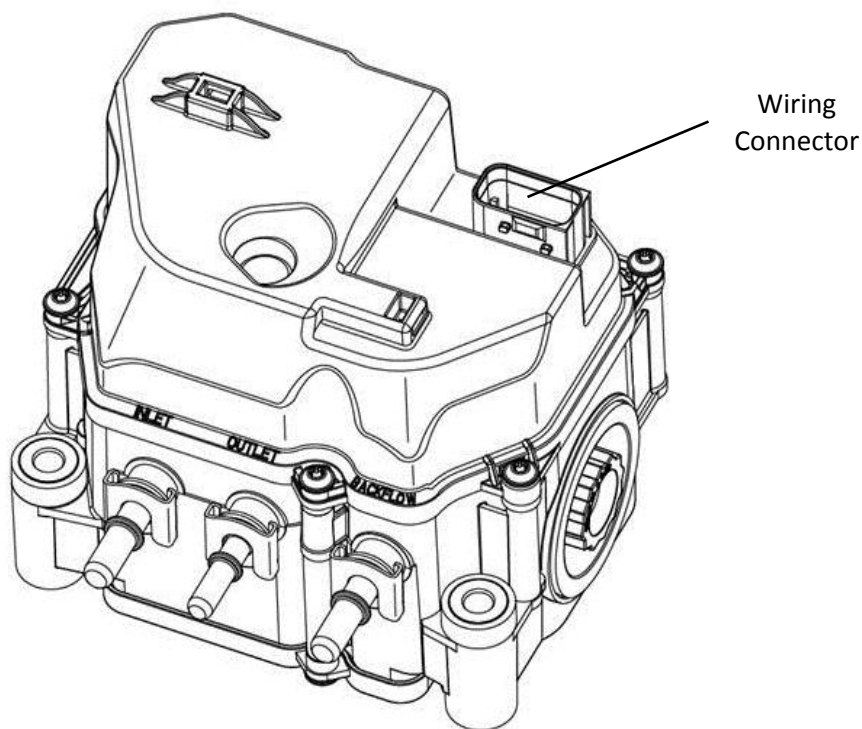
1) Overview

CODE	REASON	EFFECT
U004376-04	DFC for short circuit to ground error of the PWM output power stage of the Urea back flow pump	



No.	DCU Pin	PIN description
1	Reserve	
2	76	Pump motor control signal
3	55	Pump motor Ubat+
4	54	Pump motor GND
5	77	Purging(backflow) pump Ubat+
6	78	Purging(backflow) pump GND
7	Reserve	
8	40	Pressure sensor GND
9	39	Pressure sensor signal
10	17	Pressure sensor Ubat+
11	4	Heater Ubat+
12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

The error can be detected only when the power stage is not actuated and the diagnosis is active

4) Condition for Setting the Fault Code

The hardware detects a short circuit to ground at the power stage

5) Condition for Clearing the Fault Code

The hardware detects no short circuit to ground at the power stage

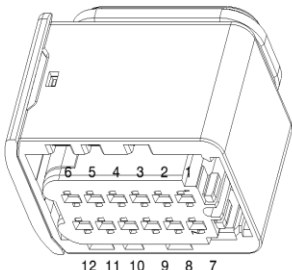
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20FC is occurred on diagnostic tool?		Step2	O.K
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

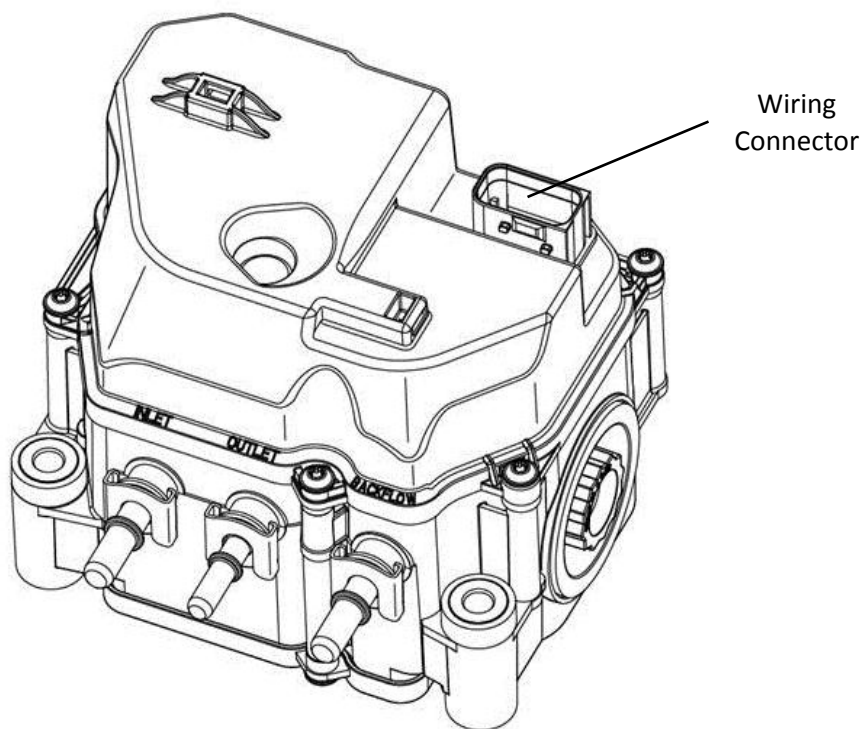
Fault Code	Fault Name
P20FD	DEF Backflow Pump SCB

1) Overview

CODE	REASON	EFFECT
U004376-03	DFC for short circuit to battery error of the PWM output power stage of the Urea back flow pump	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging(backflow) pump Ubat+
	6	78	Purging(backflow) pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

The error can be detected only when the power stage is not actuated and the diagnosis is active

4) Condition for Setting the Fault Code

The hardware detects a short circuit to battery at the power stage

5) Condition for Clearing the Fault Code

The hardware detects no short circuit to battery at the power stage

6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20FD is occurred on diagnostic tool?		Step2	O.K
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P20FF	Dosing Valve Tip Temperature Error

1) Overview

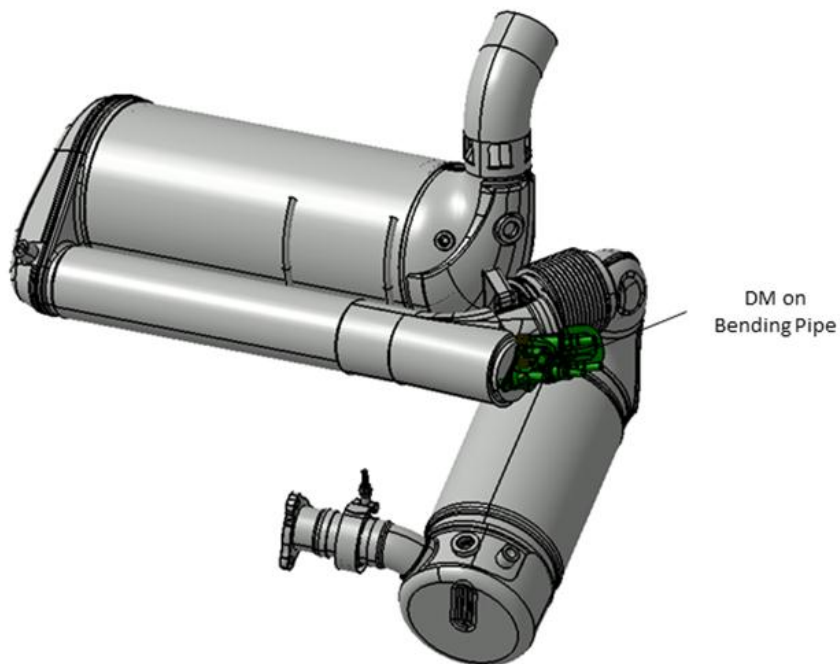
CODE	REASON	EFFECT
U004337-07 U004337-12	Dosing valve tip temperature over the threshold	Torque reduction Lv3

A technical line drawing of a DCU (Data Control Unit) connector. The drawing shows a complex assembly with multiple pins. Two specific pins are highlighted with numbers: '1' points to a pin on the left side of the connector, and '2' points to a pin on the right side. The drawing is a perspective view, showing the top and side of the connector.

No.	DCU Pin	PIN description
1	80	Reduction agent magnet valve H
2	58	Reduction agent magnet valve L

2) Component Location

Muffler Layout can be different according to Machine but the position of DM is same.



3) Condition for Running Diagnostic

The dosing valve tip temperature is checked continuously.

4) Condition for Setting the Fault Code

The error is detected when dosing valve tip temperature is greater than a threshold

5) Condition for Clearing the Fault Code

The error is healed when dosing valve tip temperature is in a threshold

6) Check List

Step	Inspection	Standard Value	YES	NO
1	P20FF is occurred on diagnostic tool?		Step 2	
2	DEF tank is frozen?		Step 4	Step 3
3	Check another fault Is there another fault?		Fix the another fault	Call Hot-line
4	Continuously maintain high idle to de-freeze the DEF tank P20FF is occurred again?		Call Hot-line	Closed

4) Condition for Setting the Fault Code

The power stage hardware reports a "Open Load" error.

5) Condition for Clearing the Fault Code

No defect detection

6) Check List

Step	Inspection	Standard Value	YES	NO
1	P21C2 is occurred on diagnostic tool?		Step2	O.K
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P21C2	DEF Heater Relay Over-temperature

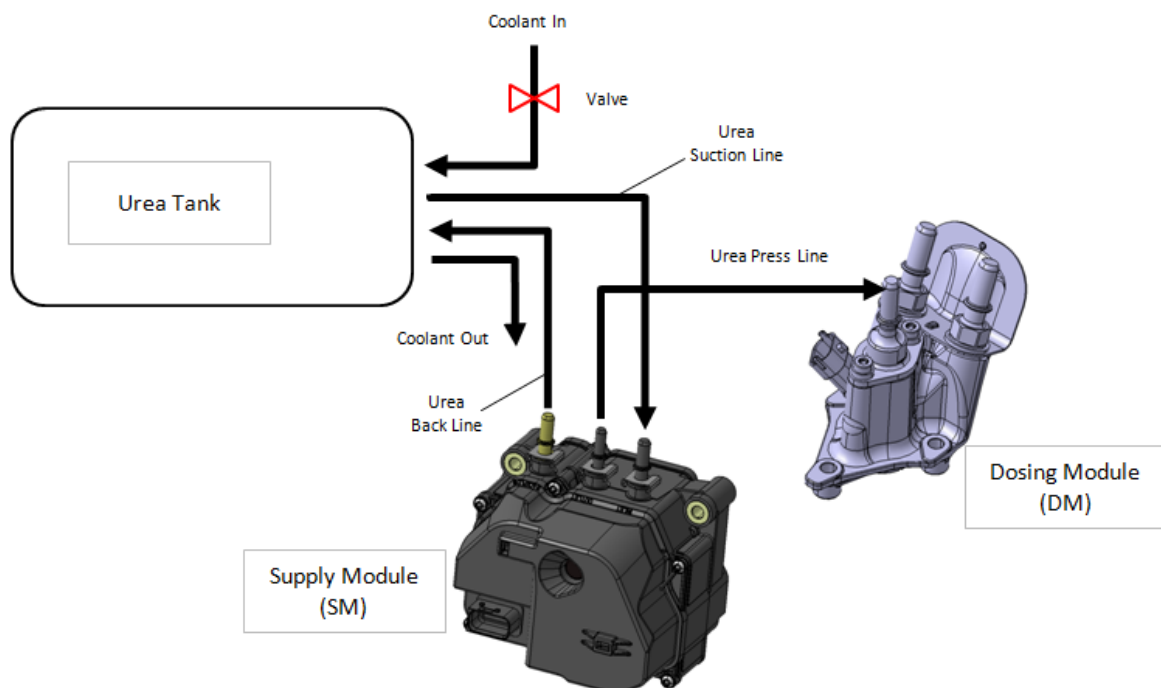
1) Overview

CODE	REASON	EFFECT
U004353-12	DFC for Over temperature error for the PWM output stage of the urea relay power stage	

No.	DCU Pin	PIN description
1	53	Heater power relay V
2	93	Heater power relay S

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Continuously corresponding to the process raster (10ms). This error can only be detected if the power stage is energized.

4) Condition for Setting the Fault Code

The power stage hardware reports a "Over Temperature" error.

5) Condition for Clearing the Fault Code

No defect detection

6) Check List

Step	Inspection	Standard Value	YES	NO
1	P21C2 is occurred on diagnostic tool?		Step2	O.K
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P21C3	DEF Heater Relay SCG

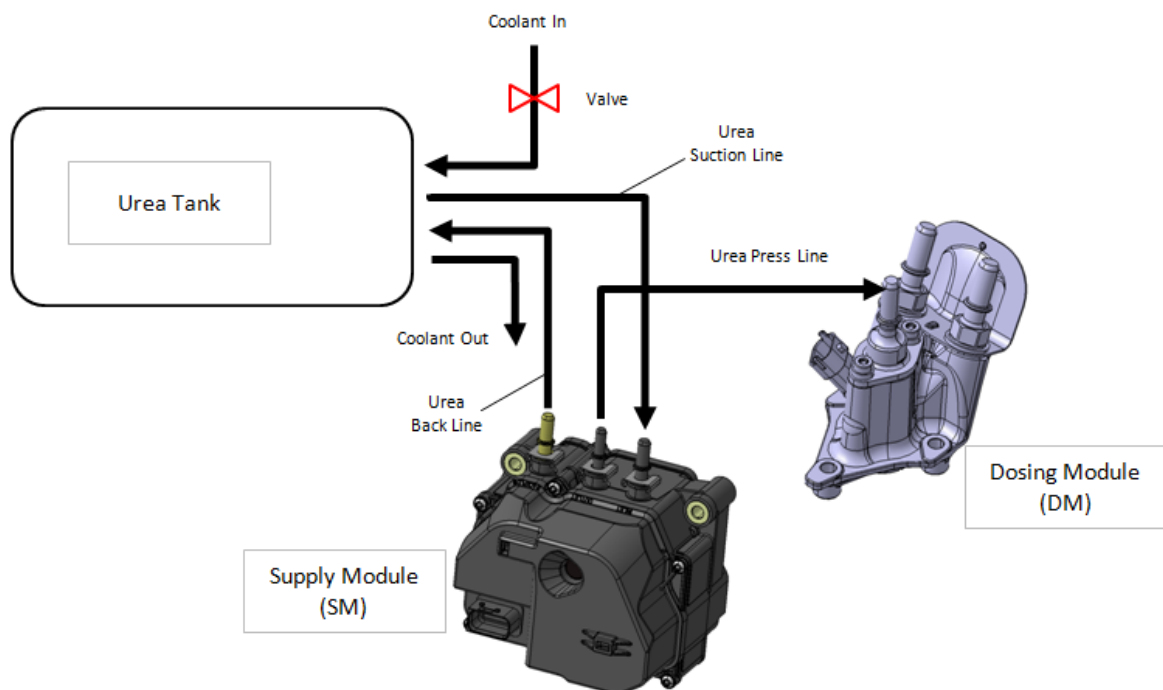
1) Overview

CODE	REASON	EFFECT
U004353-04	DFC for Short circuit to ground of the urea relay power stage	

No.	DCU Pin	PIN description
1	53	Heater power relay V
2	93	Heater power relay S

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Continuously corresponding to the process raster (10ms). This error can only be detected if the power stage is energized.

4) Condition for Setting the Fault Code

The power stage hardware reports a "Short circuit to ground" error.

5) Condition for Clearing the Fault Code

No defect detection

6) Check List

Step	Inspection	Standard Value	YES	NO
1	P21C3 is occurred on diagnostic tool?		Step2	O.K
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P21C4	DEF Heater Relay SCB

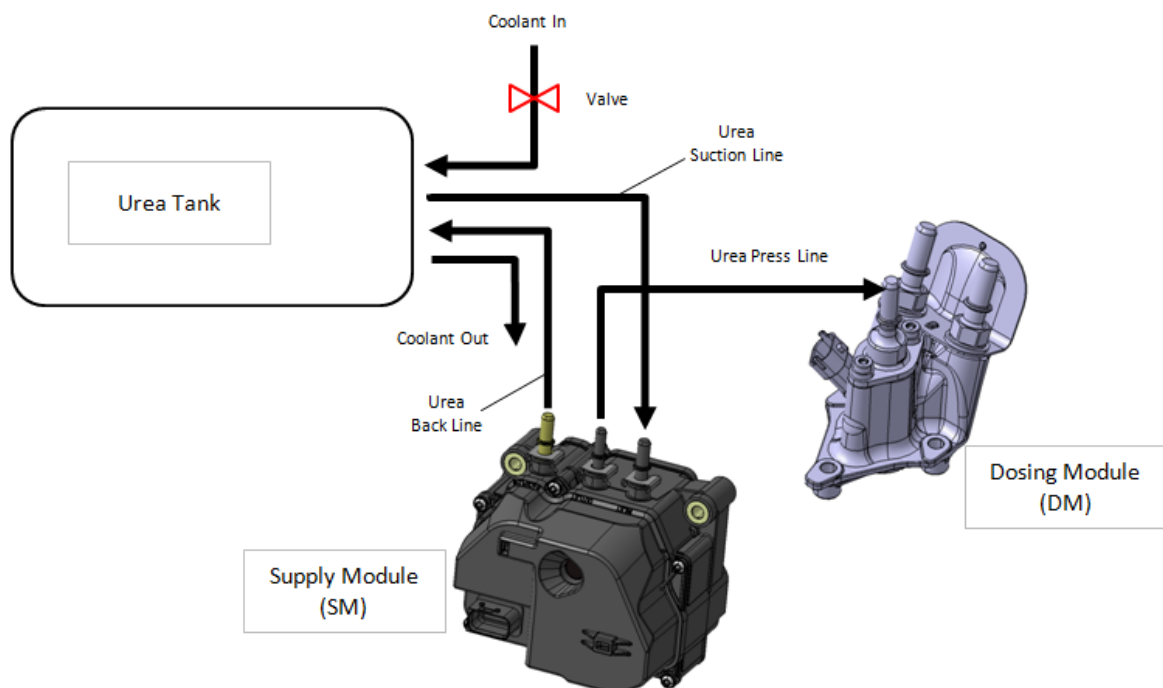
1) Overview

CODE	REASON	EFFECT
U004353-03	DFC for Short circuit to battery of the urea relay power stage	

No.	DCU Pin	PIN description
1	53	Heater power relay V
2	93	Heater power relay S

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Continuously corresponding to the process raster (10ms). This error can only be detected if the power stage is energized.

4) Condition for Setting the Fault Code

The power stage hardware reports a "Short circuit to battery" error.

5) Condition for Clearing the Fault Code

No defect detection

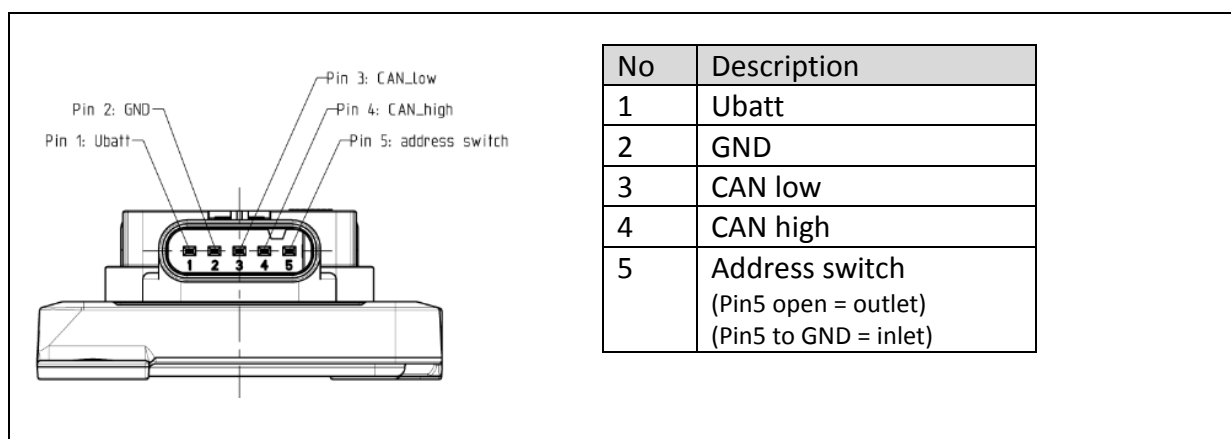
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P21C4 is occurred on diagnostic tool?		Step2	O.K
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

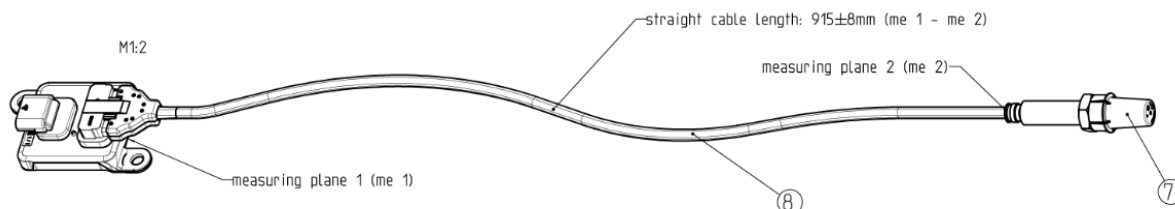
Fault Code	Fault Name
P23A1	Inlet NOx sensor signal readiness Error

1) Overview

CODE	REASON	EFFECT
U003223-02	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

There are stable environmental conditions (exhaust gas temperature and battery voltage in range, no changeover start/stop), if heater release is set

4) Condition for Setting the Fault Code

If the sensor doesn't send a valid signal after heater release an appropriate time

5) Condition for Clearing the Fault Code

The heater reaches its set-point before maximum time is expired

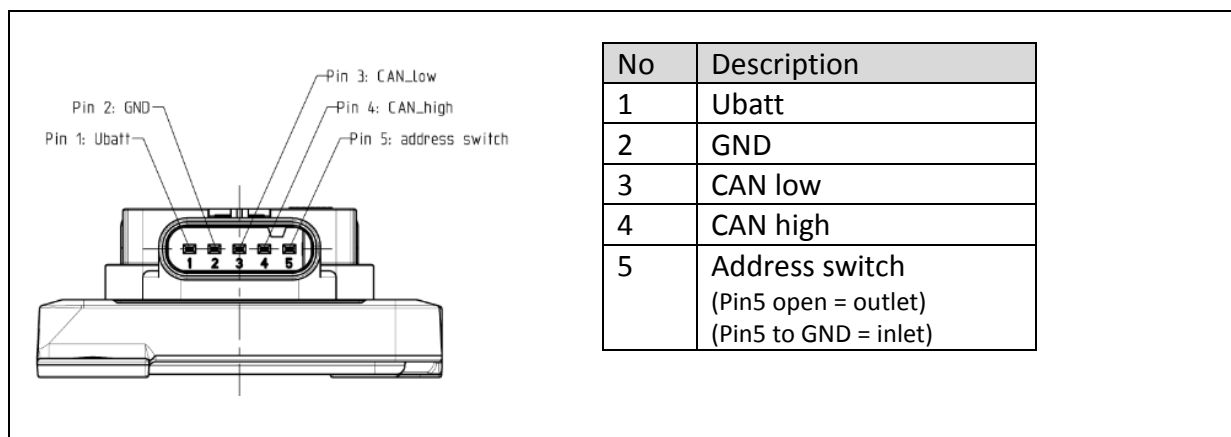
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23A1 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

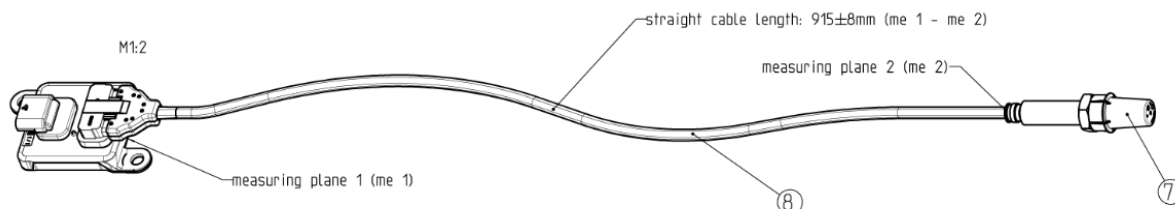
Fault Code	Fault Name
P23A2	Outlet NOx sensor signal readiness Error

1) Overview

CODE	REASON	EFFECT
U003233-02	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

There are stable environmental conditions (exhaust gas temperature and battery voltage in range, no changeover start/stop), if heater release is set

4) Condition for Setting the Fault Code

If the sensor doesn't send a valid signal after heater release an appropriate time

5) Condition for Clearing the Fault Code

The heater reaches its set-point before maximum time is expired

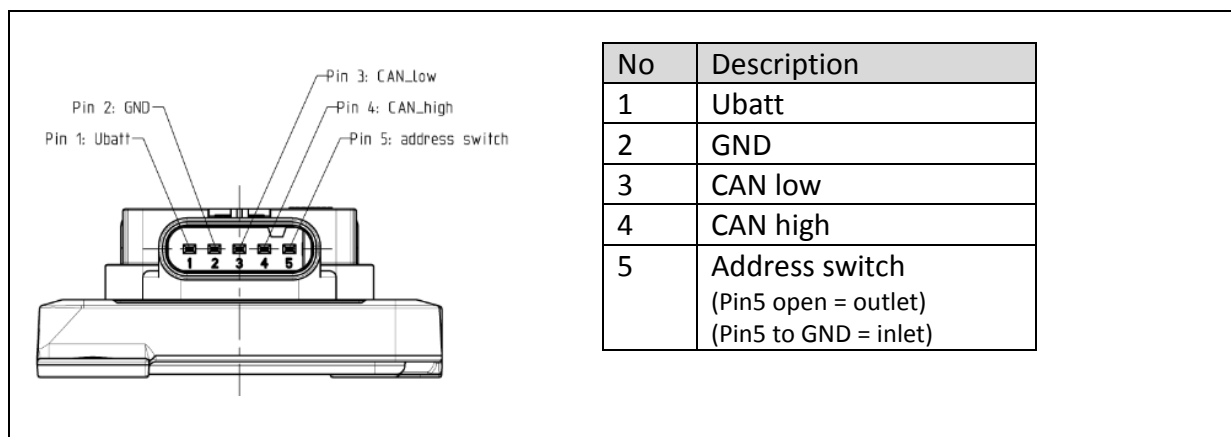
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23A2 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

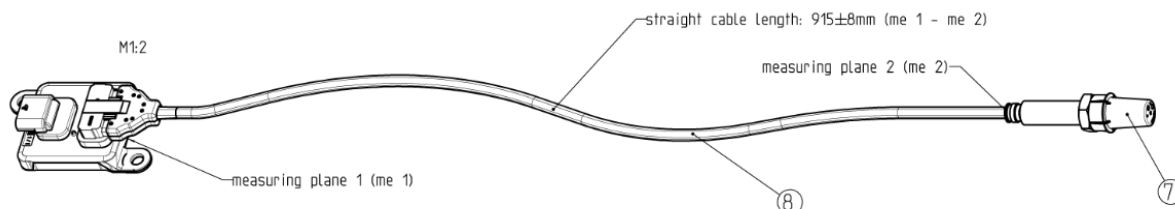
Fault Code	Fault Name
P23A3	Inlet NOx Sensor SAE J1939 Error (Binary Lambda Max)

1) Overview

CODE	REASON	EFFECT
U003217-03	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Depending on environment conditions, heating release every 10ms depending on release

4) Condition for Setting the Fault Code

Lambda signal exceeds max threshold

5) Condition for Clearing the Fault Code

No

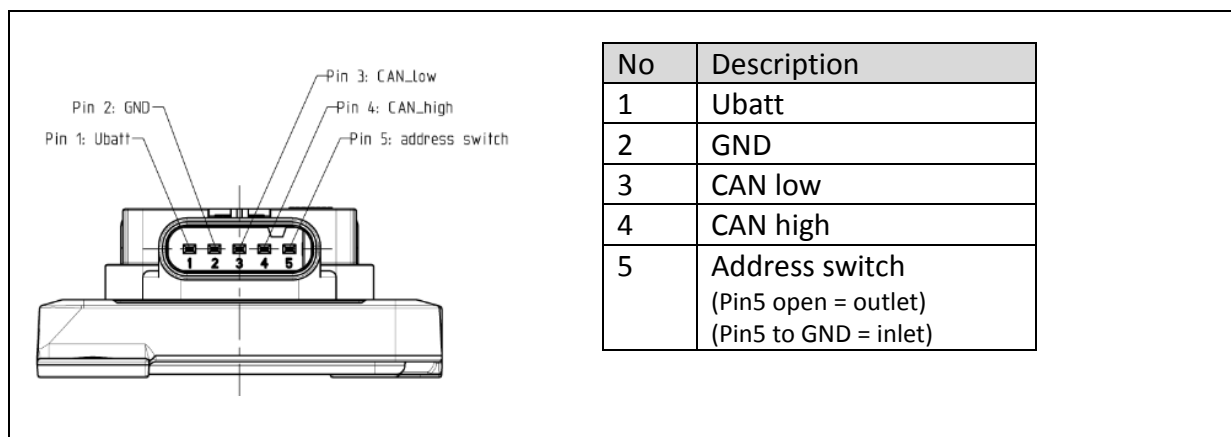
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23A3 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

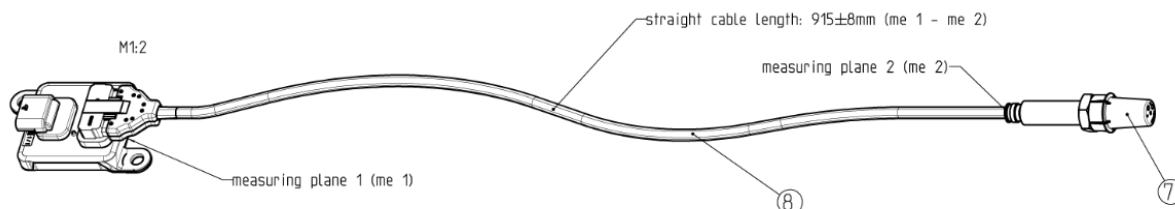
Fault Code	Fault Name
P23A4	Outlet NOx Sensor SAE J1939 Error (Binary Lambda Max)

1) Overview

CODE	REASON	EFFECT
U003227-03	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Depending on environment conditions, heating release every 10ms depending on release

4) Condition for Setting the Fault Code

Lambda signal exceeds max threshold

5) Condition for Clearing the Fault Code

No

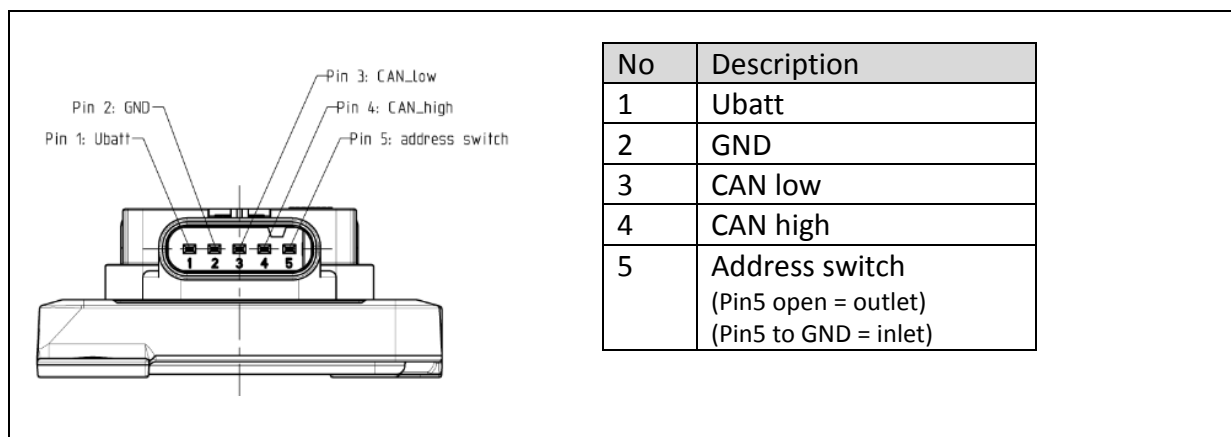
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23A4 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

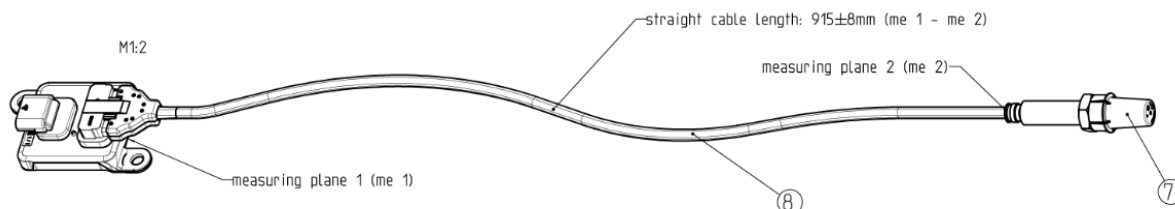
Fault Code	Fault Name
P23A5	Inlet NOx Sensor SAE J1939 Error (Binary Lambda Min)

1) Overview

CODE	REASON	EFFECT
U003217-04	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Depending on environment conditions, heating release every 10ms depending on release

4) Condition for Setting the Fault Code

Lambda signal exceeds min threshold

5) Condition for Clearing the Fault Code

No

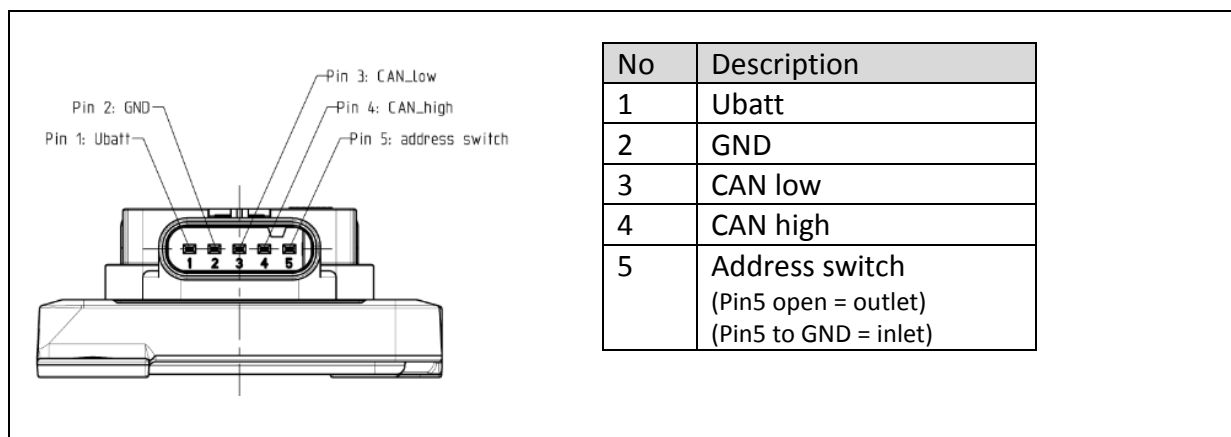
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23A5 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

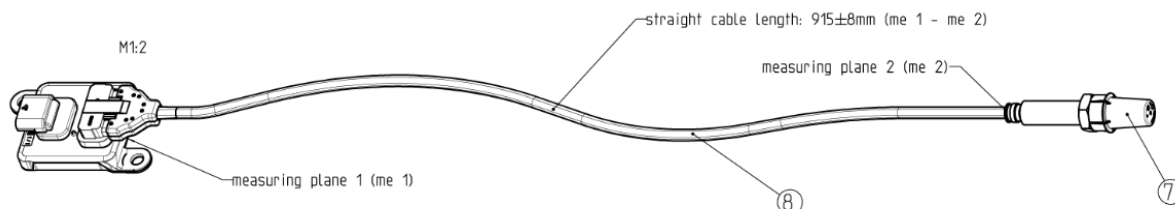
Fault Code	Fault Name
P23A6	Outlet NOx Sensor SAE J1939 Error (Binary Lambda Min)

1) Overview

CODE	REASON	EFFECT
U003227-04	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Depending on environment conditions, heating release every 10ms depending on release

4) Condition for Setting the Fault Code

Lambda signal exceeds min threshold

5) Condition for Clearing the Fault Code

No

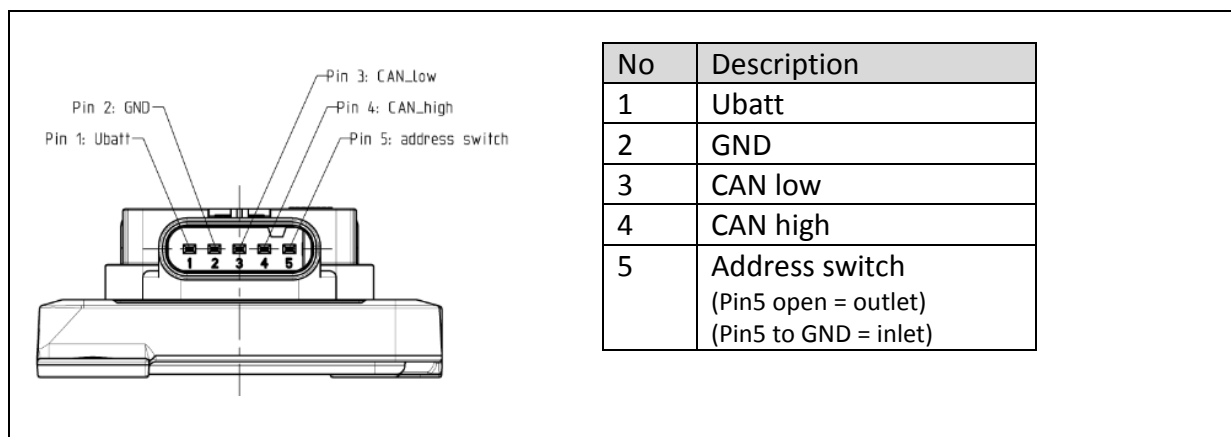
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23A6 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

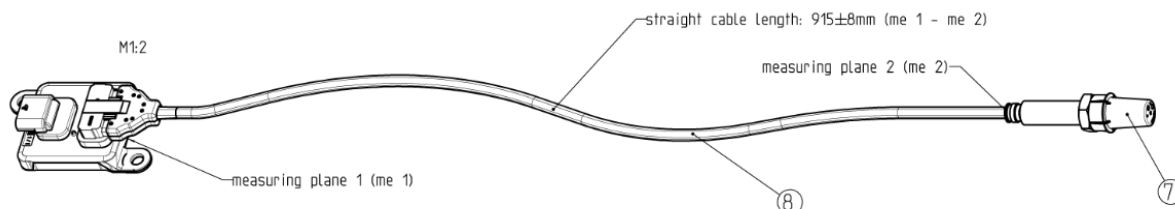
Fault Code	Fault Name
P23A7	Inlet NOx sensor SAE J1939 Error (Linear lambda Max)

1) Overview

CODE	REASON	EFFECT
U003221-03	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Depending on environment conditions, heating release
Every 10ms depending on release

4) Condition for Setting the Fault Code

Lambda signal exceeds max threshold

5) Condition for Clearing the Fault Code

No

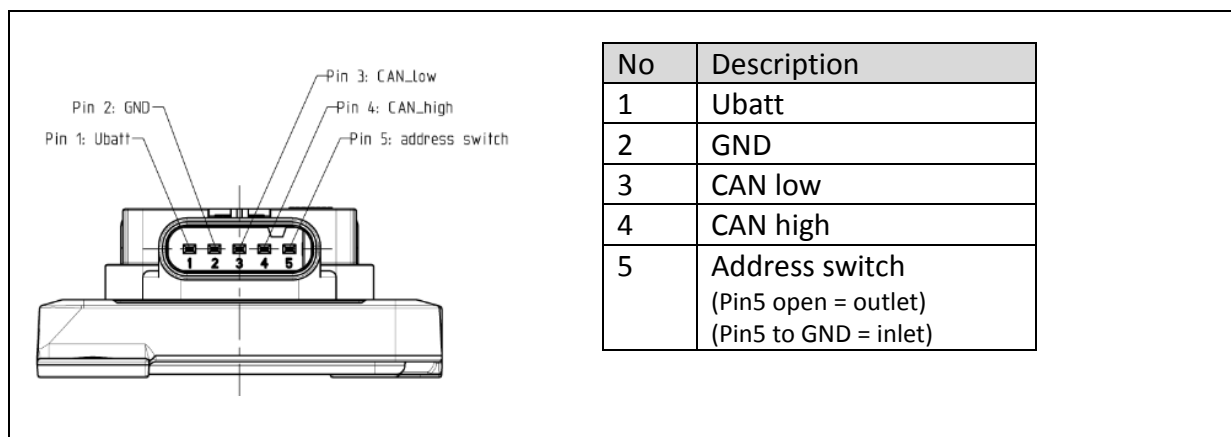
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23A7 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

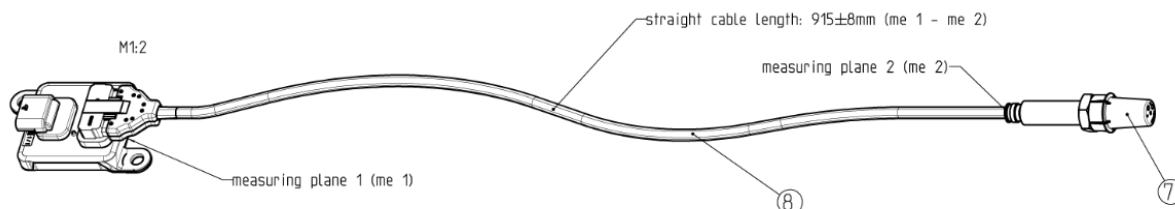
Fault Code	Fault Name
P23A8	Outlet NOx sensor SAE J1939 Error (Linear lambda Max)

1) Overview

CODE	REASON	EFFECT
U003231-03	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Depending on environment conditions, heating release
Every 10ms depending on release

4) Condition for Setting the Fault Code

Lambda signal exceeds max threshold

5) Condition for Clearing the Fault Code

No

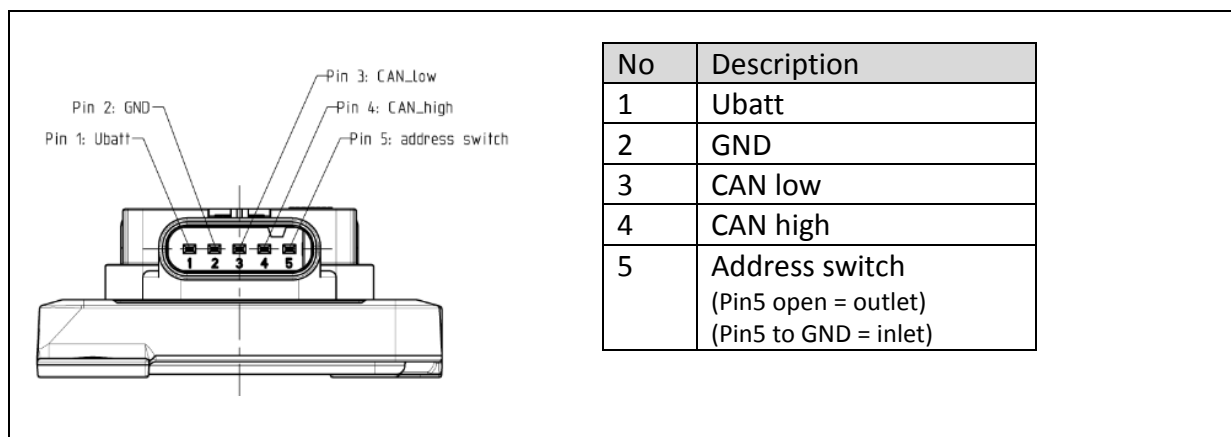
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23A8 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

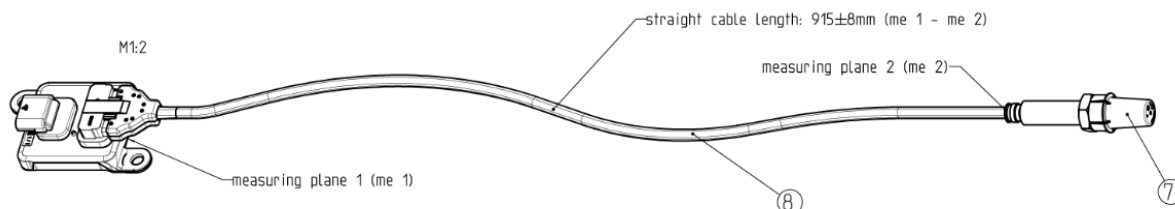
Fault Code	Fault Name
P23A9	Inlet NOx sensor SAE J1939 Error (Linear lambda Min)

1) Overview

CODE	REASON	EFFECT
U003221-04	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Depending on environment conditions, heating release
Every 10ms depending on release

4) Condition for Setting the Fault Code

Lambda signal exceeds min threshold

5) Condition for Clearing the Fault Code

No

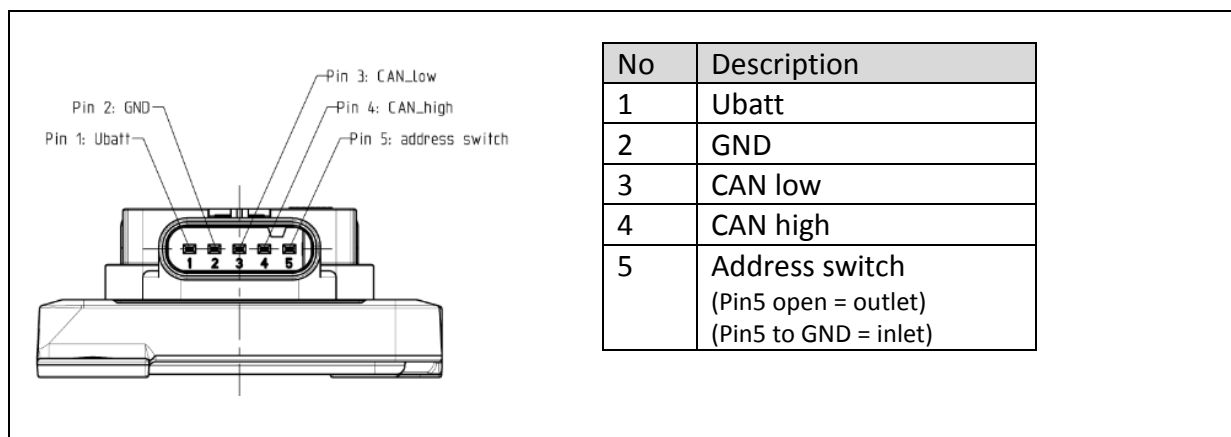
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23A9 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

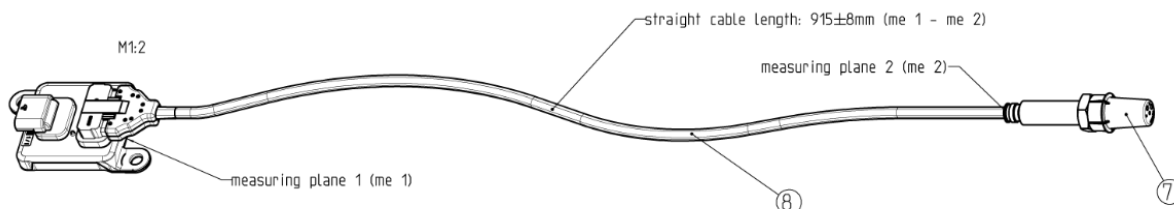
Fault Code	Fault Name
P23AA	Outlet NOx sensor SAE J1939 Error (Linear lambda Min)

1) Overview

CODE	REASON	EFFECT
U003231-04	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Depending on environment conditions, heating release
Every 10ms depending on release

4) Condition for Setting the Fault Code

Lambda signal exceeds min threshold

5) Condition for Clearing the Fault Code

No

6) Check List

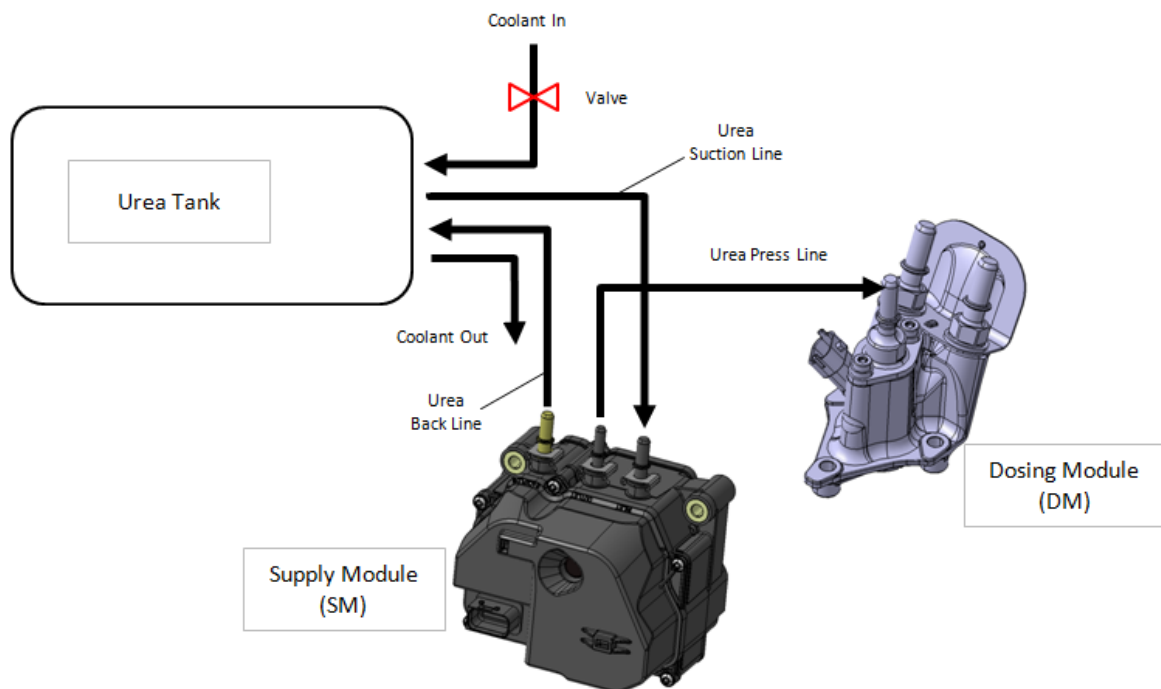
Step	Inspection	Standard Value	YES	NO
1	P23AA is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P23B0	Leakage Detection

1) Overview

CODE	REASON	EFFECT
U101239-07	Leakage in the system	

2) Component Location



3) Condition for Running Diagnostic

The plausibility is done, when the system is in "METERING CONTROL", there is no dosing, the environment pressure is high enough and the temperatures of reducing agent and environment are low enough. The calculation is done every 100ms

4) Condition for Setting the Fault Code

When the release conditions are met, the pressure is stable and the filtered duty cycle of the pump is above the expected duty cycle

5) Condition for Clearing the Fault Code

When the release conditions are met, the pressure is stable and the duty cycle of the pump is below the expected duty cycle


6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23B0 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check urea line (PL/BL/SL) Line problem?		Do necessary repair	Call Hot-line

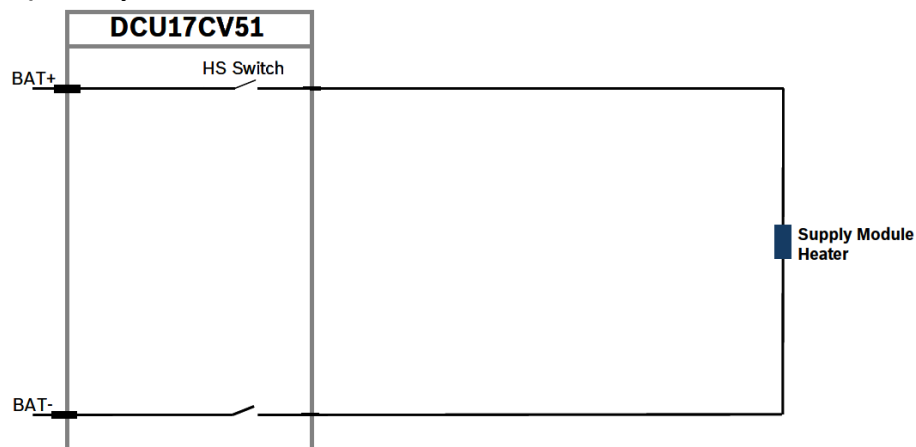
Fault Code	Fault Name
P23B2	Supply Module Heater Plausibility Error

1) Overview

CODE	REASON	EFFECT
U005706-22	Supply module problem Supply module heater problem Supply module connection problem	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

Supply module is defrosted and enabling conditions are fulfilled

4) Condition for Setting the Fault Code

After defrosting of the supply module the temperature of the supply module heater has not risen by the threshold and the temperature of the supply module has not risen by the threshold

5) Condition for Clearing the Fault Code

After defrosting of the supply module the temperature of the supply module heater has risen by the threshold and the temperature of supply module has risen by the threshold

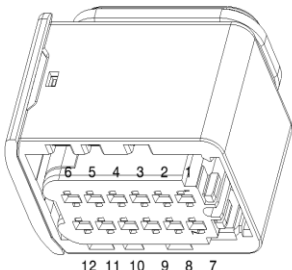
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23B2 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check actuator connection Connection problem?		Do necessary repair	Step 4
4	Check actuator resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line (Change SM)

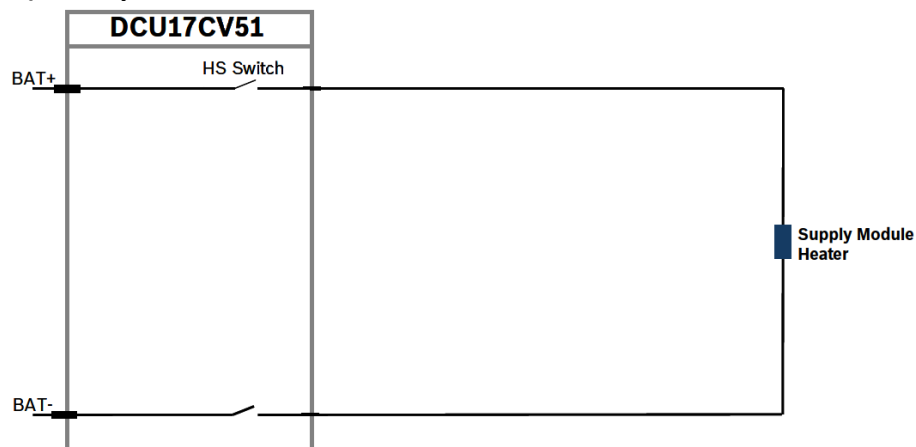
Fault Code	Fault Name
P23B3	Supply Module Heater Temperature Plausibility Error

1) Overview

CODE	REASON	EFFECT
U005706-26	Supply module problem Supply module heater problem Supply module connection problem	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

Supply module is defrosted and enabling conditions are fulfilled

4) Condition for Setting the Fault Code

After defrosting of the supply module the temperature of the supply module heater has not risen by the threshold but the temperature of the supply module has risen by the threshold

5) Condition for Clearing the Fault Code

After defrosting of the supply module the temperature of the supply module heater has risen by the threshold

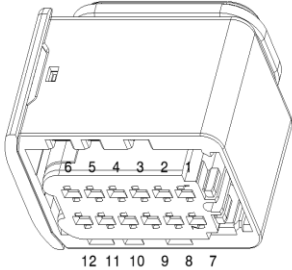
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23B3 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check actuator connection Connection problem?		Do necessary repair	Step 4
4	Check actuator resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line (Change SM)

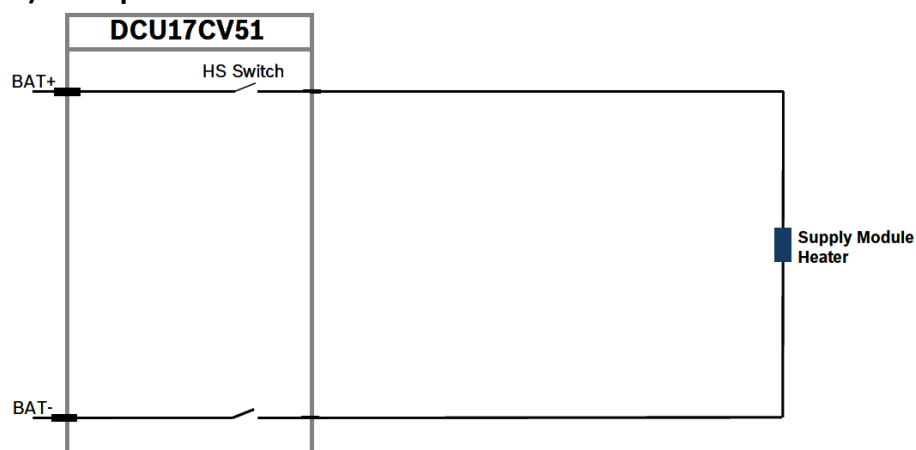
Fault Code	Fault Name
P23B4	Supply Module Heater Temperature cold start Plausibility Error

1) Overview

CODE	REASON	EFFECT
U005706-27	Supply module problem Supply module heater problem Supply module connection problem	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

Engine cold start is detected and enabling conditions are fulfilled

4) Condition for Setting the Fault Code

The difference between the sensed sensor signal of supply module heater temperature and the ambient air temperature is greater than a threshold

5) Condition for Clearing the Fault Code

The difference between the sensed sensor signal of supply module heater temperature and the ambient air temperature is below a threshold


6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23B4 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check actuator connection Connection problem?		Do necessary repair	Step 4
4	Check actuator resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line (Change SM)

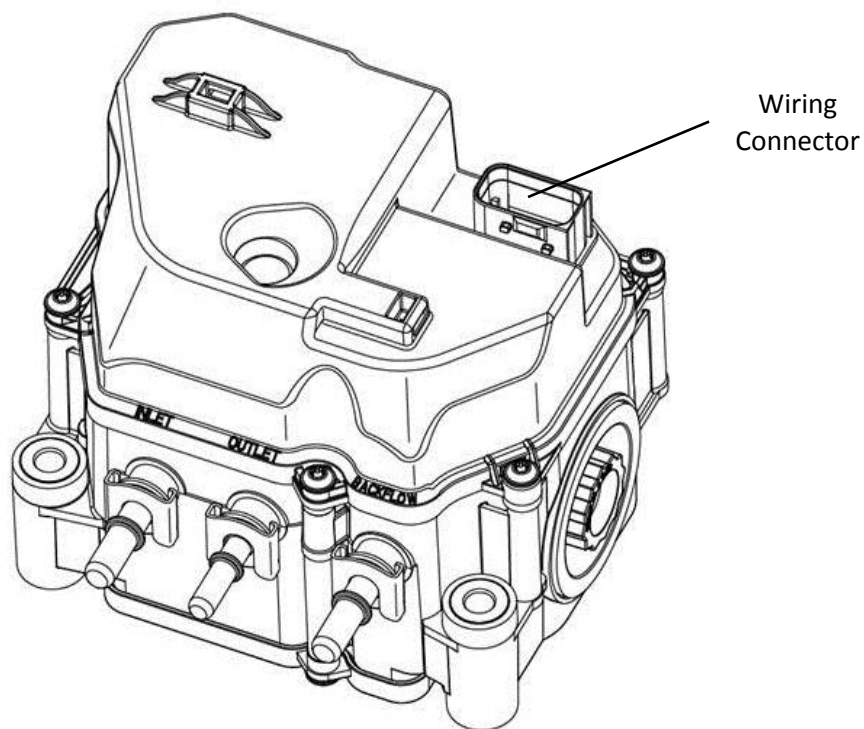
Fault Code	Fault Name
P23B5	Supply Module Temperature Plausibility Error

1) Overview

CODE	REASON	EFFECT
U005707-26	Supply module problem Supply module connection problem	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

Supply module is defrosted and enabling conditions are fulfilled

4) Condition for Setting the Fault Code

After defrosting of the supply module the temperature of the supply module has not risen by the threshold but the temperature of the supply module heater has risen by the threshold

5) Condition for Clearing the Fault Code

After defrosting of the supply module the temperature of the supply module has risen by the threshold

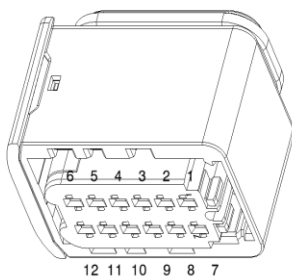
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23B5 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check actuator connection Connection problem?		Do necessary repair	Step 4
4	Check actuator resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line (Change SM)

Fault Code	Fault Name
P23B6	Supply Module Temperature cold start Plausibility Error

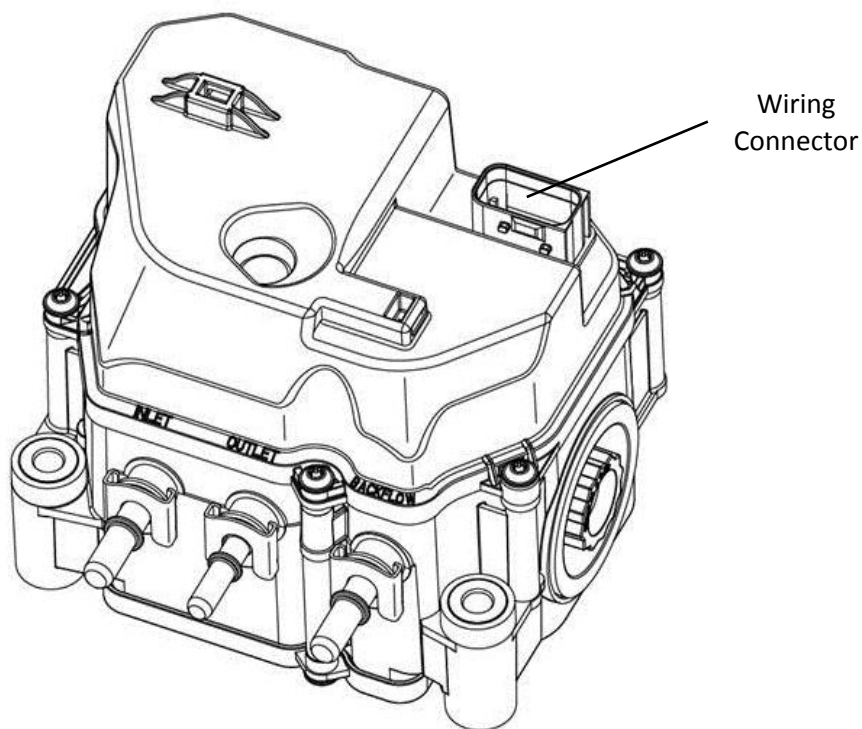
1) Overview

CODE	REASON	EFFECT
U005707-27	Supply module problem Supply module connection problem	



No.	DCU Pin	PIN description
1	Reserve	
2	76	Pump motor control signal
3	55	Pump motor Ubat+
4	54	Pump motor GND
5	77	Purging pump Ubat+
6	78	Purging pump GND
7	Reserve	
8	40	Pressure sensor GND
9	39	Pressure sensor signal
10	17	Pressure sensor Ubat+
11	4	Heater Ubat+
12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

Engine cold start is detected and enabling conditions are fulfilled

4) Condition for Setting the Fault Code

The difference between the sensed sensor signal of supply module temperature and the ambient air temperature is greater than a threshold

5) Condition for Clearing the Fault Code

The difference between the sensed sensor signal of supply module temperature and the ambient air temperature is below a threshold

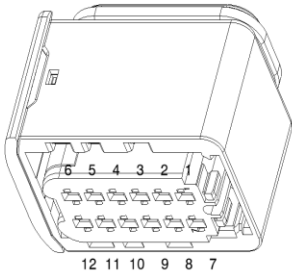
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23B6 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check actuator connection Connection problem?		Do necessary repair	Step 4
4	Check actuator resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line (Change SM)

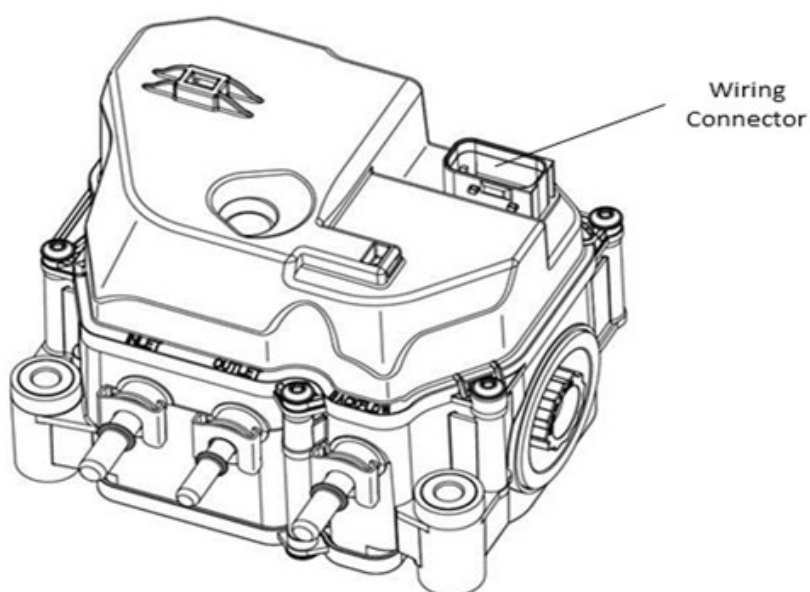
Fault Code	Fault Name
P23BA	DEF Pump Pressure Too Low

1) Overview

CODE	REASON	EFFECT
U004334-21	Supply module problem Pressure sensor problem Dosing valve problem Urea line problem	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

When after the pressure compensation (key off)

4) Condition for Setting the Fault Code

In case the measured pressure is below or equal than the lower tolerable limit

5) Condition for Clearing the Fault Code

A healing is not possible in the same driving cycle

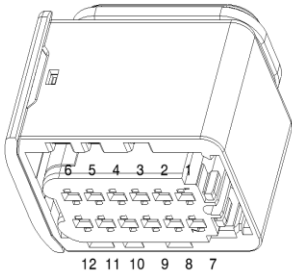
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23BA is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check actuator connection Connection problem?		Do necessary repair	Step 5
5	Check urea line Urea line problem?		Do necessary repair	Step 6
6	Check sensor/actuator resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor/actuator	Call Hot-line

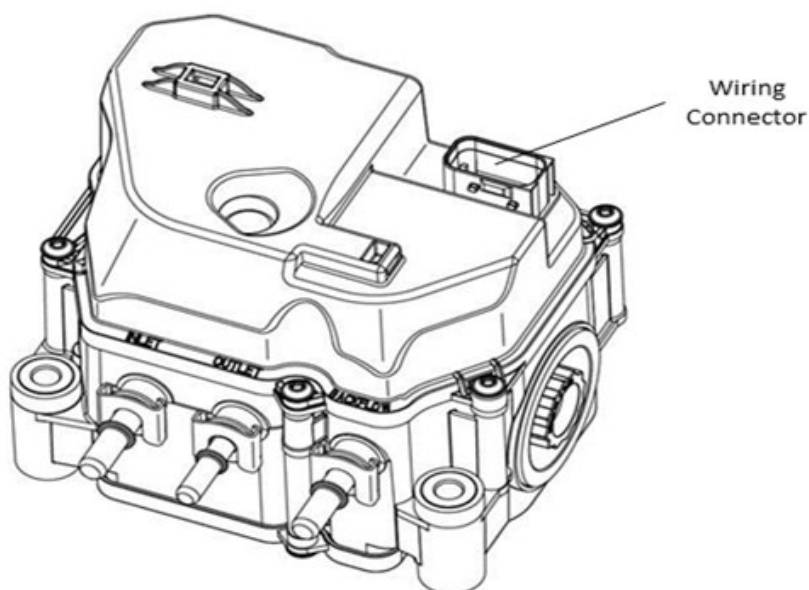
Fault Code	Fault Name
P23BB	DEF Pump Pressure Too High

1) Overview

CODE	REASON	EFFECT
U004334-20	Supply module problem Pressure sensor problem Dosing valve problem Urea line problem	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

When after the pressure compensation (key off)

4) Condition for Setting the Fault Code

In case the measured pressure is above or equal than the upper tolerable limit

5) Condition for Clearing the Fault Code

A healing is not possible in the same driving cycle

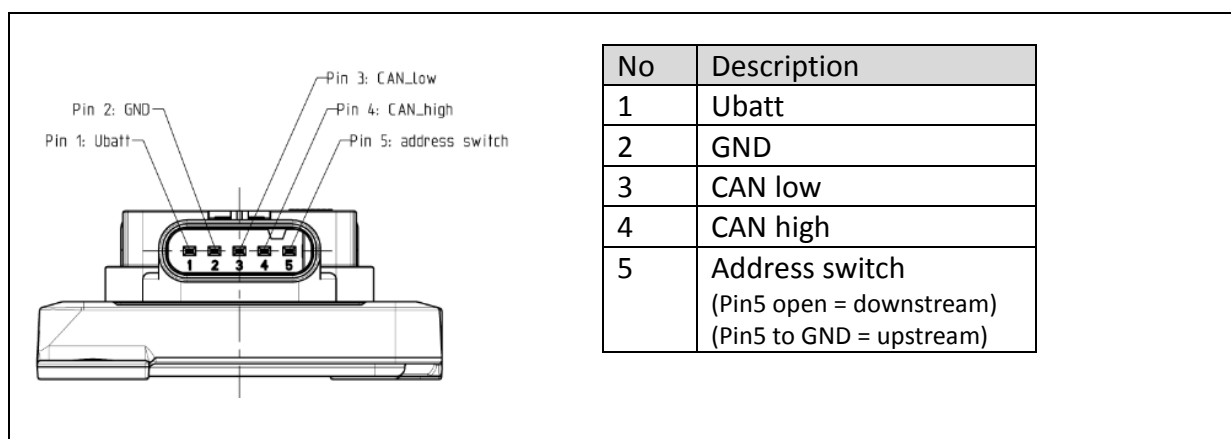
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23BB is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check actuator connection Connection problem?		Do necessary repair	Step 5
5	Check urea line Urea line problem?		Do necessary repair	Step 6
6	Check sensor/actuator resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor/actuator	Call Hot-line

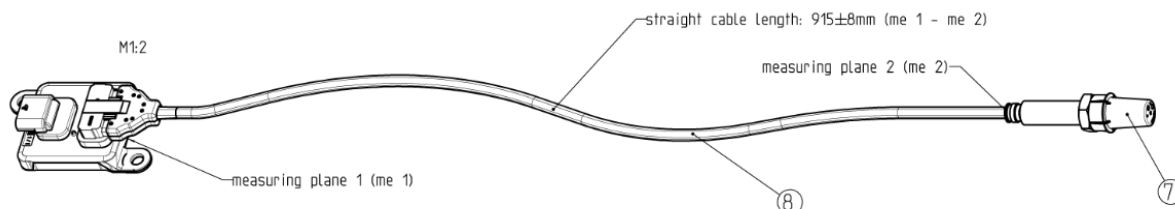
Fault Code	Fault Name
P23C1	Upstream Nox O2 Plausibility (Full-Load)

1) Overview

CODE	REASON	EFFECT
U003217-00	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

During Full-Load, at stable O2-model values and environment conditions

4) Condition for Setting the Fault Code

The average percental deviation of measured value in relation to model value is greater than a threshold

5) Condition for Clearing the Fault Code

The average percental deviation of measured value in relation to model value is less than a threshold

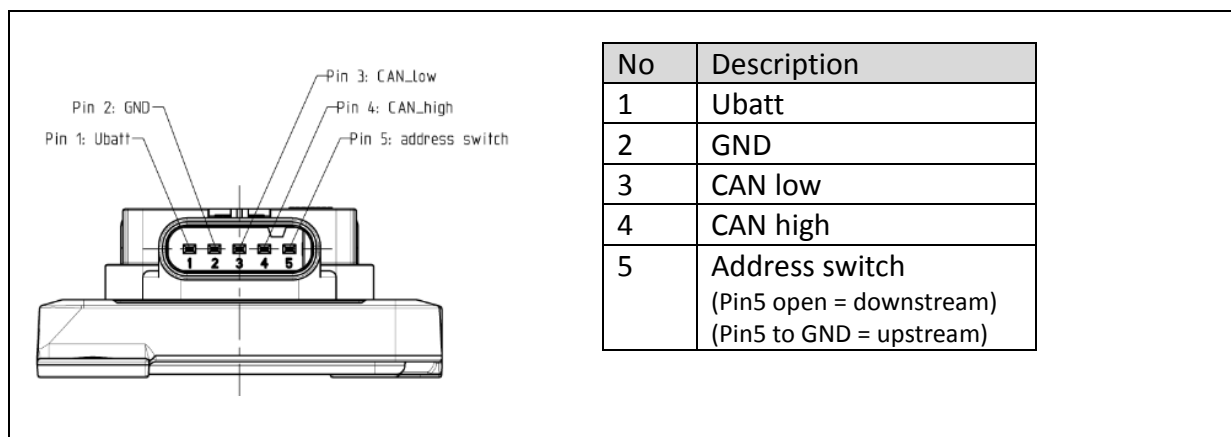
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23C1 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

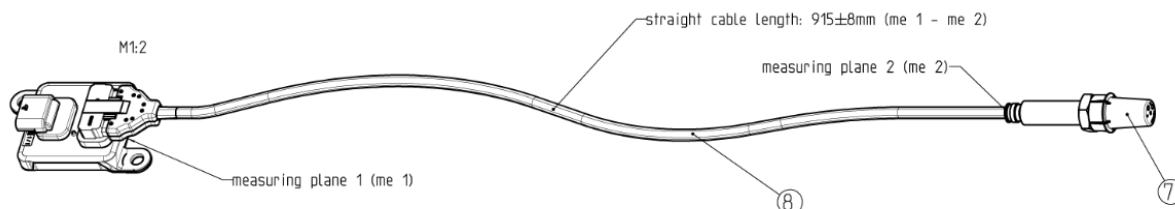
Fault Code	Fault Name
P23C2	outlet Nox O2 Plausibility (Full-Load)

1) Overview

CODE	REASON	EFFECT
U003227-01	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

During Full-Load, at stable O2-model values and environment conditions

4) Condition for Setting the Fault Code

The average percental deviation of measured value in relation to model value is greater than a threshold

5) Condition for Clearing the Fault Code

The average percental deviation of measured value in relation to model value is less than a threshold

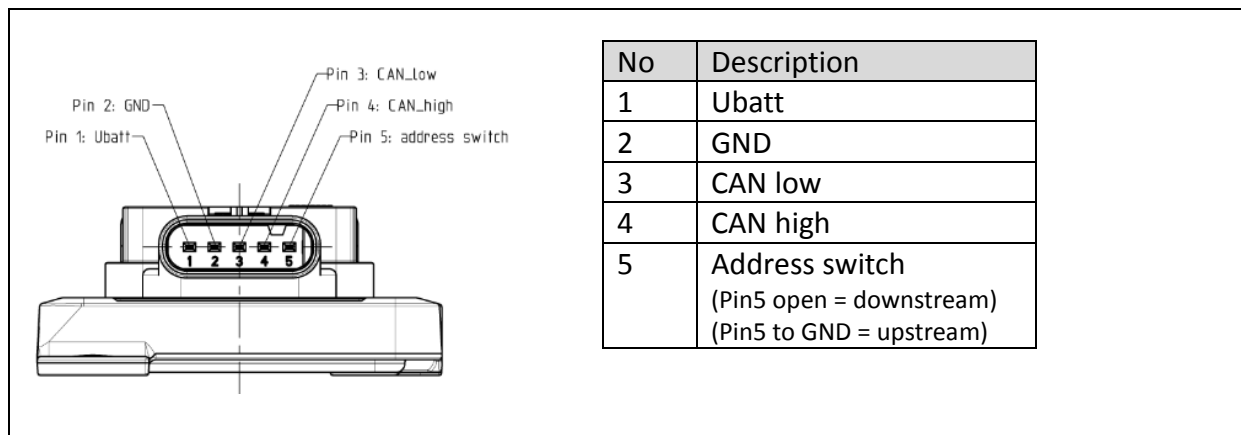
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23C2 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

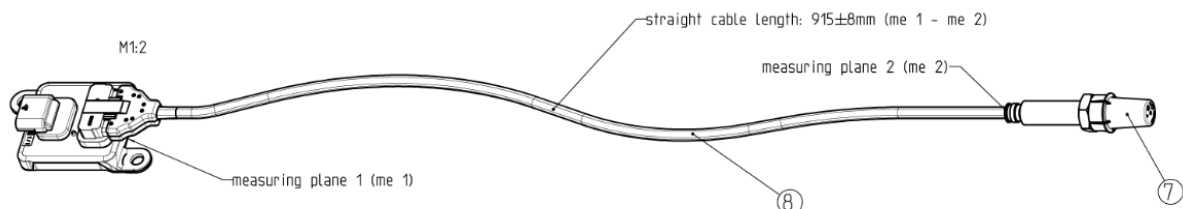
Fault Code	Fault Name
P23C3	O2 Plausibility in overrun (Sensor 1)

1) Overview

CODE	REASON	EFFECT
U003217-21	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

During overrun, at stable O2-model values and environment conditions

4) Condition for Setting the Fault Code

The average percental deviation of measured value in relation to model value is greater than a threshold

5) Condition for Clearing the Fault Code

The average percental deviation of measured value in relation to model value is less than a threshold

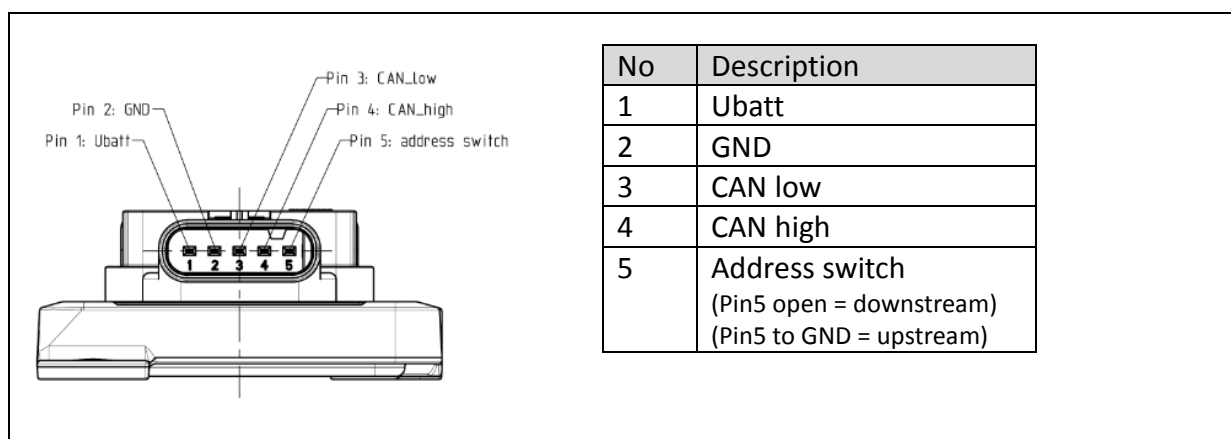
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23C3 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

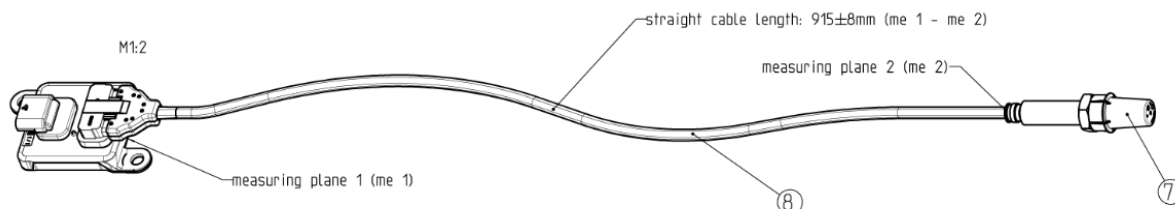
Fault Code	Fault Name
P23C4	O2 Plausibility in overrun (Sensor 2)

1) Overview

CODE	REASON	EFFECT
U003227-22	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

During overrun, at stable O2-model values and environment conditions

4) Condition for Setting the Fault Code

The average percental deviation of measured value in relation to model value is greater than a threshold

5) Condition for Clearing the Fault Code

The average percental deviation of measured value in relation to model value is less than a threshold

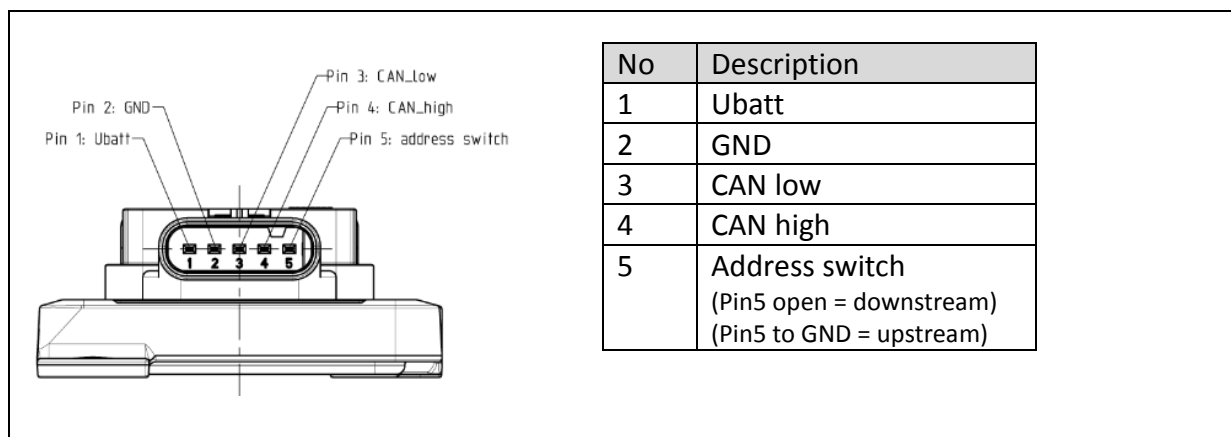
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23C4 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

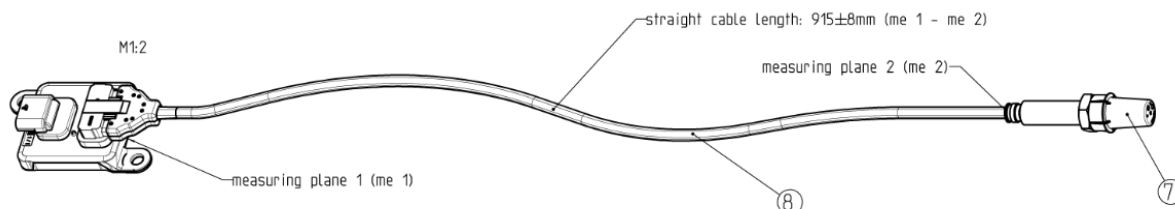
Fault Code	Fault Name
P23C5	O2 Plausibility in part load (Sensor 1)

1) Overview

CODE	REASON	EFFECT
U003217-23	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

During part-load, at stable O2-model values and environment conditions

4) Condition for Setting the Fault Code

The average percental deviation of measured value in relation to model value is greater than a threshold

5) Condition for Clearing the Fault Code

The average percental deviation of measured value in relation to model value is less than a threshold

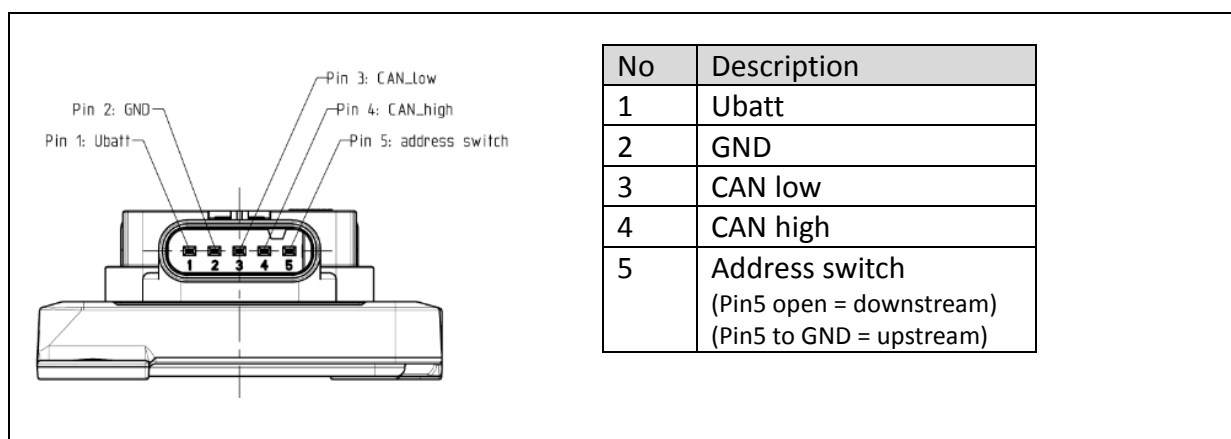
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23C5 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

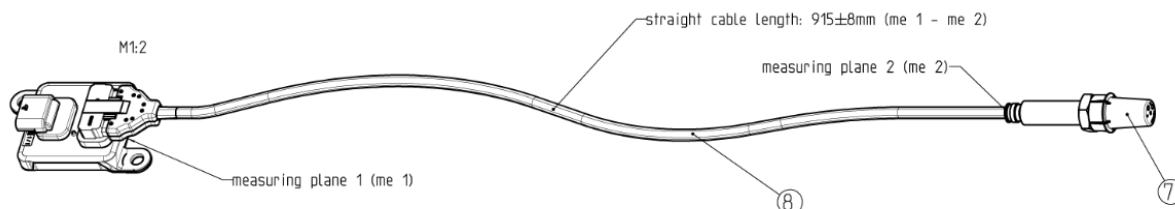
Fault Code	Fault Name
P23C6	O2 Plausibility in part load (Sensor 2)

1) Overview

CODE	REASON	EFFECT
U003227-24	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

During part-load, at stable O2-model values and environment conditions

4) Condition for Setting the Fault Code

The average percental deviation of measured value in relation to model value is greater than a threshold

5) Condition for Clearing the Fault Code

The average percental deviation of measured value in relation to model value is less than a threshold

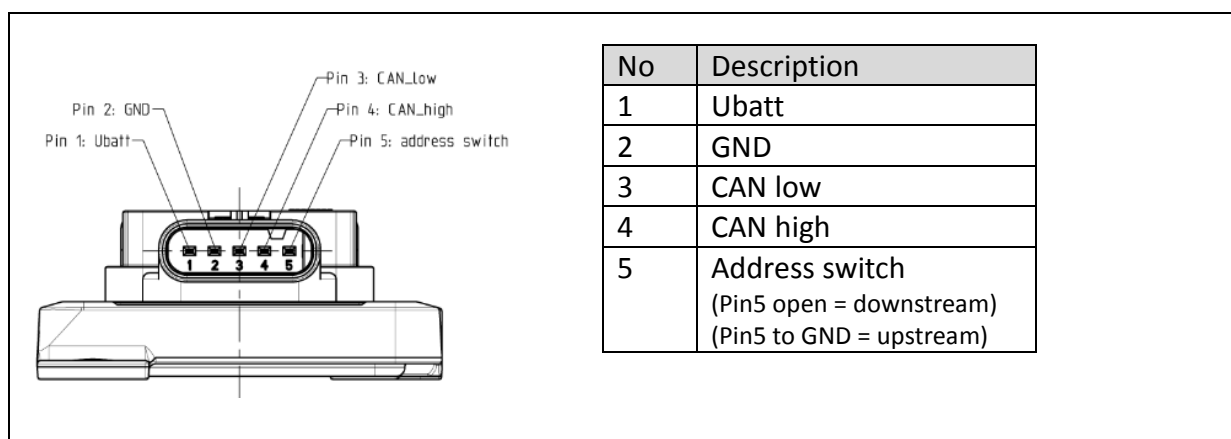
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23C6 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

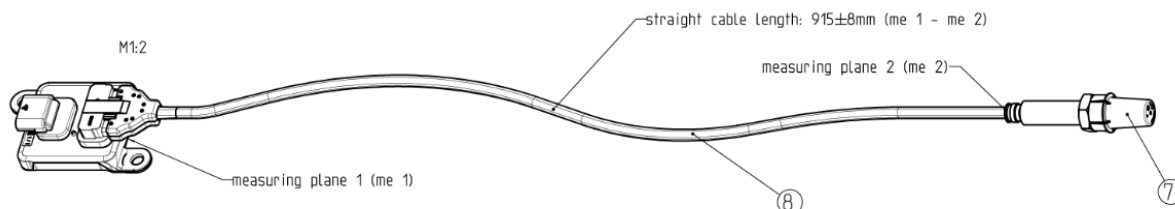
Fault Code	Fault Name
P23D1	inlet Nox Dynamic Error (O2 Signal High)

1) Overview

CODE	REASON	EFFECT
U003220-23	Network problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Time synchronous in case of load to overrun transition

4) Condition for Setting the Fault Code

The measured O2 concentration of upstream NOx sensor does not rise to the low and high threshold within the limited times at a load to overrun transition

5) Condition for Clearing the Fault Code

If the high threshold is reached within the maximum calibrated time limit and the state "DIA" is reached

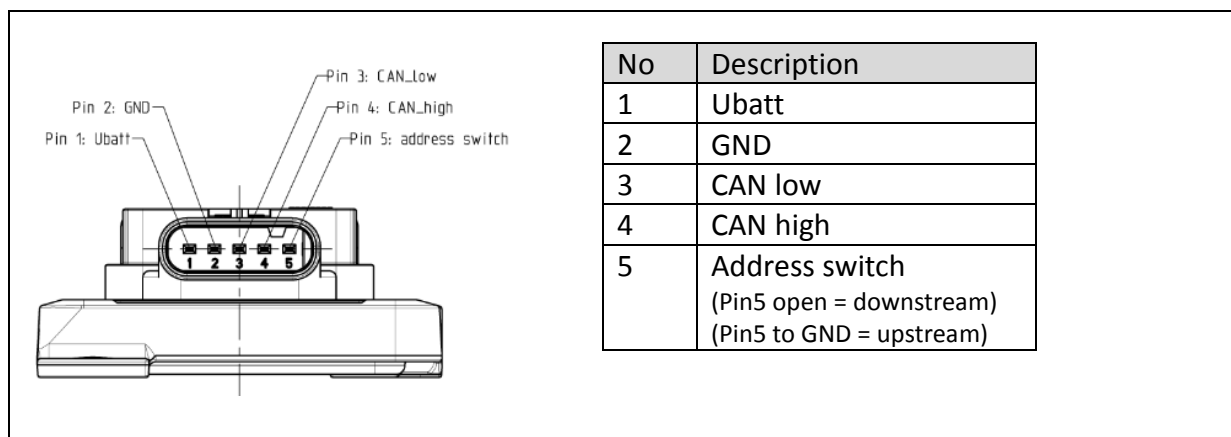
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23D1 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

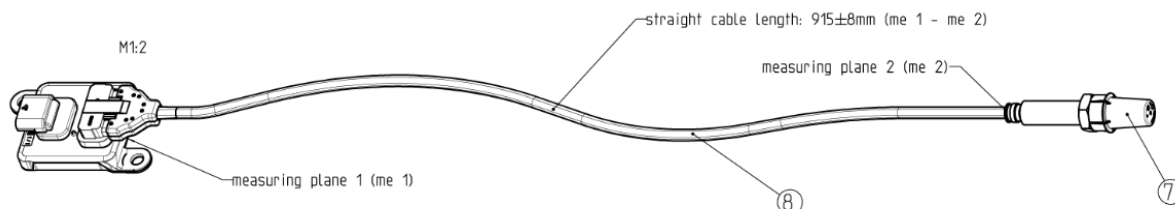
Fault Code	Fault Name
P23D2	outlet Nox Dynamic Error (O2 Signal High)

1) Overview

CODE	REASON	EFFECT
U003220-24	Network problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Time synchronous in case of load to overrun transition

4) Condition for Setting the Fault Code

The measured O2 concentration of downstream NOx sensor does not rise to the low and high threshold within the limited times at a load to overrun transition

5) Condition for Clearing the Fault Code

If the high threshold is reached within the maximum calibrated time limit and the state "DIA" is reached

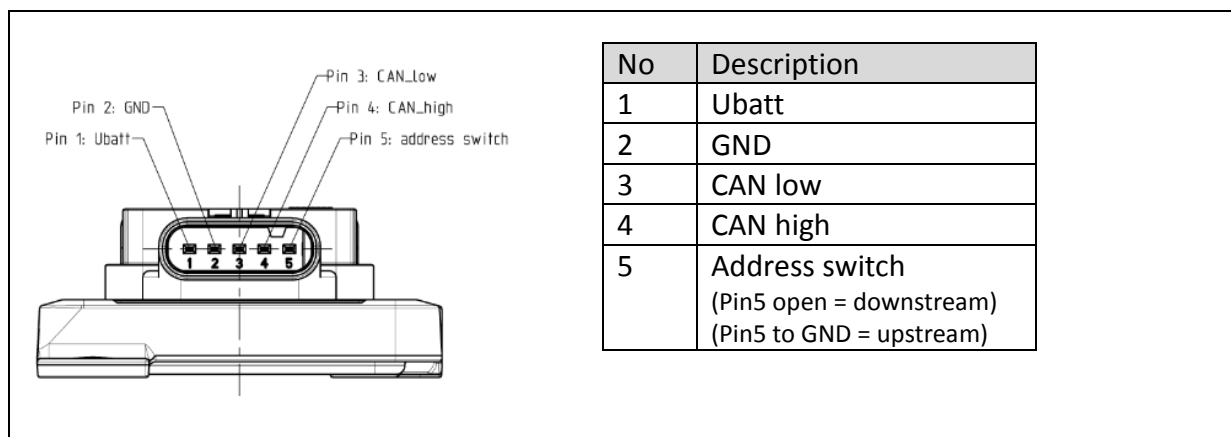
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23D2 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

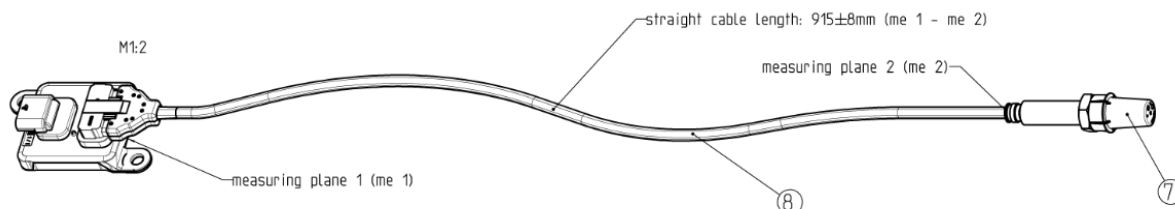
Fault Code	Fault Name
P23D3	inlet Nox Dynamic Error (O2 Signal Low)

1) Overview

CODE	REASON	EFFECT
U003220-25	Network problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Time synchronous in case of load to overrun transition

4) Condition for Setting the Fault Code

The measured O2 concentration of upstream NOx sensor does not rise to the threshold within the limited times at a load to overrun transition

5) Condition for Clearing the Fault Code

If the low threshold is reached within the maximum calibrated time limit and the state "DIA" is reached

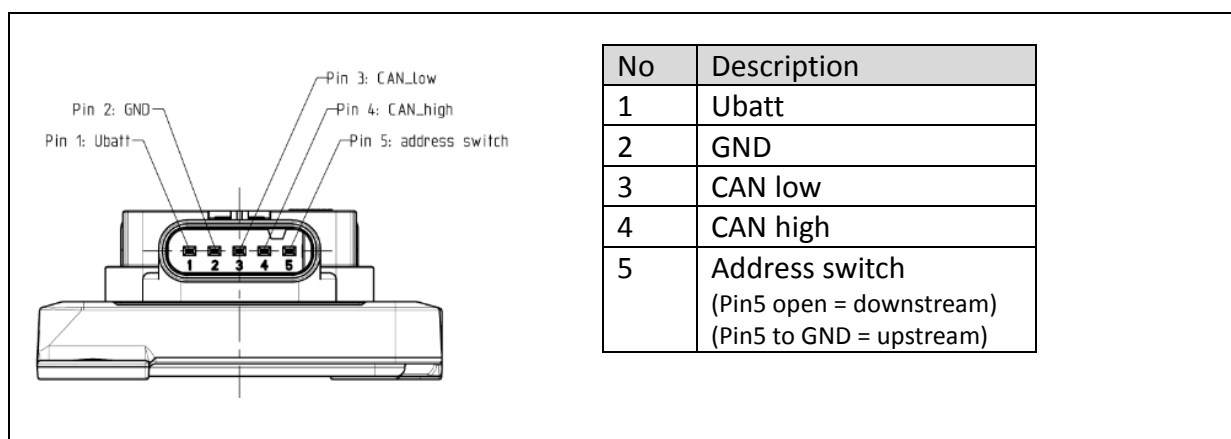
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23D3 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

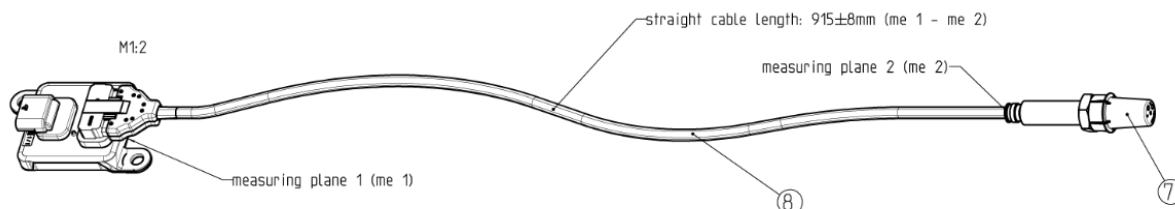
Fault Code	Fault Name
P23D4	outlet Nox Dynamic Error (O2 Signal Low)

1) Overview

CODE	REASON	EFFECT
U003220-26	Network problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Time synchronous in case of load to overrun transition

4) Condition for Setting the Fault Code

The measured O2 concentration of downstream NOx sensor does not rise to the low threshold within the limited times at a load to overrun transition

5) Condition for Clearing the Fault Code

If the low threshold is reached within the maximum calibrated time limit and the state "DIA" is reached

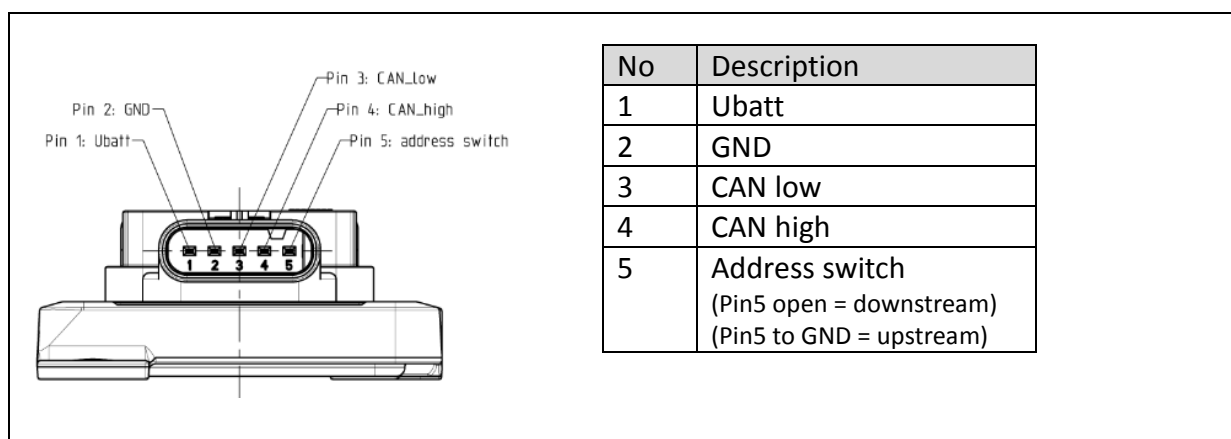
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23D4 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

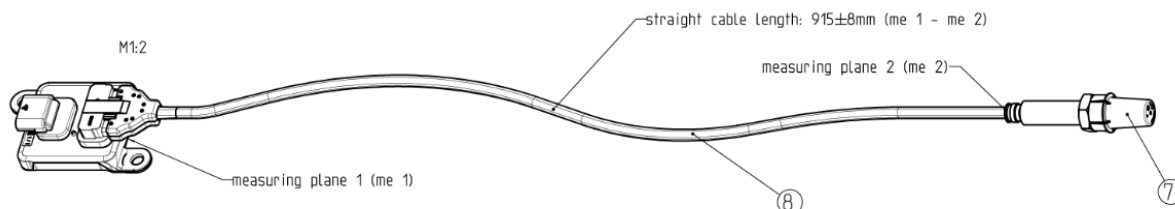
Fault Code	Fault Name
P23E1	inlet Nox Delay (O2 Signal Low)

1) Overview

CODE	REASON	EFFECT
U003218-23	Network problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Time synchronous in case of load to overrun transition

4) Condition for Setting the Fault Code

The selected O2 signal concentration of upstream NOx sensor does not falls to the high threshold within the limited time and at an overrun to load transition

5) Condition for Clearing the Fault Code

The selected O2 signal concentration of upstream NOx sensor falls to the high threshold within the permissible time at an overrun to load transition

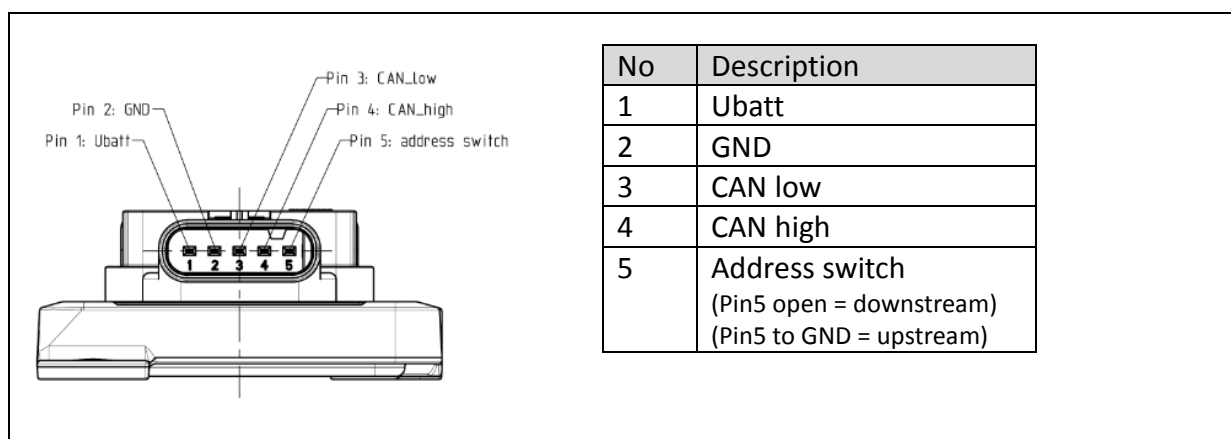
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23E1 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

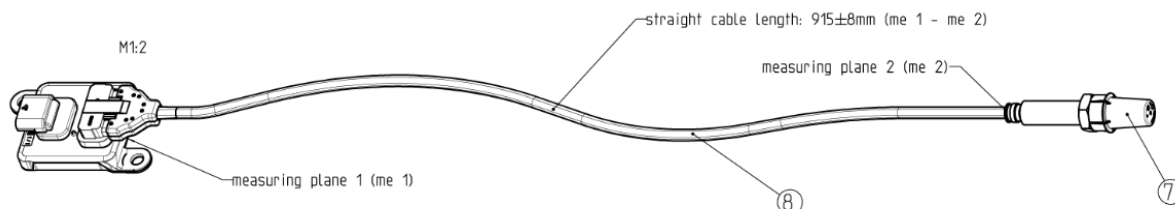
Fault Code	Fault Name
P23E2	outlet Nox Delay (O2 Signal Low)

1) Overview

CODE	REASON	EFFECT
U003228-23	Network problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Time synchronous in case of load to overrun transition

4) Condition for Setting the Fault Code

The selected O2 signal concentration of downstream NOx sensor does not falls to the high threshold within the limited time and at an overrun to load transition

5) Condition for Clearing the Fault Code

The selected O2 signal concentration of downstream NOx sensor falls to the high threshold within the permissible time at an overrun to load transition

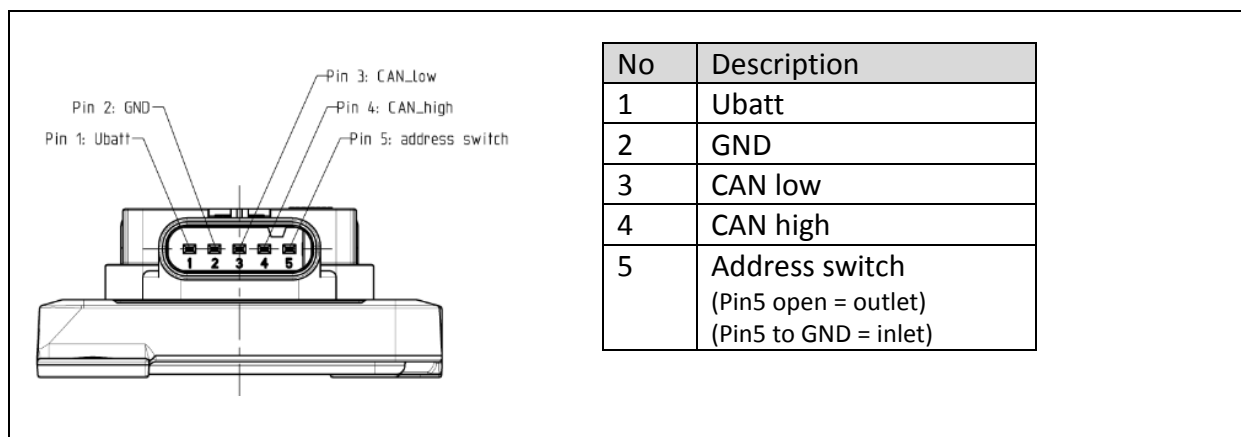
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23E2 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

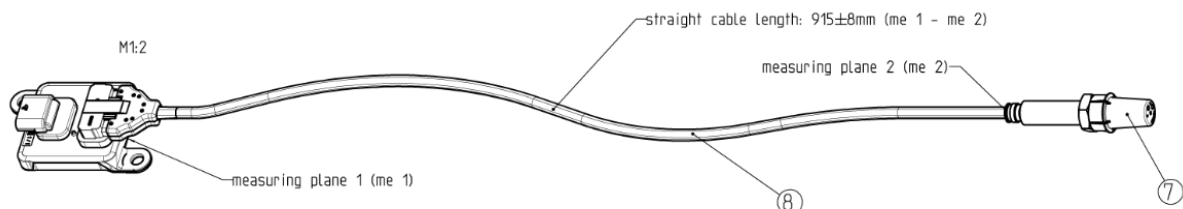
Fault Code	Fault Name
P23EE	Inlet NOx sensor Wire monitoring

1) Overview

CODE	REASON	EFFECT
U003220-21	DCU connection problem Sensor connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

In case of stable environment conditions, every 10ms depending on release
: Exhaust gas temperature and battery voltage are in defined range and heating is release

4) Condition for Setting the Fault Code

The sensor detects and error in voltage supply

5) Condition for Clearing the Fault Code

No

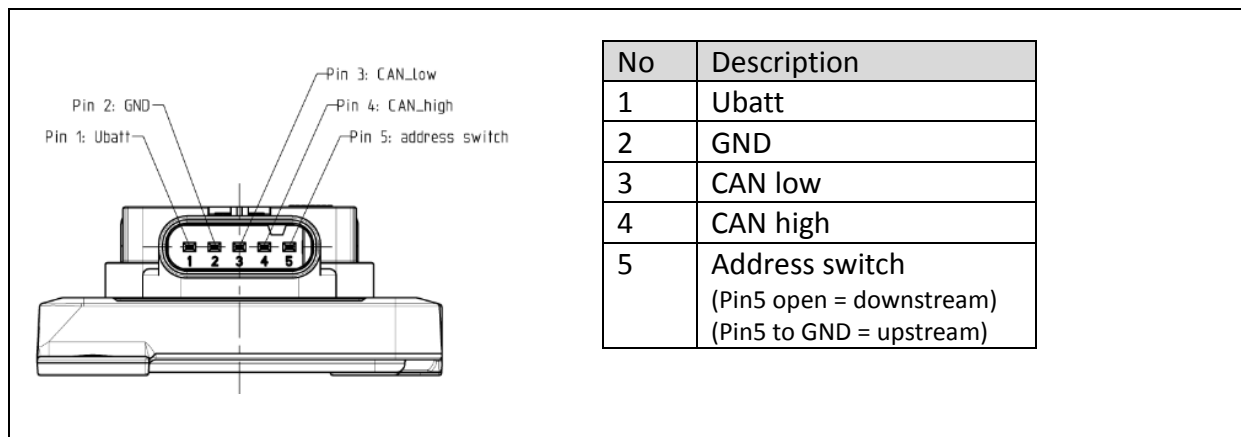
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23EE is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

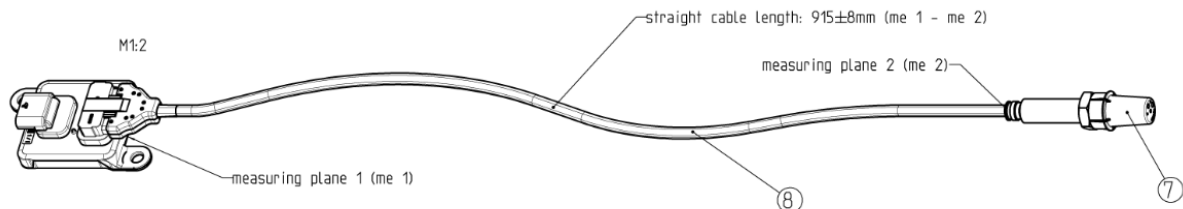
Fault Code	Fault Name
P23EF	Outlet NOx sensor Wire monitoring

1) Overview

CODE	REASON	EFFECT
U003220-22	DCU connection problem Sensor connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

In case of stable environment conditions, every 10ms depending on release
: Exhaust gas temperature and battery voltage are in defined range and heating is release

4) Condition for Setting the Fault Code

The sensor detects and error in voltage supply

5) Condition for Clearing the Fault Code

No

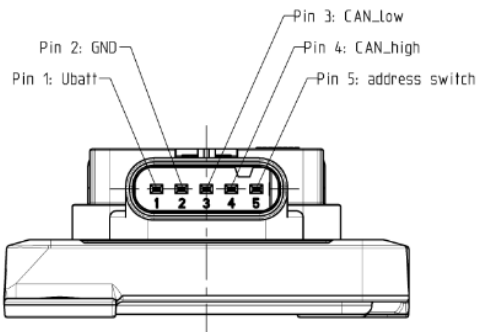
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23EF is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P23F0	inlet Nox Delay (O2 Signal High)

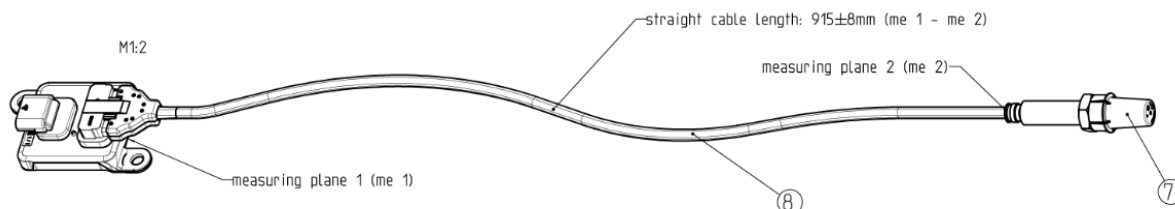
1) Overview

CODE	REASON	EFFECT
U003218-07	Network problem Sensor problem	



No	Description
1	Ubatt
2	GND
3	CAN low
4	CAN high
5	Address switch (Pin5 open = downstream) (Pin5 to GND = upstream)

2) Component Location



3) Condition for Running Diagnostic

Time synchronous in case of load to overrun transition

4) Condition for Setting the Fault Code

The selected O2 signal concentration of upstream NOx sensor does not falls to the low threshold within the limited time and at an overrun to load transition

5) Condition for Clearing the Fault Code

The selected O2 signal concentration of upstream NOx sensor falls to the low threshold within the permissible time at an overrun to load transition

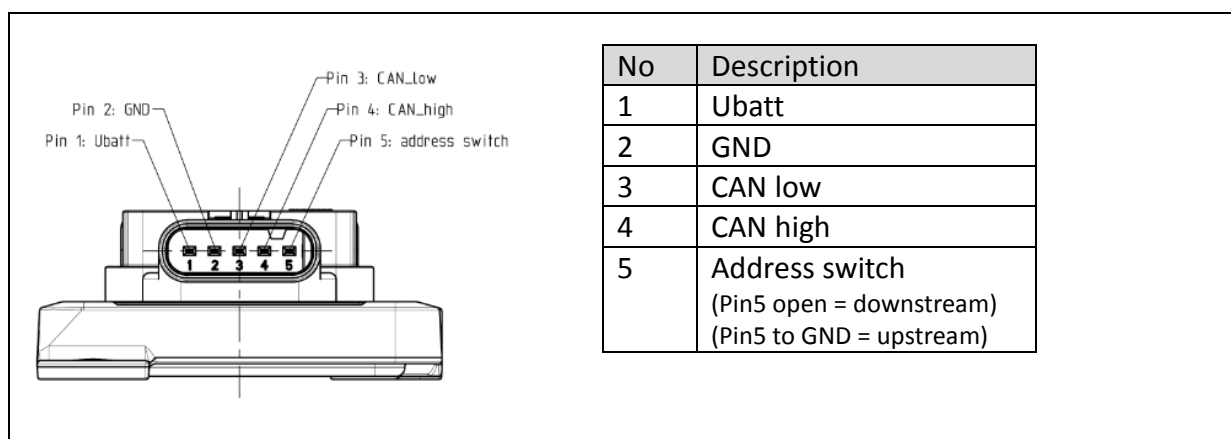
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23F0 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

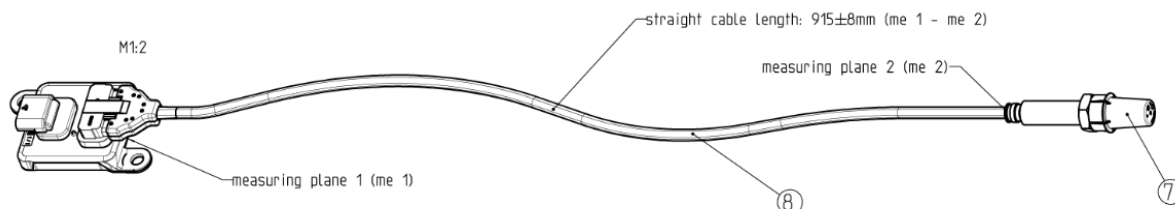
Fault Code	Fault Name
P23F1	outlet Nox Delay (O2 Signal High)

1) Overview

CODE	REASON	EFFECT
U003228-07	Network problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Time synchronous in case of load to overrun transition

4) Condition for Setting the Fault Code

The selected O2 signal concentration of downstream NOx sensor does not falls to the low threshold within the limited time and at an overrun to load transition

5) Condition for Clearing the Fault Code

The selected O2 signal concentration of downstream NOx sensor falls to the low threshold within the permissible time at an overrun to load transition

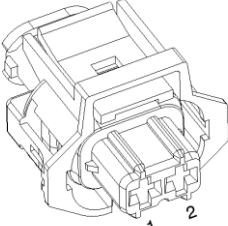
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P23F1 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P24F4	SCR Inlet Temperature Static Plausibility

1) Overview

CODE	REASON	EFFECT
U004360-22	SCR inlet temperature sensor error (or install error)	

	No.	DCU Pin	PIN description
	1	83	Catalyst temperature sensor 1 signal
	2	61	Catalyst temperature sensor 1 ground

2) Component Location

3) Condition for Running Diagnostic

Engine cold start

4) Condition for Setting the Fault Code

The difference between the sensed signal of SCR inlet temperature and ambient air temperature is greater than a threshold

5) Condition for Clearing the Fault Code

The difference between the sensed signal of SCR inlet temperature and ambient air temperature is below a threshold

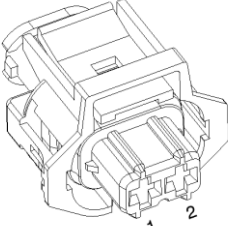
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P24F4 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Call Hot-line

Fault Code	Fault Name
P24F5	SCR Inlet Temperature Plausibility Min

1) Overview

CODE	REASON	EFFECT
U004360-21	SCR inlet temperature sensor error (or install error)	

	No.	DCU Pin	PIN description
	1	83	Catalyst temperature sensor 1 signal
	2	61	Catalyst temperature sensor 1 ground

2) Component Location

3) Condition for Running Diagnostic

SCR inlet temperature is sufficiently high to detect

4) Condition for Setting the Fault Code

The difference between the sensed signal of SCR inlet temperature and calculated model temperature is less than a threshold

5) Condition for Clearing the Fault Code

The difference between the sensed signal of SCR inlet temperature and calculated model temperature lies within a suitable range

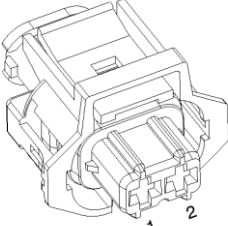
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P24F5 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Call Hot-line

Fault Code	Fault Name
P24F6	SCR Inlet Temperature Plausibility Max

1) Overview

CODE	REASON	EFFECT
U004360-20	SCR inlet temperature sensor error (or install error)	

			
	No.	DCU Pin	PIN description
	1	83	Catalyst temperature sensor 1 signal
	2	61	Catalyst temperature sensor 1 ground

2) Component Location

3) Condition for Running Diagnostic

SCR inlet temperature is sufficiently high to detect

4) Condition for Setting the Fault Code

The difference between the sensed signal of SCR inlet temperature and calculated model temperature is greater than a threshold

5) Condition for Clearing the Fault Code

The difference between the sensed signal of SCR inlet temperature and calculated model temperature lies within a suitable range

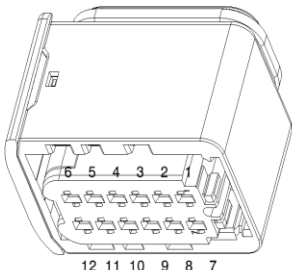
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P24F6 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Call Hot-line

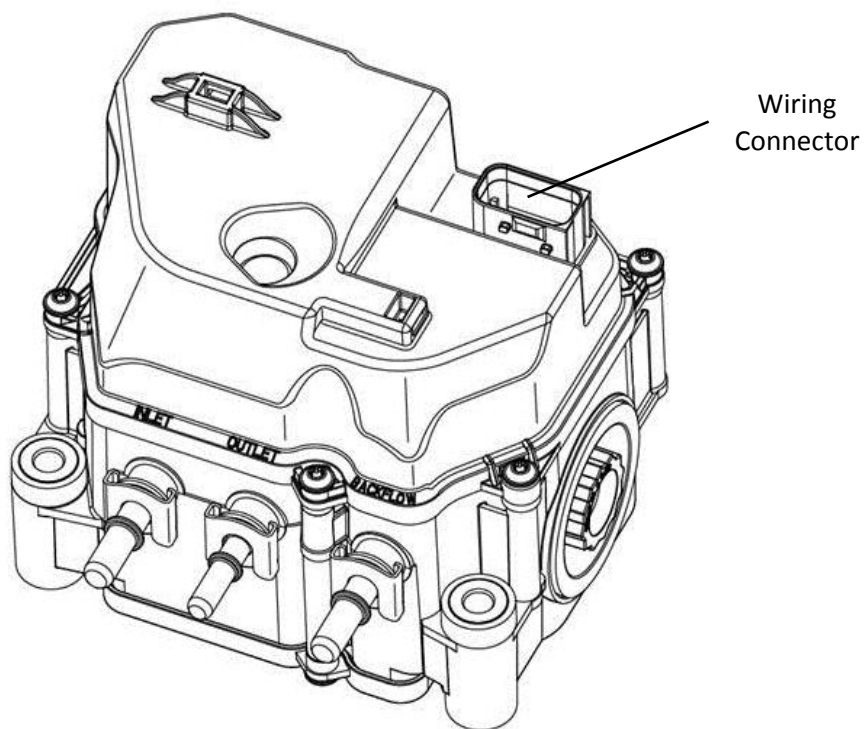
Fault Code	Fault Name
P25E0	Supply Module Heater Duty Low

1) Overview

CODE	REASON	EFFECT
U005706-24	Supply Heater Module temperature Duty cycle below Minimum range	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

4) Condition for Setting the Fault Code

When the sensor value (raw duty cycle) is less than 4%

5) Condition for Clearing the Fault Code

When the sensor value (raw duty cycle) is greater than 4%

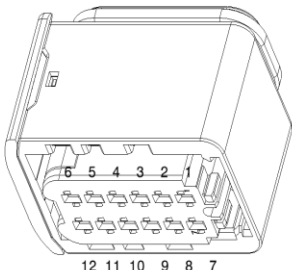
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P25E0 is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Supply module	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

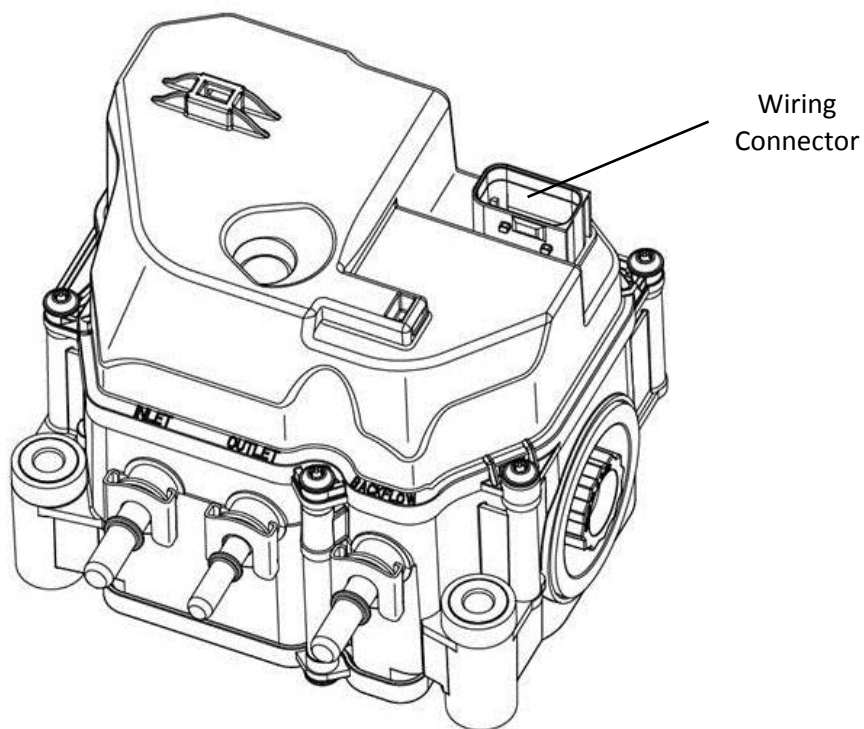
Fault Code	Fault Name
P25E1	Supply Module Heater Duty High

1) Overview

CODE	REASON	EFFECT
U005706-23	supply heater module temperature Duty cycle above Maximum range	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

4) Condition for Setting the Fault Code

When the sensor value (raw duty cycle) is greater than 86%

5) Condition for Clearing the Fault Code

When the sensor value (raw duty cycle) is less than 86%

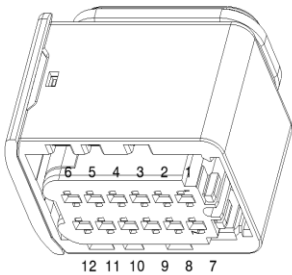
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P25E1 is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Supply module	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

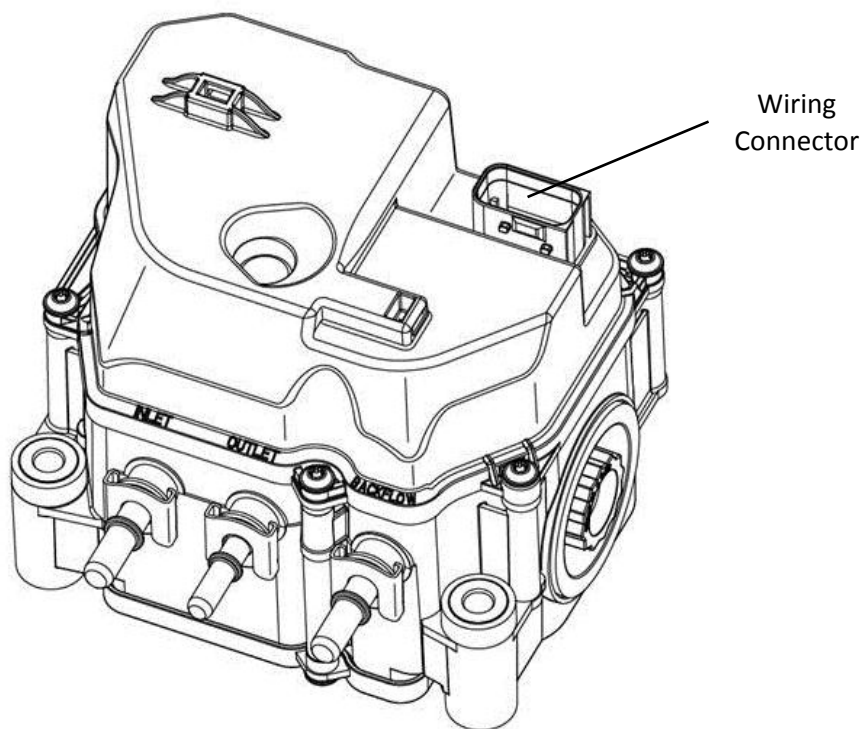
Fault Code	Fault Name
P25E2	Supply Module Temperature Duty Low

1) Overview

CODE	REASON	EFFECT
U005707-24	Supply Module temperature Duty cycle below Minimum range	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

4) Condition for Setting the Fault Code

When the sensor value (raw duty cycle) is less than 4%

5) Condition for Clearing the Fault Code

When the sensor value (raw duty cycle) is greater than 4%

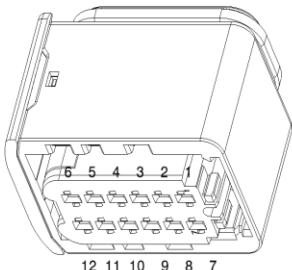
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P25E2 is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Supply module	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

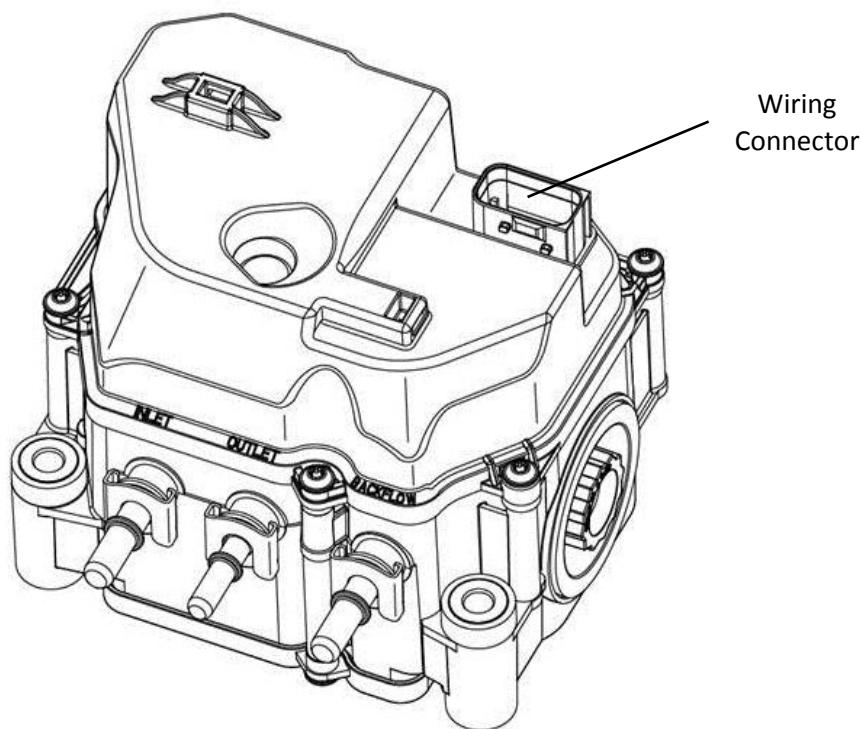
Fault Code	Fault Name
P25E3	Supply Module Temperature Duty High

1) Overview

CODE	REASON	EFFECT
U005707-23	Supply Module temperature Duty cycle above Maximum range	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

4) Condition for Setting the Fault Code

When the sensor value (raw duty cycle) is greater than 86%

5) Condition for Clearing the Fault Code

When the sensor value (raw duty cycle) is less than 86%

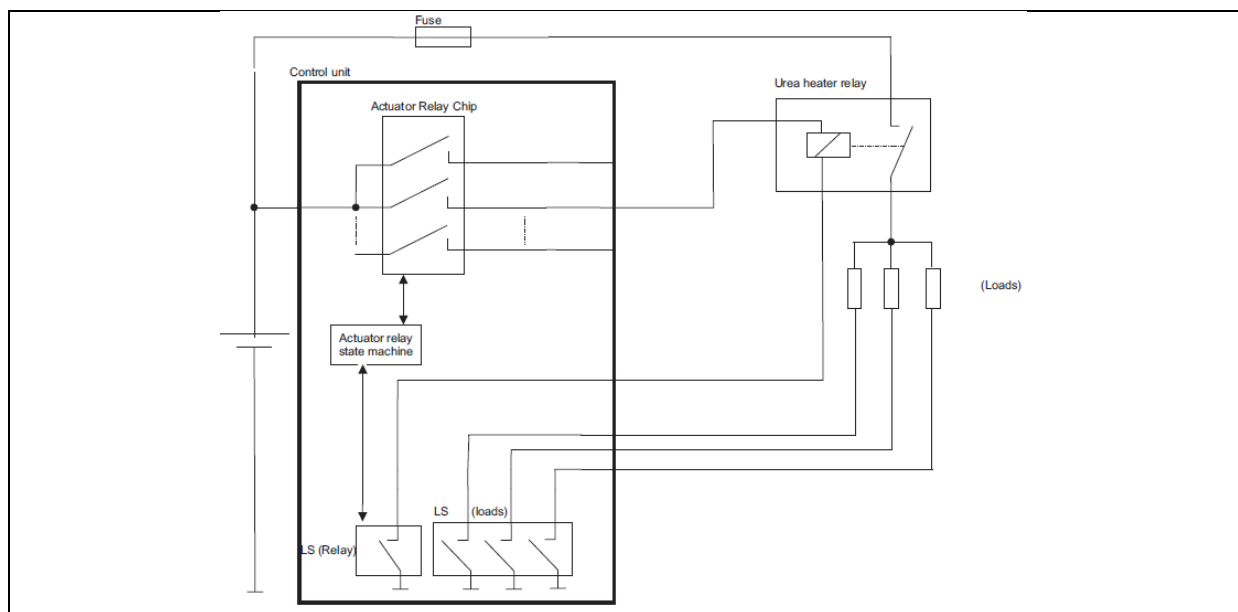
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P25E3 is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Supply module	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

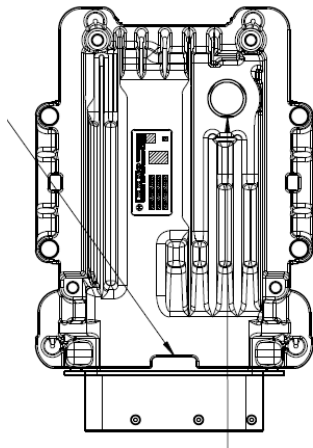
Fault Code	Fault Name
P26E8	DCU Actuator Relay 3 SCG

1) Overview

CODE	REASON	EFFECT
U003512-24	Short circuit to ground of actuator relay 3	



2) Component Location



3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

Diagnostic Fault Check for short circuit to ground of actuator relay

After the SCG error is recognized, the actuator relay is immediately switched off by the hardware

5) Condition for Clearing the Fault Code

When no error is detected

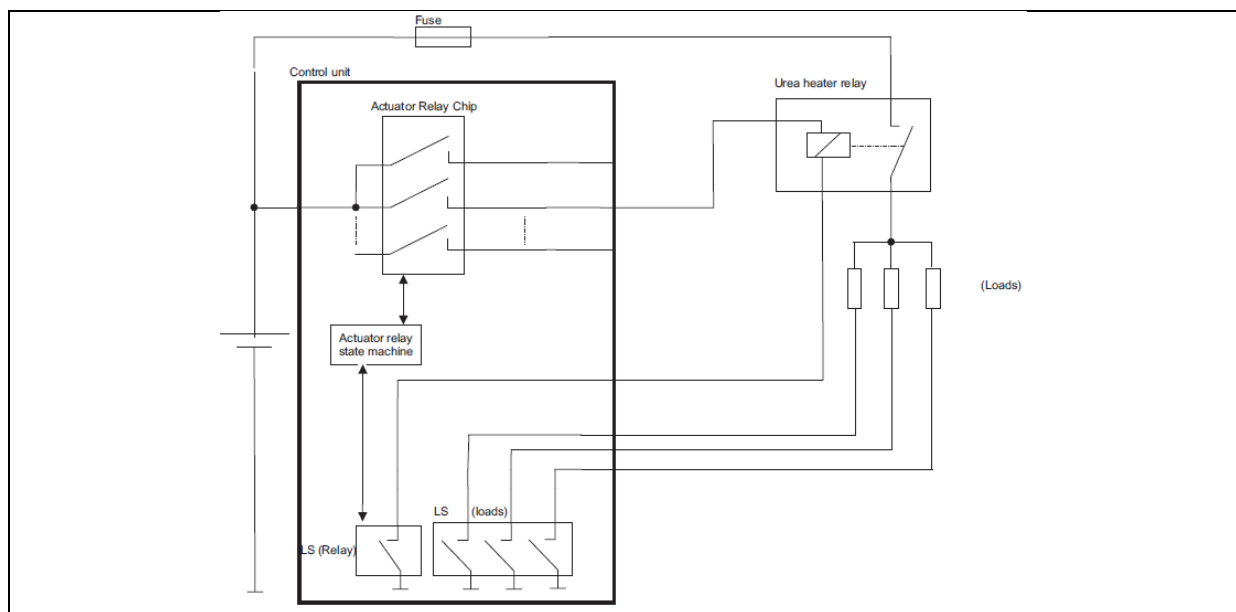
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P26E8 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	After key on, Check the DCU voltage related pin connection and harness. Pin or connection problem?		Do necessary repair	Step4
4	Please replace the DCU. Check the fault state. Is fault clear?		Problem solved	Call Hot-line

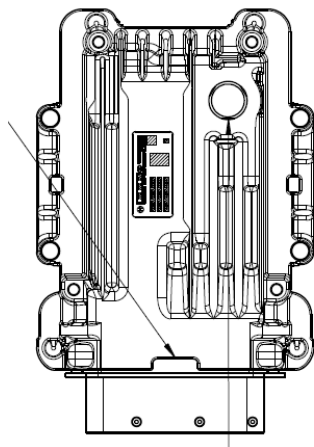
Fault Code	Fault Name
P26E9	DCU Actuator Relay 3 SCB

1) Overview

CODE	REASON	EFFECT
U003512-23	Short circuit to battery of actuator relay 3	



2) Component Location



3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

Diagnostic Fault Check for short circuit to battery of actuator relay

When fault is detected, the actuator relay (high side power stage) is OFF

5) Condition for Clearing the Fault Code

When no error is detected

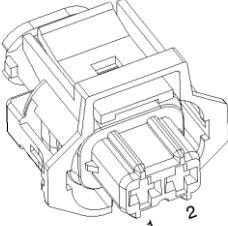
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P26E9 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	After key on, Check the DCU voltage related pin connection and harness. Pin or connection problem?		Do necessary repair	Step4
4	Please replace the DCU. Check the fault state. Is fault clear?		Problem solved	Call Hot-line

Fault Code	Fault Name
P042B	SCR Outlet Temperature Error

1) Overview

CODE	REASON	EFFECT
U004363-00 U004363-01	SCR outlet temperature is above a threshold	

	No.	DCU Pin	PIN description
	1	62	Catalyst temperature sensor 2 signal
	2	84	Catalyst temperature sensor 2 ground

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

The sensed sensor signal SCR outlet temperature is greater than a threshold /

The sensed sensor signal SCR outlet temperature is less than a threshold

5) Condition for Clearing the Fault Code

The sensed sensor signal SCR outlet temperature is in a threshold

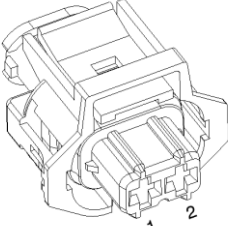
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P042B is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 5
5	Check DCU connection Connection problem?		Do necessary repair	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P042C	SCR Outlet Temperature Sensor Signal Low

1) Overview

CODE	REASON	EFFECT
U004363-04	SCR outlet temperature sensor signal is below a threshold	

	No.	DCU Pin	PIN description
	1	62	Catalyst temperature sensor 2 signal
	2	84	Catalyst temperature sensor 2 ground

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

The sensor raw signal of SCR outlet temperature is below a threshold

5) Condition for Clearing the Fault Code

The sensor raw signal of SCR outlet temperature becomes equal or greater than a threshold

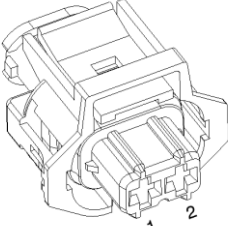
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P042C is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 5
5	Check DCU connection Connection problem?		Do necessary repair	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P042D	SCR Outlet Temperature Sensor Signal High

1) Overview

CODE	REASON	EFFECT
U004363-03	SCR outlet temperature sensor signal is above a threshold	

	No.	DCU Pin	PIN description
	1	62	Catalyst temperature sensor 2 signal
	2	84	Catalyst temperature sensor 2 ground

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

The sensor raw signal of SCR outlet temperature is above a threshold

5) Condition for Clearing the Fault Code

The sensor raw signal of SCR outlet temperature becomes equal or lesser than a threshold

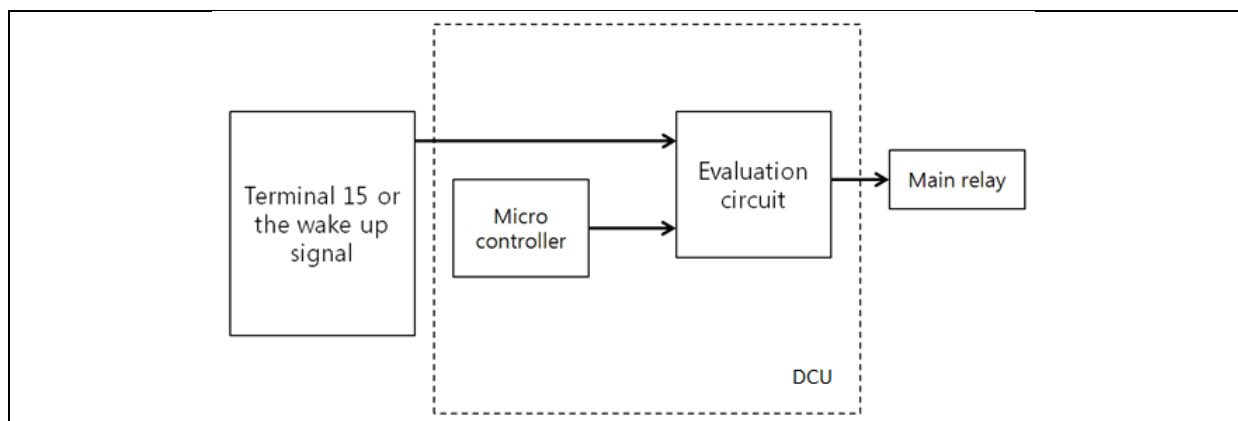
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P042D is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 5
5	Check DCU connection Connection problem?		Do necessary repair	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

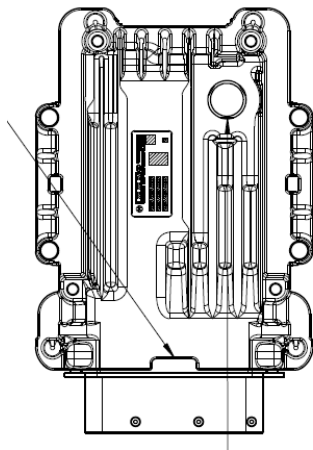
Fault Code	Fault Name
P068A	DCU Main Relay (Early opening)

1) Overview

CODE	REASON	EFFECT
U003492-12	Detection of an early opening main relay of DCU	



2) Component Location



3) Condition for Running Diagnostic

During DCU initialization

4) Condition for Setting the Fault Code

At the start of the DCU, diagnosis checks if the main relay was opened without a request or not. If counter for early opening of main relay is higher than threshold counter, this fault is detected

5) Condition for Clearing the Fault Code

If DCU goes through proper shutdown procedure, shutdown module resets the counter to zero and updates to EEPROM. The error is cleared in the next driving cycle

6) Check List

Step	Inspection	Standard Value	YES	NO
1	P068A is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	After key on, Check the DCU voltage related pin connection and harness. Pin or connection problem?		Do necessary repair	Step4
4	Please replace the DCU. Check the fault state. Is fault clear?		Problem solved	Call Hot-line

Fault Code	Fault Name
P0071	Environment Temperature Error

1) Overview

CODE	REASON	EFFECT
U000171-00 U000171-01	Environment temperature is above a threshold (171-00) Environment temperature is below a threshold (171-01)	

2) Component Location

Not a special location (Normally near the supply module and Adblue supply line)

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

The sensed sensor signal environment temperature is greater than a threshold /

The sensed sensor signal environment temperature is less than a threshold

5) Condition for Clearing the Fault Code

The sensed sensor signal environment temperature is in a threshold

6) Check List

Step	Inspection	Standard Value	YES	NO
1	P0071 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 6
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 7
5	Check DCU connection Connection problem?		Do necessary repair	Step 8
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P0072	Environment Temperature Sensor Low

1) Overview

CODE	REASON	EFFECT
U000171-04	Environment temperature sensor signal is below a threshold	

2) Component Location

Not a special location (Normally near the supply module and Adblue supply line)

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

The sensor raw signal of environment temperature is below a threshold

5) Condition for Clearing the Fault Code

The sensor raw signal of environment temperature becomes equal or greater than a threshold

6) Check List

Step	Inspection	Standard Value	YES	NO
1	P0072 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 6
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 7
5	Check DCU connection Connection problem?		Do necessary repair	Step 8
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P0073	Environment Temperature Sensor High

1) Overview

CODE	REASON	EFFECT
U000171-03	Environment temperature sensor signal is above a threshold	

2) Component Location

Not a special location (Normally near the supply module and Adblue supply line)

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

The sensor raw signal of environment temperature is above a threshold

5) Condition for Clearing the Fault Code

The sensor raw signal of environment temperature becomes equal or lesser than a threshold

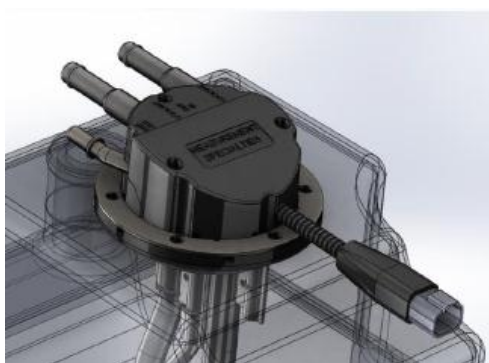
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P0073 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 6
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 7
5	Check DCU connection Connection problem?		Do necessary repair	Step 8
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P115A	DEF Temperature Sensor Fail

1) Overview

CODE	REASON	EFFECT
U004365-11	Urea tank temperature sensor problem Urea tank temperature sensor install problem	Inducement Group5



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

Key on or engine run when there is no bus-off and no timeout error

4) Condition for Setting the Fault Code

The error is reported if its FMI is equal 11

5) Condition for Clearing the Fault Code

The error is healed when its FMI is not equal 11

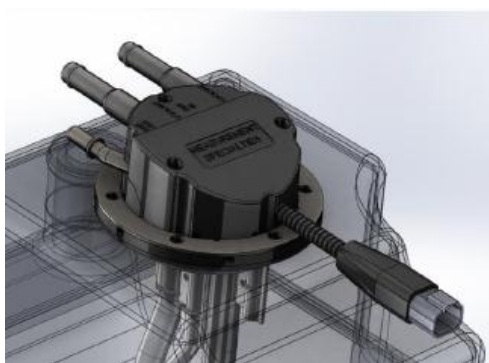
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P115A is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 5
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 6
5	Check DCU connection Connection problem?		Do necessary repair	Step 7
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 8
7	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P115C	DEF Temperature Sensor SCG

1) Overview

CODE	REASON	EFFECT
U004365-04	Urea tank temperature sensor problem Urea tank temperature sensor install problem	Inducement Group5



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

Key on or engine run when there is no bus-off and no timeout error

4) Condition for Setting the Fault Code

The error is reported if its FMI is equal 4

5) Condition for Clearing the Fault Code

The error is healed when its FMI is not equal 4

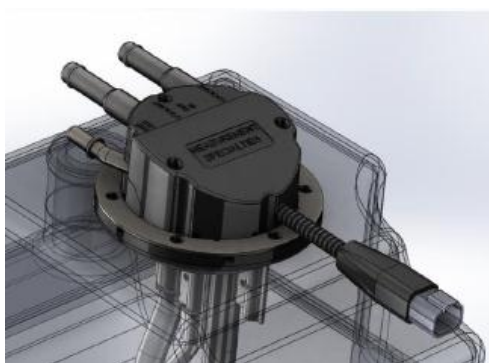
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P115C is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 5
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 6
5	Check DCU connection Connection problem?		Do necessary repair	Step 7
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 8
7	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P115D	DEF Temperature Sensor Open

1) Overview

CODE	REASON	EFFECT
U004365-03	Urea tank temperature sensor problem Urea tank temperature install problem	Inducement Group5



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

Key on or engine run when there is no bus-off and no timeout error

4) Condition for Setting the Fault Code

The error is reported if its FMI is equal 3

5) Condition for Clearing the Fault Code

The error is healed when its FMI is not equal 3

6) Check List

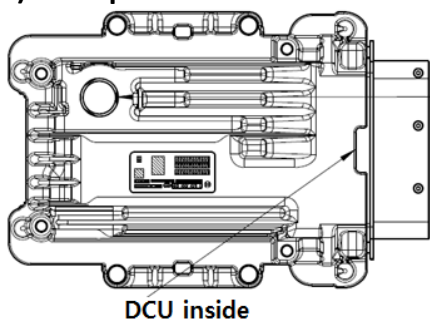
Step	Inspection	Standard Value	YES	NO
1	P115D is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 5
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 6
5	Check DCU connection Connection problem?		Do necessary repair	Step 7
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 8
7	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P160C	DCU Monitoring Error (query-/response-communication)

1) Overview

CODE	REASON	EFFECT
U520698-12	DCU problem	

2) Component Location



3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

The fault is occurred when query-/response-communication is late several times

5) Condition for Clearing the Fault Code

The fault is healed when query-/response-communication is on time

6) Check List

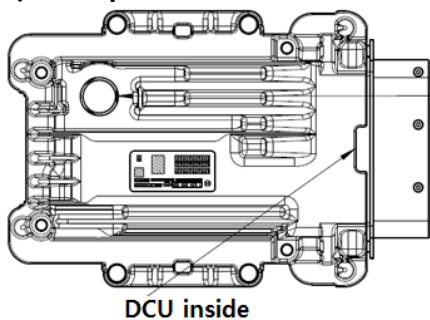
Step	Inspection	Standard Value	YES	NO
1	U160C is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 5
5	Please change the DCU Check the fault state Is fault cleared?		Problem solve	Call Hot-line

Fault Code	Fault Name
P160C	DCU reset 0

1) Overview

CODE	REASON	EFFECT
U105644-13	Visibility of Software Resets	

2) Component Location



3) Condition for Running Diagnostic

Engine Key on or engine running

4) Condition for Setting the Fault Code

The evaluation of the reset reason will be done after every reset. Depending on the configured visibility of the current reset one of the fault checks in the array will be set.

5) Condition for Clearing the Fault Code

When the detected reset was no trap and no software reset all fault checks will be cleared.

6) Check List

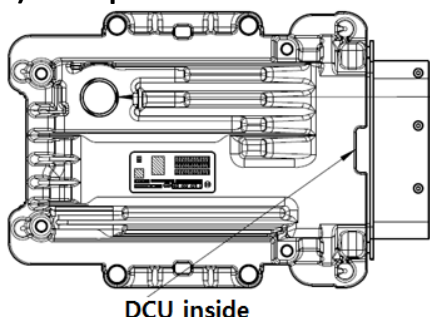
Step	Inspection	Standard Value	YES	NO
1	P160C is detected on diagnostic tool?		Step2	
2	Turn off the Key switch and DCU power. (after Key Off, please wait for 30sec)		Step3	
3	After Key On, check the fault state. Is this fault detected continuously?		Step4	Problem solved
4	Please replace the DCU. Check the fault state. Is fault clear?		Problem solved	Call Hot-line

Fault Code	Fault Name
P160D	DCU Monitoring Error (SPI communication)

1) Overview

CODE	REASON	EFFECT
U520699-12	DCU problem	

2) Component Location



3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

The fault is occurred when SPI communication is late several times

5) Condition for Clearing the Fault Code

The fault is healed when SPI communication is on time

6) Check List

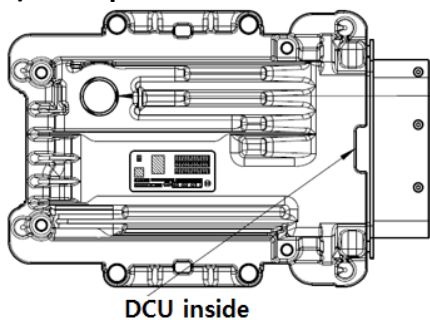
Step	Inspection	Standard Value	YES	NO
1	U160C is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 5
5	Please change the DCU Check the fault state Is fault cleared?		Problem solve	Call Hot-line

Fault Code	Fault Name
P160D	DCU reset 1

1) Overview

CODE	REASON	EFFECT
U105645-13	Visibility of Software Resets	

2) Component Location



3) Condition for Running Diagnostic

Engine Key on or engine running

4) Condition for Setting the Fault Code

The evaluation of the reset reason will be done after every reset. Depending on the configured visibility of the current reset one of the fault checks in the array will be set.

5) Condition for Clearing the Fault Code

When the detected reset was no trap and no software reset all fault checks will be cleared.

6) Check List

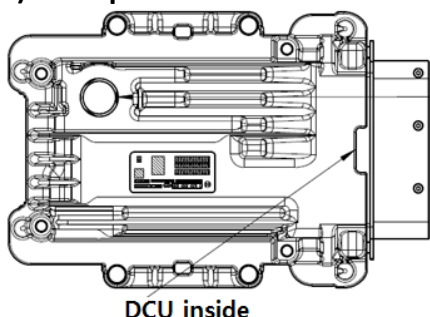
Step	Inspection	Standard Value	YES	NO
1	P160D is detected on diagnostic tool?		Step2	
2	Turn off the Key switch and DCU power. (after Key Off, please wait for 30sec)		Step3	
3	After Key On, check the fault state. Is this fault detected continuously?		Step4	Problem solved
4	Please replace the DCU. Check the fault state. Is fault clear?		Problem solved	Call Hot-line

Fault Code	Fault Name
P160E	DCU Monitoring Error (ROM-test)

1) Overview

CODE	REASON	EFFECT
U520700-12	DCU problem	

2) Component Location



3) Condition for Running Diagnostic

Diagnosis is only preformed while post-drive

4) Condition for Setting the Fault Code

If multiple errors are detected while testing the complete ROM-memory

5) Condition for Clearing the Fault Code

None

6) Check List

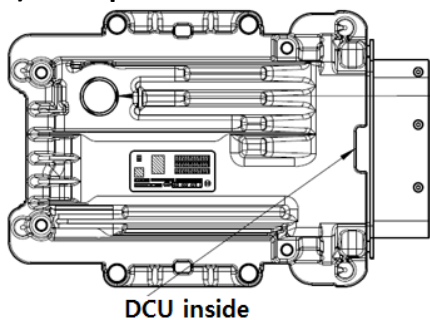
Step	Inspection	Standard Value	YES	NO
1	U160C is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 5
5	Please change the DCU Check the fault state Is fault cleared?		Problem solve	Call Hot-line

Fault Code	Fault Name
P160E	DCU reset 2

1) Overview

CODE	REASON	EFFECT
U105646-13	Visibility of Software Resets	

2) Component Location



3) Condition for Running Diagnostic

Engine Key on or engine running

4) Condition for Setting the Fault Code

The evaluation of the reset reason will be done after every reset. Depending on the configured visibility of the current reset one of the fault checks in the array will be set.

5) Condition for Clearing the Fault Code

When the detected reset was no trap and no software reset all fault checks will be cleared.

6) Check List

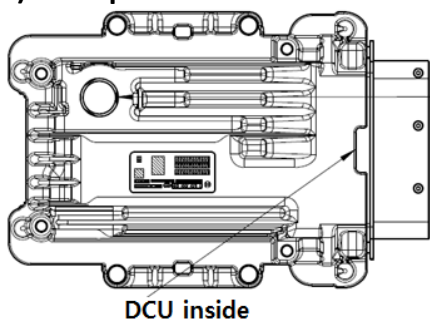
Step	Inspection	Standard Value	YES	NO
1	P160E is detected on diagnostic tool?		Step2	
2	Turn off the Key switch and DCU power. (after Key Off, please wait for 30sec)		Step3	
3	After Key On, check the fault state. Is this fault detected continuously?		Step4	Problem solved
4	Please replace the DCU. Check the fault state. Is fault clear?		Problem solved	Call Hot-line

Fault Code	Fault Name
P160F	Peripheral Monitoring Error

1) Overview

CODE	REASON	EFFECT
U520701-12	DCU problem	

2) Component Location



3) Condition for Running Diagnostic

Any condition

4) Condition for Setting the Fault Code

When any peripheral monitoring function reports an error

5) Condition for Clearing the Fault Code

When none of the peripheral monitoring functions report error

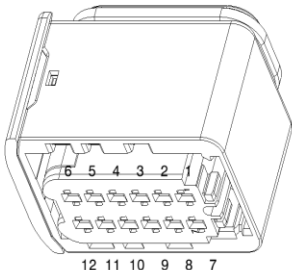
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P160F is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 5
5	Please change the DCU Check the fault state Is fault cleared?		Problem solve	Call Hot-line

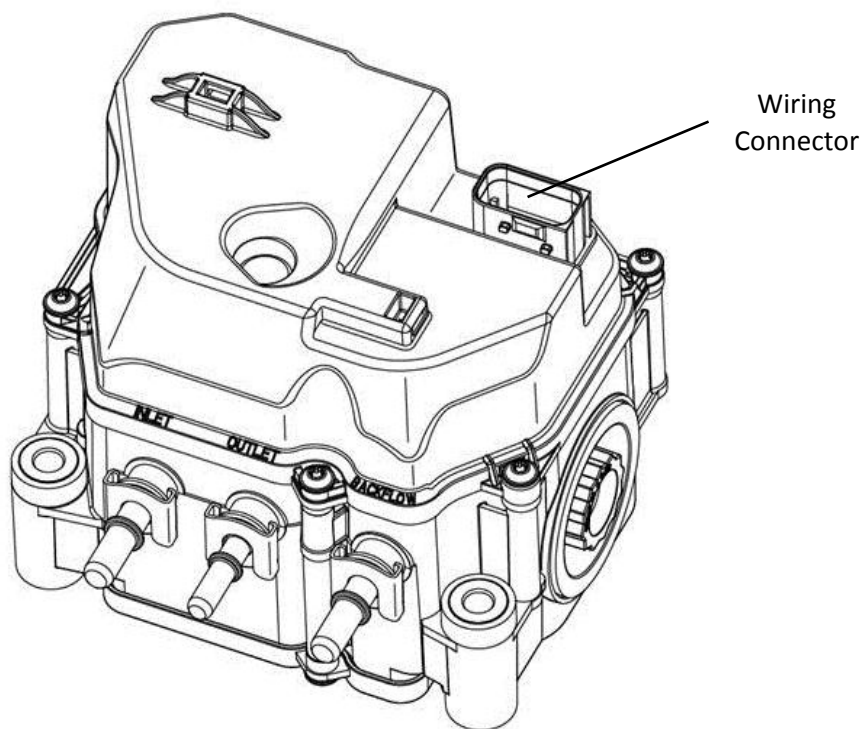
Fault Code	Fault Name
P201F	DEF Pump Motor Speed Deviation Error (Permanent)

1) Overview

CODE	REASON	EFFECT
U004374-30	Permanent Pump Motor Speed Deviation	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

100 ms.

4) Condition for Setting the Fault Code

An SCG was reported by the powerstage for a specific time. Additionally, the pump motor has been restarted more than 5 times in the same driving cycle. Fault level of 100% corresponds to a 'pump motor failed' error.

5) Condition for Clearing the Fault Code

This fault is considered permanent and is not healed.

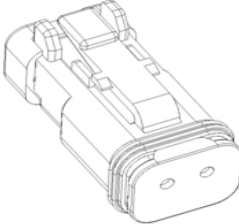
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P201F is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Supply module	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P202A	DEF Tank Heater Open

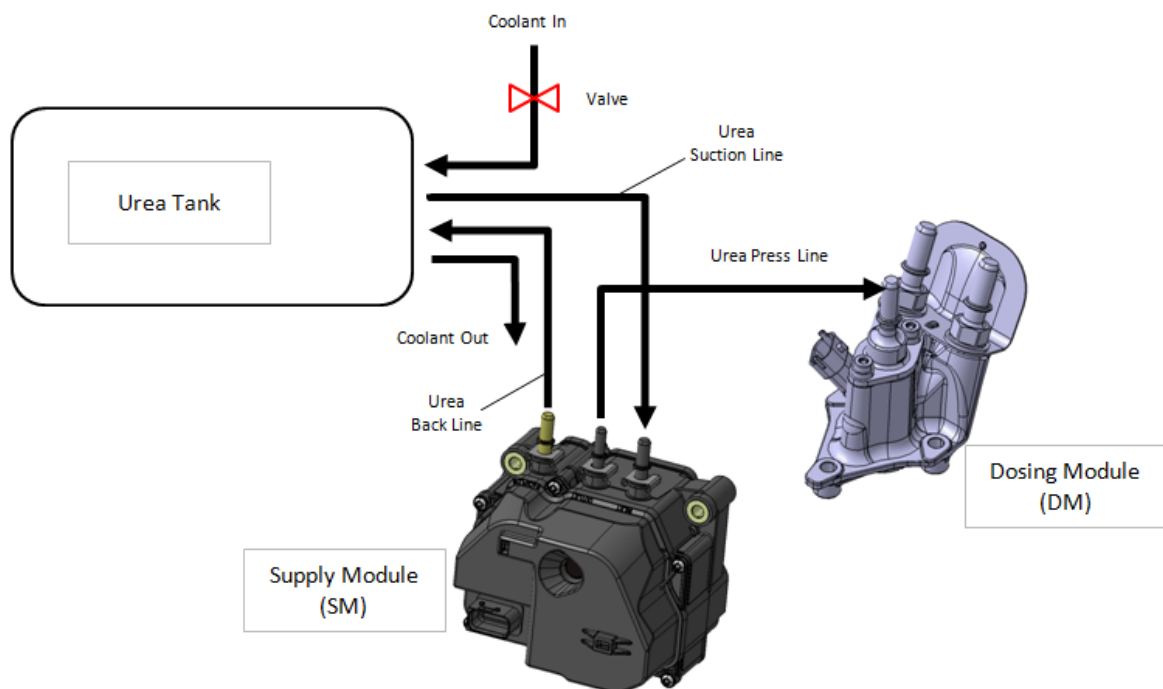
1) Overview

CODE	REASON	EFFECT
U003363-05	Electrical problem Connection problem Harness problem Coolant valve problem	

	No.	DCU Pin	PIN description
	1	75	Coolant valve_V
	2	92	Coolant valve_S

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Key on or engine running

4) Condition for Setting the Fault Code

The power stage hardware reports a "no load" error during 100ms of debounced time.

5) Condition for Clearing the Fault Code

There is no defect detection

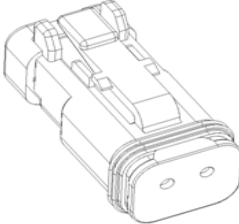
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P202A is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check valve connection Connection problem?		Do necessary repair	Step 3
4	Check DCU connection Connection problem?		Do necessary repair	Step 4
5	Check valve resistance Resistance problem?		Change Valve	Step 5
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P202B	DEF Tank Heater SCG

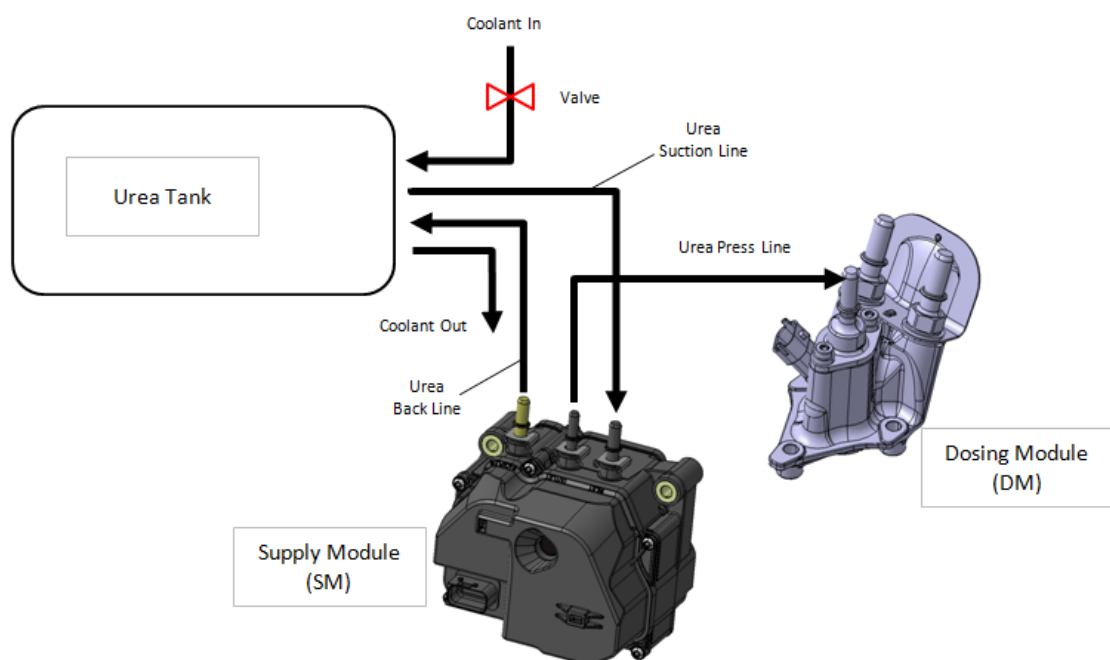
1) Overview

CODE	REASON	EFFECT
U003363-04	Electrical problem Connection problem Harness problem Coolant valve problem	

	No.	DCU Pin	PIN description
	1	75	Coolant valve_V
	2	92	Coolant valve_S

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Key on or engine running

4) Condition for Setting the Fault Code

The power stage hardware reports a "short circuit to ground" error.

5) Condition for Clearing the Fault Code

There is no defect detection

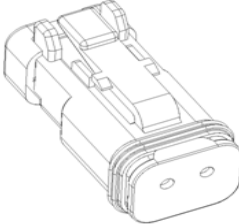
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P202B is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check valve connection Connection problem?		Do necessary repair	Step 3
4	Check DCU connection Connection problem?		Do necessary repair	Step 4
5	Check valve resistance Resistance problem?		Valve Sensor	Step 5
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P202C	DEF Tank Heater SCB

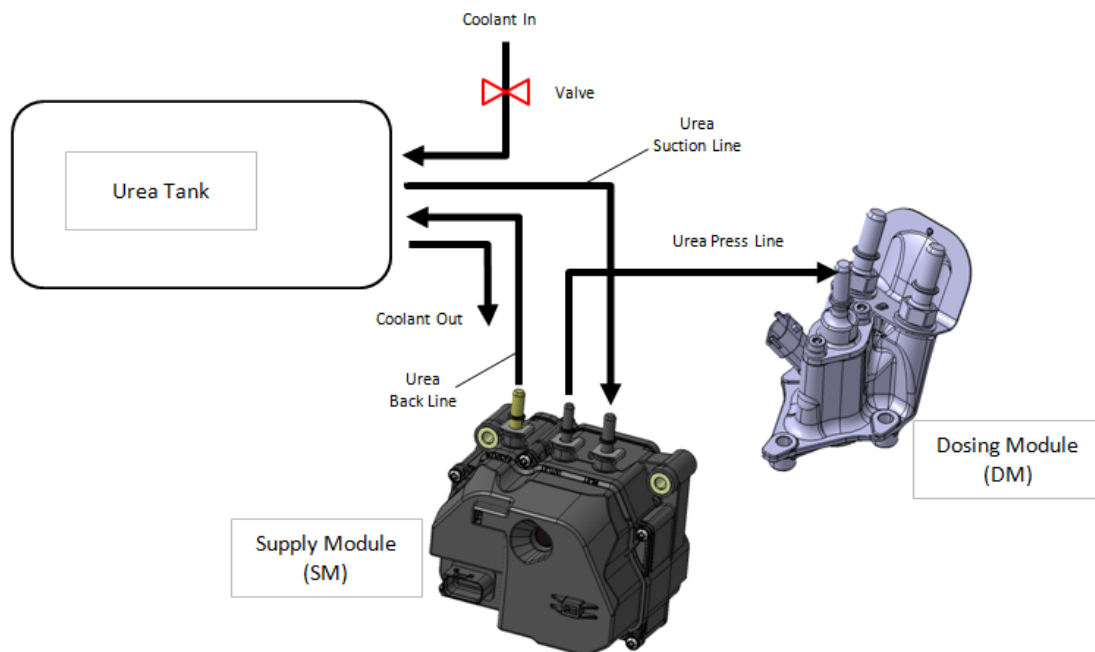
1) Overview

CODE	REASON	EFFECT
U003363-03	Electrical problem Connection problem Harness problem Coolant valve problem	

	No.	DCU Pin	PIN description
	1	75	Coolant valve V
	2	92	Coolant valve S

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Key on or engine running

4) Condition for Setting the Fault Code

If the power stage hardware reports a "short circuit to battery" error during 100ms of debounced time.

5) Condition for Clearing the Fault Code

There is no defect detection

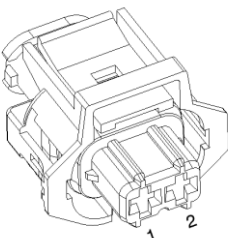
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P202C is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check valve connection Connection problem?		Do necessary repair	Step 3
4	Check DCU connection Connection problem?		Do necessary repair	Step 4
5	Check valve resistance Resistance problem?		Valve Sensor	Step 5
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P202E	Dosing Valve Over Temperature

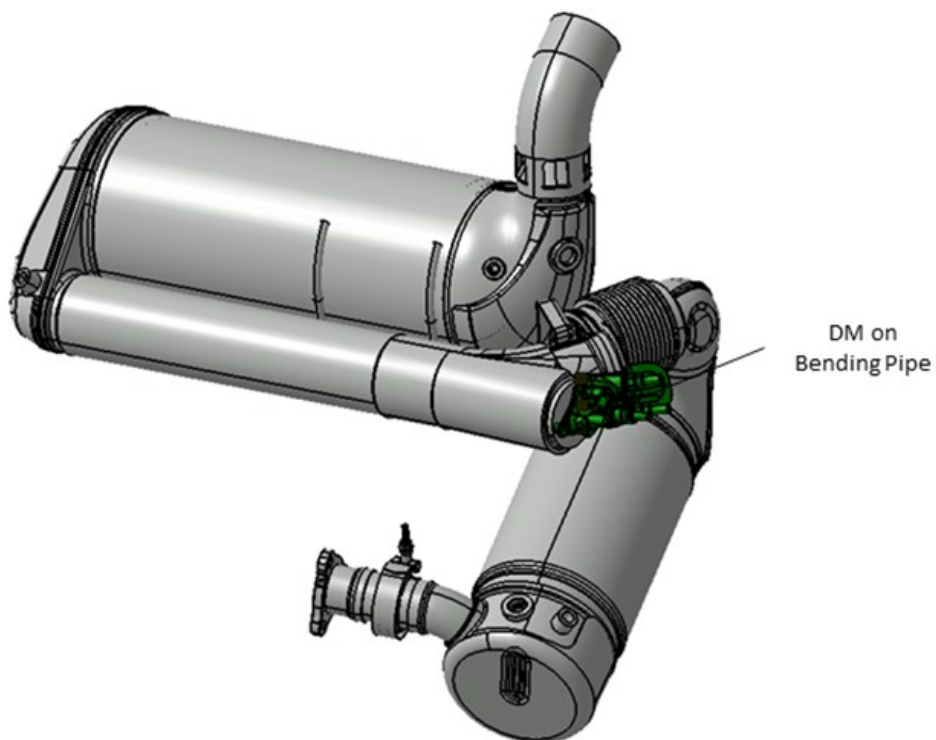
1) Overview

CODE	REASON	EFFECT
U003361-12	Over temperature error on powerstage of Urea dosing valve actuator	

	No.	DCU Pin	PIN description
	1	80	Reduction agent magnet valve H
	2	58	Reduction agent magnet valve L

2) Component Location

Muffler Layout can be different according to Machine but the position of DM is same.



3) Condition for Running Diagnostic

In the METERINGCONTROL status if the operating conditions are within the evaluation range.

4) Condition for Setting the Fault Code

The dosing valve is detected as blocked if no opening signal is detected by the dosing

5) Condition for Clearing the Fault Code

Healing is based on the application.

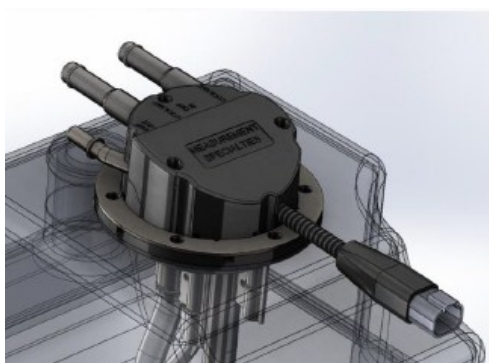
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P202E is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Dosing module	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P203A	DEF Level Sensor Fail

1) Overview

CODE	REASON	EFFECT
U003532-11	Urea tank sensor problem Urea tank sensor install problem	Inducement Group5



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

Key on or engine run when there is no bus-off and no timeout error

4) Condition for Setting the Fault Code

The error is reported if its FMI is equal 11

5) Condition for Clearing the Fault Code

The error is healed when its FMI is not equal 11

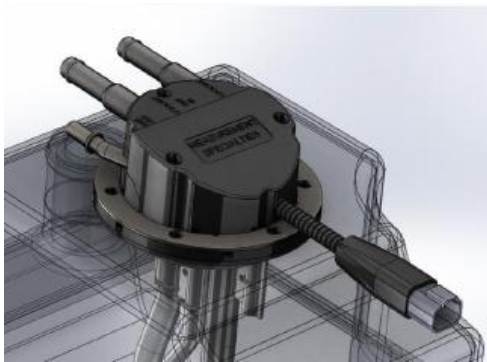
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P203A is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 5
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 6
5	Check DCU connection Connection problem?		Do necessary repair	Step 7
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 8
7	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P203A	DEF Level Signal Error

1) Overview

CODE	REASON	EFFECT
U001761-19	Urea tank level signal is error	



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

The signal source is configured to be coming from CAN module. The frequency of testing depends on the scheduling time of the process

4) Condition for Setting the Fault Code

The signal from CAN of urea tank level is equal to 0x7FFF. (Not available)

5) Condition for Clearing the Fault Code

The signal from CAN of urea tank level is not equal to 0x7FFF. (Not available)

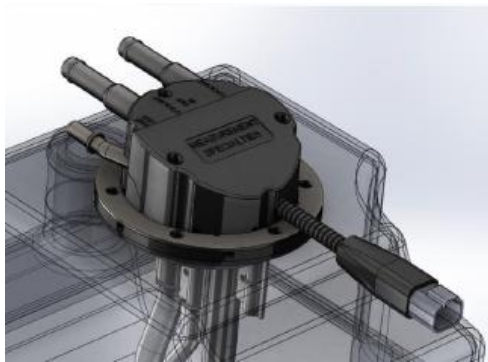
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P203A is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 5
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 6
5	Check DCU connection Connection problem?		Do necessary repair	Step 7
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 8
7	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P203B	DEF Level Too High

1) Overview

CODE	REASON	EFFECT
U001761-00	Urea tank level is above a threshold	



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

The ADC module doesn't report any error and the corresponding electrical SRC error is not set and no error in CAN message. The frequency of testing depends on the scheduling time of the process

4) Condition for Setting the Fault Code

The sensed sensor signal of urea tank level is greater than a threshold

5) Condition for Clearing the Fault Code

The sensed sensor signal of urea tank level is below a threshold

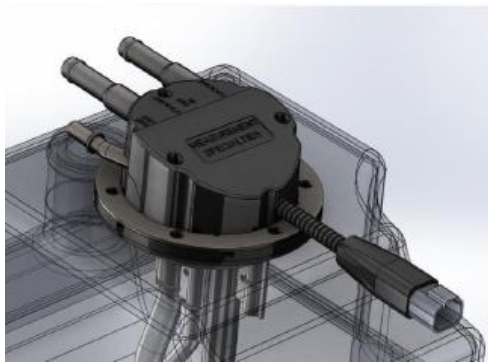
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P203B is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 5
5	Check DCU connection Connection problem?		Do necessary repair	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 7
7	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P203B	DEF Level Too Low

1) Overview

CODE	REASON	EFFECT
U001761-01	Urea tank level is below a threshold	



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

The ADC module doesn't report any error and the corresponding electrical SRC error is not set and no error in CAN message. The frequency of testing depends on the scheduling time of the process

4) Condition for Setting the Fault Code

The sensed sensor signal of urea tank level is less than a threshold

5) Condition for Clearing the Fault Code

The sensed sensor signal of urea tank level is above a threshold

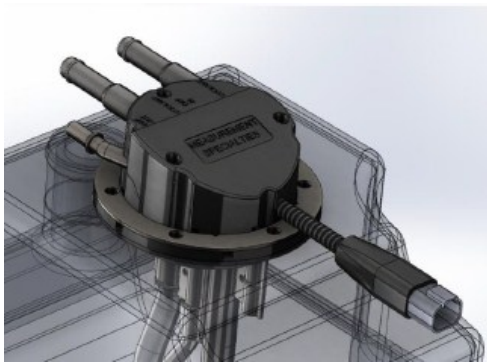
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P203B is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 5
5	Check DCU connection Connection problem?		Do necessary repair	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 7
7	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P203C	DEF Level Sensor SCG

1) Overview

CODE	REASON	EFFECT
U003532-04	Urea tank sensor problem Urea tank sensor install problem	Inducement Group5



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

Key on or engine run when there is no bus-off and no timeout error

4) Condition for Setting the Fault Code

The error is reported if its FMI is equal 4

5) Condition for Clearing the Fault Code

The error is healed when its FMI is not equal 4

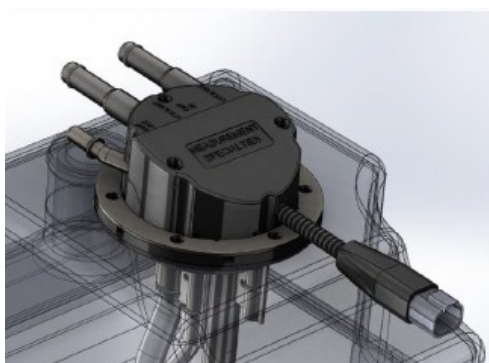
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P203C is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 5
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 6
5	Check DCU connection Connection problem?		Do necessary repair	Step 7
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 8
7	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P203D	DEF Level Sensor Open

1) Overview

CODE	REASON	EFFECT
U003532-03	Urea tank sensor problem Urea tank sensor install problem	Inducement Group5



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

Key on or engine run when there is no bus-off and no timeout error

4) Condition for Setting the Fault Code

The error is reported if its FMI is equal 3

5) Condition for Clearing the Fault Code

The error is healed when its FMI is not equal 3

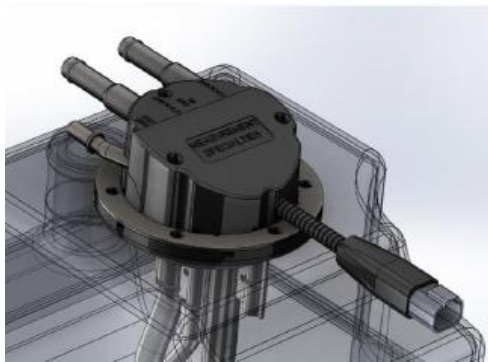
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P203D is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 5
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 6
5	Check DCU connection Connection problem?		Do necessary repair	Step 7
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 8
7	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P203E	DEF Fill Level Error

1) Overview

CODE	REASON	EFFECT
U001761-20 U001761-21	Sensed consumption too low (1761-20) Sensed consumption too much (1761-21)	



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

If the plausibility enable conditions status is true and threshold consumption reached status is true

4) Condition for Setting the Fault Code

If the measured consumption deviates less than a threshold from expected

5) Condition for Clearing the Fault Code

When cause of error has been removed (e.g. new level sensor) healing can be carried out in the next driving cycle with positive plausibility check

*To prevent abnormal detection, you shall fill it up with DEF when you refill

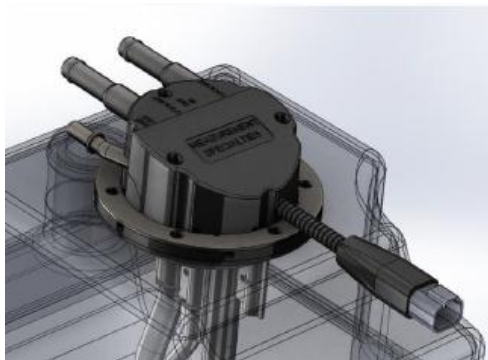
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P203E is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check the dosing valve Dosing valve problem?		Do necessary repair	Step 4
4	Check the PL/BL/SL line Line problem?		Do necessary repair	Step 5
5	Check sensor connection Connection problem?		Do necessary repair	Step 4
6	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 5
7	Check DCU connection Connection problem?		Do necessary repair	Step 6
8	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 7
9	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P203F	DEF Level is Empty

1) Overview

CODE	REASON	EFFECT
U001761-16	Urea tank level is empty state (less than 2.5%)	DEF Level Indicator Flashing Low Idle only



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

Continuous

4) Condition for Setting the Fault Code

If the remaining reducing agent is beneath the empty threshold (2.5%)

5) Condition for Clearing the Fault Code

When the remaining reducing agent is greater than the empty threshold (2.5%)

You shall fill it up with DEF when you refill

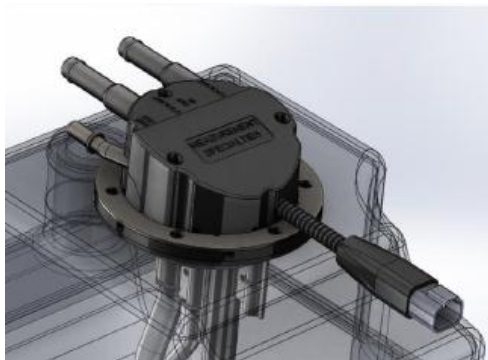
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P203F is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check the urea quantity Urea is enough?		Step 4	Fill the Urea
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 6
6	Check DCU connection Connection problem?		Do necessary repair	Step 7
7	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 8
8	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P203F	DEF Level is Warning

1) Overview

CODE	REASON	EFFECT
U001761-15	Urea tank level is warning state (less than 25%)	DEF Level Indicator ON



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

Continuous

4) Condition for Setting the Fault Code

If the remaining reducing agent is beneath the warning threshold (25%)

5) Condition for Clearing the Fault Code

When the remaining reducing agent is greater than the warning threshold (25%)

You shall fill it up with DEF when you refill

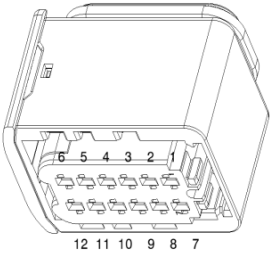
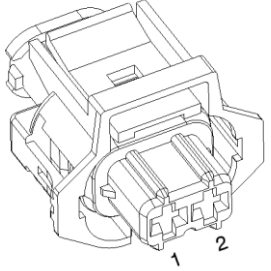
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P203F is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check the urea quantity Urea is enough?		Step 4	Fill the Urea
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 6
6	Check DCU connection Connection problem?		Do necessary repair	Step 7
7	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 8
8	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P204A	General Pressure Check Error

1) Overview

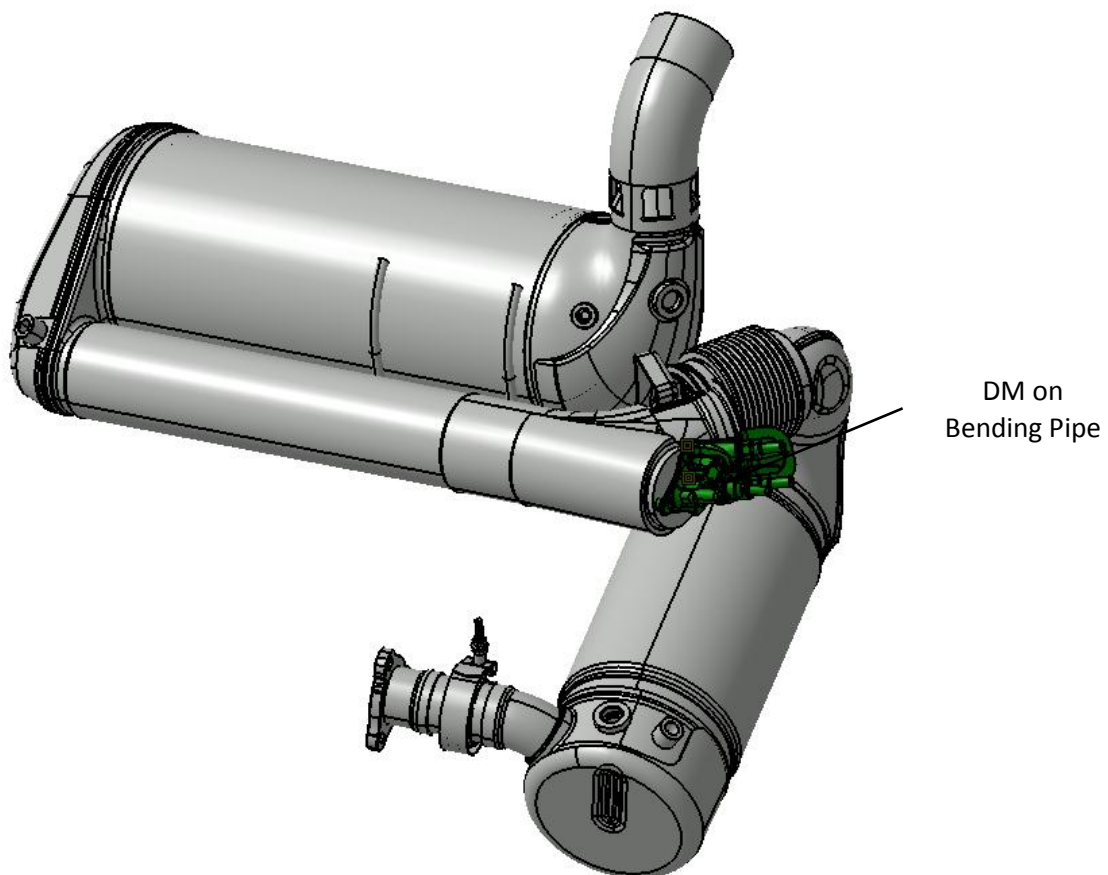
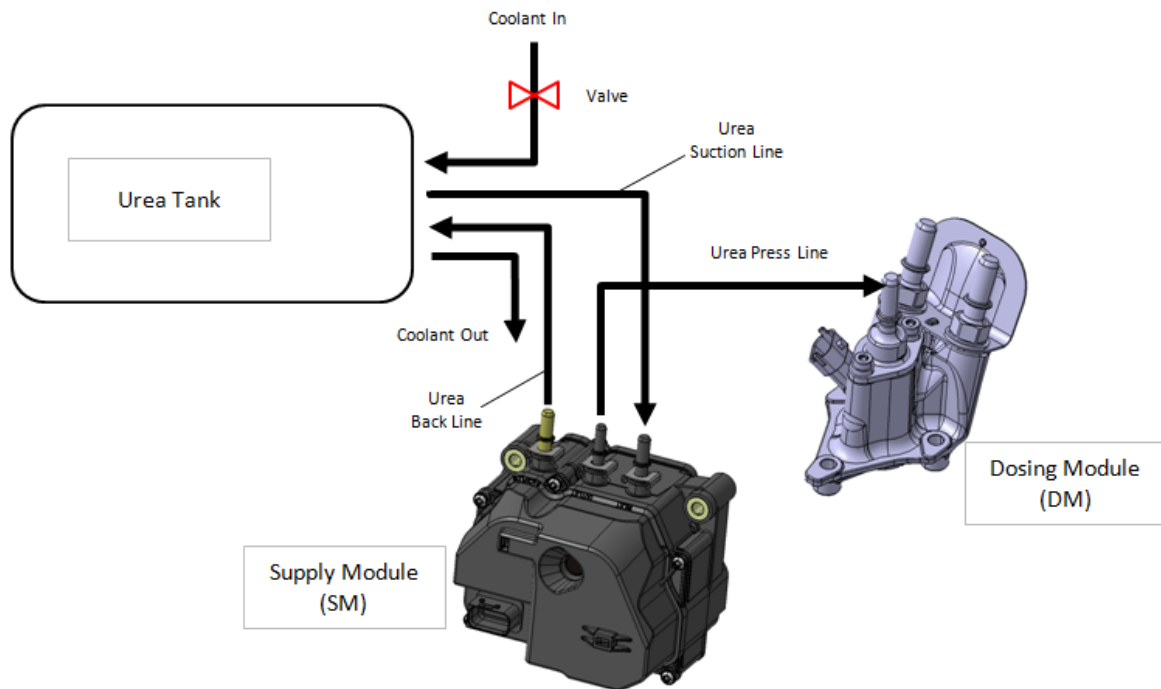
CODE	REASON	EFFECT
U005435-12	Pressure check error = FCT_ERROR in state DETECTIONMODE	Inducement Group5

	No.	DCU Pin	PIN description(Supply module)
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND
	No.	DCU Pin	PIN description (Dosing module)
	1	80	Reduction agent magnet valve H
	2	58	Reduction agent magnet valve L

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker

Muffler Layout can be different according to Machine but the position of DM is same.



3) Condition for Running Diagnostic

Check in the DETECTIONMODE state.

4) Condition for Setting the Fault Code

If function PressureCheck detected an insufficient pressure drop (down to 8500hpa, then dosing is not possible. Export variable from function PressureCheck.

5) Condition for Clearing the Fault Code

The error will be healed at restart.

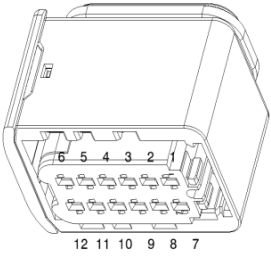
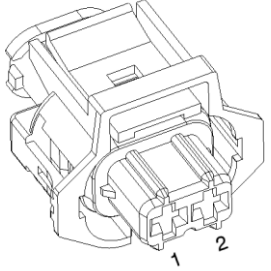
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P204A is occurred on diagnostic tool?		Step2	O.K
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Supply module or Dosing module	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 7
7	Check Pressure line Line problem?		Fix pressure line	Call Hot-line

Fault Code	Fault Name
P204B	Monitoring of Pressure Build-up

1) Overview

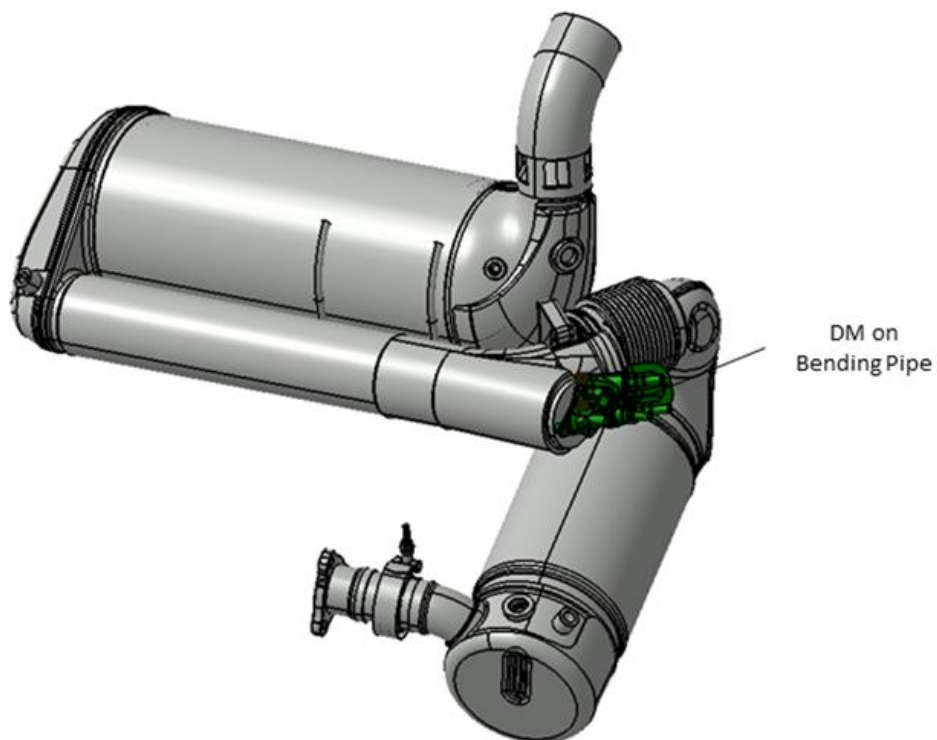
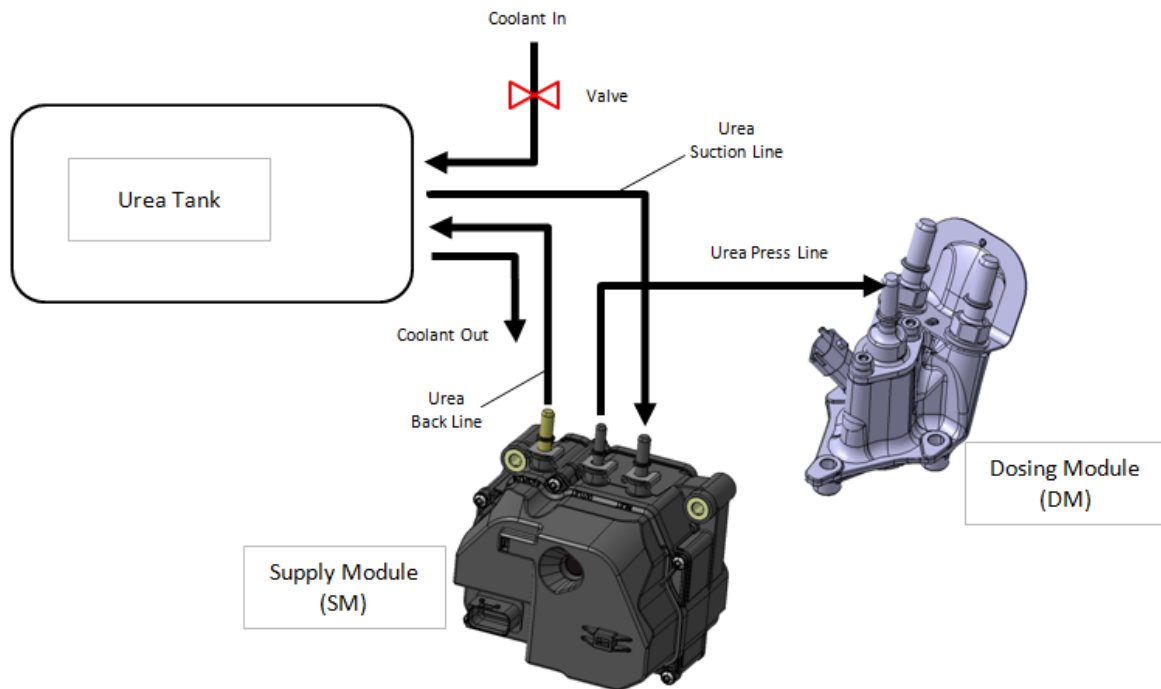
CODE	REASON	EFFECT
U004335-02	Monitoring of Pressure Build Up Error Symmetric (Supply module monitoring)	

	No.	DCU Pin	PIN description(Supply module)
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND
	No.	DCU Pin	PIN description (Dosing module)
	1	80	Reduction agent magnet valve H
	2	58	Reduction agent magnet valve L

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker

Muffler Layout can be different according to Machine but the position of DM is same.



3) Condition for Running Diagnostic

Check in the PRESSUREBUILDUP state.

4) Condition for Setting the Fault Code

This DFC will be set in PRESSUREBUILDUP state if the status byte in substate PRESSUREBUILDUP state equals EXIT_FCT_ERROR and Counter for missed pressure build-up attempts is greater than or equal to 3.

5) Condition for Clearing the Fault Code

If pressure build-up was successful the error will be healed .

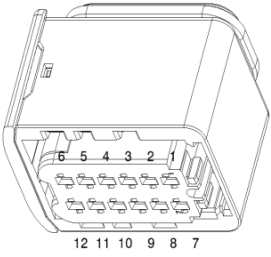
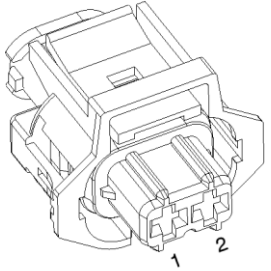
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P204B is occurred on diagnostic tool?		Step2	O.K
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Supply module or Dosing module	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 7
7	Check Pressure line Line problem?		Fix pressure line	Call Hot-line

Fault Code	Fault Name
P204B	Pressure Stabilization Error

1) Overview

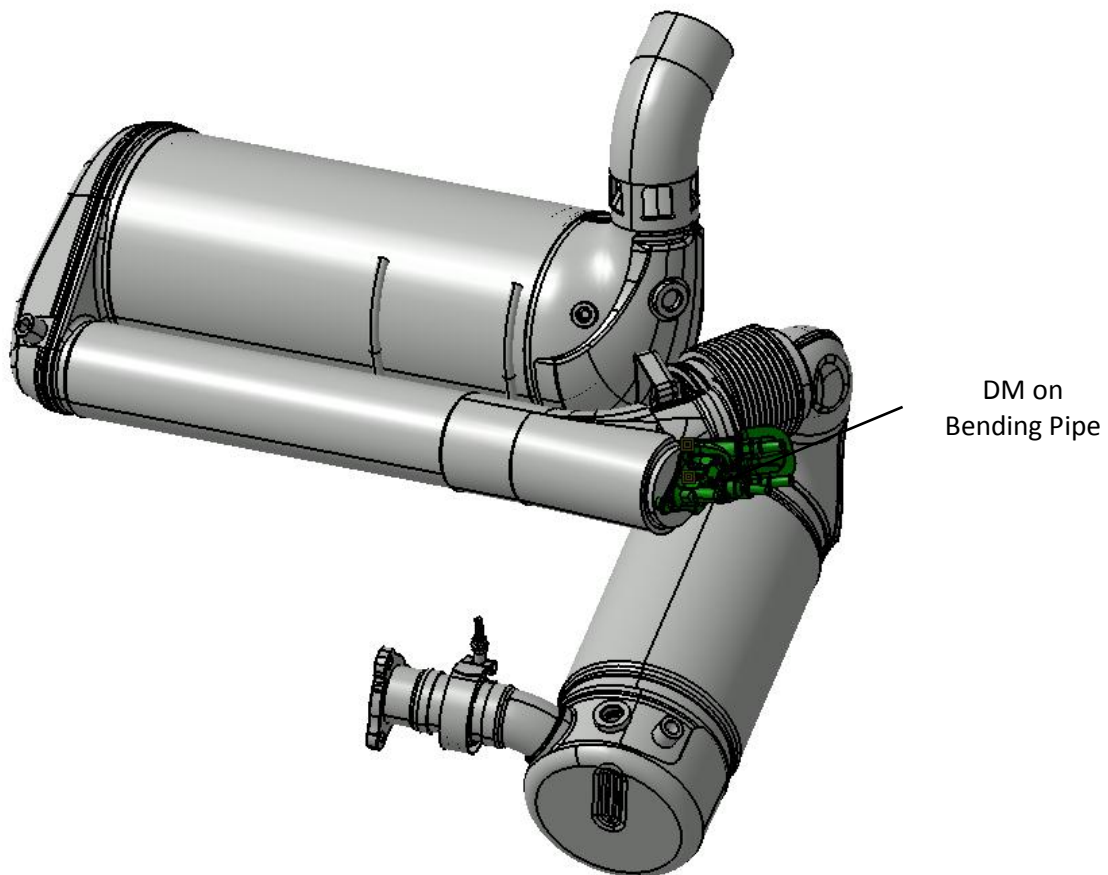
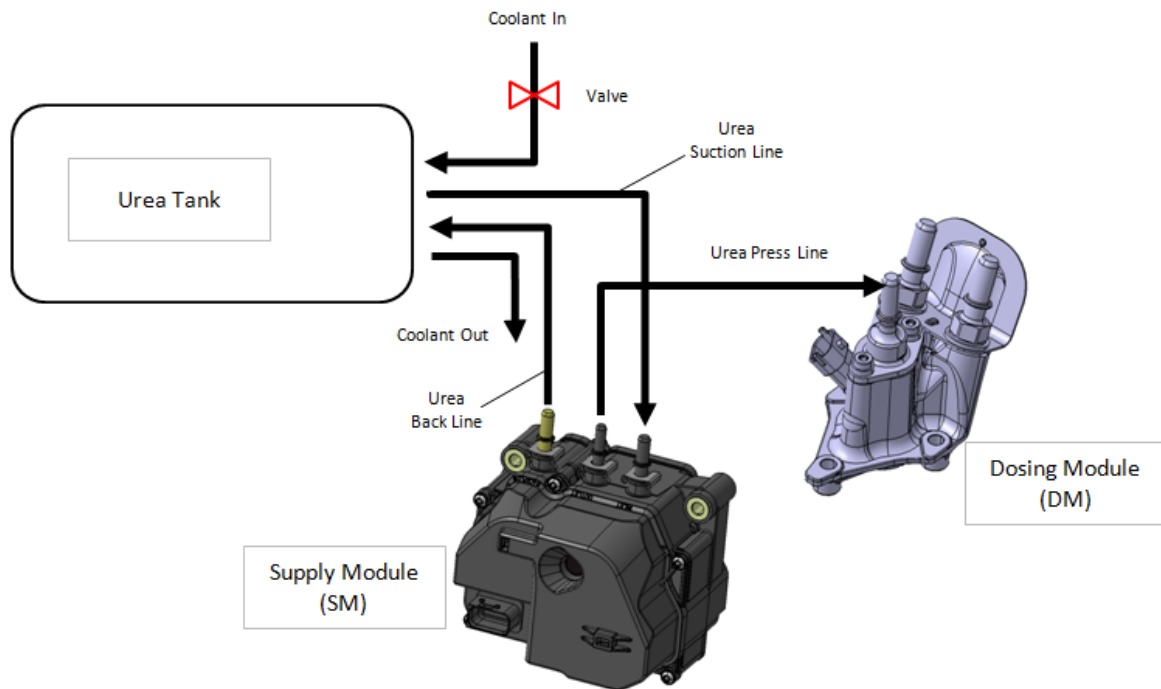
CODE	REASON	EFFECT
U005435-10	Pressure stabilization error (Supply module monitoring)	Inducement Group5

	No.	DCU Pin	PIN description(Supply module)
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND
	No.	DCU Pin	PIN description (Dosing module)
	1	80	Reduction agent magnet valve H
	2	58	Reduction agent magnet valve L

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker

Muffler Layout can be different according to Machine but the position of DM is same.



3) Condition for Running Diagnostic

Test regardless of state

4) Condition for Setting the Fault Code

If function Pressure Check cannot set a $8500 < P < 9500$ (hpa) for measuring the pressure drop. Export variable from function Pressure Check.

5) Condition for Clearing the Fault Code

The error will be healed at restart.

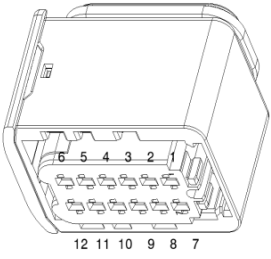
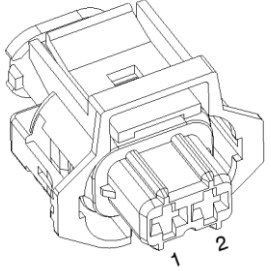
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P204B is occurred on diagnostic tool?		Step2	O.K
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Supply module or Dosing module	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 7
7	Check Pressure line Line problem?		Fix pressure line	Call Hot-line

Fault Code	Fault Name
P204C	Underpressure in Metering Control

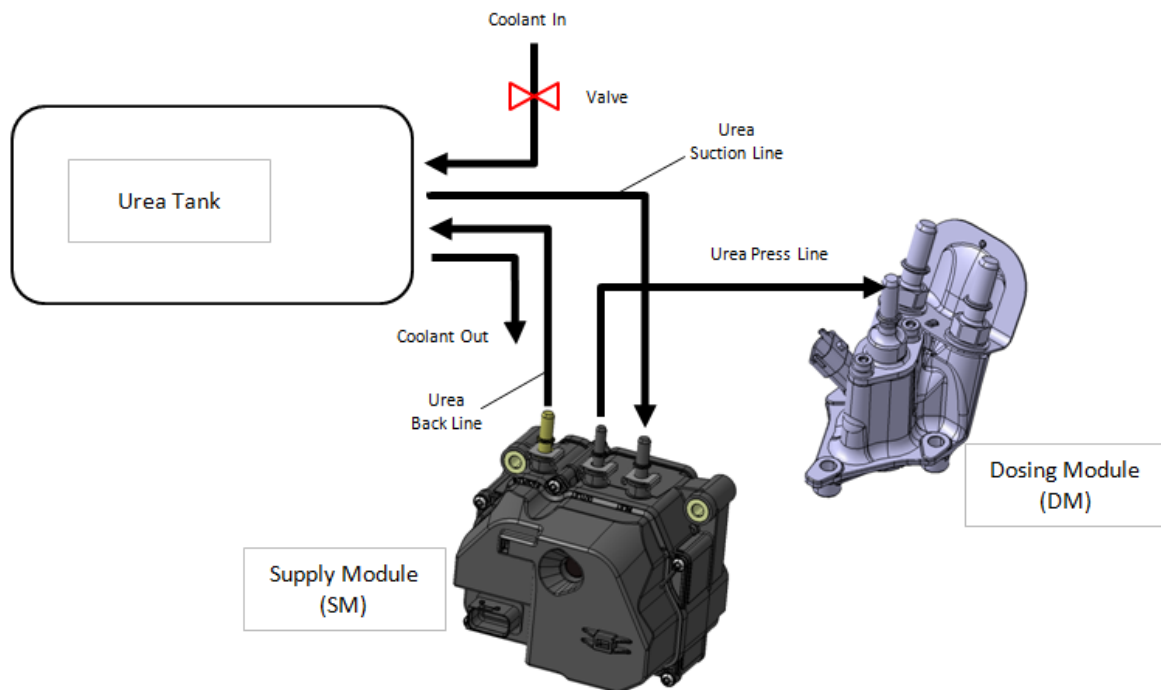
1) Overview

CODE	REASON	EFFECT
U004335-01	underpressure error = FCT_ERROR in the METERINGCONTROL state	Inducement Group5

	No.	DCU Pin	PIN description(Supply module)
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND
	No.	DCU Pin	PIN description (Dosing module)
	1	80	Reduction agent magnet valve H
	2	58	Reduction agent magnet valve L

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Check in the METERINGCONTROL state attempt.

4) Condition for Setting the Fault Code

The pressure characteristic is checked for compliance with two minimum pressure thresholds. If Relative Urea Pump Module Pressure falls below the first minimum pressure threshold 7500hPa for greater than the threshold.

5) Condition for Clearing the Fault Code

The error will not be healed in the current driving cycle. The error is cleared at initialization of a driving cycle.

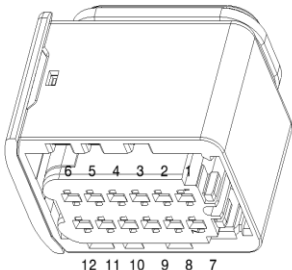
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P204C is occurred on diagnostic tool?		Step2	O.K
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Supply module or Dosing module	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 7
7	Check Pressure line Line problem?		Fix pressure line	Call Hot-line

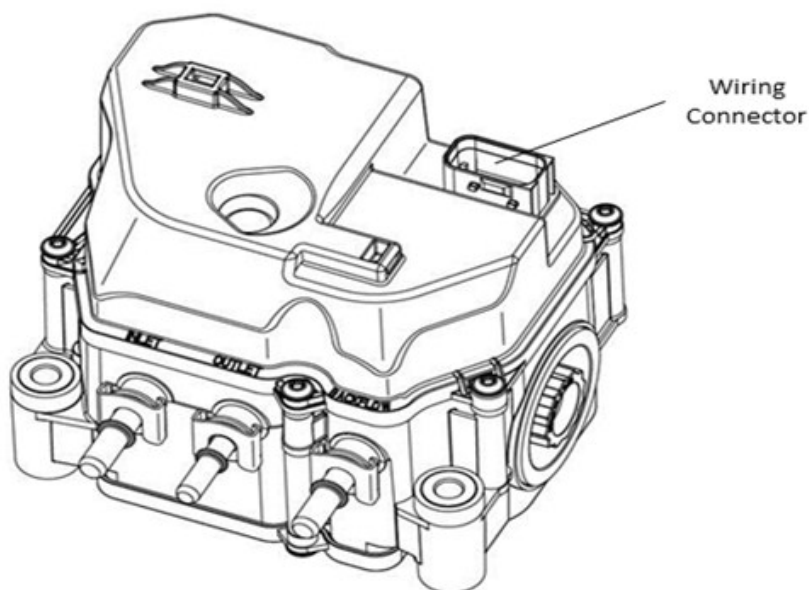
Fault Code	Fault Name
P204C	DEF Pump Pressure Min

1) Overview

CODE	REASON	EFFECT
U004334-04	Electrical problem Connection problem Harness problem Sensor problem	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

Key on or engine running

4) Condition for Setting the Fault Code

If the supply module raw signal is less than 250 [mV] for a duration 400 ms then an error is reported using P204C fault.

5) Condition for Clearing the Fault Code

If the supply module raw signal is greater than 250 [mV] for a duration 400 ms then the error is healed

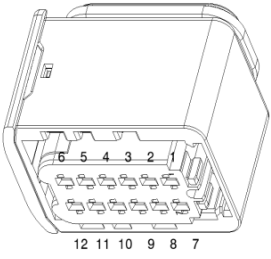
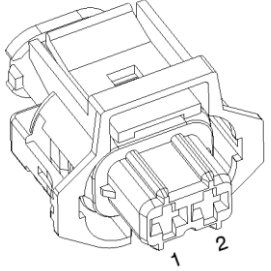
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P204C is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P204D	Overpressure in Metering Control

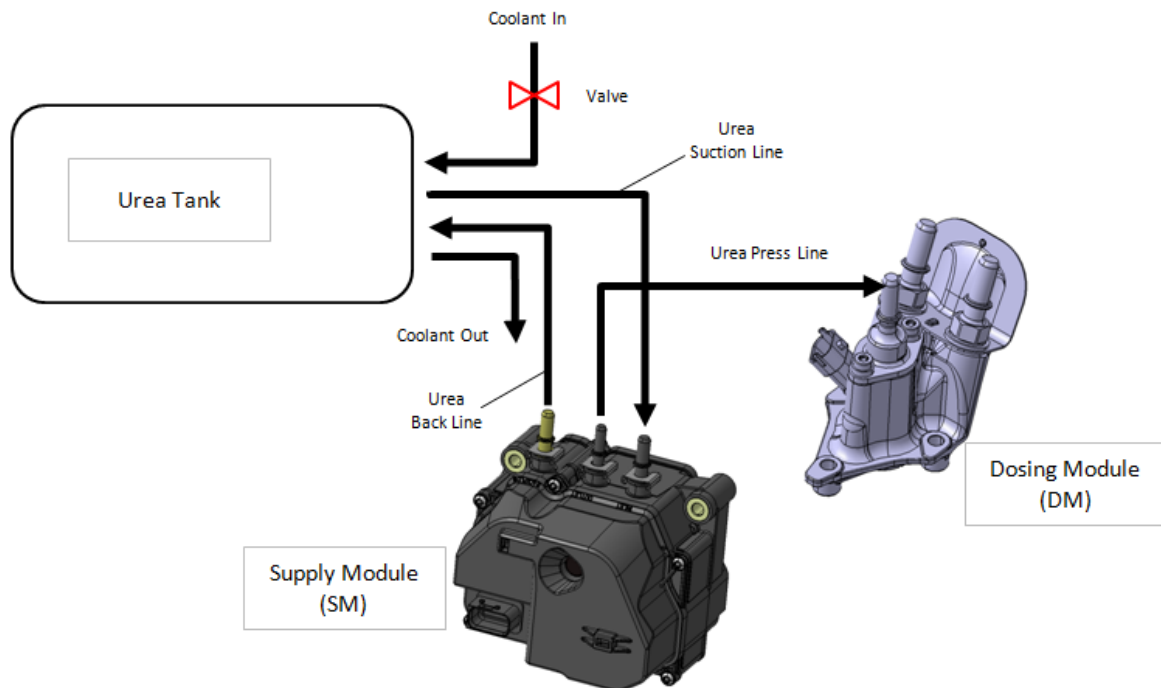
1) Overview

CODE	REASON	EFFECT
U004335-00	overpressure error = FCT_ERROR in the METERINGCONTROL state	Inducement Group5

	No.	DCU Pin	PIN description(Supply module)
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND
	No.	DCU Pin	PIN description (Dosing module)
	1	80	Reduction agent magnet valve H
	2	58	Reduction agent magnet valve L

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Check in the METERINGCONTROL state

4) Condition for Setting the Fault Code

The pressure characteristic is checked for compliance with a maximum pressure threshold. If Relative Urea Pump Module Pressure exceeds the maximum pressure threshold 10500hPa for longer than the debouncing time 20sec, an error will be set.

5) Condition for Clearing the Fault Code

The error will not be healed in the current driving cycle. The error is cleared at initialization of a driving cycle.

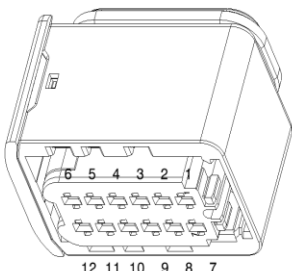
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P204D is occurred on diagnostic tool?		Step2	O.K
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Supply module or Dosing module	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 7
7	Check Pressure line Line problem?		Fix pressure line	Call Hot-line

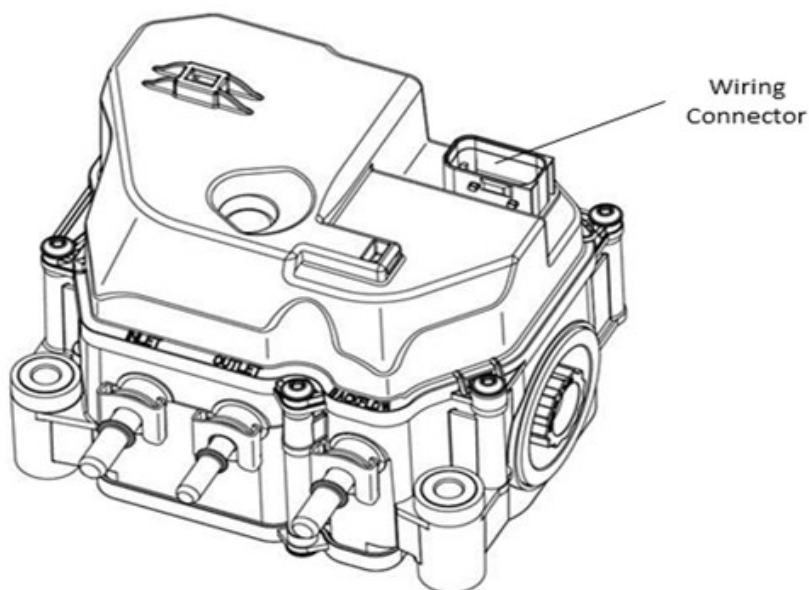
Fault Code	Fault Name
P204D	DEF Pump Pressure Max

1) Overview

CODE	REASON	EFFECT
U004334-03	Electrical problem Connection problem Harness problem Sensor problem	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

Key on or engine running

4) Condition for Setting the Fault Code

If the supply module raw signal is greater than 4750 [mV] for a duration 400 ms then an error is reported using P204D fault.

5) Condition for Clearing the Fault Code

If the supply module raw signal is less than 4750 [mV] for a duration 400 ms then the error is healed

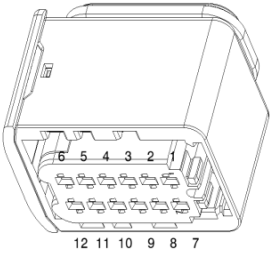
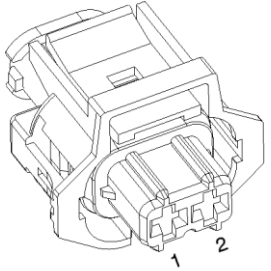
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P204D is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P204D	Monitoring of Over Pressure

1) Overview

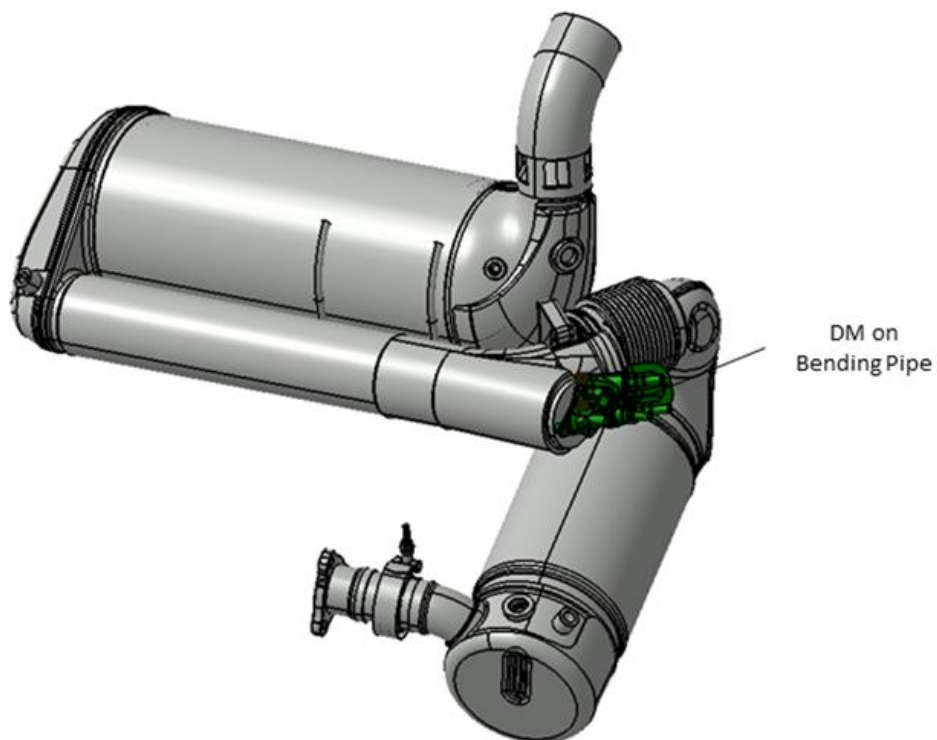
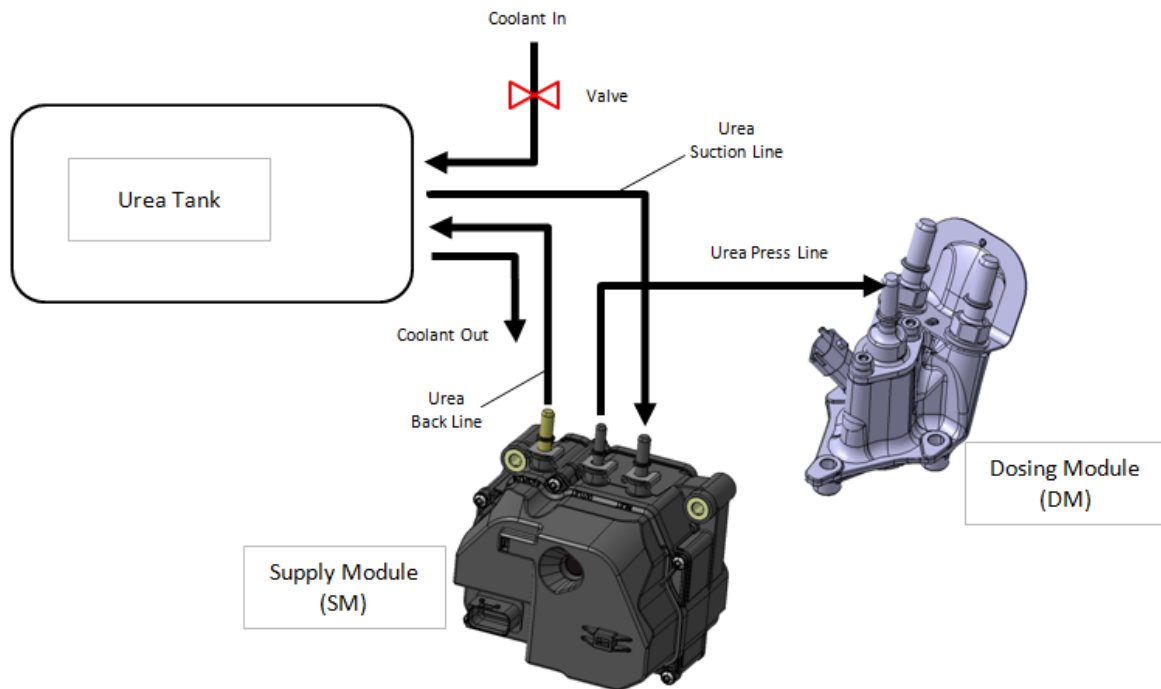
CODE	REASON	EFFECT
U004335-12	Monitoring of over pressure	

	No.	DCU Pin	PIN description(Supply module)
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND
	No.	DCU Pin	PIN description (Dosing module)
	1	80	Reduction agent magnet valve H
	2	58	Reduction agent magnet valve L

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker

Muffler Layout can be different according to Machine but the position of DM is same.



3) Condition for Running Diagnostic

Test regardless of state

4) Condition for Setting the Fault Code

The system is monitored for overpressure regardless of the state with two exceptions:

when the supply module is defrosting and when the reverting valve is actuated for pressure reduction in the DETECTIONMODE state. If the supply module is defrosted, the RVV control flag is not set, and if the pressure Relative Urea Pump Module Pressure is higher than 12500hPa and the debounce time 5s is elapsed, the error will be set.

5) Condition for Clearing the Fault Code

This DFC will be healed if there is no overpressure for longer than 5sec.

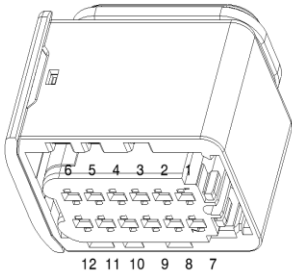
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P204D is occurred on diagnostic tool?		Step2	O.K
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Supply module or Dosing module	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 7
7	Check Pressure line Line problem?		Fix pressure line	Call Hot-line

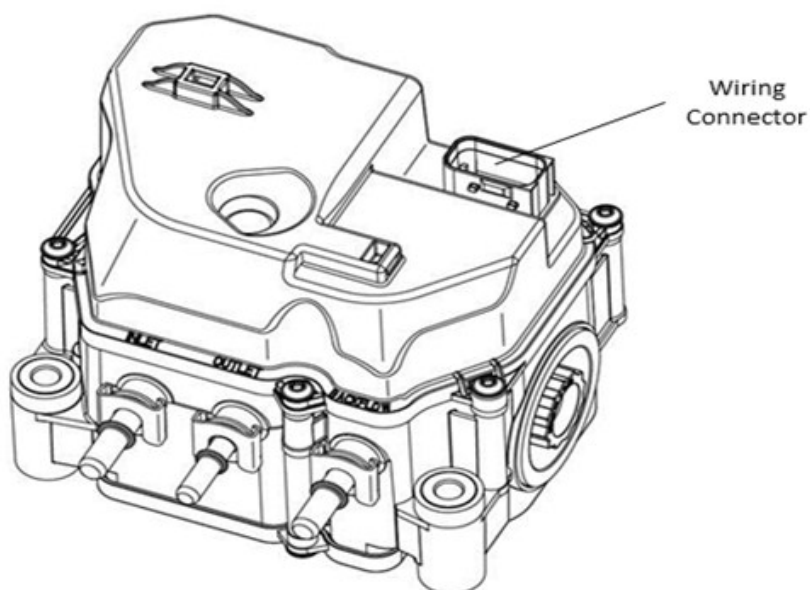
Fault Code	Fault Name
P204E	Defective Pressure Reduction

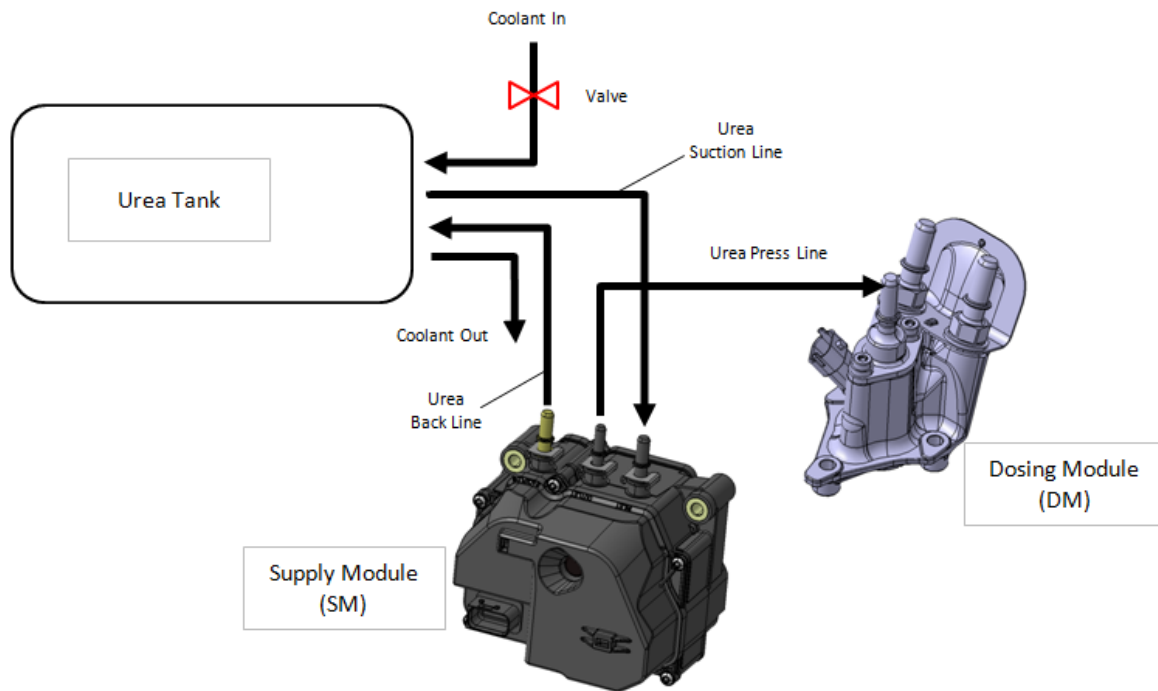
1) Overview

CODE	REASON	EFFECT
U004334-22	Supply module problem Pressure sensor problem Dosing valve problem Urea line problem	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location





3) Condition for Running Diagnostic

Pressure is high enough and there is enough AdBlue in the pressure line
The check is executed every time the state "PRESSUREREDUCTION" is entered

4) Condition for Setting the Fault Code

If the minimum pressure is greater than a threshold during "PRESSUREREDUCTION"

5) Condition for Clearing the Fault Code

If the minimum pressure is smaller than a threshold during "PRESSUREREDUCTION"

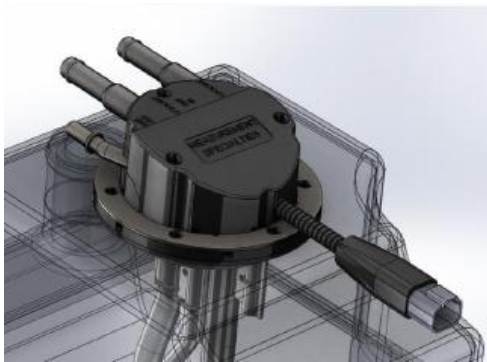
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P204E is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check actuator connection Connection problem?		Do necessary repair	Step 5
5	Check urea line Urea line problem?		Do necessary repair	Step 6
6	Check sensor/actuator resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor/actuator	Call Hot-line

Fault Code	Fault Name
P205A	DEF Temperature Sensor Error

1) Overview

CODE	REASON	EFFECT
U003031-27	Stuck in range check of urea tank temperature sensor	



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

The Urea tank level is greater than a calibrated threshold and urea tank temperature is in the calibrated range

4) Condition for Setting the Fault Code

No significant tank temperature increase as expected

5) Condition for Clearing the Fault Code

The fault can be healed only by a new fault free heating cycle in the new driving cycle

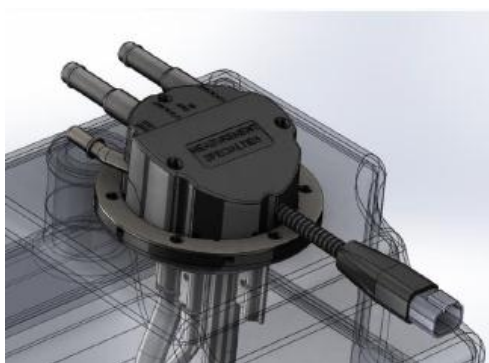
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P205A is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check the coolant valve Coolant valve problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 6
6	Check DCU connection Connection problem?		Do necessary repair	Step 7
7	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 8
8	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P205A	DEF Temperature Signal Error

1) Overview

CODE	REASON	EFFECT
U003031-31	Urea tank temperature signal is error Network problem	



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

The signal source is configured to be coming from CAN module.
The frequency of testing depends on the scheduling time of the process

4) Condition for Setting the Fault Code

The signal from CAN of urea tank temperature is equal to 0x7FFF. (Not available)

5) Condition for Clearing the Fault Code

The signal from CAN of urea tank temperature is not equal to 0x7FFF. (Not available)

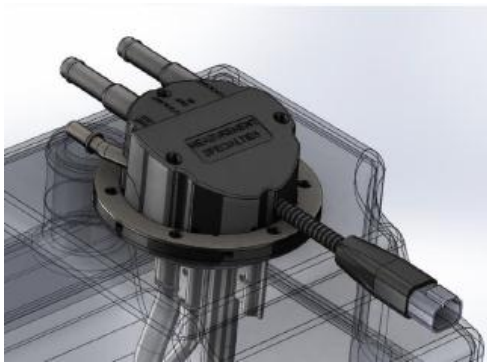
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P205A is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 5
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 6
5	Check DCU connection Connection problem?		Do necessary repair	Step 7
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 8
7	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P205B	DEF Temperature Plausibility High

1) Overview

CODE	REASON	EFFECT
U003031-20	"Urea tank temperature - environment temperature" is above a threshold	



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

- Plausibility check enabled
- Tank level sensor signal is plausible and tank level evaluation is possible
- Refill event is not detected in the current driving cycle. If a refill has been detected once then the tank temperature cold start plausibility monitoring is inhibited for the whole driving cycle
- Actual tank level is greater than or equal to calibration threshold (10%)

4) Condition for Setting the Fault Code

If the difference between urea tank temperature and environment temperature is greater than a threshold

5) Condition for Clearing the Fault Code

If the difference between urea tank temperature and environment temperature is less than or equal to a threshold

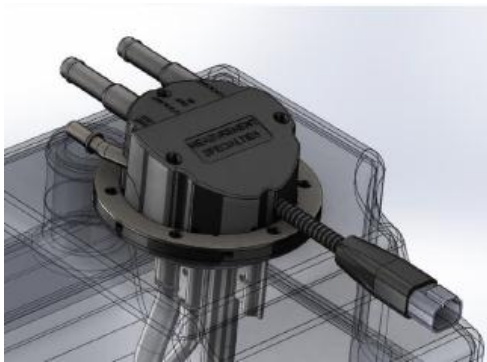
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P205B is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 5
5	Check DCU connection Connection problem?		Do necessary repair	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 7
7	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P205B	DEF Temperature Plausibility Low

1) Overview

CODE	REASON	EFFECT
U003031-21	"Urea tank temperature - environment temperature" is below a threshold	



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

- Plausibility check enabled
- Tank level sensor signal is plausible and tank level evaluation is possible
- Refill event is not detected in the current driving cycle. If a refill has been detected once then the tank temperature cold start plausibility monitoring is inhibited for the whole driving cycle
- Actual tank level is greater than or equal to calibration threshold (10%)

4) Condition for Setting the Fault Code

If the difference between urea tank temperature and environment temperature is lesser than a threshold

5) Condition for Clearing the Fault Code

If the difference between urea tank temperature and environment temperature is greater than or equal to a threshold

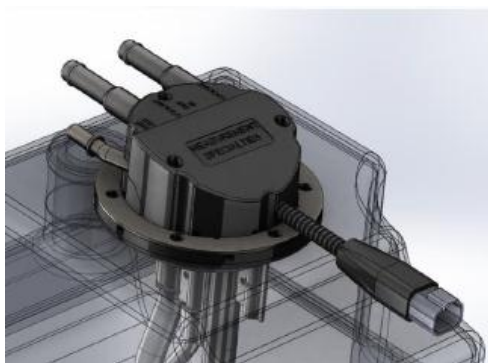
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P205B is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 5
5	Check DCU connection Connection problem?		Do necessary repair	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 7
7	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P205B	DEF Temperature Too High

1) Overview

CODE	REASON	EFFECT
U003031-00	Urea tank temperature is above a threshold	



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

The ADC module doesn't report any error and the corresponding electrical SRC error is not set. The frequency of testing depends on the scheduling time of the process

4) Condition for Setting the Fault Code

The sensed sensor signal of urea tank temperature is greater than a threshold

5) Condition for Clearing the Fault Code

The sensed sensor signal of urea tank temperature is lower than or equal to a threshold

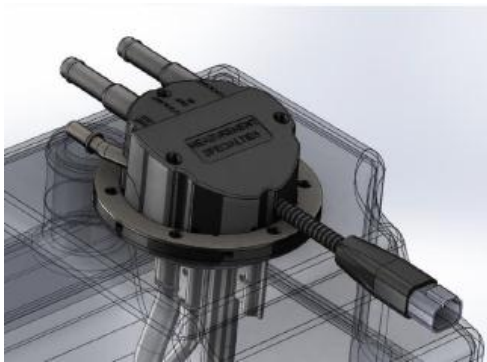
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P205B is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 5
5	Check DCU connection Connection problem?		Do necessary repair	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 7
7	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P205B	DEF Temperature Too Low

1) Overview

CODE	REASON	EFFECT
U003031-01	Urea tank temperature is below a threshold	



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

The ADC module doesn't report any error and the corresponding electrical SRC error is not set. The frequency of testing depends on the scheduling time of the process

4) Condition for Setting the Fault Code

The sensed sensor signal of urea tank temperature is less than a threshold

5) Condition for Clearing the Fault Code

The sensed sensor signal of urea tank temperature is greater than or equal to a threshold

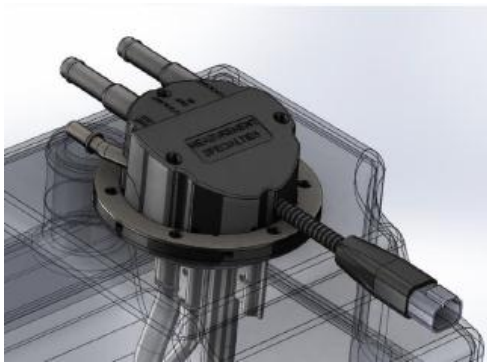
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P205B is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 5
5	Check DCU connection Connection problem?		Do necessary repair	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 7
7	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P205E	DEF Overheating

1) Overview

CODE	REASON	EFFECT
U003031-23	Error Urea tank temperature is overheated Coolant valve problem	



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

As soon as T15 is switched ON

4) Condition for Setting the Fault Code

When tank temperature is greater than a threshold for a certain time

5) Condition for Clearing the Fault Code

If the AdBlue tank temperature is below the threshold for a certain time

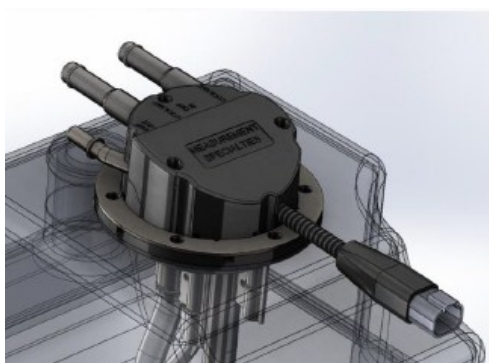
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P205A is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check the coolant valve Coolant valve problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 6
6	Check DCU connection Connection problem?		Do necessary repair	Step 7
7	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 8
8	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P206A	DEF Quality Sensor Fail

1) Overview

CODE	REASON	EFFECT
U003516-11	Urea quality sensor problem Urea quality sensor install problem	Inducement Group5



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

Key on or engine run when there is no bus-off and no timeout error

4) Condition for Setting the Fault Code

The error is reported if its FMI is equal 11

5) Condition for Clearing the Fault Code

The error is healed when its FMI is not equal 11

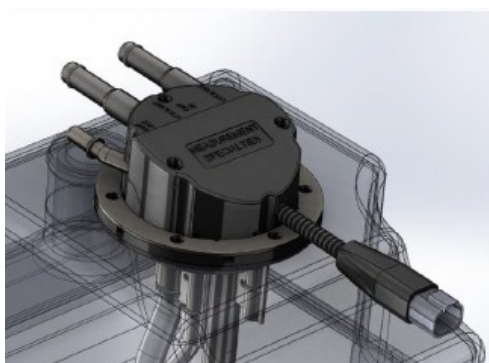
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P206A is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 5
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 6
5	Check DCU connection Connection problem?		Do necessary repair	Step 7
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 8
7	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P206A	DEF Quality Signal Error

1) Overview

CODE	REASON	EFFECT
U003516-31	Urea quality signal is error	Inducement Group4



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

The signal from CAN of urea quality is equal to 0x7FFF. (Not available)

5) Condition for Clearing the Fault Code

The signal from CAN of urea quality is not equal to 0x7FFF. (Not available)

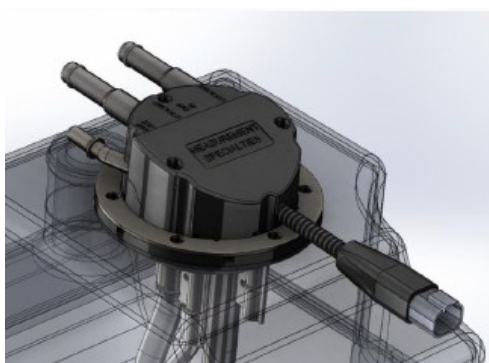
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P206A is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 5
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 6
5	Check DCU connection Connection problem?		Do necessary repair	Step 7
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 8
7	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P206B	DEF Quality Error

1) Overview

CODE	REASON	EFFECT
U003516-00 U003516-01	Urea quality is above a valid limit (3516-00) Urea quality is below a valid limit (3516-01)	Inducement Group4



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

The sensed urea quality signal exceeds the maximum valid limit /
The sensed urea quality signal falls below the minimum valid limit

5) Condition for Clearing the Fault Code

The sensed urea quality signal is in a valid limit

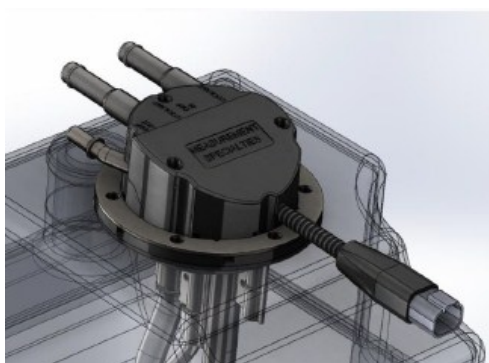
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P206B is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check urea quality using by densitometer Urea quality problem?		Change Urea	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P206C	DEF Quality Sensor SCG

1) Overview

CODE	REASON	EFFECT
U003516-04	Urea quality sensor problem Urea quality sensor install problem	Inducement Group5



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

Key on or engine run when there is no bus-off and no timeout error

4) Condition for Setting the Fault Code

The error is reported if its FMI is equal 4

5) Condition for Clearing the Fault Code

The error is healed when its FMI is not equal 4

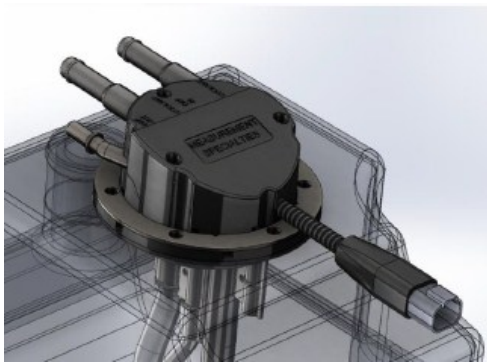
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P206C is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 5
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 6
5	Check DCU connection Connection problem?		Do necessary repair	Step 7
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 8
7	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P206D	DEF Quality Sensor Open

1) Overview

CODE	REASON	EFFECT
U003516-03	Urea quality sensor problem Urea quality sensor install problem	Inducement Group5



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

Key on or engine run when there is no bus-off and no timeout error

4) Condition for Setting the Fault Code

The error is reported if its FMI is equal 3

5) Condition for Clearing the Fault Code

The error is healed when its FMI is not equal 3

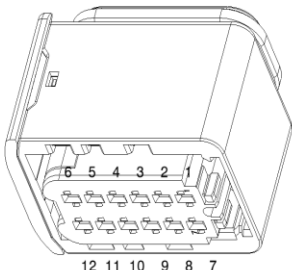
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P206D is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 5
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 6
5	Check DCU connection Connection problem?		Do necessary repair	Step 7
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 8
7	Check Network Network problem?		Do necessary repair	Call Hot-line

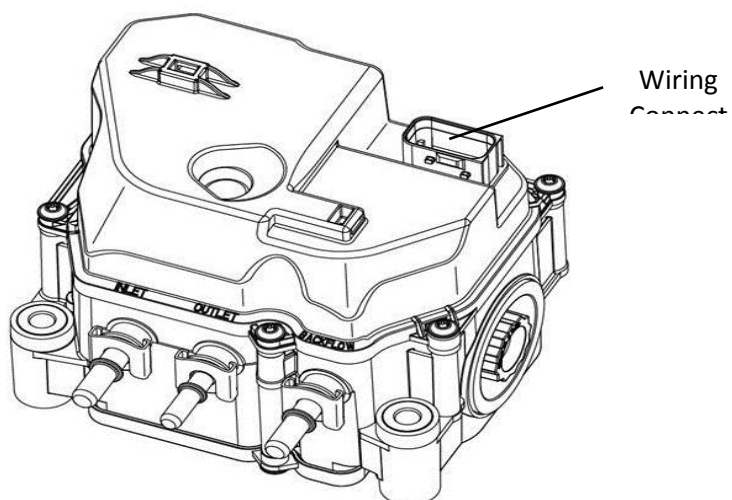
Fault Code	Fault Name
P208A	DEF Pump Motor Open

1) Overview

CODE	REASON	EFFECT
U004375-05	DFC for OL error on the PWM output powerstage for the actuator	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

The error is checked only if diagnosis is enabled and the Corresponding Actuator Relay to which the Urea Pump Motor is connected is CLOSED and pump actuation is not disabled.

4) Condition for Setting the Fault Code

The hardware detects an open load error on the PWM output power stage for the Urea Pump Module Motor Actuator.

5) Condition for Clearing the Fault Code

The hardware detects the presence of load on the PWM output power stage for the Urea Pump Module Motor Actuator.

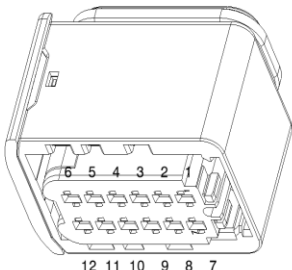
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P208A is occurred on diagnostic tool?		Step2	O.K
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

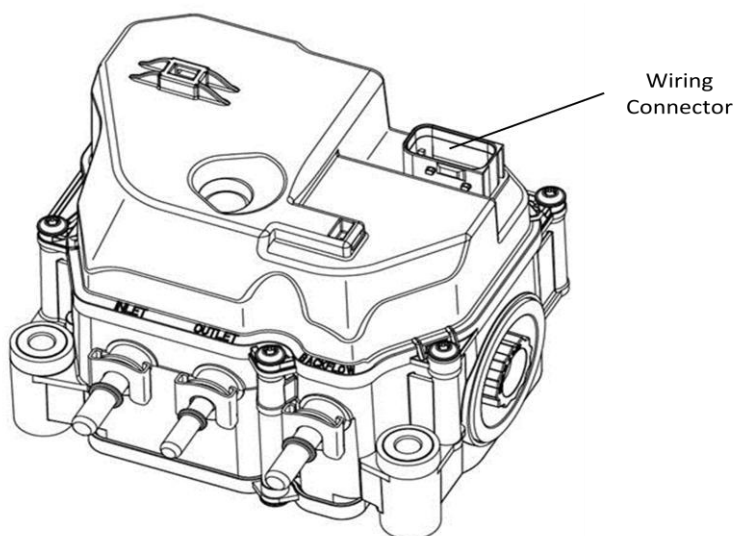
Fault Code	Fault Name
P208B	DEF Pump Motor Over temperature

1) Overview

CODE	REASON	EFFECT
U004374-28	Pump Motor Speed Deviation	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

100 ms.

4) Condition for Setting the Fault Code

An SCG was reported by the powerstage for a specific time. Additionally, the pump motor has been restarted more than 5 times in the same driving cycle. Fault level of 100% corresponds to a 'pump motor failed' error.

5) Condition for Clearing the Fault Code

Pressure has been reduced through pressure reduction and the pressure has dropped

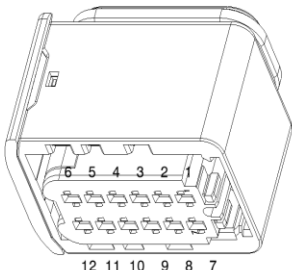
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P208B is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Supply module	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

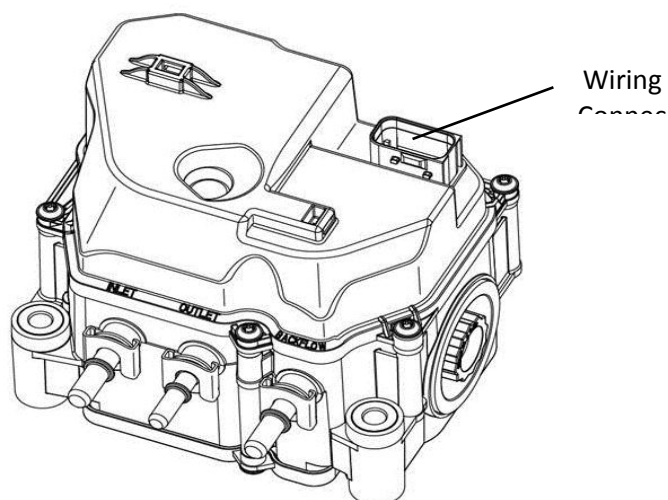
Fault Code	Fault Name
P208B	DEF Pump Motor Over-temperature

1) Overview

CODE	REASON	EFFECT
U004375-12	Urea pump motor power stage problem	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

The error is checked only if diagnosis is enabled and the Corresponding Actuator Relay to which the

Urea Pump Motor is connected is CLOSED and pump actuation is not disabled.

4) Condition for Setting the Fault Code

The hardware detects an over temperature on the PWM output power stage for the Urea Pump Module Motor Actuator.

5) Condition for Clearing the Fault Code

The hardware detects absence of any short circuit to battery on the PWM output power stage for the Urea Pump Module Motor Actuator.

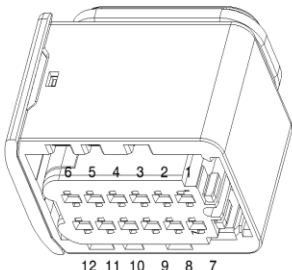
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P208B is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change urea pump motor or supply module	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

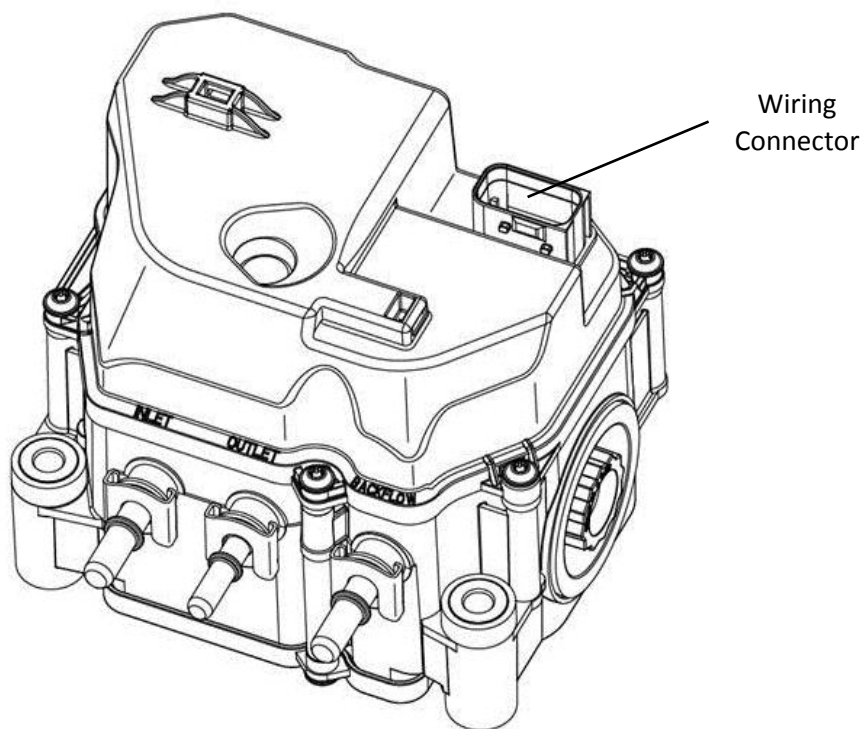
Fault Code	Fault Name
P208C	DEF Pump Motor SCG

1) Overview

CODE	REASON	EFFECT
U004375-04	DFC for SCB error on the PWM output powerstage for the actuator	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

The error is checked only if diagnosis is enabled and the Corresponding Actuator Relay to which the Urea Pump Motor is connected is closed and pump actuation is not disabled .

4) Condition for Setting the Fault Code

The hardware detects a short circuit to ground error on the PWM output power stage for the Urea Pump Module Motor Actuator.

5) Condition for Clearing the Fault Code

The hardware detects absence of any short circuit to ground on the PWM output power stage for the Urea Pump Module Motor Actuator.

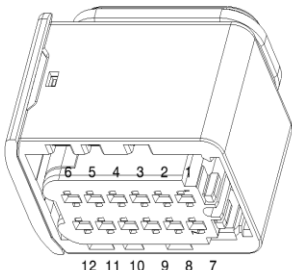
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P208C is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

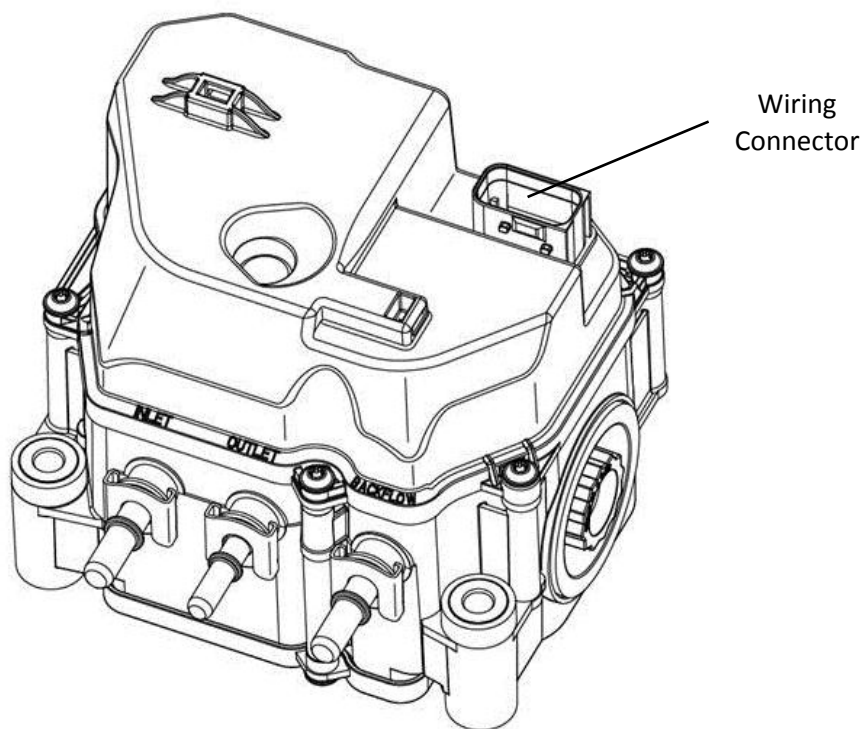
Fault Code	Fault Name
P208D	DEF Pump Motor SCB

1) Overview

CODE	REASON	EFFECT
U004375-03	DFC for SCB error on the PWM output powerstage for the actuator	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

The error is checked only if diagnosis is enabled and the Corresponding Actuator Relay to which the Urea Pump Motor is connected is closed and pump actuation is not disabled .

4) Condition for Setting the Fault Code

The hardware detects a short circuit to battery error on the PWM output power stage for the Urea Pump Module Motor Actuator.

5) Condition for Clearing the Fault Code

The hardware detects absence of any short circuit to battery on the PWM output power stage for the Urea Pump Module Motor Actuator.

6) Check List

Step	Inspection	Standard Value	YES	NO
1	P208D is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Sensor	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P208E	Dosing Valve is blocked

1) Overview

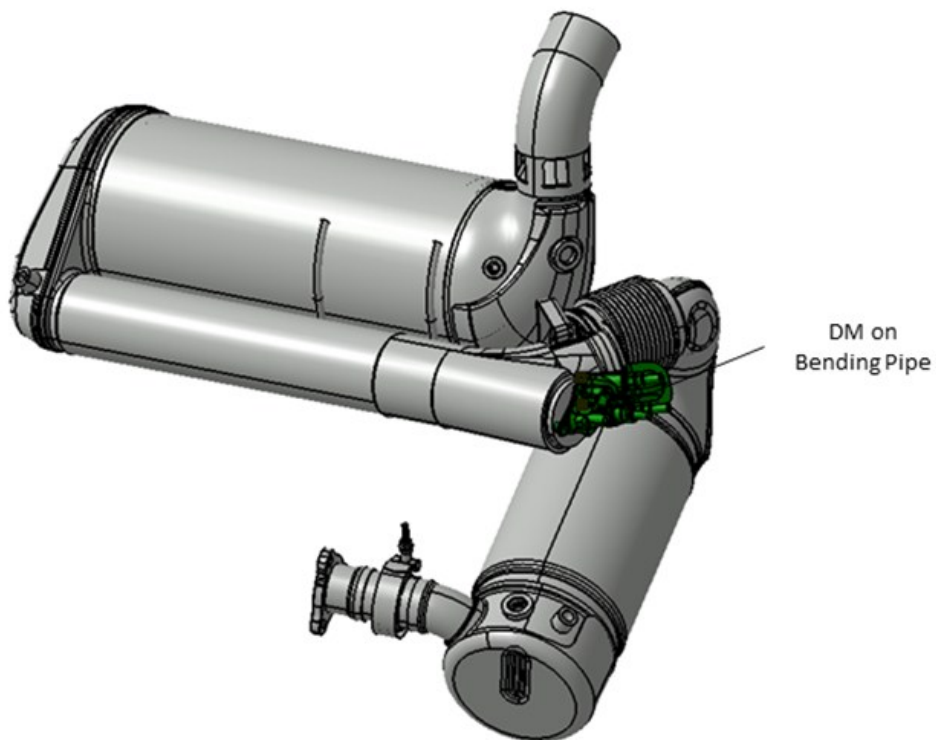
CODE	REASON	EFFECT
U003361-27	DCU connection problem Dosing Valve connection problem Dosing Valve problem	

A technical line drawing of a DCU (Data Control Unit) connector. The connector is shown from a perspective view, highlighting its internal components and the two pins at the bottom. Pin 1 is on the left and pin 2 is on the right, both labeled with their respective numbers.

No.	DCU Pin	PIN description
1	80	Reduction agent magnet valve H
2	58	Reduction agent magnet valve L

2) Component Location

Muffler Layout can be different according to Machine but the position of DM is same.



3) Condition for Running Diagnostic

Whenever there is a change in error status of urea dosing valve driver and the release condition for urea dosing valve are satisfied or when the heating time of the dosing valve is greater than threshold

4) Condition for Setting the Fault Code

The dosing valve will be blocked if no opening process is detected by the dosing valve driver and the operating conditions are within the evaluation range

5) Condition for Clearing the Fault Code

Healing is based on the application

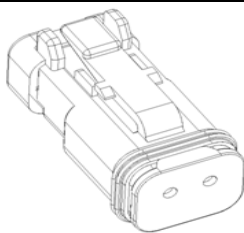
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P208E is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check DM resistance and DM tip Resistance problem? Or DM tip problem?		Change DM	Call Hot-line

Fault Code	Fault Name
P209F	DEF Tank Heater Overtemperature

1) Overview

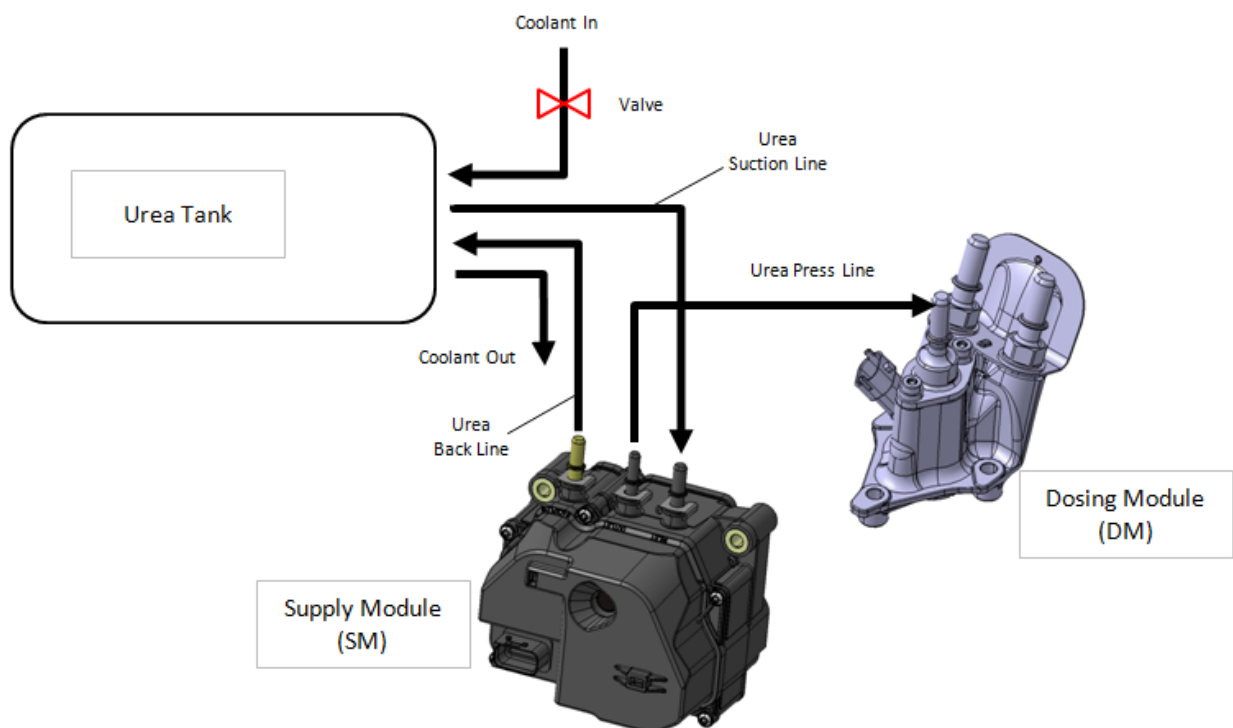
CODE	REASON	EFFECT
U003363-12	Electrical problem Connection problem Harness problem Coolant valve problem	



No.	DCU Pin	PIN description
1	75	Coolant valve V
2	92	Coolant valve S

2) Component Location

Urea Tank, Valve and Urea Lines is applied by Machine/Vehicle Maker



3) Condition for Running Diagnostic

Key on or engine running

4) Condition for Setting the Fault Code

The power stage hardware reports a "over temperature" error.

5) Condition for Clearing the Fault Code

There is no defect detection

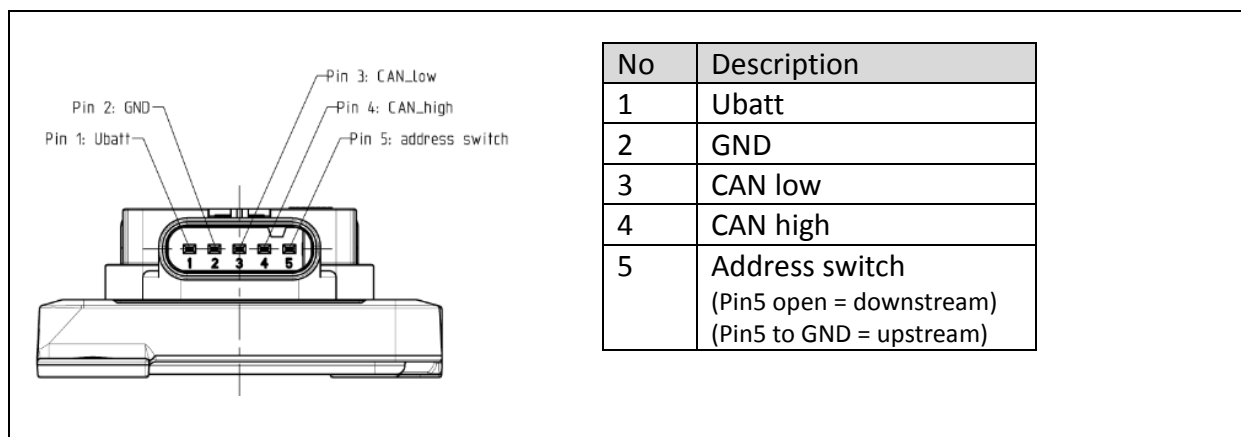
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P209F is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check valve connection Connection problem?		Do necessary repair	Step 3
4	Check DCU connection Connection problem?		Do necessary repair	Step 4
5	Check valve resistance Resistance problem?		Valve Sensor	Step 5
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

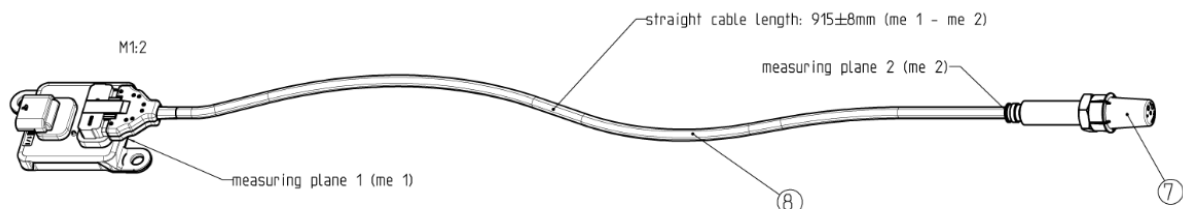
Fault Code	Fault Name
P237E	Heater No Availability (Sensor 1)

1) Overview

CODE	REASON	EFFECT
U104332-21	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Stable environment conditions must be given, frequency: always after release of sensor heating

4) Condition for Setting the Fault Code

If the heater won't stay heated up, after reaching set-point once

5) Condition for Clearing the Fault Code

Heater stays heated up

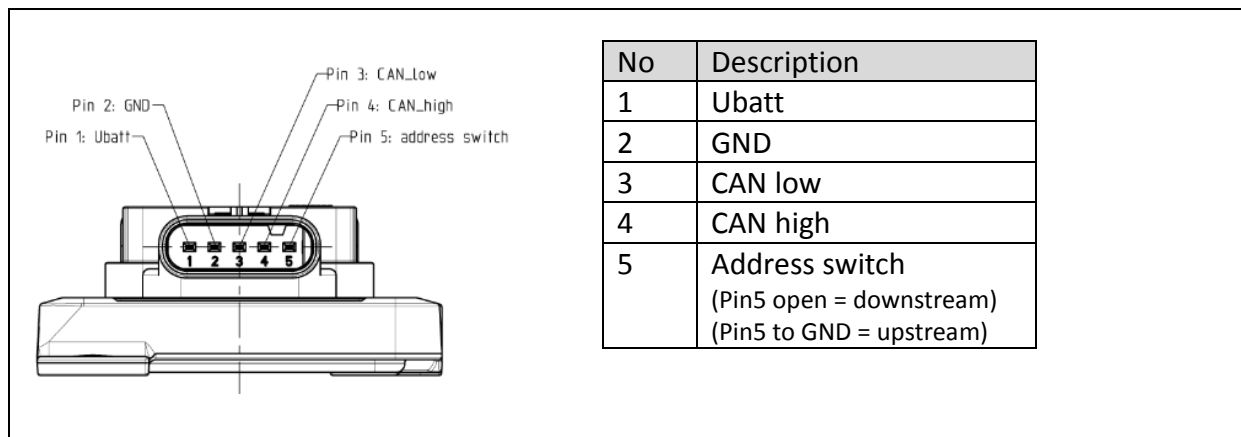
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P237E is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

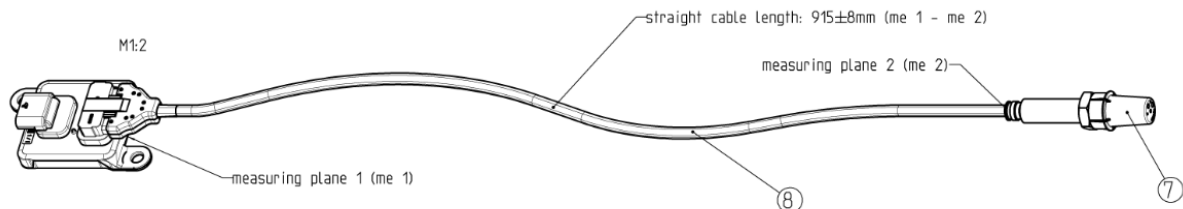
Fault Code	Fault Name
P237F	Heater No Availability (Sensor 2)

1) Overview

CODE	REASON	EFFECT
U104385-22	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Stable environment conditions must be given, frequency: always after release of sensor heating

4) Condition for Setting the Fault Code

If the heater won't stay heated up, after reaching set-point once

5) Condition for Clearing the Fault Code

Heater stays heated up

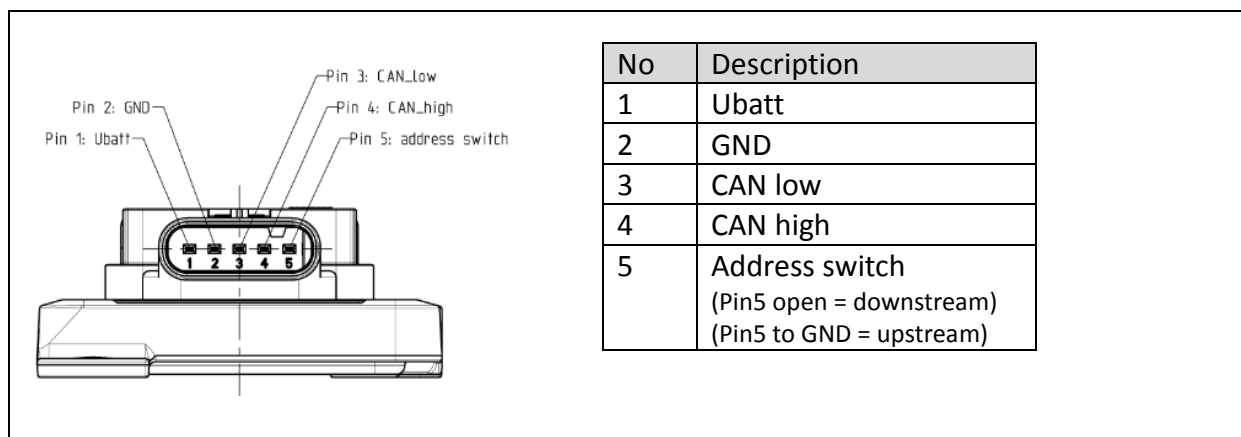
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P237F is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

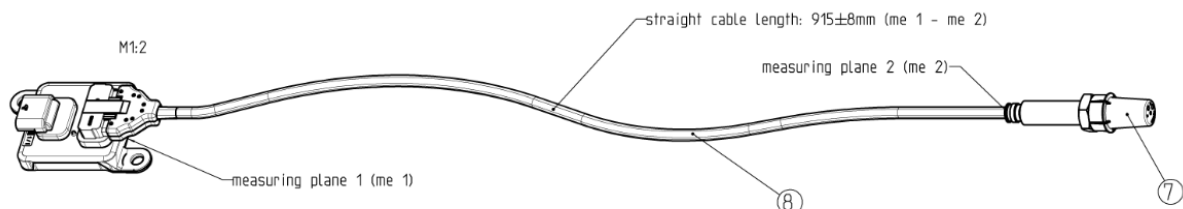
Fault Code	Fault Name
P239E	Nox Undershoot Error (Sensor 1)

1) Overview

CODE	REASON	EFFECT
U003224-23	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Every time if the status of detection of offset is set unequal to 0

4) Condition for Setting the Fault Code

Offset is smaller than undershoot threshold

5) Condition for Clearing the Fault Code

Offset is greater than undershoot threshold

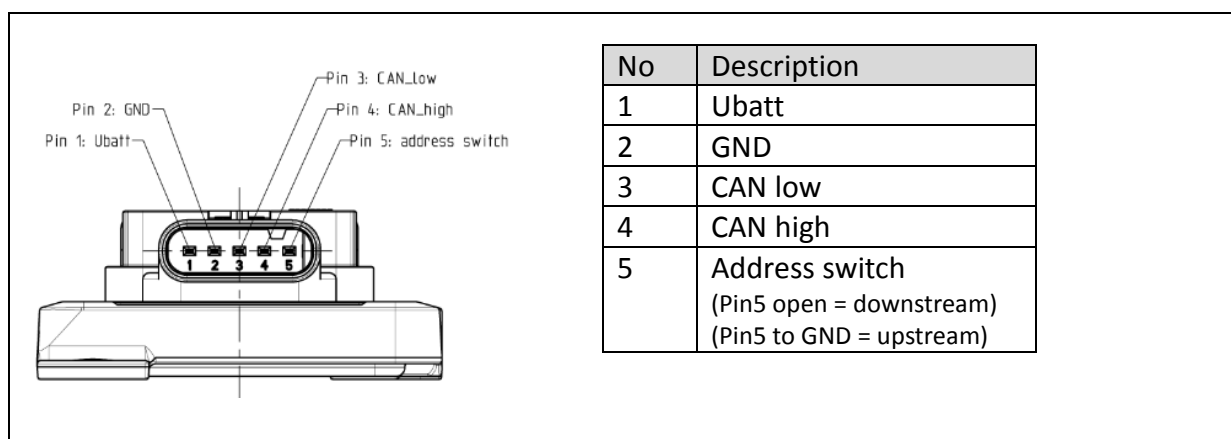
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P239E is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

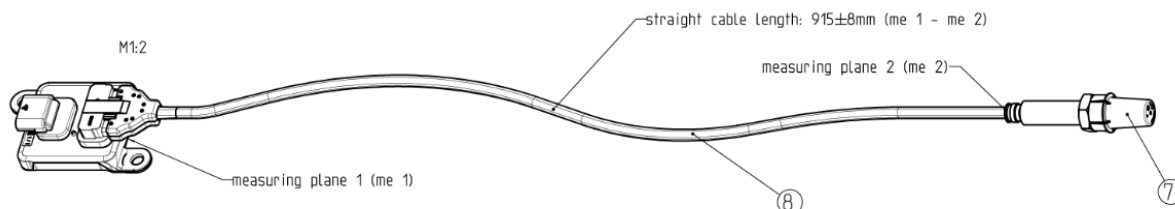
Fault Code	Fault Name
P239F	Nox Undershoot Error (Sensor 2)

1) Overview

CODE	REASON	EFFECT
U003234-24	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Every time if the status of detection of offset is set unequal to 0

4) Condition for Setting the Fault Code

Offset is smaller than undershoot threshold

5) Condition for Clearing the Fault Code

Offset is greater than undershoot threshold

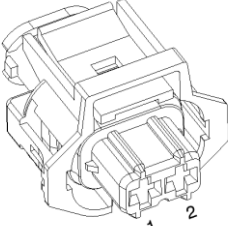
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P239F is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P0426	SCR Inlet Temperature Error

1) Overview

CODE	REASON	EFFECT
U004360-00 U004360-01	SCR inlet temperature is above a threshold (4360-00) SCR inlet temperature is below a threshold (4360-01)	

	No.	DCU Pin	PIN description
	1	83	Catalyst temperature sensor 1 signal
	2	61	Catalyst temperature sensor 1 ground

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

The sensed sensor signal SCR inlet temperature is greater than a threshold /
The sensed sensor signal SCR inlet temperature is less than a threshold

5) Condition for Clearing the Fault Code

The sensed sensor signal SCR inlet temperature is in a threshold

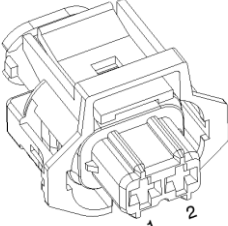
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P0426 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 5
5	Check DCU connection Connection problem?		Do necessary repair	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P0426	SCR Inlet Temperature Sensor Tampering

1) Overview

CODE	REASON	EFFECT
U004360-25	SCR inlet temperature sensor error (or install error)	

	No.	DCU Pin	PIN description
	1	83	Catalyst temperature sensor 1 signal
	2	61	Catalyst temperature sensor 1 ground

2) Component Location

3) Condition for Running Diagnostic

Engine is sufficiently running and engine torque is exceeds threshold

4) Condition for Setting the Fault Code

An error is detected when SCR inlet temperature is less than a threshold, as a function of ambient air temperature

5) Condition for Clearing the Fault Code

If condition for defect detection is not present

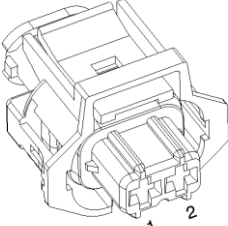
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P0426 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Call Hot-line

Fault Code	Fault Name
P0427	SCR Inlet Temperature Sensor Signal Low

1) Overview

CODE	REASON	EFFECT
U004360-04	SCR inlet temperature sensor signal is below a threshold	

	No.	DCU Pin	PIN description
	1	83	Catalyst temperature sensor 1 signal
	2	61	Catalyst temperature sensor 1 ground

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

The sensor raw signal of SCR inlet temperature is below a threshold

5) Condition for Clearing the Fault Code

The sensor raw signal of SCR inlet temperature becomes equal or greater than a threshold

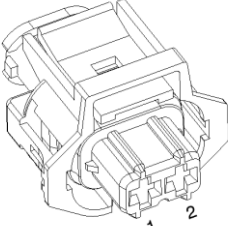
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P0427 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 5
5	Check DCU connection Connection problem?		Do necessary repair	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P0428	SCR Inlet Temperature Sensor Signal High

1) Overview

CODE	REASON	EFFECT
U004360-03	SCR inlet temperature sensor signal is above a threshold	

	No.	DCU Pin	PIN description
	1	83	Catalyst temperature sensor 1 signal
	2	61	Catalyst temperature sensor 1 ground

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

The sensor raw signal of SCR inlet temperature is above a threshold

5) Condition for Clearing the Fault Code

The sensor raw signal of SCR inlet temperature becomes equal or lesser than a threshold

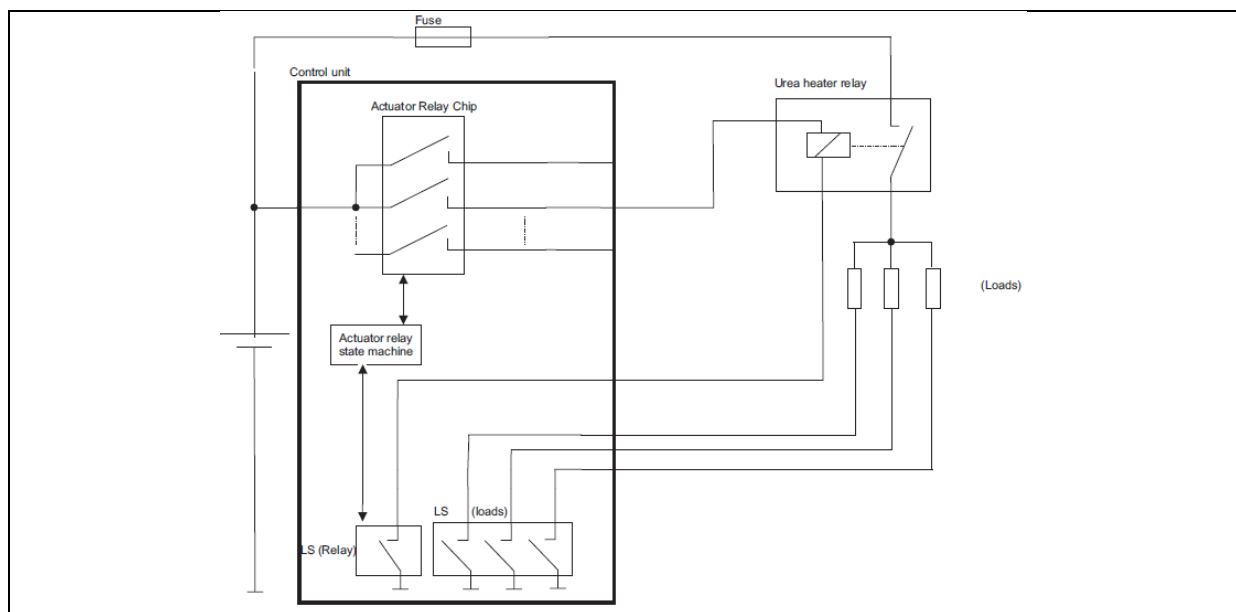
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P0428 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 5
5	Check DCU connection Connection problem?		Do necessary repair	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

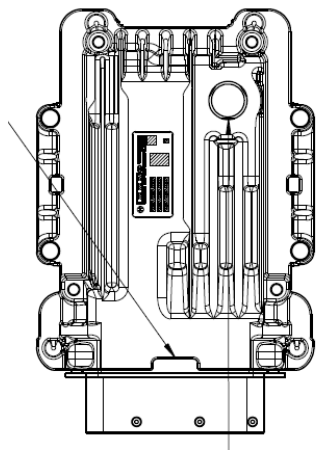
Fault Code	Fault Name
P0658	DCU Actuator Relay 0 SCG

1) Overview

CODE	REASON	EFFECT
U003509-24	Short circuit to ground of actuator relay 0	



2) Component Location



3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

Diagnostic Fault Check for short circuit to ground of actuator relay

After the SCG error is recognized, the actuator relay is immediately switched off by the hardware

5) Condition for Clearing the Fault Code

When no error is detected

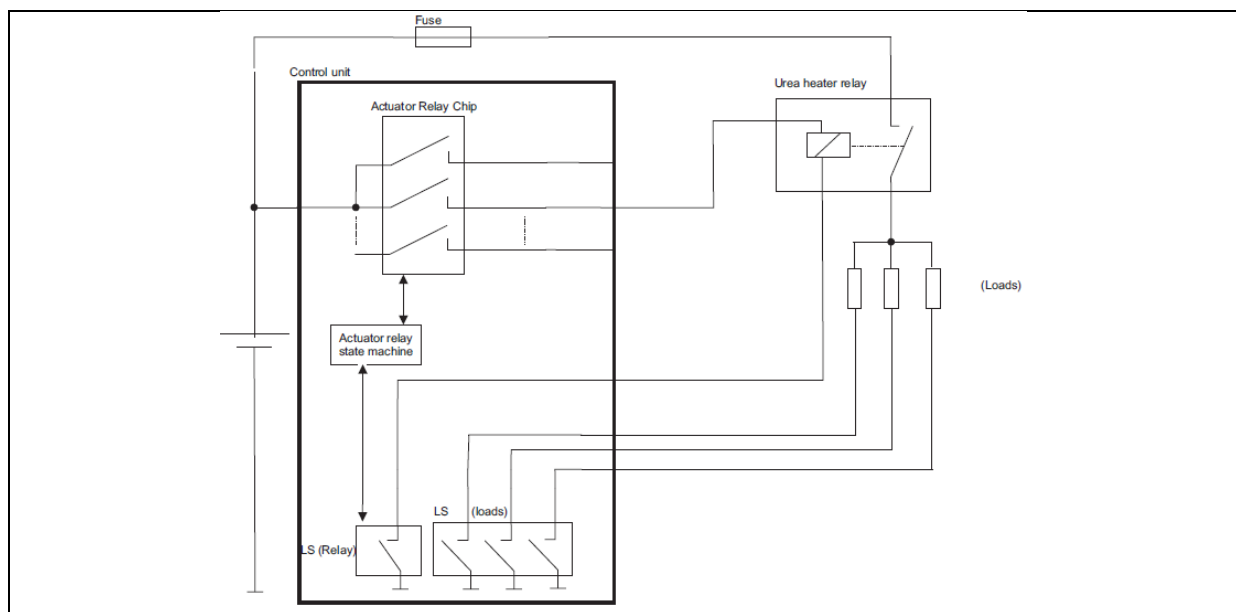
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P0658 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	After key on, Check the DCU voltage related pin connection and harness. Pin or connection problem?		Do necessary repair	Step4
4	Please replace the DCU. Check the fault state. Is fault clear?		Problem solved	Call Hot-line

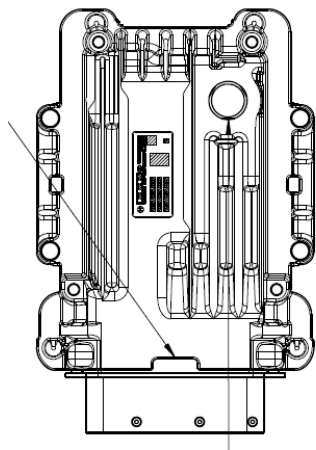
Fault Code	Fault Name
P0659	DCU Actuator Relay 0 SCB

1) Overview

CODE	REASON	EFFECT
U003509-23	Short circuit to battery of actuator relay 0	



2) Component Location



3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

Diagnostic Fault Check for short circuit to battery of actuator relay

When fault is detected, the actuator relay (high side power stage) is OFF

5) Condition for Clearing the Fault Code

When no error is detected

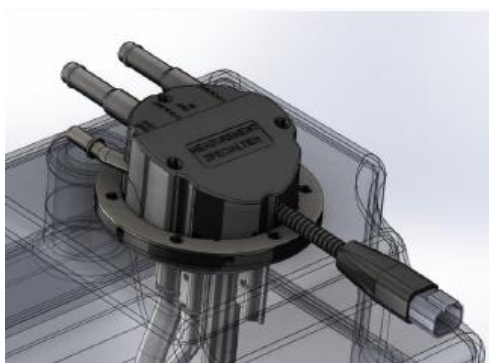
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P0659 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	After key on, Check the DCU voltage related pin connection and harness. Pin or connection problem?		Do necessary repair	Step4
4	Please replace the DCU. Check the fault state. Is fault clear?		Problem solved	Call Hot-line

Fault Code	Fault Name
P1560	DEF Quality Too High

1) Overview

CODE	REASON	EFFECT
U003516-00	Urea quality is above a valid limit	Inducement Group4



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

The sensed urea quality signal exceeds the maximum valid limit /
The sensed urea quality signal falls below the minimum valid limit

5) Condition for Clearing the Fault Code

The sensed urea quality signal is in a valid limit

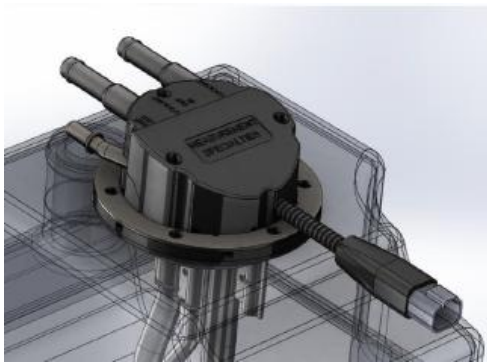
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P1560 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check urea quality using by densitometer Urea quality problem?		Change Urea Step 4	Step 5
4	After change Urea, running engine more than 10 minutes. Is fault code cleared ?		OK	Step 5
5	Check Urea Tank module connection. Connection problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
P1561	DEF Quality Too Low

1) Overview

CODE	REASON	EFFECT
U003516-01	Urea quality is below a valid limit	Inducement Group4



No	Description
1	CAN L
2	CAN H
3	Ground
4	+VCC

2) Component Location



3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

The sensed urea quality signal exceeds the maximum valid limit /
The sensed urea quality signal falls below the minimum valid limit

5) Condition for Clearing the Fault Code

The sensed urea quality signal is in a valid limit

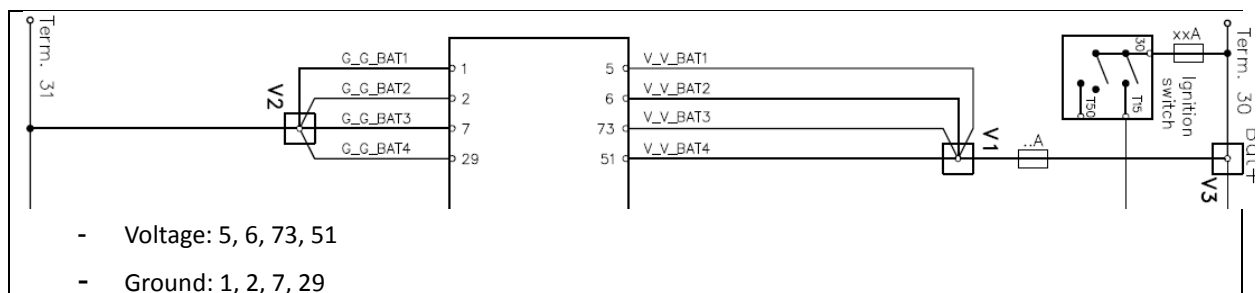
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P1561 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check urea quality using by densitometer Urea quality problem?		Change Urea Step 4	Step 5
4	After change Urea, running engine more than 10 minutes. Is fault code cleared ?		OK	Step 5
5	Check Urea Tank module connection. Connection problem?		Do necessary repair	Call Hot-line

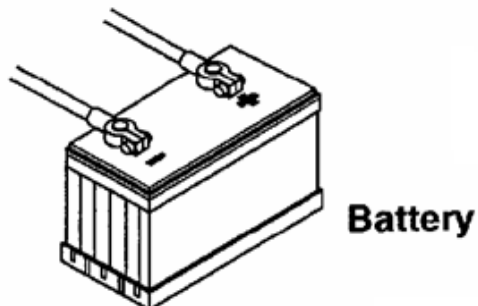
Fault Code	Fault Name
P1562	Battery Voltage Low

1) Overview

CODE	REASON	EFFECT
U000444-01	Battery voltage error	



2) Component Location



3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

The sensor raw signal of battery voltage is below a threshold

5) Condition for Clearing the Fault Code

The sensor raw signal of battery voltage is equal to or above a threshold

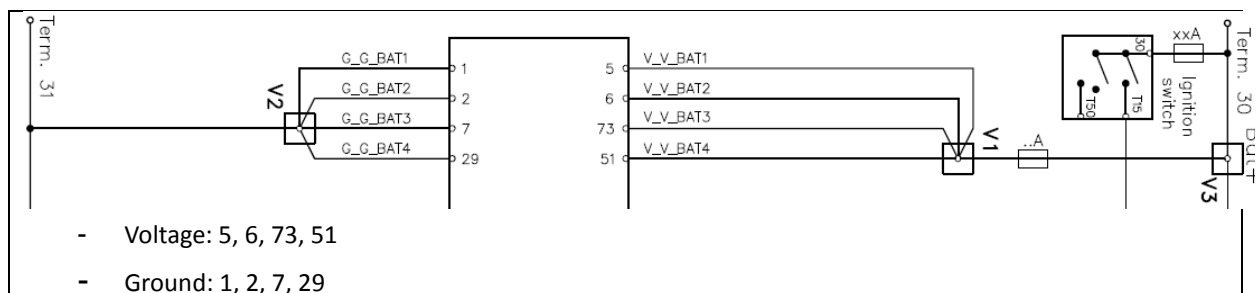
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P1562 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check the DCU voltage related pin connection and harness. Pin or connection problem?		Do necessary repair	Step4
4	Check the alternator operation. Alternator problem?		Step5	
5	Please replace the alternator. Check the fault state. Is fault clear?		Problem solved	Call Hot-line

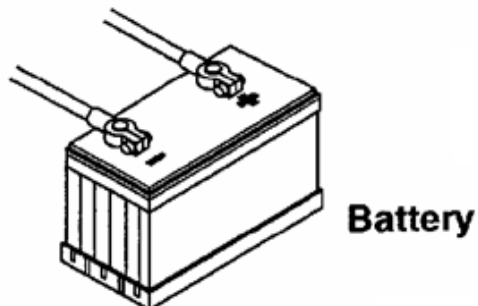
Fault Code	Fault Name
P1563	Battery Voltage High

1) Overview

CODE	REASON	EFFECT
U000444-00	Battery voltage error	



2) Component Location



3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

The sensor raw signal of battery voltage is above a threshold

5) Condition for Clearing the Fault Code

The sensor raw signal of battery voltage is equal to or below a threshold

6) Check List

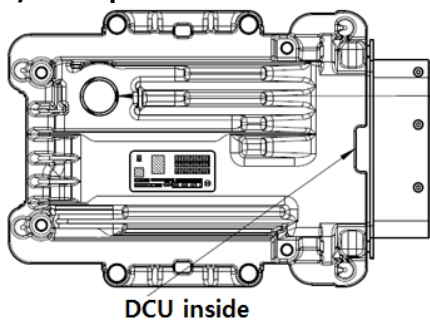
Step	Inspection	Standard Value	YES	NO
1	P1563 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check the DCU voltage related pin connection and harness. Pin or connection problem?		Do necessary repair	Step4
4	Check the alternator operation. Alternator problem?		Step5	
5	Please replace the alternator. Check the fault state. Is fault clear?		Problem solved	Call Hot-line

Fault Code	Fault Name
P1602	Sensor Supply Error

1) Overview

CODE	REASON	EFFECT
U521602-12	DCU problem Electrical problem Battery problem	

2) Component Location



3) Condition for Running Diagnostic

The testing is done unconditionally in the scheduling of the device driver, every 10ms

4) Condition for Setting the Fault Code

When the output voltage of the corresponding sensor supply is out of its specified range

5) Condition for Clearing the Fault Code

The healing starts immediately after the output voltage of the corresponding sensor supply is within its specified range again

6) Check List

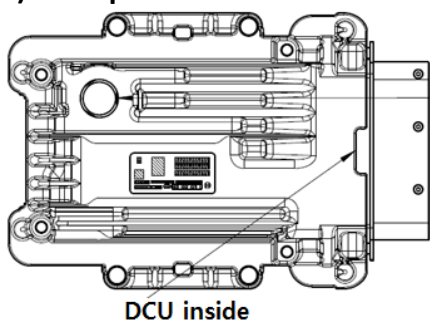
Step	Inspection	Standard Value	YES	NO
1	U1602 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 5
5	Check Battery Battery problem?		Change Battery	Step 6
6	Please change the DCU Check the fault state Is fault cleared?		Problem solve	Call Hot-line

Fault Code	Fault Name
P1630	DCU EEP Read Error

1) Overview

CODE	REASON	EFFECT
U520202-12	EEP read error based on the error in reading blocks from memory media	

2) Component Location



3) Condition for Running Diagnostic

At every read access to memory media

4) Condition for Setting the Fault Code

Fault is set when data for when the number of blocks that could not be read from memory media is greater or equal to threshold. However the max value of threshold is restricted to 3 by software.

5) Condition for Clearing the Fault Code

Fault is cleared when number of block read failure is less then threshold in next drive cycle.

6) Check List

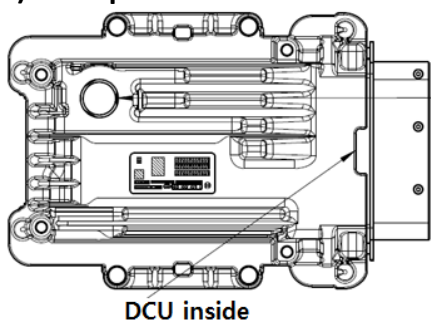
Step	Inspection	Standard Value	YES	NO
1	P1630 is detected on diagnostic tool?		Step2	
2	Turn off the Key switch and DCU power. (after Key Off, please wait for 30sec)		Step3	
3	After Key On, check the fault state. Is this fault detected continuously?		Step4	Problem solved
4	Please replace the DCU. Check the fault state. Is fault clear?		Problem solved	Call Hot-line

Fault Code	Fault Name
P1631	DCU EEP Write Error

1) Overview

CODE	REASON	EFFECT
U520204-12	EEP write error based on the error in storing the blocks in memory media	

2) Component Location



3) Condition for Running Diagnostic

At every write access to memory media.

4) Condition for Setting the Fault Code

If a block cannot be written more than 3 times, an error will be registered.

5) Condition for Clearing the Fault Code

Fault is cleared if there was one successful write for any block in the next drive cycle.

6) Check List

Step	Inspection	Standard Value	YES	NO
1	P1631 is detected on diagnostic tool?		Step2	
2	Turn off the Key switch and DCU power. (after Key Off, please wait for 30sec)		Step3	
3	After Key On, check the fault state. Is this fault detected continuously?		Step4	Problem solved
4	Please replace the DCU. Check the fault state. Is fault clear?		Problem solved	Call Hot-line

Fault Code	Fault Name
P2047	Dosing Valve Short Circuit to Battery (Low-side)

1) Overview

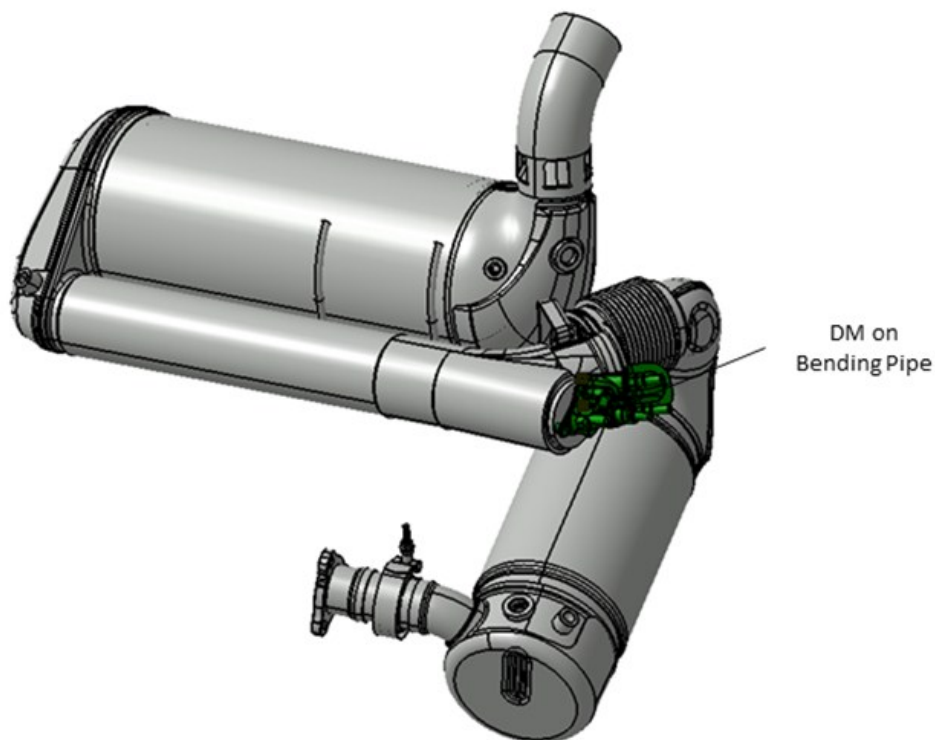
CODE	REASON	EFFECT
U003361-03	Diagnostic error check for short circuit to battery error on lowside switch	

A technical line drawing of a DCU (Data Control Unit) connector. The drawing shows a complex, multi-pin connector with a housing. Two specific pins are highlighted with labels: '1' and '2'. Pin 1 is located at the bottom left of the connector, and pin 2 is located at the bottom right. The drawing is a perspective view, showing the top and side of the connector.

No.	DCU Pin	PIN description
1	80	Reduction agent magnet valve H
2	58	Reduction agent magnet valve L

2) Component Location

Muffler Layout can be different according to Machine but the position of DM is same.



3) Condition for Running Diagnostic

The error will be checked only when the power stage diagnosis is activated. The test frequency is based on the process sequencing after the first injection.

4) Condition for Setting the Fault Code

The low-side power stage driver reports a "short circuit to battery" error.

5) Condition for Clearing the Fault Code

After the first occurrence of the error, the power stage is switched off.

If a temporary error is present, a test pulse will be sent to the power stage in every raster.

As soon as the error is detected as permanent, the test pulse will be sent every 1000ms. The test will be run only 2 times. If the error is not healed within this time, no further checking will be done in the current driving cycle. If calibrated variable(2 times) is equal to 0xFFFF, the test pulse will be sent until the error is healed.

6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2047 is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change actuator	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P2048	Dosing Valve Short Circuit to Ground (Low-side)

1) Overview

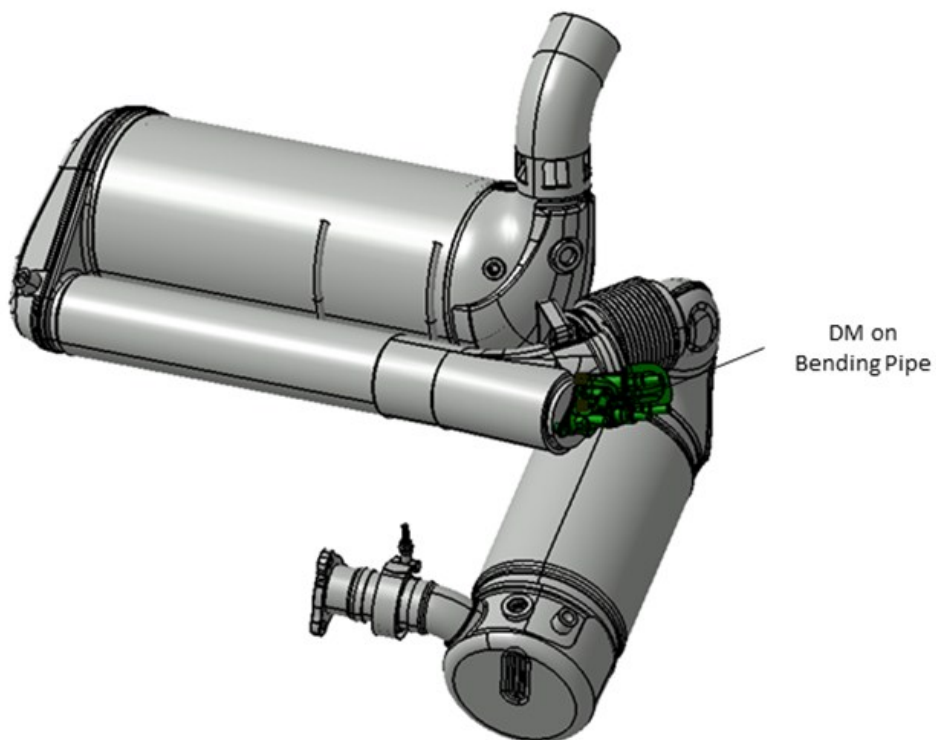
CODE	REASON	EFFECT
U003361-04	Diagnostic error check for short circuit to ground or open load on the lowside switch.	

A technical line drawing of a DCU (Data Control Unit) connector. The drawing shows a complex assembly with multiple pins and internal components. Two specific pins are highlighted with labels: '1' and '2'. Pin 1 is located at the bottom left of the connector, and pin 2 is located at the bottom right. The drawing is oriented vertically, with the connector's main body at the top and the pins at the bottom.

No.	DCU Pin	PIN description
1	80	Reduction agent magnet valve H
2	58	Reduction agent magnet valve L

2) Component Location

Muffler Layout can be different according to Machine but the position of DM is same.



3) Condition for Running Diagnostic

The error will be checked only when the power stage diagnosis is activated. This error is tested until the error is reported as permanent. The error cannot be healed once reported as permanent.

4) Condition for Setting the Fault Code

The "virtual device" reports hold current below threshold.

5) Condition for Clearing the Fault Code

The "virtual device" reports hold current greater than or equal to threshold.

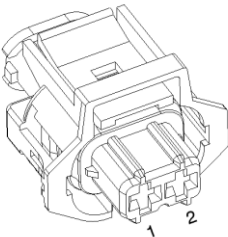
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2048 is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change actuator	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P2049	Dosing Valve Short Circuit to Battery (High-side)

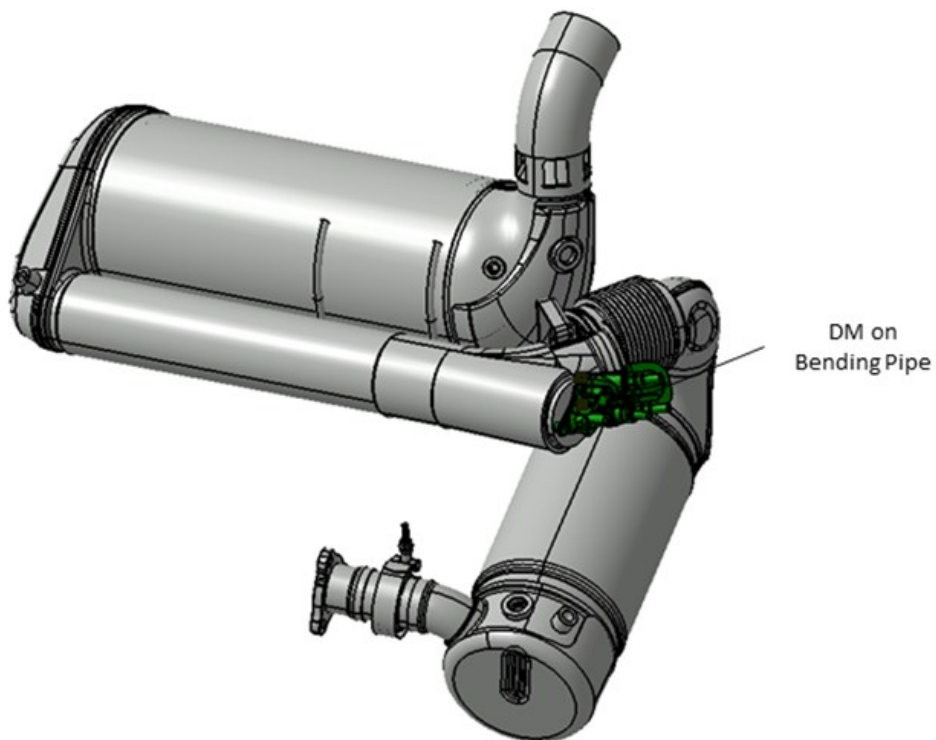
1) Overview

CODE	REASON	EFFECT
U003361-05	Diagnostic error check for short circuit to battery on highside or open load error.	

	No.	DCU Pin	PIN description
	1	80	Reduction agent magnet valve H
	2	58	Reduction agent magnet valve L

2) Component Location

Muffler Layout can be different according to Machine but the position of DM is same.



3) Condition for Running Diagnostic

The error will be checked only when the power stage diagnosis is activated. The test frequency is based on the process sequencing.

4) Condition for Setting the Fault Code

The highside power stage reports short circuit to battery or open load

5) Condition for Clearing the Fault Code

Once the error is healed

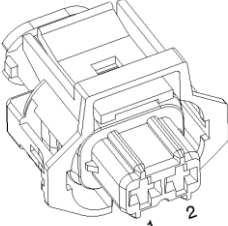
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2049 is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change actuator	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P2080	DOC Inlet Temperature Sensor Signal Error

1) Overview

CODE	REASON	EFFECT
U004765-03 U004765-04	DOC inlet temperature sensor signal is above a threshold (4765-3) DOC inlet temperature sensor signal is below a threshold (4765-4)	

	No.	DCU Pin	PIN description
	1	34	Catalyst temperature sensor 3 signal
	2	12	Catalyst temperature sensor 3 ground

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

The sensor raw signal of DOC inlet temperature is above a threshold

The sensor raw signal of DOC inlet temperature is below a threshold

5) Condition for Clearing the Fault Code

The sensor raw signal of DOC inlet temperature becomes within a threshold

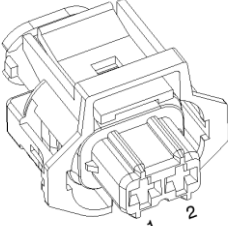
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2080 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 5
5	Check DCU connection Connection problem?		Do necessary repair	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

Fault Code	Fault Name
P2081	DOC Inlet Temperature Error

1) Overview

CODE	REASON	EFFECT
U004765-00 U004765-01	DOC inlet temperature is above a threshold (4765-0) DOC inlet temperature is below a threshold (4765-1)	

	No.	DCU Pin	PIN description
	1	34	Catalyst temperature sensor 3 signal
	2	12	Catalyst temperature sensor 3 ground

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

The sensed sensor signal DOC inlet temperature is greater than a threshold /
The sensed sensor signal DOC inlet temperature is less than a threshold

5) Condition for Clearing the Fault Code

The sensed sensor signal DOC inlet temperature is in a threshold

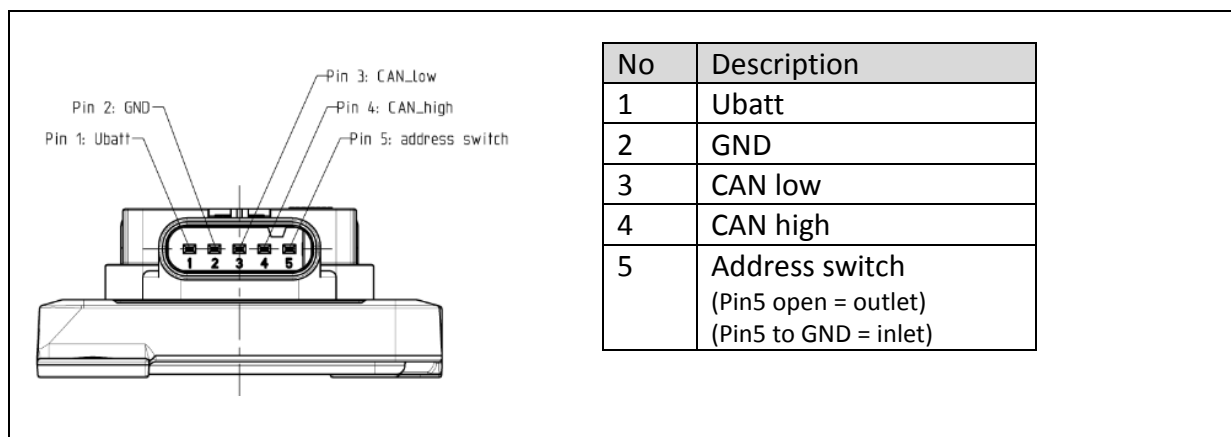
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2081 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check sensor resistance (checking it is coherent with vehicle conditions) if applicable. Resistance problem?		Change sensor	Step 5
5	Check DCU connection Connection problem?		Do necessary repair	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

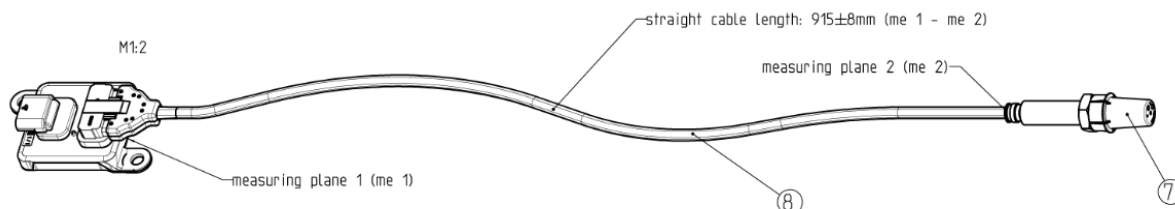
Fault Code	Fault Name
P2202	Inlet Nox Sensor Short Circuit

1) Overview

CODE	REASON	EFFECT
U003216-04	DCU connection problem Sensor connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

NOx sensor control unit detects a short circuit

4) Condition for Setting the Fault Code

No

5) Condition for Clearing the Fault Code

Depending on environment conditions, heating release every 10ms depending on release

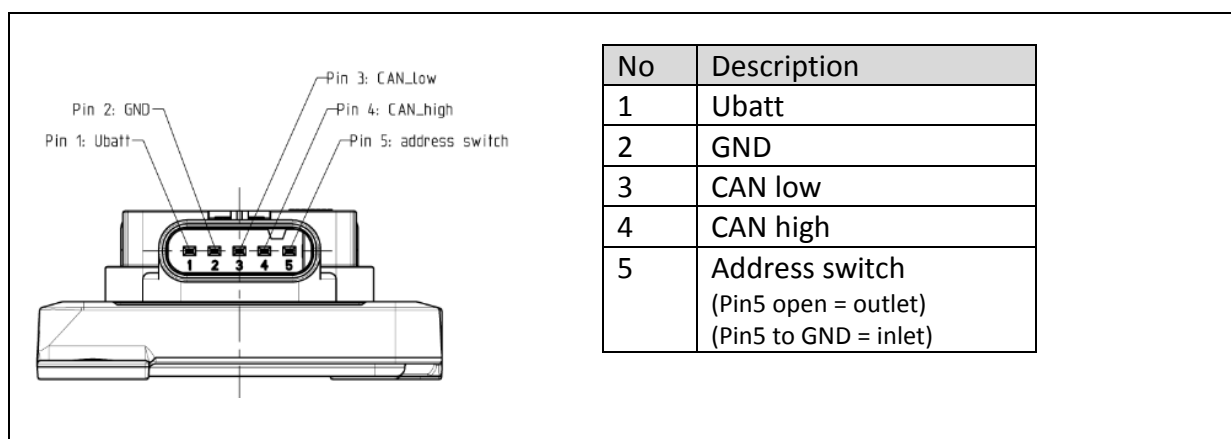
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2202 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

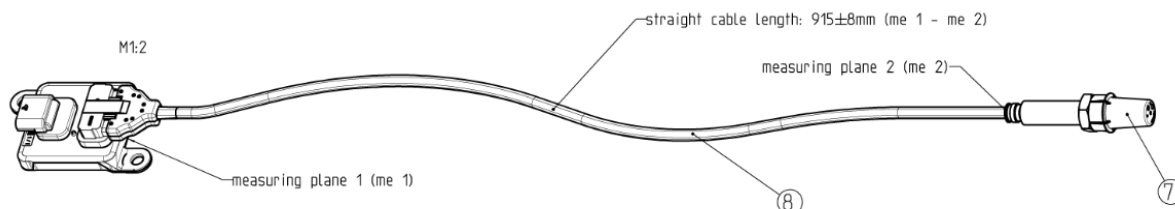
Fault Code	Fault Name
P2203	Inlet Nox Sensor Open

1) Overview

CODE	REASON	EFFECT
U003216-05	DCU connection problem Sensor connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

NOx sensor control unit detects an open circuit

4) Condition for Setting the Fault Code

No

5) Condition for Clearing the Fault Code

Depending on environment conditions, heating release every 10ms depending on release

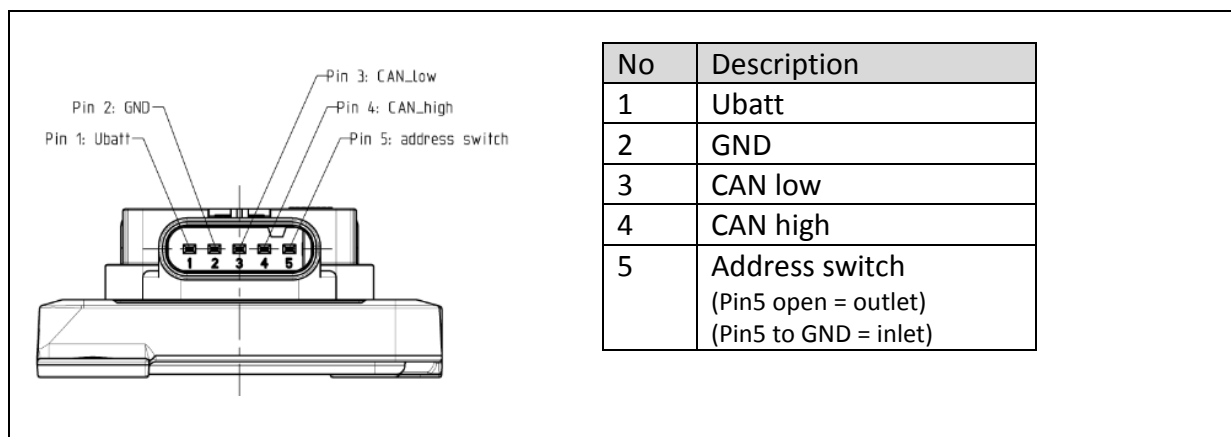
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2203 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

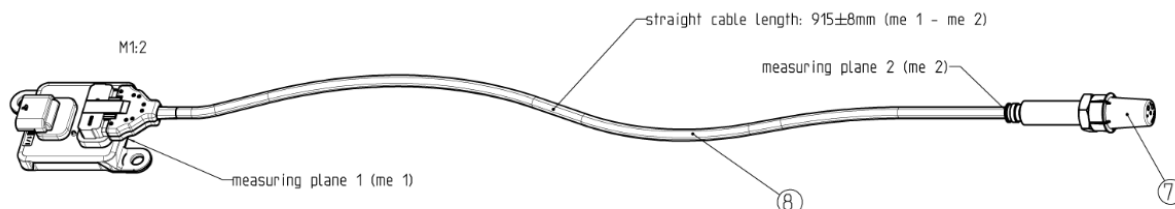
Fault Code	Fault Name
P2215	Outlet Nox Sensor Short Circuit

1) Overview

CODE	REASON	EFFECT
U003226-04	DCU connection problem Sensor connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

NOx sensor control unit detects a short circuit

4) Condition for Setting the Fault Code

No

5) Condition for Clearing the Fault Code

Depending on environment conditions, heating release every 10ms depending on release

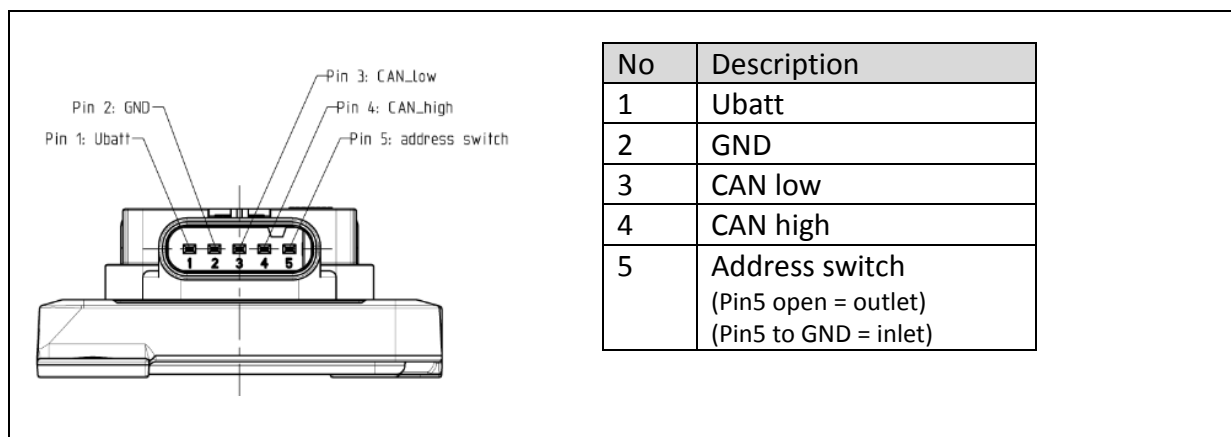
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2215 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

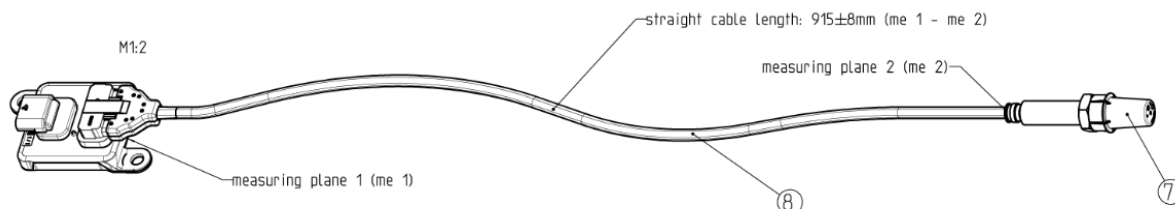
Fault Code	Fault Name
P2216	Outlet Nox Sensor Open

1) Overview

CODE	REASON	EFFECT
U003216-05	DCU connection problem Sensor connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

NOx sensor control unit detects an open circuit

4) Condition for Setting the Fault Code

No

5) Condition for Clearing the Fault Code

Depending on environment conditions, heating release every 10ms depending on release

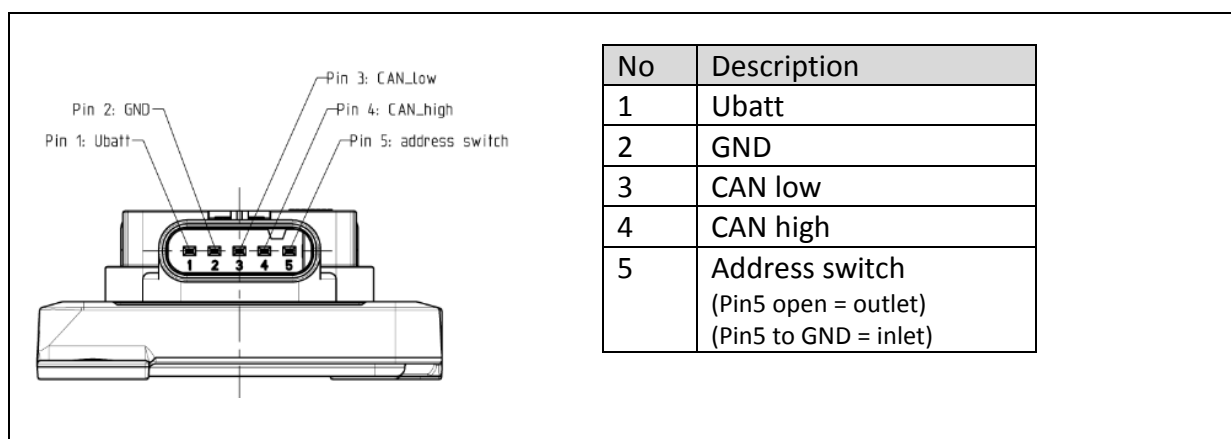
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2216 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

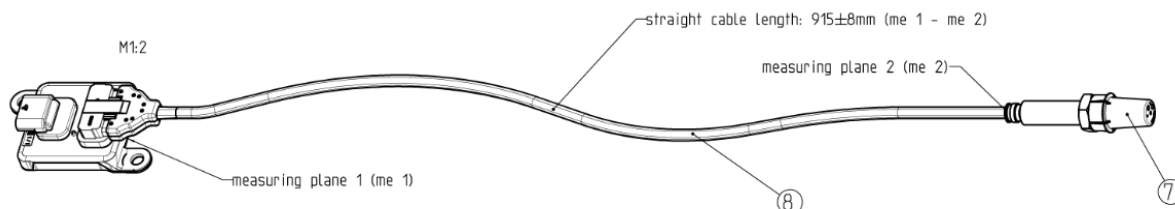
Fault Code	Fault Name
P2381	Inlet NOx Sensor Heater Readiness Error

1) Overview

CODE	REASON	EFFECT
U104332-07	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Stable environment conditions must be given
Frequency: always after release of sensor heating

4) Condition for Setting the Fault Code

If the heater is not heated fast enough

5) Condition for Clearing the Fault Code

Heater is heated fast enough

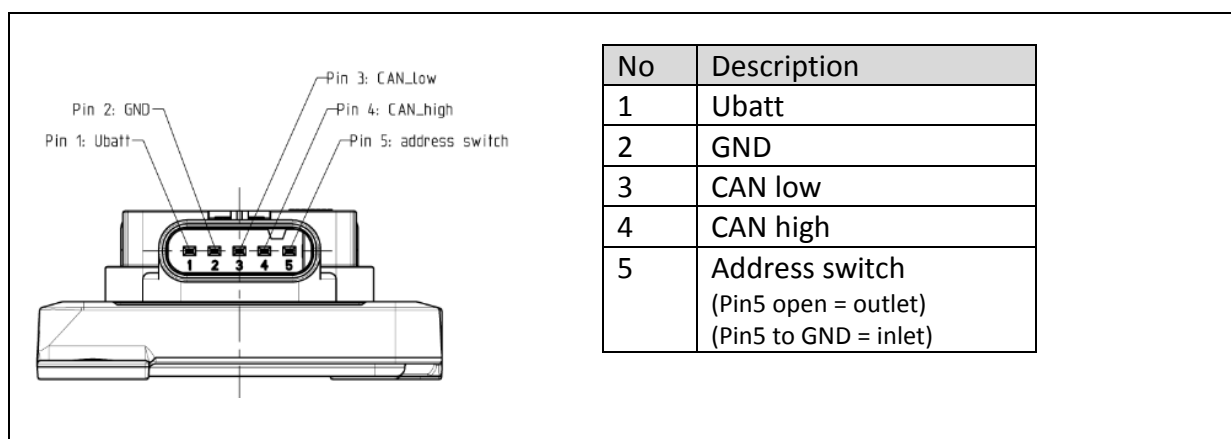
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2381 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

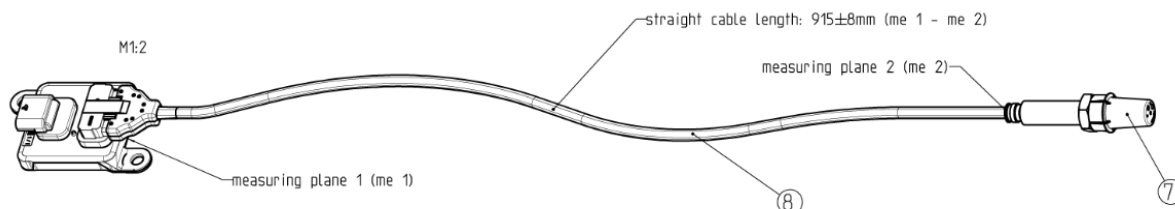
Fault Code	Fault Name
P2382	Outlet NOx Sensor Heater Readiness Error

1) Overview

CODE	REASON	EFFECT
U104385-07	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Stable environment conditions must be given
Frequency: always after release of sensor heating

4) Condition for Setting the Fault Code

If the heater is not heated fast enough

5) Condition for Clearing the Fault Code

Heater is heated fast enough

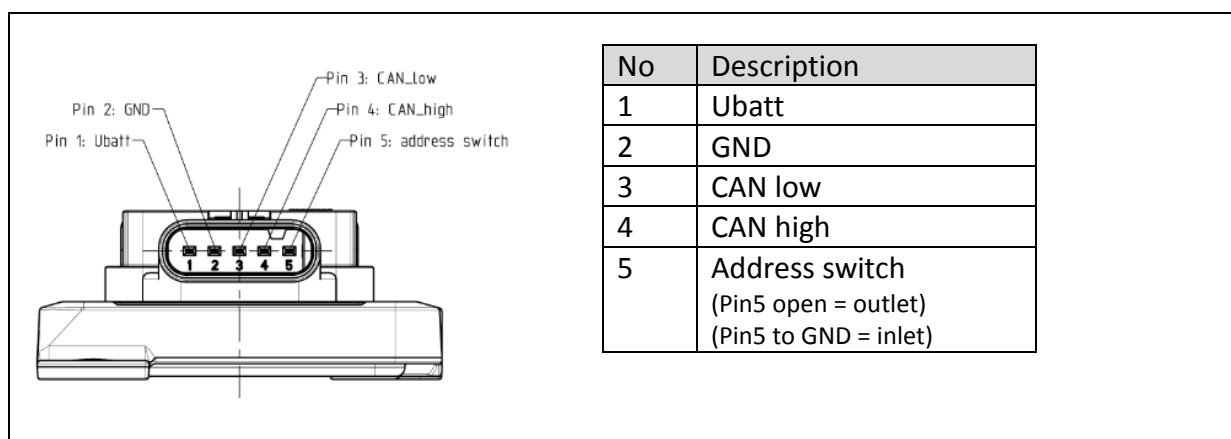
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2382 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

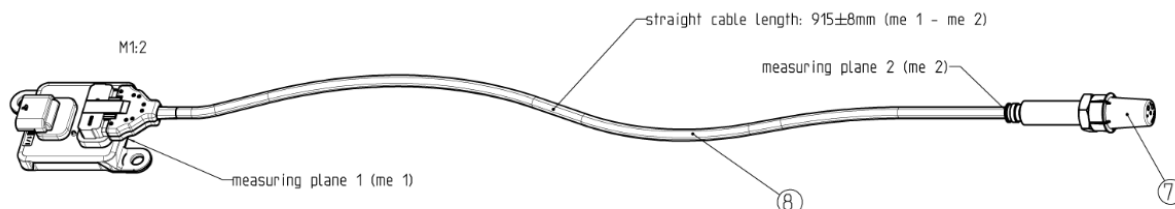
Fault Code	Fault Name
P2383	Inlet NOx Sensor Mounting Error

1) Overview

CODE	REASON	EFFECT
U104332-09	Network problem DCU connection problem Sensor location problem	



2) Component Location



3) Condition for Running Diagnostic

Always if the defined operation point is active and stable

4) Condition for Setting the Fault Code

If the O2 concentration is above the defined threshold (Sensor is probably not mounted correctly)

5) Condition for Clearing the Fault Code

The O2 concentration has to be below the defined threshold
(Sensor has to be mounted correctly and be placed in the exhaust gas pipe)

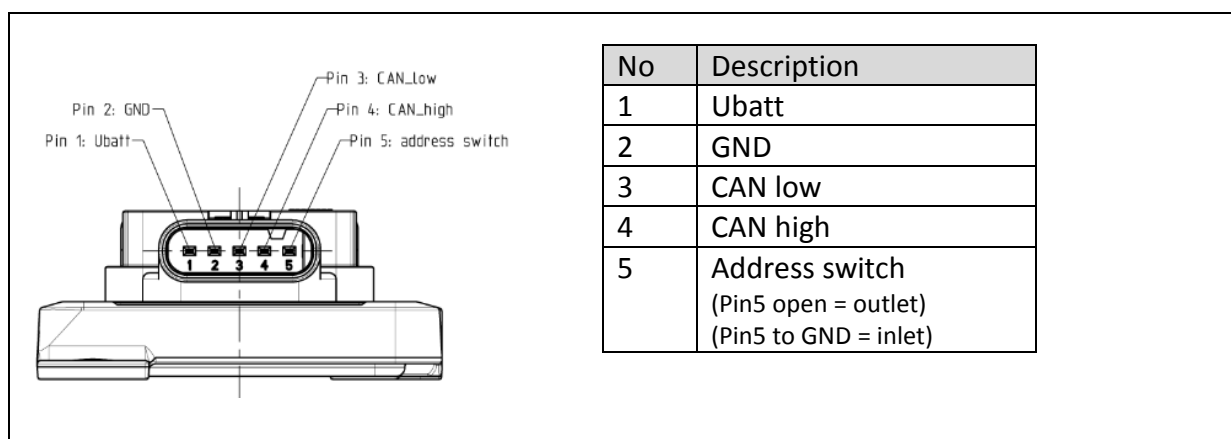
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2383 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

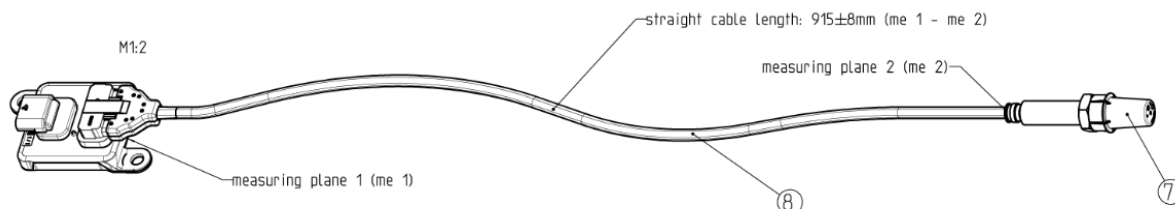
Fault Code	Fault Name
P2384	Outlet NOx Sensor Mounting Error

1) Overview

CODE	REASON	EFFECT
U104385-09	Network problem DCU connection problem Sensor location problem	



2) Component Location



3) Condition for Running Diagnostic

Always if the defined operation point is active and stable

4) Condition for Setting the Fault Code

If the O2 concentration is above the defined threshold (Sensor is probably not mounted correctly)

5) Condition for Clearing the Fault Code

The O2 concentration has to be below the defined threshold
(Sensor has to be mounted correctly and be placed in the exhaust gas pipe)

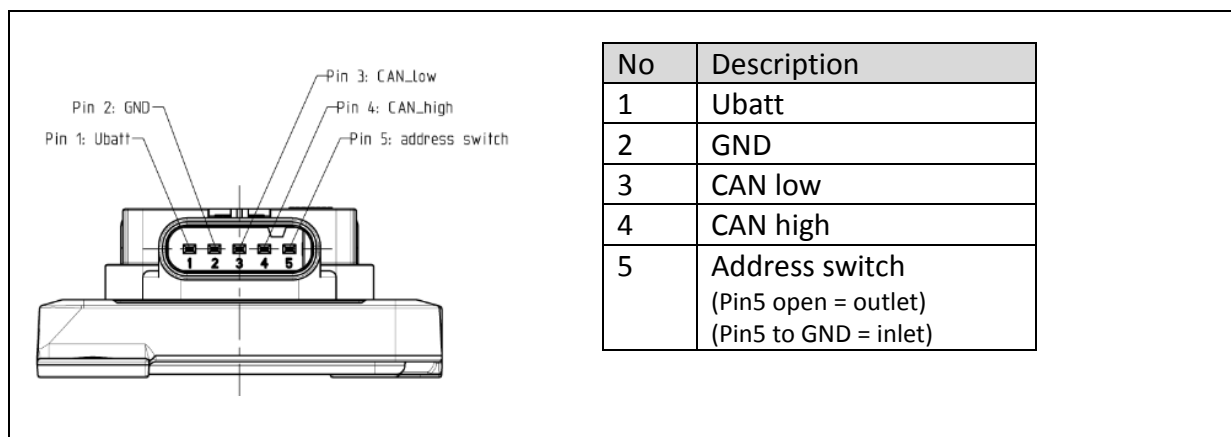
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2384 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

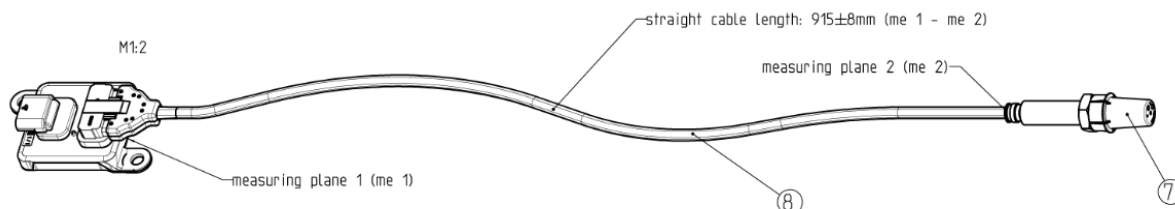
Fault Code	Fault Name
P2385	Inlet NOx Sensor Signal Validity Error

1) Overview

CODE	REASON	EFFECT
U104332-19	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Always after model value was valid for at least this time

4) Condition for Setting the Fault Code

Ratio of modeled validity time to measured validity time exceeds threshold

5) Condition for Clearing the Fault Code

Ratio is greater than threshold

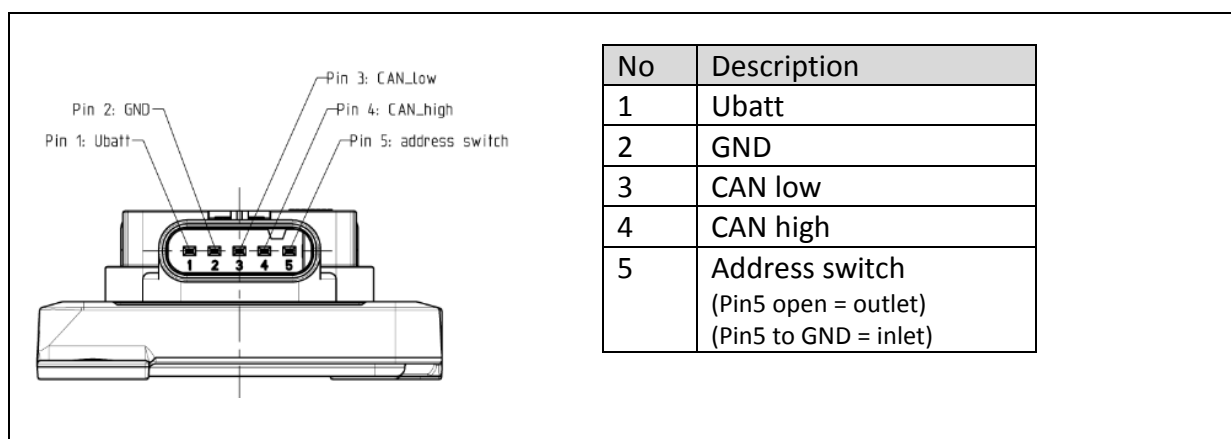
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2385 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

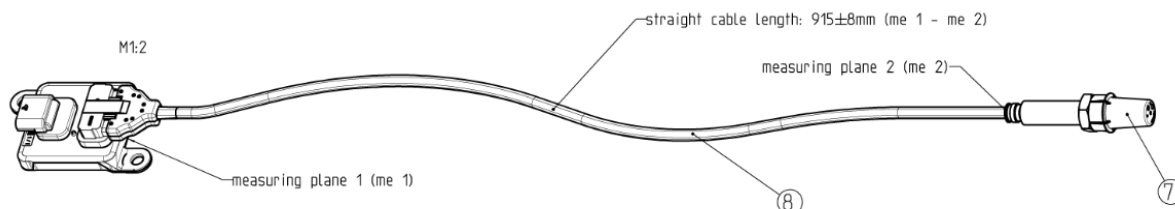
Fault Code	Fault Name
P2386	Outlet NOx Sensor Signal Validity Error

1) Overview

CODE	REASON	EFFECT
U104385-19	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Always after model value was valid for at least this time

4) Condition for Setting the Fault Code

Ratio of modeled validity time to measured validity time exceeds threshold

5) Condition for Clearing the Fault Code

Ratio is greater than threshold

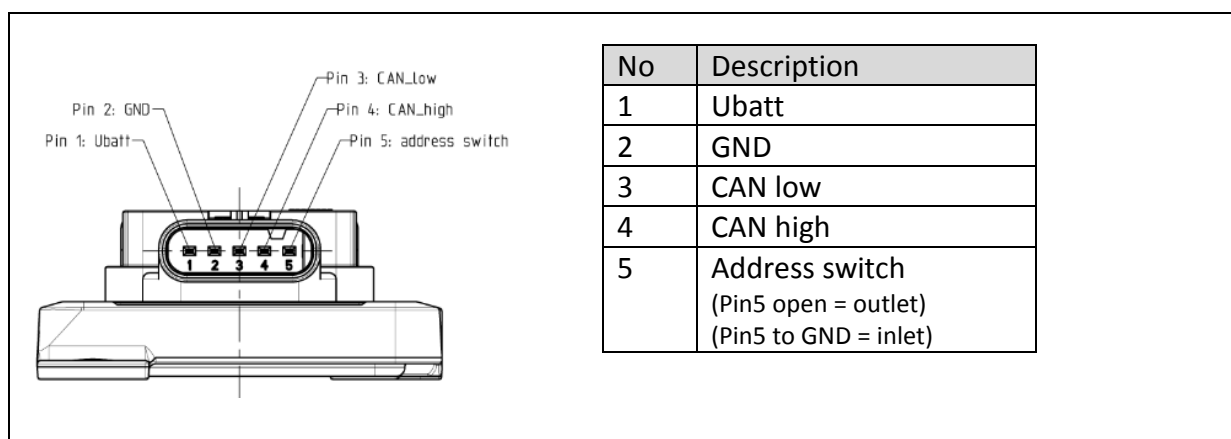
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2386 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

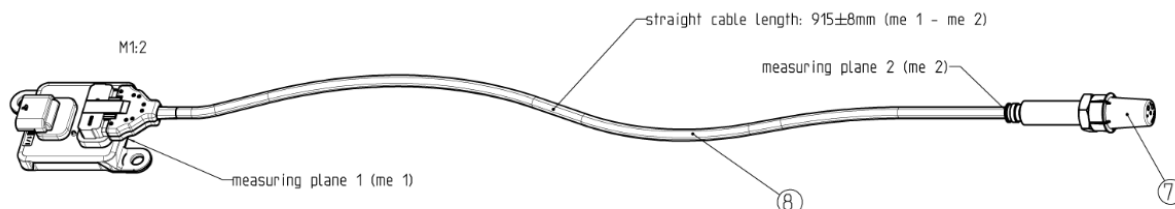
Fault Code	Fault Name
P2387	Inlet NOx Sensor Dynamic High Error

1) Overview

CODE	REASON	EFFECT
U104332-23	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

During transition to overrun, in case of stable conditions

4) Condition for Setting the Fault Code

During transition to overrun it is monitored if the start value of NOx signal is falling below a high threshold within a certain time span. If this is not fulfilled a fault is detected

5) Condition for Clearing the Fault Code

During transition to overrun the start value of NOx signal is falling below a high threshold within a certain time span

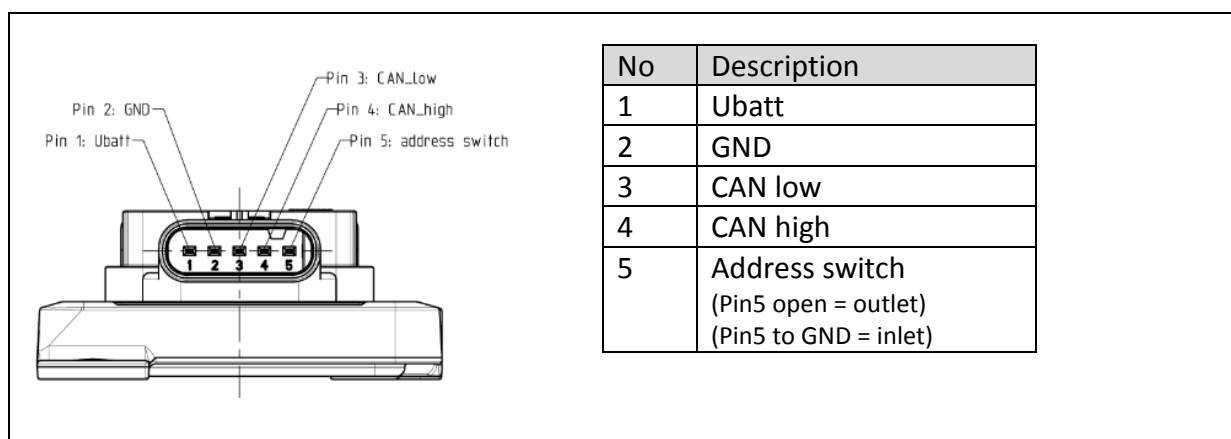
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2387 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

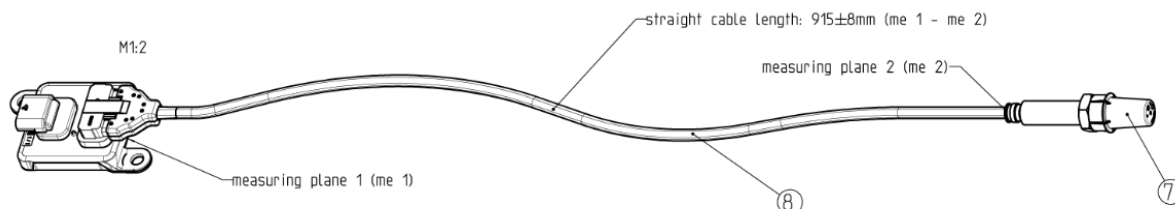
Fault Code	Fault Name
P2388	Inlet NOx Sensor Dynamic Low Error

1) Overview

CODE	REASON	EFFECT
U104332-24	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

During transition to overrun, in case of stable conditions

4) Condition for Setting the Fault Code

During transition to overrun it is monitored if the start value of NOx signal is falling below a low threshold within a certain time span. If this is not fulfilled a fault is detected

5) Condition for Clearing the Fault Code

During transition to overrun the start value of NOx signal is falling below a low threshold within a certain time span

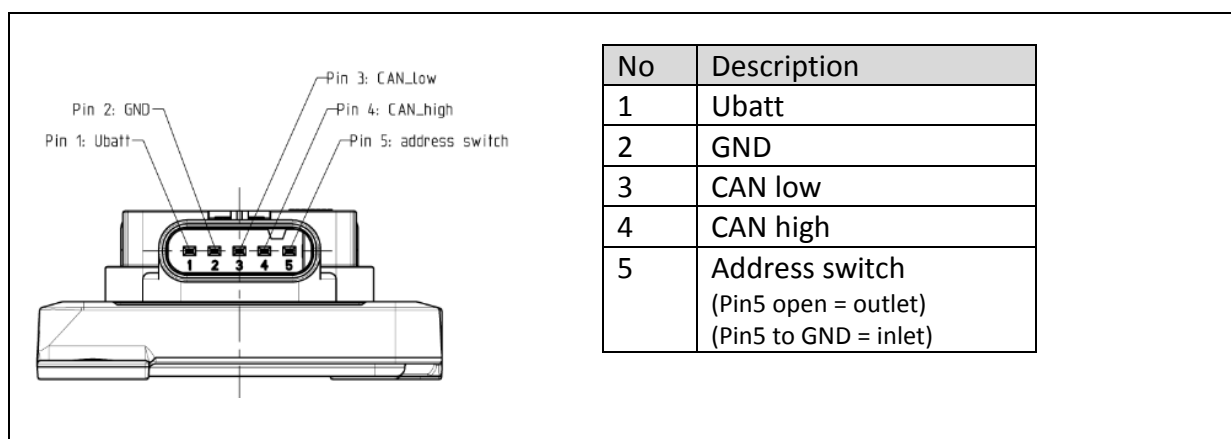
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2388 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

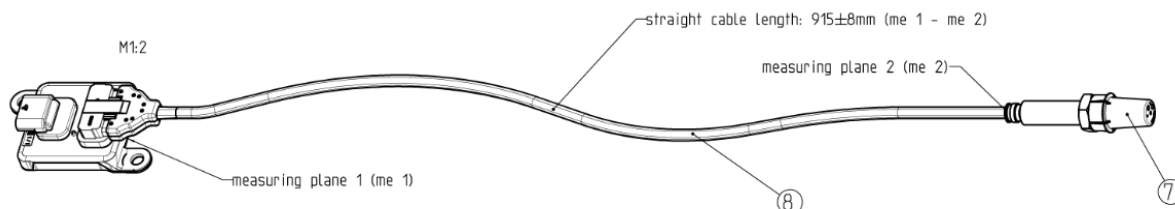
Fault Code	Fault Name
P2391	Inlet NOx Sensor offset max error

1) Overview

CODE	REASON	EFFECT
U003224-00	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Every time if the status of detection of offset is set equal to 1 or 2

4) Condition for Setting the Fault Code

Offset is greater than upper threshold

5) Condition for Clearing the Fault Code

Detection of an offset is smaller than upper threshold

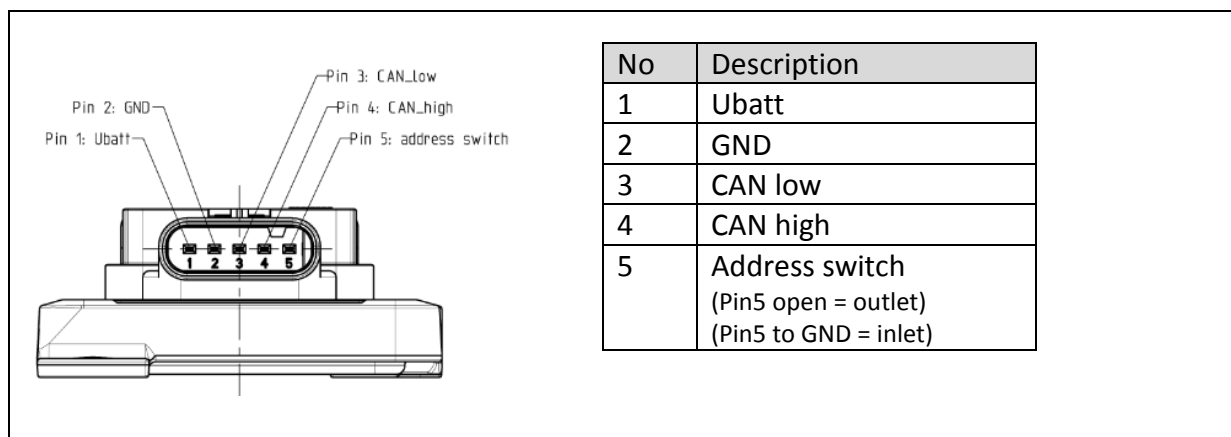
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2391 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

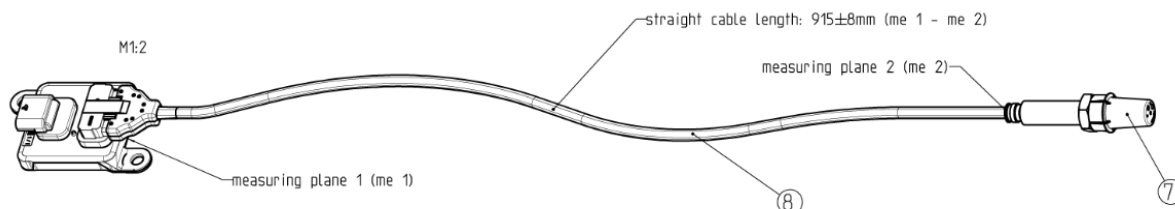
Fault Code	Fault Name
P2392	Outlet NOx Sensor offset max error

1) Overview

CODE	REASON	EFFECT
U003234-00	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Every time if the status of detection of offset is set equal to 1 or 2

4) Condition for Setting the Fault Code

Offset is greater than upper threshold

5) Condition for Clearing the Fault Code

Detection of an offset is smaller than upper threshold

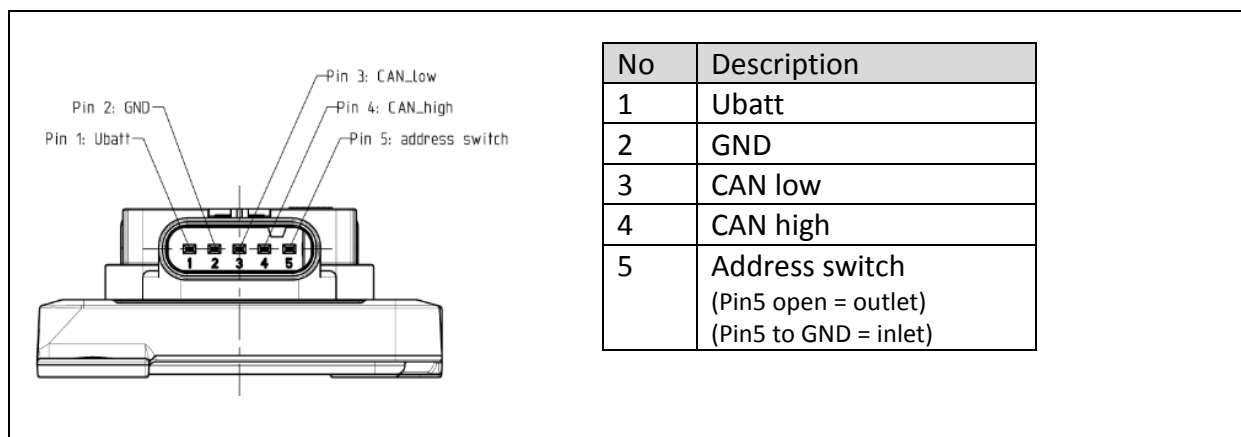
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2392 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

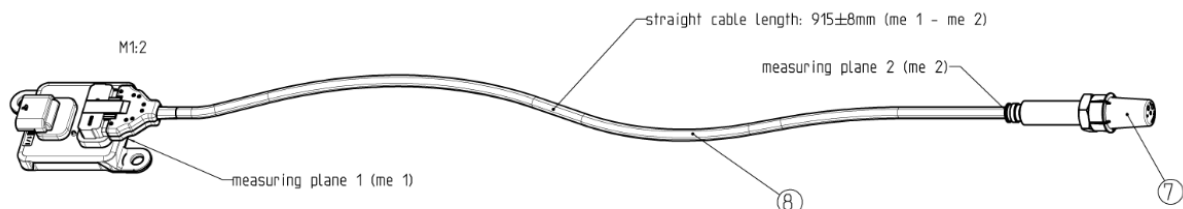
Fault Code	Fault Name
P2393	Inlet NOx Sensor offset min error

1) Overview

CODE	REASON	EFFECT
U003224-01	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Every time if the status of detection of offset is set equal to 1 or 2

4) Condition for Setting the Fault Code

Offset is smaller than lower threshold

5) Condition for Clearing the Fault Code

Detection of an offset is greater than lower threshold

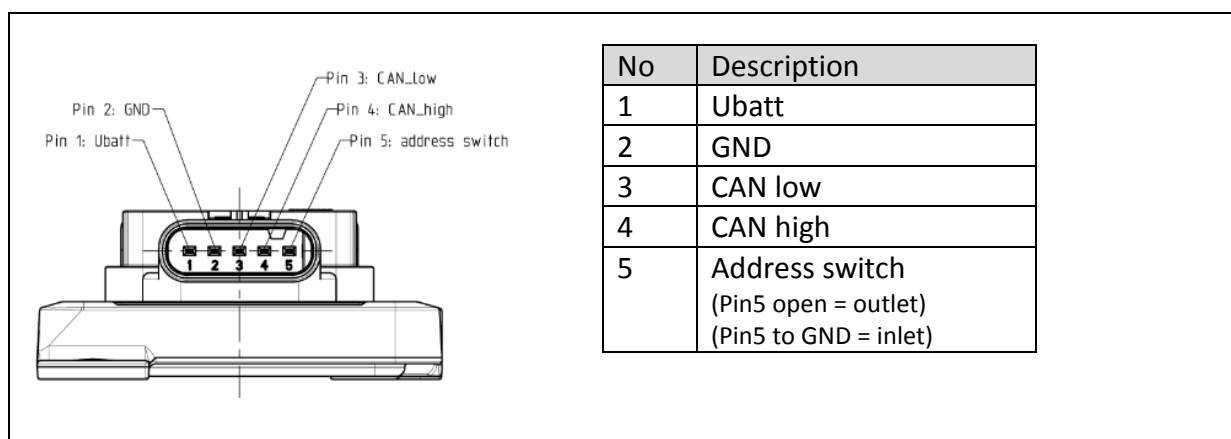
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2393 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

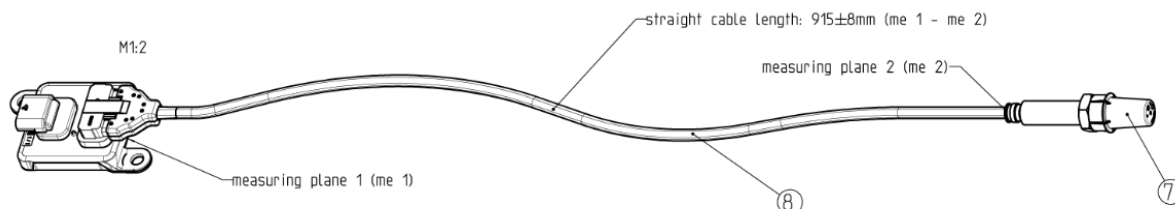
Fault Code	Fault Name
P2394	Outlet NOx Sensor offset min error

1) Overview

CODE	REASON	EFFECT
U003234-01	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Every time if the status of detection of offset is set equal to 1 or 2

4) Condition for Setting the Fault Code

Offset is smaller than lower threshold

5) Condition for Clearing the Fault Code

Detection of an offset is greater than lower threshold

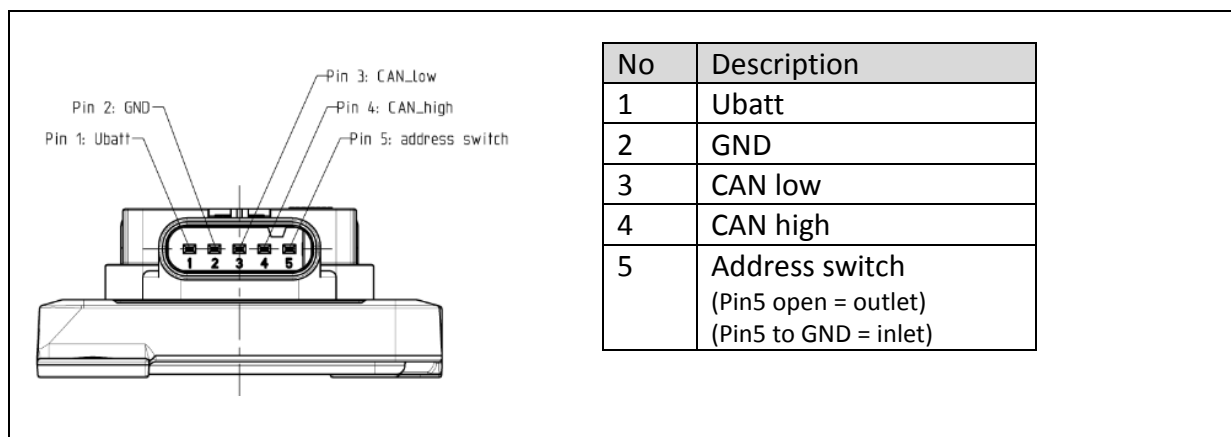
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2394 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

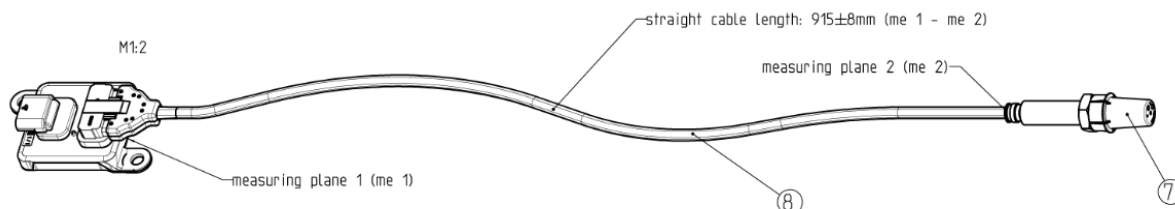
Fault Code	Fault Name
P2395	Inlet NOx Sensor SRC Max

1) Overview

CODE	REASON	EFFECT
U003224-03	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Depending on environment conditions, heating released
Every 10ms depending on release

4) Condition for Setting the Fault Code

NOx signal exceeds max threshold

5) Condition for Clearing the Fault Code

No

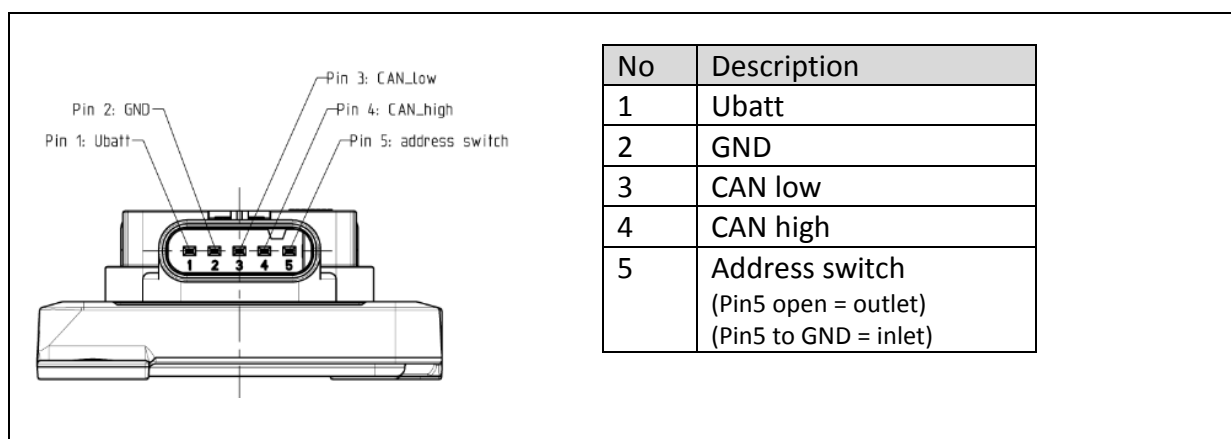
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2395 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

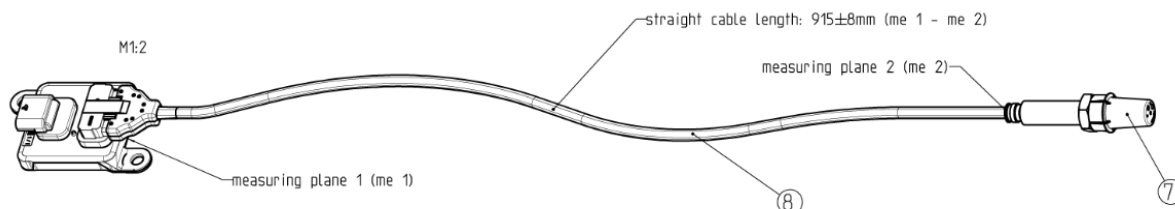
Fault Code	Fault Name
P2396	Outlet NOx Sensor SRC Max

1) Overview

CODE	REASON	EFFECT
U003234-03	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Depending on environment conditions, heating released
Every 10ms depending on release

4) Condition for Setting the Fault Code

NOx signal exceeds max threshold

5) Condition for Clearing the Fault Code

No

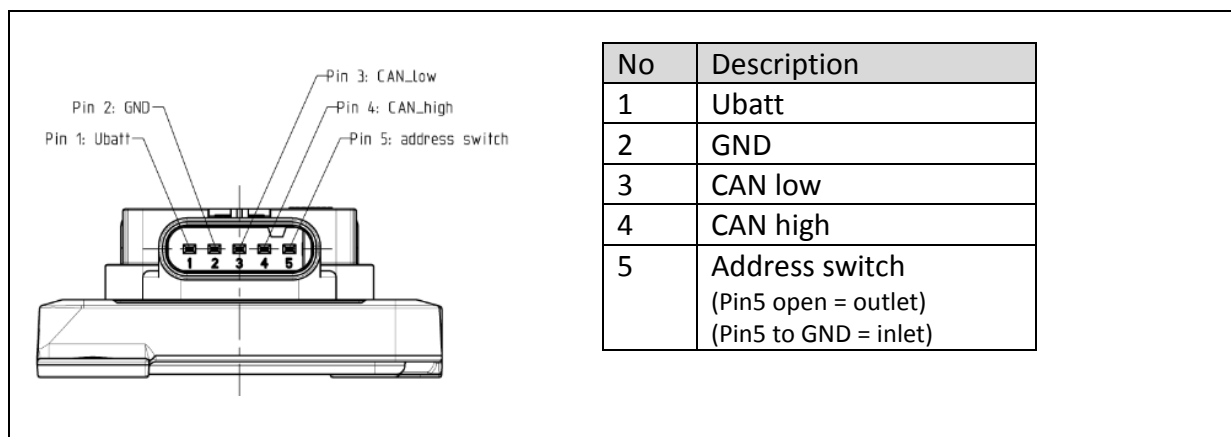
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2396 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

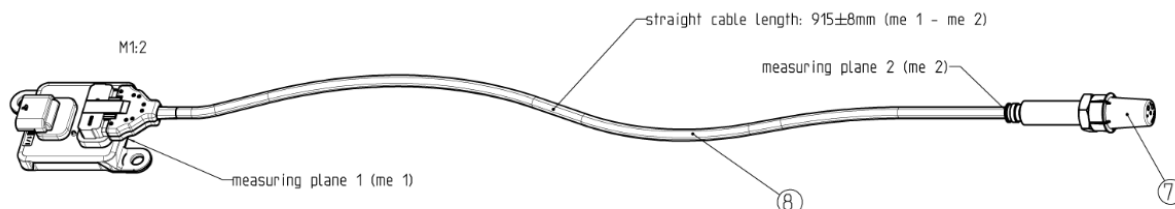
Fault Code	Fault Name
P2397	Inlet NOx Sensor SRC Min

1) Overview

CODE	REASON	EFFECT
U003224-04	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Depending on environment conditions, heating released
Every 10ms depending on release

4) Condition for Setting the Fault Code

NOx signal exceeds min threshold

5) Condition for Clearing the Fault Code

No

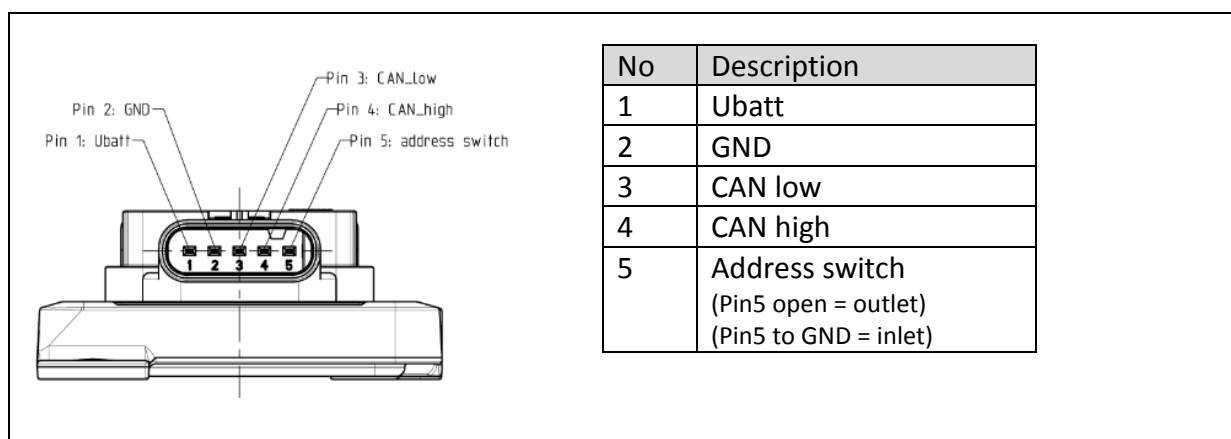
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2397 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

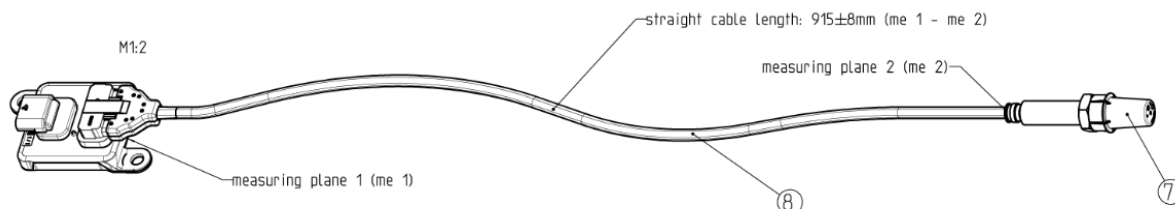
Fault Code	Fault Name
P2398	Outlet NOx Sensor SRC Min

1) Overview

CODE	REASON	EFFECT
U003234-04	Network problem DCU connection problem Sensor problem	



2) Component Location



3) Condition for Running Diagnostic

Depending on environment conditions, heating released
Every 10ms depending on release

4) Condition for Setting the Fault Code

NOx signal exceeds min threshold

5) Condition for Clearing the Fault Code

No

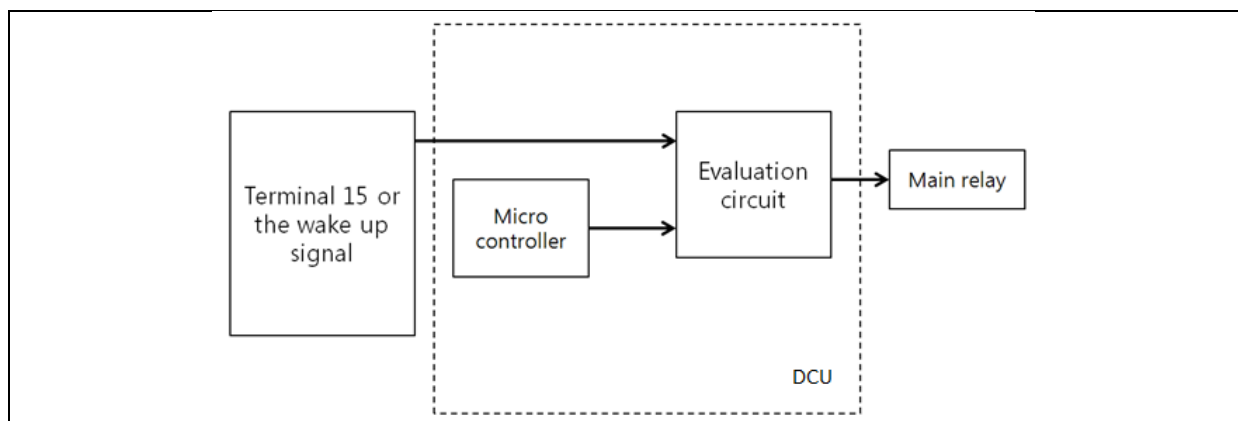
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2398 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

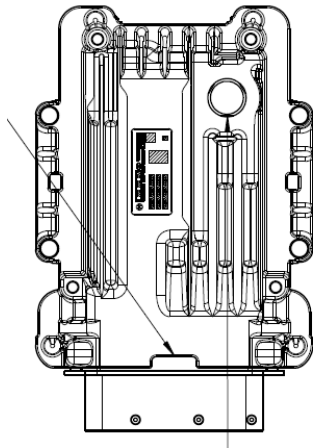
Fault Code	Fault Name
P2510	DCU Main Relay (Stuck)

1) Overview

CODE	REASON	EFFECT
U003492-31	Detection of a stucked main relay DCU	



2) Component Location



3) Condition for Running Diagnostic

During DCU initialization

4) Condition for Setting the Fault Code

The main relay is reported as sticky if main relay was not opened by time after commanding to open main relay during shutdown

5) Condition for Clearing the Fault Code

The sticky main relay is reported as healed, if DCU shuts down before the time threshold has elapsed after commanding to open the main relay. The diagnosis result is stored in EEPROM and evaluated during initialization

6) Check List

Step	Inspection	Standard Value	YES	NO
1	P068A is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	After key on, Check the DCU voltage related pin connection and harness. Pin or connection problem?		Do necessary repair	Step4
4	Please replace the DCU. Check the fault state. Is fault clear?		Problem solved	Call Hot-line

Fault Code	Fault Name
P2530	Key Position Error

1) Overview

CODE	REASON	EFFECT
U000158-22	Key status is OFF and engine rpm is above a threshold	

2) Component Location

Not a special location

3) Condition for Running Diagnostic

Continuously checked in configured raster

4) Condition for Setting the Fault Code

Key status is OFF and engine rpm is above a threshold during specific time

5) Condition for Clearing the Fault Code

It is possible to erase the error in current driving cycle when key status is ON and engine rpm is above a threshold

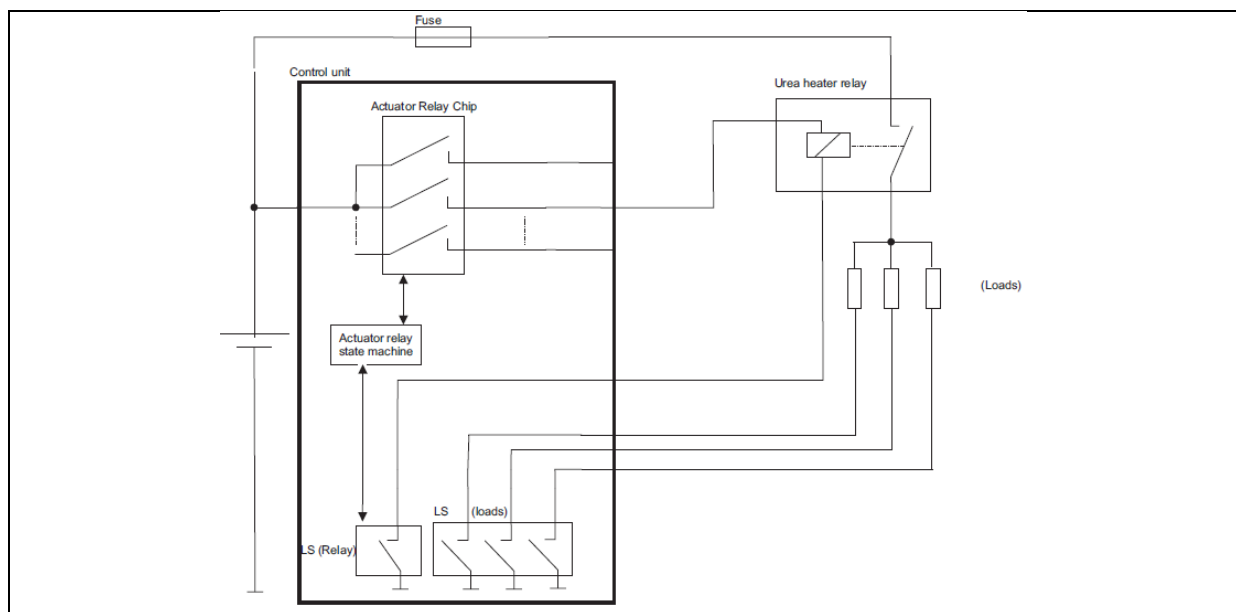
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2530 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and disconnect the battery		Step 3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check key connection and wire harness Electrical problem?		Fix harness	Call Hot-line

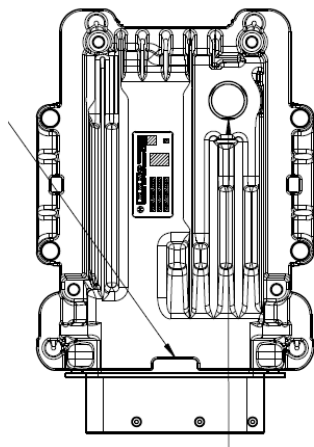
Fault Code	Fault Name
P2670	DCU Actuator Relay 1 SCG

1) Overview

CODE	REASON	EFFECT
U003510-24	Short circuit to ground of actuator relay 1	



2) Component Location



3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

Diagnostic Fault Check for short circuit to ground of actuator relay

After the SCG error is recognized, the actuator relay is immediately switched off by the hardware

5) Condition for Clearing the Fault Code

When no error is detected

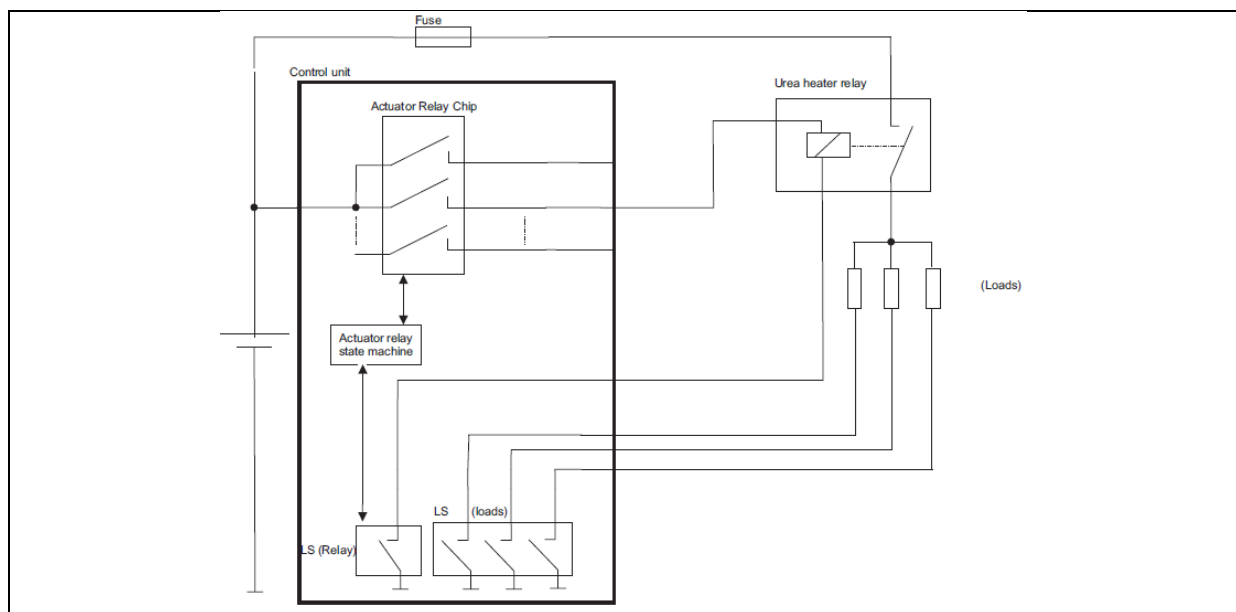
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2670 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	After key on, Check the DCU voltage related pin connection and harness. Pin or connection problem?		Do necessary repair	Step4
4	Please replace the DCU. Check the fault state. Is fault clear?		Problem solved	Call Hot-line

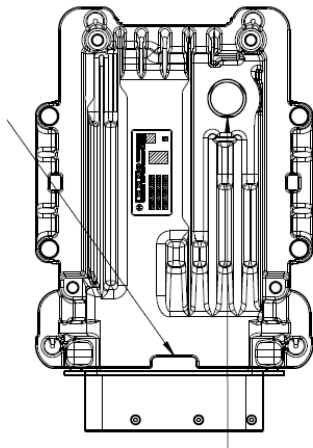
Fault Code	Fault Name
P2671	DCU Actuator Relay 1 SCB

1) Overview

CODE	REASON	EFFECT
U003510-23	Short circuit to battery of actuator relay 1	



2) Component Location



3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

Diagnostic Fault Check for short circuit to battery of actuator relay

When fault is detected, the actuator relay (high side power stage) is OFF

5) Condition for Clearing the Fault Code

When no error is detected

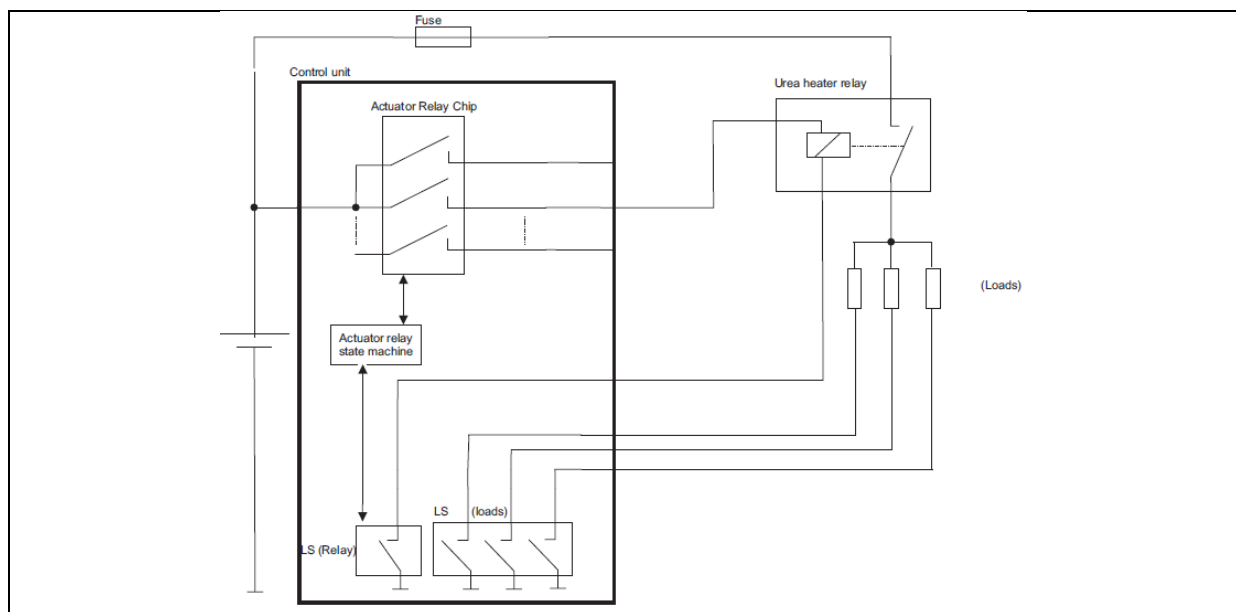
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2671 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	After key on, Check the DCU voltage related pin connection and harness. Pin or connection problem?		Do necessary repair	Step4
4	Please replace the DCU. Check the fault state. Is fault clear?		Problem solved	Call Hot-line

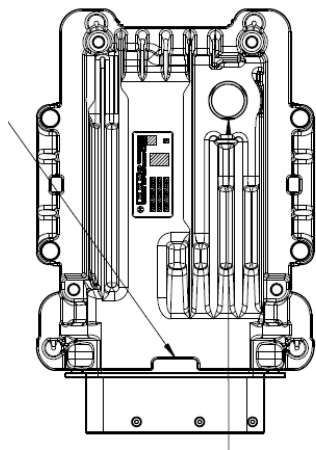
Fault Code	Fault Name
P2685	DCU Actuator Relay 2 SCG

1) Overview

CODE	REASON	EFFECT
U003511-24	Short circuit to ground of actuator relay 2	



2) Component Location



3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

Diagnostic Fault Check for short circuit to ground of actuator relay

After the SCG error is recognized, the actuator relay is immediately switched off by the hardware

5) Condition for Clearing the Fault Code

When no error is detected

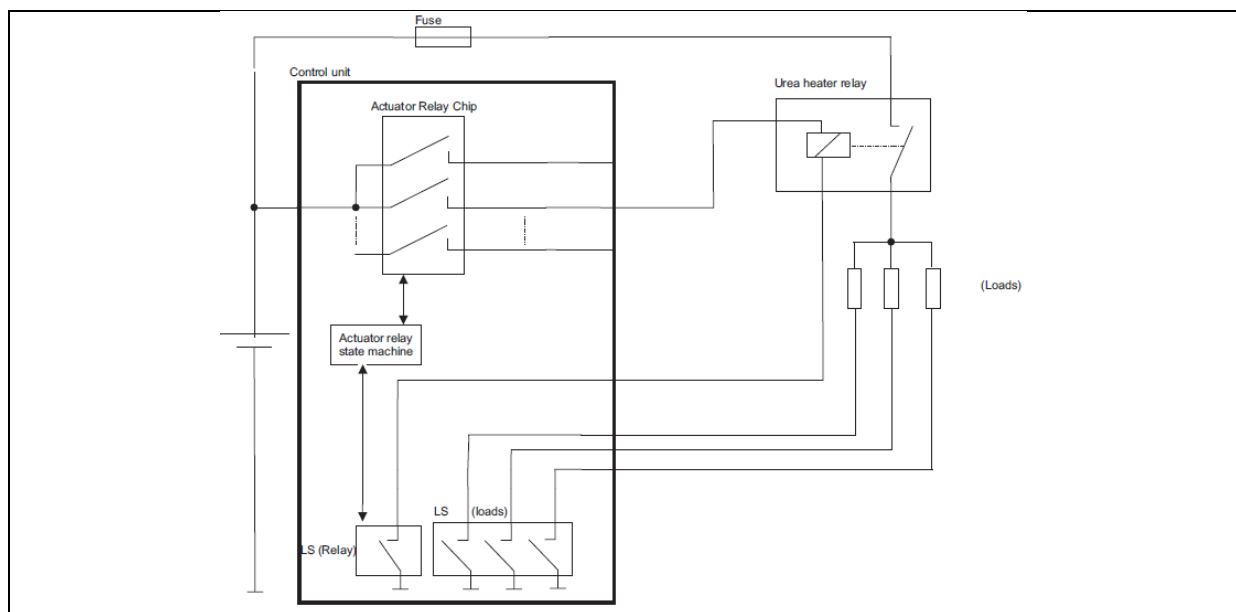
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2685 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	After key on, Check the DCU voltage related pin connection and harness. Pin or connection problem?		Do necessary repair	Step4
4	Please replace the DCU. Check the fault state. Is fault clear?		Problem solved	Call Hot-line

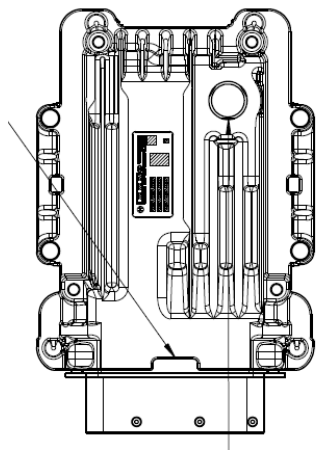
Fault Code	Fault Name
P2686	DCU Actuator Relay 2 SCB

1) Overview

CODE	REASON	EFFECT
U003511-23	Short circuit to battery of actuator relay 2	



2) Component Location



3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

Diagnostic Fault Check for short circuit to battery of actuator relay

When fault is detected, the actuator relay (high side power stage) is OFF

5) Condition for Clearing the Fault Code

When no error is detected

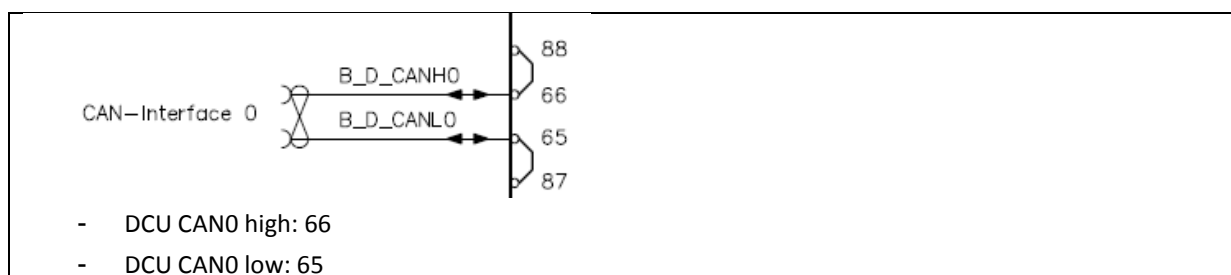
6) Check List

Step	Inspection	Standard Value	YES	NO
1	P2686 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	After key on, Check the DCU voltage related pin connection and harness. Pin or connection problem?		Do necessary repair	Step4
4	Please replace the DCU. Check the fault state. Is fault clear?		Problem solved	Call Hot-line

Fault Code	Fault Name
U010E	CAN A Bus-off

1) Overview

CODE	REASON	EFFECT
U000639-29	BusOff error Pas CAN A Line is open / short	



2) Component Location

N/A

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

The error is detected when CAN A has a busoff

5) Condition for Clearing the Fault Code

The error is healed when no busoff error is recognized

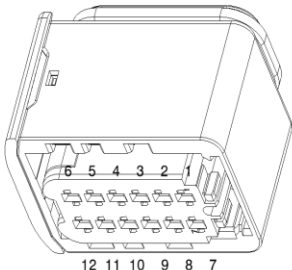
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U010E is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 5
5	Check Network Network problem?		Do necessary repair	Call Hot-line

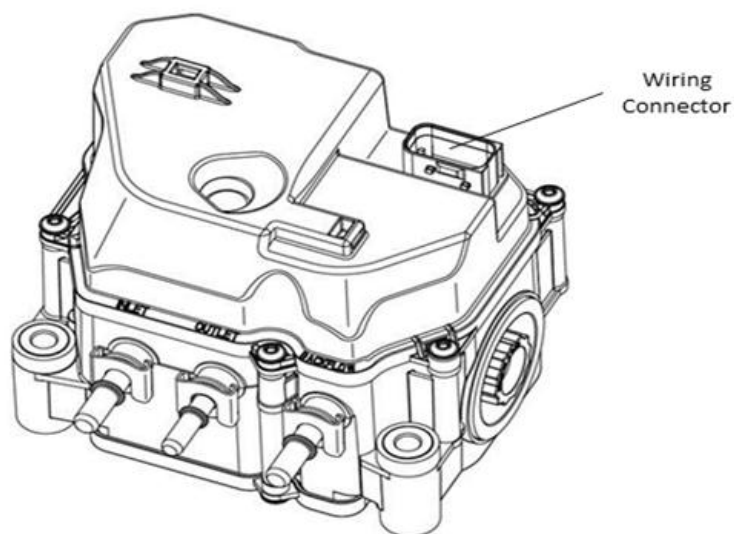
Fault Code	Fault Name
U040F	DEF Pump Motor Communication Fail

1) Overview

CODE	REASON	EFFECT
U005435-29	Pump Motor Communication Receive Fail	

	No.	DCU Pin	PIN description
	1	Reserve	
	2	76	Pump motor control signal
	3	55	Pump motor Ubat+
	4	54	Pump motor GND
	5	77	Purging pump Ubat+
	6	78	Purging pump GND
	7	Reserve	
	8	40	Pressure sensor GND
	9	39	Pressure sensor signal
	10	17	Pressure sensor Ubat+
	11	4	Heater Ubat+
	12	3	Heater GND

2) Component Location



3) Condition for Running Diagnostic

4) Condition for Setting the Fault Code

The communication of the pump motor fails

5) Condition for Clearing the Fault Code

There is no defect detection

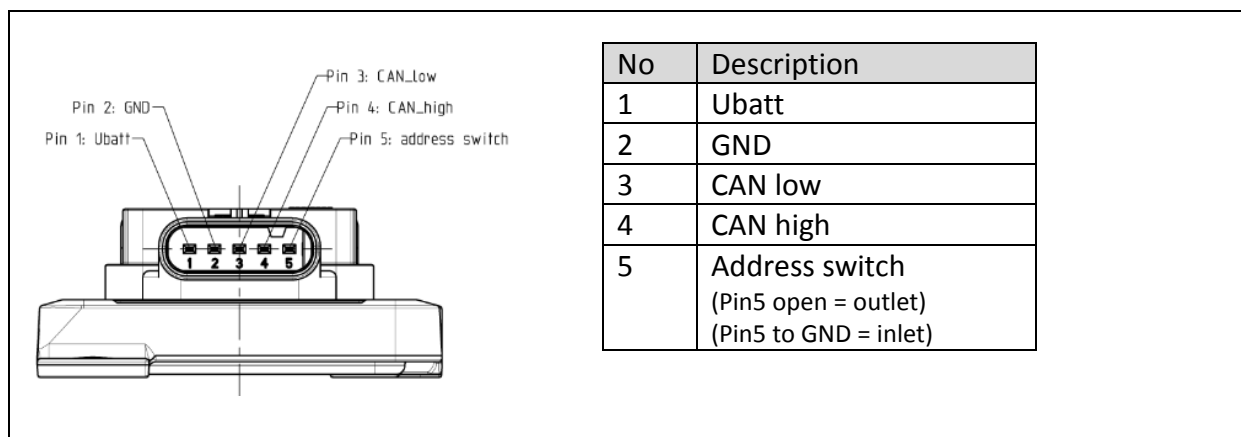
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U040F is occurred on diagnostic tool?		Step 2	
2	After let the machine be in safety area and turn-off the key switch		Step 3	
3	Check sensor connection Connection problem?		Do necessary repair	Step 4
4	Check DCU connection Connection problem?		Do necessary repair	Step 5
5	Check sensor resistance Resistance problem?		Change Supply module	Step 6
6	Check continuity and electrical insulation Electrical problem?		Fix harness	Call Hot-line

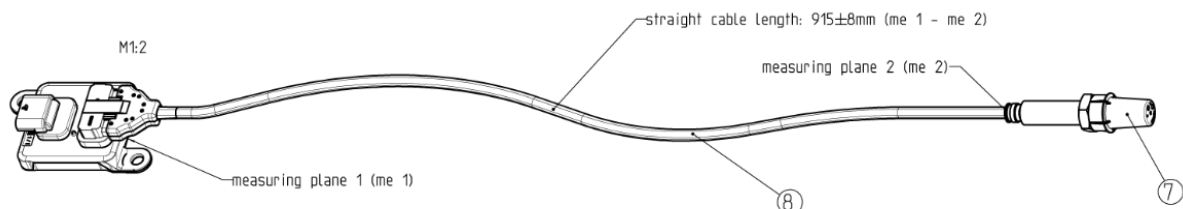
Fault Code	Fault Name
U102A	Inlet NOx Sensor SAE J1939 Error (NH3 correction)

1) Overview

CODE	REASON	EFFECT
U005030-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

The SAE check will be tested on the successful reception of the frame

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail signal out of range or erroneous signal for inlet gas NOx sensor correction factor of NH3

5) Condition for Clearing the Fault Code

Not possible for healing in the current driving cycle as the frame is received only once in a driving cycle

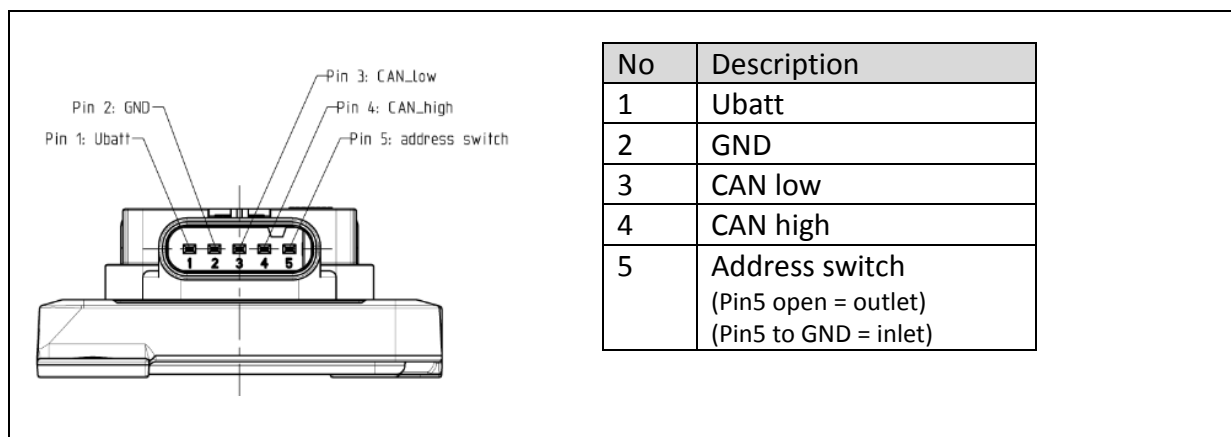
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U102A is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

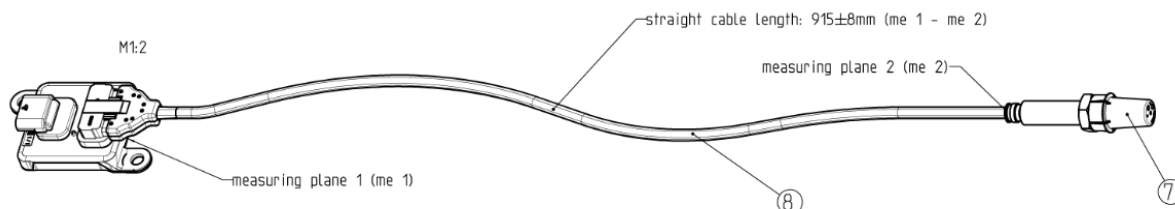
Fault Code	Fault Name
U102B	Outlet NOx Sensor SAE J1939 Error (heater ratio)

1) Overview

CODE	REASON	EFFECT
U005031-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

The SAE check will be tested on the successful reception of the frame

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail signal out of range or erroneous signal for outlet gas NOx sensor heater ratio message

5) Condition for Clearing the Fault Code

Not possible for healing in the current driving cycle as the frame is received only once in a driving cycle

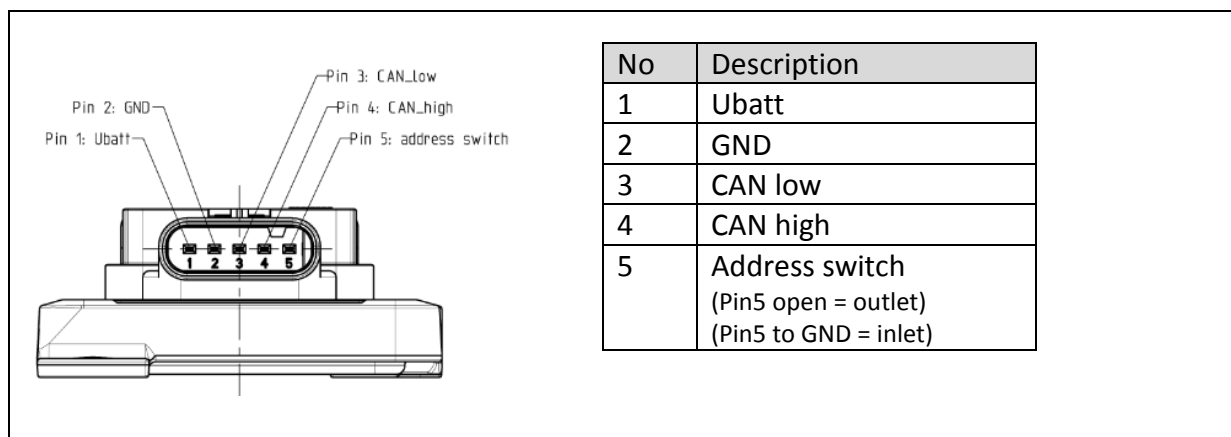
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U102B is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

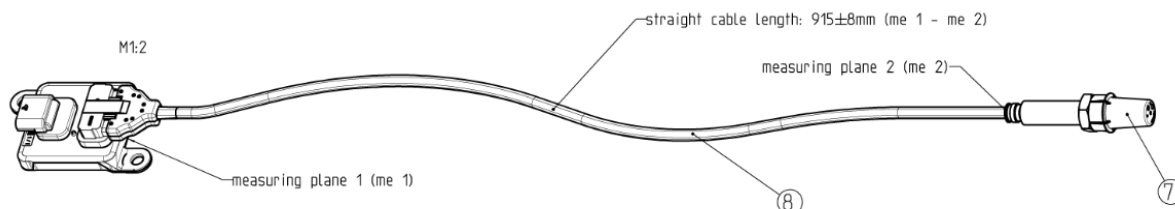
Fault Code	Fault Name
U102C	Outlet NOx Sensor SAE J1939 Error (Nox gain)

1) Overview

CODE	REASON	EFFECT
U005032-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

The SAE check will be tested on the successful reception of the frame

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail signal out of range or erroneous signal for outlet gas NOx sensor new part deviation NOx gain message

5) Condition for Clearing the Fault Code

Not possible for healing in the current driving cycle as the frame is received only once in a driving cycle

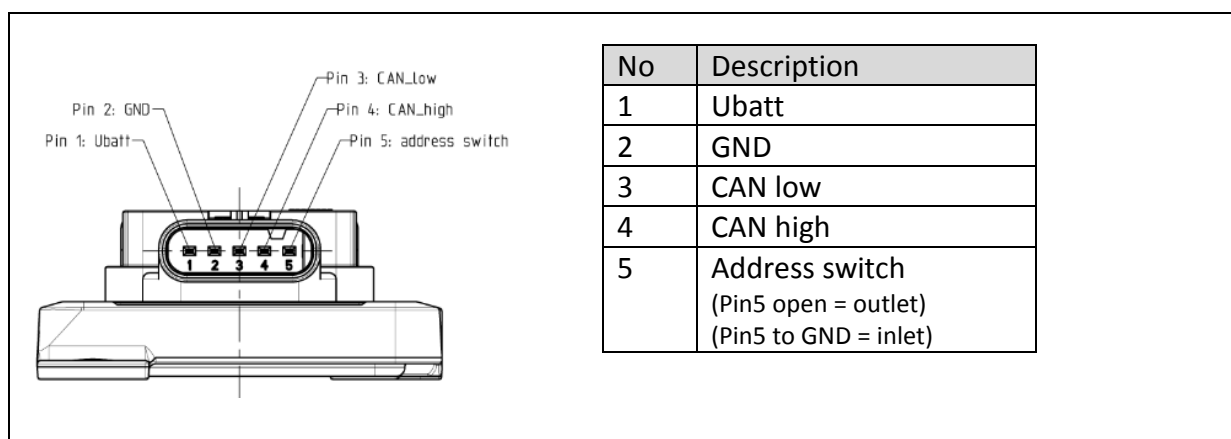
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U102C is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

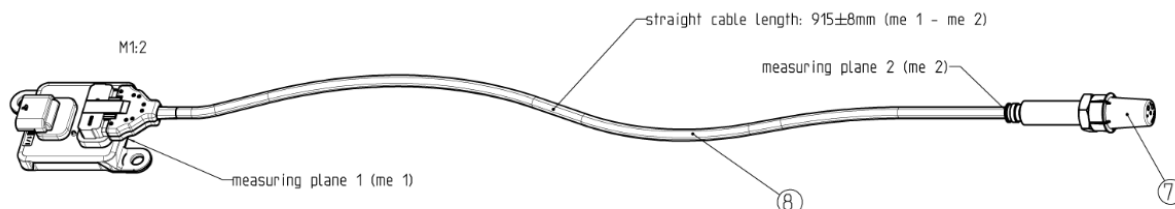
Fault Code	Fault Name
U102D	Outlet NOx Sensor SAE J1939 Error (Nox offset)

1) Overview

CODE	REASON	EFFECT
U005033-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

The SAE check will be tested on the successful reception of the frame

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail signal out of range or erroneous signal for outlet gas NOx sensor new part deviation NOx offset message

5) Condition for Clearing the Fault Code

Not possible for healing in the current driving cycle as the frame is received only once in a driving cycle

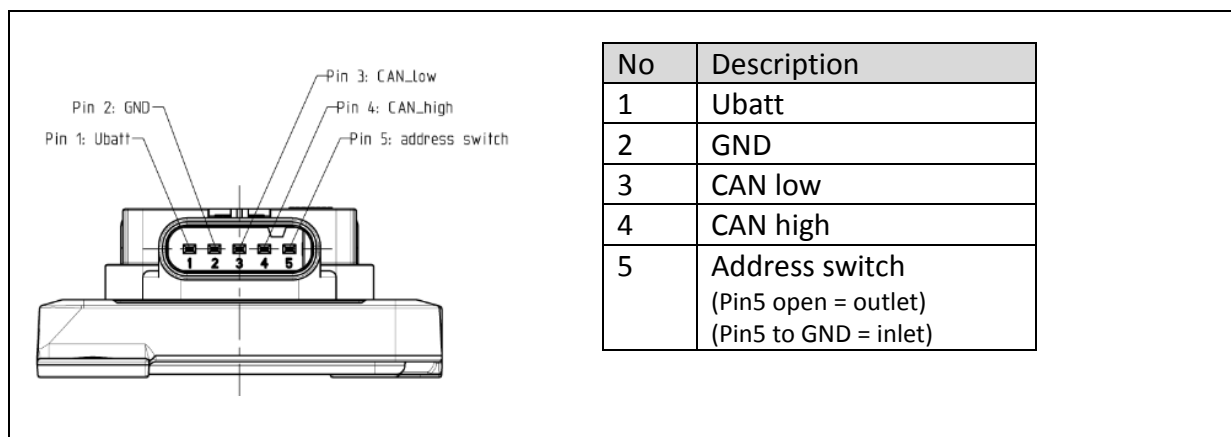
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U102D is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

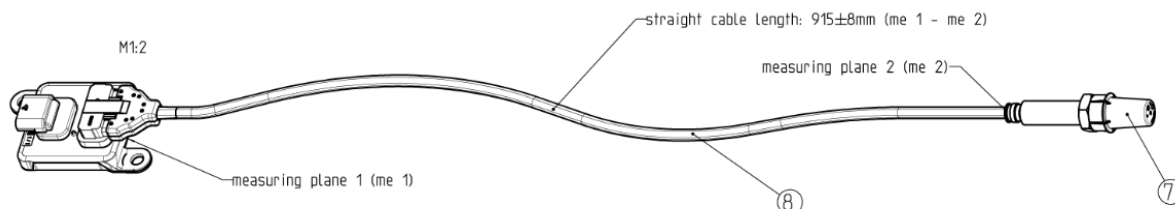
Fault Code	Fault Name
U102E	Outlet NOx Sensor SAE J1939 error (lambda pressure corr.)

1) Overview

CODE	REASON	EFFECT
U005034-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

The SAE check will be tested on the successful reception of the frame

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail signal out of range or erroneous signal for outlet gas NOx sensor correction factor of lambda pressure

5) Condition for Clearing the Fault Code

Not possible for healing in the current driving cycle as the frame is received only once in a driving cycle

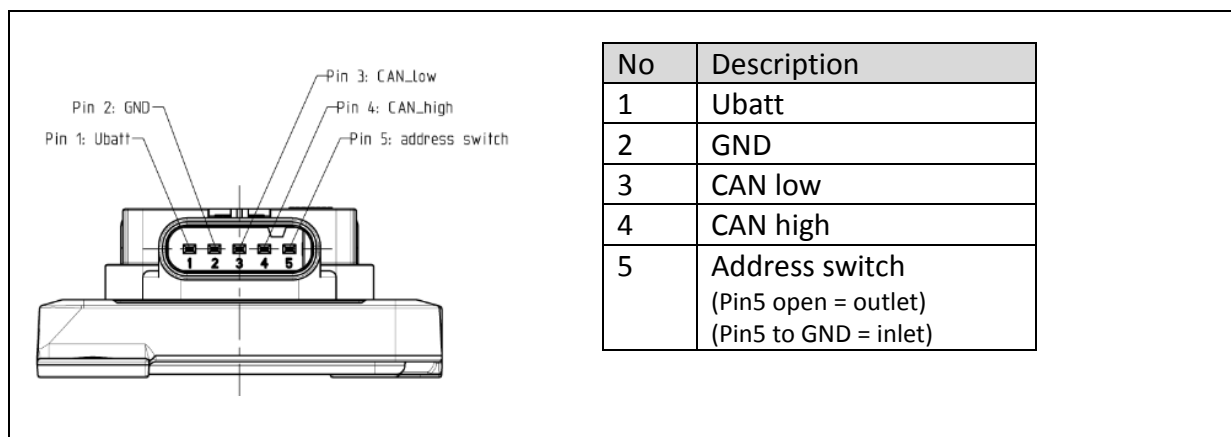
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U102E is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

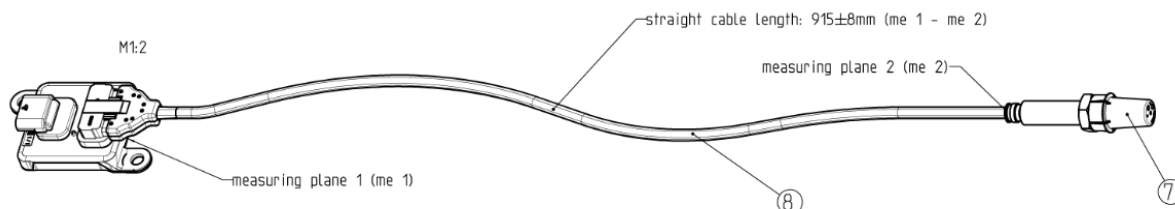
Fault Code	Fault Name
U102F	Outlet NOx Sensor SAE J1939 Error (Nox pressure corr.)

1) Overview

CODE	REASON	EFFECT
U005035-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

The SAE check will be tested on the successful reception of the frame

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail signal out of range or erroneous signal for outlet gas NOx sensor correction factor of NOx pressure

5) Condition for Clearing the Fault Code

Not possible for healing in the current driving cycle as the frame is received only once in a driving cycle

6) Check List

Step	Inspection	Standard Value	YES	NO
1	U102F is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
U111A	Timeout of AT1I1

1) Overview

CODE	REASON	EFFECT
U061454-19	Network problem DCU connection problem Sensor connection problem	

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

6) Check List

Step	Inspection	Standard Value	YES	NO
1	U111A is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check Sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
U111B	Timeout of AT1IGC1

1) Overview

CODE	REASON	EFFECT
U064785-19	Network problem DCU connection problem Sensor connection problem	

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

6) Check List

Step	Inspection	Standard Value	YES	NO
1	U111B is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check Sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
U111C	Timeout of AT1IGC2

1) Overview

CODE	REASON	EFFECT
U064784-19	Network problem DCU connection problem Sensor connection problem	

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

6) Check List

Step	Inspection	Standard Value	YES	NO
1	U111C is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check Sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
U116D	Timeout of AT1O1

1) Overview

CODE	REASON	EFFECT
U061455-19	Network problem DCU connection problem Sensor connection problem	

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

6) Check List

Step	Inspection	Standard Value	YES	NO
1	U116D is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check Sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
U116E	Timeout of AT1OGC1

1) Overview

CODE	REASON	EFFECT
U064783-19	Network problem DCU connection problem Sensor connection problem	

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

6) Check List

Step	Inspection	Standard Value	YES	NO
1	U116E is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check Sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
U116F	Timeout of AT1OGC2

1) Overview

CODE	REASON	EFFECT
U064782-19	Network problem DCU connection problem Sensor connection problem	

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

6) Check List

Step	Inspection	Standard Value	YES	NO
1	U116F is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check Sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
U121A	Timeout of AT1T1I

1) Overview

CODE	REASON	EFFECT
U064889-19	Network problem DCU connection problem Sensor connection problem	

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

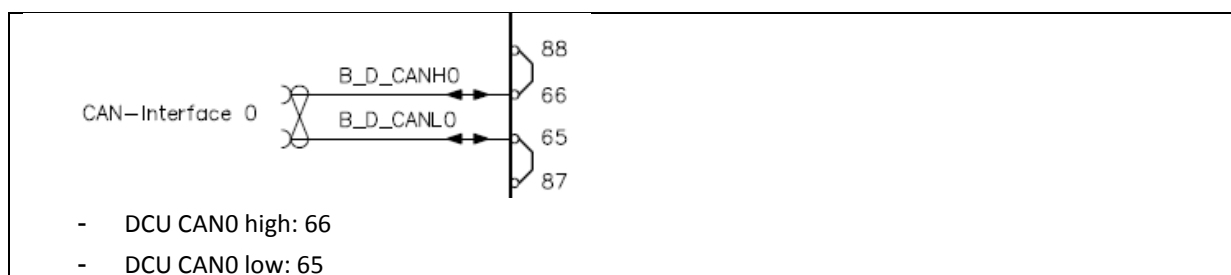
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U121A is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check Sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
U0401	UDS CAN ID Error

1) Overview

CODE	REASON	EFFECT
U000639-28	Network problem DCU connection problem	



2) Component Location

N/A

3) Condition for Running Diagnostic

Checked only during initialization

4) Condition for Setting the Fault Code

The error is reported if the CAN identifier calibrated for UDS diagnostics is invalid

5) Condition for Clearing the Fault Code

If error is not found during initialization fault won't be set. However once fault is set fault won't be healed, until calibration data is corrected and re-initialization is done

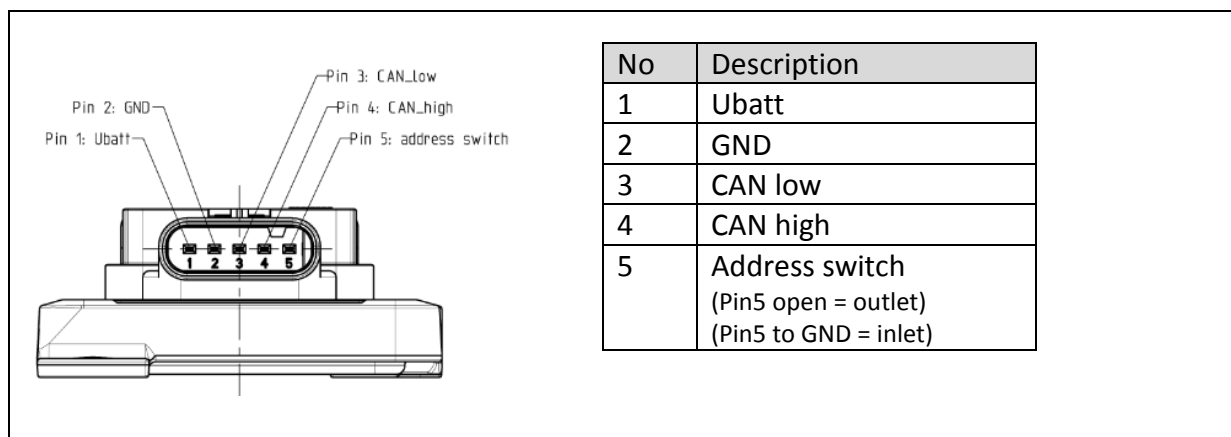
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U0401 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 5
5	Check Network Network problem?		Do necessary repair	Call Hot-line

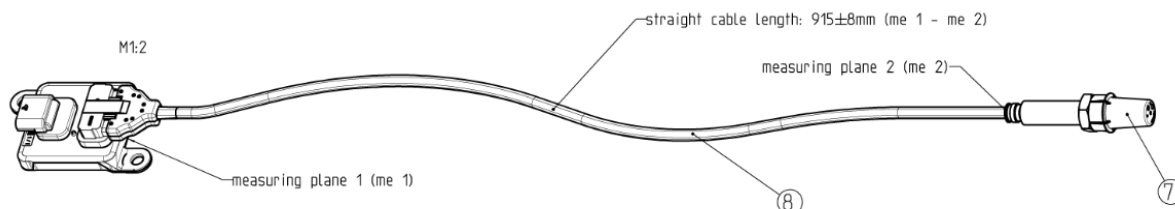
Fault Code	Fault Name
U1024	Inlet NOx Sensor SAE J1939 Error (heater ratio)

1) Overview

CODE	REASON	EFFECT
U005024-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

The SAE check will be tested on the successful reception of the frame

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail signal out of range or erroneous signal for inlet gas NOx sensor heater ratio message

5) Condition for Clearing the Fault Code

Not possible for healing in the current driving cycle as the frame is received only once in a driving cycle

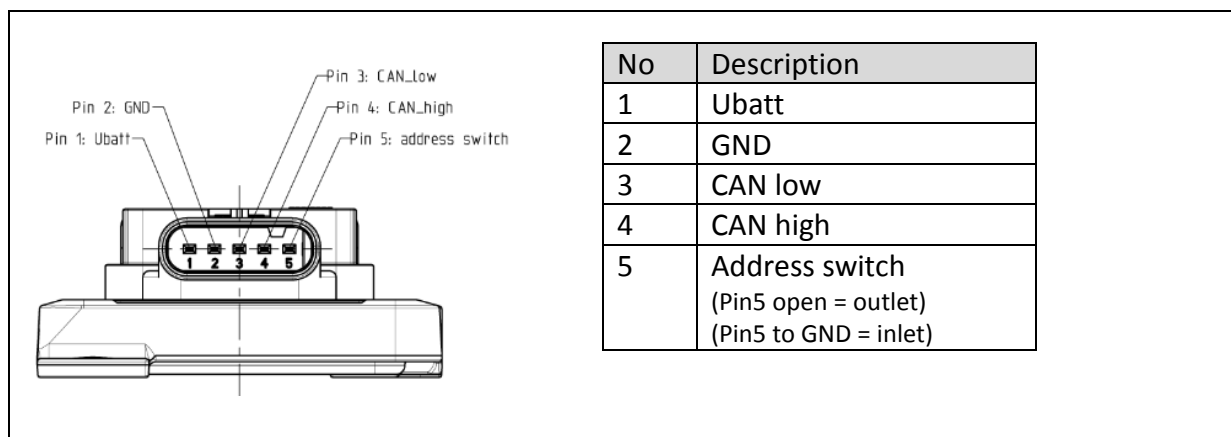
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1024 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

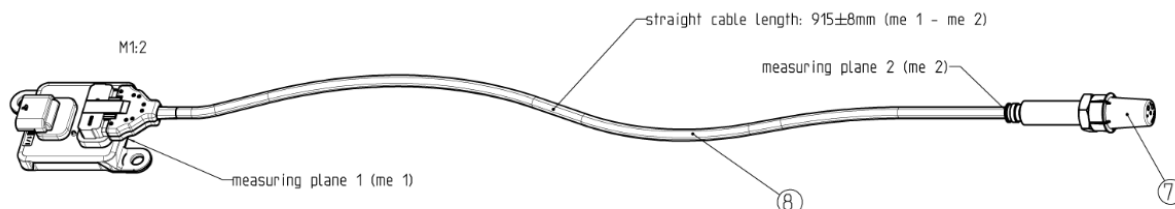
Fault Code	Fault Name
U1025	Inlet NOx Sensor SAE J1939 Error (Nox gain)

1) Overview

CODE	REASON	EFFECT
U005025-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

The SAE check will be tested on the successful reception of the frame

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail signal out of range or erroneous signal for inlet gas NOx sensor new part deviation NOx gain message

5) Condition for Clearing the Fault Code

Not possible for healing in the current driving cycle as the frame is received only once in a driving cycle

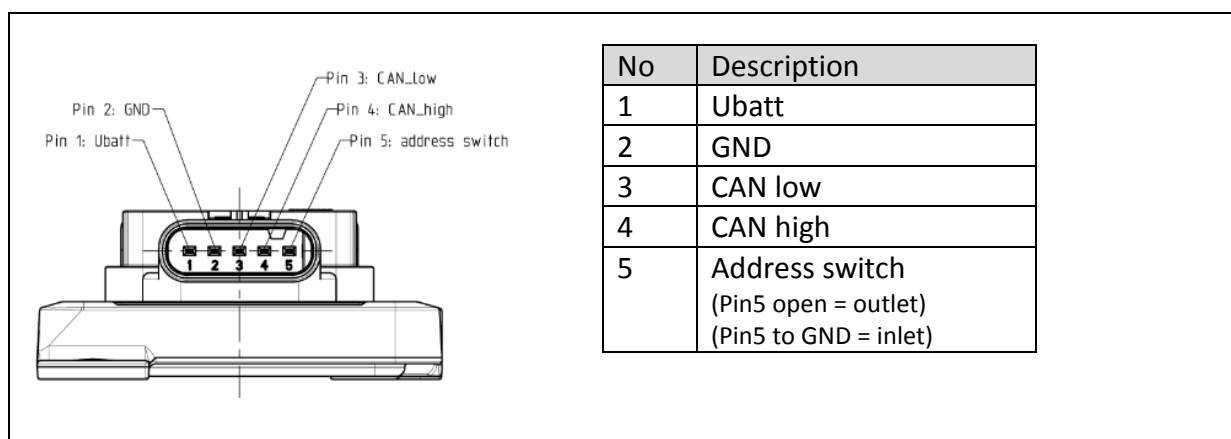
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1025 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

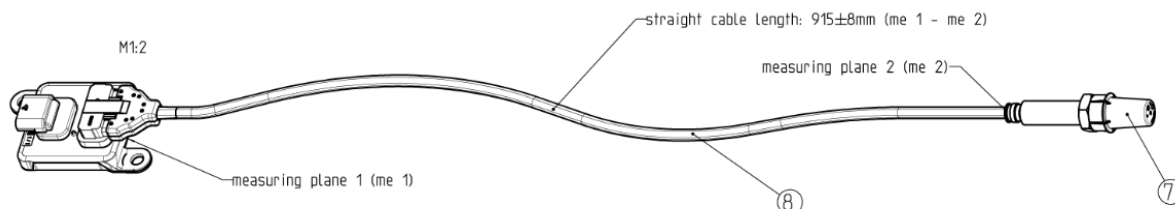
Fault Code	Fault Name
U1026	Inlet NOx Sensor SAE J1939 Error (Nox offset)

1) Overview

CODE	REASON	EFFECT
U005026-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

The SAE check will be tested on the successful reception of the frame

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail signal out of range or erroneous signal for inlet gas NOx sensor new part deviation NOx offset message

5) Condition for Clearing the Fault Code

Not possible for healing in the current driving cycle as the frame is received only once in a driving cycle

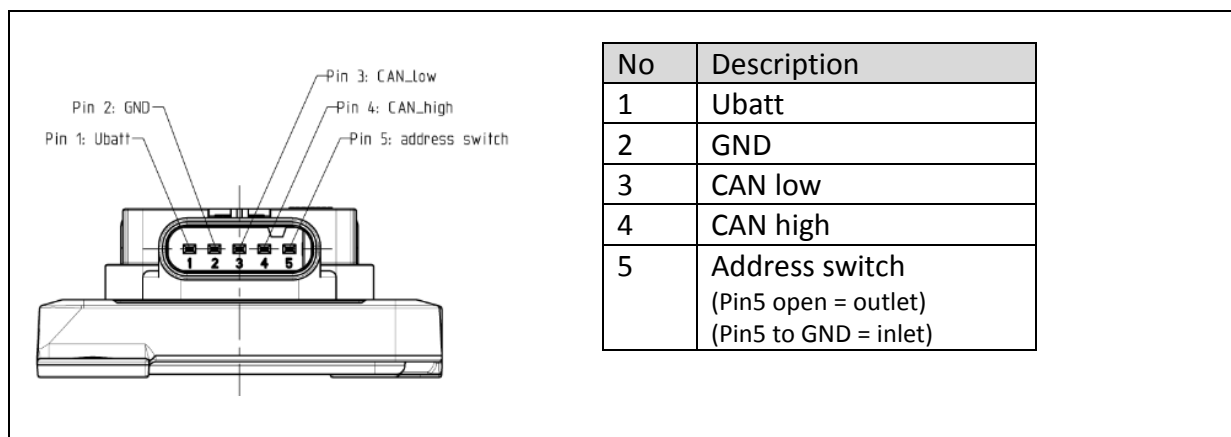
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1026 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

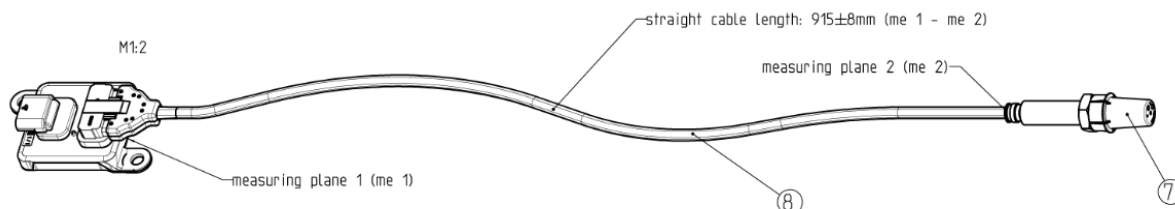
Fault Code	Fault Name
U1027	Inlet NOx Sensor SAE J1939 Error (lambda pressure corr.)

1) Overview

CODE	REASON	EFFECT
U005027-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

The SAE check will be tested on the successful reception of the frame

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail signal out of range or erroneous signal for inlet gas NOx sensor correction factor of lambda pressure

5) Condition for Clearing the Fault Code

Not possible for healing in the current driving cycle as the frame is received only once in a driving cycle

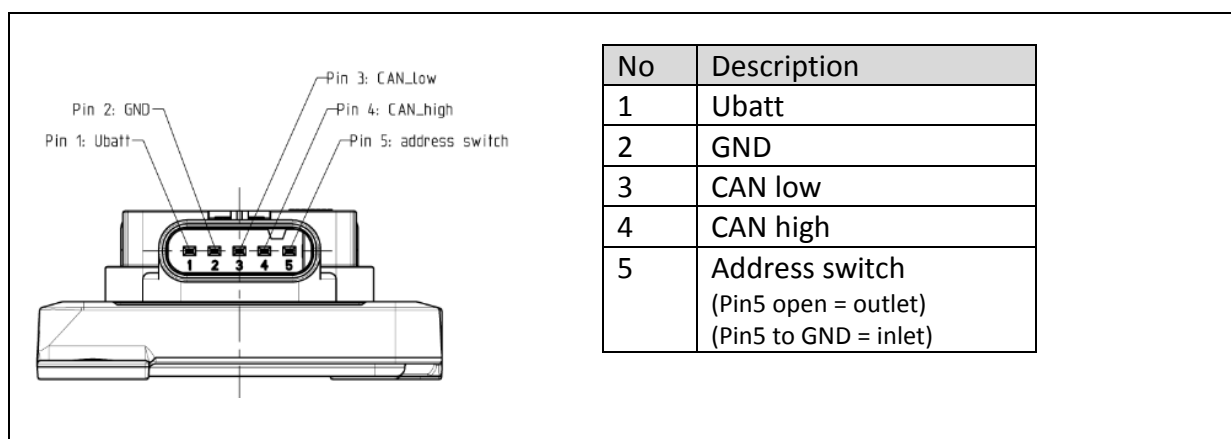
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1027 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

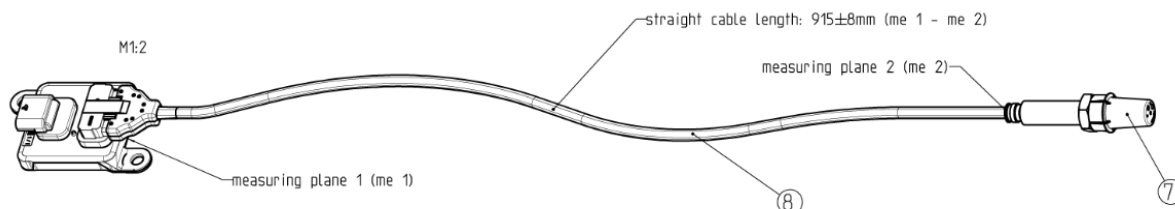
Fault Code	Fault Name
U1028	Inlet NOx Sensor SAE J1939 Error (Nox pressure corr.)

1) Overview

CODE	REASON	EFFECT
U005028-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

The SAE check will be tested on the successful reception of the frame

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail signal out of range or erroneous signal for inlet gas NOx sensor correction factor of NOx pressure

5) Condition for Clearing the Fault Code

Not possible for healing in the current driving cycle as the frame is received only once in a driving cycle

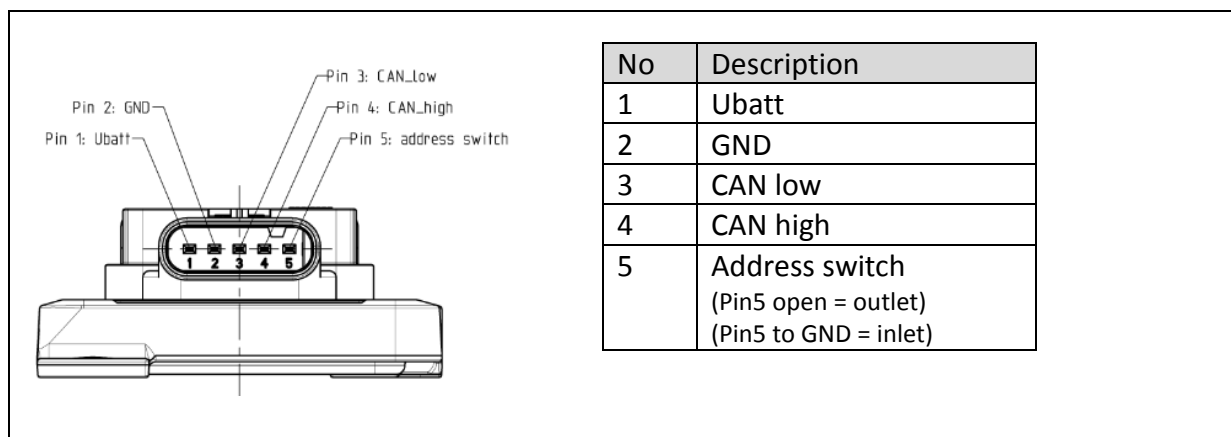
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1028 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

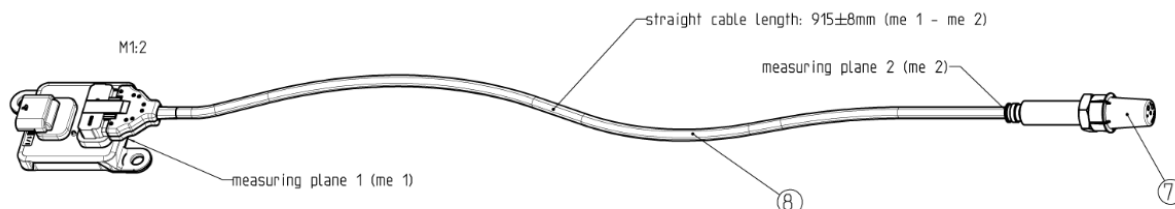
Fault Code	Fault Name
U1029	Inlet NOx Sensor SAE J1939 Error (NO2 correction)

1) Overview

CODE	REASON	EFFECT
U005029-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

The SAE check will be tested on the successful reception of the frame

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail signal out of range or erroneous signal for inlet gas NOx sensor correction factor of NO2

5) Condition for Clearing the Fault Code

Not possible for healing in the current driving cycle as the frame is received only once in a driving cycle

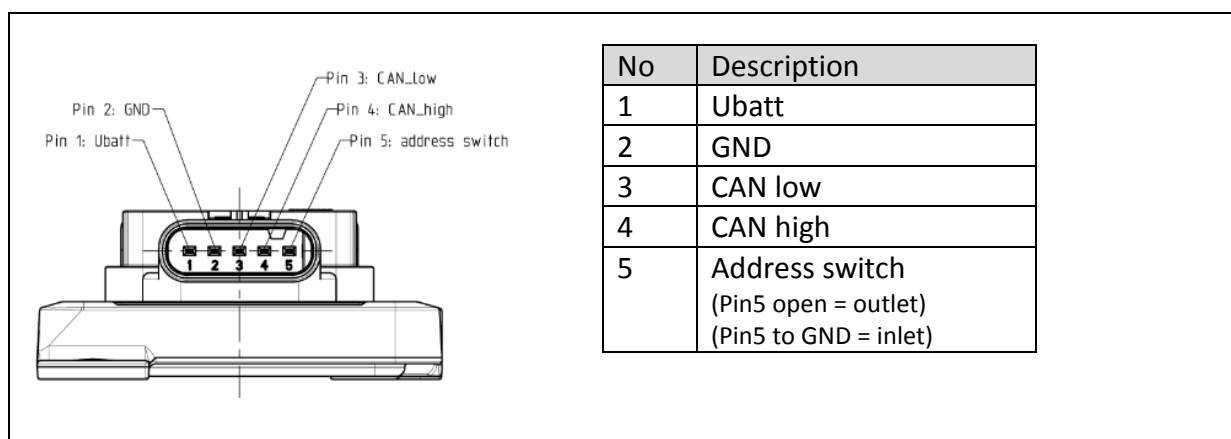
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1029 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

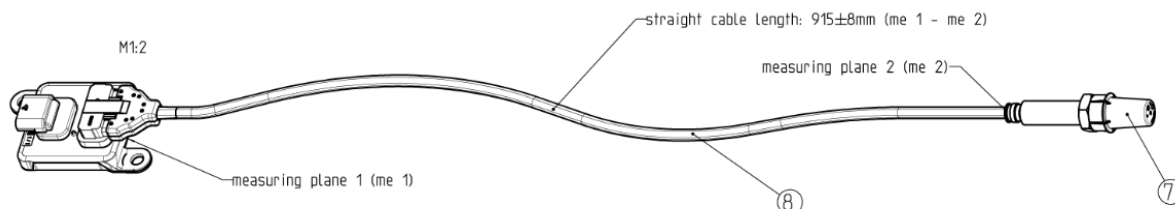
Fault Code	Fault Name
U1030	Outlet NOx Sensor SAE J1939 Error (NO2 correction)

1) Overview

CODE	REASON	EFFECT
U005036-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

The SAE check will be tested on the successful reception of the frame

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail signal out of range or erroneous signal for outlet gas NOx sensor correction factor of NO2

5) Condition for Clearing the Fault Code

Not possible for healing in the current driving cycle as the frame is received only once in a driving cycle

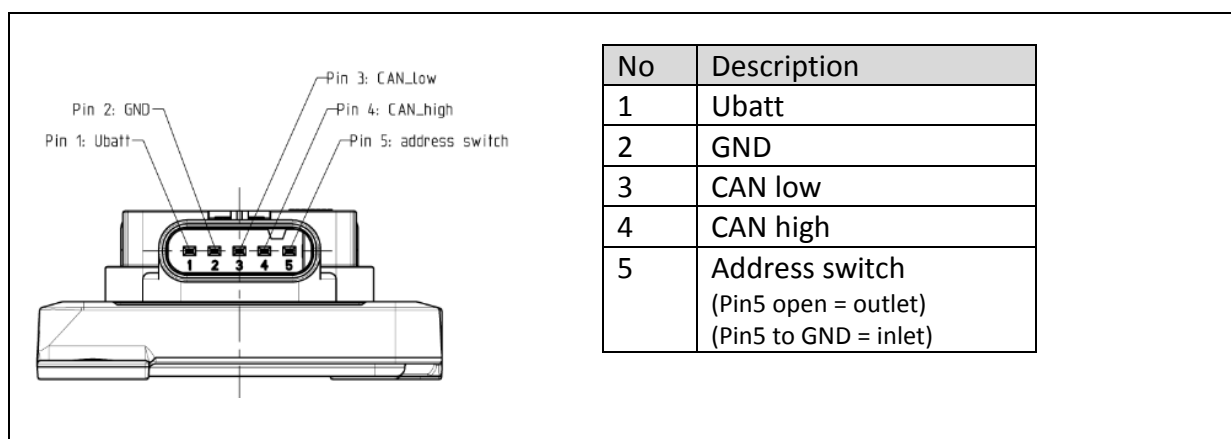
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1030 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

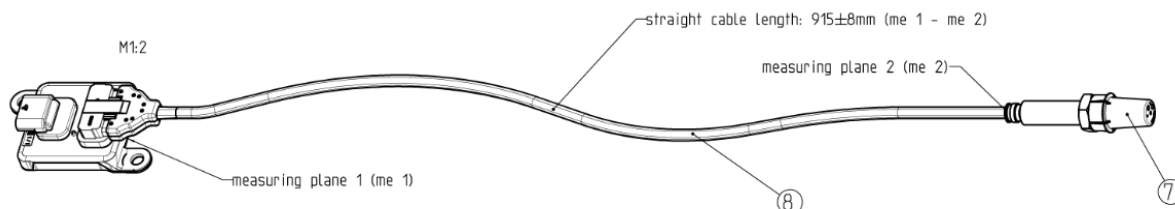
Fault Code	Fault Name
U1031	Outlet NOx Sensor SAE J1939 Error (NH3 correction)

1) Overview

CODE	REASON	EFFECT
U005037-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

The SAE check will be tested on the successful reception of the frame

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail signal out of range or erroneous signal for outlet gas NOx sensor correction factor of NH3

5) Condition for Clearing the Fault Code

Not possible for healing in the current driving cycle as the frame is received only once in a driving cycle

6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1031 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
U1126	Timeout of DM1ECU

1) Overview

CODE	REASON	EFFECT
U065226-19	Network problem ECU/DCU connection problem	

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1126 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check ECU/DCU connection Connection problem?		Do necessary repair	Step 4
4	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 5
5	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
U1147	Timeout of EEC3

1) Overview

CODE	REASON	EFFECT
U065247-19	Network problem ECU/DCU connection problem	

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1147 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check ECU/DCU connection Connection problem?		Do necessary repair	Step 4
4	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 5
5	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
U1162	Timeout of ET1

1) Overview

CODE	REASON	EFFECT
U065262-19	Network problem ECU/DCU connection problem	

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1162 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check ECU/DCU connection Connection problem?		Do necessary repair	Step 4
4	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 5
5	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
U1169	Timeout of AMB

1) Overview

CODE	REASON	EFFECT
U065269-19	Network problem ECU/DCU connection problem	

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1169 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check ECU/DCU connection Connection problem?		Do necessary repair	Step 4
4	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 5
5	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
U1170	Timeout of IC1

1) Overview

CODE	REASON	EFFECT
U065270-19	Network problem ECU/DCU connection problem	

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1170 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check ECU/DCU connection Connection problem?		Do necessary repair	Step 4
4	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 5
5	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
U1196	Timeout of PROSCR1

1) Overview

CODE	REASON	EFFECT
U065296-19	Network problem ECU/DCU connection problem	

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1196 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check ECU/DCU connection Connection problem?		Do necessary repair	Step 4
4	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 5
5	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
U1200	Timeout of PROSCR3

1) Overview

CODE	REASON	EFFECT
U065300-19	Network problem ECU/DCU connection problem	

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

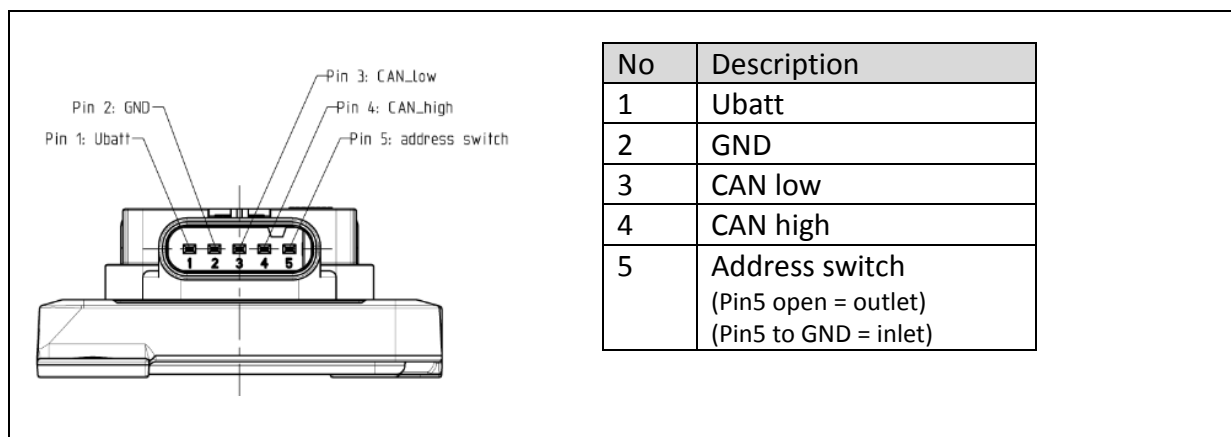
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1200 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check ECU/DCU connection Connection problem?		Do necessary repair	Step 4
4	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 5
5	Check Network Network problem?		Do necessary repair	Call Hot-line

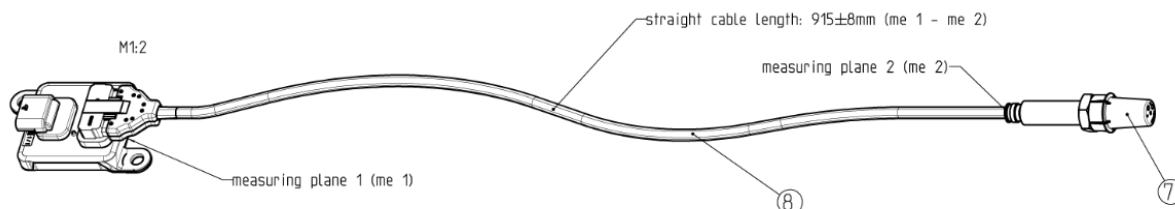
Fault Code	Fault Name
U1216	Inlet NOx Sensor SAE J1939 Error (Concentration)

1) Overview

CODE	REASON	EFFECT
U003216-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

Continuously checked in the configured raster when there is no busoff and no timeout error

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail for signal out of range or erroneous signal for NOx concentration inlet message

5) Condition for Clearing the Fault Code

The error is healed when the SAE checks are satisfied for NOx concentration inlet message

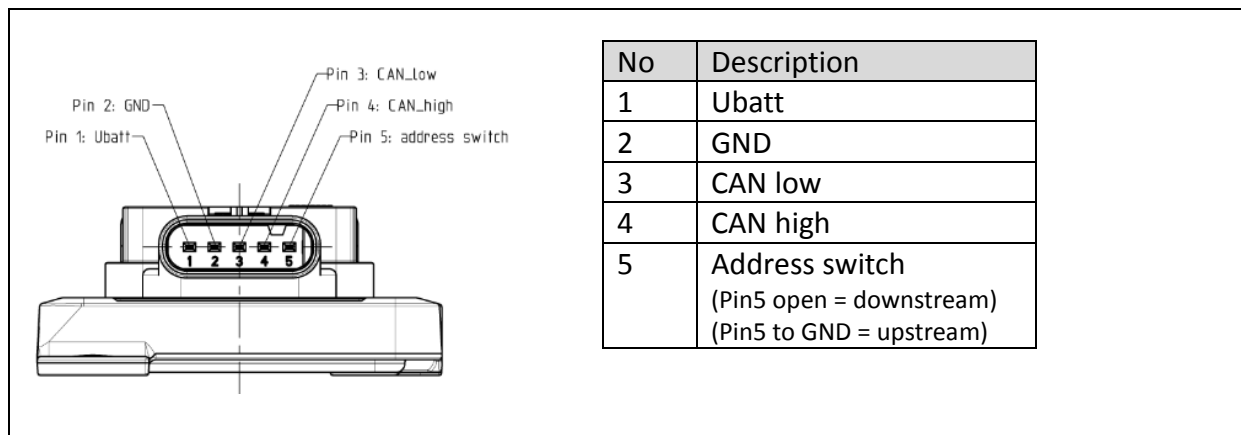
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1216 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

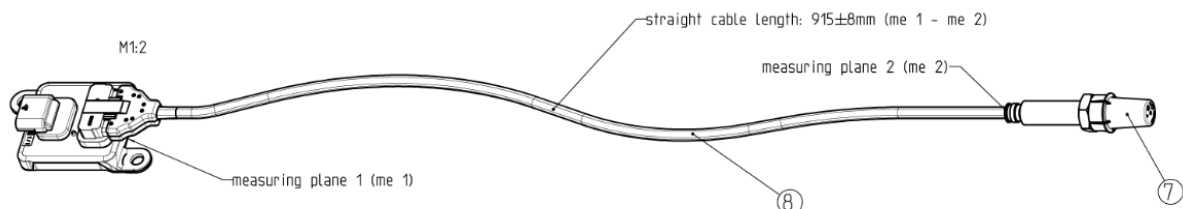
Fault Code	Fault Name
U1217	SAE J1939 Error (Upstream Oxidation Factor)

1) Overview

CODE	REASON	EFFECT
U003217-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

Continuously checked in the configured raster when there is no busoff and no timeout error

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail for signal out of range or erroneous signal for actual oxidation factor upstream message

5) Condition for Clearing the Fault Code

The error is healed when the SAE checks are satisfied for actual oxidation factor upstream message

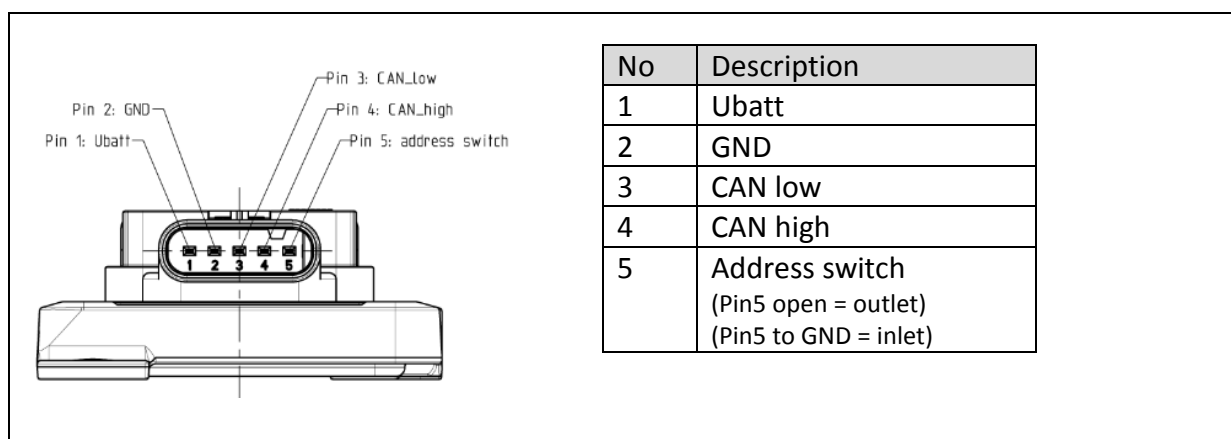
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1217 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

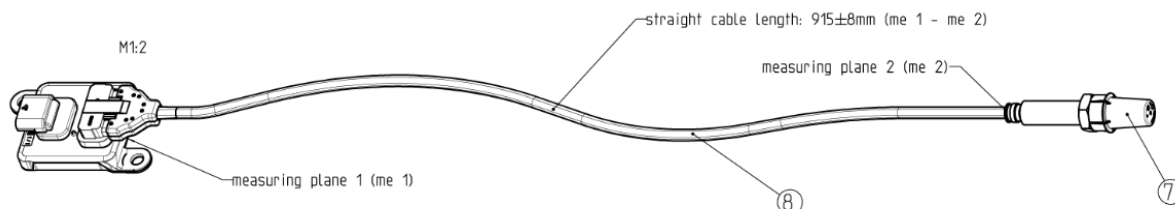
Fault Code	Fault Name
U1219	Inlet NOx Sensor SAE J1939 Error (Temperature)

1) Overview

CODE	REASON	EFFECT
U003219-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

Continuously checked in the configured raster when there is no busoff and no timeout error

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail for erroneous signal for the bits 2 and 3 of the sensor status byte inlet message (temperature signal)

5) Condition for Clearing the Fault Code

The error is healed when the SAE checks are satisfied for the bits 2 and 3 of sensor status byte inlet message (temperature signal)

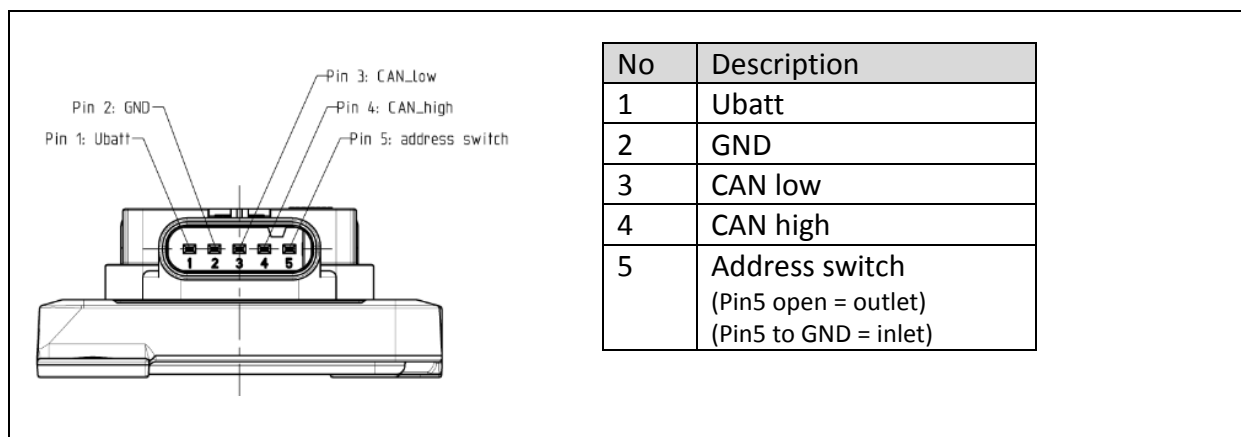
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1219 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

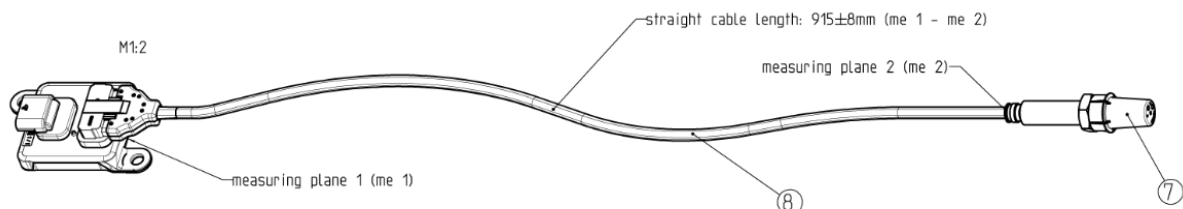
Fault Code	Fault Name
U1223	Inlet NOx Sensor SAE J1939 Error (Power Signal)

1) Overview

CODE	REASON	EFFECT
U003218-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

Continuously checked in the configured raster when there is no busoff and no timeout error

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail for erroneous signal for the bits 0 and 1 of the sensor status byte inlet message (power signal)

5) Condition for Clearing the Fault Code

The error is healed when the SAE checks are satisfied for the bits 0 and 1 of sensor status byte inlet message (power signal)

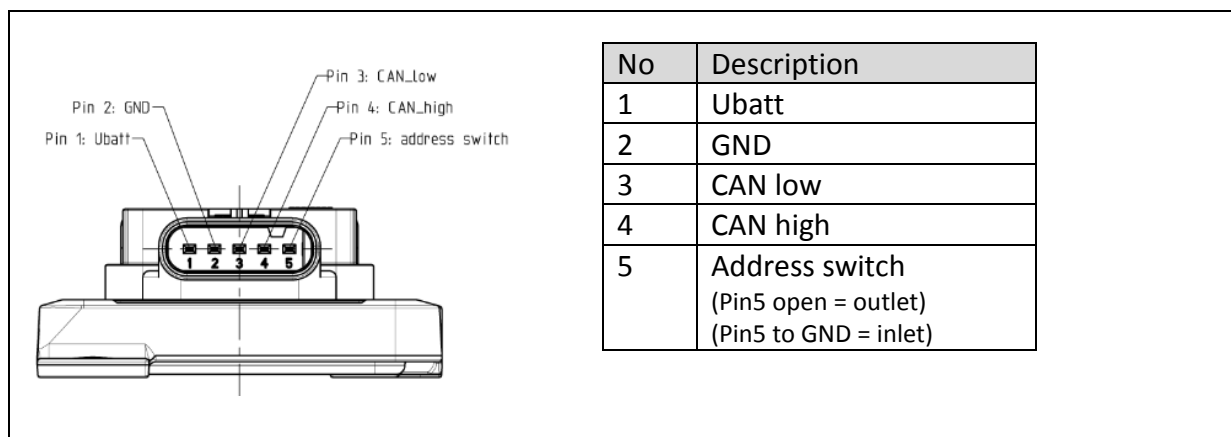
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1223 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

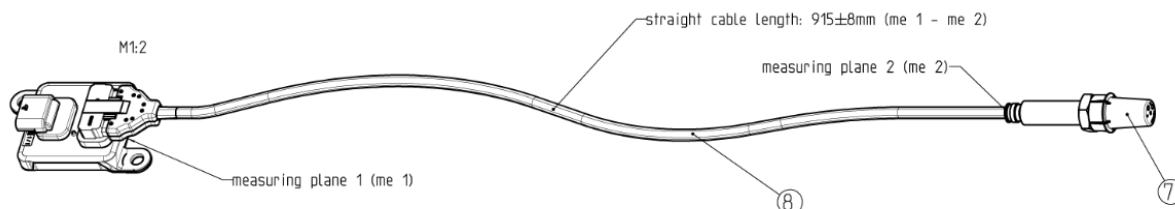
Fault Code	Fault Name
U1224	Inlet NOx Sensor SAE J1939 Error (Nox Signal)

1) Overview

CODE	REASON	EFFECT
U003224-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

Continuously checked in the configured raster when there is no busoff and no timeout error

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail for erroneous signal for the bits 4 and 5 of the sensor status byte inlet message (NOx signal)

5) Condition for Clearing the Fault Code

The error is healed when the SAE checks are satisfied for the bits 4 and 5 of sensor status byte inlet message (NOx signal)

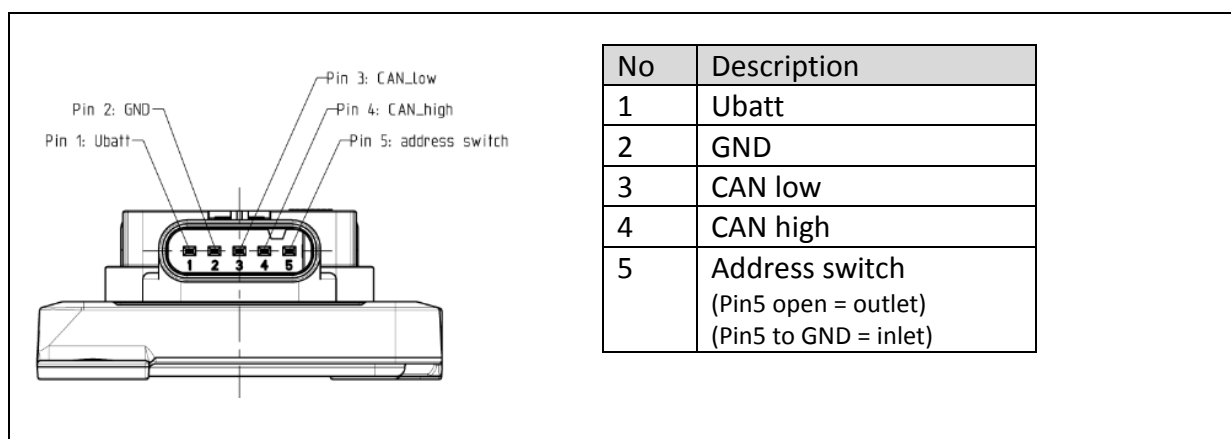
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1224 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

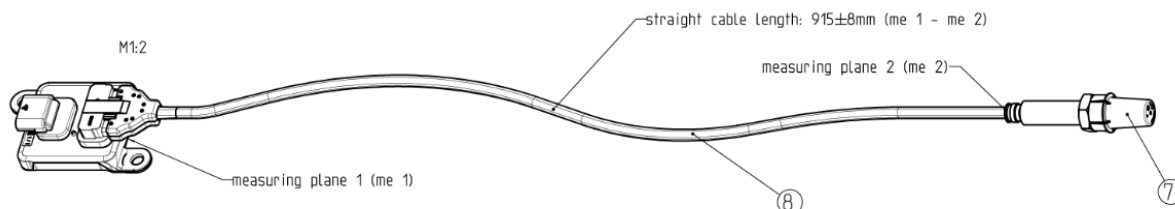
Fault Code	Fault Name
U1225	Outlet NOx Sensor SAE J1939 Error (Nox Signal)

1) Overview

CODE	REASON	EFFECT
U003234-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

Continuously checked in the configured raster when there is no busoff and no timeout error

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail for erroneous signal for the bits 4 and 5 of the sensor status byte outlet message (NOx signal)

5) Condition for Clearing the Fault Code

The error is healed when the SAE checks are satisfied for the bits 4 and 5 of sensor status byte outlet message (NOx signal)

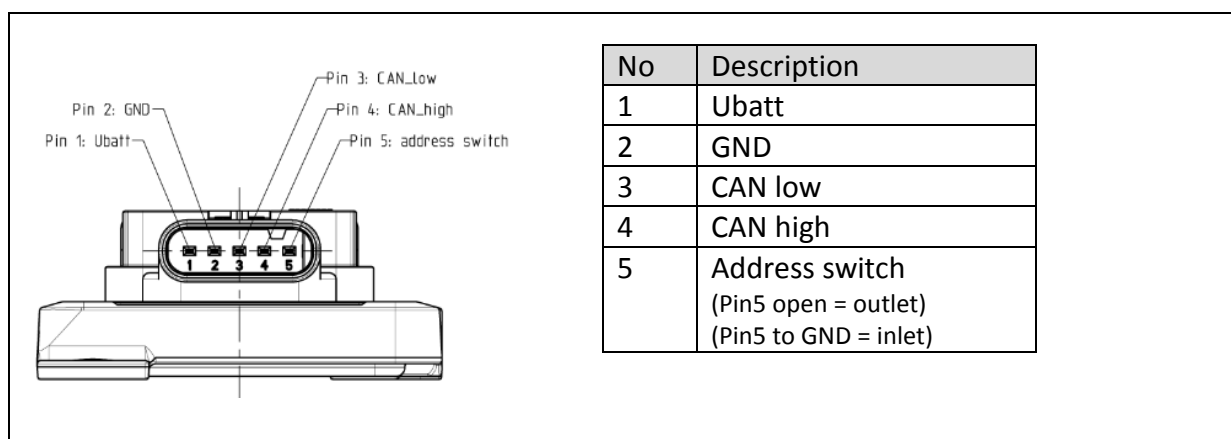
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1225 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

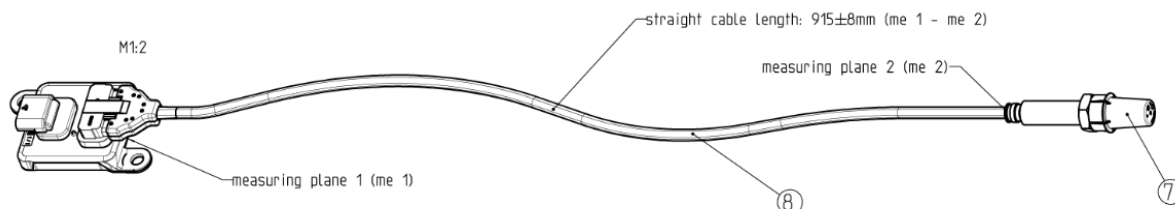
Fault Code	Fault Name
U1226	Outlet NOx Sensor SAE J1939 Error (Concentration)

1) Overview

CODE	REASON	EFFECT
U003226-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

Continuously checked in the configured raster when there is no busoff and no timeout error

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail for signal out of range or erroneous signal for NOx concentration outlet message

5) Condition for Clearing the Fault Code

The error is healed when the SAE checks are satisfied for NOx concentration outlet message

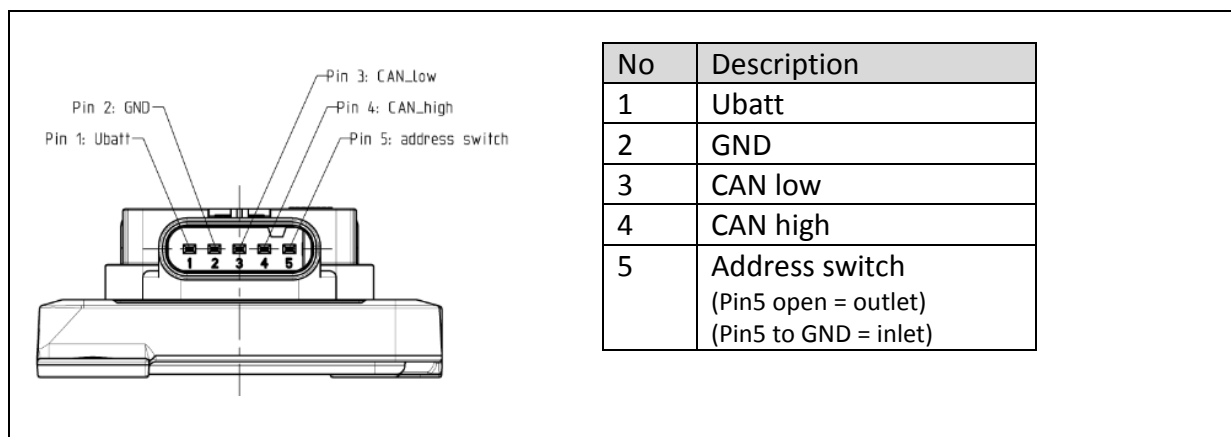
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1226 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

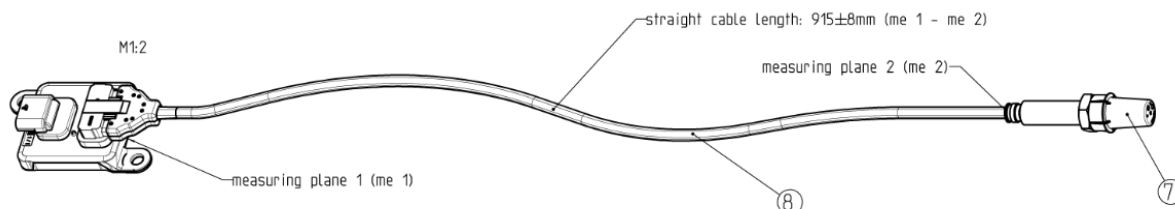
Fault Code	Fault Name
U1227	Outlet NOx Sensor SAE J1939 Error (Oxidation Factor)

1) Overview

CODE	REASON	EFFECT
U003227-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

Continuously checked in the configured raster when there is no busoff and no timeout error

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail for signal out of range or erroneous signal for actual oxidation factor outlet message

5) Condition for Clearing the Fault Code

The error is healed when the SAE checks are satisfied for actual oxidation factor outlet message

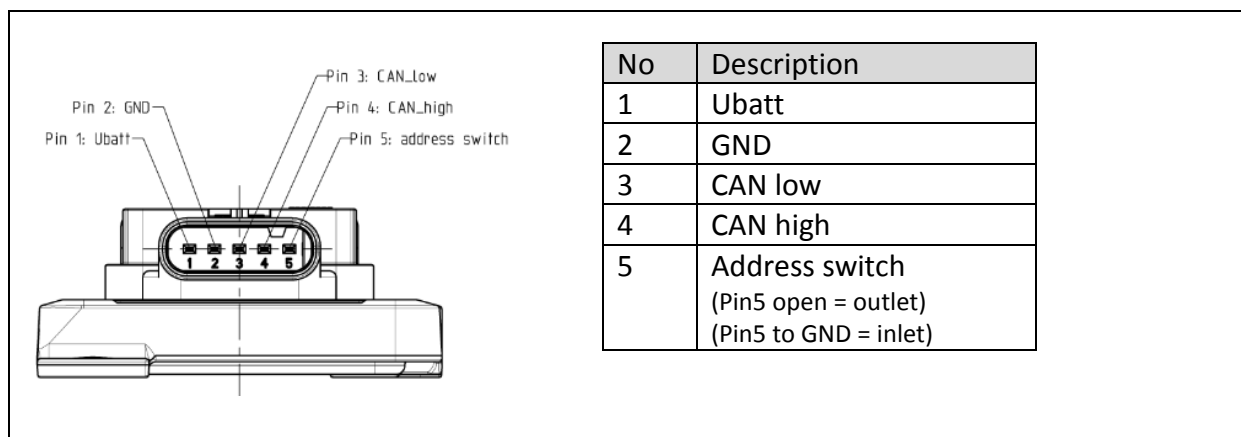
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1227 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

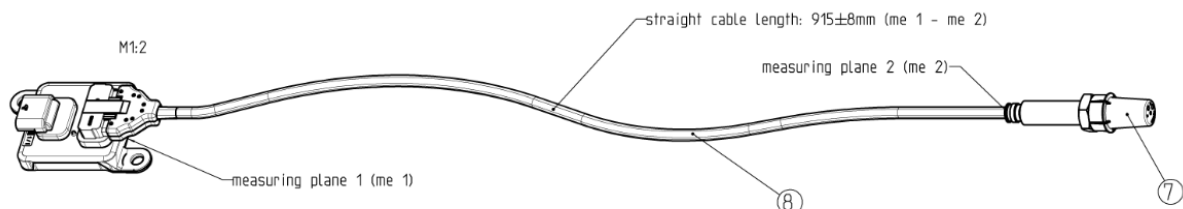
Fault Code	Fault Name
U1229	Outlet NOx Sensor SAE J1939 Error (Temperature)

1) Overview

CODE	REASON	EFFECT
U003229-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

Continuously checked in the configured raster when there is no busoff and no timeout error

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail for erroneous signal for the bits 2 and 3 of the sensor status byte outlet message (temperature signal)

5) Condition for Clearing the Fault Code

The error is healed when the SAE checks are satisfied for the bits 2 and 3 of sensor status byte outlet message (temperature signal)

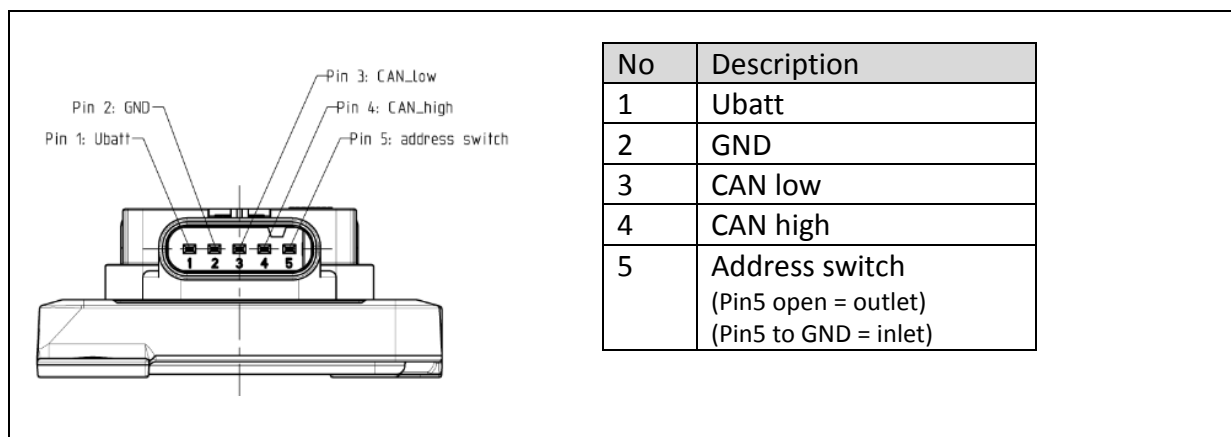
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1229 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

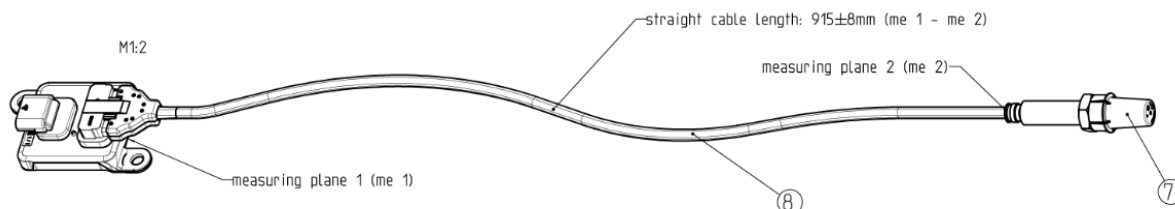
Fault Code	Fault Name
U1233	Outlet NOx Sensor SAE J1939 Error (Power Signal)

1) Overview

CODE	REASON	EFFECT
U003228-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

Continuously checked in the configured raster when there is no busoff and no timeout error

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail for erroneous signal for the bits 0 and 1 of the sensor status byte outlet message (power signal)

5) Condition for Clearing the Fault Code

The error is healed when the SAE checks are satisfied for the bits 0 and 1 of sensor status byte outlet message (power signal)

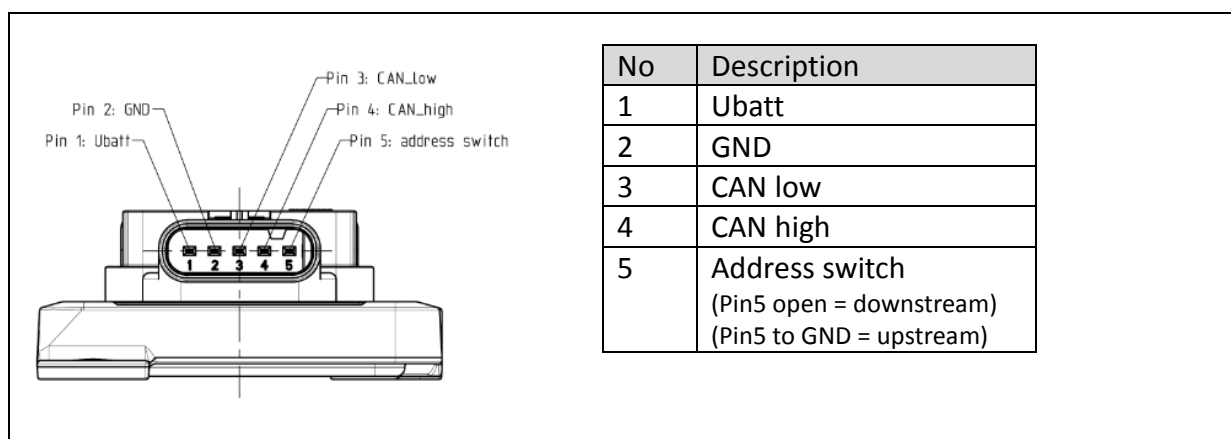
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1233 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

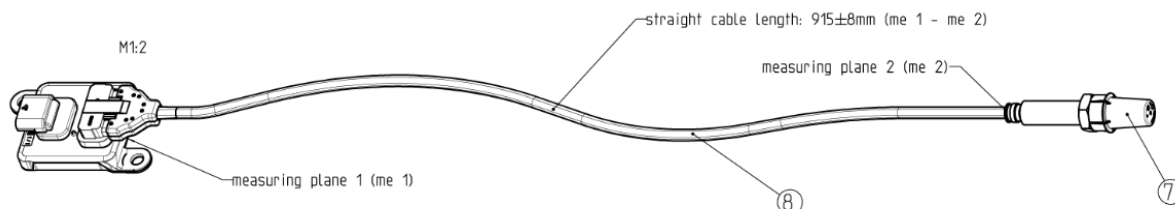
Fault Code	Fault Name
U1234	SAE J1939 Error (inlet O2 Signal)

1) Overview

CODE	REASON	EFFECT
U003225-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

Continuously checked in the configured raster when there is no busoff and no timeout error

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail for erroneous signal for the bits 6 and 7 of the sensor status byte upstream message (O2 signal)

5) Condition for Clearing the Fault Code

The error is healed when the SAE checks are satisfied for the bits 6 and 7 of sensor status byte upstream message (O2 signal)

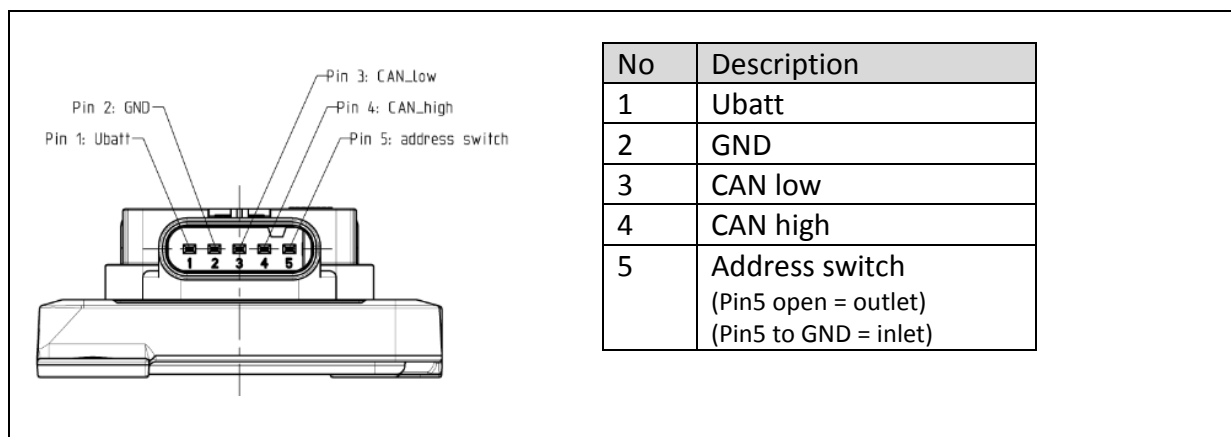
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1234 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

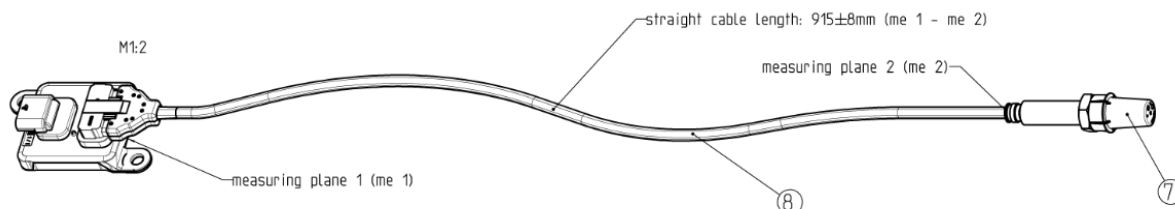
Fault Code	Fault Name
U1235	Outlet NOx Sensor SAE J1939 Error (O2 Signal)

1) Overview

CODE	REASON	EFFECT
U003235-19	Network problem DCU connection problem Sensor problem	Inducement Group5



2) Component Location



3) Condition for Running Diagnostic

Continuously checked in the configured raster when there is no busoff and no timeout error

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail for erroneous signal for the bits 6 and 7 of the sensor status byte outlet message (O2 signal)

5) Condition for Clearing the Fault Code

The error is healed when the SAE checks are satisfied for the bits 6 and 7 of sensor status byte outlet message (O2 signal)

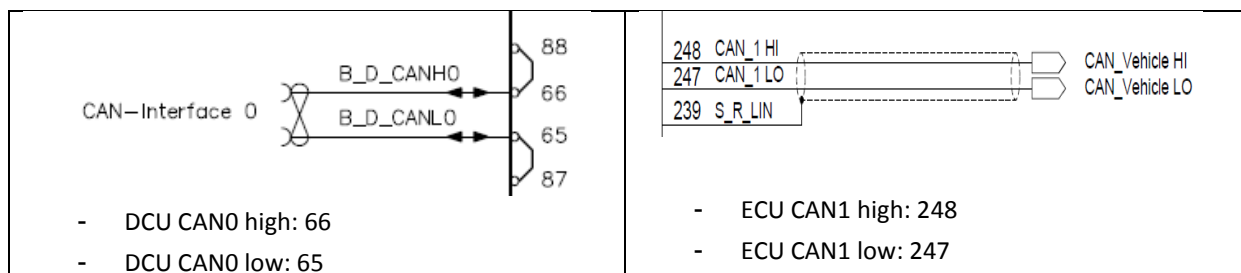
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1235 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

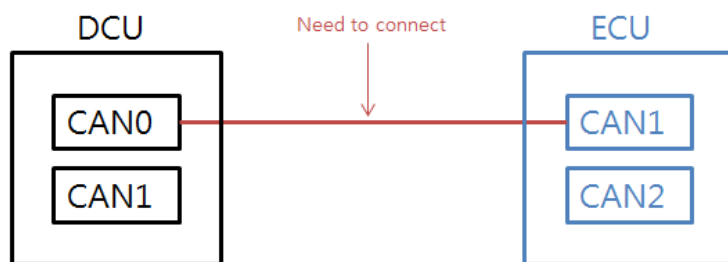
Fault Code	Fault Name
U1444	Timeout of EEC1

1) Overview

CODE	REASON	EFFECT
U061444-19	Network problem ECU/DCU connection problem	



2) Component Location



3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

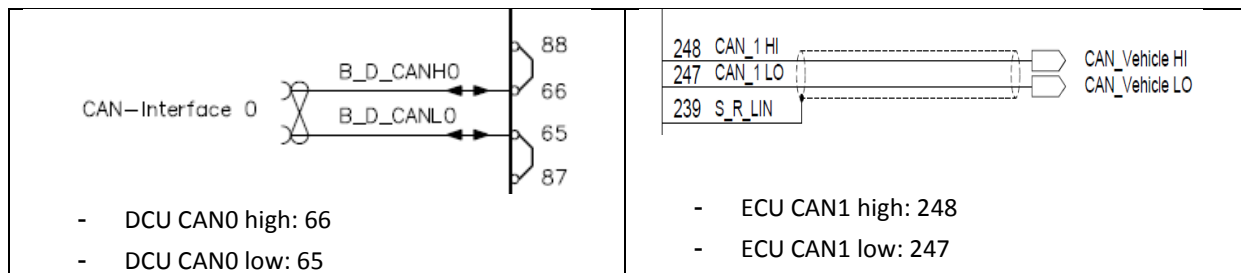
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1444 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check ECU/DCU connection Connection problem?		Do necessary repair	Step 4
4	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 5
5	Check Network Network problem?		Do necessary repair	Call Hot-line

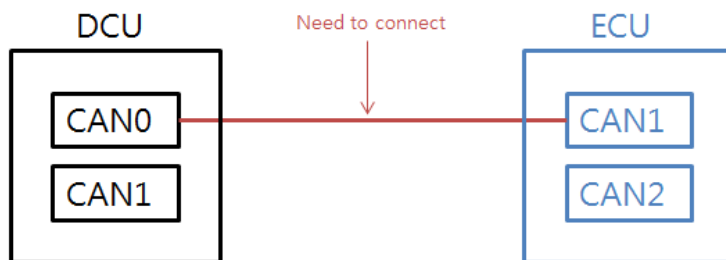
Fault Code	Fault Name
U1544	SAE J1939 Error (Reference Torque)

1) Overview

CODE	REASON	EFFECT
U000544-19	Network problem ECU-DCU connection problem	



2) Component Location



3) Condition for Running Diagnostic

Continuously checked in the configured raster when there is no non plausible condition and no busoff and no timeout error

4) Condition for Setting the Fault Code

The error is reported if the SAE J1939 checks fail for signal not in range or erroneous signal for reference engine torque

5) Condition for Clearing the Fault Code

The error is healed when the SAE checks for signal not in range and erroneous signal are no longer present for reference engine torque

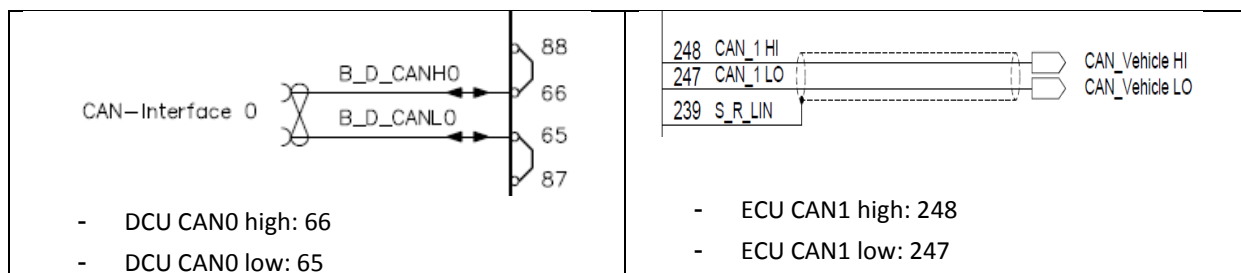
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1544 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check ECU-DCU connection Connection problem?		Do necessary repair	Step 4
4	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 5
5	Check Network Network problem?		Do necessary repair	Call Hot-line

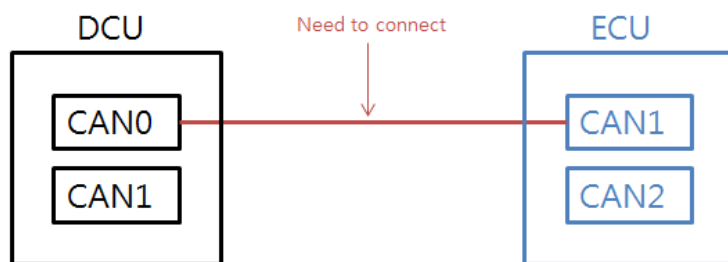
Fault Code	Fault Name
U1646	Timeout of DM1ECU BAM

1) Overview

CODE	REASON	EFFECT
U060160-19	Network problem ECU/DCU connection problem	



2) Component Location



3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

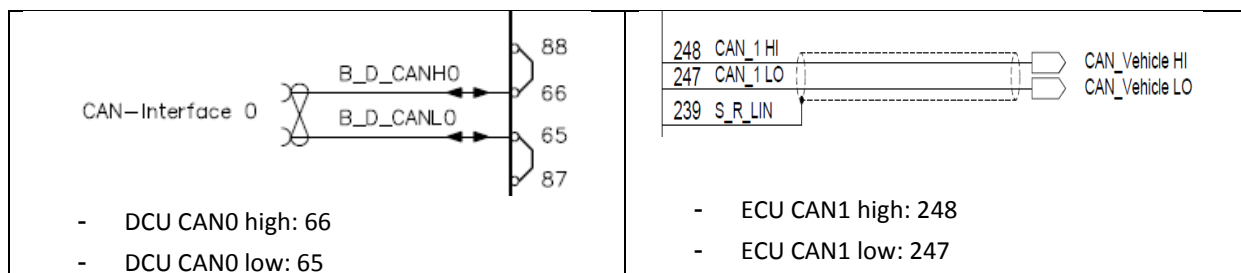
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1646 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check ECU/DCU connection Connection problem?		Do necessary repair	Step 4
4	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 5
5	Check Network Network problem?		Do necessary repair	Call Hot-line

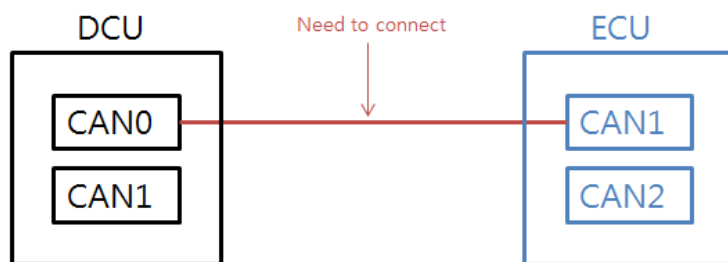
Fault Code	Fault Name
U1660	Timeout of DM1ECU Packet

1) Overview

CODE	REASON	EFFECT
U060416-19	Network problem ECU/DCU connection problem	



2) Component Location



3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1660 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check ECU/DCU connection Connection problem?		Do necessary repair	Step 4
4	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 5
5	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
U1661	Timeout of DM1ECUSPN1

1) Overview

CODE	REASON	EFFECT
U065226-21	Network problem ECU/DCU connection problem	Inducement Group1

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1661 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check ECU/DCU connection Connection problem?		Do necessary repair	Step 4
4	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 5
5	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
U1800	Timeout of A1DOC

1) Overview

CODE	REASON	EFFECT
U064800-19	Network problem DCU connection problem Sensor connection problem	

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1800 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check Sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
U1904	Timeout of NOxSensGlbReqTx

1) Overview

CODE	REASON	EFFECT
U059904-19	Network problem DCU connection problem	Inducement Group5

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

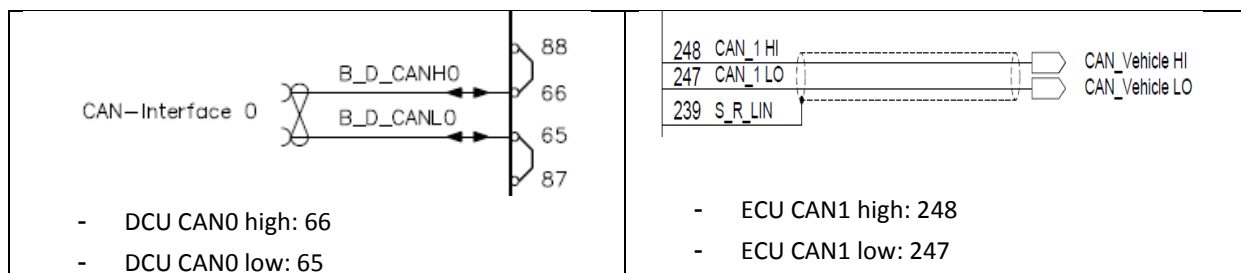
6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1904 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 5
5	Check Network Network problem?		Do necessary repair	Call Hot-line

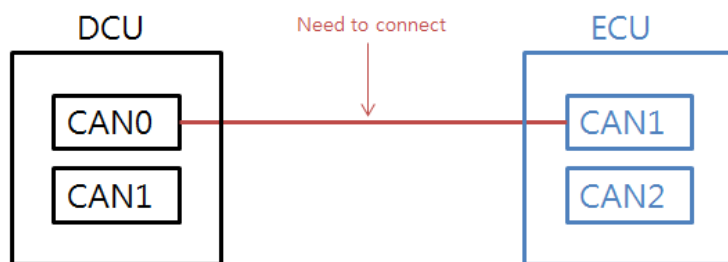
Fault Code	Fault Name
U1444	Timeout of EEC1

1) Overview

CODE	REASON	EFFECT
U061444-19	Network problem ECU/DCU connection problem	



2) Component Location



3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1444 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check ECU/DCU connection Connection problem?		Do necessary repair	Step 4
4	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 5
5	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
U1916	Timeout of EEC7

1) Overview

CODE	REASON	EFFECT
U064916-19	Network problem ECU/DCU connection problem	

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1916 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check ECU/DCU connection Connection problem?		Do necessary repair	Step 4
4	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 5
5	Check Network Network problem?		Do necessary repair	Call Hot-line

Fault Code	Fault Name
U1923	Timeout of A1DEFI

1) Overview

CODE	REASON	EFFECT
U064923-19	Network problem DCU connection problem Sensor connection problem	

2) Component Location

3) Condition for Running Diagnostic

Key on or engine run

4) Condition for Setting the Fault Code

When no one receives the transmitted frame within the time duration

5) Condition for Clearing the Fault Code

When someone receives the transmitted frame within the time duration

6) Check List

Step	Inspection	Standard Value	YES	NO
1	U1923 is occurred on diagnostic tool?		Step2	
2	After let the machine be in safety area and turn-off the key switch		Step3	
3	Check DCU connection Connection problem?		Do necessary repair	Step 4
4	Check Sensor connection Connection problem?		Do necessary repair	Step 5
5	Check continuity and electrical insulation Electrical problem?		Fix harness	Step 6
6	Check Network Network problem?		Do necessary repair	Call Hot-line