



Solution

Title (customer effect) Particulate Matter (PM) Sensor Diagnostic Trouble Codes (DTC) Illuminating The Malfunction Indicator Lamp (MIL); Tech Tip TT-014-2016 - **OBD16 And Newer Emissions (Commonly Model Year 2017, Includes Common Rail Fuel System Chassis)**

Cause The PM sensor can log several different codes that illuminate the MIL (Check Engine Lamp).

Solution Overview

With the implementation of OBD16 Emissions controls (commonly model year 2017), a new sensor was required to monitor particulate matter (PM) levels in exhaust that has already passed through the Emissions Aftertreatment System. Excessive particulate levels at this stage can indicate a damaged or failed Diesel Particulate Filter (DPF). **The PM sensor's only purpose is monitoring and is not used in any EATS (regeneration and NOx conversion) functions. Codes set by the sensor will not affect performance or cause a Derate.**

Repair

NOTE: AS OF 27 February 2018, the Tech Tip below is still current information. If diagnostics indicate that sensor replacement is required, instructions should be followed.

If a chassis arrives with a derate warning active, the PM sensor is not the source of the derate and there is a separate existing issue.

- Verify the chassis emissions level

- Details can be found in the Product Details box on the Product tab in PTT as seen below:

Tech Tool

Tech Tool Links Help

Product Product History Diagnose Test Calibrate Program Impact

Selected Product (N 997222)

Refresh Settings... Manual Selection... Latest Selections... OBD/LVD

Product Details

Chassis ID: N 997222	VIN: 4V4NC9EH2JN997222
Model: VN	Company: Volvo Trucks
Emission Level: US17 + OBD2016	
Electrical System: VERSION3	

- For US17+OBD16 (Common Rail Fuel System) Chassis setting **DTCs P24DA or P1031 ONLY:**

- Software improvements have been released to address these codes. Reprogram the Engine Control Module (EMS). It is possible a warning box may open stating the current software is the same version. Select the option to reload the software if this occurs.

- For US17+OBD16 Chassis setting any other codes for the PM Sensor, Proceed with instructions in [Tech Tip TT-014-2016](#).

- For US14+OBD16 (Commonly 2017 model year): Proceed with instructions in [Tech Tip TT-014-2016](#).

Solution visibility

[Dealer distribution](#)

Function(s)/component(s) affected

Function affected Documentation , TT , DPF , CV electronic control unit , 1 1 0 EMS , EECU , Diagnostic tool

Function Group

Function Group 2549 miscellaneous , 258 emissions after-treatment

Customer effect

Main customer effect soot , regeneration , calibration/programming/pairing/missing operation , diagnostics /methodology , efficiency/abnormal behavior , fault code/display , visual appearance

Lights/Messages on information display

message on display , - - - - , - - / - -

Fault code(s)

OBD 2013 Diagnostic Trouble Codes P1031 , P1032 , P1033 , P1034 , P249C , P24AE , P24AF , P24B0 , P24B1 , P24B3 , P24B4 , P24B5 , P24B7 , P24D0 , P24D1 , P24DA , P24FC , P2AB0

Conditions

Vehicle operating mode when driving , when stationary

Frequency of occurrence of problem

always

Administration

Author ut01793

Last modified by RU4469V

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NA_MACK_Vehicle_Range

[NA_MACK_Vehicle_Ran](#)

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Cabover , LR , LEU , MRU , Conventional , CHU , CXU , GU , TD

NA_VOLVO_Vehicle_Range

NA_VOLVO_Vehicle_Range

Conventional , VNX , VNL , VNM , VHD , VAH

Engine family

Engine family

Volvo , 11L Engine , 13L Engine , 16L Engine , Mack , MP7 , MP8 , MP10

Emission Standard

Emission Standard

US16
