VOLVO CAR
SERVICE AND PARTS BUSINESS

Technical Journal

TITLE:

D-TPMS, Service required and DTC's

REF NO:	ISSUING DEPARTMENT:	CAR MARKET:	
TJ 31398.5.0	Technical Service	United States and Canada	
PARTNER: 3 US 7510 Volvo Car USA		ISSUE DATE: 2021-02-03	STATUS DATE: 2021-02-17
FUNC GROUP: 7761	FUNC DESC: Pressure control	Page 1 of 4	

"Right first time in Time"

Attachment

File Name	File Size
TJ 31398.jpg	0.0849 MB

Rows beginning with * are modified
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DESCRIPTION:
If the vehicle is equipped with direct tyre pressure monitoring sensors (D-TPMS), follow advice under "Service" if a warning message TPMS Service Required in DIM with one or more DTC's related to communication issues between TPMS sensors and the vehicle.

Note: Vehicles with D-TPMS can be identified by one of the following VDN codes:
RG02;RG03;RG04;RG05
Note: Cases with "Low tire pressure" messages are not covered by this TJ, check TJ 31408 or if any VIDA method is available.

DIM= Driver Information Module
D-TPMS=Direct Tire Pressure Monitoring System
TPMS= Tire Pressure Monitoring Sensors
DTC= Diagnostic Trouble Code
VIDA= Vehicle Information and Diagnostics for Aftersales
OBD= On Board Diagnostic
CEM= Central Electronic Module
MAM= Multimedia Antenna Module

CSC Customer Symptom Codes

Code	Description
LI	Warning lights and chimes/Tire pressure monitoring, Service required warning

DTC Diagnostic Trouble Codes

Control Module	Code	Fault Type
CEM	C1A5655	Intermittent
CEM	C1A5855	Intermittent
CEM	C1A6055	Intermittent
CEM	C1A6255	Intermittent
CEM	C1A5687	Intermittent
CEM	C1A5887	Intermittent
CEM	C1A6087	Intermittent
CEM	C1A6287	Intermittent
CEM	U201F00	Intermittent

Vehicle Type

Type	Eng	Eng Desc	Sales	Body	Gear	Steer	Model Year	Plant	Chassis range	Struc Week Range
256							2016-2016		0000001-0105000	201505-201616

SERVICE:

In case there are DTC's due to poor communication / non working TPMS sensors / not programmed TPMS sensors:

1. Always use Volvo TPMS tool PN 9513035 to diagnose the car.
2. Ping each TPMS sensor so that you are able to read out sensor ID, tire pressure, temperature, battery status, etc.
   * Note: The latest internal software (firmware) for the TPMS tool was released from Volvo in October 2018.
   * Note: It is highly recommended to update the TPMS ping tool if this has never been done before since there are known communication issues with the original firmware from supplier.
   The new firmware is solving a communication issue between the TPMS sensor and TPMS tool, which could lead to unnecessary replacements of good TPMS sensors.
   In case the TPMS tool cannot read out the TPMS sensor properly, then it is needed to update the TPMS tool with new firmware.
   New firmware and instruction can be found here: https://volvocarstools.volvocars.biz/. Select your language and search for TPMS and then download the zip file.
   Unzip the file and transfer the file 9513035.mfu to the TPMS tool using a USB cable.
3. Visual inspect TPMS sensors for damages, etc., which could happen if driving with a flat tire, or bending the air valve too much, or if the tire workshop damages the TPMS sensor while replacing tire.
   Note: Damaged sensors should not be claimed on warranty.
4. Position the tool correctly against tyre side wall aiming towards TPMS sensor & Replace any TPMS sensor (PN 31362304) which does not respond to TPMS tool ping tool function after 3 attempts.

5. Once all TPMS sensors can be pinged with the TPMS tool, use the OBD cable, TPMS tool and the "OBD Relearn" function to program all TPMS sensor IDs to CEM.

Note: If there are troubles with all four sensors, then the problem is most likely not with the TPMS sensors. Instead fault trace other parts such as remote receiver (MAM), cables, radio disturbances etc. In case the OBD Relearn has been completed without errors, but the DTC's and TPMS Service required remains, then fault trace:

1. If CEM-U201F00 is present, then start with fault tracing the Multimedia Antenna Module (MAM). Check cables/terminals/ground, eventually try with another MAM unit if nothing wrong can be found.
2. Fault trace DTC's according to VIDA. For TPMS design and function overview, check VIDA VCC-ID VCC-477152-1
3. Check if dark tinted window films has been installed, try TPMS function with windows down to see if anything changes. Remove films if this has negative impact on TPMS functionality.
4. Check and, if necessary, turn off any non-Volvo accessory using 433 MHz that has been installed in the vehicle.
5. Remove tire from rim and inspect that the correct TPMS sensor is being used, the Volvo logo must be printed on the decal on TPMS sensor (see photo).
6. Try a battery reset.
7. * The built-in battery in TPMS sensor have an expected lifetime of 8-10 years. It is required to replace the TPMS sensors when the batteries are too low.

General notes about D-TPMS:

- It is very unlikely that all 4 sensors are defective on the same car at the same time. If 4 sensors are not working, then it is a better to fault trace the car instead of replacing all 4 sensors.
- Do not download CEM Reload or CEM Upgrade software, it will not help.
- Do not carry out TPMS Calibration when having TPMS Service Required.
- Always use Volvo original XC90 TPMS sensor PN 31362304, other Volvo TPMS sensors and universal TPMS sensors will not work due to a different signal algorithm.

VST Operation Number

VST Operation Number	Description
96364-2	TPMS troubleshooting CSC = LI

VEHICLE REPORT:

Yes, please submit a Vehicle Report if the service solution described in this TJ has no effect. Use concern area "Vehicle Report" and sub concern area "Support not needed", use function group 7761.

If the tire has been removed from the rim, take a photo of the bar code printed inside rim, and also a photo of the label on TPMS sensor.
Note: If any other reasons for TPMS Service Required was found, then please include this in the Vehicle Report in order to improve this TJ.

To view TJ attachment continue to next page. This TJ has one attachment.


TJ 31398
433 MHz
VOLVO
ANATEL: 0281-15-8001
CMIIT ID: 2014DJ6434
CCAH15LP0170T1
FCC ID: MRXVHSS4
IC: 2546A-VHSS4
M: VHSS4
ASSY IN UK