

Technical Journal

TITLE:

Backup Battery DTC TCAM-U210993

| | | | |
|--|--|---|--|
| REF NO: TJ 35602.5.0 | ISSUING DEPARTMENT: Technical Service | CAR MARKET: United States and Canada | |
| PARTNER: 3 US 7515 Polestar | | ISSUE DATE: 2023-01-11 | STATUS DATE: 2023-01-11 |
| FUNC GROUP: 3943 | FUNC DESC: Telematics | Page 1 of 6 | |

Attachment

| File Name | File Size |
|------------------------|-----------|
| TJ 35602.png | 5.8222 MB |
| TJ35602BUB.jpg | 0.2417 MB |
| TJ35602BUB - reset.jpg | 0.1473 MB |

Rows beginning with * are modified

Note! If using a printed copy of this Technical Journal, first check for the latest online version.

DESCRIPTION:

*Change in *Vehicle Type*.

If there is a warning message in the DIM and CCD about “eCall service required” together with DTC TCAM-U210993 pointing out the BUB, please follow the procedure under “Service”.

This symptom may also appear directly after a SW update due to trigger level when DTC is set was increased from 10% SOC in BUB to 30% SOC in BUB in the new TCAM SW that was released 2020, week 43.

DIM = Driver Information Module

CCD = Center Console Display

BUB = Backup Battery

TCAM = Telematic Connectivity Antenna Module

SOC = State Of Charge

SW = Software

Technical Journal 35602.5.0

CSC Customer Symptom Codes

| Code | Description |
|------|---|
| 6K | Mobile app Volvo Cars/Activation problems |
| 6O | Mobile applications Polestar Connect/Communication problems |
| 6P | Polestar Connect/Does not work |

DTC Diagnostic Trouble Codes

| Control Module | Code | Fault Type |
|----------------|---------|--------------|
| TCAM | U210993 | Intermittent |

Vehicle Type

| Type | Eng | Eng Desc | Sales | Body | Gear | Steer | Model Year | Plant | Chassis range | Struc Week Range |
|------|-----|----------|-------|------|------|-------|------------|-------|---------------|------------------|
| 534 | | | | | | | 2021-2023 | | - | 202007-202352 |

SERVICE:

Improved TCAM SW was released 2020, week 43.

If the message together with the DTC is confirmed, the cause may be a discharged BUB. Do not replace the BUB, first check if it is possible to charge it.

Vida has been updated with a new method that allows charging of the BUB.

Start with performing a software upgrade in accordance with TJ 35361.

VIDA method:

- A 12 volt battery maintainer must be connected to the vehicle throughout the BUB charging procedure.
- Gear selector must be in P - Park.
- If BUB SoC is 1% or greater, charge the BUB using the Vida script, see attachment TJ35602BUB.
- BUB will charge by 5% SOC per hour, charge the BUB up to **minimum 45% SOC**. (After charging is stopped the BUB SOC may drop a little)
- If "eCall Service Required" is still shown in DIM, then go to "SW Installation" tab in VIDA, click on "Advanced test" and click on "Reset"
- Once reset has completed, erase DTCs.

If the DTC is set again then charge the BUB to above 50% SOC.

BUB is continuously charged while the vehicle is driven.

NOTE:

If BUB SOC is 0% (below 2 Volt) it is not possible to charge the BUB and it needs to be replaced, see VIDA instruction VCC-516696-1.

After replacement the BUB SOC must be reset by using a VIDA script, see attachment TJ35602BUB - reset.

Alternative method to quick charge the BUB using an battery charger:

It is possible to charge the BUB outside the vehicle using a universal battery charger suitable for 1 cell lithium-ion battery which supplies max 4V and max 1A, the max temperature must not exceed 60°C / 140°F. (There is no suitable Volvo charger for this operation)

To make an adapter harness to connect to the BUB, you need following parts:

1x 31450330 RECEPTACLE HOUSING.
2x 30656678 REPAIR TERMINAL.

Connect terminals to:

Pin 1 Positive.

Pin 4 Negative.

See attached picture "TJ 35602.png".

Warranty claim info:

To get warranty claim accepted for a job described in this TJ, please use following data:
VST OP number: 36050-2, 39753-2.

VST Operation Number

| VST Operation Number | Description |
|----------------------|-----------------------------------|
| 36050-2 | Calibrating/Identifying with VIDA |
| 39753-2 | TCAM back-up battery replace |

LABOR TIME:

36050: 0.2 hrs

39753: 0.3 hrs

VEHICLE REPORT:

Yes, please submit a Vehicle Report if the service solution described in this TJ has no effect.

Use concern area "Vehicle Report Polestar" and sub concern area "Support needed Polestar", use function group 3943 and the title; eCall -Service required.

The helpdesk will assist via remote take-over to activate the charging sequence.

Information to NSC:

For helpdesks with possibilities to use DSA.

Method to charge the BuB in the workshop.

Connect battery support to the car.

Via remote take-over, use DSA and check BuB SOC via DID 22 D0 86.

If SOC is 0% (2V) it is not possible to charge the BuB and it needs to be replaced.

If SOC is above 0%, it is possible to let the car charge the BuB via TCAM by using this sequence.

Unlock VGM firewall:

1. 10 03 - Extended session
2. Go to "tools" and then press security access
3. select VGM, area 15 and enter PIN="FF FF FF FF FF"

Technical Journal 35602.5.0

Sequence to activate Usage Mode Driving (CEM):

1. 10 03 - Extended session
2. 22 F1 86 - Confirm Extended session
3. Go to "tools" and then press security access
4. select CEM, area 03
5. use PIN="43 45 4D 30 33"
6. 2F DD 0A 03 0D - UM Driving
7. 22 DD 0A - Confirm UM=Driving

TCAM sequence to check so BuB is charging:

1. 22 FE 47 - Read BuB status (0=Not charging, 1=Charging)
2. If BuB status=0, Send: 31 01 DD 00 01 - Force BuB charge
3. 22 FE 47 Confirm BuB status=1
4. 22 D0 86 Read BuB state of charge

TCAM will charge the BuB under following conditions:

Battery temp (BuB): <55 degrees C

Vehicle battery voltage: 11 – 16 Volt

SOC level BuB: <80%

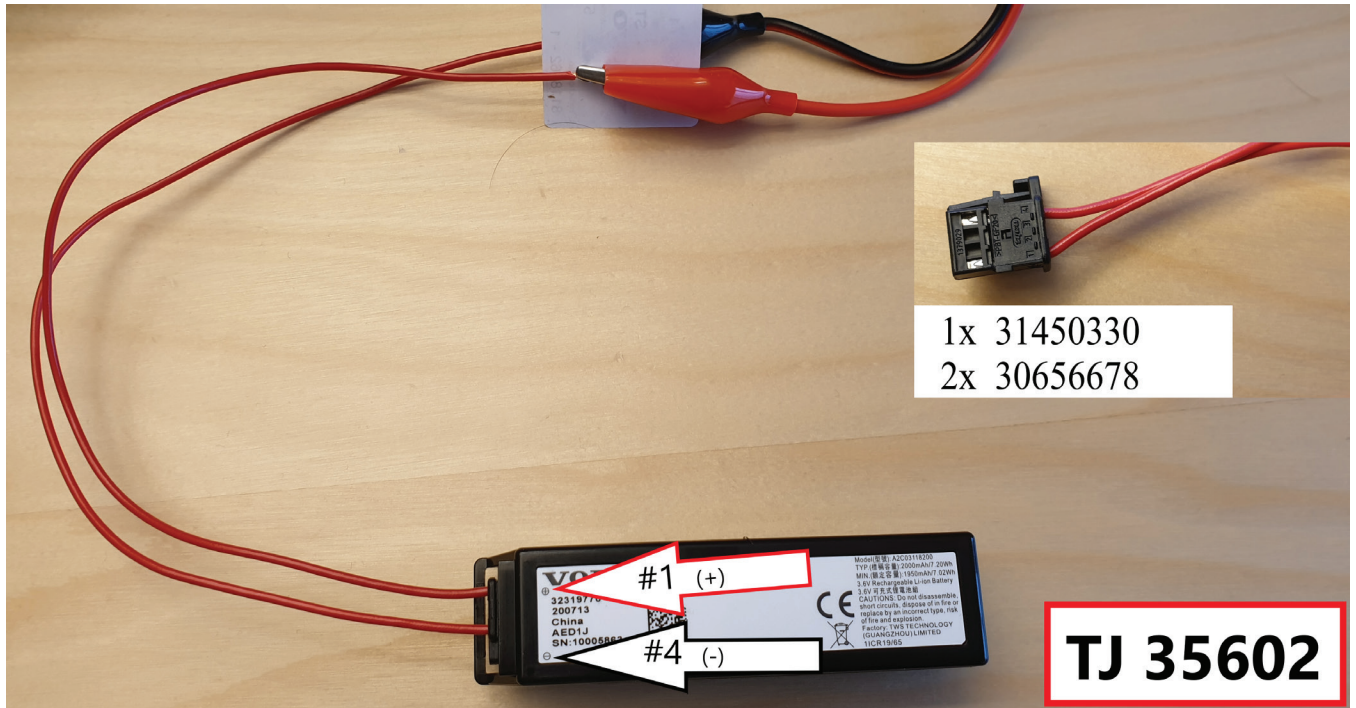
BuB voltage: >2V

* The BuB will be charged with 5% SOC per hour and needs to reach 37% SOC before you stop charging.


If BuB SOC is 0%, the BuB needs to be replaced.

After replacement you need to reset SOC by running 2E300001

To view TJ attachments continue to next page. This TJ has three attachments.




Planning & Diagnostics Software Installation Information Service Journals




VIN: LPSVSEDEEML000407
Model/Year/Class: Polestar 2, 2021, 000407

Customer Name: _____

Connection: == P2P ==

13.8 V 

Lists

- ▶ Planning
- Customer Symptom Codes
- Claim Types
- Technical Journals
- Service Programs
- Operations and Packages
- Parts
- Software
- ▶ Diagnostics
- Network
- Fault Tracing 
- Components
- Service Functions 1**

Documents Diagnostic Sequences

Diagnostic Sequences

- 12 V power overview
- Calibration of Forward L...
- Calibration of Forward L...
- Charging TCAM backup 2**
- High voltage system, ove...
- Infotainment Head Unit (I...
- Normal mode and vehicl...
- Open VGM firewall (5194...
- OTA2 reset
- Parking brake service po...
- Program the service con...
- Read-out distance, time...
- Read-out of the service c...
- Reset DTCs in Steering e...
- Reset ITPMS calibration
- Reset the Infotainment H...
- Reset the service remind...
- Resetting of long term w...
- Resetting the informatio...
- Switch overview
- Vehicle SoC, voltage and current history

P2P (VCC-519518-1, version 1.0)

Charging TCAM backup battery

This routine will charge the TCAM backup battery.

Caution! The usage mode will change to Driving. Make sure the gear is in position "P".

1. Make sure the 12 V battery is connected to a charging device.
2. Make sure the gear is in position "P".
3. Click the button "Start". The usage mode will change to Driving. The charging will begin.
4. When the SoC - State of Charge, exceeds 30 %, this tool can be closed.

TCAM backup battery, state of charge (SOC)

30 %

TCAM - Backup battery voltage

3600 mV

TCAM - TCAM backup battery, charging status

Charging

TCAM - TCAM backup battery issue status

No issue

TCAM - Usage mode

Driving

EGSM - Transmission park position

ParkEngaged

Start
Stop
Close

TJ35602

Technical Journal 35602.5.0

The screenshot displays a technical journal interface with a left-hand navigation menu and a main content area. The navigation menu includes categories such as Customer Symptom Codes, Claim Types, Technical Journals, Service Programs, Operations and Packages, Parts, Software, Diagnostics, Network, Fault Tracing, and Components. The 'Service Functions' category is highlighted with a red circle labeled '1'. Below this, a box contains the text 'TJ35602'. The main content area lists various service functions, with 'Resetting SW after TCAM Backup battery change' highlighted by a red circle labeled '2'. A pop-up window titled 'VIRTUAL (VCC-519522-1, version 1.0)' is overlaid on the right side of the interface. The pop-up window contains the following text:

Resetting SW after TCAM Backup battery change

When replacing a component connected to the control module, the relevant adaptation values should be reset. A reset is performed for the control module to quickly learn the new component, its characteristics, and its effects on surrounding components and functions.

Instructions

1. Set the vehicle to usage mode inactive.
2. Click the start button.
3. If the reset is successful, click the button "Charge backup battery" to start the charging of the TCAM Backup battery.

At the bottom of the pop-up window, there are three buttons: 'Start', 'Charge backup battery', and 'Close'. The title of the pop-up window is also repeated at the top of the window's content area.