

[ARTICLE 41471](#)

TAS air compressor internally frozen due to moisture / water present in system

Description

Firmware Details

Steps To Test

Steps To Fix

Effects

Causes

DESCRIPTION 

The Tesla Air Suspension (TAS) air compressor blows the 40A fuse because it is internally frozen due to excessive moisture and freezing ambient temperatures which causes excessive current draw.

FIRMWARE DETAILS 

None

STEPS TO TEST 

1. If the compressor is not operating, consult the relevant Electrical Information for the vehicle to locate the positive and negative motor connector on the compressor:
 - **Model S (2012 - 2020):** [Electrical Information & Connector Reference](#)
 - **Model X (2015 - 2020):** [Electrical Information & Connector Reference](#)
 - **Model S (2021+):** [Electrical Information & Connector Reference](#)
 - **Model X (2021+):** [Electrical Information & Connector Reference](#)

QUALIFIERS 

- Tesla
- Model S
- Palladium S
- Palladium X
- Model X

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- The positive motor terminal should have approximately 12V when the compressor relay is closed by the air suspension Electronic Control Unit (ECU).
 - The negative motor terminal should have continuity with the body ground.
2. Check for a direct short between B+ and B- or the motor body.
 - The pump should read a resistance of 0.3 to 0.5 Ohms across B+ and B-.
 3. Remove the pipework from the compressor and valve block to identify any signs of water ingress.
 - If water ingress is found, then inspect the whole system for an air leak.
 4. Inspect the pipework and air struts for any signs of leakage.
 - An air leak in the system will cause high moisture content to enter the system which will freeze in low temperatures, so although replacing the compressor will resolve the issue temporarily, this is not the actual cause of the issue. Rather, the source of the liquid ingress is the root of the issue and should be located and addressed.
 - **Note:** There is no need to disassemble the compressor to prove an internal issue.

If moisture is present in the system and the air compressor is frozen, then this is the issue.

STEPS TO FIX



1. Disconnect all the air line connections from the air springs and reservoir.

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2. Blow compressed air through the pipework to flush / remove any excessive moisture.
3. Inspect and dry the air suspension reservoir. If moisture or rust is found to be excessive, replace the reservoir according to Service Manual procedure:
 - **Model S (2012 - 2020):** Reservoir - Air Suspension (Remove and Replace) - [Correction code 31102502](#)
 - **Model X (2015 - 2020):** Reservoir - Air Suspension (Remove and Replace) - [Correction code 31102502](#)
 - **Model S (2021+):** Superbeam (Remove and Replace) - [Correction code 31108302](#)
 - **Model X (2021+):** Reservoir - Auxiliary - Air Suspension (Remove and Replace) - [Correction code 31102512](#)
4. Replace the air suspension compressor according to Service Manual Procedure:
 - **Note:** It may be recommended to also replace the valve block.
 - **Model S (2012 - 2020):**
 - Compressor - Air Suspension (Remove and Replace) 1st Generation - [Correction code 31102002](#)
 - Compressor - Air Suspension (Remove and Replace) 2nd Generation - [Correction code 31102302](#)
 - **Model X (2015 - 2020):** Compressor - Air Suspension (Remove and Replace) - [Correction code 31102002](#)
 - **Model S (2021+):** Compressor - Air Suspension (Remove and Replace) - [Correction code 31102002](#)
 - **Model X (2021+):** Compressor - Air Suspension (Remove and Replace) - [Correction code 31102002](#)
5. If the compressor has been running with excessive current draw over a longer period of time due to air leakage, it is

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recommended to also replace the relevant relay and fuse.

Refer to the relevant Electrical Information:

- **Model S (2012 - 2020):** [Electrical Information & Connector Reference](#)
- **Model X (2015 - 2020):** [Electrical Information & Connector Reference](#)
- **Model S (2021+):** [Electrical Information & Connector Reference](#)
- **Model X (2021+):** [Electrical Information & Connector Reference](#)

6. Pressurize and refill the system with nitrogen.

FILTER CAUSES

AND EFFECTS:

Select model to filter by

EFFECTS



- + **#24604** - TAS_a222_compressorPrefillFault (No Model Qualifiers)
- + **#46977** - [Pre-FW 2023.2] TAS2_a222_compressorPrefillFault (No Model Qualifiers)

POSSIBLE CAUSES



None

#27814: Air suspension intake / exhaust hose is impeded or kinked

Description: In the Tesla Air

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