



# Technical Service Bulletin

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**97 Q7 Various warnings or functions inoperative, corroded splice points in driver sill. DTC:**

**U150600,U028400, U020800**

47 22 17 2067722/1 August 26, 2022.

| Model(s) | Year        | VIN Range | Vehicle-Specific Equipment |
|----------|-------------|-----------|----------------------------|
| Q7       | 2017 – 2024 | All       | Not Applicable             |
| SQ7      | 2020 – 2024 |           |                            |

## Condition

### Customer states:

- Various functional issues, instrument cluster messages, failure of displays, lighting, and operational issues. These issues may include problems with the ambient lighting or the MMI, or it may not be possible to start the engine.

### Workshop findings:

- Various DTC entries may be present in multiple control units.
- Fuse block at the driver side footrest (SB) may have low or no voltage to one or more circuits.
- Junction points under carpet (driver side) are oxidized.
- Driver seat may be inoperative.
- Check engine lamp may be illuminated.
- Ambient lighting may have limited function.

## Technical Background



# Technical Service Bulletin

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In climates where road salts are used to melt snow, it is possible that the heavy salt concentrations enter the vehicle between the driver-side sill and carpet. When this mixture enters the body harness it is possible that the splice points at the driver's sill location become oxidized.

## Production Solution

Splice points will be sealed in production.

## Service

Due to the various circuits that may be affected, the customer concerns and DTCs vary greatly. As such, the normal diagnosis should always be carried out first to find a root cause. If the root cause is found to be related to the oxidized splice points in the driver's sill area, use the steps below as a repair guide.



### Note:

The following chart is a guide for splice points, symptoms, and related DTCs:

| Splice | Symptom                 | DTC                                                                                                                                                                                                          |
|--------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| B304   | Driver seat inoperative | <ul style="list-style-type: none"><li>No DTC</li><li>U020800 1 Lost Communication with Seat Control Module A</li></ul>                                                                                       |
| B468   | Secondary air           | <ul style="list-style-type: none"><li>P041800: Sec. Air Injection System Relay A Circuit</li><li>P225700: Secondary Air Injection System Control "A" Circuit low.</li></ul>                                  |
|        | Motor mount             | <ul style="list-style-type: none"><li>P157200: Left Electro-Hydraulic Engine Mount Solen.val. Short circuit to ground</li><li>P157300: Left Electro-Hydraulic Engine Mount Solen.val. Open circuit</li></ul> |



# Technical Service Bulletin

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|      |                              |                                                                                                                                                                                                                    |
|------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |                              | <ul style="list-style-type: none"><li>• P157600: Right Electro-Hydraulic Engine Mount Solen.val. Short circuit to ground</li><li>• P157700: Right Electro-Hydraulic Engine Mount Solen.val. Open circuit</li></ul> |
|      | Radiator shutter             | <ul style="list-style-type: none"><li>• U028400: Lost Communication With Active Grille Air Shutter Module "A"</li></ul>                                                                                            |
| B698 | AC system failure            | <ul style="list-style-type: none"><li>• U150600: Local data bus no communication</li><li>• U150C00: Local data bus 11 no communication</li></ul>                                                                   |
| B711 | Ambient lighting inoperative | <ul style="list-style-type: none"><li>• U150600: Local data bus 5 no communication</li></ul>                                                                                                                       |



**Tip:** When replacing the terminal 30 power cable, you may freely choose to install the cable using repair version 1 or 2.

**Version 1:** Cut the wire ends from the repair cable at the driver fuse block side and splice them into the vehicle.

**Version 2:** De-pin the fuse blocks on the driver's side, and install the repair cable (no cutting).

Below is a brief summary of steps to install the repair cable:

1. Inspect splice points in the driver sill area.
2. Repair all splice points.
3. Test fit terminal 30 cable, mark, and tape service cable.
4. Reinstall cable permanently.
5. Tape the main harness.



# Technical Service Bulletin

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## 1. Inspect the splice points for damage.

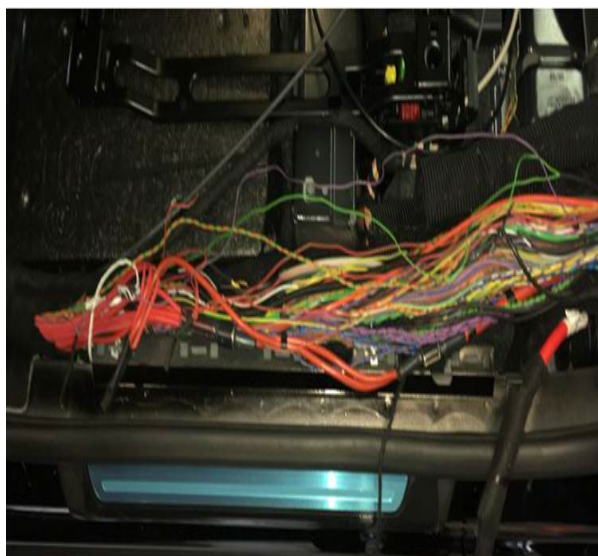
- a. De-energize the vehicle before beginning repair.
- b. Carefully open the harness tape of the main vehicle harness located in the area between the A-Pillar and the B-Pillar on the driver's side (Figure 2).



**Tip:** A locally sourced seam ripper is useful for this task. Avoid using a razor blade as this will likely cause unintended cuts in the wires.



*Figure 1: Seam ripper.*



*Figure 2: Driver side door sill area, open harness to expose splice points.*

## 2. Repair the splice points.

- a. **All** splice points in this area must be serviced with VAS 1978 B, ensuring that they are watertight.

**Non-oxidized splice points:** Seal the splice points using shrinking end caps.

- Part Numbers: 021 972 913 C / 021 972 913 D

**Oxidized splice points:** Service with VAS 1978 B. Ensure that repaired splice points are watertight.

## 3. Test fit terminal 30 cable, mark, and tape service cable.



# Technical Service Bulletin

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**There are two ways of connecting the repair cable to the vehicle:**

**Version 1:** Cut the wire ends from the repair cable at the driver fuse block side and splice them into the vehicle.



**Note:**

It is important to check beforehand whether there is sufficient space in the area of the driver's sill. Depending on vehicle equipment, it may not be possible to use this version due to reasons of space. Splice points must be staggered.

- a. Connect the repair cable with VAS 1978 B and VAS 631 003.
- b. It is possible to connect the repair wire using crimp connectors so that the individual wires do not have to be pinned directly into the fuse holder in the footrest. Use VAS 1978 B and VAS 631 003 to do this.

**Use the following crimp connectors:**

- 4 mm<sup>2</sup>: 000 979 943
- 6 mm<sup>2</sup>: 000 979 943
- 10 mm<sup>2</sup>: 000 979 944 + 000 979 992 A

**OR**

**Version 2:** De-pin the fuse block on the driver's side, and install the repair cable (no cutting).

- a. Route individual wires of repair cable into fuse block at the driver's side. Use the chart below to ensure the repair cable wires are pinned correctly into the corresponding fuse block location.

| The stickers on the repair wiring harness are described in more detail in the table below: |                                  |               |             |
|--------------------------------------------------------------------------------------------|----------------------------------|---------------|-------------|
| Wire number (sticker)                                                                      | Cross section [mm <sup>2</sup> ] | Fuse position | Description |



# Technical Service Bulletin

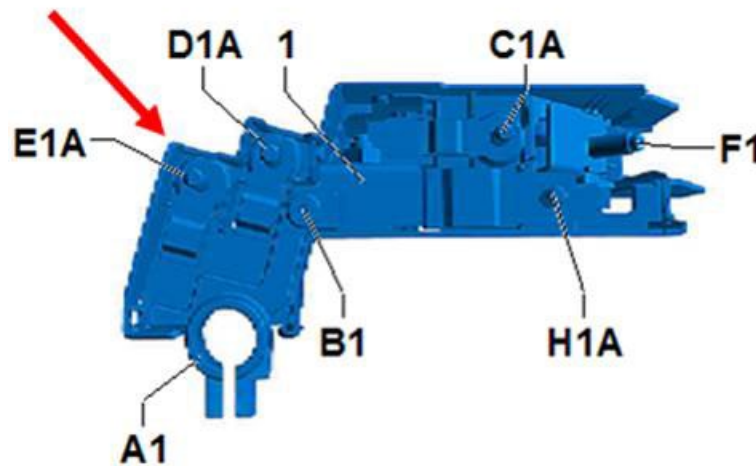
|        |   |                  |                                                                               |
|--------|---|------------------|-------------------------------------------------------------------------------|
| 25     | 6 | SB ST 2          | Wire already in fuse bar (red, 12-pin)                                        |
| 206    | 4 | SR2 S123         | Fuse 1 for ABS control unit                                                   |
| 210    | 6 | SB ST3           | Wire already in fuse bar (black)                                              |
| 211    | 6 | SB ST3           | Wire already in fuse bar (black)                                              |
| 214    | 6 | J329 (contact 3) | Relay for power supply of terminal 15                                         |
| 208    | 6 | SB ST5           | Wire already in fuse bar (red, 16-pin)                                        |
| 231    | 6 | J271 (contact 3) | Main relay                                                                    |
| 207    | 4 | SR2 S124         | Fuse 2 for ABS control unit                                                   |
| 56105  | 4 | S44 (contact 1)  | Fuse for driver seat adjustment (vehicles with electric seat adjustment only) |
| 87595  | 4 | J757 (contact 3) | Engine component power supply relay (vehicles with petrol engine only)        |
| 771112 | 6 | S51 (contact 1)  | Fuse S51 for automatic gearbox.                                               |

# Technical Service Bulletin

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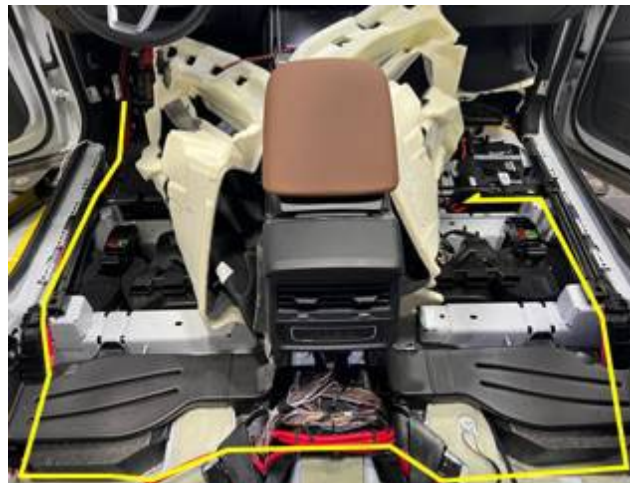
## Test fit the terminal 30 cable:

- a. Test fit the repair cable in the vehicle.
- b. Disconnect the existing cable at E1A, and bolt the repair cable to the power supply terminal at the battery so that the cable end makes flat contact with the E1A terminal (Figure 3).



*Figure 3: Power supply location at the battery.*

- c. Route the repair cable along the factory routing path from the battery to the LF fuse block as indicated by the yellow line (Figure 4).
- d. Ensure sufficient slack and positioning is obtained along the entire routing path.



# Technical Service Bulletin

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*Figure 4: Terminal 30 cable repair routing.*

- e. Mark the location on the repair cable just after the cable duct on the rear passenger side (Figure 5).
- f. This mark will be used in the next step as the indicator from the point to start wrapping the repair cable.



*Figure 5: The location is marked as indicated by the red arrow.*

- g. Remove the repair cable from the vehicle and wrap it with textile tape **N 107 292 04** (blue) between power distributor E1A at the battery to the marked location from the last step (Figure 6).



*Figure 6: Cable wrapping for N 107 292 04 (blue).*



# Technical Service Bulletin

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- h. Next, wrap the same section of the repair cable again with textile tape **N 107 516 03** (gray) (Figure 7).

It is very important that the wrappings overlap by 50%. This wrapping is needed for crash requirements.



*Figure 7: Cable wrapping for N 107 516 03 Gray.*

## 4. Reinstall cable permanently.

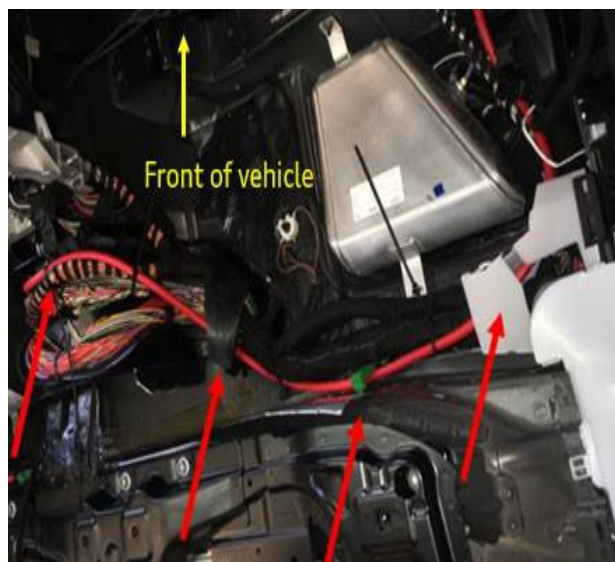
- a. Re-install and route the cable along the exterior of the main harness on the inside facing portion of the main harness (Figures 8 & 9). Secure with cable ties and textile tape **N 107 290 02** as needed along the factory routing path of the original cable (see Figure 4).
- **Do not** route the cable between the harness and the exterior body.
  - **Do not** route the cable inside (within) the main harness.
  - **It is not necessary** to completely wrap any portion of the repair cable with textile tape **N 107 290 02**, only use it to secure the cable, and to prevent chafing.



# Technical Service Bulletin

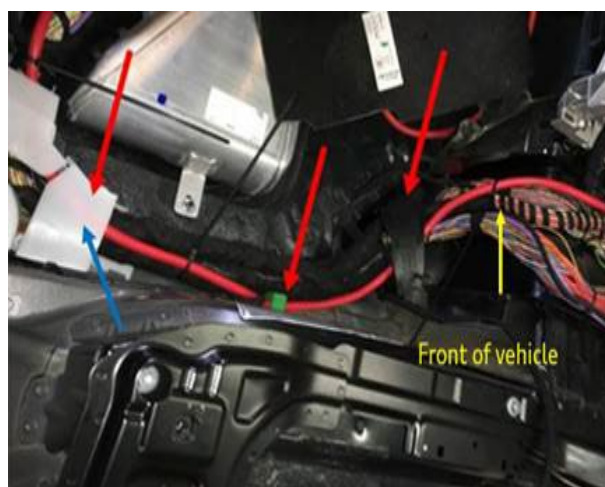
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- b. Route the repair cable into the wiring ducts on the rear passenger side (Figure 8) and the rear driver side (Figure 9).



*Figure 8: Routing path passenger side. The lower portion of the photo is where the seat bottom mounts.*

- c. Wrap the repair cable from the duct at the rear drive side (Figure 9) all the way to the last junction point of the repair cable nearest the fuse box.



*Figure 9: Routing path driver side. The lower portion of the photo is where the seat bottom mounts.*



# Technical Service Bulletin

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**Note:** If using repair version 1, stop the wrap at the point you are splicing the repair cable into the vehicle harness. After the repair cable is spliced in, continue wrapping both tapes to fuse block. Ensure the splice points are staggered.

- First wrap the cable with textile tape **N 107 292 04** (blue) (Figure 6), then again with textile tape **N 107 516 03** (grey) (Figure 7).
- Both tape wrappings must overlap by 50%

## 5. Tape the main harness.

**The following steps apply to both versions 1 and 2:** Wrap the main harness.

- a. The original supply cable does not need to be fully removed from the interior wiring harness.
  - Once disconnected, cut the original cable end off at the E1A connection point at the battery. Seal the end with textile tape **N 107 290 02** and wrap the remaining wire securely onto the interior wiring harness
  - Cut the original power supply wires back in the area of the driver's door sill, ensuring sufficient working space. Seal ends which are cut off with textile tape **N 109 290 02**.
- b. Wrap the entire main wiring harness (including repair cable) between the A and B pillars both on the driver and passenger sides. First wrap with blue textile tape **N 107 292 04** (Figure 10).



*Figure 10: Main wiring harness wrapped with blue textile tape.*



# Technical Service Bulletin

- c. Then rewrap with gray textile tape **N 107 516 03** (Figure 11).



*Figure 11: Gray textile tape covering the already wrapped main wiring harness.*

## Warranty

|                          |                                                                                                                                                                                           |           |        |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------|
| <b>Claim Type:</b>       | <ul style="list-style-type: none"><li>• Use applicable claim types.</li><li>• If the vehicle is outside of any warranty, this Technical Service Bulletin is informational only.</li></ul> |           |        |
| <b>Service Number:</b>   | 9709                                                                                                                                                                                      |           |        |
| <b>Damage Code:</b>      | 0033                                                                                                                                                                                      |           |        |
| <b>Labor Operations:</b> | <b>Up to model year 2019</b><br>Remove and install floor covering (front and rear)                                                                                                        | 7041 1999 | 570 TU |
|                          | <b>From model year 2020 onwards</b><br>Remove and install floor covering (front and rear)                                                                                                 | 7041 1999 | 540 TU |
|                          | <b>All Model years</b><br>Service all splice points in driver sill area                                                                                                                   | 9709 4199 | 240 TU |



# Technical Service Bulletin

|                         |                                                                                               |              |                                        |
|-------------------------|-----------------------------------------------------------------------------------------------|--------------|----------------------------------------|
|                         | <b>Only claim Version 1 or 2 below, ensure version used is entered into claim comments.</b>   |              |                                        |
|                         | <b>Version 1:</b><br>Cut and splice terminal 30 repair cable and wrap harness                 | 9709 2399    | 120 TU                                 |
|                         | <b>Version 2:</b><br>Re-pin Terminal 30 repair cable into vehicle fuse block and wrap harness | 9709 2399    | 300 TU                                 |
| <b>Diagnostic Time:</b> | GFF                                                                                           | 0150 0000    | Time stated on the diagnostic protocol |
|                         | Road test prior to the service procedure                                                      | No allowance | 0 TU                                   |
|                         | Road test after the service procedure                                                         | 0121 0004    | 10 TU                                  |
| <b>Claim Comment:</b>   | As per TSB 2067722/1                                                                          |              |                                        |

All warranty claims submitted for payment must be in accordance with the *Audi Warranty Policies and Procedures Manual*. Claims are subject to review or audit by Audi Warranty.

## Required Parts and Tools

| The part numbers mentioned in this TSB are different than the ones listed in ETKA. Only use parts listed in this TSB, this includes superseding part numbers! |                                     |             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------|
| Part Number                                                                                                                                                   | Part Description                    | Quantity    |
| 021 972 913 C                                                                                                                                                 | Shrinkable hose, waterproof D=5.7mm | As required |



# Technical Service Bulletin

|                                |                                                        |             |
|--------------------------------|--------------------------------------------------------|-------------|
| 021 972 913 D                  | Shrinkable hose, waterproof D=7.4mm                    | As required |
| 4M1 974 177                    | Repair cable (Terminal 30 cable) <b>Q7 only</b>        | 1           |
| N 107 292 04                   | Blue textile tape                                      | 2           |
| N 107 516 03                   | Grey textile tape                                      | 3           |
| N 107 290 02                   | Adhesive tape                                          | 1           |
| 000 979 940                    | Crimp connector                                        | As required |
| 000 979 941                    | Crimp connector                                        | As required |
| 000 979 942                    | Crimp connector                                        | As required |
| 000 979 943                    | Crimp connector                                        | As required |
| 000 979 944 +<br>000 979 992 A | Crimp connector 10mm <sup>2</sup> +<br>shrinkable hose | As required |
| N 106 972 01                   | Cable tie                                              | Shop supply |

| Tool Number       | Tool Description                                         |
|-------------------|----------------------------------------------------------|
| Locally sourced   | Seam ripper                                              |
| VAS 1978 B        | Wire harness repair set                                  |
| VAS 6160/VAS 6150 | VAS tester with the current version of ODIS (Windows 10) |

## Additional Information



# Technical Service Bulletin

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All parts and service references provided in this TSB (**2067722**) are subject to change and/or removal.

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