

Technical Service Bulletin



87 Air conditioning inoperative

87 13 43 2020124/10 July 12, 2013. Supersedes Technical Service Bulletin Group 87 number 13-42 dated June 11, 2013 for reasons listed below.

| Model(s) | Year | VIN Range | Vehicle-Specific Equipment |
|--------------|-------------|-------------------|----------------------------|
| A4 | 2009-2012 | All | Not Applicable |
| A4 | 2013 | N000001 - N045670 | |
| A4 | 2013 | A000001 – A231729 | |
| A5 | 2008-2012 | All | |
| A5 | 2013 | 000001 - 071355 | |
| S5 / RS5 | 2013 | 900000 - 902787 | |
| A5 Cab | 2010-2012 | All | |
| A5 Cab | 2013 | 000001 - 015616 | |
| S5 / RS5 Cab | 2013 | 900000 - 900501 | |
| A6 | 2005-2012 | All | |
| A6 | 2013 | 000001 - 134357 | |
| A7 | 2012 | All | |
| A7 | 2013 | 000001 - 134357 | |
| A8 | 2004-2012 | All | |
| A8 | 2013 | 000001 - 029602 | |
| Q5 | 2009 - 2012 | All | |
| Q5 | 2013 | 000001 - 083307 | |

Condition

| REVISION HISTORY | | |
|------------------|------------|---|
| Revision | Date | Purpose |
| 10 | - | Revised <i>Warranty</i> (Change service number) |
| 9 | 6/11/2013 | Revised header data (Added models and model years) |
| 8 | 11/16/2012 | Revised header data (added D3 pull ahead) Revised <i>Service</i> Revised <i>Warranty</i> (Additional SRT) |
| 7 | 9/5/2012 | Revised <i>Service</i> (Added labels a-d) Revised <i>Warranty</i> |
| 6 | 7/23/2012 | Revised <i>Service</i> (Added an additional descriptive note and text) |
| 5 | 8/15/2011 | Revised <i>Service</i> (Added additional steps and images) Revised <i>Warranty</i> |
| 4 | 4/8/2011 | Revised <i>Condition, Technical Background, Production Solution</i> |
| 3 | 3/22/2011 | Revised header data (Added models and model years) Revised <i>Technical Background, Production Solution, Service, and Required Parts and Tools</i> |
| 2 | 4/23/2010 | Revised <i>Technical Background, Production Solution, and Service</i> |
| 1 | 2/27/2009 | Original publication |

- Air conditioning is inoperative.
- The HVAC blower functions normally.
- Battery discharged; however, when charged, there is no bus silence when vehicle ignition is off.

Technical Background

- The A/C pressure/temperature sensor, G395, leaks refrigerant. This causes sensor G395 to show an incorrect or implausible value when reading MVBs. An incorrect signal or a low refrigerant level in the system can cause the air conditioning compressor to deactivate.
- The LIN cable connecting the vehicle electrical system control module, J519, to sensor G395 is pinched or cut. This affects the A4/S4, A5/S5 Coupe and Cabriolet, and Audi Q5 vehicles. The A6 and A8 are *not* affected by this type of failure.
- The pressure sensor G395/G65 sends an incorrect signal that prevents bus silence and the battery is discharged.



Tip: Sensor G395 is a LIN slave of the vehicle electrical system control module. The vehicle electrical system control module transfers the information provided by the sensor via the comfort data bus to the climate control module, J255.

Production Solution

An improved sensor G395 was introduced into series production and the wiring manufacturer's processes were optimized.

Service

For A4/S4 (8K), A5/S5 Coupe/Cabriolet (8T/8F), Audi Q5, A6, A7, A8, R8:

If DTCs for sensor G395 are stored in the climate control module, J255, then check the system pressures and refrigerant volume.

- If system pressures and refrigerant volume are low, check for refrigerant leaks at sensor G395. If a leak is found, then replace sensor G395.
- If the system pressure and refrigerant volume are correct, perform guided fault finding (GFF). If an implausible pressure value is found in MVB 1, field 4, then replace sensor G395.



Tip: Install only the improved G395. See part numbers in *Required Parts and Tools*.

Only for A4/S4 (8K), A5/S5 Coupe/Cabriolet (8T/8F), Audi Q5:

1. Check the diagnostic fault memory for two possible DTC scenarios:

DTC Scenario 1

08 - Climate Control Module - J255:

DTC 00457 - Vehicle Electrical System Control Module – J519- Please check DTC memory

DTC 00256 - A/C Pressure/temperature Sensor –G395- Incorrect Signal

-AND-

09 - Vehicle Electrical System Control Module – J519:

DTC 00256 - A/C Pressure/temperature Sensor –G395- No signal/communication

DTC Scenario 2

08 - Climate Control Module - J255:

DTC 00457 - Vehicle Electrical System Control Module – J519- Please check DTC memory

DTC 00256 - A/C Pressure/temperature Sensor –G395- Incorrect Signal

-AND-

09 - Vehicle Electrical System Control Module – J519:

DTC 01592 - Air Quality Sensor –G238- No signal/communication

DTC 00256 - A/C Pressure/temperature Sensor –G395- No signal/communication

If scenario 1 is the case, perform step 7.

If scenario 2 is the case, perform steps 2 – 6.



Tip: The existing LIN cable connecting the vehicle electrical system control module to sensor G395 could be pinched or cut if scenario 2 is the case.

2. Check the LIN cable connecting the vehicle electrical system control module to sensor G395 according to GFF.
3. Check the wire terminals in the connector at sensor G395 for proper attachment, possible corrosion, and for any pins that may be pushed back or widened.
4. Check to make sure there is proper voltage going to the sensor and verify the ground is not intermittently open (wiggle test).

5. Check the integrity of the wire harness.

There are two known sections in the wiring harness that can be affected, but the potentially affected areas are not limited to these two known sections. One of the known sections is in the driver's footwell area where the wire harness enters the interior of the car from the engine bay (Figure 1).



Figure 1. Wire harness in driver footwell area.

The second known section is in the wire harness located under the driver's side headlight (Figure 2).



Figure 2. Wire harness under driver's side headlight.

6. If a cut wire is found, install an overlay wire for the LIN bus signal. Do *not* attempt to repair the existing wire harness.

- a. Route the new LIN bus wire from the vehicle electrical system control module, J519, to the sender for sensor G395 so that it enters the interior of the vehicle through the driver's side fender/lower A-pillar area through the grommet indicated in the images at right (Figures 3 and 4).



Tip: Do *not* route the wire through the same opening used by the existing wire harness.

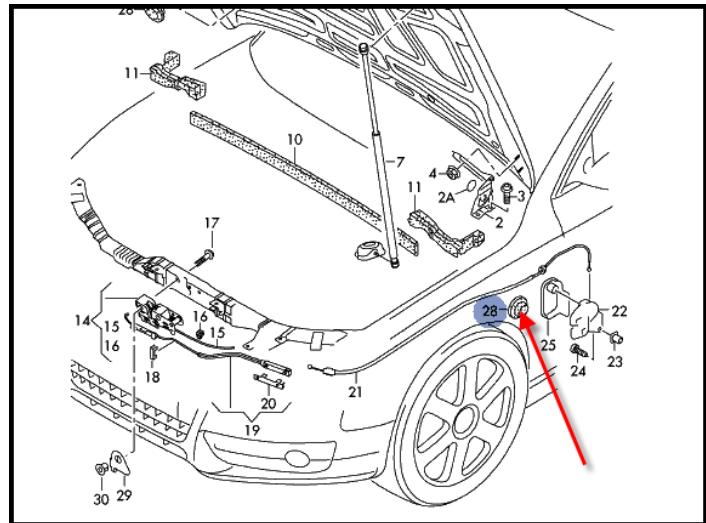


Figure 3. Grommet in driver's side fender/lower A-pillar area used for pass-through for new overlay wire.



Figure 4. Access hole in grommet.



Tip: The LIN bus between the vehicle electrical system control module and sensor G395 may contain a junction point shared with other modules depending on the vehicle. Ensure that the junction points are maintained when routing the overlay.

On vehicles with a charisma switch (ride selection switch located on the instrument panel) route the new cable of the sender for sensor G395 to junction B549 (Figure 5, red arrow).

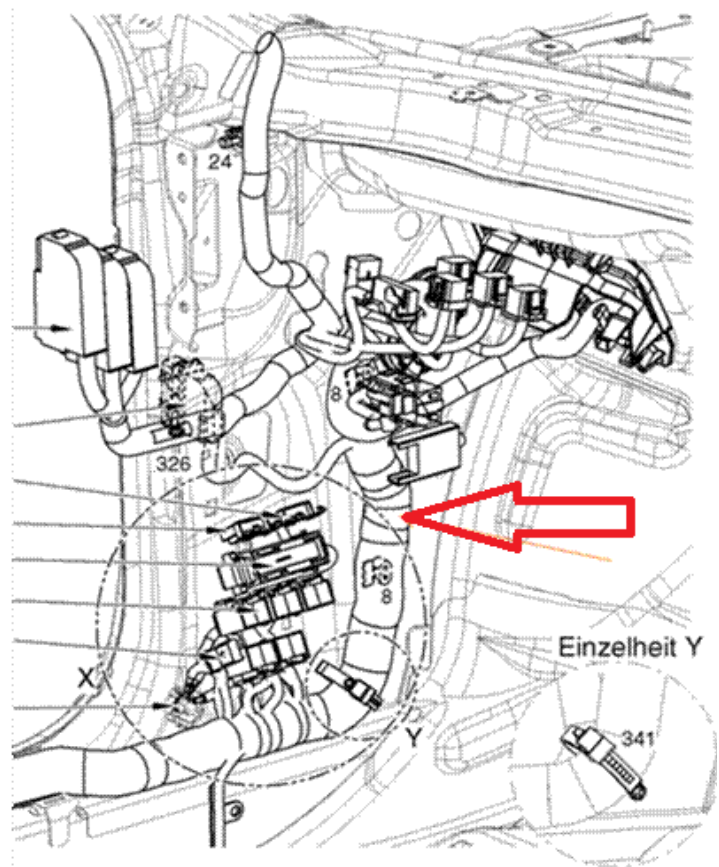


Figure 5. Cable routing with charisma switch option.

- b. Seal off the opening around the wire with Butyl sealant to prevent water intrusion (Figure 6).



Figure 6. Access hole in grommet to be sealed with Butyl sealant.

- 7. Replace the sender for sensor G395.

Technical Service Bulletin



Warranty

| | | | |
|--------------------------|---|--|--|
| Claim Type: | Use applicable claim type. If vehicle is outside any warranty, this Technical Service Bulletin is informational only. | | |
| Service Number: | 8757 | | |
| Damage Code: | 0010 | | |
| Labor Operations: | Repair front left wiring loom | 9715 9999 | 165 TU |
| | Drain and refill refrigerant (if necessary) | 8703 1700 | 50 TU |
| | Check front left wiring loom | 9715 9999 | 175 TU |
| | Replace A/C Pressure/temperature Sensor – G395- | 8709 XXXX See ElsaWeb for applicable labor operations | XX TU |
| Diagnostic Time: | GFF | 0150 0000 | Time stated on diagnostic protocol (MAX 50 TU) |
| | Road test prior to service procedure | No allowance | 0 TU |
| | Road test after service procedure | No allowance | 0 TU |
| Claim Comment: | As per TSB #2020124/10 | | |

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

| Part Number | Part Description | Quantity |
|-------------|------------------|----------|
| 4H0959126A | Pressure sensor | 1 |

Additional Information

All parts and service references provided in this TSB (2020124) are subject to change and/or removal. Always check with your Parts Department and service manuals for the latest information.