Technical Service Bulletin

93 "Electrical system: Malfunction! Safely turn off vehicle" is in the cluster, DTC P0AC000 is stored in battery module

93 21 51 2059309/4 May 26, 2021. Supersedes Technical Service Bulletin Group 93 number 20-34 dated September 18, 2020 for reasons listed below.

Model(s)	Year	VIN Range	Vehicle-Specific Equipment
Q5 PHEV	2019 - 2021	All	PHEV
A7 PHEV	2021	All	PHEV

Condition

REVISION HISTORY		
Revision	**Date**	**Purpose**
4	-	Revised *Service* (Changed to software updates)
3	05/26/2021	Revised header (Added A7 and Q5 MY 2021)
		Revised *Condition* (Updated Workshop findings)
		Revised *Production Solution* (Updated information)
		Revised *Service* (Changed to software updates)
		Revised *Warranty* (Added table)
		Revised *Additional Information* (Added reference)
2	09/18/2020	Revised header (Updated model)

Customer states:

- When the "ignition" is switched on, a red warning light appears and the vehicle cannot be moved.

- In the instrument cluster, the red battery symbol (Figure 1) with the text "electrical system: Malfunction! Safely turn off vehicle" is shown.

Figure 1. Red battery symbol.

- After turning the car off and then on again, the warning light usually goes out and the vehicle works properly again.

Workshop findings:

- According to Guided Fault Finding, the BJB (Battery Junction Box – SX6) should be replaced but the replacement is not effective.

The following DTC is stored in the hybrid battery management module, J840 (address word 008C):

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- **DTC P0AC000** (Hybrid/EV Battery Pack Current Sensor "A" Circuit Range/Performance).

Technical Background

The internal communication between the BJB (Battery Junction Box – SX6) electronics and the current/voltage sensor is under extremely unusual conditions and registers as inaccurate.

Production Solution

Improved software.

Service

The TSB applies if in the battery regulation control module, J840 (address word 008C) one of the following DTC combinations is logged:

DTC	Combination/Not	Other DTC	Instructions
P0AC000	As the only entry in 008C	N/A	Perform TSB
P0AC000	In combination with	P33F000	Perform TSB
P0AC000	In combination with	U059B00	Perform TSB

The TSB does not apply if other DTCs in addition to the DTC combinations above are logged in the battery regulation control module, J840 (address word 008C). If this is the case, standard diagnosis continues outside of this TSB.

Tip: To prevent the high-voltage battery from charging during the software update, the high-voltage charging cable on vehicles with high-voltage components must be unplugged **BEFORE** the SVM code is entered. Please note that charging the high-voltage battery during a software update can cause damage to the high-voltage components.

Tip: To ensure the flashing procedure does not fail, please ensure the diagnostic scan tool has been updated to the latest level

Tip: As the Battery Junction Box (SX6) is a slave of the hybrid battery management module, J840 (address word 008C) it does not display the software version of the control modules directly in the diagnostic log, instructions on how to evaluate the various software versions are provided below.
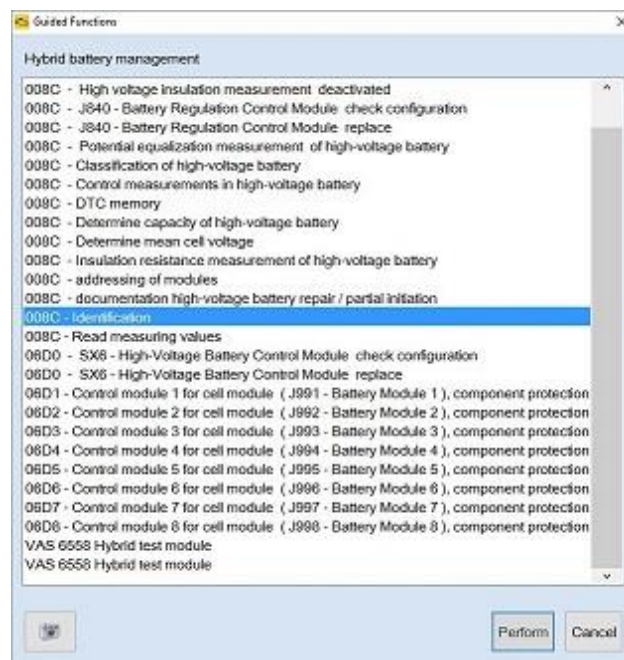
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Identifying the control modules:

1. To obtain the data we need to use the diagnostic scan tool then right-click and select the hybrid battery management module, J840 (address word 008C), and select "Guided Functions" (Figure 2).
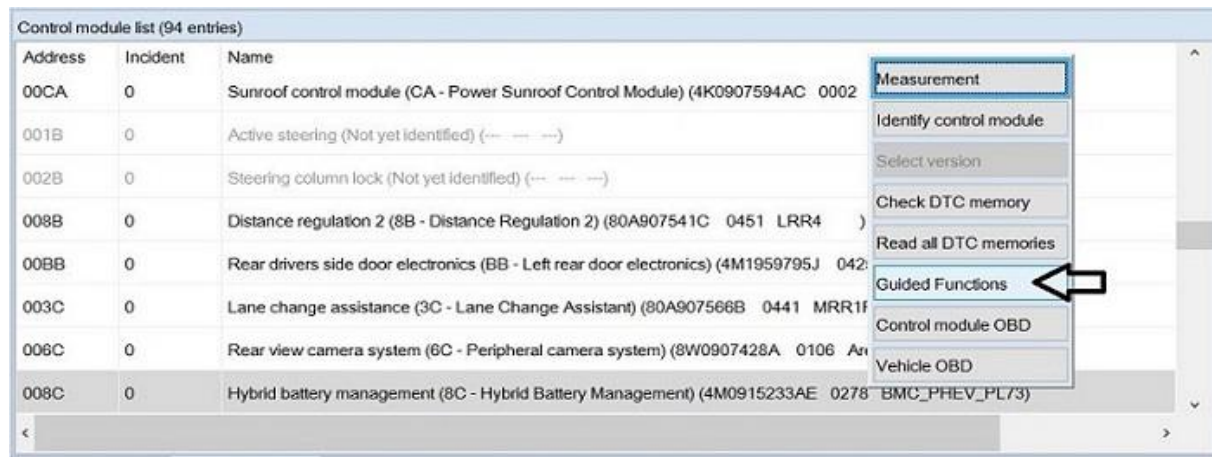
Figure 2. *Guided Functions.*

2. In the Guided Functions menu select 008C – Identification and click "Perform" (Figure 3).

Figure 3. *Guided Functions Menu.*

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3. The Identification data of the hybrid battery management module, J840 (address word 008C) is now displayed (Figure 4). Write down the Software part number, Software Version number, Hardware part number, and Hardware version number, as this information will be needed in the following steps. After you have saved the data for later, answer yes to the question "Do you still want additional identification data?"
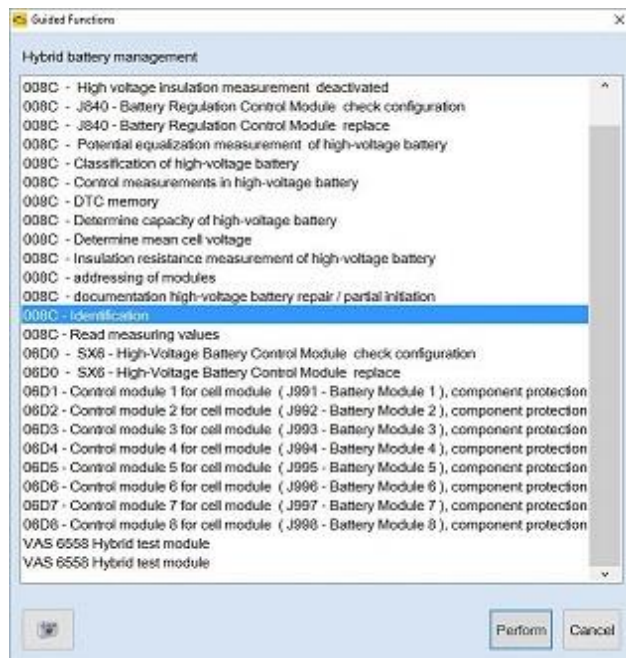
Figure 4. *Identification data, Hybrid Battery Management module.*

4. After selecting "Yes" the scan tool will obtain more data from the hybrid battery management module, J840 (address word 008C). This data is not needed for this TSB so we can ignore it and click "Continue".

5. The next screen will ask "Do you want to read and display the subsystems" and it will display the number of slave control modules. Select "Yes".

6. After selecting "Yes" the scan tool will obtain the identification of all the slave modules of the hybrid battery management module, J840 (address word 008C). The Battery Junction Box (SX6) should be the 1st Slave displayed but if it is not scroll down until you find it and write down the Software part number, Software Version number, Hardware part number, and Hardware version number, as this information will be needed in the following step.

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J840 - Read identification data

Subsystems

Slave 1 of 9
Slave ID: 208
Slave system name: Battery interrupt switch
Slave hardware part number: 80A915253D
Slave hardware version: H18
Software part number: 80A915253E
Software version: 0106
Slave serial number: NOT_SUPPORTED
Slave coding value: not supported
Slave system name: SX6 SFT426D0

Figure 5. Battery Junction Box (SX6) Identification.

7. • Now compare your actual software and hardware with the table below and if the vehicle has the affected software in either the hybrid battery management module, J840 (address word 008C) or the Battery Junction Box (SX6) then update the control modules according to the SVM instructions below.

   • If both of the control modules already have the improved software this TSB does not apply.

	Affected Software			Improved Software		
Control Module	Software part number	Software Level	Hardware part number	Software part number	Software Level	Hardware part number
008C	4K0915233	0275	4KD915233	4K0915233A	0278	4K0915233
	4M0915233R	0274	4M0915233C	4M0915233AE	0278	4M0915233C
SX6 (06D0)	4K0915254C	0205	4K0915254C	4K0915254D	0206	4K0915254C
	80A915253C	0103	80A915253C	80A915253E	0106	80A915253C
	80A915253C	0105	80A915253C			
	80A915253D	0105	80A915253D	80A915253E	0106	80A915253D

SVM Update Instructions

8. Follow all instructions in TSB 2011732: *00 Software Version Management (SVM), operating instructions.*
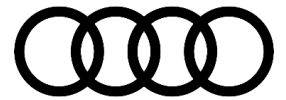
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9. Update the Hybrid Battery Management module, (J840) and/or the Battery Junction Box (SX6) using the SVM action codes as listed in the table below.

10. For this SVM update, two SVM action codes will have to be performed and they **must** be performed in the order described below.

⚠️ **Note:**

If the sequence "SVM code 1 before SVM code 2" is not followed precisely when flashing or not followed through to the end, it may not be possible to operate the vehicle.

Step	Model	Control Module	Old Software Part Number	Old Software Version	New Software Part Number	New Software Version (or higher)	SVM Code Input #1
1	Q5 TFSI e A7 TFSI e (PHEV, Hybrid)	008C	4K0915233	0275	4K0915233A	0278	8CA006
		008C	4M0915233R	0274	4M0915233AE	0278	
		SX6 (06D0)	4K0915254C	0205	4K0915254D	0206	
			80A915253C	0103	80A915253E	0106	
			80A915253C	0105	80A 15253E	0106	
			80A915253D	0105	80A915253E	0106	

Step	Model	Control Module	Old Software Part Number	Old Software Version	New Software Part Number	New Software Version (or higher)	SVM Code Input #2
2	Q5 TFSI e A7 TFSI e (PHEV, Hybrid)	008C	4K0915233	0275	4K0915233A	0278	8CA006KONF
		008C	4M0915233R	0274	4M0915233AE	0278	
		SX6 (06D0)	4K0915254C	0205	4K0915254D	0206	
			80A915253C	0103	80A915253E	0106	
			80A915253C	0105	80A915253E	0106	

				80A915253D	0105	80A915253E	0106	

11. After completion of both SVM updates the installed software should match the target software shown in the table in step 7.

Warranty

Claim Type:	• 110 up to 48 Months/50,000 Miles. • G10 for CPO Covered Vehicles – Verify Owner. • If the vehicle is outside any warranty, this Technical Service Bulletin is informational only.		
Service Number:	9327		
Damage Code:	0040		
Labor Operations:	Software Updates	0151 0000	Time stated on the diagnostic protocol (Max 70 TU)
Diagnostic Time:	GFF	0150 0000	Time stated on the diagnostic protocol (Max 40 TU)
	Road test prior to service procedure	No allowance	0 TU
	Road test after service procedure	0121 0004	10 TU
Claim Comment:	As per TSB #2059309/4		

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.

Additional Information

The following Technical Service Bulletin(s) will be necessary to complete this procedure:

• TSB 2011732, *00 Software Version Management (SVM), operating instructions.*

All part and service references provided in this TSB (2059309) are subject to change and/or removal. Always check with your Parts Department and/or ETKA for the latest information and parts bulletins. Please check the Repair Manual for fasteners, bolts, nuts, and screws that require replacement during the repair.

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