



93-23-07 - Front Electric Drive Power Electronics Software Update - Specific Listed DTCs and Symptom Codes

Release date: 2/7/2024

Condition

Applicable Vehicles						
Model(s)	Year	Eng. Code	Trans. Code	VIN Range From	VIN Range To	PR Code
ID.4	2022	All	All	All	All	1X1

CAUTION

The software update according to this technical bulletin is applicable only to model year 2022 vehicles included in campaign 97HB or 97HC. Always check whether the VIN is included in campaign 97HB or 97HC before proceeding!

Revision Table			
Instance Number	Published Date	Version Number	Reason For Update
2071701/2	2/7/2024	93-23-07	Change of title, addition of applicable fault codes, and steps for further software update.
2071701/1	10/9/2023	93-23-07	Original publication

The customer reports an electric drive system error message has appeared.

Example 1: "Error: Drive system. Please service vehicle."

Example 2: "Electrical system not working correctly. Please service vehicle."

Or various warning lamps and symbols are illuminated in the instrument cluster.

Or drive readiness (ready mode) sometimes cannot be established (intermittent no-start).

One or more of the diagnostic trouble codes (DTCs) together with one or more of the specific symptom codes listed below is present in the fault memory of the Electric Drive Power and Control Electronics 2 - **JX4**- (diagnostic address 00CE).

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P30A000: Intermediate circuit condenser not discharged

- With symptom codes: 42124 and/or 42146

P18F100: Function limitation due to deviating wheel speeds

- With symptom codes: 42204 and/or 42330

P0A1B00 - Drive Motor "A" Control Module

- With symptom codes: 42297 and/or 42175 and/or 42267 and/or 42322 and/or 42323 and/or 42328

P060600 - ECM/PCM Processor

- With symptom code: 42130

P0C0500 - Drive Motor "A" Phase U-V-W Circuit/Open

- With symptom code: 42237

P0A5F00 - Drive Motor "A" Phase U Current High

- With symptom code: 41955

P0A6200 - Drive Motor "A" Phase V Current High

- With symptom code: 41933

P0A6500 - Drive Motor "A" Phase W Current High

- With symptom code: 41937

P0C7900 - Drive Motor "A" Inverter Voltage Too High

- With symptom code: 41826

**WARNING**

If one or more of the DTCs in combination with the specific symptom codes listed above is not present at the start of diagnosis, then this technical bulletin does not apply!

Technical Background

Software related deviation in the Electric Drive Power and Control Electrics 2 -**JX4**.

Production Solution

According to DTC-symptom codes:

- P18F100-42204/42330, P30A000-42124/42146, P0A1B00-42297/42175 – Implementation of optimized software (SW 8351) and hardware (H12) in production CW11/22
- P060600-42130 – Implementation of optimized software (SW 8352) in production CW35/22
- P0A1B00-42267/42322/42323/42328/42175, P0C0500-42237, P0C7900-41826 – Not applicable
- P0A5F00-41955, P0A6200-41933, P0A6500-41937 – Not applicable

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Service

1. Check whether the campaign 97HB or 97HC has already been performed (all criteria closed).
 - If no (campaign 97HB or 97HC open) continue with step 2.
 - If yes (campaign 97HB or 97HC closed) continue with step 3.
2. Perform the campaign 97HB or 97HC compound software update, as applicable:
 - 97HB: ID.S 3.1.3 including SW 8351 for the Electric Drive Power and Control Electronics 2 ~~-JX4-~~
 - 97HC: ID.S 3.2.1 including SW 8352 for the Electric Drive Power and Control Electronics 2 ~~-JX4-~~

 **CAUTION**

The update to ID.S 3.1.3 or 3.2.1 according to campaign 97HB or 97HC must be performed before updating to ID.S 3.2.12!

3. Perform the **ID.S 3.2.12** compound software update, which includes **SW 8353** for the Electric Drive Power and Control Electronics 2 ~~-JX4-~~ according to the attached ID.S 3.2.12 software update instructions. Then proceed to step 4.

 **NOTICE**

The control units in the ID family (MEB platform) vehicles may only be updated together and sequentially within the "ID. Software" (ID.S) compound update. Changes of individual control unit part numbers (if applicable) are generally reflected in the ETKA parts catalog after an ID.S compound update has been successfully completed.

4. Carry out the following steps in order:
 - Perform terminal 30 reset by disconnecting and reconnecting the 12V battery ground strap. See Repair Group 27 Battery, Disconnecting and Connecting in Elsa.
 - Erase DTC memory in diagnostic address 00CE.
 - Perform bus-sleep using GFF > Test plan > Select self-test > 0019 – Establish bus sleep mode.
 - Proceed to step 5.

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5. After completion of steps 1 through 4, if none of the above listed DTCs and symptom codes for which this bulletin was performed returns, then no further work is necessary. If one of the above listed DTCs and symptom codes has returned, then proceed to step 6.
6. Perform the relevant Guided Fault Finding (GFF) test plan for the DTC(s), and if necessary, replace the Electric Drive Power and Control Electronics 2 -JX4-.

! CAUTION

As of this writing, the Electric Drive Power and Control Electronics 2 -JX4- is only available as part of the complete front electric drive assembly. The associated procedures, tools, and required Single-use fasteners are completely described in the Elsa repair manual and are beyond the scope of this technical bulletin.

! NOTICE

If an order was previously made for the electric drive assembly with Electric Drive Power and Control Electronics 2 -JX4- (i.e., assembly part number 1ED.901.132.*) with software below SW 8353, then that order should be cancelled. Instead, perform the ID.S 3.2.12 compound update according to this technical bulletin. If replacement is necessary after SW 8353 has been installed, then a superseded part number corresponding to SW 8353 may be ordered (refer to ETKA parts catalog after the update is successfully performed).



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Warranty

To determine if this procedure is covered under Warranty, always refer to the Warranty Policies and Procedures Manual ¹⁾

Applicable Vehicles

Model(s)	Year	Eng. Code	Trans. Code	VIN Range From	VIN Range To	PR Code
ID.4	2022	All	All	All	All	1X1

SAGA Coding

Claim Type:	Use applicable Claim Type ¹⁾		
Service Number:	Damage Code	HST	Damage Location (Depends on Service No.)
9340	Steps 1 – 5 performed	0039	--
	Steps 1 – 6 performed	0040	--

Parts Manufacturer:	ID.4	Z2G ²⁾
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Labor Operation ³⁾: Steps 1-2	Not applicable – Labor is accounted for within the campaign 97HB or 97HC
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Labor Operation ³⁾: ODIS setup with 12V battery charger connection	01 50 00 10 = see Elsa for latest time units
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Labor Operation ³⁾: Perform three bus sleep procedures	27 06 02 99 = 30 TU
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Labor Operation ³⁾: Step 4 (terminal 30 reset)	97 85 09 50 = see Elsa for latest time units
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The additional operations below are applicable only if step 6 has led to a necessary replacement of the front e-drive.

Labor Operation ³⁾: Coolant drain and fill	19 38 17 50 = see Elsa for latest time units
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Labor Operation ³⁾ : Subframe remove + reinstall	40 07 19 60 = see Elsa for latest time units	
Labor Operation ³⁾ : 2 Wheels remove + reinstall	44 05 20 52 = see Elsa for latest time units	
Labor Operation ³⁾ : Rear cover plate remove + reinstall	51 94 19 03 = see Elsa for latest time units	
Labor Operation ³⁾ : Disable HV system voltage deactivate and reactivate	93 10 83 50 = see Elsa for latest time units	
Labor Operation ³⁾ : Electric Drive Motor remove + reinstall	93 40 19 60 = see Elsa for latest time units	
Labor Operation ³⁾ : Electric drive motor replace	93 40 55 60 = see Elsa for latest time units	
Labor Operation ³⁾ : Vehicle front + rear measured (only if required)	44 95 03 00 = see Elsa for latest time units	
Labor Operation ³⁾ : Front wheel track adjusted (only if required)	44 88 15 50 = see Elsa for latest time units	
Causal Part:	Steps 1 – 5 performed	Select labor operation 97 85 09 50
	Steps 1 – 6 performed	Use replacement front electric drive part number according to ETKA catalog <u>after</u> current software update has been applied
Diagnostic Time ⁴⁾		
GFF Time expenditure	01500000 = Actual GFF print out – 100 TU max.	YES
Road Test	01210002 = see Elsa for latest time units 01210004 = see Elsa for latest time units	YES
Technical Diagnosis	01320000 = 00 TU max.	NO
Claim Comment: Input “As per Technical Bulletin 2071701” in comment section of Warranty Claim.		



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- 1) Vehicle may be outside any Warranty in which case this Technical Bulletin is informational only.
- 2) Code per warranty vendor code policy.
- 3) Labor Time Units (TUs) are subject to change with ELSA updates.
- 4) Documentation required per Warranty Policies and Procedures Manual.

Required Parts and Tools

Part No.	Part Description	Quantity
Use replacement front electric drive part number according to ETKA catalog after current software update has been applied	Front electric drive assembly	1
12E407298	Lock ring, inner axle end	2
N 10240305	Nut, connecting link	4
N 10469402	Bolt, transmission mount	1
N 10866001	Bolt, motor / transmission support	9
N 91284901	Bolt, motor mount	2
N 10785401	Bolt, subframe	6
N 10518405	Bolt, steering shaft	2
WHT005538	Nut, tie rod end	2
WHT005437A	Bolt, outer axle end	2
N 91233201	Nut, lower ball joint	6
N 0385494	Rivet, underbody panel (if required)	4
N 91039802	Bolt, subframe	4
N 91260401	Bolt, subframe	4



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G 12E100S1	G12 EVO Coolant Concentrate	12.7 Quarts
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NOTICE

For special tools associated with electric drive assembly removal and replacement, see repair manual.

Tool Description	Tool No:
VAS Diagnostic Tool	VAS 6150/X & VAS 6160/X with ODIS Service with current online updates
VAS Battery Tester / Charger	VAS 5908

Additional Information

All part and service references provided in this Technical Bulletin are subject to change and/or removal. Always check with your Parts Dept. and Repair Manuals for the latest information.

Release Date	1/26/2024	Software Update Instructions	
ID. Software (ID.S) Version 3.2.12 Update According to Technical Bulletin 2071701/*			

Revision History		
Revision	Date	Purpose
1	January 26, 2024	Original publication

⚠ WARNING

- These instructions are applicable only to Technical Bulletin 2071701/*.
- For the update procedure to be covered under warranty, the conditions of Technical Bulletin 2071701/* must be satisfied (i.e., specific DTCs present at the start of diagnosis).

OVERVIEW of REPAIR STEPS

- Step 1 – Verify prerequisites for ID.S 3.2.12 are satisfied
- Step 2 – Complete software update via SVM
- Step 3 – Perform bus sleep
- Step 4 – Complete software configuration via SVM
- Step 5 – Perform bus sleep
- Step 6 – Perform “VKMS Adaptation” test plan
- Step 7 – End Guided Fault Finding and clear faults
- Step 8 – Complete remaining technical bulletin steps

Step 1 – Verify Prerequisites for ID.S 3.2.12

- Confirm that Technical Bulletin 2071701/* applies to the vehicle.
- Confirm that all prerequisite steps in Technical Bulletin 2071701/* are completed.
- Continue to step 2.

⚠ WARNING

- The ID.S software updates are incremental, and this update cannot be successfully performed if the prerequisite conditions are not satisfied.
- Damage resulting from improper repair or failure to follow these work instructions are not eligible for warranty reimbursement.

Step 2 – Update Software via SVM

NOTICE

Prior to launching the VAS Diagnostic Tester and starting an update, ensure the following conditions are met;

- ✓ **The ODIS software is completely up to date.**
 - Refer to the “Current ODIS Service Version” circular found in Elsa2Go Service References.
- ✓ **The battery charger is connected to the vehicle battery and remains connected for the duration of the software update.**
 - Battery voltage must remain above 12.5 volts for the duration of the software update. Failure to do so may cause the update to fail, which could result in damage to the control module. Control modules damaged by insufficient voltage will not be covered.
- ✓ **The screen saver and power saving settings are off.**
 - Failure to do so may result in the tester entering power save mode during the software update, which could result in damage to the control module.
- ✓ **The VAS Diagnostic Tester is plugged in using the supplied power adapters.**
 - Under no circumstances should the tester be used on battery power alone during the software update. Failure to do so may result in the tester powering off during the update, which could result in damage to the control module.
- ✓ **The VAS Diagnostics Interface MUST ONLY be connected to the tester with a USB cable.**
 - Performing a software update using a Bluetooth or WiFi connection increases the risk of losing connection during the update, which could result in damage to the control module. It also greatly increases the time required to perform the update. Requests for additional time or parts will be denied if the GFF log shows the update was performed using Bluetooth or WiFi.

WARNING

Radiator Fan(s) may cycle ON high speed during the Update Process! There is a serious risk that personal injury may result if contact is made with spinning fan blades. Keep hands and all objects away from Radiator Fan(s) during Update Process!

TIP

To Update-Programming using SVM, review and follow instructions in Technical Bulletin 2014603: *Software Version Management (SVM) Operating Instructions*.

The SVM Process must be completed in its entirety so the database receives the update confirmation response. A warranty claim may not be reimbursed if there is no confirmation response to support the claim.

NOTICE

If there are any ODIS "Hot-Fix" patches installed, they must be removed from the scan tool before beginning this operation. ODIS "Hot-Fix" patches may affect the update process.

Before starting the software update, the following conditions must be met:

- ODIS Service version MUST be completely up to date.
- Refer to the current information found in Elsa2Go Service References on the following topics:
 - ODIS Feedback must be set up correctly.
 - Dealership's internet firewall settings must meet the specified requirements.
 - ODIS user must have SFD access.
 - Windows Power Options must be set according to the ODIS tester setup directions.
- Only one key can be in the vehicle when performing this software flash.
- The vehicle key's battery must be ok.
- Any additional keys must be a minimum of 20 meters away from the vehicle.
- The car MUST NOT be hooked up to a high-voltage charger.
- If the work steps have to be interrupted for any reason, the best stopping point is at one of the bus sleep steps.

WARNING

Before starting programming, it is essential to perform the following actions for the -VAS5908- battery charger.

The battery charger's default setting will switch the charger off automatically after a period of time. To prevent this, the following must be carried out.

Switch it OFF and then ON again each time the charger is connected.

The battery charger's display must have switched off before it's restarted.

The charging time can be changed in the charger's settings menu (access code = 6161). Refer to the owner's manual for further information. DO NOT change any settings that will damage the charger or the vehicle.

WARNING

- Check for pre-existing faults.
- If any of the modules being updated are offline, the communication issue must be addressed prior to starting this procedure.
- Any module with a "Faulty Control Module" fault must be addressed prior to starting the flash. The flash may fail for the affected control module.
- Diagnosis and repair of pre-existing conditions are not covered under this action.

NOTE

If the customer is enrolled in Car-Net and they have the myVW app downloaded on their phone, they may receive several notifications during the update process.

Software update instructions:

- Switch off all consumers, air conditioning, heater blower motor, lights, heated seats, etc.
- Ensure the latest version of ODIS is downloaded.
- Ensure diagnostic head is connected to ODIS tester via USB cable.
- Move selector lever to P.
- Select “Special functions” > “Adapting software” > “Perform test”
- Enter SVM code **4C6E** and follow the on-screen prompts.
- Continue to Step 3.

Step 3 – Perform Bus Sleep

- Switch off the ignition.
- Turn off the hazards.
- Remove diagnosis interface from the vehicle diagnosis connection.
- Remove battery charger from the 12V battery.
- Close front and rear lid as well as all doors.
- Lock vehicle.
- Move vehicle key (remote control) at least 20 meters away from the vehicle.
- Wait at least 5 minutes until the vehicle is in bus sleep.
- Then unlock vehicle again.
- Connect and switch on battery charger.
- Insert diagnosis interface on vehicle diagnosis connection.
- Switch on the ignition.
- Place a vehicle key (remote control) in the center console on the reader coil.
- Continue to Step 4.

Step 4 – Perform Software Configuration via SVM

- Reconnect battery charger.
- Switch off all consumers, air conditioning, heater blower motor, lights, heated seats, etc.
- Ensure diagnostic head is connected to ODIS tester via USB cable.
- Move selector lever to P.
- Select “Special functions” > “Adapting software” > “Perform test”
- Enter SVM code **4C6F** and follow the on-screen prompts.
- Continue to Step 5.

Step 5 – Perform Bus Sleep

- Switch off the ignition.
- Turn off the hazards.
- Remove diagnosis interface from the vehicle diagnosis connection.
- Remove battery charger from the 12V battery.
- Close front and rear lid as well as all doors.
- Lock vehicle.
- Move vehicle key (remote control) at least 20 meters away from the vehicle.
- Wait at least 5 minutes until the vehicle is in bus sleep.
- Then unlock vehicle again.
- Connect and switch on battery charger.
- Insert diagnosis interface on vehicle diagnosis connection.
- Switch on the ignition.
- Place a vehicle key (remote control) in the center console on the reader coil.
- Continue to Step 6.

Step 6 - Perform “VKMS Adaptation” test plan

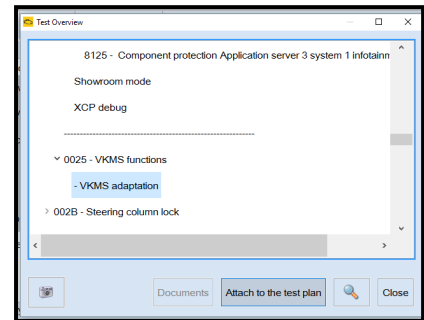
- Perform 0025 Immobilizer “VKMS Adaptation” test plan.



TIP

After selecting “Self Test,” use the search function and enter “VKMS” to aid in finding the test plan.

- Follow the on-screen prompts.
- Pay close attention to all steps outlined in the test plan and follow them exactly as described.
- Continue to Step 7.



Step 7 - End Guided Fault Finding and clear faults

- Exit Diagnosis and select “Yes” to end the diagnostic session.
- When prompted to continue Guided Fault Finding, select “NO”.
- GFF will be exited and faults will be erased.
- Static faults created by the flash process will remain.
- When prompted, select “YES” to populate new test plans.
- Work through all test plans for faults created by the flash process.
- Reference any applicable TSBs that address “ghost” faults.
- Pay close attention to all steps outlined in the test plans and follow them exactly as described.
- Exit GFF and send diagnostic protocol online.
- Continue to step 8.

NOTICE

Driver assist systems will not require re-calibration due to this software update.

WARNING

Perform a test drive above 20 mph/35 kph to calibrate the three-phase drive -VX54-.

When performing this road test, the vehicle will momentarily lose acceleration when the three-phase drive -VX54- calibrates. Ensure the road test is performed in a safe manner.

Step 8 – Complete remaining technical bulletin steps

- Ensure any remaining steps according to Technical Bulletin 2071701/* are completed.