STAR ONLINE PUBLICATION

Case Number: S2408000117

Release Date: November 2024

Symptom/Vehicle Issue: Turtle Icon Warning Lamp is Displayed on Cluster, No Electric Vehicle Operation or Reverse

Customer Complaint/Technician Observation: The customer complains of the mil lamp on no electric vehicle operation or reverse. The technician may observe Diagnostic Trouble Code (DTC) P08F2 - Drive Motor C Inverter Performance and/or P08F3 – Drive Motor D Inverter Performance.

Please note that Electric mode unavailability and/or reverse gear unavailability can be considered as a condition of DTCs P08F2/P08F3; no oil drain from transmission is necessary.

Repair Procedure:

1. Verify the presence of other codes in the:
   - PCM - U0402-00 : Implausible Data Received From TCM
   - BPCM - P0C78 : Hybrid/EV Battery System Precharge "A" Time Too Long
   - HCP - P0A7D : Hybrid Battery Pack State of Charge Low
   - HCP - P0AF8 : Hybrid/EV Battery System Voltage
   - APM - P2930 : Hybrid/EV Battery System Precharge "B" Current Too High

Please note that the above mentioned DTCs may not be necessarily all be present at the same time.

2. Check the 12V & 48V State of Charge, charge as needed.
3. Complete the wiring/connections verifications following the attached 12V & 48V circuit checklist.
4. If any code is present after the previous check, start the related diagnosis to solve issues prior to P08F3 diagnosis.
5. If not, complete the P08F3 diagnosis procedure without replacing the inverter or the transmission.
6. In case the Hydraulic Control Processor (HCP) reports the **DTC- P0DA3-00 : Drive Motor "B" Inverter Voltage Sensor "A" Circuit** replace ONLY the inverter and verify if the DTC is still present. If it is, replace the entire transmission.
7. For any other DTC not mentioned, follow the related diagnostic procedures.

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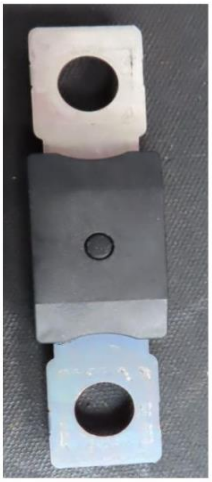
DTC P0AF8 set on HCP – P08F2 on TCM

DTC SUMMARY

ECU	DTC CODE	DTC DESCRIPTION	STATUS
PCM	U0402	Implausible Data Received From TCM	Active
PCM	U0429	Implausible Data Received from Steering Control Module	Stored
PCM	U0418	Implausible Data Received From Brake System Control Module 1	Stored
HCP	P0AF8-00	Hybrid/EV Battery System Voltage-	Active
TCM	P08F2-00	Drive Motor "C" Inverter Performance-	Pending
PAM	U1700-29	BCM Body Computer Module - Signal signal invalid	Active
HALF	P0780-68	Gear Shift Malfunction - Event information	Active

Inspect the wiring harness between the 48V battery and the electric motor. The 330A fuse present on the wiring in a blue box as shown. Check and tighten the nuts.



Open circuit detected. Fuse SHOWN darker ON ONE SIDE.

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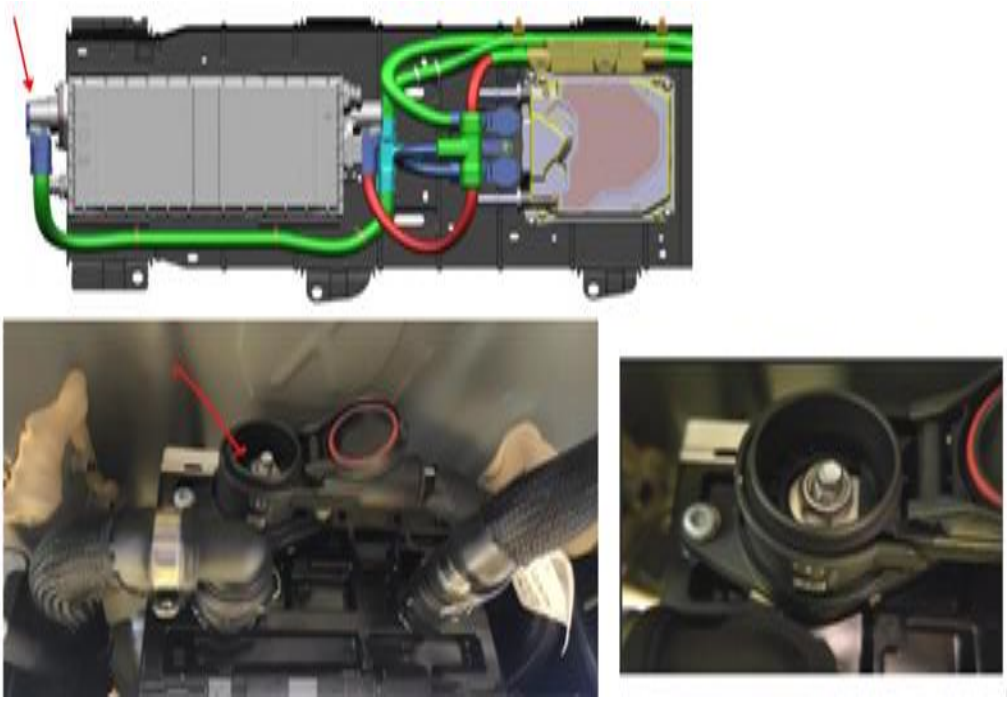
DTC P0A7D set on HCP / DTC P0C78 set on Battery Pack Control Module (BPCM) / DTC P2930 set on Auxiliary Power Module (APM).

BPCM_PN	P0C78-00	Hybrid/EV Battery System Precharge "A" Time Too Long-	No	stored
DASM_FGA	C1403-86	Electrical power steering failure - Signal invalid	Yes	active
DASM_FGA	C1408-86	ESC fail status present - Signal invalid	Yes	active
DASM_FGA	C1431-86	Yaw rate acceleration sensors from BSM failure - Signal invalid	Yes	active
DCTM_FGA	P08F3-00	Drive Motor "D" Inverter Performance	No	pending

Check the connection between the wiring harness and the 48V battery. The nut of the connector on the positive pole of the 48V should be checked and tightened.



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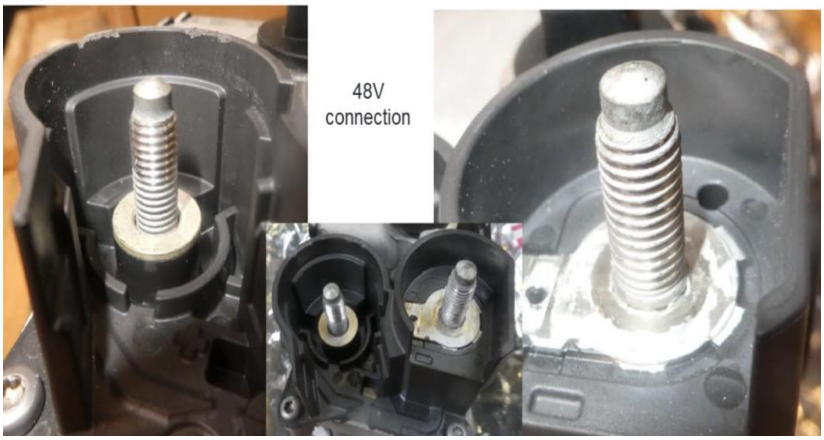
DTC P0AF8 set on HCP / P0C78 set on BPCM.

DTC SUMMARY

ECU	DTC CODE	DTC DESCRIPTION	STATUS
HCP	P0AF8-00	Hybrid/EV Battery System Voltage-	Active
BCM	U045A-00	Implausible Data Received From Parking Assist Module-	Active
ESM	U0100-87	Lost Communication With ECM/PCM	Stored
TCM	P2794-00	Gear Shift Direction Circuit Low-	Active
TCM	P3955-00		Stored
TCM	P3963-00		Stored
TCM	P0A3D-00	Drive Motor B Inverter Over Temperature-	Active
TCM	U0415-00	Invalid Data Received from Anti-Lock Brake System (ABS) Control Module "A"-	Stored
TCM	P0806-00	Clutch Position Sensor 1 Circuit Performance-	Stored
TCM	P08F2-00	Drive Motor "C" Inverter Performance-	Active
TCM	P08F3-00	Drive Motor "D" Inverter Performance-	Stored
PAM	U0422-00	Implausible Data Received From Body Control Module-	Active
APM	P0607-00	ECU Internal Performance-	Stored
APM	P1ABC-00	APM HV Battery System Voltage Low-	Active
APM	B21E3-00	DC to DC Converter Current Sensor - Over Current-	Stored
BPCM	P0C78-00	Hybrid/EV Battery System Precharge "A" Time Too Long-	Stored

Check the tightening of the nuts at the connection of the 48V battery and at the Inverter.



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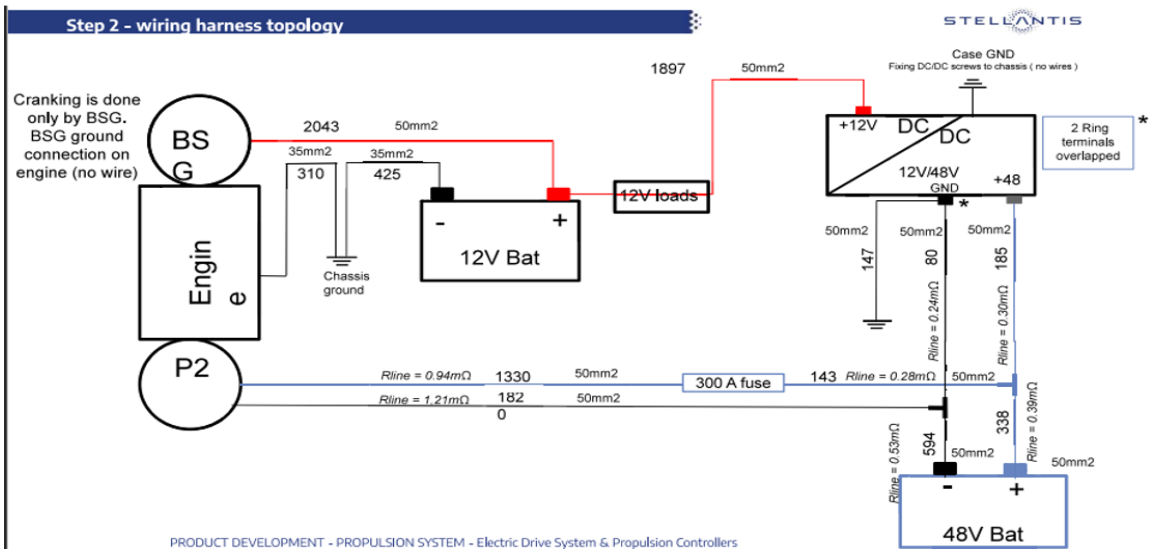
STELLANTIS

Step 2 - wiring harness checks

Step 2 - wiring harness topology



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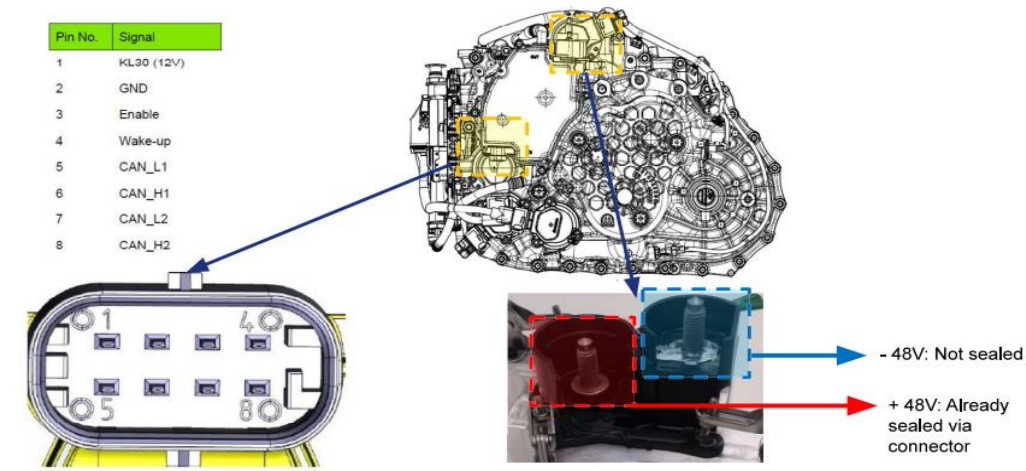
Step 2 - wiring harness checks - Inverter

STELLANTIS

Pin No.	Signal
1	KL30 (12V)
2	GND
3	Enable
4	Wake-up
5	CAN_L1
6	CAN_H1
7	CAN_L2
8	CAN_H2



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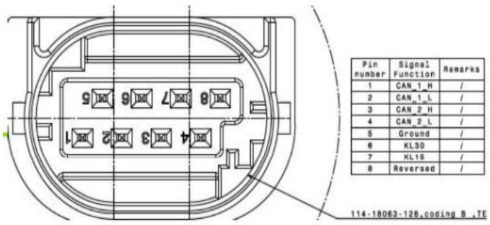
Step 2 - wiring harness checks - DCDC

STELLANTIS

Figure 2 – DC/DC assembly on supporting tray



Pin number	Signal Function	Remarks
1	CAN_1_H	/
2	CAN_1_L	/
3	CAN_2_H	/
4	CAN_2_L	/
5	Ground	/
6	KL30	/
7	KL15	/
8	Reversed	/

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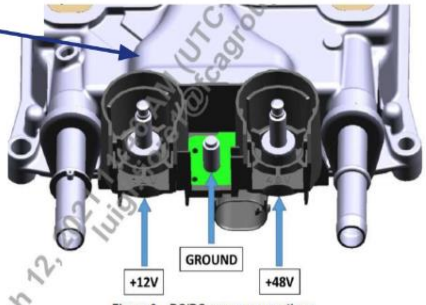

Figure 3 – DC/DC power connections

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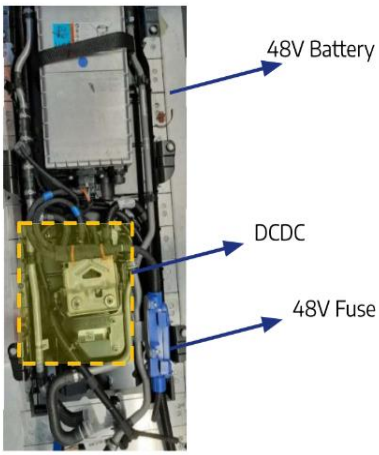
Vehicle picturess

STELLANTIS

LV Battery



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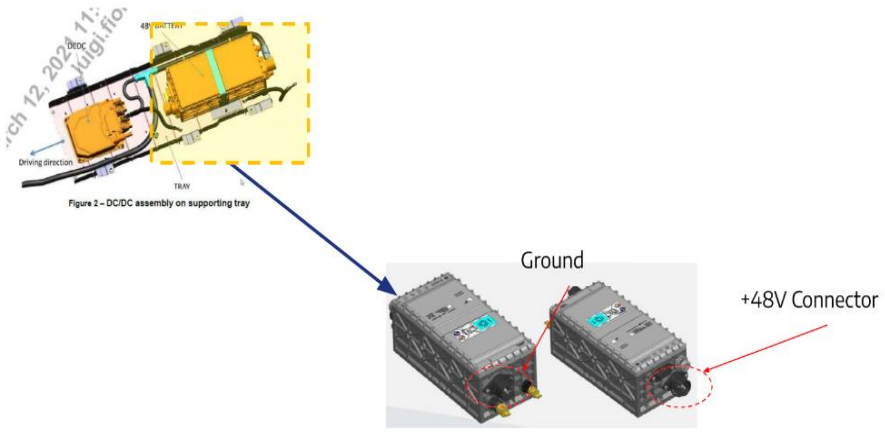
Step 2 - wiring harness checks - 48V Battery

STELLANTIS



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Step 2 - wiring harness checks - measurements

STELLANTIS

test #	Action	Description	Expected value	Results
1	Torque measurement	Thightening torque on Inverter +48V	16Nm +/- 10%	
2		Thightening torque on Inverter -48V	16Nm +/- 10%	
3		Thightening torque on DCDC +48V	16Nm +/- 10%	
4		Thightening torque on DCDC +12V	16Nm +/- 10%	
5		Thightening torque on DCDC GND	16Nm +/- 10%	
6		Thightening torque on Battery +48V	16Nm +/- 10%	
7		Thightening torque on Battery -48V	16Nm +/- 10%	
8		Thightening torque on 48V fuse top	11Nm	
9		Thightening torque on 48V fuse bottom	11Nm	

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Step 2 - wiring harness checks - measurements

STELLANTIS

test #	Action	Description	Expected value	Results
10	Continuity checks	continuity check +48V DCDC to +48V Inverter	OK	
11		continuity check +48V DCDC to +48V battery	OK	
12		continuity check -48V GND to -48V battery	OK	
13		continuity check GND DCDC to -48V Inverter	OK	
14		continuity check +12V DCDC to LV battery	OK	
15		continuity check -48V Battery to -48V Inverter	OK	
16		continuity check +48V Battery to +48V Inverter	OK	

PRODUCT DEVELOPMENT - PROPULSION SYSTEM - Electric Drive System & Propulsion Controllers

Step 2 - wiring harness checks - measurements

STELLANTIS

test #	Action	Description	Expected value	Results
17	Capacity measurement	Capacity measurement between +48V DCDC and GND DCDC	3.7milliF	
18		Capacity measurement between +48V Inverter and -48V Inverter	3.7milliF	
19		Capacity measurement between +48V Battery and -48V Battery	3.7milliF	

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