

J1- Measuring the Capacitance of High-Voltage Power Electronics

Vehicles Affected

Models	Model Year	Model Type	VIN Range	Vehicle-Specific Equipment
Taycan	As of 2020 up to 2024	Y1A, Y1B, Y1C	N/A	Power Electronics

Revision History

Revision	Release Date	Changes
0	September 5, 2025	▪ Original document
1	September 10, 2025	▪ Update to Notes section under Service Information ▪ VAS special tool number corrected under Service Information

Condition

Customer complains of a red “Engine control error” in the instrument cluster (Figure 1). The workshop may find the following faults stored in the front and/or rear high-voltage power electronics CU and/or the DCDC Converter:

Front and/or rear high-voltage power electronics CU:

- P061B00_00AC80 - Internal Control Module Torque Calculation, Performance
- P0E9D00_00AC8E - DC/DC converter current sensor 2 - short circuit to ground
- P061A00_00ACFC - Internal Control Module Torque Performance

DCDC Converter (**NOTE:** these faults can be reproduced under full load acceleration):

- C113AF5_E10FF0 - HV voltage converter – control unit defective
- C113AF5_E11FF0 - HV voltage converter – control unit defective
- C113AF5_E12FF0 - HV voltage converter – control unit defective



Figure 1
“Engine control error” in instrument cluster”

Advanced Technical Information

Bulletin #: 2519.1

Part ID: 2791

2

Technical Background

The power electronics (PE) may lose capacitance over time due to electrical fatigue. This results in voltage fluctuations in the HV system that can cause HV components to shut off in addition to the above-mentioned fault codes.

Service Information

If the above-mentioned condition and fault code(s) exist, please measure the capacitance of both the front and rear high-voltage PE using a multimeter. Please start with the measurement of the front PE and then proceed to the measurement of the rear PE.

Notes:

- Observe general warning notes for working on the high-voltage vehicle electrical system.
- A multimeter with a measuring range up to 1,000 μF and measuring accuracy 1.2% must be used.
 - Fluke 179/175 true RMS multimeter or an alternative multimeter with same measuring range and accuracy may be used.
 - Snap-On Enhanced Multimeter EEDM535F (minimum required tool) is also acceptable.

Procedure:

1. Measure Front Power Electronics CU:
 - a. De-energize HV system with the service disconnect in the front trunk area and secure against reactivation. Verify absence of electrical charge.
 - b. Remove front luggage compartment trim panels and front luggage compartment liner (panels (front) plenum panel cover, front trim panel (engine compartment), tool kit support, and luggage compartment liner).

- c. Remove the dome strut in the front trunk area (Reference: WM, 408619A2 Removing and installing strut (dome strut)) (Figure 2).

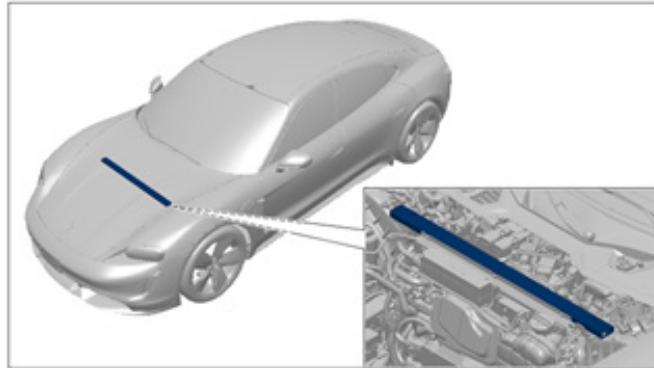


Figure 2 - Dome Strut

- d. Disconnect front HV PE traction cable connector (high-voltage connector).
e. Install special tool VAS 6558A/38A-2 to front HV PE traction cable connector.
f. Set multimeter to the capacitance measurement setting. Insert the red and black probes of the multimeter to the special tool leads labeled 1 and 2, respectively (Figure 3).
g. Wait at least 10 seconds for the measurement to stabilize. Record the capacitance value once stabilized.
h. Reinstall all components in reverse order.



**Figure 3 - Measuring Capacitance
on Front PE**

2. Measure Rear Power Electronics CU:

- a. Observe general warning notes for working on the high-voltage vehicle electrical system.
- b. Remove rear cargo anchoring system eyelets.
- c. Remove rear luggage compartment cover and insulating mat underneath.
- d. Open access port lid (body cover) to access rear PE.
- e. Disconnect HV PE traction cable connector (high-voltage connector) and install HV cable 9J1971015B.
- f. Set multimeter to capacitance measurement setting. Insert the red and black probes of the multimeter to the red and black leads of the HV cable (9J1971015B), respectively.
- g. Wait at least 10 seconds for the measurement to stabilize. Record the capacitance value once stabilized.
- h. Reinstall all components in reverse order.



Figure 4 - Measuring Capacitance on Rear PE

3. Compare measurements to the chart below (Table 1). Replace any PE with a capacitance measurement that does not meet or exceed the lower tolerance limit. Please document the capacitance measurements in the PCSS job.

Table 1: Reference Capacitance Values for Front and Rear PE

Power Electronics	Model	Factory Setpoint (μF)	Lower Tolerance Limit (μF)
Front axle	All (except Turbo S)	420	320
Front axle	Turbo S	840	640
Rear axle	All	840	640

Advanced Technical Information

Bulletin #: 2519.1

Part ID: 2791

2

Warranty

The following labor operations may only be claimed **as needed**:

APOS	Labor operation	I No.
03350053	On board diagnostic	
40861903	Strut remove and reinstall	
27915501	Power electronics replace (front)	
27915503	Power electronics replace (rear)	

Additional labor operations may also be claimed **only as needed**.

PCSS encryption:

Location (FES5)	27910	Power electronics
Damage type (SA4)	1613	No function occasionally

Search Items

J1, Taycan, power electronics, measurement, capacitance, high-voltage power electronics, dc/dc converter

Important Notice: Technical Bulletins issued by Porsche Cars North America, Inc. are intended only for use by professional automotive technicians who have attended Porsche service training courses. They are written to inform those technicians of conditions that may occur on some Porsche vehicles, or to provide information that could assist in the proper servicing of a vehicle. Porsche special tools may be necessary in order to perform certain operations identified in these bulletins. Use of tools and procedures other than those Porsche recommends in these bulletins may be detrimental to the safe operation of your vehicle, and may endanger the people working on it. Properly trained Porsche technicians have the equipment, tools, safety instructions, and know-how to do the job properly and safely. Part numbers listed in these bulletins are for reference only. The work procedures updated electronically in the Porsche PIWIS diagnostic and testing device take precedence and, in the event of a discrepancy, the work procedures in the PIWIS Tester are the ones that must be followed.