

Taycan – Troubleshooting HV Faults

Vehicles Affected

Models	Model Year	Model Type	VIN Range	Vehicle-Specific Equipment
Taycan	As of 2020 up to 2022	Y1A, Y1B, Y1C	N/A	N/A

Revision History

Revision	Release Date	Changes
0	June 15, 2022	Original document

Condition

The following document aims to assist Porsche Dealership service and support personnel with diagnosis of select fault codes pertaining to high-voltage systems. This document will be updated and re-published when new information becomes available.

Feedback on any existing documentation (the Workshop Manual or Guided Fault Finding, for example) is highly encouraged.

Please submit any feedback via PRMS: https://ppn.porsche.com/portal/community/porsche_cars_north_america/after_sales/support/blog/2020/11/11/information-media-error-reporting-and-feedback-to-document-function

Technical Background

Self-diagnosis and monitoring routines within the PIWIS Tester, the vehicle, vehicle systems, and control units can result in erroneous Fault Codes, DTCs, or warnings.

Service Information

Diagnosis should be performed using the information contained here in conjunction with existing diagnostic information and tools (e.g. the Workshop Manual, published TIs, and Guided Fault Finding).

Diagnostic Tip #1

Thermal Management (TME) CU Fault Code B182D16 “Electric interior heater (HV-PTC) 800 V electronics - voltage too low.” This fault appears often when the HV system does not start, but rarely indicates a real issue. Focus next diagnostic steps on figuring why the HV system is not starting.

Diagnostic Tip #2

The Gateway control unit (Part ID 9035) is the High Voltage Coordinator in the Taycan. There are many Gateway actual values available for information, but fault codes stored in the Gateway will typically reveal what is preventing the HV system from starting. Knowing the complete FC + DTC title helps identify a diagnostic starting point.

Example: Gateway Fault U112300, “Data bus – fault value received.”

This fault appears vague at first glance, but there is valuable information available when viewing diagnostic information based upon the specific Diagnostic Trouble Code (DTC). There are over 60 different DTC's for FC U112300.

E.g. U112300-FF0008, “No_Component_Function_BMS”, indicates the HV system does not start due to HV battery control is not functioning correctly.

Refer to Appendix A at the end of the document for a list of HV-related Gateway faults including DTCs. Each fault and sub-fault/DTC contains a title that provides valuable information about the status of the HV systems.

Diagnostic Tip #3

Some HV faults cause the HV Battery to enter “Emergency Off” mode whereby the HV system locks and prevents the vehicle from starting.

Faults that cause the vehicle to enter Emergency Off mode can be serious (Cell Voltage Limit Reached, for example), while some faults can be erroneous (faults that set due to a mishandled 12V jump-start, for example).

Example: several occurrences of Gateway Fault U112300, “Data bus – fault value received”, including U112300-FF0044. The DTC information in Appendix A lists this fault as, “UCell_UL_Failure_HV Battery”.

With the complete fault title, the technician sees there is a Fault + DTC indicating why the HV system entered Emergency Off mode.

Note: It is possible to erase all faults from the HV battery and for the “Emergency Off” mode to remain active in the HV battery. Switching the HV system back on requires a reset function with the PT3G.

With PT3G, go to *BMS (High-Voltage Battery CU) --> Drive Links --> Resetting cell module deactivation*. If the HV systems are fully functional and healthy, the vehicle can then be switched on and driven.

Diagnostic tip #4

It is important to understand various **scenarios and errors that can occur during 12V jump-starting**.

- Always use the approved Deutronic power supply (VAS 5908) to jump-start a Taycan, when possible.
- The HV system normally provides energy to recharge the 12-volt battery. If the HV system has errors and does not activate, then it will not charge the 12-volt battery.
- Ensure the 12-volt battery recharges by the HV system or an external power supply.
- If the vehicle must be jump-started using a jump box, be sure to switch on the vehicle and confirm the HV system is active immediately after energizing the 12-volt system. As the 12-volt battery was extremely low on charge, it will not keep the car powered up for long (sometimes only a few seconds, for example – it depends on how deeply the 12-volt battery is discharged)
- Observe existing workshop manual and technical information documents concerning jump-start of the 12-volt battery.
- **Do not leave a jump box connected after the 12-volt battery is re-activated.** Even a fully charged jump box may have a lower output voltage than the discharged 12-volt battery; this can result in the jump box actually bringing the 12-volt battery voltage down, even though it successfully reactivated it.
- **Important: Confirming the HV system is active**
If the 12-volt battery indicator (instrument cluster image, below) is red or yellow, the HV system did not start and the 12-volt system is not charging. Additional warning messages are likely to be displayed.



Figure 2

- If this warning indicator appears after jump-starting, immediately cycle the ignition off and back on again. It is possible for this error to happen when jump starting, even if the only problem was a discharged battery. Confirm the errors are gone and the HV system is active. If these warnings and indicator cannot be cleared after a few ignition cycles, turn off the car and provide an external power supply to the 12-volt battery as soon as possible.
- **Avoid leaving a jump box connected to the vehicle with the HV system deactivated.** If the 12-volt battery contactor opens again, then the electrical system is powered only by the jump box. Once the system voltage becomes low, a wide variety of erroneous faults will set, and it can take a lot of working time to recover. For example, the HV battery erroneously sets faults for cell overvoltage and undervoltage, and the HV system is then locked.

Diagnostic tip #5

- If the 12-volt battery is able to switch on the ignition, then it is likely not an underlying issue with the vehicle. If it has enough power to turn on the vehicle lights, then it has enough power to activate the HV system. Do not incorrectly associate HV system errors with the 12-volt battery.
- Keep the customer's complaint in consideration. If the complaint is a no-start with multiple warnings, and the 12-volt battery became discharged later, then the 12-volt battery did not likely cause the problem. Therefore, it is recommended to recharge the 12-volt battery and continue diagnosing the HV system.

Diagnostic tip #6

- Not all fault codes which can be stored in a control unit are indicating a failure. During vehicle and vehicle software development, all similar messages are categorized as A) Faults, B) Development Faults, or C) Notes or Notices ("Hinweis"). After the software is implemented in vehicle production, the vehicle control units compile all three message types into one category: Faults.
- It is important to note many faults are intended as informational notices; they are usually "Hinweis_Prio 6" in the fault code freeze-frame data. Actual fault codes are typically Priority 1 through 4.
- Examples from the High-Voltage Charger (On-Board Charger, OBC):
 - U15AC00 - Signal damping log, Malfunction
 - U15BF00 - Intelligente Ladefunktion, fehlerhafte Kommunikation
 - U15AE00 - Quick battery charging (DC), Charging station communication failure
 - >> These faults are just notices, and can typically be ignored.
 - >> For example, U15AE00 is normally unrelated to on-board diagnostics, but may become relevant if there are consistent failures to start charging at multiple DC chargers.
- The following faults are commonly stored in the On-Board Charger (OBC) of a vehicle that is fully functional and working as designed.
 - B200000, B1A88F3, B1A8AF3, P16EF00, P1A3500, P31E900, P31EA00, P33EA00, P33EB00, P33EF00, P33F000, U112100, U112200, U13AE00, U14CA00, U15A900, U15AB00, U15AC00, U15AD00, U15AE00, U15AF00, U15B100, U15B300, U15B500, U15BF00, and U15C900
- Always consider which faults or notices may or may not be relevant to the customer complaint.

Appendix A: Fault Code Titles

Fault	Sub-Fault	Usable Title (translated)
U112300	91000F	DCDC Converter_No_Component_Function
U112300	FF0006	Operating_Mode_Error_HV Battery
U112300	FF0008	No_Component_Function_HV Battery
U112300	FF0009	Power_Limitation_HV Battery
U112300	FF000A	Service_Disconnect_HV Battery
U112300	FF000B	Interlock(HVIL/Pilot line)_HV Battery
U112300	FF000C	Fault_2_Isolation (insulation resistance)_HV Battery
U112300	FF000D	Fault_1_Isolation (insulation resistance)_HV Battery
U112300	FF0012	Operating_Mode_Error_DCDC Converter
U112300	FF0014	No_Component_Function_DCDC Converter
U112300	FF001A	Operating_Mode_Error_On Board Charger
U112300	FF001C	No_Component_Function_On Board Charger
U112300	FF001D	Interlock(HVIL/Pilot line)_On Board Charger
U112300	FF0025	No_Component_Function_Drive_DME
U112300	FF0026	No_Component_Function_EM_DME
U112300	FF0027	Interlock(HVIL/Pilot line)_EM_DME
U112300	FF0028	section_mode_EM_DME
U112300	FF0029	cutoff_operation_strategy_EM_DME
U112300	FF002A	Interlock(HVIL/Pilot line)_Rear Power Electronics
U112300	FF002B	Discharging_Defect_Rear Power Electronics
U112300	FF0033	Error_HV Heater
U112300	FF0034	Interlock(HVIL/Pilot line)-HV Heater
U112300	FF0035	Internal_Failure-Airbag_Deactivated_HV
U112300	FF0038	Airbag_Crash_Type_small

Fault	Sub-Fault	Usable Title (translated)
U112300	FF0039	Airbag_Crash_Type_heavy
U112300	FF003B	Airbag_Crash_Type_History_small
U112300	FF003C	Total_Free_Voltage
U112300	FF003F	Error_HV Compressor
U112300	FF0040	Interlock(HVIL/Pilot line)_HV Compressor
U112300	FF0041	Operating_Mode_Error_HV Heater
U112300	FF0042	Operating_Mode_Error_HV Compressor
U112300	FF0043	UCell_UL_HV Battery
U112300	FF0044	UCell_UL_Failure_HV Battery
U112300	FF0049	HV Battery_Voltage_DC Link2_Failure
U112300	FF0051	Voltage_Off_Failure_HV Booster
U112300	FF0054	Operating_Mode_Error_HV Booster
U112300	FF0056	No_Component_Function_HV Booster
U112300	FF0057	Interlock(HVIL/Pilot line)_HV Booster
U112300	FF0058	Actual_Voltage_HV_Failure_HV Booster
U112300	FF0062	NO_Voltage_HV_HV Compressor
U112300	FF0063	NO_Voltage_HV_HV Heater
U112300	FF0064	No_Component_Function_Rear Power Electronics
U112300	FF006A	HV Charging Management(OBC)_Actual_Voltage_Failure
U112300	FF006F	HV Battery_Voltage_DC Link (voltage)_Failure
U112300	FF0073	DCDC onverter Actual_Voltage_HV_Failure_Value
U112300	FF0074	Voltage_Off_failure_HV Battery
U112300	FF0075	Voltage_Off_failure_On Board Charger
U112300	FF0076	Voltage_Off_failure_Rear Power Electronics

Fault	Sub-Fault	Usable Title (translated)
U112300	FF0078	AC_Phase_breakoff_Rear Power Electronics
U112300	FF0086	Rear Power Electronics_actual_voltage_failure
U112300	FF008B	No_Component_Function_Front Power Electronics
U112300	FF008C	Voltage_Off_failure_Front Power Electronics
U112300	FF008E	Front Power Electronics_actual_voltage_failure
U112300	FF014D	Interlock(HVIL/Pilot line)_DCDC Converter
U112300	FF0157	Discharging_Defect_DCDC Converter
U112300	FF0160	AC_Phase_breakoff_Front Power Electronics
U112300	FF0161	Interlock(HVIL/Pilot line)_Front Power Electronics
U112300	FF0168	Discharging_Defect_Front Power Electronics
U112300	FF0200	Discharging_Defect_Front Power Electronics
U112200	FF0037	Airbag_Message_Failure
U112200	FF0046	Message_Failure_HV Battery_30
U112200	FF004B	Message_Failure_HV Battery_14
U112200	FF0053	Message_Failure_HV Booster
U112200	FF008A	Message_Failure_Front Power Electronics_HYB11
U112200	FF0165	Message_Failure_Front Power Electronics_HYB14
U112100	FF0036	Airbag_Time_Out
U112100	FF0047	Timeout_Error_HV Battery_30
U112100	FF004A	Timeout_Error_HV Battery_14
U112100	FF0052	Timeout_Error_HV Booster
U112100	FF0089	Timeout_Error_Front Power Electronics_HYB11
U112100	FF0164	Timeout_Error_Front Power Electronics_HYB14
U13EA00	FF0099	high_voltage_system_locked

Fault	Sub-Fault	Usable Title (translated)
U059900	FF0011	Message_Failure_DCDC Converter_03
U059900	FF006D	Message_Failure_DCDC Converter_01
U049C00	FF0019	Message_Failure_On Board Charger
U049C00	FF0068	Message_Failure_HV Charging Management(OBC)_03
U049C00	FF0097	Message_Failure_HV Charging Management(OBC)_04
U045600	910058	TME (Thermal Management)_Message_Failure
U045600	FF0031	TME (Thermal Management)_Message_Failure
U041300	910050	HV Battery_07_Message_Failure
U041300	910052	HV Battery_09_Message_Failure
U041300	910054	HV Battery_10_Message_Failure
U041300	91004E	HV Battery_02_Message_Failure
U041300	FF0005	Message_Failure_HV Battery_04
U041300	FF0070	Message_Failure_HV Battery_01
U041100	FF0066	Message_Failure_Rear Power Electronics_HYB11
U041100	FF0162	Message_Failure_Rear Power Electronics_HYB14
U040100	910056	DME_14_Message_Failure
U040100	91005A	DME_Message_Failure
U040100	FF0023	Message_Failure_DME
U029800	FF0010	Timeout_Error_DCDC Converter_03
U029800	FF006E	Timeout_Error_DCDC Converter_01
U019B00	FF0018	Timeout_Error_On Board Charger
U019B00	FF0069	Timeout_Error_HV Charging Management(OBC)
U019B00	FF0098	Timeout_Error_HV Charging Management(OBC)_04
U011600	910059	TME (Thermal Management)_01_Timeout

Fault	Sub-Fault	Usable Title (translated)
U011600	FF0030	Time_Out_TME (Thermal Management)
U011200	910051	HV Battery_07_Timeout
U011200	910053	HV Battery_09_Timeout
U011200	910055	HV Battery_10_Timeout
U011200	91004F	HV Battery_02_Timeout
U011200	FF0004	Timeout_Error_HV Battery_04
U011200	FF0071	Timeout_Error_HV Battery_01
U011000	FF0067	Timeout_Error_Rear Power Electronics_HYB11
U011000	FF0163	Timeout_Error_Rear Power Electronics_HYB14
U010000	910057	DME_14_Timeout
U010000	91005B	DME_01_Timeout
U010000	FF0022	Timeout_Error_DME
C129AF0	FF0087	Initialization_Failure_Front Power Electronics
C129AF0	FF0088	Initialization_Failure_Voltage_Off_Front Power Electronics
C129AF0	FF008D	Front Power Electronics_actual_voltage_Initialization_failure
C1220F0	FF0061	Deep Discharge_Protection_HV_Battery
C11C5F5	FF009D	Failure_Wire_5 -Invalid voltage difference between actual voltage of HV charging network and HV battery voltage.
C11C5F3	FF009B	Failure_Wire_3 -Invalid voltage difference between actual voltage of Front Power Electronics and HV battery voltage.
C11C5F2	FF0060	Failure_Wire_2-Invalid voltage difference between actual voltage DCDC converter and HV battery voltage
C11C5F1	FF003D	Failure_Wire_1-Invalid voltage difference between actual voltage of Rear Power Electronics and HV battery voltage.
C11C5F0	FF003A	Airbag_Crash_History_Type_heavy
C11BAF0	FF0001	Initialization_Failure_Actual_State_HV Battery

Fault	Sub-Fault	Usable Title (translated)
C11BAF0	FF0002	Initialization_Failure_HV Battery
C11BAF0	FF0003	Initialization_Failure_Voltage_Off_HV Battery
C11BAF0	FF0007	Operating Mode_Failure_HV Battery
C11BAF0	FF0045	Initialization_Failure_Cell_Overvoltage_HV Battery
C11BAF0	FF0048	Initialization_Failure_Voltage_DC Link2
C11BAF0	FF0072	Initialization_Failure_Voltage_DC Link
C11B9F0	FF002C	Actual_Mode_HV heater
C11B9F0	FF002D	Internal_Failure_State_HV Heater
C11B9F0	FF002E	Actual_Mode_HV Compressor
C11B9F0	FF002F	Internal_Failure_State_HV Compressor
C11B9F0	FF0032	Operating Mode_Failure_HV Heater
C11B9F0	FF003E	Failure_Operating Mode-HV Compressor
C11B8F0	FF0015	Initialization_Failure_Actual_State_On Board Charger
C11B8F0	FF0016	Initialization_Failure_On Board Charger
C11B8F0	FF0017	Initialization_Failure_Voltage_Off_On Board Charger
C11B8F0	FF001B	Operating Mode_Failure_On Board Charger
C11B8F0	FF006B	Initialization_Failure_Actual_Voltage_HV_On Board Charger
C11B7F0	FF000E	Initialization_Failure_Actual_State_DCDC Converter
C11B7F0	FF000F	Initialization_Failure_DCDC Converter
C11B7F0	FF0013	Operating Mode_Failure_DCDC Converter
C11B7F0	FF0065	Initialization_Failure_Voltage_Off_Rear Power Electronics
C11B7F0	FF006C	Initialization_Failure_Actual_Voltage_DCDC Converter
C11B7F0	FF0077	Initialization_Failure_Rear Power Electronics
C11B7F0	FF0085	Rear Power Electronics_actual_voltage_Initialization_failure

Fault	Sub-Fault	Usable Title (translated)
C113AF3	FF004D	Initialization_Failure_HV Booster
C113AF3	FF004E	Initialization_Failure_Actual_Voltage_HV_HV Booster
C113AF3	FF004F	Initialization_Failure_Voltage_Off_HV Booster
C113AF0	FF004C	Initialization_Failure_Actual_State_HV Booster
C113AF0	FF0055	Operating Mode_Failure_HV Booster
B106DF1	FF001E	Initialization_Failure_Actual_State_DME
B106DF1	FF001F	Initialization_Failure_DME
B106DF1	FF0020	Initialization_Failure_Drive_Status (DME)
B106DF1	FF0021	Initialization_Failure_Engine_DME
B106DF1	FF0024	Operating Status_Error_DME

Warranty

Please document customer complaint cases and attach vehicle analysis logs to corresponding complaint lines in PCSS/PQIS.

Search Items

Taycan, High Voltage, HV, OBC, faults, fault codes, diagnosis

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.