

Communication practice task list - fault verification

Phenomenon	Symptom						
	Can the heavy current be supplied?	Is READY available?	Is driving possible?	Is acceleration possible?	Does any alarm lamp on the instrument panel come on? (If any, record it)	Are any other abnormalities displayed by the instrument panel? (If any, record it)	Remarks of other abnormalities
H (high voltage) - CAN (H) short to H (high voltage) - CAN (L)	N	N	N	N	None	N flashing	
H (high voltage) - CAN (H) short to ground	N	N	N	N	None	N flashing	
H (high voltage) - CAN (L) short to ground	N	N	N	N	The turtle lamp comes on.	N flashing	
P (low pressure) - CAN (H) short to P (low pressure) - CAN (L)	N	N	N	N	The ABS and ESC lamps come on.	N flashing	
P (low pressure) - CAN (H) short to ground	Y	N	N	N	The ABS and ESC lamps come on.	N flashing	
P (low pressure) - CAN (L) short to ground	Y	N	N	N	The ABS and ESC lamps come on.	N flashing	
B (body) - CAN (H) short to B (body) - CAN (L)	Y	N	N	N	TPMS lamp, EPB lamp, PS lamp, and brake alarm lamp come on.	Gear can be displayed.	EPB can not be released.
B (body) - CAN (H) short to ground	Y	N	N	N	TPMS lamp, EPB lamp, PS lamp, and brake alarm lamp come on.	Gear can be displayed.	EPB can not be released.
B (body) - CAN (L) short to	Y	N	N	N	TPMS lamp, EPB lamp, PS	Gear can be displayed.	EPB can not be

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ground					lamp, and brake alarm lamp come on.		released.
The gateway module is damaged (MCU).	N	N	N	N	N gear flashing, no driving range, traction battery temperature display.		Power off is available.
The gateway module is damaged (instrument).	N	N	N	N	None (instrument does not work).		Power off is unavailable.
P- CAN terminal resistor is disconnected.	N	N	N	N	N gear flashing, no driving range, traction battery temperature display.		Power off is available.
B-CAN terminal resistor is disconnected.	N	N	N	N	None (instrument does not work).		Power off is unavailable.

Measure the terminal resistance values under 60/120Ω. What are the voltage values of CAN-H and CAN-L?

60/120Ω: H-CAN: $U_{CAN-H} = 2.43V$ $U_{CAN-L} = 2.14V$

P-CAN: $U_{CAN-H} = 2.65V$ $U_{CAN-L} = 2.32$

B-CAN: $U_{CAN-H} = 2.6V$ $U_{CAN-L} = 2.4V$

- Summary:**
- 1. P-CAN, B-CAN network cable short to each other or separate short to ground will not affect the vehicle high voltage power-on.**
 - 2. If any CAN network fails during vehicle driving, the MCU will stop power distribution to the motor and the vehicle will be powered off immediately.**