

ELECT-14, Air Bag System Testing

Introduction

The information in this procedure comes from the Porsche factory airbag system diagnostics procedure. Personally, I have not had the opportunity to use this procedure yet. So, for now, we have to assume that the factory procedure works as written. If you attempt to use this procedure and determine that changes need to be made, please let me know.

The airbag system has an internal diagnostics system which continuously monitors the condition of the system. Any faults in the system are indicated by an "Airbag" warning light on the instrument cluster. When the ignition is turned on and when the engine is started, the "Airbag" light illuminates and remains lit for 5 seconds. If no faults in the system are detected, the "Airbag" light will then extinguish.

Testing the air bag system will require you to make up a test rig to apply a ground to the air bag test connector. The Air Bag Warning Light Reset procedure ([ELECT-12](#)) contains instructions for fabricating the test rig.

After the ground is applied to the test connector, the "Airbag" light will blink in a series of codes to indicate the faults stored in the system's memory. It takes approximately 2 minutes to detect all faults once the test is started. Therefore, the ignition switch must be on for at least 2 minutes during the test.

Tools

- Improvised Test Rig
- Pen and paper for recording fault codes

Procedure

1. Turn the ignition switch off.
2. Connect the test rig from the airbag molex test connector to ground.
3. Depress and hold the switch/pushbutton on the test.
4. Turn the ignition switch on.
5. Release the test rig pushbutton 3 seconds after the ignition switch is turned on.
6. Count and record the lamp blink codes. The lamp blink codes will run as follows:
 - a. 5 second lamp test.
 - b. Light flashes 1 or more times depending on the number of faults.
 - c. After 3 seconds the fault codes will start.
 - d. Light flashes 1 to 4 times to indicate the fault code group.
 - e. 3 second pause.
 - f. Light flashes 1 to 4 times to indicate the line in the fault table.
 - g. 3 second pause.

- h. Light flashes 1 to 4 times to indicate the column in the fault table.
- i. 3 second pause.
- j. Light flashes 1 or 2 times.
 - 1. 1 = Short-time fault
 - 2. 2 = Long-time fault
- k. 3 second pause.
 - l. Next fault code sequence starts.
 - m. Air bag light remains lit at the end of the test.
- 7. Using the lamp code table, determine the system faults and take corrective actions as described in the "Correcting Faults" section.
- 8. After all testing is complete and all faults have been corrected, reset the airbag warning light ([ELECT-12](#)).

The flash code test may be repeated as often as desired.

Lamp Code Table

Air Bag System Lamp Codes					
Group 1					Line
	01	11	21	31	1
	05		25		2
	09	19	29		3
	0D	1D	2D		4
Column	1	2	3	4	
Group 2					Line
	02	12	22	32	1
	06		26		2
	0A	1A	2A		3
	0E	1E	2E		4
Column	1	2	3	4	
Group 3					Line
	03	13	23	33	1
	07	17	27		2

	0B	1B	2B		3
		1F	2F		4
Column	1	2	3	4	
Group 4					Line
	04	14	24	34	1
	08	18	28		2
	0C	1C	2C		3
		20	30		4
Column	1	2	3	4	

Air Bag Fault Codes

Fault Code Table		
Hex-Code	Fault Description	Fault
01	Front Sensor Left	Closed 1 time
02	Front Sensor Left	Closed several times
03	Front Sensor Right	Closed 1 time
04	Front Sensor Right	Closed several times
05	Front Sensor Left	Closed permanently
06	Front Sensor Right	Closed permanently
07	Front Sensor Lead Left	Leaks against positive
08	Front Sensor Lead Right	Leaks against positive
09	Front Sensor Lead Left	Leaks against ground
0A	Front Sensor Lead Right	Leaks against ground
OB	Front Sensor Lead Left	Short circuit against positive
OC	Front Sensor Lead Right	Short circuit against positive
OD	Front Sensor Lead Left	Short circuit against

Fault Code Table		
Hex-Code	Fault Description	Fault
		ground
OE	Front Sensor Lead Right	Short circuit against ground
11	Front Sensor Lead Left	Break
12	Front Sensor Lead Right	Break
13	Front Sensor Lead Left	Excessive resistance
14	Front Sensor Lead Right	Excessive resistance
17	Ignition Capacitor 1	Insufficient capacitance
18	Ignition Capacitor 2	Insufficient capacitance
19	Transition resistance to ignition capacitor 1	Excessive
1A	Transition resistance to ignition capacitor 1	Excessive
1B	Ignition Pill Circuit 1	Leak against positive
1C	Ignition Pill Circuit 2	Leak against positive
1D	Ignition Pill Circuit 3	Leak against positive
1E	Ignition Pill Circuit 1	Short circuit against positive
1F	Ignition Pill Circuit 2	Short circuit against positive
20	Ignition Pill Circuit 3	Short circuit against positive
21	Ignition Pill Circuit 1	Leak against ground
22	Ignition Pill Circuit 2	Leak against ground
23	Ignition Pill Circuit 3	Leak against ground
24	Ignition Pill Circuit 1	Short circuit against ground
25	Ignition Pill Circuit 2	Short circuit against ground

Fault Code Table		
Hex-Code	Fault Description	Fault
26	Ignition Pill Circuit 3	Short circuit against ground
27	Ignition Pill Circuit 1	Break
28	Ignition Pill Circuit 2	Break
29	Ignition Pill Circuit 3	Break
2A	Ignition Pill Circuit 1	Insufficient resistance
2B	Ignition Pill Circuit 2	Insufficient resistance
2C	Ignition Pill Circuit 3	Insufficient resistance
2D	Ignition Pill Circuit 1	Excessive resistance
2E	Ignition Pill Circuit 2	Excessive resistance
2F	Ignition Pill Circuit 3	Excessive resistance
30	Failure Warning Lamp	Short circuit
31	Failure Warning Lamp	Broken filament
32	Control Unit	Internal fault
33	Firing Order Correct	
34	Ignition Current Flowed	

Ignition pill circuit 1: Driver's airbag
 Ignition pill circuits 2 and 3: Passenger's airbag

Correcting Faults

Faults 01 to 06

Replace left or right front sensor.

Faults 07 to 0E

Check front sensor with ohmmeter.

1. Terminals 1 and 2 reading: 10 kOhm.
2. Terminals 2 and 3 reading: 0 Ohm.

If correct readings are obtained, erase the fault memory. If the fault is still present, replace the control unit. If the correct readings are not obtained, replace the front sensor.

Fault 11 or 12

Check front sensor plug connection for correct tightness.

Check front sensor with ohmmeter (see Faults 07 to 0E).

If ohmmeter shows infinite resistance (∞ Ohm) for point 1 or 2, replace the front sensor. If the readings are obtained, replace the control unit.

Fault 13 or 14

Check front sensor with ohmmeter (see Faults 07 to 0E).

If front sensor checks okay, replace control unit.

Faults 17 to 1A

Replace control unit. **Faults 1B, 1E, 21, 24**

Try installing new contact unit.

Attempt to reset airbag warning light ([ELECT-12](#)) and then turn the ignition on.

If fault is still present, try installing an airbag unit.

Attempt to reset airbag warning light ([ELECT-12](#)) and then turn the ignition on.

If fault is still present, replace control unit.

Faults 1C, 1D, 1F, 20, 22, 23, 25, 26

Try installing a new airbag unit.

Attempt to reset airbag warning light ([ELECT-12](#)) and then turn the ignition on.

If fault is still present, replace control unit.

Fault 27

Check tightness of plug connection to airbag unit.

Check tightness of plug connection to contact unit.

If plug connections are tight, try installing a new contact unit.

Attempt to reset airbag warning light ([ELECT-12](#)) and then turn the ignition on.

If fault is still present, try installing an airbag unit.

Attempt to reset airbag warning light ([ELECT-12](#)) and then turn the ignition on.

If fault is still present, replace control unit.

Fault 28 or 29

Check tightness of plug connection to airbag unit.

If plug connections are tight, try installing a new airbag unit.

Attempt to reset airbag warning light ([ELECT-12](#)) and then turn the ignition on.

If fault is still present, replace control unit.

Faults 2A, 2B, 2C

Try installing an airbag unit.

Attempt to reset airbag warning light ([ELECT-12](#)) and then turn the ignition on.

If fault is still present, replace control unit.

Fault 2D

Replace the contact unit.

Check plug contacts of plug connections to airbag unit and contact unit for corrosion.

If contacts are in good condition, try connecting a new airbag unit.

Attempt to reset airbag warning light ([ELECT-12](#)) and then turn the ignition on.

If fault is still present, replace control unit.

Fault 2E or 2F

Check plug contacts of plug connections to airbag unit and contact unit for corrosion.

If contacts are in good condition, try connecting a new airbag unit.

Attempt to reset airbag warning light ([ELECT-12](#)) and then turn the ignition on.

If fault is still present, replace control unit.

Faults 30 and 31

Central warning lamp and belt symbol still light up after failure of the airbag sign.

Remove and check control lamp and replace if necessary.

Check wiring harness for damage and replace control unit if necessary.

Fault 32

Replace control unit.

Faults 33 and 34

Fault indications 33 and 34 are displayed only after an accident with airbag activation. In this case, all components must be replaced.

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