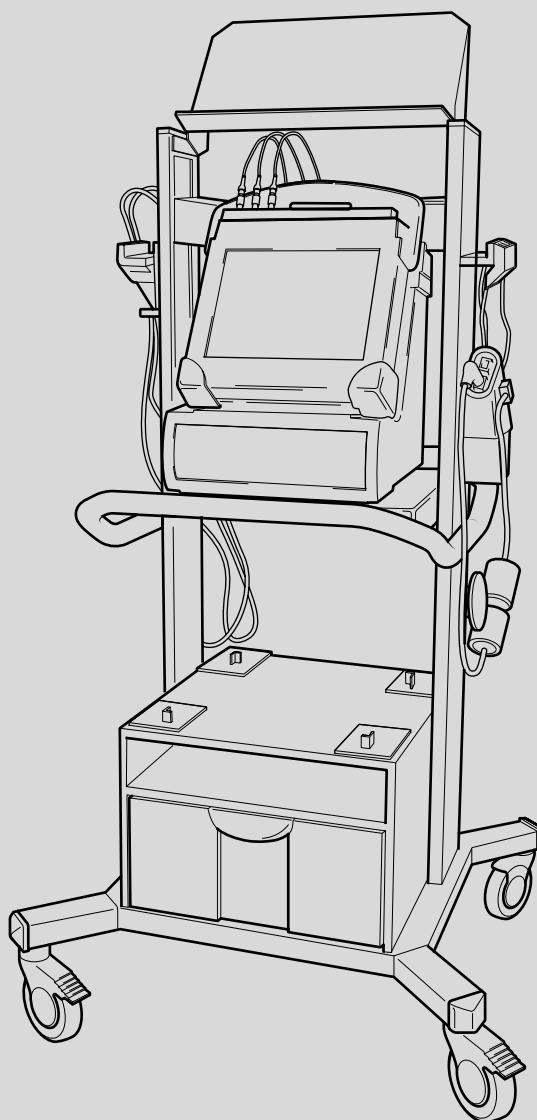


DAVIE XD diagnostics manual

LF45
LF55
CF65
CF75
CF85
XF95



DAF

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1. EBS FAULT CODES

1.1 INTRODUCTION

If the electronic unit detects a system fault, this fault is usually stored in the memory of the electronic unit as a fault code.
Most system faults will also generate a warning.

1.2 EXPLANATORY NOTES TO EBS FAULT CODES

If there is an electrical fault in the EBS system, the symptom "open circuit in EBS pressure control" or "deactivation of EBS pressure control" may occur as a system reaction.

Open circuit in EBS pressure control

On application of the foot brake valve, the electronic unit will receive information on the desired vehicle deceleration from the brake pedal position sensor in the foot brake valve.

In the electronic unit, this vehicle deceleration command is converted into brake pressure to the brake cylinders.

If there is no feedback from the output pressure or wheel speed, there will be less accurate electronically controlled deceleration and brake force distribution.

Deactivation of EBS pressure control

The output pressure control in the brake cylinders is entirely pneumatic; i.e. there is no more electronically controlled deceleration and brake force distribution.

Fault code	Fault code description with possible cause	Symptom
11-18	Voltage on pin A8 of the EBS unit is too low due to: - contact resistance or poor connection to pin A8 of the EBS unit	- ABS on front axle deactivated - ASR brake control deactivated - EBS pressure control on front axle and drawn vehicle deactivated
11-31	Extremely low voltage (<3 V) on pin A8 of the EBS unit due to: - excessive contact resistance on pin A8 of the EBS unit - interruption on pin A8 of the EBS unit	- ABS on front axle deactivated - ASR brake control deactivated - EBS pressure control on front axle and drawn vehicle deactivated
12-18	Voltage on pin A9 of the EBS unit is too low due to: - contact resistance or poor connection to pin A9 of the EBS unit - short circuit to earth on pin B7 of the EBS unit	- ABS on front and rear axles deactivated - ASR brake/engine control deactivated - EBS pressure control on rear axle deactivated
12-31	Extremely low voltage (<3 V) on pin A9 of the EBS unit due to: - excessive contact resistance on pin A9 of the EBS unit - interruption on pin A9 of the EBS unit	- ABS on front and rear axles deactivated - ASR brake/engine control deactivated - EBS pressure control on rear axle deactivated
	Short circuit to earth on pin E4 or B7 of the EBS unit	- ABS on front and rear axles deactivated - ASR brake/engine control deactivated - EBS pressure control on rear axle deactivated - Pin B7 is connected to earth inside the EBS unit while the power supply to A9 and E4 is interrupted inside the unit.

Fault code	Fault code description with possible cause	Symptom
13-18	Voltage on pin A7 of the EBS unit is too low due to: - contact resistance or poor connection to pin A7 of the EBS unit	- No noticeable system limitation in EBS
14-32	Sensor supply voltage on pins D9, B13 or E1 of the EBS unit due is too low due to: - contact resistance or poor connection on specified connection points of the EBS unit - short circuit to earth on specified connection points of the EBS unit	- No noticeable system limitation in EBS
14-33	Constant voltage, even if the ignition is turned off and the brake is not applied, on pin D9, B13 or E1 of the EBS unit due to: - short circuit to supply on specified connection points of the EBS unit	- No noticeable system limitation in EBS
15-33	Constant voltage, even if the ignition is turned off and the brake is not applied, on pin B7 of the EBS unit due to: - short circuit to supply on pin B7 of the EBS unit	- No noticeable system limitation in EBS
16-11	Internal failure in EBS electronic unit	- ABS on front and rear axles deactivated - ASR brake/engine control deactivated - EBS pressure control on front axle, rear axle and drawn vehicle deactivated
16-12	Configuration parameters in the electronic unit incorrect due to: - incorrect programming - retrofitted components without identification card (oxford) change	- ABS on front and rear axles deactivated - ASR brake/engine control deactivated - EBS pressure control on front axle, rear axle and drawn vehicle deactivated
16-15	Internal failure in EBS electronic unit	- ABS on front and rear axles deactivated - ASR brake/engine control deactivated - EBS pressure control on front axle, rear axle and drawn vehicle deactivated
16-17	Voltage (>32 V) on pins A7, A8 and A9 of the EBS unit is too high due to: - excessive alternator/battery voltage - inductive voltage of external component	- ABS on front and rear axles deactivated - ASR brake/engine control deactivated - EBS pressure control on front axle, rear axle and drawn vehicle deactivated
16-18	Voltage on pins A7, A8 and A9 of the EBS unit at a speed of >2 km/h is too low due to: - insufficient battery voltage - poor earth connection to EBS electronic unit	- ABS on front and rear axles deactivated - ASR brake/engine control deactivated - EBS pressure control on front axle, rear axle and drawn vehicle deactivated
16-53	Incorrect tyre size due to: - incorrectly programmed tyre size - tyre sizes of front and rear axles in different tyre classes without unit having been reprogrammed - The difference in peripheral speed between the left and right wheel on the same axle exceeds 10%	- ABS on front and rear axles deactivated - ASR brake/engine control deactivated
21-37	Interruption on pin C4 and/or C5 of the EBS unit, wheel speed sensor (F513)	- ABS on front axle, right deactivated - ASR brake/engine control deactivated

EBS

EBS fault codes

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Fault code	Fault code description with possible cause	Symptom
21-38	Unacceptable wheel speed sensor frequency signal from wheel speed sensor (F513) on pins C4 and C5 of the EBS unit due to: <ul style="list-style-type: none">- loose pole ring- wrong assessment by EBS unit	<ul style="list-style-type: none">- ABS on front and rear axles deactivated- ASR brake/engine control deactivated- EBS pressure control on front axle, rear axle and drawn vehicle deactivated
21-41	Short circuit to earth on pin C4 and/or C5 of the EBS unit, wheel speed sensor (F513)	<ul style="list-style-type: none">- ABS on front axle, right deactivated- ASR brake/engine control deactivated
21-42	Short circuit to supply on pin C4 and/or C5 of the EBS unit, wheel speed sensor (F513)	<ul style="list-style-type: none">- ABS on front axle, right deactivated- ASR brake/engine control deactivated
21-44	Short circuit on pin C4 and/or C5 of the EBS unit, wheel speed sensor (F513)	<ul style="list-style-type: none">- ABS on front axle, right deactivated- ASR brake/engine control deactivated
21-45	Incorrect wheel speed sensor sine-wave signal from wheel speed sensor (F513) on pins C4 and C5 of the EBS unit due to: <ul style="list-style-type: none">- distorted wheel speed sensor ring- damaged wheel speed sensor ring	<ul style="list-style-type: none">- ABS on front axle, right deactivated- ASR brake/engine control deactivated
21-46	No uniformity (frequency changes) of wheel speed sensor signal from wheel speed sensor (F513) on pins C4 and C5 of the EBS unit due to: <ul style="list-style-type: none">- heavy point due to brake disc wobble, for example	<ul style="list-style-type: none">- ABS on front axle, right deactivated- ASR brake/engine control deactivated
21-47	Excessive oscillation of wheel speed sensor signal (maximum/minimum level) from wheel speed sensor (F513) on pins C4 and C5 of the EBS unit due to: <ul style="list-style-type: none">- excessive wheel bearing play- incorrect mounting of wheel speed sensor ring	<ul style="list-style-type: none">- ABS on front axle, right deactivated- ASR brake/engine control deactivated
21-48	Minimum value of wheel speed sensor signal from wheel speed sensor (F513) on pins C4 and C5 of the EBS unit is too low due to: <ul style="list-style-type: none">- too large an air gap between wheel speed sensor ring and wheel speed sensor- contact resistance on pin C4 and/or C5 of the EBS unit	<ul style="list-style-type: none">- ABS on front axle, right deactivated- ASR brake/engine control deactivated
22-37	Interruption on pin D7 and/or D8 of the EBS unit, wheel speed sensor (F512)	<ul style="list-style-type: none">- ABS on front axle, left deactivated- ASR brake/engine control deactivated
22-38	Unacceptable wheel speed sensor frequency signal from wheel speed sensor (F512) on pins D7 and D8 of the EBS unit due to: <ul style="list-style-type: none">- loose pole ring- wrong assessment by EBS unit	<ul style="list-style-type: none">- ABS on front and rear axles deactivated- ASR brake/engine control deactivated- EBS pressure control on front axle, rear axle and drawn vehicle deactivated
22-41	Short circuit to earth on pin D7 and/or D8 of the EBS unit, wheel speed sensor (F512)	<ul style="list-style-type: none">- ABS on front axle, left deactivated- ASR brake/engine control deactivated
22-42	Short circuit to supply on pin D7 and/or D8 of the EBS unit, wheel speed sensor (F512)	<ul style="list-style-type: none">- ABS on front axle, left deactivated- ASR brake/engine control deactivated
22-44	Short circuit on pin D7 and/or D8 of the EBS unit, wheel speed sensor (F512)	<ul style="list-style-type: none">- ABS on front axle, left deactivated- ASR brake/engine control deactivated

Fault code	Fault code description with possible cause	Symptom
22-45	Incorrect wheel speed sensor sine-wave signal from wheel speed sensor (F512) on pins D7 and D8 of the EBS unit due to: - distorted wheel speed sensor ring - damaged wheel speed sensor ring	- ABS on front axle, left deactivated - ASR brake/engine control deactivated
22-46	No uniformity (frequency changes) of wheel speed sensor signal from wheel speed sensor (F512) on pins D7 and D8 of the EBS unit due to: - heavy point due to brake disc wobble, for example	- ABS on front axle, left deactivated - ASR brake/engine control deactivated
22-47	Excessive oscillation of wheel speed sensor signal (maximum/minimum level) from wheel speed sensor (F512) on pins D7 and D8 of the EBS unit due to: - excessive wheel bearing play - incorrect mounting of wheel speed sensor ring	- ABS on front axle, left deactivated - ASR brake/engine control deactivated
22-48	Minimum value of wheel speed sensor signal from wheel speed sensor (F512) on pins D7 and D8 of the EBS unit is too low due to: - too large an air gap between wheel speed sensor ring and wheel speed sensor - contact resistance on pin D7 and/or D8 of the EBS unit	- ABS on front axle, left deactivated - ASR brake/engine control deactivated
23-37	Interruption on pin B1 and/or B2 of the rear axle modulator (D879), wheel speed sensor (F515)	- ABS on rear axle, right deactivated - ASR brake/engine control deactivated
23-41	Short circuit to earth on pin B1 and/or B2 of the rear axle modulator (D879), wheel speed sensor (F515)	- ABS on rear axle, right deactivated - ASR brake/engine control deactivated
23-42	Short circuit to supply on pin B1 and/or B2 of the rear axle modulator (D879), wheel speed sensor (F515)	- ABS on rear axle, right deactivated - ASR brake/engine control deactivated
23-44	Short circuit between pins B1 and B2 of the rear axle modulator (D879), wheel speed sensor (F515)	- ABS on rear axle, right deactivated - ASR brake/engine control deactivated
23-45	Incorrect wheel speed sensor sine-wave signal from wheel speed sensor (F515) on pins B1 and B2 of the rear axle modulator (D879) due to: - distorted wheel speed sensor ring - damaged wheel speed sensor ring	- ABS on rear axle, right deactivated - ASR brake/engine control deactivated
23-46	No uniformity (frequency changes) of wheel speed sensor signal from wheel speed sensor (F515) on pins B1 and B2 of the rear axle modulator (D879) due to: - excessive wheel bearing play - incorrect mounting of wheel speed sensor ring	- ABS on rear axle, right deactivated - ASR brake/engine control deactivated

Fault code	Fault code description with possible cause	Symptom
23-47	Excessive oscillation of wheel speed sensor signal (maximum/minimum level) from wheel speed sensor (F515) on pins B1 and B2 of the rear axle modulator (D879) due to: <ul style="list-style-type: none"> - excessive wheel bearing play - incorrect mounting of wheel speed sensor ring 	<ul style="list-style-type: none"> - ABS on rear axle, right deactivated - ASR brake/engine control deactivated
23-48	Minimum value of wheel speed sensor signal from wheel speed sensor (F515) on pins B1 and B2 of the rear axle modulator (D879) is too low due to: <ul style="list-style-type: none"> - too large an air gap between wheel speed sensor ring and wheel speed sensor - contact resistance on pin B1 and/or B2 of the rear axle modulator 	<ul style="list-style-type: none"> - ABS on rear axle, right deactivated - ASR brake/engine control deactivated
24-37	Interruption in wheel speed sensor (F514) on pins C1 and C2 of the rear axle modulator (D879)	<ul style="list-style-type: none"> - ABS on rear axle, left deactivated - ASR brake/engine control deactivated
24-41	Short circuit to earth in wheel speed sensor (F514) on pins C1 and C2 of the rear axle modulator (D879)	<ul style="list-style-type: none"> - ABS on rear axle, left deactivated - ASR brake/engine control deactivated
24-42	Short circuit to supply in wheel speed sensor (F514) on pins C1 and C2 of the rear axle modulator (D879)	<ul style="list-style-type: none"> - ABS on rear axle, left deactivated - ASR brake/engine control deactivated
24-44	Short circuit between pins C1 and C2 of the rear axle modulator (D879), wheel speed sensor (F514)	<ul style="list-style-type: none"> - ABS on rear axle, left deactivated - ASR brake/engine control deactivated
24-45	Incorrect wheel speed sensor sine-wave signal from wheel speed sensor (F514) on pins C1 and C2 of the rear axle modulator (D879) due to: <ul style="list-style-type: none"> - distorted wheel speed sensor ring - damaged wheel speed sensor ring 	<ul style="list-style-type: none"> - ABS on rear axle, left deactivated - ASR brake/engine control deactivated
24-46	No uniformity (frequency changes) of wheel speed sensor signal from wheel speed sensor (F514) on pins C1 and C2 of the rear axle modulator (D879) due to: <ul style="list-style-type: none"> - excessive wheel bearing play - incorrect mounting of wheel speed sensor ring 	<ul style="list-style-type: none"> - ABS on rear axle, left deactivated - ASR brake/engine control deactivated
24-47	Excessive oscillation of wheel speed sensor signal (maximum/minimum level) from wheel speed sensor (F514) on pins C1 and C2 of the rear axle modulator (D879) due to: <ul style="list-style-type: none"> - excessive wheel bearing play - incorrect mounting of wheel speed sensor ring 	<ul style="list-style-type: none"> - ABS on rear axle, left deactivated - ASR brake/engine control deactivated
24-48	Minimum value of wheel speed sensor signal from wheel speed sensor (F514) on pins C1 and C2 of the rear axle modulator (D879) is too low due to: <ul style="list-style-type: none"> - too large an air gap between wheel speed sensor ring and wheel speed sensor - contact resistance on pin C1 and/or C2 of the rear axle modulator 	<ul style="list-style-type: none"> - ABS on rear axle, left deactivated - ASR brake/engine control deactivated

Fault code	Fault code description with possible cause	Symptom
31-16	Large deviation between the duty cycle signals from the foot brake valve (F628) on pins E2 and E5 of the EBS unit due to: - internal fault in foot brake valve	- ABS on front and rear axles deactivated - ASR brake/engine control deactivated - EBS pressure control on front axle, rear axle and drawn vehicle deactivated - Low voltage on connection point A9 inside EBS unit
31-52	Large deviation between the duty cycle signals from the foot brake valve (F628) on pins E2 and E5 of the EBS unit due to: - internal fault in foot brake valve	- No noticeable system limitation in EBS
32-37	No signal from brake pedal position switch 1 in foot brake valve (F628) on pin E3 of the EBS unit due to: - defective switch - interruption on pin E3 of the EBS unit	- No noticeable system limitation in EBS
32-41	Brake pedal position switch 1 remains closed in foot brake valve (F628) or short circuit to earth on pin E3 of the EBS unit	- The actuating pressure control is active when the brake pedal is not applied; after a specified time (approx. 1 min.) the actuating pressure control will automatically disengage.
33-37	No signal from brake pedal position switch 2 in foot brake valve (F628) on pin E6 of the EBS unit due to: - defective switch in foot brake valve - interruption on pin E6 of the EBS unit	- No noticeable system limitation in EBS
33-41	Brake pedal position switch 2 remains closed in foot brake valve (F628) or short circuit to earth on pin E6 of the EBS unit	- The actuating pressure control is active when the brake pedal is not applied; after a specified time (approx. 1 min.) the actuating pressure control will automatically disengage.
34-41	Lower signal level from brake pedal position sensor 1 in foot brake valve (F628) on pin E2 of the EBS unit is too low during a specified period of time due to: - contact resistance on pin E2 of the EBS unit - internal fault in foot brake valve - short circuit to earth on pin E2 of the EBS unit	- No noticeable system limitation in EBS
34-43	Upper signal level from brake pedal position sensor 1 in foot brake valve (F628) on pin E2 of the EBS unit is too high during a specified time or the pulse width of the signal is incorrect due to: - short circuit to supply on pin E2 of the EBS unit - internal fault in foot brake valve - interruption on pin E1 of the EBS unit - interruption on connection point E2 of the EBS unit	- No noticeable system limitation in EBS

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Fault code	Fault code description with possible cause	Symptom
35-41	Lower signal level from brake pedal position sensor 2 in foot brake valve (F628) on pin E5 of the EBS unit is too low during a specified period of time due to: <ul style="list-style-type: none"> - contact resistance on pin E5 of the EBS unit - internal fault in foot brake valve - short circuit to earth on pin E5 of the EBS unit 	- No noticeable system limitation in EBS
35-43	Upper signal level from brake pedal position sensor 2 in foot brake valve (F628) on pin E5 of the EBS unit is too high during a specified time or the pulse width of the signal is incorrect due to: <ul style="list-style-type: none"> - short circuit to supply on pin E5 of the EBS unit - internal fault in foot brake valve - interruption on pin E4 of the EBS unit - interruption on pin E5 of the EBS unit 	- No noticeable system limitation in EBS
41-61	Communication via V-CAN on pins A1 and A3 of the EBS unit not possible when switching on ignition due to: <ul style="list-style-type: none"> - interruption on pin A1 of the EBS unit - short circuit to earth on pin A3 of the EBS unit - short circuit to supply on pin A1 and/or A3 of the EBS unit 	- ASR brake/engine control deactivated
41-63	Interrupted communication via V-CAN on pins A1 and A3 of the EBS unit due to: <ul style="list-style-type: none"> - interruption on pin A1 and/or A3 of the EBS unit - short circuit to earth on pin A3 of the EBS unit - short circuit to supply on pin A1 and/or A3 of the EBS unit 	- ASR brake/engine control deactivated
41-65	No CAN message "ERC1" received within a specified period of time from the engine management system in relation to the engine braking torque	- No noticeable system limitation in EBS
41-66	No CAN message "EEC1" received within a specified period of time from the engine management system in relation to the engine torque and engine speed	- No noticeable system limitation in EBS
41-67	No CAN message "ETC1" received within a specified period of time from the gearbox (AS Tronic) if the drive line is activated	- No noticeable system limitation in EBS
41-68	No CAN message "CCVS" received within a specified period of time from the engine management system in relation to the parking brake status, vehicle speed and clutch status	- No noticeable system limitation in EBS

Fault code	Fault code description with possible cause	Symptom
41-69	No CAN message "TCO1" received within a specified period of time from the tachograph in relation to the vehicle speed due to: <ul style="list-style-type: none"> - communication problem with the tachograph (MTCO) - K-factor in MTCO incorrect or not there - delayed loss of supply voltage on EBS unit when switching off ignition (this is a common production situation but it has been solved in subsequent production versions by the addition of relay G426) 	- No noticeable system limitation in EBS
41-71	No CAN message received from VIC within a specified period of time	- No noticeable system limitation in EBS
42-16	EBS unit does not receive correct CAN message from the rear axle modulator (D879) on pins B1 and B4 of the EBS unit	- ABS on front and rear axles deactivated - ASR brake/engine control deactivated - EBS pressure control on front axle, rear axle and drawn vehicle deactivated
42-61	Interrupted CAN communication with the rear axle modulator (D879) via pins B1 and B4 of the EBS unit due to: <ul style="list-style-type: none"> - short circuit to earth on pin B4 of the EBS unit - short circuit to supply on pin B1 and/or pin B4 of the EBS unit - short circuit between pin B1 and pin B4 of the EBS unit 	- ABS on front and rear axles deactivated - ASR brake/engine control deactivated - EBS pressure control on rear axle deactivated
43-61	CAN communication problem with the drawn vehicle ECU via pins B3 and B6 of the EBS unit	- No noticeable system limitation in EBS
43-63	Interrupted CAN communication, with a driving combination, with the drawn vehicle ECU via pins B3 and B6 of the EBS unit due to: <ul style="list-style-type: none"> - interruption on pins B3 and B6 of the EBS unit - short circuit between pin B3 and pin B6 of the EBS unit 	- No noticeable system limitation in EBS
43-75	Interrupted CAN communication, with a driving combination, with the drawn vehicle ECU via pin B3 (CAN-H) of the EBS unit due to: <ul style="list-style-type: none"> - interruption on pin B3 of the EBS unit - short circuit on pin B3 of the EBS unit 	- No noticeable system limitation in EBS
43-76	Interrupted communication, with a driving combination, with the drawn vehicle ECU via pin B6 (CAN-L) of the EBS unit due to: <ul style="list-style-type: none"> - interruption on pin B6 of the EBS unit - short circuit on pin B6 of the EBS unit 	- No noticeable system limitation in EBS
45-16	Interruption, short circuit to earth or short circuit to supply on pin A18 of the EBS unit	- No noticeable system limitation in EBS
51-21	Short circuit to earth on pin D11 of the EBS unit, ABS valve (B256)	- ABS on front axle, left deactivated
51-22	Short circuit to supply on pin D11 of the EBS unit, ABS valve (B256)	- ABS on front axle deactivated

EBS

EBS fault codes

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Fault code	Fault code description with possible cause	Symptom
51-23	Interruption on pin D12 of the EBS unit, ABS valve (B256)	- ABS on front axle, left deactivated
51-24	Interruption on pin D11 of the EBS unit, ABS valve (B256)	- ABS on front axle, left deactivated
51-25	Continuous actuation of ABS valve (B256) via pins D10 and D12 and/or D11 and D12 of the EBS unit due to: - internal short circuit in EBS unit	- ABS on front axle deactivated - EBS pressure control on front axle and drawn vehicle deactivated
51-26	Interruption on pin D10 of the EBS unit, ABS valve (B256)	- ABS on front axle, left deactivated
51-27	Short circuit to earth on pin D10 of the EBS unit, ABS valve (B256)	- ABS on front axle, left deactivated
51-28	Short circuit to supply on pin D10 of the EBS unit, ABS valve (B256)	- ABS on front axle deactivated
52-21	Short circuit to earth on pin C2 of the EBS unit, ABS valve (B257)	- ABS on front axle, right deactivated
52-22	Short circuit to supply on pin C2 of the EBS unit, ABS valve (B257)	- ABS on front axle deactivated
52-23	Interruption on pin C3 of the EBS unit, ABS valve (B257)	- ABS on front axle, right deactivated
52-24	Interruption on pin C2 of the EBS unit, ABS valve (B257)	- ABS on front axle, right deactivated
52-25	Continuous actuation of ABS valve (B257) via pins C1 and C3 and/or C2 and C3 of the EBS unit due to: - internal short circuit in EBS unit	- ABS on front axle deactivated - EBS pressure control on front axle and drawn vehicle deactivated
52-26	Interruption on pin C1 of the EBS unit, ABS valve (B257)	- ABS on front axle, right deactivated
52-27	Short circuit to earth on pin C1 of the EBS unit, ABS valve (B257)	- ABS on front axle, right deactivated
52-28	Short circuit to supply on pin C1 of the EBS unit, ABS valve (B256)	- ABS on front axle deactivated
53-32	Short circuit to earth on pin D12 or C3 of the EBS unit, ABS valve (B256 or B257)	- No noticeable system limitation in EBS
53-33	Short circuit to supply on pin D12 or C3 of the EBS unit, ABS valve (B256 or B257)	- ABS on front axle deactivated
55-12	Incorrect redundancy valve (B306) parameters due to: - redundancy valve connected to the EBS unit without the EBS unit having been programmed for a redundancy valve	- ABS on front and rear axles deactivated - ASR brake/engine control deactivated - EBS pressure control on front axle, rear axle and drawn vehicle deactivated
55-31	Interruption in redundancy valve (B306), measured via pin B12 of the EBS unit	- ABS on front and rear axles deactivated - ASR brake/engine control deactivated - EBS pressure control on rear axle deactivated
55-32	Short circuit to earth in redundancy valve (B306), measured via pin B12 of the EBS unit	- ABS on front and rear axles deactivated - ASR brake/engine control deactivated - EBS pressure control on rear axle deactivated

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