

	A	B	C	D	E	F	G	H	I	J
1	MSF CAN Fault Codes									
2	SA	SPN	FMI	Item	Errortext	Connector, Pin	NOTES	CUSTOMER PERCEPTION SYMPTOM	POSSIBLE CAUSES	REPAIR ACTION
3	49	168	03	System Voltage	Electrical Potential (Voltage) - Voltage above normal, or shorted to high source	conn D, pin 2	Battery overvoltage	none	1. The system voltage is too high	1. Check the system voltage
4	49	168	04	System Voltage	Electrical Potential (Voltage) - Voltage below normal, or shorted to low source	conn D, pin 2	Battery undervoltage	none	1. The system voltage is too low	1. Check the system voltage
5	49	520201	03	Steering Wheel	Steering wheel switch right - Voltage above normal or shorted to high source	conn A, pin 2	DASH_H_PNL_SW_MSF_MSTR_3A, Pin 3; Fault is valid also for open circuit at this pin, can't be differentiated	Right steering wheel switches without function	1. Steering wheel switch harness is shorted to battery or open	1. Check wiring harness
6	49	520201	04	Steering Wheel	Steering wheel switch right - Voltage below normal or shorted to low source	conn A, pin 2	DASH_H_PNL_SW_MSF_MSTR_3A, Pin 3;	Right steering wheel switches without function	Short circuit to GND	Check wiring and connector
7	49	520203	03	Steering Wheel	Steering wheel switch left - Voltage above normal or shorted to high source	conn A, pin 1	DASH_H_PNL_SW_MSF_MSTR_3A, Pin 1; Fault is valid also for open circuit at this pin, can't be differentiated	Left steering wheel switches without function	Open load or short circuit to BAT	Check wiring and connector
8	49	520203	04	Steering Wheel	Steering wheel switch left- Voltage below normal or shorted to low source	conn A, pin 1	DASH_H_PNL_SW_MSF_MSTR_3A, Pin 1;	Left steering wheel switches without function	Short circuit to GND	Check wiring and connector

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9	49	520302	03	Sub bus	Subbus signal - Voltage above normal or shorted to high source	conn B, pin 2	DASH_H_PNL_SW_MSF MSTR_5A to _10A, Pin 2;	MSF slave switches without/ improper function	Short circuit to BAT	Check wiring and connector
10	49	520302	04	Sub bus	Subbus signal - Voltage below normal or shorted to low source	conn B, pin 2	DASH_H_PNL_SW_MSF MSTR_5A to _10A, Pin 2;	MSF slave switches without/ improper function	Short circuit to GND	Check wiring and connector
11	49	520404	03	Stalk Switch	Stalk switch flash - Voltage above normal or shorted to high source	conn C, pin 4	DASH_H_PNL_SW_MSF MSTR_4A, Pin 4;	Low beam, flash and high beam out of function	Short circuit to BAT	Check wiring and connector
12	49	520405	03	Stalk Switch	Stalk switch high beam - Voltage above normal or shorted to high source	conn C, pin 5 conn C, pin 6	DASH_H_PNL_SW_MSF MSTR_4A, Pin 5 and Pin 6;	Stalk switch high beam without function	Short circuit to BAT	Check wiring and connector
13	49	520415	04	Stalk Switch	Stalk switch wiper common - Voltage below normal or shorted to low source	conn C, pin 7	DASH_H_PNL_SW_MSF MSTR_4A, Pin 7;	Stalk switch out of function	Short circuit to GND	Check wiring and connector

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14	49	520601	04	Headlamp Switch	Headlamp switch +12V Battery Voltage below normal or shorted to low source	conn E, pin 1	DASH_H_PNL_SW_MSF MSTR_2A, Pin 1;	Headlamp switch without function (no Head lights/ Back lighting, no Fog Lights)	Short circuit to GND	Check wiring and connector
15	49	520607	04	Headlamp Switch	Backlighting - Voltage below normal or shorted to low source	conn A, pin 2 conn E, pin 7	Either backlighting (terminal 58d) for the headlight switch > connector E, pin 7 < or for the steering wheel switch > connector A, pin 2 < got a short to GND	No backlight function on the rotary light switch and steering wheel switches	Short circuit to GND	Check wiring and connector
16	49	523530	31	Sub bus	Subbus switch missing	-	none	One or more of the subbus switches are missing or not functioning properly	1. Switch not plugged in or switch electrical failure 2. Wrong subbus switch parameterization	1. Check for missing or broken switch 2. Check subbus switch parameterization

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2	SA	SPN	FMI	Item	Error text	Connector, Pin	NOTES	CUSTOMER PERCEPTION SYMPTOM	POSSIBLE CAUSES	REPAIR ACTION
17	49	523531	31	Sub bus	Extra subbus switch	-	none	none	1. incorrect switch connected to subbus 2. Wrong subbus switch parametrization	1. Check subbus switch parameterization 2. Unplug all non-parameterized subbus switches
18	49	523543	02	Headlamp Switch	Headlamp switch inputs - Data erratic, intermittent or incorrect	conn E, pin 2 conn E, pin 3 conn E, pin 4 conn E, pin 5	DASH_H_PNL_SW_MSF_MSTR_2A, Pins 2, 3, 5; RLS signal pattern different from (0,0,1;1,0,1;1,1,0)	Headlamp switch behaves erratically	1. Headlamp switch connected incorrectly 2. Headlamp switch wiring harness shorted to GND, Battery or open	1. Check Headlamp Switch connection 2. Check Headlamp Switch wiring harness
19	49	523544	31	Stalk Switch	Stalk switch interrupt	conn C, pin 8 conn C, pin 9 conn C, pin 14	DASH_H_PNL_SW_MSF_MSTR_4A, Pin 8, Pin 9 and Pin 14;	Stalk switch out of function (no turn lights, no wiper, no flash lights, no washer)	1. Interrupt of the stalk switch Signals 56, 56A	1. Check stalk switch wiring harness
20	49	524033	31	SAM	Lost communication with SAM_CAB	conn D, pin 3 conn D, pin 5	Monitored SAM Cabin messages: SAM_CAB_A1	Backlighting is internally set to 100 %	1. Cabin CAN data link compromised 2. ECU is not powered	1. Check Cabin CAN data link 2. Check ECU power supply
21	49	524037	31	CGW	Lost communication with CGW	conn D, pin 3 conn D, pin 5	Monitored CGW messages: CGW_R2	none	1. Cabin CAN data link compromised 2. ECU is not powered	1. Check Cabin CAN data link 2. Check ECU power supply

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22	49	524071	31	SAM	Lost communication with SAM_CHAS	conn D, pin 3 conn D, pin 5	Monitored SAM Chassis messages: SAM_CHAS_A1	Trl_pw (Trailer power) subbus switch function illumination switched off	SAM Chassis electrical hardware failure or internal failure.	Check wiring harness (CAN bus, SAM Chassis power supply)