

SS 1033351 New Cascadia Fault Code SA 33 SPN 520197 FMI 31 MQ Switch Bus – Malfunction

Applicable Vehicles

Any new Cascadia with 17.48 or newer SSAM software

Symptoms

In some cases the MSF switches may not function, including the 4-way flashers (Hazard switch). The fault code SA 33 SPN 520197 FMI 31 MQ Switch Bus – Malfunction appears after flashing.

Issue

With the release of the 17.48 SSAM software, the SSAM now has the ability to fault code for missing or extra MSF switches. The following are reported issues from the field that have triggered the fault code.

- Vehicles that had issues with MSF switches will now display the code i.e. a damaged or unplugged switches.
- Parameters that do not match the installed MSF switches.
- MSF switches that do not have switch parameters.
- Wrong parameters loaded during flashing.

Solution

The most common reported issues are associated with the above top three bullet points. To address these types of issues, it is recommended to use DiagnosticLink "Instrumentation" panel labeled "MSF Subbus Switches". The panel will show extra or missing switches by color. An extra switch is a switch that is installed without a parameter. Missing switch occurs when a parameter is present with out it matching switch ID. To locate the ID for a specific switch, the P/N is found on the side of the switch, enter the P/N in EZWiring and the switch address (ID) is documented on the print. Example of base switches are P/N A06-90128 or A06-90129.


Instrumentation

Engine: DDEC16-DD15
Vehicle: New Cascadia-Sleeper

DiagnosticLink

Air Pressure Monitor	All Instruments	Antilock Braking System (ABS)	Auto Traction Control, Electronic Stability
Cascadia Cruise Control	Cascadia J1939 Datalink Test	Central Gateway Monitoring	Chart
Data Stream	Data Stream J1939	Detroit Assurance	EGR
Hill Start Aid (HSA)	Intelligent Powertrain Management	Lane Departure Warning	Mechanical
TCM Global Status	Transmission	Transmission Learned Values	User
MSC Stalk and Switch Inputs	MSF Subbus Switches	Service and Park Brake	Starting & Charging
ID011 DOME LIGHT,BUNK	NOT Pressed		
ID015 UTILITY LIGHT	Not Pressed		
ID020 TRAILER POWER	Not Pressed		
ID023 LIGHT TEST	Switch not available		
ID027 ATC NORM/SPIN	Not Pressed		
ID028 HSA OFF	Not Pressed		
ID029 LANE ALERT OFF	Not Pressed		
ID031 ENG SHT DWN OVRD	Not Pressed		
ID032 ENG FAN CONTROL	Switch not available		
ID044 FOOTWELL LT,FRONT	Not Pressed		

☐ Extra
☐ Missing
☐ Available

Parameters for switch IDs can be found under the "Parameters" tab for the SSAM02T in the folder MSC_MSF_Vehicle Config.

SS 1033351 New Cascadia Fault Code SA 33 SPN 520197 FMI 31 MQ Switch Bus – Malfunction

 **Parameters** 

 English (United States) troubleshooting content (DDC-SVC-MAN-0084, DDC-SVC-MAN-0191, DDC-SVC-MAN-0200, DDC-SVC-MAN-0015, DDC-SVC-MAN-0010, DDC-SVC-MAN-0009) is missing

Parameter	Part	Value	Units	Minimum
 SSAM02T - Single SAM				
 MSC - Continued	A0344470158-001	MSC Continued - Default		
 MSC HLS Headlampswitch interface	A0324478858-001	MSC HLS - Fog/Road, CAN Wakeup		
 MSC - HW Config	A0314472558-001	MSC HW Config - Default		
 MSC MSF Mapping table	A0304470958-002	MSC MSF Mapping Table - Default 002		
 MSC MSF Modular switch field	A0304471158-001	MSC MSF Modular Switch Field - Default		
 MSC MSF Vehicle Config	A0304471058-001	MSC MSF Vehicle Config - Blank		
Switch_001	A0304471258-001	Switch Defined Location - Dash		
Switch_002	(from parent)	Switch Not Present		
Switch_003	(from parent)	Switch Not Present		
Switch_004	(from parent)	Switch Not Present		
Switch_005	A0304471658-001	Switch Defined Location - Dash		
Switch_006	A0304473258-001	A0304473258-001 Dome Light Da...		
Switch_007	(from parent)	A0304473258-001 Dome Light Dash Switch - Present		
Switch_008	A0304472258-001	A0304473358-001 Dome Light Dash Switch - Not Present		
Switch_009	(from parent)	Switch Not Present		
Switch_010	A0304473658-001	Switch Defined Location - Sleeper		
Switch_011	A0304473458-001	Switch Defined Location - Sleeper		
Switch_012	(from parent)	Switch Not Present		
Switch_013	(from parent)	Switch Not Present		
Switch_014	A0304472658-001	Switch Defined Location - Sleeper ...		
Switch_015	A0304471458-001	Switch Defined Location - Dash		
Switch_016	(from parent)	Switch Not Present		

 switch ID.

There can be switches that are communicating on the bus, but do not show on the panel. These switches have switch IDs 501 thru 508. These switches can be identified by the base P/N A06-90129-XXX. Use EZWiring to obtain the switch address (ID) documented on the print. Verify that all 501 thru 508 switches that are installed have matching switch parameters.



To address the 4th bullet point (Wrong parameters loaded during flashing) it has been reported that completely powering down the SSAM for 1 minute and then repowering the SSAM can cause the code to go away. If the

SS 1033351 New Cascadia Fault Code SA 33 SPN 520197 FMI 31 MQ Switch Bus – Malfunction

code appeared during a flash of the SSAM prior to DiagnosticLink 8.07 Service Pack 2 (SP2) release, then reflash the SSAM using SP2.