



Service Data

SD-65-21025

The SafetyDirect® By Bendix CVS Web Portal Processor



Figure 1 – SafetyDirect® by Bendix CVS Web Portal Processor

1.0 DESCRIPTION

The SafetyDirect® by Bendix CVS Web Portal Processor is a component used to collect complex safety data and supply it to the vehicle's On Board Computer (OBC)/telematics system for transfer to the SafetyDirect web site.

This document covers troubleshooting the processor when used with the Bendix® Wingman® Fusion™ system and its safety systems, including:

- Lane Departure Warning (LDW) Systems;
- Over-Speed Alert & Action (OAA); and
- Collision Mitigation Technology (CMT).

(For information about the Bendix Wingman Fusion system, see Service Data Sheet, SD-61-4963).

For free downloads of Service Data Sheets, visit the Bendix website at bendix.com.



Bendix safety technologies complement safe driving practices and are not intended to enable or encourage aggressive driving. No commercial vehicle safety technology replaces a skilled, alert driver exercising safe driving techniques and proactive, comprehensive driver training. Responsibility for the safe operation of the vehicle remains with the driver at all times.

1.1 BENDIX® WINGMAN® FUSION™ SYSTEM COMPONENTS

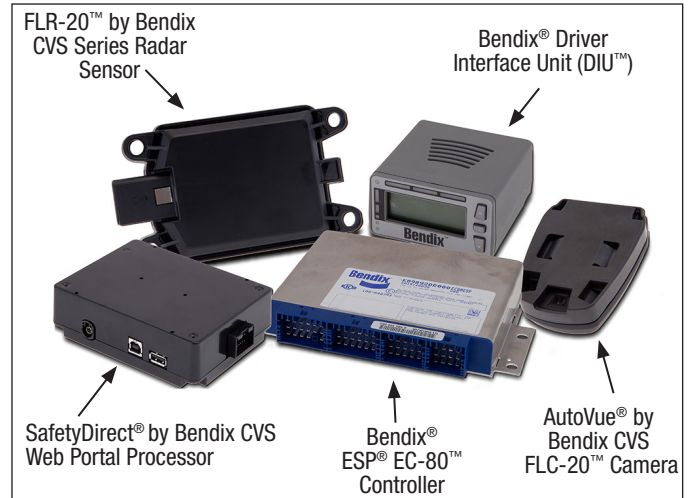


Figure 2 – Main Bendix® Wingman® Fusion™ System Components

The Bendix Wingman Fusion system has five major components (See Figure 2).

1. An AutoVue® by Bendix CVS FLC-20™ camera is a visible-light spectrum camera mounted on the inside of the windshield.
2. The SafetyDirect Web Portal Processor described in this document, is normally located in the overhead compartment above the windshield, near the camera.
3. An FLR-20™ by Bendix CVS radar sensor, located at the front of the vehicle close to—or on—the bumper.
4. A Bendix® ESP® EC-80™ controller is located in the cab of the vehicle, controls the antilock braking and full stability functions for the vehicle, using a set of wheel-speed, yaw, steering-angle and load sensors. In the Bendix Wingman Fusion system, the controller also manages any actions requested by the Fusion system.
5. A Bendix® Driver Interface Unit (DIU™)—or similar OEM dashboard display—communicates between the driver and the Bendix Wingman Fusion system. A set of visual, text, and audible indicators and alerts are provided.

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GENERAL SAFETY GUIDELINES



WARNING! PLEASE READ AND FOLLOW THESE INSTRUCTIONS



TO AVOID PERSONAL INJURY OR DEATH:

When working on or around a vehicle, the following guidelines should be observed **AT ALL TIMES**:

- ▲ Park the vehicle on a level surface, apply the parking brakes, and always block the wheels. Always wear personal protection equipment.
- ▲ Stop the engine and remove the ignition key when working under or around the vehicle. When working in the engine compartment, the engine should be shut off and the ignition key should be removed. Where circumstances require that the engine be in operation, **EXTREME CAUTION** should be used to prevent personal injury resulting from contact with moving, rotating, leaking, heated, or electrically charged components.
- ▲ Do not attempt to install, remove, disassemble, or assemble a component until you have read, and thoroughly understand, the recommended procedures. Use only the proper tools and observe all precautions pertaining to use of those tools.
- ▲ If the work is being performed on the vehicle's air brake system, or any auxiliary pressurized air systems, make certain to drain the air pressure from all reservoirs before beginning **ANY** work on the vehicle. If the vehicle is equipped with a Bendix® AD-IS® air dryer system, a Bendix® DRM™ dryer reservoir module, a Bendix® AD-9si®, AD-HF®, or AD-HFi™ air dryer, be sure to drain the purge reservoir.
- ▲ Following the vehicle manufacturer's recommended procedures, deactivate the electrical system in a manner that safely removes all electrical power from the vehicle.
- ▲ Never exceed manufacturer's recommended pressures.
- ▲ You should consult the vehicle manufacturer's operating and service manuals, and any related literature, in conjunction with the Guidelines above.
- ▲ Never connect or disconnect a hose or line containing pressure; it may whip and/or cause hazardous airborne dust and dirt particles. Wear eye protection. Slowly open connections with care, and verify that no pressure is present. Never remove a component or plug unless you are certain all system pressure has been depleted.
- ▲ Use only genuine Bendix® brand replacement parts, components, and kits. Replacement hardware, tubing, hose, fittings, wiring, etc. must be of equivalent size, type, and strength as original equipment and be designed specifically for such applications and systems.
- ▲ Components with stripped threads or damaged parts should be replaced rather than repaired. Do not attempt repairs requiring machining or welding unless specifically stated and approved by the vehicle and component manufacturer.
- ▲ Prior to returning the vehicle to service, make certain all components and systems are restored to their proper operating condition.
- ▲ For vehicles with Automatic Traction Control (ATC), the ATC function must be disabled (ATC indicator lamp should be ON) prior to performing any vehicle maintenance where one or more wheels on a drive axle are lifted off the ground and moving.
- ▲ The power **MUST** be temporarily disconnected from the radar sensor whenever any tests **USING A DYNAMOMETER** are conducted on a vehicle equipped with a Bendix® Wingman® system.

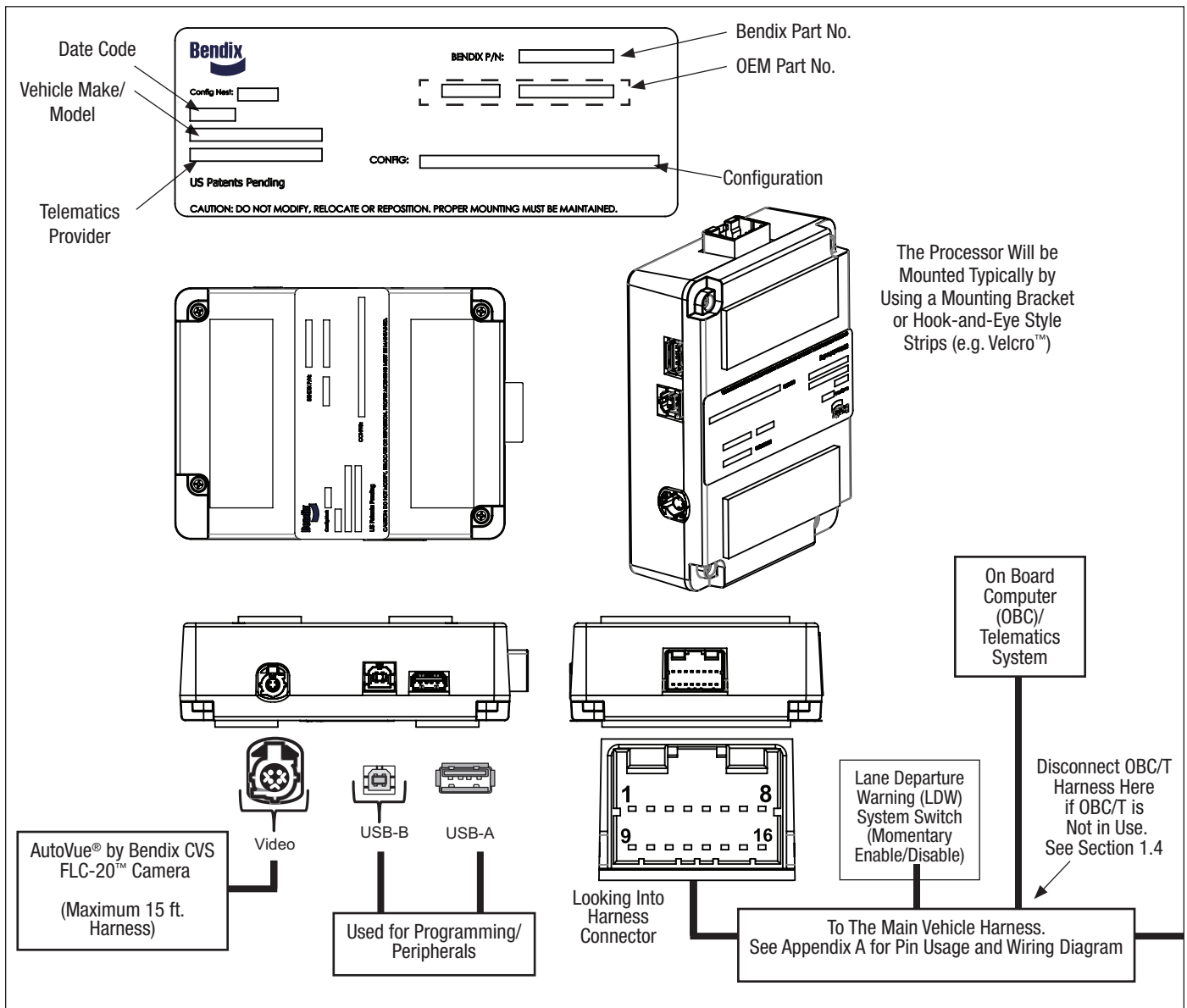


Figure 3 – SafetyDirect® By Bendix CVS Web Portal Processor Fusion® System Connections

1.2 CONNECTIONS

The processor has four connection locations. (See Figure 3).

1.3 ENABLE/DISABLE SWITCH FUNCTIONS

In the case of vehicles configured to do so, the enable/disable switch also functions – when depressed for six (6) seconds – to activate a request to the SafetyDirect® by Bendix CVS Web Portal Processor to transfer the last 90 seconds of buffered video data to the On Board Computer (OBC)/telematics system to transmit off the vehicle.

1.4 IMPORTANT NOTE ON TELEMATICS WIRING

Where a vehicle does not have an On Board Computer (OBC)/telematics system – in order to prevent interference to the SafetyDirect Web Portal Processor – disconnect from the OBC/T harness (any wiring harness provisionally installed in the vehicle for potential use for Telematics) from the main vehicle harness. Re-connect the harness only when an OBC/telematics system is installed. (See Appendix B).

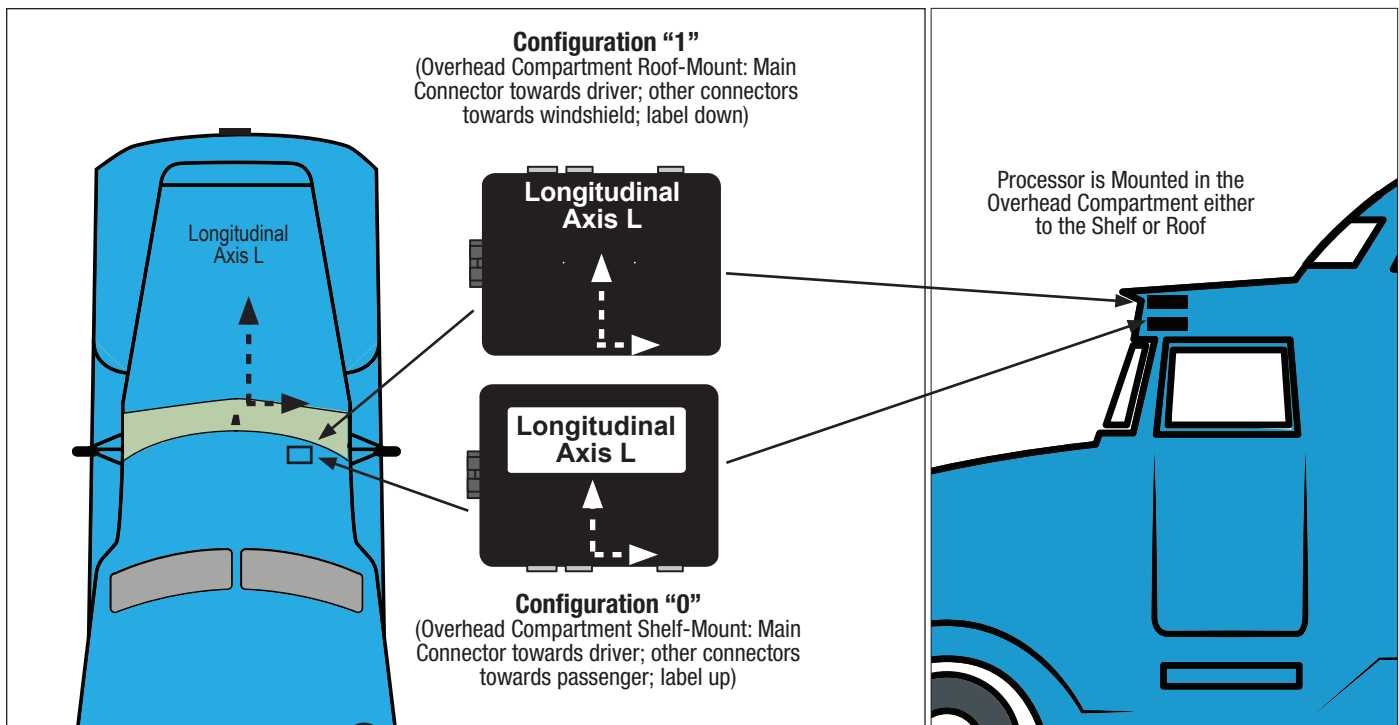


Figure 4 – SafetyDirect® by Bendix CVS Web Portal Processor Permissible Configurations

1.5 ORIENTATION

It is critical that the processor be installed in the expected orientation to the vehicle longitudinal line. (See Figure 4).

The SafetyDirect® by Bendix CVS Web Portal Processor must be installed in the vehicle using a method that keeps the processor stable and permanently mounted in the same orientation. The two most used orientations are shown in Figure 4. The exact mounting location varies by the OEM and vehicle model, and should remain consistent for all vehicles in that category. The processor is mounted inside the cab, preferably in the overhead compartment to help provide the shortest length for the video cable. The maximum length permitted is 15 feet (4.5m). In most cases a mounting bracket or professional-quality, hook-and-eye fastening material (e.g. "Velcro™", or similar) may be used.



Misalignment may result in variation in the reporting of excessive braking and turning.

1.6 MAINTENANCE

In normal use, the SafetyDirect Web Portal Processor needs no maintenance. Protect the Processor from damage or being moved from its set location in the overhead compartment.

1.7 SAFETYDIRECT WEB PORTAL PROCESSOR INTERCHANGEABILITY

When replacing SafetyDirect Web Portal Processors only use replacements with the same part number (or a direct superceding replacement number supplied by Bendix).



SafetyDirect Web Portal Processors of different vehicle models and model years must not be interchanged. The use of an incorrect SafetyDirect Web Portal Processor can lead to Diagnostic Trouble Codes (DTCs) being set, and performance degradation – including unnecessary system interventions and the potential for situations where interventions do not occur when they would normally.

SafetyDirect Web Portal Processors are designed specifically for particular vehicle and model. DTCs caused by relocating SafetyDirect Web Portal Processors to an incorrect vehicle may result in the vehicle system using the SafetyDirect Web Portal Processor to be partially or fully unavailable.

If you have questions, contact the Bendix Tech Team at 1-800-AIR-BRAKE (1-800-247-2725), option 2.

2.0 TROUBLESHOOTING

2.1 SAFETY GUIDELINES

Read and follow the General Safety Guidelines shown on page two of this document.

Bendix safety technologies complement safe driving practices and are not intended to enable or encourage aggressive driving. No commercial vehicle safety technology replaces a skilled, alert driver exercising safe driving techniques and proactive, comprehensive driver training. Responsibility for the safe operation of the vehicle remains with the driver at all times.

IMPORTANT

All vehicle Diagnostic Trouble Codes (DTCs) related to the engine, transmission, instrument cluster, engine cruise control, and Bendix® ABS, ATC or ESP® systems must first be resolved, with no DTCs present during the vehicle operation while in cruise control, before trying to resolve SafetyDirect® by Bendix CVS Web Portal Processor DTCs.

IMPORTANT

System Problems. If a problem with the SafetyDirect Web Portal Processor is detected, it should be serviced as soon as possible to restore full functionality.

2.2 SETTING DIAGNOSTIC TROUBLE CODES

If, during operation, the Bendix® Wingman® Fusion™ system detects a problem with the SafetyDirect Web Portal Processor, a DTC will be set and – depending on the OEM – the driver will be alerted by the dash display, an icon, or similar method. In these cases, some features of Bendix Wingman Fusion system will not be available.

2.3 PC-BASED DIAGNOSTIC SOFTWARE

Use a PC-based software program to provide the technician with the processor diagnostic information and configuration capability.

See Table 1 For SPN (Suspect Parameter Number) and FMI (Failure Mode Identifier) code combinations.

For Bendix Wingman Fusion system diagnostics, use Bendix® ACom® PRO™ Diagnostic Software.

IMPORTANT

Please note that Bendix ACom PRO Diagnostic Software is required for troubleshooting the SafetyDirect Web Portal Processor.

IMPORTANT

Bendix®-brand Electronic Control Units (ECUs) are not designed to store data for purposes of accident reconstruction and Bendix® ACom® PRO™ Diagnostic Software is not intended to retrieve data for purposes of accident reconstruction. Bendix makes no representations as to the accuracy of data or video retrieved and interpreted from ECUs for purposes of accident reconstruction. Bendix does not offer accident reconstruction services or interpretation of stored data. Bendix ECUs are not protected from fire, loss of power, impact damage, or other conditions that may be sustained in a crash situation and may cause data to be unavailable or irretrievable.

2.4 TABLE OF SYSTEM DIAGNOSTIC TROUBLE CODES (DTCs)

Refer to the DTC(s) found and determine the action(s) to take.

Table of Diagnostic Trouble Codes (DTCs), Causes and Recommended Actions					
SPN	FMI	DTC Name	Condition Found	Suggested Remedial Action(s)	Condition that Clears the DTC
0084	02	Vehicle Speed Value Not Found	J1939 Data Bus speed value is not present.	<ul style="list-style-type: none"> Check the J1939 Data Bus connection. Is the vehicle's J1939 Data Bus functioning? If no problems were found during the checks above, replace the processor and re-test. 	J1939 Data Bus speed value is present.
0084	15	Vehicle Speed Value Out-of-Range	J1939 Data Bus speed value is outside the expected range.	<ul style="list-style-type: none"> Check the J1939 Data Bus connection. Is the vehicle's J1939 Data Bus functioning? If no problems were found during the checks above, replace the processor and re-test. 	J1939 Data Bus speed value is within the expected range.
0625	02	Bendix® Wingman® Fusion™ Private Communications Receive Failure	Processor fails to receive Bendix information messages on Private Data Bus for 30 seconds.	<ul style="list-style-type: none"> Check the Private CAN connection to the processor and the Bendix™ FLC-20™ camera. Is the vehicle's Fusion CAN Data Bus functioning? If no problems were found during the checks above, replace the processor and re-test. 	Processor successfully receives FLC-20 messages on Fusion CAN bus for 3 seconds.
0628	31	SYS Related Parameters Not Found In NVM	Processor internal parameter block in Non-Volatile Memory (NVM) is corrupted. No warnings are generated.	<ul style="list-style-type: none"> Initiate an ignition cycles to save parameters and reset the system. If the ignition cycle does not clear the Diagnostic Trouble Code (DTC), replace the processor and re-test. 	NVM contains expected calibration parameter block.
0639	02	J1939 CAN Bus Receive Failure OR Wingman Fusion Private Communications Initialization Failure	Processor fails to receive on J1939 Data Bus. OR Processor fails to initialize on the Private Data Bus controller.	<ul style="list-style-type: none"> Initiate multiple ignition cycle to reset the system. If the ignition cycle does not clear the DTC, replace the processor and re-test. 	Ability to successfully receive on J1939 Data bus. OR Ability to successfully initialize internal Fusion CAN bus controller.
<p>For technical support, call the Bendix Tech Team at 1-800-AIR-BRAKE (1-800-247-2725), option 2, Monday through Thursday 8:00 a.m. to 6:00 p.m. and Friday 8:00 a.m. to 5:00 p.m. ET. The Bendix Tech Team can also be reached by email at: techteam@bendix.com.</p>					

Table 1 – Table of Diagnostic Trouble Codes (Pages 6-12)

Table of Diagnostic Trouble Codes (DTCs), Causes and Recommended Actions

SPN	FMI	DTC Name	Condition Found	Suggested Remedial Action(s)	Condition that Clears the DTC
0886	09	Radar COMM failure (Only reported on SafetyDirect® by Bendix CVS portal not logged in Bendix® ACom® PRO™ Diagnostic Software.)	Radar message is not received while the vehicle is moving at speeds greater than 30 mph. Following distances, Forward Collision Warnings (FCW), and Collision Mitigation Braking events are not detected.	<ul style="list-style-type: none"> • Check J1939 Data Bus connection to the Radar. 	The J1939 Data Bus ACC1 message successfully received.
1564	02	Bendix™ FLC-20™ Camera CCD Input Failure	Private communications messages with the camera are not present as expected.	<ul style="list-style-type: none"> • Check the wiring between the camera and the processor. • See the camera SD sheet SD-64-20124 for more information. 	FLC-20 video input is present for 5 seconds.
1702	02	Switch Failure	Private communications input message signals switch failure. OR Discrete momentary switch input is stuck in the 'pressed' state for more than 60 seconds.	<ul style="list-style-type: none"> • Check the wiring between the enable/disable switch and the processor. • Test by temporarily installing a known good switch. • If no problems were found with the wiring, and the test with a good switch did not clear the Diagnostic Trouble Code (DTC), replace the processor and re-test. 	J1939 LDW switch message field no longer reports error state. Discrete momentary switch is un-stuck.
1703	03	Right Speaker is Shorted to Power	Resistance from right speaker positive. OR Negative output pins to power input is less than 10Ω during sound generation. No warnings are generated.	<ul style="list-style-type: none"> • Check the wiring between the right speaker and the processor. • Test by temporarily installing a known good speaker in the right speaker location. • If no problems were found with the wiring, and the test with a good speaker did not clear the DTC, replace the processor and re-test. 	System reset is required. Resistance from right speaker is positive. OR Negative output pins to power input is greater than 10Ω during sound generation.
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1703	05	Right Speaker has an Open Circuit	Resistance between right speaker output pins is greater than 40Ω during sound generation. No warnings are generated.	<ul style="list-style-type: none"> • Check the wiring between the right speaker and the processor. • Test by temporarily installing a known good speaker in the right speaker location. • If no problems were found with the wiring, and the test with a good speaker did not clear the Diagnostic Trouble Code (DTC), replace the processor and re-test. 	Resistance between right speaker output pins is less than 40Ω for 15 seconds.
1703	06	Right Speaker is Shorted to Ground	Resistance between right speaker positive or negative output pins and ground is less than 10Ω during sound generation. OR Short circuit condition between right speaker positive and negative output pins has a resistance of less than 1Ω during sound generation. No warnings are generated.	<ul style="list-style-type: none"> • Check the wiring between the right speaker and the processor. • Test by temporarily installing a known good speaker in the right speaker location. • If no problems were found with the wiring, and the test with a good speaker did not clear the DTC, replace the processor and re-test. 	Resistance between right speaker positive or negative output pins and ground is greater than 10Ω for 15 seconds. OR Resistance between right speaker positive and negative output pins is greater than 4Ω for 15 seconds.
1704	03	Left Speaker is Shorted to Power	Resistance from left speaker positive. OR Negative output pins to power input is less than 10Ω during sound generation. No warnings are generated.	<ul style="list-style-type: none"> • Check the wiring between the left speaker and the processor. • Test by temporarily installing a known good speaker in the left speaker location. • If no problems were found with the wiring, and the test with a good speaker did not clear the DTC, replace the processor and re-test. 	System reset is required. Resistance from left speaker positive or negative output pins to power input is greater than 10Ω during sound generation.
<p align="center">For technical support, call the Bendix Tech Team at 1-800-AIR-BRAKE (1-800-247-2725), option 2, Monday through Thursday 8:00 a.m. to 6:00 p.m. and Friday 8:00 a.m. to 5:00 p.m. ET. The Bendix Tech Team can also be reached by email at: techteam@bendix.com.</p>					

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SPN	FMI	DTC Name	Condition Found	Suggested Remedial Action(s)	Condition that Clears the DTC
1704	05	Left Speaker has an Open Circuit	Resistance between left speaker output pins is greater than 40Ω during sound generation. No warnings are generated.	<ul style="list-style-type: none"> • Check the wiring between the left speaker and the processor. • Test by temporarily installing a known good speaker in the left speaker location. • If no problems were found with the wiring, and the test with a good speaker did not clear the Diagnostic Trouble Code (DTC), replace the processor and re-test. 	Resistance between left speaker output pins is less than 40Ω for 15 seconds.
1704	06	Left Speaker is Shorted to Ground	Resistance between left speaker positive or negative output pins and ground is less than 10Ω during sound generation. OR Short circuit condition between left speaker positive and negative output pins has a resistance of less than 1Ω during sound generation. No warnings are generated.	<ul style="list-style-type: none"> • Check the wiring between the left speaker and the processor. • Test by temporarily installing a known good speaker in the left speaker location. • If no problems were found with the wiring, and the test with a good speaker did not clear the DTC, replace the processor and re-test. 	Resistance between left speaker positive or negative output pins and ground is greater than 10Ω for 15 seconds. OR Resistance between left speaker positive and negative output pins is greater than 4Ω for 15 seconds.
1705	03	Input Voltage is Too High	Input voltage is above 16V.	<ul style="list-style-type: none"> • Measure the ignition voltage. Ensure that ignition voltage is not greater than 16 VDC. Check the vehicle battery and associated components. • Inspect for damaged wiring, damaged or corroded connectors, and loose connections. Check the wiring between the ignition and the processor. • If no problems were found during the checks above, replace the processor and re-test. 	Input voltage is below 16V.
<p align="center">For technical support, call the Bendix Tech Team at 1-800-AIR-BRAKE (1-800-247-2725), option 2, Monday through Thursday 8:00 a.m. to 6:00 p.m. and Friday 8:00 a.m. to 5:00 p.m. ET. The Bendix Tech Team can also be reached by email at: techteam@bendix.com.</p>					

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SPN	FMI	DTC Name	Condition Found	Suggested Remedial Action(s)	Condition that Clears the DTC
1705	04	Input Voltage is Too Low	Input voltage is below 9.5V.	<ul style="list-style-type: none"> • Check the ignition voltage. • Measure the ignition voltage under load. Ensure that the ignition voltage is greater than 10 VDC (volts DC). Check the vehicle battery and associated components. Inspect for damaged wiring, damaged or corroded connectors, and loose connections. Check the condition of the fuse. • Check the wiring between the ignition and the processor. • If no problems were found during the checks above, replace the processor and re-test. 	Input voltage is above 9.5V.
1705	05	Mute Output Open	Resistance from Mute output to ground is greater than 140KΩ while output is not energized.	<ul style="list-style-type: none"> • Check the wiring between the processor and Mute output. • If no problems were found with the wiring and the Diagnostic Trouble Code (DTC) did not clear, replace the processor and re-test. 	Resistance from Mute output to ground is less than 140KΩ for 1.8 seconds while output is not energized.
1705	06	Mute Output Short to Power	Current into Mute output pin is greater than 4.5A while the output is energized.	<ul style="list-style-type: none"> • Check the wiring between the processor and Mute output. • If no problems were found with the wiring and the DTC did not clear, replace the processor and re-test. 	System reset is required. Current into Mute output is less than 4.5A while the output is energized.
1705	14	Battery line Pin 1 wire not connected (Only reported on SafetyDirect® Web Portal not logged in Bendix® ACom® PRO™ Diagnostic Software.)	<p>The processor detected no constant battery power input.</p> <p>The SD ignition off process cannot be executed.</p>	<ul style="list-style-type: none"> • Check the wiring between the processor Pin 1 and the battery positive (+) terminal. 	Constant battery power is detected by the processor for 5 seconds.
<p>For technical support, call the Bendix Tech Team at 1-800-AIR-BRAKE (1-800-247-2725), option 2, Monday through Thursday 8:00 a.m. to 6:00 p.m. and Friday 8:00 a.m. to 5:00 p.m. ET. The Bendix Tech Team can also be reached by email at: techteam@bendix.com.</p>					

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SPN	FMI	DTC Name	Condition Found	Suggested Remedial Action(s)	Condition that Clears the DTC
1705	31	Internal Failure	Internal programming failure.	<ul style="list-style-type: none"> Initiate an ignition cycle to save parameters and reset the system. If the ignition cycle does not clear the Diagnostic Trouble Code (DTC), replace the processor and re-test. 	System reset is required. CAN configuration parameters consistent with internal programming.
3564	02	FLI2 CAN Not Found	J1939 CAN Bus FLI2 message is not present.	<ul style="list-style-type: none"> Check the Bendix™ FLC-20™ CAN cable connections. Verify the FLC-20 is configured to output the FLI2 message. 	FLI2 message is received for 3 seconds.
3565	02	FLI1 CAN Not Found	J1939 CAN Bus FLI1 message is not present. No warnings are generated.	<ul style="list-style-type: none"> Check the FLC-20 CAN cable connections. Verify the FLC-20 is configured to output the FLI1 message. 	FLI1 message is received for 3 seconds.
520194	06	Mute Output Shorted to Ground	Voltage at the low side driver output to ground is less than 2.5 VDC while the output is not energized.	<ul style="list-style-type: none"> Check the Mute wiring connections the processor and the radio Mute. Verify the radio is correctly configured to support Mute line discrete input. 	Voltage at the low side driver output to ground is greater than 3.7 VDC for more than 1.8 second while the output is not energized.
520194	14	J1939 Address Claim Failure	Processor failed to claim its Source Address on the J1939 bus. Another processor is using the same source address as the processor.	<ul style="list-style-type: none"> Change the source address of the other device which is using the same source address as the processor. 	System reset is required. Successfully claimed its source address on the J1939 bus.
520195	15	Semaphore Error Log Failure	New Error Log entries are not recorded in Non-Volatile Memory (NVM). No warnings are generated.	<ul style="list-style-type: none"> Delete Error logs. Initiate an ignition cycle to reset the system. Replace the processor and re-test. 	System reset is required. Successful write to the error log flash sector.

For technical support, call the Bendix Tech Team at 1-800-AIR-BRAKE (1-800-247-2725), option 2, Monday through Thursday 8:00 a.m. to 6:00 p.m. and Friday 8:00 a.m. to 5:00 p.m. ET. The Bendix Tech Team can also be reached by email at: techteam@bendix.com.

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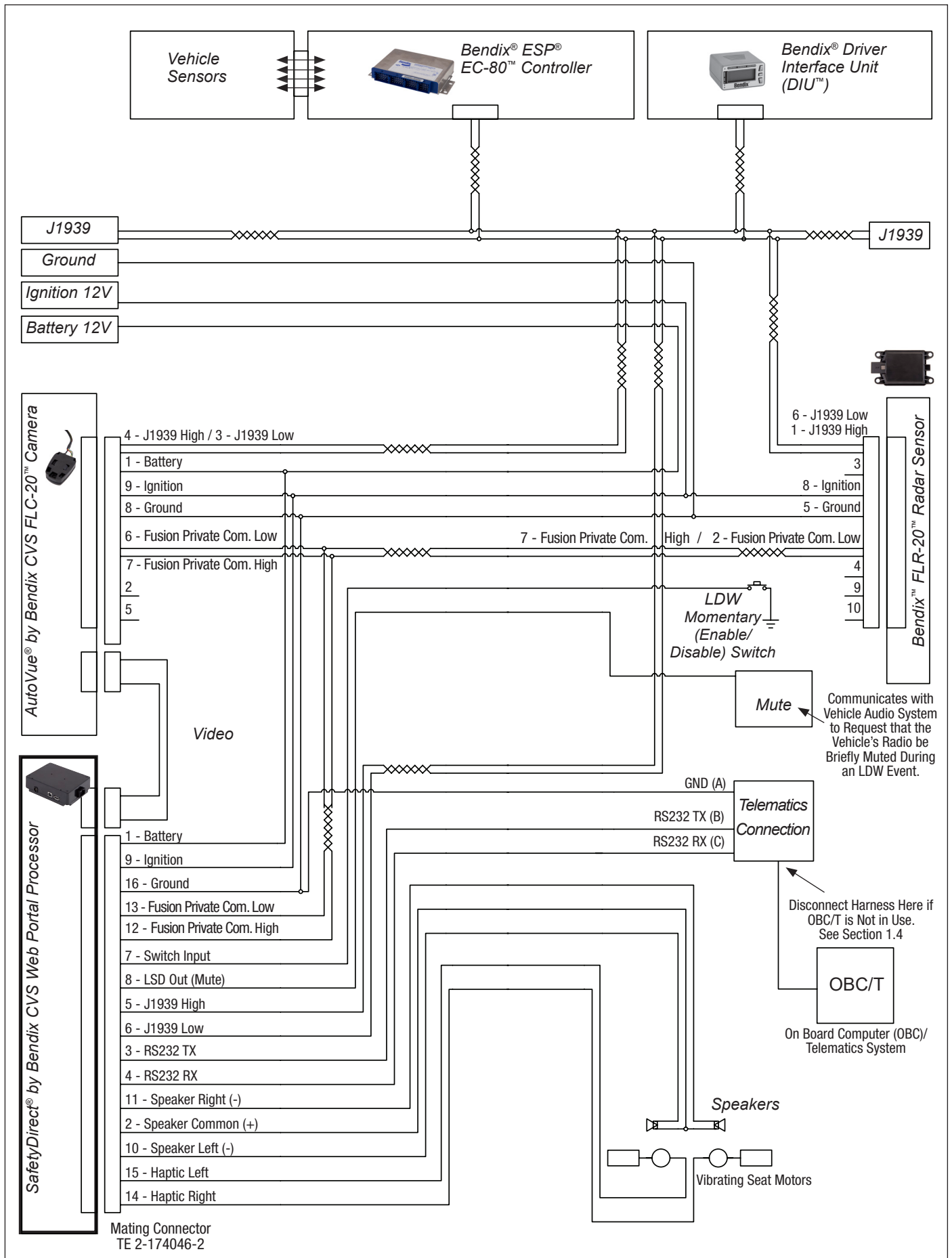
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SPN	FMI	DTC Name	Condition Found	Suggested Remedial Action(s)	Condition that Clears the DTC
520197	09	J1939 Switch Signal Not Found	J1939 Data Bus Switch message not received for 30 second. No warnings are generated.	<ul style="list-style-type: none"> • Check J1939 Data Bus connection. • Is the vehicle's J1939 Data Bus functioning? • Test by temporarily installing a known good J1939 switch. • If no problems were found during the checks above, replace processor and re-test. 	J1939 Data Bus Switch message present for 3 seconds.
520198	15	SafetyDirect® by Bendix CVS Event Log Failure	SafetyDirect Event Log entries are not recorded in NVM. Warnings continue to generate.	<ul style="list-style-type: none"> • Delete SafetyDirect (SD) Event logs. • Update Software. • Initiate an ignition cycle to reset the system. 	System reset is required. Successfully write to flash Event Log sectors.
520199	02	I2C Bus Failure	Internal failure of I2C Bus encountered error on the read or write operation for 22 seconds.	<ul style="list-style-type: none"> • Check the RS-232 cable between the telematics device and the processor. 	Connect the RS-232 cable. System reset is required. Successful I2C Bus read or write operations for 10 seconds.
<p>For technical support, call the Bendix Tech Team at 1-800-AIR-BRAKE (1-800-247-2725), option 2, Monday through Thursday 8:00 a.m. to 6:00 p.m. and Friday 8:00 a.m. to 5:00 p.m. ET. The Bendix Tech Team can also be reached by email at: techteam@bendix.com.</p>					

Table 1 – Table of Diagnostic Trouble Codes (Pages 6-12)

2.5 CLEARING DIAGNOSTIC TROUBLE CODES (DTCs)

Cycle the ignition power. Power off the vehicle for at least one (1) minute, and then start the engine and run it at idle for at least 15 seconds. If the error returns, call Bendix at 1-800-AIR-BRAKE (1-800-247-2725), option 2 for assistance.

APPENDIX A - BENDIX® WINGMAN® FUSION™ SYSTEM COMPONENT SCHEMATIC

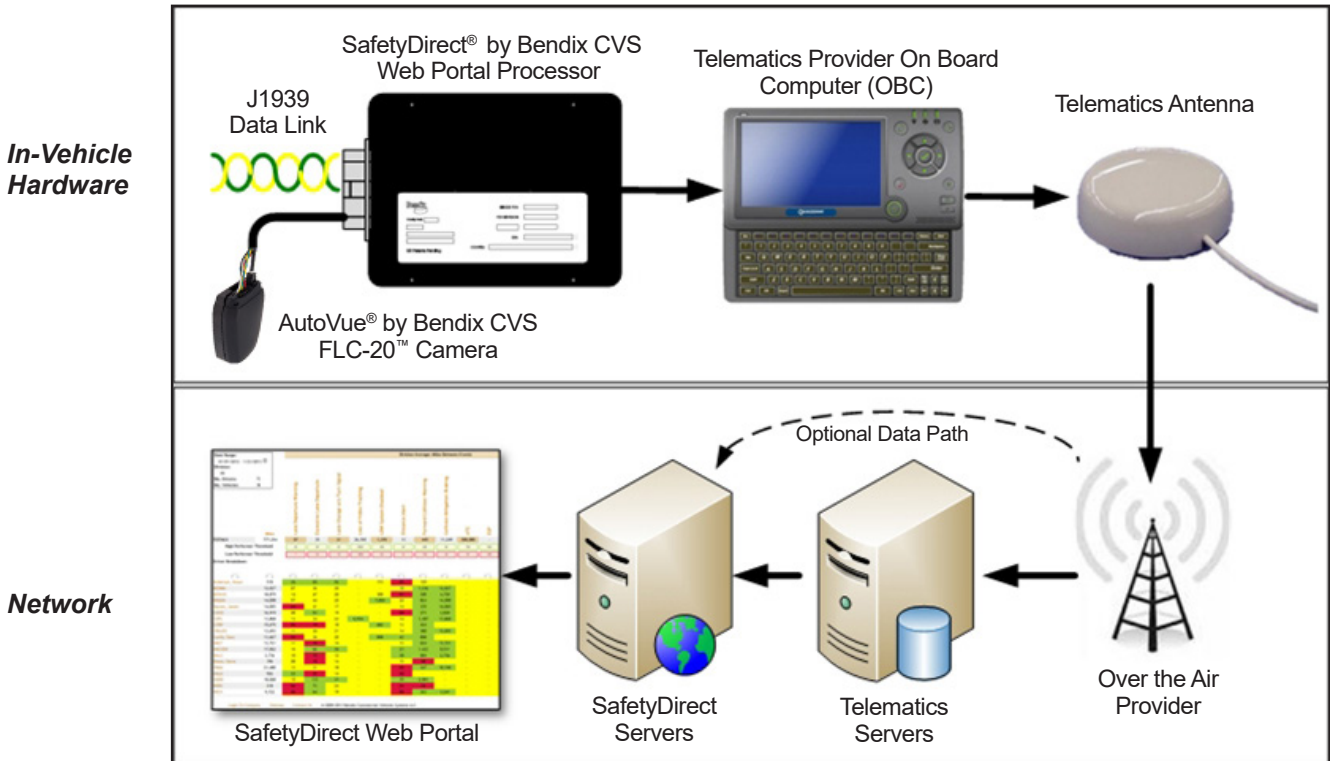


APPENDIX B - THE SAFETYDIRECT® BY BENDIX CVS WEB PORTAL PROCESSOR

Appendix B

The SafetyDirect® by Bendix CVS Web Portal Processor

The system has the ability to collect relevant driver and vehicle performance data via the the SafetyDirect Web Portal Processor and the J1939 Private communications bus. When a trigger event occurs, vehicle data and, in some cases, video, is saved in the system for later download via the vehicle telematics system.



ADDITIONAL SUPPORT AT

BENDIX.COM/1-800-AIR-BRAKE (1-800-247-2725), OPTION 2

For the latest information, and for downloads of the Bendix® ACom® PRO™ Diagnostics Software, and its User Guide, visit the Bendix website at bendix.com.

For direct telephone technical support, the Bendix Tech Team is available at 1-800-AIR-BRAKE (1-800-247-2725) option 2, Monday through Thursday, 8:00 A.M. to 6:00 P.M. and Friday 8:00 A.M. to 5:00 P.M ET. Follow the instructions in the recorded message.

The Bendix Tech Team can also be reached by email at: techteam@bendix.com.

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