

Pinpoint Test - DTC: AE

BXXXX:2B (any BXXXX DTC with a 2B failure type) Signal Cross Coupled

Refer to Wiring Diagrams Cell 46 for schematic and connector information.

Normal Operation and Fault Conditions

The RCM monitors all deployable device and sensor circuits for a signal cross coupled (short) between components. Signal cross coupled Diagnostic Trouble Codes (DTCs) are present when one or both circuits of a component are shorted to one or both circuits of another component. Signal cross coupled Diagnostic Trouble Codes (DTCs) do not set when the circuits of a single device are shorted together, a different DTC is present (for example, a DTC for circuit resistance below threshold). The RCM sends a message to the IPC to illuminate the airbag warning indicator. When a normal loop fault is present (one loop is either shorted to battery/ground, open circuit or low resistance), then signal cross coupled diagnostics are not active. Once the normal loop fault is repaired, the signal cross coupled diagnostics resume.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B0001:2B	Driver Frontal Stage 1 Deployment Control: Signal Cross Coupled	If the RCM detects a short between the driver airbag stage 1 circuits and the circuits of another SRS component, it sets this DTC and the DTC of the corresponding SRS component.
B0002:2B	Driver Frontal Stage 2 Deployment Control: Signal Cross Coupled	If the RCM detects a short between the driver airbag stage 2 circuits and the circuits of another SRS component, it sets this DTC and the DTC of the corresponding SRS component.

B0005:2B	Collapsible Steering Column Deployment Control: Signal Cross Coupled	If the RCM detects a short between the deployable steering column circuits and the circuits of another SRS component, it sets this DTC and the DTC of the corresponding SRS component.
B0010:2B	Passenger Frontal Stage 1 Deployment Control: Signal Cross Coupled	If the RCM detects a short between the passenger airbag stage 1 circuits and the circuits of another SRS component, it sets this DTC and the DTC of the corresponding SRS component.
B0011:2B	Passenger Frontal Stage 2 Deployment Control: Signal Cross Coupled	If the RCM detects a short between the passenger airbag stage 2 circuits and the circuits of another SRS component, it sets this DTC and the DTC of the corresponding SRS component.
B0050:2B	Driver Seatbelt Sensor: Signal Cross Coupled	If the RCM detects a short between the driver safety belt buckle switch circuits and the circuits of another SRS component, it sets this DTC and the DTC of the corresponding SRS component.
B0052:2B	Passenger Seatbelt Sensor: Signal Cross Coupled	If the RCM detects a short between the passenger safety belt buckle switch circuits and the circuits of another SRS component, it sets this DTC and the DTC of the corresponding SRS component.
B0070:2B	Driver Seatbelt Pretensioner "A" Deployment Control: Signal Cross Coupled	If the RCM detects a short between the driver safety belt anchor pretensioner circuits and the circuits of another SRS component, it sets this DTC and the DTC of the corresponding SRS component.
B0072:2B	Passenger Seatbelt Pretensioner "A" Deployment Control: Signal Cross Coupled	If the RCM detects a short between the passenger safety belt anchor pretensioner circuits and the circuits of another SRS component, it sets this DTC and the DTC of the corresponding SRS component.

B007E:2B	Driver Seatbelt Pretensioner "C" Deployment Control: Signal Cross Coupled	If the RCM detects a short between the driver safety belt retractor pretensioner circuits and the circuits of another SRS component, it sets this DTC and the DTC of the corresponding SRS component.
B007F:2B	Passenger Seatbelt Pretensioner "C" Deployment Control: Signal Cross Coupled	If the RCM detects a short between the passenger safety belt retractor pretensioner circuits and the circuits of another SRS component, it sets this DTC and the DTC of the corresponding SRS component.
B00B5:2B	Driver Seat Track Position Restraints Sensor: Signal Cross Coupled	If the RCM detects a short between the LH seat track position sensor circuits and the circuits of another SRS component, it sets this DTC and the DTC of the corresponding SRS component.
B00C5:2B	Passenger Seat Track Position Restraints Sensor: Signal Cross Coupled	If the RCM detects a short between the RH seat track position sensor circuits and the circuits of another SRS component, it sets this DTC and the DTC of the corresponding SRS component.
B11CF:2B	Passenger Frontal Airbag Canister Vent: Signal Cross Coupled	If the RCM detects a short between the passenger airbag canister vent circuits and the circuits of another SRS component, it sets this DTC and the DTC of the corresponding SRS component.
B1404:2B	Driver Side Airbag Deployment Control: Signal Cross Coupled	If the RCM detects a short between the driver side airbag circuits and the circuits of another SRS component, it sets this DTC and the DTC of the corresponding SRS component.
B1405:2B	Driver Curtain Deployment Control 1: Signal Cross Coupled	If the RCM detects a short between the LH side air curtain circuits and the circuits of another SRS component, it sets this DTC and the DTC of the corresponding SRS component.
B1407:2B	Passenger Side Airbag Deployment Control: Signal Cross Coupled	If the RCM detects a short between the passenger side airbag circuits and the circuits of another SRS component, it sets this DTC and the DTC of the corresponding SRS component.

B1408:2B	Passenger Curtain Deployment Control 1: Signal Cross Coupled	If the RCM detects a short between the RH side air curtain circuits and the circuits of another SRS component, it sets this DTC and the DTC of the corresponding SRS component.
B140C:2B	Second Row Driver Side Seatbelt Sensor: Signal Cross Coupled	If the RCM detects a short between the second row LH safety belt buckle sensor circuits and the circuits of another SRS component, it sets this DTC and the DTC of the corresponding SRS component.
B140D:2B	Second Row Passenger Side Seatbelt Sensor: Signal Cross Coupled	If the RCM detects a short between the second row RH safety belt buckle sensor circuits and the circuits of another SRS component, it sets this DTC and the DTC of the corresponding SRS component.
B141B:2B	Second Row Driver Side Inflatable Seatbelt Deployment Control: Signal Cross Coupled	If the RCM detects a short between the second row LH safety belt inflator circuits and the circuits of another SRS component, it sets this DTC and the DTC of the corresponding SRS component.
B141C:2B	Second Row Passenger Side Inflatable Seatbelt Deployment Control: Signal Cross Coupled	If the RCM detects a short between the second row RH safety belt inflator circuits and the circuits of another SRS component, it sets this DTC and the DTC of the corresponding SRS component.

Possible Sources

- Wiring, terminals or connectors
- RCM

Visual Inspection and Diagnostic Pre-Checks

- Inspect the affected wiring harness(es) for damage, if accessible.

PINPOINT TEST A : BXXXX:2B (ANY BXXXX DTC (DIAGNOSTIC TROUBLE CODE) WITH A 2B FAILURE TYPE) SIGNAL CROSS COUPLED



WARNING: Incorrect repair techniques or actions can cause an accidental Supplemental Restraint System (SRS) deployment. Never compromise or depart from these instructions. Failure to precisely follow all instructions could result in serious personal injury from an accidental deployment.

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may cause damage to the connector.

NOTE: *Most faults are due to connector and/or wiring concerns. Carry out a thorough inspection and verification before proceeding with the pinpoint test.*

NOTE: *Only disconnect or reconnect SRS components when instructed to do so within a pinpoint test step. Failure to follow this instruction may result in incorrect diagnosis of the SRS.*

NOTE: *Always make sure the correct SRS component is being installed. Parts released for other vehicles may not be compatible even if they appear physically similar. Check the part number listed in the Ford parts catalog to make sure the correct component is being installed. If an incorrect SRS component is installed, Diagnostic Trouble Codes (DTCs) may set.*

NOTE: *The SRS must be fully operational and free of faults before releasing the vehicle to the customer.*

A1 RETRIEVE RCM (RESTRAINTS CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCs)

-  **WARNING:** Before beginning any service procedure in this section, refer to Safety Warnings in section 100-00 General Information. Failure to follow this instruction may result in serious personal injury.

REFER to: [Pyrotechnic Device Health and Safety Precautions](#) (100-00 General Information, Description and Operation).

- Ignition ON.
- Using a diagnostic scan tool, perform RCM self-test.

Were any signal cross coupled Diagnostic Trouble Codes (DTCs) retrieved on-demand during self-test?

Yes	This fault cannot be cleared until it is corrected and the DTC is no longer retrieved during the on-demand self test. If DTC U3003:16 or U3003:17 is also retrieved on-demand, DIAGNOSE those Diagnostic Trouble Codes (DTCs) first. REFER to: Pinpoint Test - DTC: AN, Raptor (501-20B Supplemental Restraint System, Diagnosis and Testing). If DTC U3003:16 or U3003:17 are not retrieved on-demand, GO to A2
No	If DTC U3003:16 or U3003:17 is retrieved on-demand as well, DIAGNOSE those Diagnostic Trouble Codes (DTCs) first. REFER to: Pinpoint Test - DTC: AN, Raptor (501-20B Supplemental Restraint System, Diagnosis and Testing). If DTC U3003:16 or U3003:17 are not retrieved on-demand, DIAGNOSE the signal cross-coupled Continuous Memory Diagnostic Trouble Codes (CMDTCs). This is an intermittent fault when present as a CMDTC only. GO to A4

A2 CHECK THE AFFECTED CIRCUITS FOR A SIGNAL CROSS COUPLED FAULT

- Ignition OFF.
- Depower the SRS.
REFER to: [Supplemental Restraint System \(SRS\) Depowering](#) (501-20B Supplemental Restraint System, General Procedures).
- Disconnect RCM C310A and C310B.
- Using the signal cross coupled Diagnostic Trouble Codes (DTCs) present on-demand, identify the affected SRS devices.

- **NOTE:** *Most signal cross coupled faults are due to connector and/or wiring harness damage. Carry out a thorough inspection of connector(s) and/or wiring harness for damage.*

Disconnect all of the affected SRS devices.

- Using the following table, measure the resistance between the circuits of one affected SRS device to the other affected SRS device.
 - Example: If Diagnostic Trouble Codes (DTCs) B0001:2B and B0002:2B are being diagnosed, measure the resistance between circuit CR101 to circuits CR102 and RR102. Then measure the resistance between circuit RR101 to circuits CR102 and

Device/Loop (DTC)	Connector
Driver airbag stage 1 (B0001:2B)	• C216A-1 • C216A-2
Driver airbag stage 2 (B0002:2B)	• C216B-1 • C216B-2
Deployable steering column (B0005:2B)	• C2360-1 • C2360-2
Passenger airbag stage 1 (B0010:2B)	• C256-1 • C256-2
Passenger airbag stage 2 (B0011:2B)	• C256-4 • C256-5
Driver safety belt buckle (B0050:2B)	• C3201-5
Passenger safety belt buckle (B0052:2B)	• C3738-5
Driver safety belt anchor pretensioner (B0070:2B)	• C323B-1 • C323B-2
Passenger safety belt anchor pretensioner (B0072:2B)	• C303B-1 • C303B-2
Driver safety belt retractor pretensioner (B007E:2B)	• C323A-1 • C323A-2
Passenger safety belt retractor pretensioner (B007F:2B)	• C303A-1 • C303A-2
Driver seat position sensor (B00B5:2B)	• C356-2
Passenger seat position sensor (B00C5:2B)	• C3288-2
Passenger airbag canister vent (B11CF:2B)	• C256-7 • C256-8
Driver side airbag (B1404:2B)	• C3051-1 (Inline) • C3051-2 (Inline)
LH side air curtain (B1405:2B)	• C3321-1 • C3321-2
Passenger side airbag (B1407:2B)	• C3053-1 (Inline) • C3053-2 (Inline)

RH side air curtain (B1408:2B)	• C3329-1 • C3329-2
Second row LH safety belt buckle sensor (B140C:2B)	• C3646-3
Second row RH safety belt buckle sensor (B140D:2B)	• C3647-3
Second row LH safety belt inflator (B141B:2B)	• C3646-1 • C3646-2
Second row RH safety belt inflator (B141C:2B)	• C3647-1 • C3647-2

Are the resistances greater than 10,000 ohms between the affected circuits?

Yes	GO to A3
No	REPAIR the affected circuits. Refer to Wiring Diagrams Cell 5 for schematic and connector information. GO to A5

A3 CONFIRM THE RCM (RESTRAINTS CONTROL MODULE) FAULT

NOTE: Make sure all SRS components and the RCM electrical connectors are connected before carrying out the self-test. If not, Diagnostic Trouble Codes (DTCs) will be recorded.

- Connect all previously disconnected restraint system component(s).
- Connect RCM C310A and C310B.
- Repower the SRS. Do not prove out the SRS at this time.
REFER to: [Supplemental Restraint System \(SRS\) Repowering](#) (501-20B Supplemental Restraint System, General Procedures).
- Ignition ON.
- Using a diagnostic scan tool, perform RCM self-test.

Were any signal cross coupled Diagnostic Trouble Codes (DTCs) retrieved on-demand during self-test?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new RCM. REFER to: Restraints Control Module (RCM) (501-20B Supplemental Restraint System, Removal and Installation). GO to A5
No	In the process of diagnosing the fault, the fault condition has become intermittent. Do not install any new SRS components at this time. Install SRS components only when directed to do so in the pinpoint test. GO to A4

A4 CHECK FOR AN INTERMITTENT FAULT

NOTE: Most cross link faults are due to connector and/or wiring harness damage. Carry out a thorough inspection of connector(s) and/or wiring harness for damage.

- Ignition OFF.
- Depower the SRS.
REFER to: [Supplemental Restraint System \(SRS\) Depowering](#) (501-20B Supplemental Restraint System, General Procedures).
- Disconnect all of the affected SRS devices.
Refer to Wiring Diagrams Cell 46 for schematic and connector information.
- Inspect the wiring harness(es) for any type of damage. If damage is found, repair as necessary.
Refer to Wiring Diagrams Cell 5 for schematic and connector information.
- Repower the SRS. Do not prove out the SRS at this time.
REFER to: [Supplemental Restraint System \(SRS\) Repowering](#) (501-20B Supplemental Restraint System, General Procedures).
- Ignition ON.
- Using a diagnostic scan tool, perform RCM self-test.

Were any signal cross coupled Diagnostic Trouble Codes (DTCs) retrieved on-demand during self-test?

Yes	This fault cannot be cleared until it is corrected and the DTC is no longer retrieved on-demand during self-test. GO to A2
No	The fault is not present and cannot be recreated at this time. CHECK for causes of the intermittent fault. ATTEMPT to recreate the hard fault by flexing the wire harness and cycling the ignition frequently. Do not install any new SRS components at this time. Install SRS components only when directed to do so in the pinpoint test. GO to A5

A5 CHECK FOR ADDITIONAL SRS (SUPPLEMENTAL RESTRAINT SYSTEM) DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition OFF.
- Reconnect all SRS components (if previously disconnected).
- If previously directed to depower the SRS, repower the SRS. Do not prove out the SRS at this time.
REFER to: [Supplemental Restraint System \(SRS\) Repowering](#) (501-20B Supplemental Restraint System, General Procedures).
- Ignition ON.
- **NOTE:** *When selecting Restraints from the Self Test menu, DTCs are retrieved from the RCM, OCSM and BECMB.*

Using a diagnostic scan tool, carry out RCM self-test.

Are any RCM, OCSM and/or BECMB Diagnostic Trouble Codes (DTCs) retrieved on-demand during self-test?

Yes	Do not clear any Diagnostic Trouble Codes (DTCs) until all Diagnostic Trouble Codes (DTCs) have been resolved. DIAGNOSE and REPAIR the Diagnostic Trouble Codes (DTCs). REFER to: Airbag Supplemental Restraint System (SRS) (501-20B Supplemental Restraint System, Diagnosis and Testing). REFER to: Airbag Supplemental Restraint System (SRS) - Raptor (501-20B Supplemental Restraint System, Diagnosis and Testing).
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No	The repair is complete. RETURN the vehicle to the customer.
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