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2008 FORD Focus Sedan OEM Service and Repair Workshop Manual

[Go to manual page](#)



Steering Wheel and Column Electrical Components

211-05 Steering Wheel and Column Electrical Components	2022 F-150
Diagnosis and Testing	Procedure revision date: 09/30/2022

Steering Wheel and Column Electrical Components

Diagnostic Trouble Code (DTC) Chart

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: [Diagnostic Methods](#)

(100-00 General Information, Description and Operation).

Diagnostic Trouble Code Chart

Module	DTC (diagnostic trouble code)	Description	Action
BCM (body control module)	B108A:01	Start Button: General Electrical Failure	GO to Pinpoint Test G
BCM (body control module)	B108A:24	Start Button: Signal Stuck High	GO to Pinpoint Test G
BCM (body control module)	B108A:9E	Start Button: Stuck On	GO to Pinpoint Test G
BCM (body control module)	B1142:29	Ignition Status 1: Signal Invalid	GO to Pinpoint Test C

PCM (powertrain control module)	P2534:00	Ignition Switch Run/Start Position Circuit Low: No Sub Type Information	GO to Pinpoint Test D
PCM (powertrain control module)	P2535:00	Ignition Switch Run/Start Position Circuit High: No Sub Type Information	GO to Pinpoint Test D
SCCM (steering column control module)	B112B:49	Steering Wheel Module: Internal Electronic Failure	GO to Pinpoint Test O
SCCM (steering column control module)	B11D9:16	Vehicle Battery: Circuit Below Threshold	GO to Pinpoint Test J
SCCM (steering column control module)	B11D9:17	Vehicle Battery: Circuit Above Threshold	GO to Pinpoint Test K
SCCM (steering column control module)	B135C:11	Heater Element: Circuit Short To Ground	GO to Pinpoint Test M
SCCM (steering column control module)	B135C:15	Heater Element: Circuit Open	GO to Pinpoint Test M
SCCM (steering column control module)	U0140:08	Lost Communication With Body Control Module: Bus Signal / Message Failure	GO to Pinpoint Test P
SCCM (steering column control module)	U0146:08	Lost Communication With Serial Data Gateway "A": Bus Signal / Message Failure	GO to Pinpoint Test P
SCCM (steering column control module)	U0151:00	Lost Communication With Restraints Control Module:: No Sub Type Information	GO to Pinpoint Test P
SCCM (steering column control module)	U0155:08	Lost Communication With Instrument Panel Cluster Module: Bus Signal / Message Failure	GO to Pinpoint Test P

SECM (steering effort control module)	B13BD:92	Steering Wheel Heater Module: Performance or Incorrect Operation	GO to Pinpoint Test N
SECM (steering effort control module)	U1000:00	Solid State Driver Protection Active - Driver Disabled: No Sub Type Operation	GO to Pinpoint Test N
SECM (steering effort control module)	U210A:11	Temperature Sensor: Circuit Short To Ground	GO to Pinpoint Test N
SECM (steering effort control module)	U210A:15	Temperature Sensor: Circuit Short To Battery or Open	GO to Pinpoint Test N

Global Customer Symptom Code (GCSC) Chart

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: [Diagnostic Methods](#)

(100-00 General Information, Description and Operation).

Global Customer Symptom Code Chart

Customer Symptom	Action
Start/Run/Move > Starting > Slow Crank/Battery > Always	GO to Pinpoint Test J
Start/Run/Move > Starting > Ignition Switch/Key > Sticks/Binds	GO to Pinpoint Test E
Start/Run/Move > Starting > Push Button Start > Inoperative	GO to Pinpoint Test H
Stop/Steer/Ride > Steering/Steering Wheel > Performance > Inoperative	GO to Pinpoint Test M
Stop/Steer/Ride > Steering/Steering Wheel > Performance > Inoperative	GO to Pinpoint Test N

Symptom Charts

Symptom Chart: Ignition Switch - Conventional

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: [Diagnostic Methods](#)

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(100-00 General Information, Description and Operation).

Symptom Chart

Condition	Actions
The heated steering wheel is inoperative or does not operate correctly	<ul style="list-style-type: none">• GO to Pinpoint Test M

Symptom Chart: Heated Steering Wheel (vehicles equipped with adaptive steering)

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: [Diagnostic Methods](#)

(100-00 General Information, Description and Operation).

Symptom Chart

Condition	Actions
The heated steering wheel is inoperative or does not operate correctly	<ul style="list-style-type: none">• GO to Pinpoint Test N

Pinpoint Tests

PINPOINT TEST A : NO POWER IN ALL IGNITION SWITCH POSITIONS - CONVENTIONAL IGNITION SWITCH

Refer to Wiring Diagrams Cell 13for schematic and connector information.

Normal Operation and Fault Conditions REFER to: [Steering Wheel and Column Electrical Components - System Operation and Component Description](#)
(211-05 Steering Wheel and Column Electrical Components, Description and Operation).

Possible Sources

- Fuse
- Wiring, terminals or connectors
- Ignition switch
- BCM (body control module)

Visual Inspection and Pre-checks

- Inspect the battery and battery cables
- Inspect the BCM (body control module) fuse 20 (5A)

- Ignition OFF.
- Disconnect Ignition Switch C250 .
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C250-4	\bar{V}	Ground

Is the voltage greater than 11 volts?

Yes	INSTALL a new ignition switch. REFER to: Ignition Switch - Vehicles With: Keyed Ignition (211-05 Steering Wheel and Column Electrical Components, Removal and Installation).
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No	VERIFY the BCM (body control module) fuse 20 (5A) is OK. If OK, GO to A3 If not OK, REFER to the Wiring Diagrams manual to identify the possible cause of the circuit short.
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A3 CHECK THE IGNITION SWITCH VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Disconnect BCM (body control module) C2280A .
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C250-4	Ω	C2280A-12

Is the resistance less than 3 ohms?

Yes	GO to A4
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- BCM (body control module)

NOTICE

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

B1 CHECK FOR BCM (BODY CONTROL MODULE) DTC (DIAGNOSTIC TROUBLE CODE) U300A:01

- Ignition ON.
- Using a diagnostic scan tool, carry out the BCM (body control module) self-test.

Is DTC (diagnostic trouble code) U300A:01 present?

Yes

[GO to Pinpoint Test L](#)

No

GO to [B2](#)

B2 CHECK FOR VOLTAGE TO THE BCM (BODY CONTROL MODULE) WITH THE IGNITION SWITCH IN THE ACC POSITION

- Ignition OFF.
- Disconnect Ignition Switch C250 .
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2280B-50	Ω	C250-6

Is the resistance less than 3 ohms?

Yes	INSTALL a new ignition switch. REFER to: Ignition Switch - Vehicles With: Keyed Ignition (211-05 Steering Wheel and Column Electrical Components, Removal and Installation).
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No	REPAIR the circuit.
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B4 CHECK FOR VOLTAGE TO THE BCM (BODY CONTROL MODULE) WITH THE IGNITION SWITCH IN THE ON POSITION

- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2280B-50	\overline{V}	Ground

Is the voltage greater than 11 volts?

Yes	GO to B5
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No	INSTALL a new ignition switch. REFER to: Ignition Switch - Vehicles With: Keyed Ignition
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trouble code)		
BCM (body control module) B1142:29	Ignition Status 1: Signal Invalid	Sets when the BCM (body control module) does not receive a valid ignition signal during a BCM (body control module) self-test.
BCM (body control module) B1310:12	Run/Start Control: Circuit Short To Battery	Sets when the BCM (body control module) detects a short to voltage from the BCMC (body control module C) run/start relay control circuit. When set, the control side of the run/start relay is disabled via the Field Effect Transistor (FET). Once the condition that caused the DTC (diagnostic trouble code) to set is repaired, the BCM (body control module) must pass a self-test in order for the DTC (diagnostic trouble code) to clear and the system to resume normal operation.
BCM (body control module) B1310:14	Run/Start Control: Circuit Short To Ground Or Open	The BCM (body control module) continuously monitors the BCMC (body control module C) RUN/START relay control circuit. This DTC (diagnostic trouble code) is set if the BCM detects an open or a short to ground on the BCMC (body control module C) RUN/START relay control circuit. When this DTC (diagnostic trouble code) sets, the BCM (body control module) disables the control side of the RUN/START relay FET. Once the condition that caused the DTC (diagnostic trouble code) to set is repaired, the BCM (body control module) must pass a self-test in order for the DTC (diagnostic trouble code) to clear and the system to resume normal operation.

Possible Sources

- Network concern
- Wiring, terminals or connectors
- Ignition switch
- BCMC (body control module C)
- BCM (body control module)

Visual Inspection and Pre-checks


- Inspect the BCM (body control module) fuse 20 (5A)

NOTICE

Use the correct probe adapter(s) when making measurements. Failure to use the correct probe

C4 CHECK FOR VOLTAGE TO THE BCM (BODY CONTROL MODULE) WITH THE IGNITION SWITCH IN THE ON POSITION

- Ignition OFF.
- Disconnect BCM (body control module) C2280B .
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2280B-37		Ground


Is the voltage greater than 11 volts?

Yes	GO to C7
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No	VERIFY BCM (body control module) fuse 20 (5A) is OK. If OK, GO to C5 If not OK, REFER to the Wiring Diagrams manual to identify the possible cause of the circuit short.
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C5 CHECK THE IGNITION ON-DESIGNATED INPUT CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Disconnect Ignition Switch C250 .
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2280B-37		Ground

Is the resistance less than 3 ohms?

Yes	REPAIR the circuit.
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