

PRODEMAND

YMMS: 2020 Ford Ranger Lariat
 Engine: 2.3L Eng
 VIN:

Apr 11, 2021
 License:
 Odometer:

Pinpoint Tests CT: ABS Module DTC C1A99 - Pressure Sensor

Normal Operation And Fault Conditions

The ABS module uses a pressure sensor located inside the HCU to monitor the integrity of the hydraulic system. When the brake pedal is pressed, the ABS module compares the value of the brake fluid line pressure sensor to the BOO switch input from the PCM over the HS-CAN. If the brake fluid pressure sensor value is not comparable to the BOO switch input, the ABS module sets one or more DTCs.

PPT CT ABS MODULE DTC FAULT TRIGGER CONDITIONS

DTC	Description	Fault Trigger Conditions
C1A99:01	Pressure Sensor: General Electrical Failure	This DTC indicates the brake fluid line hydraulic pressure sensor signal circuit located inside the HCU has failed.
C1A99:28	Pressure Sensor: Signal Bias Level Out of Range/Zero Adjustment Failure	This DTC indicates the brake fluid line hydraulic pressure sensor located inside the HCU has failed.

Possible Causes

- Incorrectly installed stoplamp switch
- Brake drag (base brake system concern)
- Wiring, terminals or connectors
- HCU

CT1: RECHECK FOR ABS MODULE DTC C1A99


Ignition ON, engine OFF.

Carry out the ABS self-test.

Is DTC C1A99:xx currently present and active in the ABS module?

Yes	No
Go to CT2.	<p>GATHER information from the customer about conditions necessary to duplicate the concern.</p> <p>Some things to ask the customer may include; how often, drive time, down time, climate conditions (inside and outside the vehicle), speed traveling or maneuvering performed when the fault occurs.</p> <p>OPERATE the vehicle in the conditions outlined by the customer and MONITOR the PCM BOO1 and BOO2 PIDs, and the ABS module Hydraulic pressure PIDs to determine a focus area.</p> <p>If there is pressure above 1, 379 kPa (200 PSI) and no BOO reading, an incorrectly installed stoplamp switch is the most likely cause.</p>

CT2: CHECK THE ABS MODULE HYDRAULIC PRESSURE PID

 **NOTE:** *The brake pressure PID should read close to 0 kPa (0 PSI) with the brake pedal released and increase when applying the brake pedal.*

Access the ABS and monitor the BRKHYDPRESS (PRESS) PID. While monitoring the PID, fully apply the brake pedal.

Does the PID read close to 0 kPa (0 PSI) without the brake pedal applied and increase when the pedal is pressed?

Yes	No
Go to CT4.	Go to CT3.

CT3: CHECK FOR BRAKE DRAG

With the transmission in NEUTRAL, position the vehicle on a hoist. Refer to the Jacking and Lifting article.

Spin each wheel by hand and check for any indication of brake drag.

Do all 4 wheels spin freely with little to no resistance?

Yes	No
Go to CT4.	DIAGNOSE and REPAIR the brake drag concern. REFER to the Brake System General Information article.

CT4: CHECK THE PCM BOO1 AND BOO2 PIDS

Ignition ON, engine OFF.

Monitor the following PIDs while pressing and releasing the brake pedal.

Access the PCM and monitor the BOO1 (MODE) PID.

Access the PCM and monitor the BOO2 (MODE) PID.

Do the PIDs indicate ON with the brake pedal applied and OFF with the brake pedal released?

Yes	No
INSTALL a new EBB assembly. CHECK OASIS for any service articles: TSB, GSB, SSM or FSA. If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new EBB unit (HCU and ABS module assembly). If this is a Ford paid repair, INCLUDE the RVC on the warranty claim form.	INSTALL a new BOO switch. REFER to the Exterior Lighting article. When installing the new switch, USE the appropriate flex probe to VERIFY correct pin fitment at the connector.