

QB: Keep Alive Power (KAPWR)

This pinpoint test is intended to diagnose the following:

- battery terminal condition
- KAPWR wire routing
- harness circuit: KAPWR
- powertrain control module (PCM) (12A650)

Powertrain Control Module (PCM) Connector

For PCM connector views or reference values, refer to Section 6, Reference Values.

Vehicle	Connector	Pin	Circuit
E-Series	198 PIN	B21	KAPWR
EcoSport	112 PIN	B10	KAPWR
Fusion 2.5L	198 PIN	B62	KAPWR
Ranger	128 PIN	B10	KAPWR
Transit	306 PIN	B100	KAPWR
All other vehicles	198 PIN	B100	KAPWR

QB1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

Note: The DTC P2610 may set after a PCM reprogramming. If this DTC is retrieved after a PCM reprogramming, disregard this DTC.

- Carry out a visual inspection.
- Record the DTCs.
- Record the freeze frame data.
- Clear the PCM DTCs.
- Carry out the PCM self-test.

Are DTCs P0603, P1633 or P2610 present?

Yes	For DTC P2610, GO to QB6 . For all others, GO to QB2 .
No	Unable to duplicate the condition. CHECK for a loose connection, and damaged or corroded pins. WIGGLE the harness attempting to recreate the concern. REPAIR as necessary. REFER to Section 3, GO to Pinpoint Test QT , if a driveability concern exists. Clear the PCM DTCs. REPEAT the self-test.

QB2 CHECK THE 12-VOLT BATTERY TERMINALS

Note: If the KAPWR is interrupted to the PCM, a DTC can be generated on the first power-up.

Note: If DTC P0603 occurred right after or during an unsuccessful reprogramming of the PCM, clear the DTCs and repeat the PCM self-test. If DTC P0603 is retrieved again, continue with this pinpoint test.

- Inspect the 12 volt battery cables for loose connections and for corrosion.

Are the 12 volt battery terminal connections in good condition?

Yes	GO to QB3 .
No	REPAIR as necessary. Clear the PCM DTCs. REPEAT the self-test.

QB3 INSPECT THE ENGINE COMPARTMENT FOR CORRECT WIRE ROUTING

- Inspect the electronic engine control (EEC) system wiring for correct wire routing.
- Check the wiring routing to establish if any of the electrical connectors are being stressed due to incorrectly routed wiring. If necessary re-route and secure the wiring.
- Visually inspect the wiring and connectors.

Is a concern present?

Yes	REPAIR as necessary. Clear the PCM DTCs. REPEAT the self-test.
No	For E-Series, Ford GT, Motorhome / Stripped Chassis / Step Van, and Ranger 2.5L, GO to QB4 . For all others, GO to QB5 .

QB4 CHECK KAPWR TO THE PCM

- Ignition OFF.
- PCM connector disconnected.
- Measure the voltage between:

(+) PCM Connector, Harness Side	(-) 12 Volt Vehicle Battery
KAPWR	Negative terminal

Is the voltage greater than 10.5 V?

Yes	GO to QB5 .
No	ISOLATE the concern and REPAIR as necessary. Clear the PCM DTCs. REPEAT the self-test.

QB5 CHECK FOR A REOCCURRENCE OF THE DTC

- PCM connector connected.
- Clear the PCM DTCs.
- Test drive the vehicle and allow the engine to reach normal operating temperature.
- Carry out the PCM self-test.

Is DTC P0603 or P1633 present?

Yes	GO to QB8 .
No	Unable to duplicate or identify the concern at this time. GO to Pinpoint Test Z .

QB6 CHECK THE ENGINE OFF TIMER

Note: Turning the ignition ON then OFF without an engine start for the purpose of checking the engine coolant temperature does not affect the test results.

- Ignition ON, engine running.
- Allow the engine to stabilize at the correct operating temperature.
- Ignition OFF.
- Ignition ON, engine OFF.
- Clear the PCM DTCs.
- Ignition OFF.
- Allow the engine to cold soak long enough for the engine coolant temperature to drop at least 16.7°C (30°F).
- Ignition ON, engine OFF.
- Carry out the PCM self-test.

Is DTC P2610 present?

Yes	GO to QB7 .
No	Unable to duplicate the condition. REFER to Section 3, GO to Pinpoint Test QT , to continue diagnosis.

QB7 CHECK FOR ANY BODY CONTROL MODULE (BDYCM) DTCS

- Carry out the BdyCM self-test.

Are any DTCs present?

Yes	REFER to the Workshop Manual Section 419-10, Multifunction Electronic Modules, to continue diagnosis.
No	GO to QB8 .

QB8 CHECK FOR CORRECT PCM OPERATION

- Disconnect all the PCM connectors.
- Visually inspect for:
 - pushed out pins
 - corrosion
- Connect all the PCM connectors and make sure they seat correctly.
- Carry out the PCM self-test.
- Verify the concern is still present.

Is the concern still present?

Yes	INSTALL a new PCM. REFER to Section 2, Flash Electrically Erasable Programmable Read Only Memory (EEPROM) , Programming the VID Block for a Replacement PCM.
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

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