PRODEMAND

YMMS: 2014 Chrysler Town & Country Limited
Engine: 3.6L Eng
VIN:

Oct 8, 2025
License:
Odometer:

P0642-SENSOR REFERENCE VOLTAGE 1 CIRCUIT LOW

For a complete wiring diagram, **refer to appropriate SYSTEM WIRING DIAGRAMS article** .

THEORY OF OPERATION

The primary 5-Volt Supply circuit supplies the Crankshaft Position Sensor (CKP), Oil Pressure Sensor (OPS), and Throttle Body Assembly. For self protection, if the 5-Volt Supply circuit is shorted to ground or if one of the sensors is internally shorted, the Powertrain Control Module (PCM) will turn off the 5-Volt Supply circuit until the next ignition cycle.

WHEN MONITORED

Ignition on.

SET CONDITION

When the Powertrain Control Module (PCM) recognizes the (F855) 5-Volt Supply circuit voltage is too low. One Trip Fault. ETC light is flashing.

POSSIBLE CAUSES

Possible Causes
(F855) 5-VOLT SUPPLY SHORTED TO GROUND
CRANKSHAFT POSITION SENSOR
OIL PRESSURE SENSOR
A/C PRESSURE TRANSDUCER
THROTTLE BODY ASSEMBLY
APP SENSOR
POWERTRAIN CONTROL MODULE (PCM)

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding. Refer to PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE .

DIAGNOSTIC TEST

1. **ACTIVE DIAGNOSTIC TROUBLE CODE (DTC)**

> **NOTE:** *Improperly installed aftermarket accessories can cause this DTC to set. Check for any improperly installed aftermarket accessories before continuing with this test.*

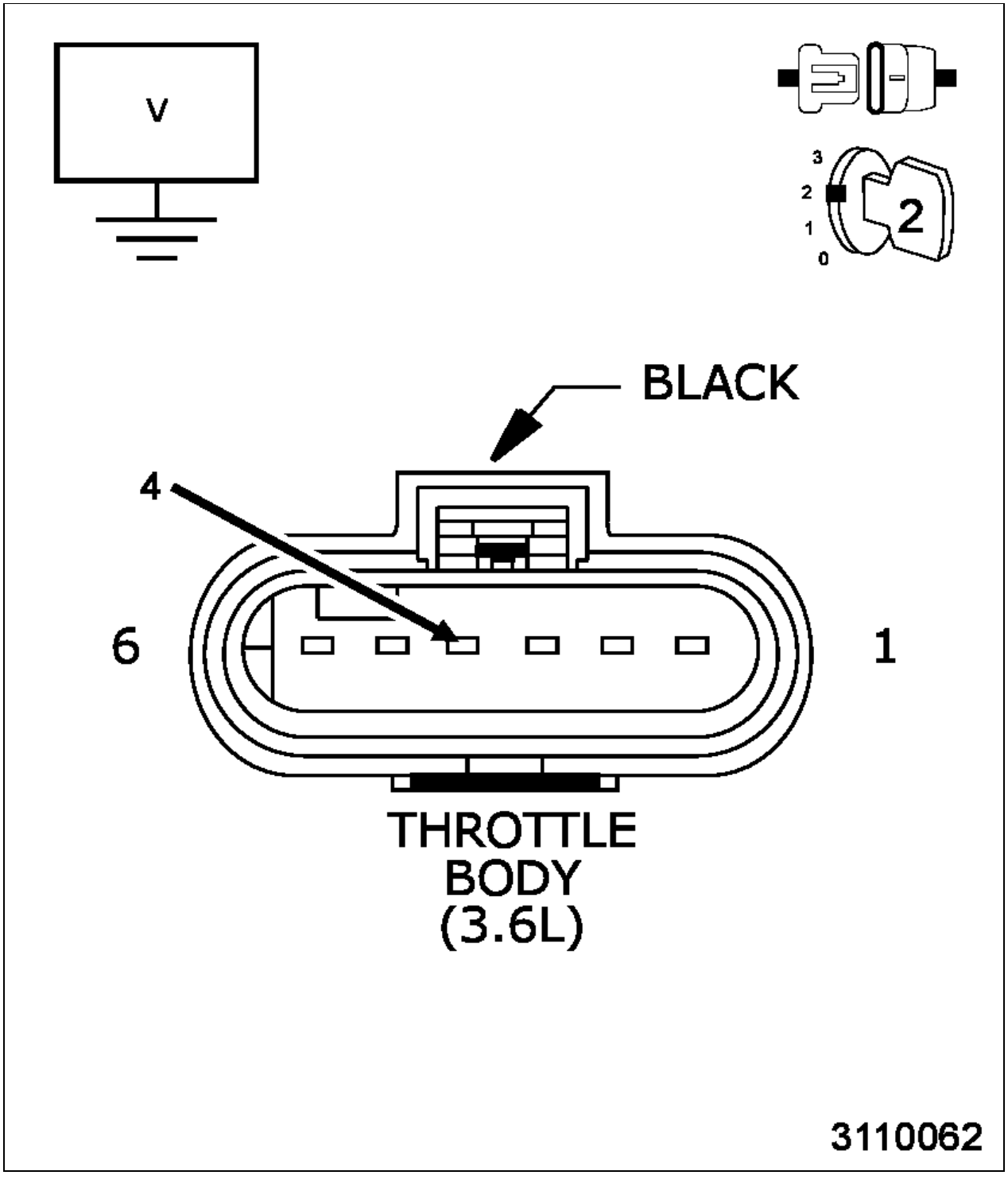
1. Turn the ignition on for 60 seconds.

2. With a scan tool, read the active DTCs.
   Is the DTC Active at this time?
   Yes
   1. Go To 2

   No
   1. Perform the INTERMITTENT CONDITION diagnostic procedure. Refer to INTERMITTENT CONDITION .

2. **(F855) 5-VOLT SUPPLY SHORTED TO GROUND**

Fig 1: Checking 5 Volt Supply Circuit For A Short To Ground



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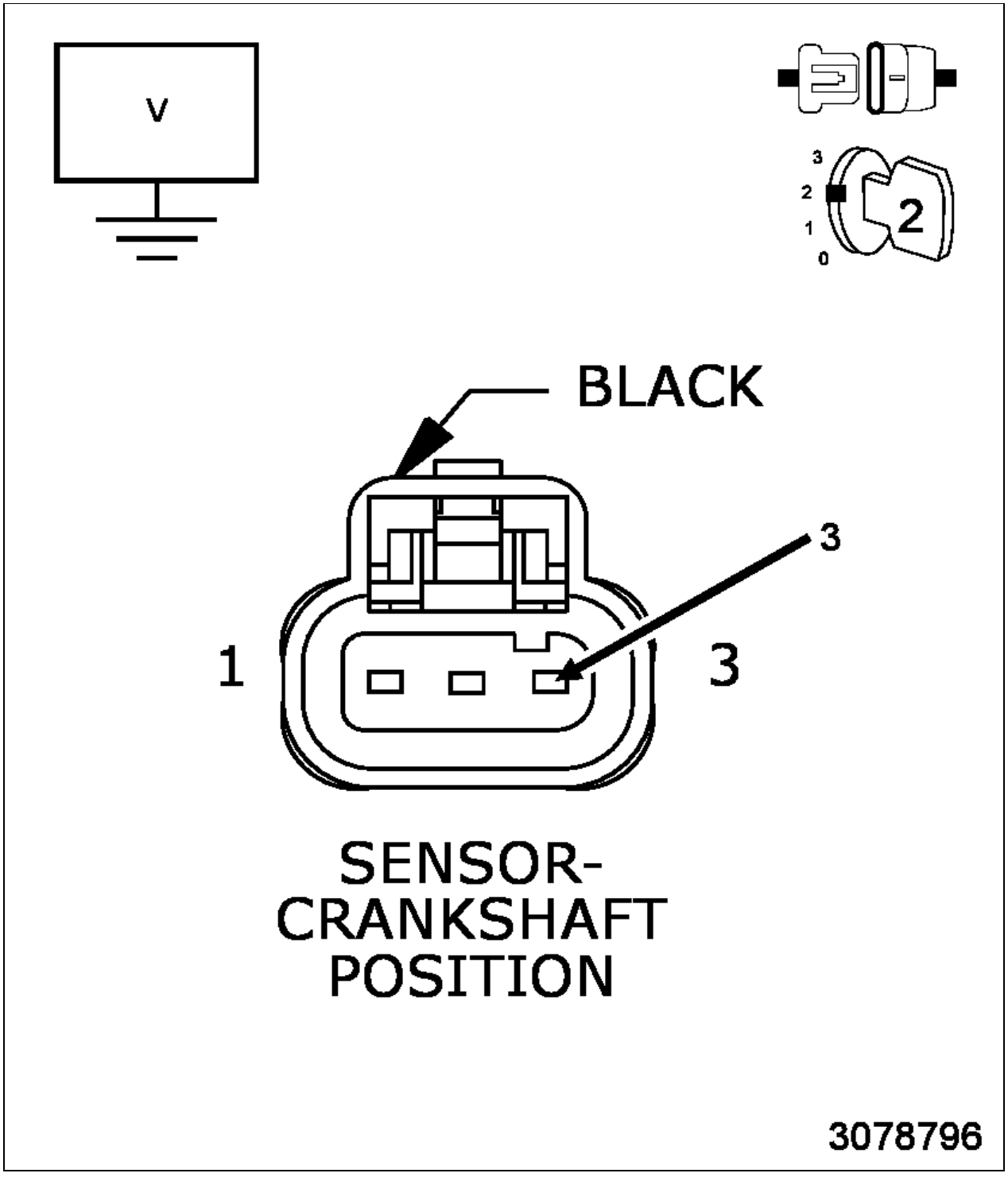
1. Turn the ignition off.
2. Disconnect the PCM C2 harness connector.
3. Disconnect all the Sensors that share the (F855) 5-Volt Supply circuit.
4. Disconnect the APP Sensor harness connector.

5. Measure the resistance between ground and the (F855) 5-Volt Supply circuit in the Throttle Body harness connector.
   Is the resistance below 100 Ohms?
   Yes
   1. Repair the short to ground in the (F855) 5-Volt Supply circuit.
   2. Perform the POWERTRAIN VERIFICATION TEST. Refer to POWERTRAIN VERIFICATION TEST .

   No
   1. Go To 3

3. **CRANKSHAFT POSITION SENSOR**

Fig 2: Checking 5-Volt Supply Circuit



Courtesy of CHRYSLER GROUP, LLC

1. Reconnect all the previously disconnected Sensors except for the CKP Sensor harness connector.
2. Ignition on, engine not running.
3. Measure the voltage on the (F855) 5-Volt Supply circuit in the CKP Sensor harness connector. Is the voltage below 4.75 Volts?

Yes

1. Go To 4

No

1. Verify that there is good pin to terminal contact in the CKP Sensor and Powertrain Control Module harness connectors. If OK, replace the Crankshaft Position Sensor. Refer to SENSOR, CRANKSHAFT POSITION, REMOVAL .
2. Perform the POWERTRAIN VERIFICATION TEST. Refer to POWERTRAIN VERIFICATION TEST .

4. **5-VOLT SENSOR SHORTED TO GROUND**

1. Measure the voltage on the (F855) 5-Volt Supply circuit at the CKP Sensor harness connector.

> **NOTE:** *You must Turn the Ignition OFF when disconnecting any of the Sensor harness connectors and Turn the Ignition On to check the voltage readings.*

2. While monitoring the voltage, disconnect each Sensor harness connector that shares the (F855) 5-Volt Supply circuit, one at a time.
   Does the voltage increase above 4.75 Volts when disconnecting any of the Sensor harness connectors?

   Yes

   1. Verify that there is good pin to terminal contact in the related Sensor and Powertrain Control Module connectors. If OK, replace the Sensor that causes the (F855) 5-Volt Supply circuit voltage to increase when disconnected.
   2. Perform the POWERTRAIN VERIFICATION TEST. Refer to POWERTRAIN VERIFICATION TEST .

   No

   1. Go To 5

5. **POWERTRAIN CONTROL MODULE (PCM)**

1. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors between the related Sensors and the Powertrain Control Module (PCM).
2. Look for any chafed, pierced, pinched, or partially broken wires.
3. Look for broken, bent, pushed out or corroded terminals. Verify that there is good pin to terminal contact in the related Sensor and Powertrain Control Module connectors.
4. Perform any Technical Service Bulletins that may apply.
   Were there any problems found?

   Yes

   1. Repair as necessary.
   2. Perform the POWERTRAIN VERIFICATION TEST. Refer to POWERTRAIN VERIFICATION TEST .

   No

   1. Replace and program the Powertrain Control Module (PCM) in accordance with the Service Information. Refer to MODULE, POWERTRAIN CONTROL, REMOVAL .
   2. Perform the POWERTRAIN VERIFICATION TEST. Refer to POWERTRAIN VERIFICATION TEST .