

Yes	REPAIR as necessary. Clear the PCM DTCs. REPEAT the self-test.
No	GO to HF7 .

HF7 CHECK FOR EXCESSIVE EXHAUST BACK PRESSURE

- The internal condition of exhaust system and its ability to flow can be checked with an exhaust back pressure tool.

Is an exhaust back pressure tester available?

Yes	GO to HF8 .
No	GO to HF9 .

HF8 CHECK FOR EXCESSIVE EXHAUST BACK PRESSURE WITH EXHAUST BACK PRESSURE TOOL

Note: Typical exhaust back pressure, when measured near the exhaust manifold and at normal engine operating temperature, should not exceed 20.7 kPa (3 psi) at idle and 55.2 kPa (8 psi) at wide open throttle (WOT) under load.

- Install an exhaust back pressure tester and follow the tool manufacturer installation and testing instructions.

Does the exhaust back pressure test indicate a restriction?

Yes	REPAIR as necessary. Clear the PCM DTCs. REPEAT the self-test. To continue diagnosis of a symptom (lack of power, loss of power, or no start), REFER to Section 3, Symptom Charts.
No	No indication of restrictions or leaks has been detected in the exhaust system. To continue diagnosis of a symptom (lack of power, loss of power, or no start), REFER to Section 3, Symptom Charts.

HF9 CHECK MANIFOLD VACUUM FOR AN INDICATION OF EXCESSIVE EXHAUST SYSTEM RESTRICTION

Note: When the engine is first started and is idled, the reading may be normal 51-74 kPa (15-22 in-Hg), but as the engine RPM is increased, the back pressure caused by a clogged exhaust system causes the needle to slowly drop to 0 kPa (0 in-Hg). The needle then may slowly rise. Excessive exhaust restriction causes the needle to drop to a low point even if the engine is only idling.

- Attach a vacuum gauge to the intake manifold vacuum source.
- Observe the vacuum gauge while increasing the engine RPM.

Does the vacuum gauge indicate an exhaust restriction concern?

Yes	REPAIR as necessary. Clear the PCM DTCs. REPEAT the self-test. To continue diagnosis of a symptom (lack of power, loss of power, or no start), REFER to Section 3, Symptom Charts.
No	No indication of restrictions or leaks has been detected in the exhaust system. To continue diagnosis of a symptom (lack of power, loss of power, or no start), REFER to Section 3, Symptom Charts.

HF10 CARRY OUT THE CATALYST MONITOR DRIVE CYCLE

- Carry out the catalyst monitor drive cycle. Refer to Section 2, [On Board Diagnostic \(OBD\) Drive Cycle](#).
- Carry out the PCM self-test.

Are DTCs P0420 or P0430 present?

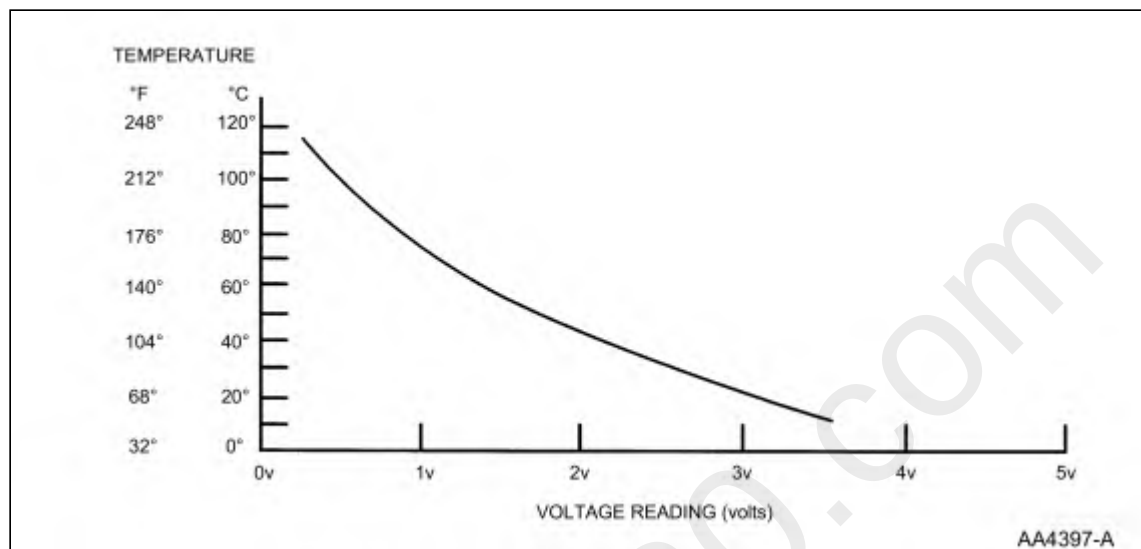
Yes	INSTALL a new catalyst between the monitored HO2S, only for the bank referenced, (P0420 Bank 1), (P0430 Bank 2). Do not install a new unmonitored catalyst unless it is repaired as an assembly. REFER to the Workshop Manual Section 309-00, Exhaust System. Clear the PCM DTCs. REPEAT the self-test.
No	The test is complete and no concerns are present.

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KP: Charge Air Cooler (CAC)

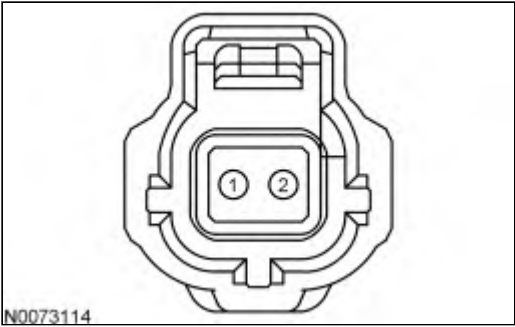
This pinpoint test is intended to diagnose the following:

- CAC coolant temperature sensor (12A648)
- CAC pump (8501)
- harness circuits: CAC, CACCTS, SIGRTN, PUMPPWR and GND

**TEMPERATURE SENSOR VOLTAGE AND RESISTANCE SPECIFICATIONS**

Temperature		Temperature Sensor Values
°C	°F	Resistance (K ohms)
120	248	1.18
110	230	1.55
100	212	2.07
90	194	2.80
80	176	3.84
70	158	5.37
60	140	7.70
50	122	10.97
40	104	16.15
30	86	24.27
20	68	37.30
10	50	58.75
0	32	95.85
-10	14	160.31

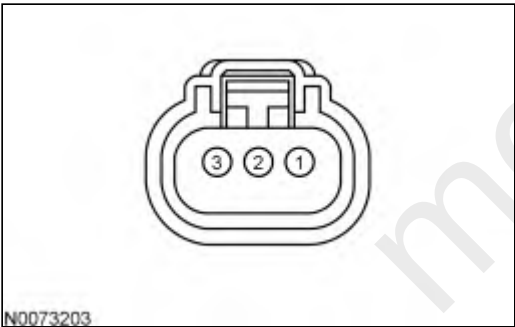
Charge Air Cooler (CAC) Coolant Temperature Sensor Connector



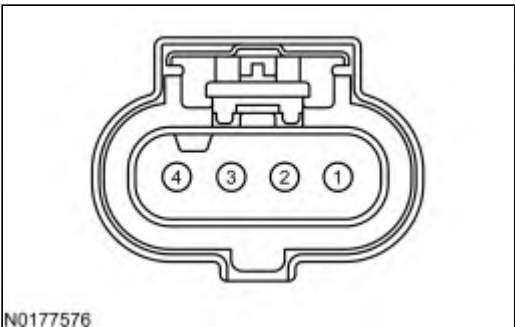
Vehicle	Connector	Pin	Circuit
Fusion	A	2	SIGRTN
		1	CACCTS
Mustang	A	1	SIGRTN
		2	CACCTS

Charge Air Cooler (CAC) Pump Connector

A



B



Vehicle	Connector	Pin	Circuit