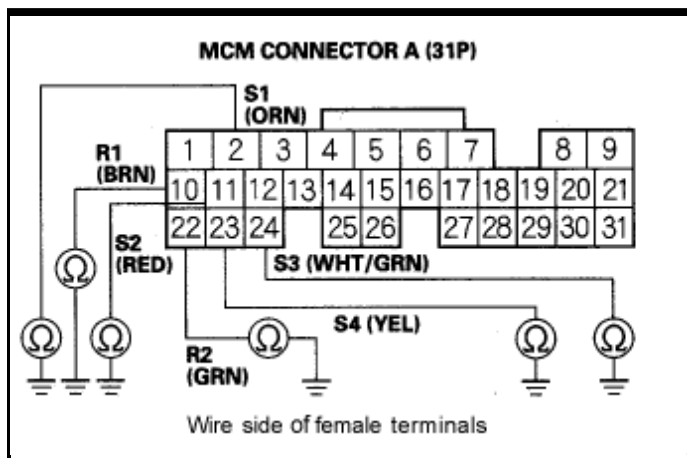


DTC P0A3F (89): Motor Rotor Position Sensor Circuit Malfunction

NOTE: Before you troubleshoot, record all freeze data, and review the general troubleshooting information.

1. Turn the **ignition switch** ON (II).
2. Clear the DTC with the HDS.
3. Start the engine.
4. Check for Temporary DTCs or DTCs with the HDS. Is DTC P0A3F indicated? **YES** - Go to step 5. **NO** - Intermittent failure, the system is OK at this time. Check for poor connections or loose terminals at the motor rotor position sensor and the MCM.
5. Turn the **ignition switch** OFF.
6. Turn the battery module switch OFF.
7. Remove the IPU lid.
8. Disconnect MCM connector A (31P).
9. Disconnect the motor rotor position sensor 6P connector.



Zoom

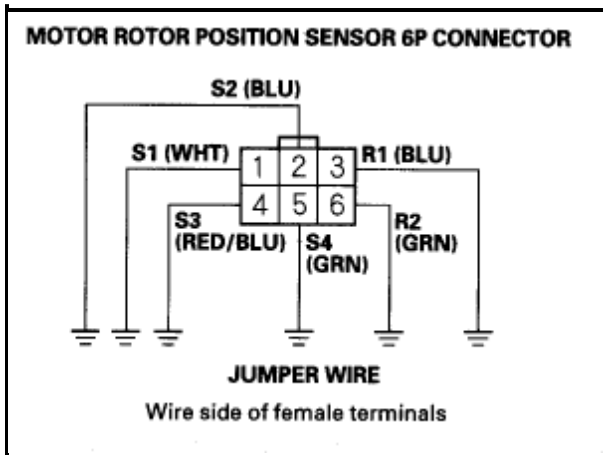
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10. Check for continuity between the following MCM connector terminals individually:

- A2 and body ground
- A11 and body ground
- A24 and body ground
- A23 and body ground
- A10 and body ground
- A22 and body ground

YES - Repair short in the wire between the motor rotor position sensor and the MCM (A2, A11, A24, A23, A10, A22), then go to step 17.

NO - Go to step 11.

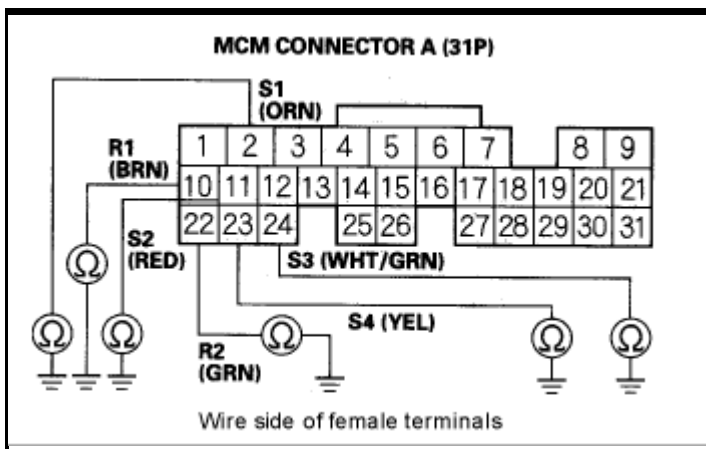


Zoom

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11. Connect the following motor rotor position sensor 6P connector terminals with a jumper wire individually:

- No. 1 and body ground
- No. 2 and body ground
- No. 3 and body ground
- No. 4 and body ground
- No. 5 and body ground
- No. 6 and body ground



Zoom

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12. Check for continuity between the following MCM connector terminals individually:

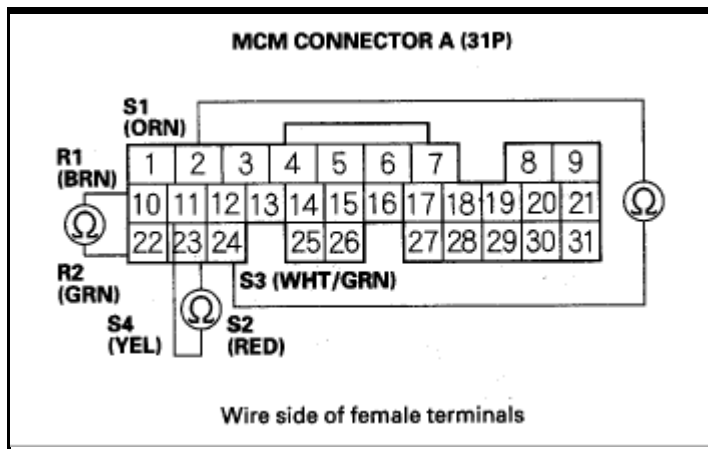
- A2 and body ground
- A11 and body ground
- A24 and body ground
- A23 and body ground
- A10 and body ground
- A22 and body ground

Is there continuity?

YES - Go to step 13.

NO - Repair open in the wire between the motor rotor position sensor and the MCM (A2, A11, A24, A23, A10, A22), then

go to step 17.



Zoom

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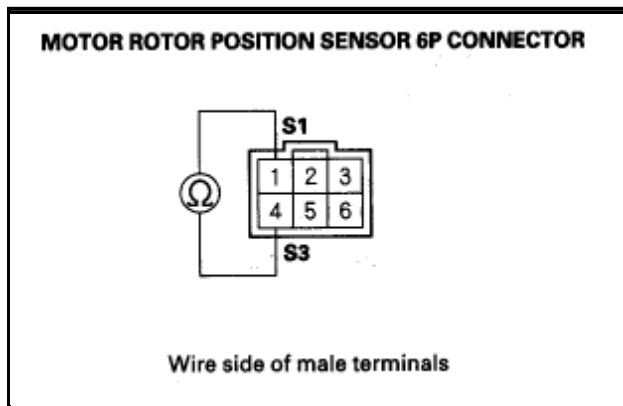
13. Remove the jumper wire from motor rotor position sensor 6P connector. Check for continuity between the following MCM connector terminals individually:

- A2 and A24
- A11 and A23
- A10 and A22

Is there continuity?

YES - Repair short in the wire(s) that had the continuity between motor rotor position sensor and the MCM (A2, A10, A11, A22, A23, A24), then go to step 17.

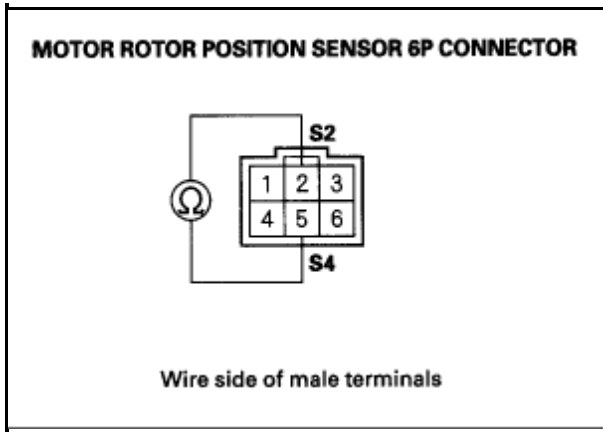
NO - Go to step 14.



Zoom

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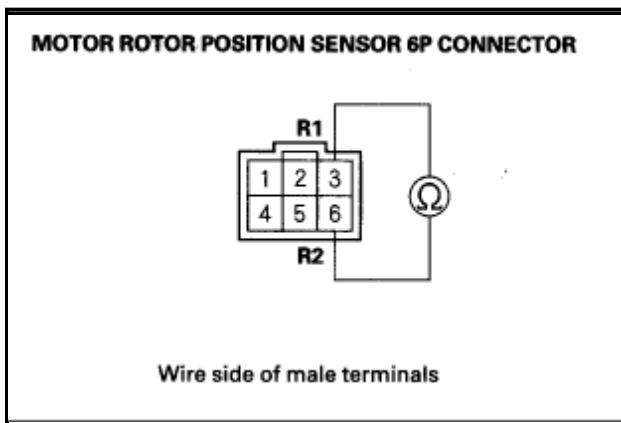
14. Measure resistance between motor rotor position sensor 6P connector terminals No. 1 and No. 4. Is there **about 15 - 18 ohms** ? **YES** - Go to step 15. **NO** - Replace the motor rotor position sensor, then go to step 17.



Zoom

Sized for Print

15. Measure resistance between motor rotor position sensor 6P connector terminals No. 2 and No. 5. Is there **about 8 - 10 ohms** ? **YES** - Go to step 16. **NO** - Replace the motor rotor position sensor, then go to step 17.



Zoom

Sized for Print

16. Measure resistance between motor rotor position sensor 6P connector terminals No. 3 and No. 6. Is there **about 9 ohms** ? **YES** - Go to step 24. **NO** - Replace the motor rotor position sensor, then go to step 17.
17. Reconnect all connectors.
18. Reinstall the IPU lid, then turn the battery module switch ON.
19. Turn the [ignition switch](#) ON (II).
20. Clear the DTC with the HDS.
21. Start the engine.
22. Check for Temporary DTCs or DTCs with the HDS. Is DTC P0A3F indicated? **YES** - Check for poor connections or loose terminals at the motor rotor position sensor and the MCM, then go to step 1. **NO** - Go to step 23.
23. Monitor the OBD STATUS for P0A3F in the DTCs MENU with the HDS. Does the screen indicate PASSED? **YES** - Troubleshooting is complete. If any other Temporary DTCs or DTCs were indicated in step 22, go to the indicated DTCs troubleshooting. **NO** - If the screen indicates FAILED, check for poor connections or loose terminals at the motor rotor position sensor and the MCM, then go to step 1. If the screen indicates NOT COMPLETED, keep the engine idling until a result comes on.
24. Reinstall the IPU lid, then turn the battery module switch ON.
25. Update the MCM if it does not have the latest software, or substitute a known-good MCM.
26. Start the engine.
27. Check for Temporary DTCs or DTCs with the HDS. Is DTC P0A3F indicated? **YES** - Check for poor connections or loose terminals at the motor rotor position sensor and the MCM. If the MCM was updated, substitute a known-good MCM, then go to step 26. If the MCM was substituted, go to step 1. **NO** - Go to step 28.
28. Monitor the OBD STATUS for P0A3F in the DTCs MENU with the HDS. Does the screen indicate PASSED? **YES** - If the MCM was updated, troubleshooting is complete. If the MCM was substituted, replace the original MCM. If any other Temporary DTCs or DTCs were indicated in step 27, go to the indicated DTCs troubleshooting. **NO** - If the

screen indicates FAILED, check for poor connections or loose terminals at the motor rotor position sensor and the MCM. If the MCM was updated, substitute a known-good MCM, then go to step 26. If the MCM was substituted, go to step 1. If the screen indicates NOT COMPLETED, keep the engine idling until a result comes on.