

2012 - Mazda6 - Body and Accessories

M-MDS AND VEHICLE NOT COMMUNICATING [MULTIPLEX COMMUNICATION SYSTEM]

CAUTION:

- Perform the following on-board diagnosis according to [FOREWORD \[MULTIPLEX COMMUNICATION SYSTEM\]](#) troubleshooting procedure.

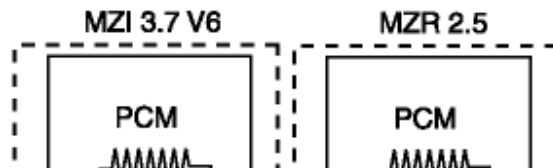
Detection Condition

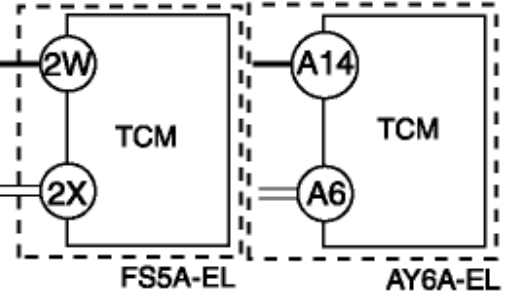
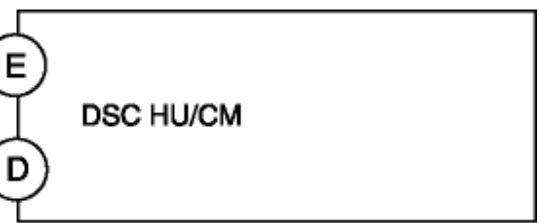
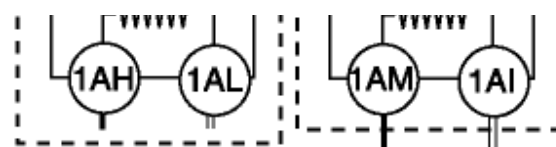
- Possible causes of communication errors between the M-MDS and vehicle include communication circuit interruption due to an open circuit in the CAN communication wiring harness, or poor contact of connector terminals, or a BUS OFF condition due to a short circuit in the CAN communication wiring harness.

Possible Causes

- Open circuit in wiring harness between PCM and DLC-2
- Improper insertion of PCM, BCM, connector C-06 or C-27 damage, deformation, corrosion, or disconnection of connector terminals
- Short circuit in wiring harness between CAN system-related module CAN_L and CAN_H lines
- Short circuit to power supply in wiring harness between CAN system-related module
- Short circuit to ground in wiring harness between CAN system-related module
- Short circuit to power supply in CAN system-related module internal CAN lines
- Short circuit to ground in CAN system-related module internal CAN lines
- Damage, deformation, corrosion, or disconnection of DLC-2
- PCM power supply is not normal
- PCM ground is not normal
- PCM internal resistance is not normal
- CAN system-related module malfunction

Wiring Diagram





ADVANCED KEYLESS
ENTRY AND PUSH
BUTTON START SYSTEM

CONNECTOR
C-06

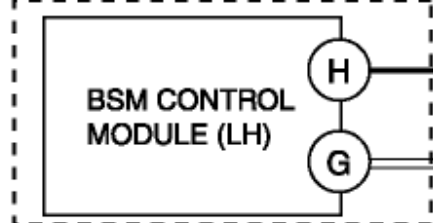


CONNECTOR
C-27

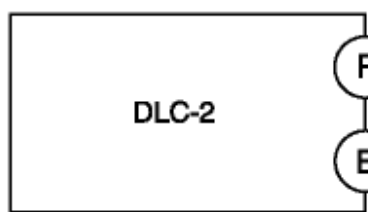
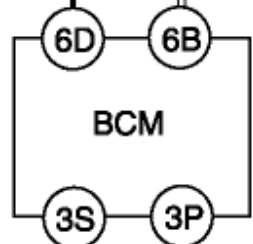
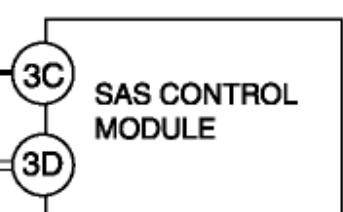
WITH BSM SYSTEM



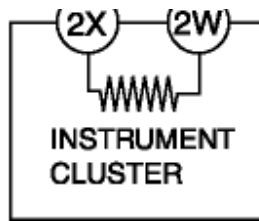
WITH BSM SYSTEM



CONNECTOR
C-27



— : CAN_H
--- : CAN_L



== : CAN_L

Diagnostic Procedure

CAUTION:

- When disconnecting the connector, verify that there is no looseness, damage, deformation, corrosion, or poor connection of the connector terminals.

Step	Inspection	Action
1	VERIFICATION BEFORE SERVICING Is there communication between the M-MDS and vehicle?	Yes Go to the next step.
		No Go back to FOREWORD [MULTIPLEX COMMUNICATION SYSTEM]. (See FOREWORD [MULTIPLEX COMMUNICATION SYSTEM] .)
2	VERIFY THAT M-MDS AND DLC-2 ARE CONNECTED - Verify the connection condition between the M-MDS and DLC-2. - Are the connector terminals normal without damage, deformation, corrosion, or disconnection?	Yes Go to the next step.
		No Correct the connection condition, then go to Step 13.
3	VERIFY PCM POWER SUPPLY CONDITION - Refer to the PCM terminal voltage table and inspect the terminal voltage and fuse condition. (See PCM INSPECTION [MZR 2.5].) (See PCM INSPECTION [MZI 3.7 V6].) - Is the power supply condition normal?	Yes Go to the next step.
		No Repair or replace the fuse or wiring harness, then go to Step 13.
4	VERIFY PCM BODY GROUND CONDITION Inspect the PCM body ground wiring harness and ground point.	Yes Go to the next step.
		No Repair or replace the wiring harness, then go to Step 13.

	• Are the ground and ground point normal?		
5	INSPECT PCM CONNECTOR TERMINAL • Disconnect the negative battery cable. • Disconnect the PCM connector. • Are the PCM connector terminal normal without damage, deformation, corrosion, or disconnection?	Yes	Go to the next step.
		No	Repair the connector terminal if necessary, then go to Step 13.
6	INSPECT PCM • Disconnect the PCM connector. • Measure the resistance between the following PCM connector terminals: ▪ Between terminal 1AM and terminal 1AI (part side) (MZR 2.5) ▪ Between terminal 1AH and terminal 1AL (part side) (MZI 3.7 V6) • Is the resistance 118-130 ohm?	Yes	Go to the next step.
		No	Replace the PCM, then go to the next step. (See PCM REMOVAL/ INSTALLATION [MZR 2.5] .) (See PCM REMOVAL/ INSTALLATION [MZI 3.7 V6] .)
7	VERIFY THAT THERE IS NO OPEN CIRCUIT IN CAN COMMUNICATION WIRING HARNESS CAUTION: • When inspecting the DLC-2, touch it with a paper clip or similar thin pin without directly inserting a tester into the terminals. • Verify the continuity between the following terminals: ▪ Between DLC-2 terminal F and BCM terminal 3S ▪ Between DLC-2 terminal E and BCM terminal 3P ▪ Between BCM terminal 6D and PCM terminal 1AM (MZR 2.5)	Yes	Go to the next step.
		No	There is an open circuit in the CAN communication wiring harness. Repair or replace it, then go to Step 13.

	▪ Between BCM terminal 6B and PCM terminal 1AI (MZR 2.5) ▪ Between BCM terminal 6D and PCM terminal 1AH (MZI 3.7 V6) ▪ Between BCM terminal 6B and PCM terminal 1AL (MZI 3.7 V6) • Is there continuity?		
8	INSPECT CAN COMMUNICATION WIRING HARNESS IN BCM FOR OPEN CIRCUIT • Verify the continuity between the following terminals: ▪ Between BCM terminal 6D and BCM terminal 3S ▪ Between BCM terminal 6B and BCM terminal 3P • Is there continuity?	Yes Go to the next step.	No Replace the BCM which has an open circuit in the CAN communication wiring harness in the BCM, then go to Step 13. (See BODY CONTROL MODULE (BCM) REMOVAL/ INSTALLATION.)
9	VERIFY THAT THERE IS NO SHORT CIRCUIT IN CAN COMMUNICATION WIRING HARNESS CAUTION: • When inspecting the DLC-2, touch it with a paper clip or similar thin pin without directly inserting a tester into the terminals. • Measure the resistance between the terminals. ▪ Between DLC-2 terminal F and DLC-2 terminal E • Is the resistance 60 ohm or less?	Yes There is an open circuit in the CAN communication wiring harness. Repair or replace it, then go to Step 13.	No Go to the next step.
10	VERIFY NO SHORT CIRCUIT TO GROUND IN CAN COMMUNICATION WIRING HARNESS CAUTION: • When inspecting the DLC-2, touch it with a paper clip or similar thin pin without directly inserting a tester into the terminals.	Yes There is a short circuit to ground in the CAN communication wiring harness. Repair or replace it, then go to Step 13.	No Go to the next step.

	• Verify the continuity between the following terminals: ▪ Between DLC-2 terminal F and ground ▪ Between DLC-2 terminal E and ground ▪ Between PCM terminal 1AM and ground (MZR 2.5) ▪ Between PCM terminal 1AI and ground (MZR 2.5) ▪ Between PCM terminal 1AH and ground (MZI 3.7 V6) ▪ Between PCM terminal 1AL and ground (MZI 3.7 V6) • Is there continuity?		
11	VERIFY NO SHORT CIRCUIT TO POWER SUPPLY SYSTEM IN CAN COMMUNICATION WIRING HARNESS CAUTION: • When inspecting the DLC-2, touch it with a paper clip or similar thin pin without directly inserting a tester into the terminals. • Verify the continuity between the following terminals: ▪ Between DLC-2 terminal F and DLC-2 terminal A ▪ Between DLC-2 terminal E and DLC-2 terminal A ▪ Between PCM terminal 1AM and PCM terminal 1C (MZR 2.5) ▪ Between PCM terminal 1AI and PCM terminal 1C (MZR 2.5)	Yes	There is a short circuit to the power supply system in the CAN communication wiring harness. Repair or replace it, then go to Step 13.
		No	Go to the next step.

	▪ Between PCM terminal 1AH and PCM terminal 1V (MZI 3.7 V6) ▪ Between PCM terminal 1AL and PCM terminal 1V (MZI 3.7 V6) • Is there continuity?		
12	INSPECT CAN-RELATED MODULES OTHER THAN PCM • Remove only one of the CAN-related modules other than those related to the PCM. • Connect the negative battery cable. • Connect the M-MDS to the DLC-2. • Does the M-MDS recognize the vehicle?	Yes	Replace the removed module.
		No	Inspect all of the CAN-related modules other than those related to the PCM using the same procedure. After inspecting all of the modules, go to the next step.
13	PERFORM VEHICLE IDENTIFICATION • Connect the M-MDS to the DLC-2. • Does the M-MDS recognize the vehicle?	Yes	DTC troubleshooting completed.
		No	Replace the PCM. (See PCM REMOVAL/ INSTALLATION [MZR 2.5] .) (See PCM REMOVAL/ INSTALLATION [MZI 3.7 V6] .)

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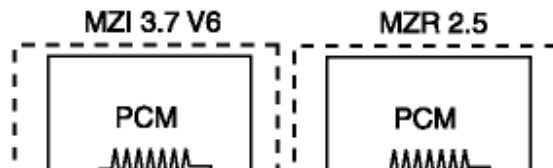
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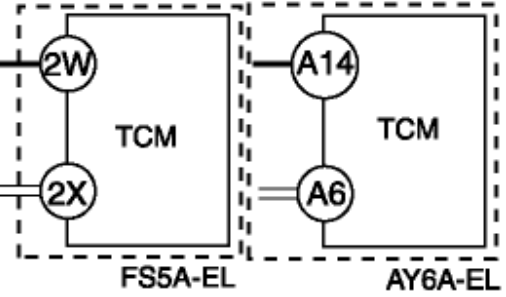
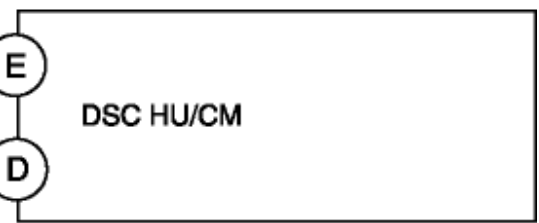
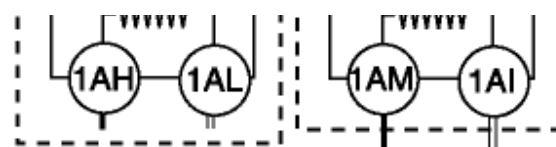
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BUTTON START SYSTEM

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C-06

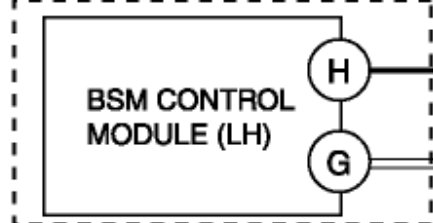


CONNECTOR
C-27

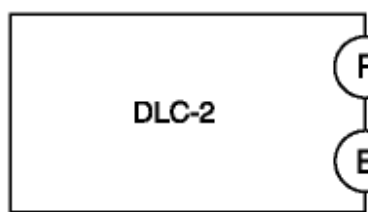
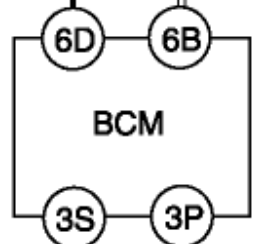
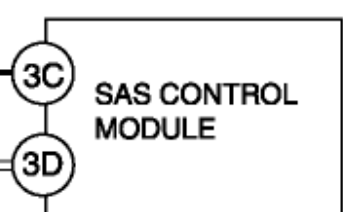
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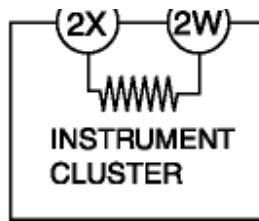
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CONNECTOR
C-27



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--- : CAN_L



== : CAN_L

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13	PERFORM VEHICLE IDENTIFICATION • Connect the M-MDS to the DLC-2. • Does the M-MDS recognize the vehicle?	Yes	DTC troubleshooting completed.
		No	Replace the PCM. (See PCM REMOVAL/ INSTALLATION [MZR 2.5] .) (See PCM REMOVAL/ INSTALLATION [MZI 3.7 V6] .)