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2014 MAZDA 3 / Axela Hatchback OEM Service and Repair Workshop Manual

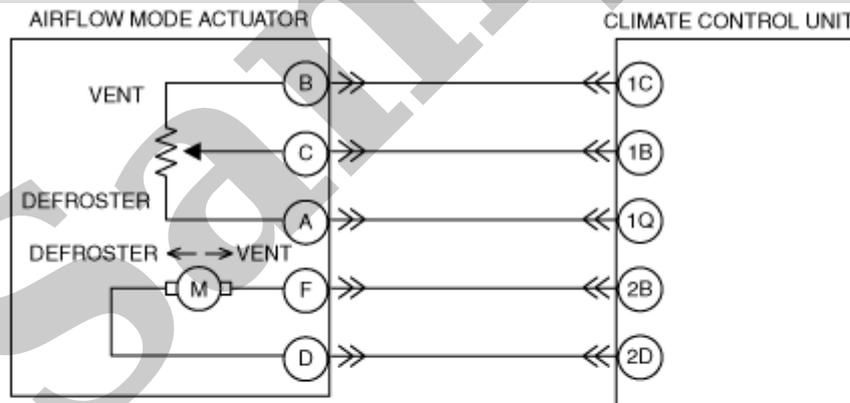
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DTC B1C1C:12, B1C1C:13 [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)]

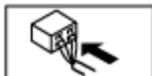
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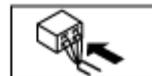
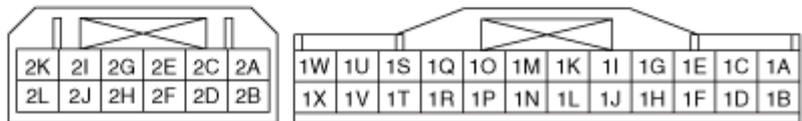
<p>System malfunction location</p>	<ul style="list-style-type: none"> • B1C1C:12: Airflow mode actuator (potentiometer) circuit short to power supply • B1C1C:13: Airflow mode actuator (potentiometer) circuit open
<p>Detection condition</p>	<ul style="list-style-type: none"> • Malfunction in wiring harness between airflow mode actuator and climate control unit
<p>Fail-safe function</p>	<p>Malfunction determined when ignition switched ON</p> <ul style="list-style-type: none"> • Airflow mode actuator drive signal is stopped right when the malfunction is determined. For manual operation, only vent or defroster mode is operable. <p>Malfunction already exists when ignition switched ON</p> <ul style="list-style-type: none"> • Control based on ambient temperature. For manual operation, only vent or defroster mode is operable.
<p>Possible cause</p>	<ul style="list-style-type: none"> • Connector or terminal malfunction • Airflow mode actuator malfunction • Open circuit in wiring harness between the following terminals: <ul style="list-style-type: none"> — Climate control unit terminal 1C–airflow mode actuator terminal B — Climate control unit terminal 1B–airflow mode actuator terminal C — Climate control unit terminal 1Q–airflow mode actuator terminal A • Short to power supply in wiring harness between the following terminals: <ul style="list-style-type: none"> — Climate control unit terminal 1C–airflow mode actuator terminal B — Climate control unit terminal 1B–airflow mode actuator terminal C — Climate control unit terminal 1Q–airflow mode actuator terminal A • Climate control unit malfunction



AIRFLOW MODE ACTUATOR WIRING HARNESS SIDE CONNECTOR



CLIMATE CONTROL UNIT WIRING HARNESS SIDE CONNECTOR



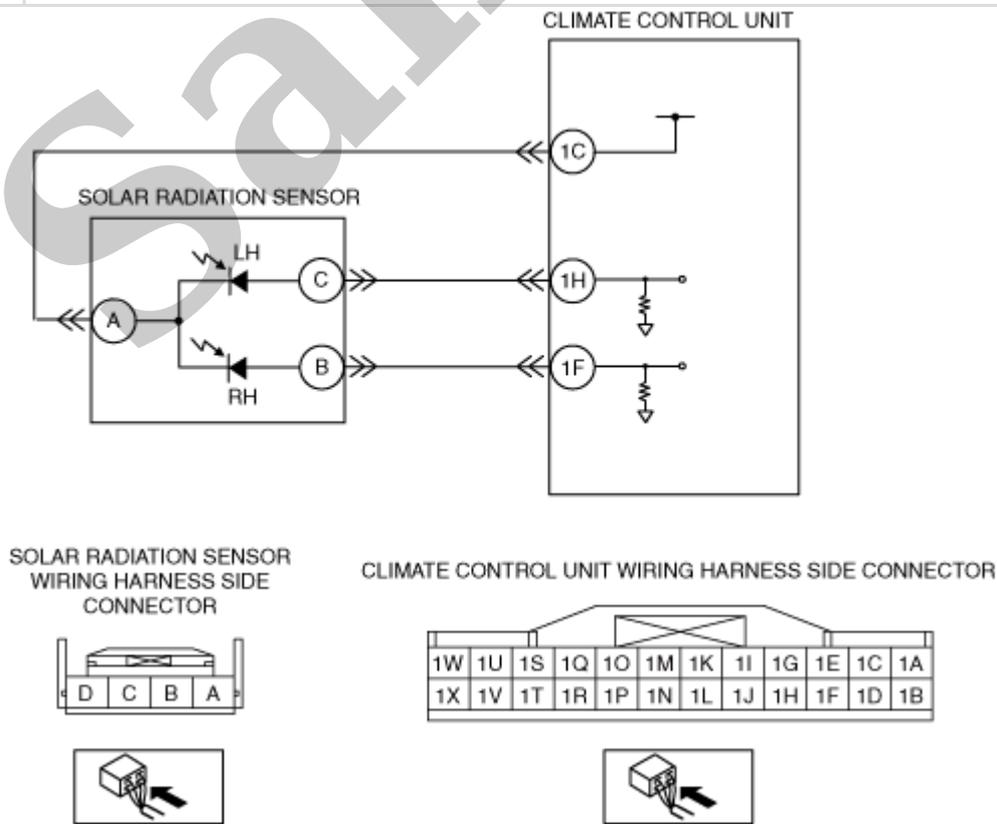
Diagnostic procedure

DTC B1A63:12, B1A63:13, B1A64:12, B1A64:13 [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)]

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System malfunction location	<ul style="list-style-type: none"> • B1A63:12: Solar radiation sensor (RH) circuit short to power supply • B1A63:13: Solar radiation sensor (RH) circuit open • B1A64:12: Solar radiation sensor (LH) circuit short to power supply • B1A64:13: Solar radiation sensor (LH) circuit open
Detection condition	<ul style="list-style-type: none"> • Malfunction in wiring harness between solar radiation sensor and climate control unit
Fail-safe function	<p>Malfunction determined when ignition switched ON</p> <ul style="list-style-type: none"> • The solar radiation sensor input value is fixed at the value directly before the malfunction only when the valve is 4.9 V or more. <p>Malfunction already exists when ignition switched ON</p> <ul style="list-style-type: none"> • Solar radiation sensor value is fixed at 0 W/m².
Possible cause	<ul style="list-style-type: none"> • Connector or terminal malfunction • Light amount shone on the solar radiation sensor is insufficient (Circuit is normal) • Solar radiation sensor malfunction • Open circuit in wiring harness between the following terminals: <ul style="list-style-type: none"> — Climate control unit terminal 1C–solar radiation sensor terminal A — Climate control unit terminal 1H–solar radiation sensor terminal C — Climate control unit terminal 1F–solar radiation sensor terminal B • Short to power supply in wiring harness between the following terminals: <ul style="list-style-type: none"> — Climate control unit terminal 1C–solar radiation sensor terminal A — Climate control unit terminal 1H–solar radiation sensor terminal C — Climate control unit terminal 1F–solar radiation sensor terminal B • Climate control unit malfunction



DTC U0423:68 [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)]

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System malfunction location	• Invalid data received from instrument cluster
Detection condition	• The climate control unit receives error signals from the Instrument cluster
Fail-safe function	• The value of the error signal is fixed at the specified value.
Possible cause	• Instrument cluster malfunction • Climate control unit malfunction
System wiring diagram	Not applicable

Diagnostic procedure

Step	Inspection	Action
1	PERFORM INSTRUMENT CLUSTER DTC INSPECTION • Perform the instrument cluster DTC inspection using the M-MDS. (See DTC INSPECTION [INSTRUMENT CLUSTER].) • Are any DTCs displayed?	Yes Go to the applicable DTC inspection. (See DTC TABLE [INSTRUMENT CLUSTER].)
		No Go to the next step.
2	PERFORM CLIMATE CONTROL UNIT DTC INSPECTION • Clear the DTC from the climate control unit memory using the M-MDS. (See CLEARING DTC [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)].) • Perform the climate control unit DTC inspection using the M-MDS. (See DTC DISPLAY [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)].) • Is the same DTC displayed?	Yes Replace the instrument cluster, then go to the next step. (See INSTRUMENT CLUSTER REMOVAL/INSTALLATION.)
		No Go to the next step.
3	VERIFY TROUBLESHOOTING COMPLETED • Clear the DTC from the climate control unit memory using the M-MDS. (See CLEARING DTC [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)].) • Perform the climate control unit DTC inspection using the M-MDS. (See DTC DISPLAY [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)].) • Is the same DTC displayed?	Yes Repeat the inspection from Step 1. • If the malfunction recurs, replace the climate control unit. (See CLIMATE CONTROL UNIT REMOVAL/INSTALLATION [FULL-AUTO AIR CONDITIONER].) Go to the next step.
		No Go to the next step.
4	VERIFY THAT NO OTHER DTCs ARE PRESENT • Verify other DTCs displayed. • Are any other DTCs displayed?	Yes Repair or replace the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)].)
		No DTC troubleshooting completed.

Step	Inspection		Action
6	INSPECT CLIMATE CONTROL UNIT POWER SUPPLY VOLTAGE <ul style="list-style-type: none">• Climate control unit connector is disconnected.• Connect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.)• Switch the ignition ON (engine off or on).• Measure the voltage at the following terminals (wiring harness-side):<ul style="list-style-type: none">— Climate control unit terminal 1W• Is the voltage 10.1–17.2 V?	Yes	Go to the next step.

Sample

Step	Inspection		Action
7	INSPECT CLIMATE CONTROL UNIT POWER SUPPLY VOLTAGE <ul style="list-style-type: none">• Climate control unit connector is disconnected.• Measure the voltage at the following terminals (wiring harness-side):<ul style="list-style-type: none">— Climate control unit terminal 1U• Is the voltage 10.1–17.2 V?	Yes	Go to the next step.

Sample

DTC U2300:54, U2300:55, U2300:56, U2300:64 [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)]

SM2898551

id0702k274550

System malfunction location	<ul style="list-style-type: none"> • U2300:54: Configuration error (data not received) • U2300:55: Configuration error (not configured) • U2300:56: Configuration error (ineffective/non-interchangeable data read) • U2300:64: Configuration error (error value read)
Detection condition	<ul style="list-style-type: none"> • Climate control unit detects configuration data not record or data error
Fail-safe function	<ul style="list-style-type: none"> • Sets the configuration value to the following fixed value <ul style="list-style-type: none"> — Destination: North_America — FSC_Types: FOW_and_LDW_and:C — PTC heater: Not_Equipped — Rear_vent: Equipped — ICA_Types: Normal_Type — Transmission_Types: MT
Possible cause	<p>Note</p> <ul style="list-style-type: none"> • If power from the battery is interrupted, the climate control unit will go into a non-configured state because the memory for the configuration information is erased. • Normally, the configuration is re-performed within 6 s after the ignition is switched ON (engine off). • After performing the configuration, DTC U2300:55 will be cleared if the ignition is switched ON (engine off) after the ignition is switched off. • Module configuration procedure was not completed properly • Correct data cannot be received from instrument cluster • Climate control unit malfunction
System wiring diagram	Not applicable

Diagnostic procedure

Step	Inspection	Action	
1	<p>RECORD CAR CONFIGURATION DATA</p> <ul style="list-style-type: none"> • Switch the ignition ON (engine off) and wait for 6 s or more. • Switch the ignition off. • Switch the ignition ON (engine off). 	Go to the next step.	
2	<p>VERIFY THAT SAME DTC IS NOT PRESENT</p> <ul style="list-style-type: none"> • Clear the DTC from the climate control unit memory using the M-MDS. (See CLEARING DTC [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)].) • Perform the climate control unit DTC inspection using the M-MDS. (See DTC DISPLAY [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)].) • Are the same DTCs present? 	Yes	Repeat the inspection from Step 1. If the malfunction recurs, go to the next step.
		No	Go to Step 5.

Step	Inspection		Action
1	INSPECT IG1 RELAY FOR MALFUNCTION <ul style="list-style-type: none"> • Switch the ignition off. • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Remove the IG1 relay. (See RELAY LOCATION.) • Inspect the IG1 relay. (See RELAY INSPECTION.) • Is the IG1 relay normal? 	Yes	Go to the next step.
		No	Replace the IG1 relay, then go to Step 9. (See RELAY LOCATION.)
2	PERFORM FRONT BODY CONTROL MODULE (FBCM) DTC INSPECTION <ul style="list-style-type: none"> • Perform the front body control module (FBCM) DTC inspection using the M-MDS. (See DTC INSPECTION [FRONT BODY CONTROL MODULE (FBCM)].) • Are any DTCs present? 	Yes	Go to the applicable DTC inspection. (See DTC TABLE [FRONT BODY CONTROL MODULE (FBCM)].)
		No	Go to the next step.
3	VERIFY CLIMATE CONTROL UNIT CONNECTOR CONDITION <ul style="list-style-type: none"> • Switch the ignition off. • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Disconnect the climate control unit connector. (See CLIMATE CONTROL UNIT REMOVAL/INSTALLATION [FULL-AUTO AIR CONDITIONER].) • Inspect the connector and terminals (corrosion, damage, pin disconnection). • Are the connector and terminals normal? 	Yes	Go to the next step.
		No	Repair/replace the connector or terminal. After repair procedure, go to Step 9.

Step	Inspection		Action
9	VERIFY THAT SAME DTC IS NOT OUTPUT AGAIN <ul style="list-style-type: none"> • Switch the ignition off. • Disconnect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Reconnect the disconnected connectors. • Connect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Clear the DTC from the climate control unit memory using the M-MDS. (See CLEARING DTC [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)].) • Perform the DTC inspection for the climate control unit using the M-MDS. (See DTC DISPLAY [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)].) • Is the same DTC displayed? 	Yes	Repeat the inspection from Step 1. <ul style="list-style-type: none"> • If the malfunction recurs, replace the climate control unit. (See CLIMATE CONTROL UNIT REMOVAL/INSTALLATION [FULL-AUTO AIR CONDITIONER].) Go to the next step.
		No	Go to the next step.
10	VERIFY THAT NO OTHER DTCs ARE PRESENT <ul style="list-style-type: none"> • Verify other DTCs displayed. • Are any other DTCs displayed? 	Yes	Repair or replace the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)].)
		No	DTC troubleshooting completed.

Step	Inspection		Action
4	INSPECT EACH SENSOR/ACTUATOR CIRCUIT FOR SHORT TO GROUND <ul style="list-style-type: none"> • Inspect for continuity between the following terminal (wiring harness-side) and body ground: <ul style="list-style-type: none"> — Climate control unit terminal 1C • Is there continuity? 	Yes	Refer to the wiring diagram and verify whether or not there is a common connector between climate control unit terminal and each sensor/actuator terminal. If there is a common connector: <ul style="list-style-type: none"> • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for a short to ground. • Repair or replace the malfunctioning part. If there is no common connector: <ul style="list-style-type: none"> • Repair or replace the wiring harness which has a short to ground. Go to the next step.
		No	Go to the next step.
5	VERIFY THAT SAME DTC IS NOT OUTPUT AGAIN <ul style="list-style-type: none"> • Reconnect the disconnected connectors. • Connect the negative battery terminal. (See NEGATIVE BATTERY TERMINAL DISCONNECTION/CONNECTION.) • Clear the DTC from the climate control unit memory using the M-MDS. (See CLEARING DTC [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)].) • Perform the climate control unit DTC inspection using the M-MDS. (See DTC DISPLAY [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)].) • Is the same DTC displayed? 	Yes	Repeat the inspection from Step 1. <ul style="list-style-type: none"> • If the malfunction recurs, replace the climate control unit. (See CLIMATE CONTROL UNIT REMOVAL/INSTALLATION [FULL-AUTO AIR CONDITIONER].) Go to the next step.
		No	Go to the next step.
6	VERIFY THAT NO OTHER DTCs ARE PRESENT <ul style="list-style-type: none"> • Verify other DTCs displayed. • Are any other DTCs displayed? 	Yes	Repair or replace the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [CLIMATE CONTROL UNIT (FULL-AUTO AIR CONDITIONER)] .)
		No	DTC troubleshooting completed.