DTC B1140:29 [START STOP UNIT]

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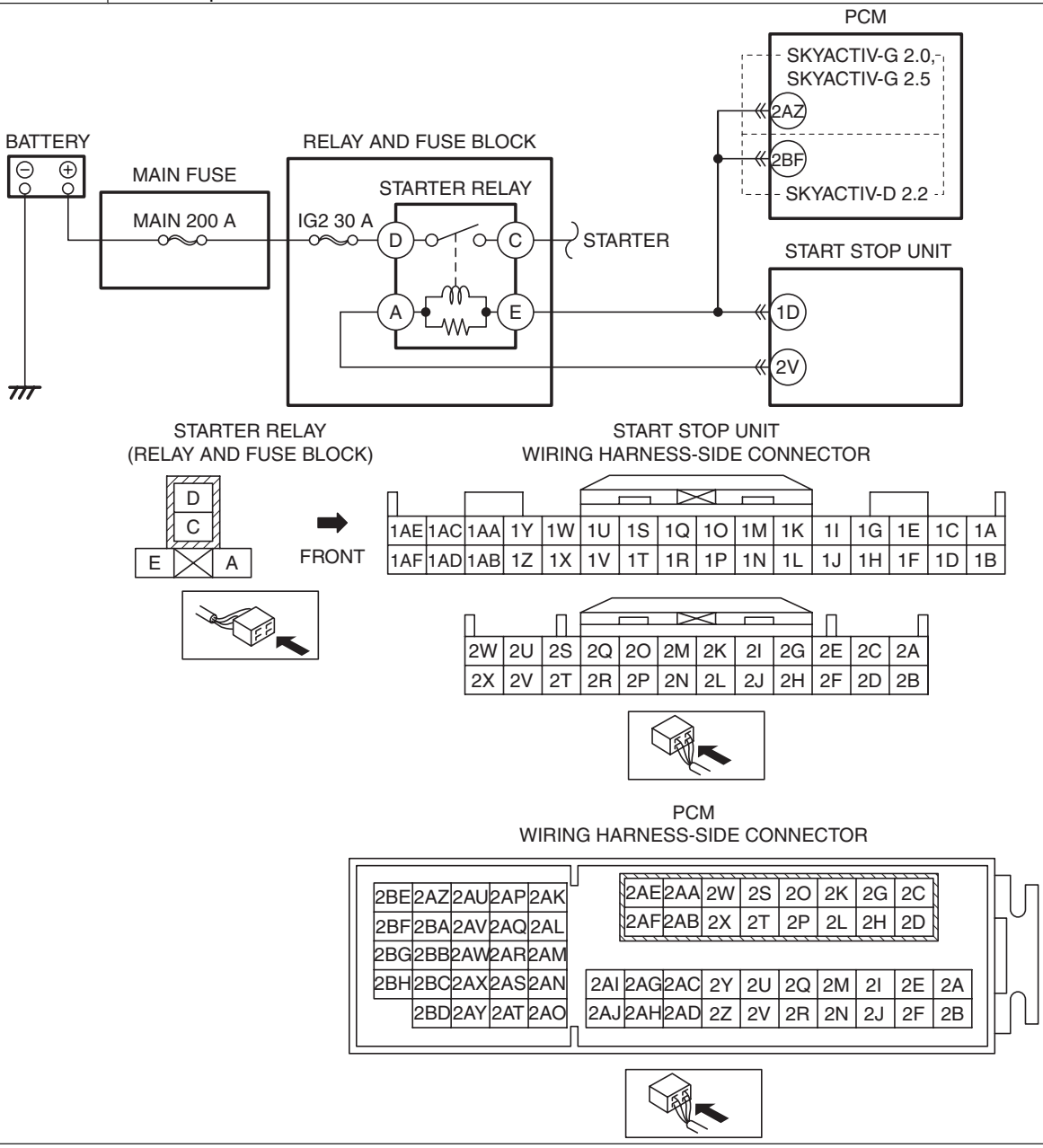
System malfunction location	**i-stop control error signal received**
Detection condition	• The starter ground circuit does not turn on even though the PCM detects an engine restart request while the engine is stopped under i-stop control, or the condition whereby an open circuit is detected for a continuous **12 s or more** for a total of five times or more.
Fail-safe	—
Possible cause	• Starter relay malfunction • PCM connector or terminal malfunction • Start stop unit connector or terminal malfunction • Open circuit in wiring harness between the following terminals: — Starter relay terminal E—PCM terminal 2AZ (SKYACTIV-G 2.0, SKYACTIV-G 2.5) — Starter relay terminal E—PCM terminal 2BF (SKYACTIV-D 2.2) — Start stop unit terminal 1D—PCM terminal 2AZ (SKYACTIV-G 2.0, SKYACTIV-G 2.5) — Start stop unit terminal 1D—PCM terminal 2BF (SKYACTIV-D 2.2) — Starter relay terminal A—Start stop unit terminal 2V • Start stop unit malfunction



Diagnostic Procedure

Step	Inspection		Action
1	**INSPECT STARTER RELAY FOR MALFUNCTION** • Switch the ignition to off. • Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Remove the starter relay. (See RELAY LOCATION.) • Inspect the starter relay. (See RELAY INSPECTION.) • Is the starter relay normal?	Yes	Go to the next step.
		No	Replace the starter relay, then go to Step 5. (See RELAY LOCATION.)
2	**INSPECT PCM CONNECTOR CONDITION** • Disconnect the PCM connector. • Inspect the connector engagement and connection condition and inspect the terminals for damage, deformation, corrosion, or disconnection. • Is the connector normal?	Yes	Go to the next step.
		No	Repair or replace the connector, then go to Step 5.
3	**INSPECT START STOP UNIT CONNECTOR CONDITION** • Disconnect the start stop unit connector. • Inspect the connector engagement and connection condition and inspect the terminals for damage, deformation, corrosion, or disconnection. • Is the connector normal?	Yes	Go to the next step.
		No	Repair or replace the connector, then go to Step 5.
4	**INSPECT STARTER RELAY CIRCUIT FOR OPEN CIRCUIT** • Verify that the starter relay is removed. • Verify that the PCM and start stop unit connectors are disconnected. • Inspect for continuity between the following terminals (vehicle wiring harness side). — Starter relay terminal E—PCM terminal 2AZ (SKYACTIV-G 2.0, SKYACTIV-G 2.5) — Starter relay terminal E—PCM terminal 2BF (SKYACTIV-D 2.2) — Start stop unit terminal 1D—PCM terminal 2AZ (SKYACTIV-G 2.0, SKYACTIV-G 2.5) — Start stop unit terminal 1D—PCM terminal 2BF (SKYACTIV-D 2.2) — Starter relay terminal A—Start stop unit terminal 2V • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness which has an open circuit, then go to the next step.

Step	Inspection		Action
5	**VERIFY THAT REPAIRS HAVE BEEN COMPLETED** • Reconnect all the disconnected connectors. • Reconnect the disconnected negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Clear DTC for the start stop unit using the M-MDS. (See CLEARING DTC [START STOP UNIT].) • Perform the work of stopping the engine by i-stop control and then restarting the engine for five or more times. • Perform the DTC inspection for the start stop unit using the M-MDS. (See DTC INSPECTION [START STOP UNIT].) • Is DTC B1140:29 displayed?	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the start stop unit, then go to the next step. (See START STOP UNIT REMOVAL/INSTALLATION.)
		No	Go to the next step.
6	**VERIFY IF OTHER DTCs DISPLAYED** • Are any other DTCs displayed?	Yes	Repair the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [START STOP UNIT].)
		No	DTC troubleshooting completed.