

DTC U3003:16 [INSTRUMENT CLUSTER]

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Without i-stop System

System malfunction location	Low power supply voltage input to instrument cluster
Detection condition	<ul style="list-style-type: none"> Instrument cluster power supply circuit voltage of 10 V or less is detected with the ignition switched ON (engine off or on).
Fail-safe	—
Possible cause	<ul style="list-style-type: none"> DTCs are stored in the PCM. Battery malfunction Generator malfunction Instrument cluster connector or terminal malfunction Instrument cluster power supply circuit malfunction <ul style="list-style-type: none"> Short to ground in wiring harness between METER1 10 A fuse and instrument cluster terminal S METER1 10 A fuse malfunction Open circuit in wiring harness between IG1 relay and instrument cluster terminal S Instrument cluster malfunction

Diagnostic Procedure

Step	Inspection	Action
1	VERIFY PCM DTCs <ul style="list-style-type: none"> Perform the DTC inspection for the PCM using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) Is the DTC displayed? 	Yes Repair the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
		No Go to the next step.
2	INSPECT BATTERY <ul style="list-style-type: none"> Inspect the battery. (See BATTERY INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].) Is the battery normal? 	Yes Go to the next step.
		No Recharge or replace the battery, then go to Step 6. (See BATTERY RECHARGING [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].) (See BATTERY REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)
3	INSPECT GENERATOR <ul style="list-style-type: none"> Inspect the generator. (See GENERATOR INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) Is the generator normal? 	Yes Go to the next step.
		No Replace the generator, then go to Step 6. (See GENERATOR REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].)

Step	Inspection	Action	
4	INSPECT INSTRUMENT CLUSTER CONNECTOR CONDITION <ul style="list-style-type: none"> Switch the ignition to off. Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].) Disconnect the instrument cluster 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 6.
5	VERIFY INSTRUMENT CLUSTER POWER SUPPLY VOLTAGE <ul style="list-style-type: none"> Reconnect all the disconnected connectors. Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].) Display PID VPWR using the M-MDS. (See PID/DATA MONITOR INSPECTION [INSTRUMENT CLUSTER].) Is the VPWR monitor value B+? 	Yes	Go to the next step.
		No	Inspect the METER1 10 A fuse. <ul style="list-style-type: none"> If a fuse is burnt out: <ul style="list-style-type: none"> Repair or replace the wiring harness which is shorted to ground. Replace the fuse. If a fuse is damaged: <ul style="list-style-type: none"> Replace the fuse. If the fuse is normal: <ul style="list-style-type: none"> Repair or replace the wiring harness which has an open circuit. Go to the next step.
6	VERIFY THAT REPAIRS HAVE BEEN COMPLETED <ul style="list-style-type: none"> 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 (WITHOUT i-stop)].) Clear DTC for the instrument cluster using the M-MDS. (See CLEARING DTC [INSTRUMENT CLUSTER].) Switch the ignition ON (engine off or on). Perform the DTC inspection for the instrument cluster using the M-MDS. (See DTC INSPECTION [INSTRUMENT CLUSTER].) Is DTC U3003:16 displayed? 	Yes	Repeat the inspection from Step 1. <ul style="list-style-type: none"> If the malfunction recurs, replace the instrument cluster, then go to the next step. (See INSTRUMENT CLUSTER REMOVAL/INSTALLATION.)
		No	Go to the next step.
7	VERIFY IF OTHER DTCs DISPLAYED <ul style="list-style-type: none"> Are any other DTCs displayed? 	Yes	Repair the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [INSTRUMENT CLUSTER].)
		No	DTC troubleshooting completed.

With i-stop System

System malfunction location	Low power supply voltage input to instrument cluster
Detection condition	Instrument cluster power supply circuit voltage of 10 V or less is detected with the ignition switched ON (engine off or on).
Fail-safe	—

System malfunction location	Low power supply voltage input to instrument cluster
Possible cause	<ul style="list-style-type: none"> • DTCs are stored in the PCM. • Battery malfunction • Generator malfunction • Instrument cluster connector or terminal malfunction • Instrument cluster power supply circuit malfunction <ul style="list-style-type: none"> — Short to ground in wiring harness between METER1 10 A fuse and instrument cluster terminal S — METER1 10 A fuse malfunction — Open circuit in wiring harness between IG1 relay and instrument cluster terminal S • Ignition relay (IG1_STAB) malfunction • DC-DC converter connector or terminal malfunction • Short to ground in wiring harness between the following terminals: <ul style="list-style-type: none"> — DC-DC converter terminal K—Ignition relay (IG1_STAB) terminal D — Ignition relay (IG1_STAB) terminal C—Instrument cluster terminal I • Open circuit in wiring harness between the following terminals: <ul style="list-style-type: none"> — DC-DC converter terminal K—Ignition relay (IG1_STAB) terminal D — Ignition relay (IG1_STAB) terminal C—Instrument cluster terminal I • DC-DC converter malfunction • Instrument cluster malfunction

Diagnostic Procedure

Step	Inspection	Action	
1	VERIFY PCM DTCs <ul style="list-style-type: none"> Perform the DTC inspection for the PCM using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-D 2.2].) Is the DTC displayed? 	Yes	Repair the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See DTC TABLE [SKYACTIV-D 2.2].)
		No	Go to the next step.
2	INSPECT BATTERY <ul style="list-style-type: none"> Inspect the battery. (See BATTERY INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See BATTERY INSPECTION [SKYACTIV-D 2.2].) Is the battery normal? 	Yes	Go to the next step.
		No	Recharge or replace the battery, then go to Step 11. (See BATTERY RECHARGING [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See BATTERY RECHARGING [SKYACTIV-D 2.2].) (See BATTERY REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See BATTERY REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
3	INSPECT GENERATOR <ul style="list-style-type: none"> Inspect the generator. (See GENERATOR INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See GENERATOR INSPECTION [SKYACTIV-D 2.2].) Is the generator normal? 	Yes	Go to the next step.
		No	Replace the generator, then go to Step 11. (See GENERATOR REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See GENERATOR REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)
4	INSPECT INSTRUMENT CLUSTER CONNECTOR CONDITION <ul style="list-style-type: none"> 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-D 2.2].) Disconnect the instrument cluster 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 11.
5	VERIFY INSTRUMENT CLUSTER POWER SUPPLY VOLTAGE <ul style="list-style-type: none"> Reconnect all the disconnected connectors. Connect 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-D 2.2].) Display PID VPWR using the M-MDS. (See PID/DATA MONITOR INSPECTION [INSTRUMENT CLUSTER].) Is the VPWR monitor value B+? 	Yes	Go to the next step.
		No	Inspect the METER1 10 A fuse. <ul style="list-style-type: none"> If a fuse is burnt out: <ul style="list-style-type: none"> Repair or replace the wiring harness which is shorted to ground. Replace the fuse. If a fuse is damaged: <ul style="list-style-type: none"> Replace the fuse. If the fuse is normal: <ul style="list-style-type: none"> Repair or replace the wiring harness which has an open circuit. Go to Step 11.

Step	Inspection		Action
6	INSPECT IGNITION RELAY (IG1_STAB) <ul style="list-style-type: none"> 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-D 2.2].) Remove the ignition relay (IG1_STAB). (See RELAY LOCATION.) Inspect the ignition relay (IG1_STAB). (See RELAY INSPECTION.) Is the ignition relay (IG1_STAB) normal? 	Yes	Go to the next step.
		No	Replace the ignition relay (IG1_STAB), then go to Step 11. (See RELAY LOCATION.)
7	INSPECT DC-DC CONVERTER CONNECTOR CONDITION <ul style="list-style-type: none"> Disconnect the DC-DC converter 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 11.
8	INSPECT DC-DC CONVERTER CIRCUIT FOR SHORT TO GROUND <ul style="list-style-type: none"> Verify that the DC-DC converter connector is disconnected. Disconnect the instrument cluster connector. Inspect the wiring harness between the following terminals (vehicle wiring harness side) and body ground for continuity. <ul style="list-style-type: none"> DC-DC converter terminal K Ignition relay (IG1_STAB) terminal D Instrument cluster terminal I Is there continuity? 	Yes	Repair or replace the wiring harness which is shorted to ground, go to Step 11.
		No	Go to the next step.
9	INSPECT DC-DC CONVERTER CIRCUIT FOR OPEN CIRCUIT <ul style="list-style-type: none"> Verify that the instrument cluster and DC-DC converter connectors are disconnected. Inspect the wiring harness between the following terminals (vehicle wiring harness side) for continuity. <ul style="list-style-type: none"> DC-DC converter terminal K—Ignition relay (IG1_STAB) terminal D Ignition relay (IG1_STAB) terminal C—Instrument cluster terminal I Is there continuity? 	Yes	Go to the next step.
		No	Repair or replace the wiring harness which has an open circuit, go to Step 11.
10	INSPECT DC-DC CONVERTER <ul style="list-style-type: none"> Inspect the DC-DC converter. (See DC-DC CONVERTER INSPECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See DC-DC CONVERTER INSPECTION [SKYACTIV-D 2.2].) Is the DC-DC converter normal? 	Yes	Go to the next step.
		No	Replace the DC-DC converter, then go to the next step. (See DC-DC CONVERTER REMOVAL/INSTALLATION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See DC-DC CONVERTER REMOVAL/INSTALLATION [SKYACTIV-D 2.2].)

Step	Inspection	Action
11	VERIFY THAT REPAIRS HAVE BEEN COMPLETED <ul style="list-style-type: none"> • 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-D 2.2].) • Clear DTC for the instrument cluster using the M-MDS. (See CLEARING DTC [INSTRUMENT CLUSTER].) • Switch the ignition ON (engine off or on). • Perform the DTC inspection for the instrument cluster using the M-MDS. (See DTC INSPECTION [INSTRUMENT CLUSTER].) • Is DTC U3003:16 displayed? 	Yes Repeat the inspection from Step 1. • If the malfunction recurs, replace the instrument cluster, then go to the next step. (See INSTRUMENT CLUSTER REMOVAL/INSTALLATION.)
		No Go to the next step.
12	VERIFY IF OTHER DTCs DISPLAYED <ul style="list-style-type: none"> • Are any other DTCs displayed? 	Yes Repair the malfunctioning part according to the applicable DTC troubleshooting. (See DTC TABLE [INSTRUMENT CLUSTER].)
		No DTC troubleshooting completed.