FREEZE FRAME DATA

1. FREEZE FRAME DATA

(a) Whenever a DTC is detected or the ABS operates, the skid control ECU stores the current vehicle (sensor) state as freeze frame data.
The skid control ECU stores the number of times (maximum: 31) the ignition switch has been turned from OFF to the ON position since the last time the ABS was activated.
HINT:
- Freeze frame data at the time the ABS operates: The skid control ECU stores and updates data whenever the ABS system operates.
When the ECU stores data at the time a DTC is detected, the data stored during ABS operation is erased.

(b) Connect the intelligent tester to the DLC3.
(c) Turn the ignition switch to the ON position.
(d) On the tester display, select the FREEZE FRAME DATA.

Intelligent Tester Display	Measurement Item	Reference Value
VEHICLE SPD	Vehicle speed reading	Min.: 0 mph (0 km/h), Max.: 202 mph (326.4 km/h)
STOP LIGHT SW	Stop light switch signal	Stop light switch ON: ON, OFF: OFF
# IG ON	Number of operations of ignition switch ON after memorizing freeze frame data	0 to 31
SYSTEM	System status	ABS activated: ABS No system activated: NO SYS

DATA LIST / ACTIVE TEST

1. DATA LIST

(a) While the intelligent tester is connected to the DLC3 with the ignition switch in the ON position, the ABS data list can be displayed. Follow the prompts on the tester screen to access the DATA LIST.

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
ABS MOT RELAY	ABS motor relay / ON or OFF	ON: During pump motor operation OFF: No pump motor operation	-
SOL RELAY	Solenoid relay / ON or OFF	ON: Solenoid relay ON OFF: Solenoid relay OFF	-
STOP LIGHT SW	Stop light switch / ON or OFF	ON: Brake pedal depressed OFF: Brake pedal released	-
PKB SW	Parking brake switch / ON or OFF	ON: Parking brake applied OFF: Parking brake released	-
ABS OPERT FR	ABS operation (FR) / BEFORE or OPERATE	BEFORE: No ABS operation (FR) OPERATE: During ABS operation (FR)	-
ABS OPERT FL	ABS operation (FL) / BEFORE or OPERATE	BEFORE: No ABS operation (FL) OPERATE: During ABS operation (FL)	-
ABS OPERT RR	ABS operation (RR) / BEFORE or OPERATE	BEFORE: No ABS operation (RR) OPERATE: During ABS operation (RR)	-
ABS OPERT RL	ABS operation (RL) / BEFORE or OPERATE	BEFORE: No ABS operation (RL) OPERATE: During ABS operation (RL)	-
WHEEL SPD FR	Wheel speed sensor (FR) reading / min.: 0 km/h (0 mph), max.: 326 km/h (202 mph)	Actual wheel speed	Similar speed as indicated on speedometer
WHEEL SPD FL	Wheel speed sensor (FL) reading / min.: 0 km/h (0 mph), max.: 326 km/h (202 mph)	Actual wheel speed	Similar speed as indicated on speedometer
WHEEL SPD RR	Wheel speed sensor (RR) reading / min.: 0 km/h (0 mph), max.: 326 km/h (202 mph)	Actual wheel speed	Similar speed as indicated on speedometer
WHEEL SPD RL	Wheel speed sensor (RL) reading / min.: 0 km/h (0 mph), max.: 326 km/h (202 mph)	Actual wheel speed	Similar speed as indicated on speedometer
IG VOLTAGE	ECU IG Power supply voltage / TOO LOW/NORMAL	TOO LOW: 9.5 V or less NORMAL: 9.5 to 14.0 V	-
SFRR	ABS solenoid (SFRR) / ON or OFF	ON: Operates	-
SFRH	ABS solenoid (SFRH) / ON or OFF	ON: Operates	-
SFLR	ABS solenoid (SFLR) / ON or OFF	ON: Operates	-
SFLH	ABS solenoid (SFLH) / ON or OFF	ON: Operates	-
SRRR	ABS solenoid (SRRR) / ON or OFF	ON: Operates	-
SRRH	ABS solenoid (SRRH) / ON or OFF	ON: Operates	-
SRLR	ABS solenoid (SRLR) / ON or OFF	ON: Operates	-
SRLH	ABS solenoid (SRLH) / ON or OFF	ON: Operates	-

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
VEHICLE SPD	Vehicle speed reading / min.: 0 km/h (0 mph), max.: 326 km/h (202 mph)	Actual vehicle speed	Speed indicated on speedometer
TEST MODE	Test mode operation / NORMAL or TEST	NORMAL: Normal mode TEST: During test mode	-
#CODE	Number of DTC recorded / min.: 0, max.: 255	Min.: 0 Max.: 255	-

2. ACTIVE TEST

HINT:

Performing the ACTIVE TEST using the intelligent tester allows the relay, actuator, etc. to operate without removing any parts. Performing the ACTIVE TEST as the first step of troubleshooting is one of the methods to shorten labor time.

It is possible to display the DATA LIST during the ACTIVE TEST.

(a) Connect the intelligent tester to the DLC3.

(b) Turn the ignition switch to the ON position.

(c) According to the display on the tester, perform the ACTIVE TEST.

HINT:

The ignition switch must be turned to the ON position to proceed to the ACTIVE TEST using the intelligent tester.

Tester Display	Test Part	Control Range	Diagnostic Note
SFRR	ABS solenoid (SFRR)	Solenoid ON / OFF	Operating sound of solenoid (clicking sound) is heard
SFRH	ABS solenoid (SFRH)	Solenoid ON / OFF	Operating sound of solenoid (clicking sound) is heard
SFLR	ABS solenoid (SFLR)	Solenoid ON / OFF	Operating sound of solenoid (clicking sound) is heard
SFLH	ABS solenoid (SFLH)	Solenoid ON / OFF	Operating sound of solenoid (clicking sound) is heard
SRRR	ABS solenoid (SRRR)	Solenoid ON / OFF	Operating sound of solenoid (clicking sound) is heard
SRRH	ABS solenoid (SRRH)	Solenoid ON / OFF	Operating sound of solenoid (clicking sound) is heard
SRLR	ABS solenoid (SRLR)	Solenoid ON / OFF	Operating sound of solenoid (clicking sound) is heard
SRLH	ABS solenoid SRLH)	Solenoid ON / OFF	Operating sound of solenoid (clicking sound) is heard
ABS MOT RELAY	ABS motor relay	Relay ON / OFF	Operating sound of motor is heard
SOL RELAY	ABS solenoid relay	Relay ON / OFF	Operating sound of solenoid (clicking sound) is heard
ABS WARNING LIGHT	ABS warning light	Warning Light ON / OFF	Observe combination meter
BRAKE WARNING LIGHT	BRAKE warning light	Warning Light ON / OFF	Observe combination meter