

AIR SUSPENSION SYSTEM > DATA LIST / ACTIVE TEST

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READ DATA LIST

HINT:

Using the intelligent tester to read the Data List allows the values or states of switches, sensors, actuators and other items to be read without removing any parts. This non-intrusive inspection can be very useful because intermittent conditions or signals may be discovered before parts or wiring is disturbed. Reading the Data List information early in troubleshooting is one way to save diagnostic time.

NOTICE:

In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

- a. Warm up the engine.
- b. Connect the intelligent tester to the DLC3.
- c. Turn the engine switch on (IG).
- d. Turn the intelligent tester on.
- e. Enter the following menus: Chassis / Air suspension / Data List.
- f. According to the display on the intelligent tester, read the Data List.

Air Suspension

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
(Up & Down) G Sensor FR	Front acceleration sensor RH (up and down) / Min.: -1045.29 m/s ² Max.: 1045.26 m/s ²	0 +/- 0.98 m/s ² when stationary	The value changes when the vehicle (front RH) is bounced.
(Up & Down) G Sensor FL	Front acceleration sensor LH (up and down) / Min.: -1045.29 m/s ² Max.: 1045.26 m/s ²	0 +/- 0.98 m/s ² when stationary	The value changes when the vehicle (front LH) is bounced.
(Up & Down) G Sensor Rear	Rear acceleration sensor (up and down) / Min.: -1045.29 m/s ² Max.: 1045.26 m/s ²	0 +/- 0.98 m/s ² when stationary	The value changes when the vehicle (rear) is bounced.
Gravity Sensor (Side to Side)	Acceleration sensor (side to side) / Min.: -1176.37 m/s ² Max.: 1176.33 m/s ²	-	-
RR Height Control Sensor	Rear height control sensor RH reading /	-	-

	Min.: -3276.8 mm (-129 in.) Max.: 3276.7 mm (129 in.)		
RL Height Control Sensor	Rear height control sensor LH reading / Min.: -3276.8 mm (-129 in.) Max.: 3276.7 mm (129 in.)	-	-
Damping Control Switch	Absorber control switch / NORMAL, COMFORT or SPORT	Indicates current absorber control switch position	-
Stop Light Switch	Stop light switch / ON or OFF	ON: Brake pedal depressed OFF: Brake pedal released	-
Door Switch	Door switch / ON or OFF	ON: Any doors open OFF: All doors closed	-
Height Control Switch (Up)	Height control switch ("up" side) / ON or OFF	ON: Switch pressed and held OFF: Switch not pressed	-
Height Control Switch (Down)	Height control switch ("down" side) / ON or OFF	ON: Switch pressed and held OFF: Switch not pressed	-
Height Position	Vehicle height position / Normal or Not Normal	Normal: Vehicle height position normal Not Normal: Vehicle height position not normal	-
Height Control	Vehicle height control condition information / ON or OFF	ON: Vehicle height control operating OFF: Vehicle height control not operating	-
TD Terminal	TD terminal / ON or OFF	ON: Height control not operating OFF: Height control operating	-
TC Terminal	TC terminal / ON or OFF	OFF	-
TS Terminal	TS terminal / ON or OFF	OFF	-
L4 Switch	Transfer L4 detection switch / ON or OFF	ON: Transfer in L4 position OFF: Transfer not in L4 position	-
IG Power Source Voltage	Actual ECU power supply voltage / Min.: 0.0 V Max.: 25.5 V	Engine switch on (IG): 11 to 14 V	-
+B Power Source Voltage	Actual battery power supply voltage /	Engine switch on (IG): 11 to 14 V	-

	Min.: 0.0 V Max.: 25.5 V		
Steering Angle	Steering angle / Min.: -49152.0 deg Max.: 49150.5 deg	Actual steering angle Steering wheel turned left: reading increases Steering wheel turned right: reading decreases	-
Engine Speed	Engine speed value / Min.: 0 rpm Max.: 25500 rpm	Actual engine speed	No large fluctuations when the engine speed is constant.
FR Wheel Speed	Front wheel RH speed value / Min.: 0 km/h (0 mph) Max.: 255 km/h (158 mph)	Actual vehicle speed	No large fluctuations when driving at a constant speed.
FL Wheel Speed	Front wheel LH speed value / Min.: 0 km/h (0 mph) Max.: 255 km/h (158 mph)	Actual vehicle speed	No large fluctuations when driving at a constant speed.
RR Wheel Speed	Rear wheel RH speed value / Min.: 0 km/h (0 mph) Max.: 255 km/h (158 mph)	Actual vehicle speed	No large fluctuations when driving at a constant speed.
RL Wheel Speed	Rear wheel LH speed value / Min.: 0 km/h (0 mph) Max.: 255 km/h (158 mph)	Actual vehicle speed	No large fluctuations when driving at a constant speed.
Driving Torque	Driving torque / Min.: -1024 Nm Max.: 1023 Nm	-	-
Damper Step FR	Damper step (Front RH) / Min.: 1 step Max.: 255 step	1 to 16 step	-
Damper Step FL	Damper step (Front LH) / Min.: 1 step Max.: 255 step	1 to 16 step	-
Damper Step RR	Damper step (Rear RH) / Min.: 1 step Max.: 255 step	1 to 16 step	-
Damper Step RL	Damper step (Rear LH) / Min.: 1 step Max.: 255 step	1 to 16 step	-
Max Damper Step FR	Max damper step	16 step	-

	(Front RH) / Min.: 0 step Max.: 255 step		
Max Damper Step FL	Max damper step (Front LH) / Min.: 0 step Max.: 255 step	16 step	-
Max Damper Step RR	Max damper step (Rear RH) / Min.: 0 step Max.: 255 step	16 step	-
Max Damper Step RL	Max damper step (Rear LH) / Min.: 0 step Max.: 255 step	16 step	-
Adaptive Variable Suspension (AVS) Mode	Adaptive variable suspension (AVS) mode / NORMAL, COMFORT, SEMI CO, SEMI SP, SPORTS	Indicates current absorber control switch position	-
Height Mode	Height mode / NORMAL, ACCE LO, LO, STAN LO, FAST LO, L4 HI, HI, EX HI or LUGG LO	NORMAL: Height control N mode LO: Height control LO mode HI: Height control HI mode	-
Height Control Prohibition	Height control prohibition / Permiss or Prohibi	Permiss: Height control permitted Prohibi: Height control prohibited	-
Rear Gate Solenoid	Status of rear gate solenoid / ON or OFF	ON: Gate solenoid operated OFF: Gate solenoid not operated	-
Rear Leveling Solenoid	Status of rear leveling solenoid / ON or OFF	ON: Leveling solenoid operated OFF: Leveling solenoid not operated	-
Exhaust Solenoid	Status of the exhaust solenoid / ON or OFF	ON: Exhaust solenoid valve operated OFF: Exhaust solenoid valve not operated	-
Motor Relay	Status of the motor relay / ON or OFF	ON: Compressor operated OFF: Compressor not operated	-
Main Relay	Status of the main relay / ON or OFF	ON: Main relay on (Engine switch on (IG)) OFF: Main relay off	-
Compatible Constant Information	-	-	-
Identical Constant Information	-	-	-

Design Constant Information	-	-	-
Number of Trouble Codes	Number of DTCs stored / Min.: 0 Max.: 255	0	-

PERFORM ACTIVE TEST

HINT:

Using the intelligent tester to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

- a. Warm up the engine.
- b. Connect the intelligent tester to the DLC3.
- c. Turn the engine switch on (IG).
- d. Turn the intelligent tester on.
- e. Enter the following menus: Chassis / Air suspension / Active Test.
- f. According to the display on the intelligent tester, perform the Active Test.

Air Suspension

Tester Display	Test Part	Control Range	Diagnostic Note
Damper Step FR	Changes damper step (front RH)	1 to 16 step	The shock absorber hardens as the damper step increases.
Damper Step FL	Changes damper step (front LH)	1 to 16 step	The shock absorber hardens as the damper step increases.
Damper Step RR	Changes damper step (rear RH)	1 to 16 step	The shock absorber hardens as the damper step increases.
Damper Step RL	Changes damper step (rear LH)	1 to 16 step	The shock absorber hardens as the damper step increases.
Rear Wheel Up/Down	Rear vehicle height	OFF, Up or Down	-
Rear Gate Solenoid	Gate solenoid valve	ON or OFF	<ul style="list-style-type: none"> • The operating sound of the solenoid (clicking sound) can be heard.

			<ul style="list-style-type: none"> When the Active Test is performed, Rear Gate Solenoid in the Data List changes between ON and OFF accordingly.
Rear Leveling Solenoid	Leveling solenoid valve	ON or OFF	<ul style="list-style-type: none"> The operating sound of the solenoid (clicking sound) can be heard. When the Active Test is performed, Rear Leveling Solenoid in the Data List changes between ON and OFF accordingly.
Exhaust Solenoid	Exhaust solenoid valve	ON or OFF	<ul style="list-style-type: none"> The operating sound of the solenoid (clicking sound) can be heard. When the Active Test is performed, Exhaust Solenoid in the Data List changes between ON and OFF accordingly.
Compressor Motor Relay	AIR SUS relay	ON or OFF	<ul style="list-style-type: none"> The operating sound of the relay (clicking sound) can be heard.

			<ul style="list-style-type: none">• When the Active Test is performed, Compressor Motor Relay in the Data List changes between ON and OFF accordingly.
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