

DATA LIST / ACTIVE TEST

1. READ DATA LIST

HINT:

Using the intelligent tester's Data List allows switch, sensor, actuator and other item values to be read without removing any parts. Reading the Data List early in troubleshooting is one way to save time.

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the ignition switch to the ON position.
- (c) Read the Data List.

WIPER:

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
F WIPER SW	Front Wiper switch / ON or OFF	ON: Front wiper is operated OFF: Front wiper is not operated	-
WIPER LO SW	Wiper LO switch input / ON or OFF	ON: Front wiper switch is in LO position OFF: Front wiper switch is in any position other than LO	-
WIPER HI SW	Wiper HI switch input / ON or OFF	ON: Front wiper switch is in HI position OFF: Front wiper switch is in any position other than HI	-
WIPER AUTO SW	Wiper AUTO switch input / ON or OFF	ON: Front wiper switch is in AUTO position OFF: Front wiper switch is in any position other than AUTO	-
WASHER SW	Washer switch input / ON or OFF	ON: Front washer switch is in ON position OFF: Front washer switch is in OFF position	-
TIME CTL SW	Wiper volume switch position / deg	Value can be displayed.	-
SPEED MODE	Speed mode / NOT AVL or AVAIL	Customized sign can be displayed.	-
AUTO WIPER	Auto wiper / NOT AVL or AVAIL	Customized sign can be displayed.	-
REWIPE CONTROL	Rewipe control / OFF / 3 s. / SPD MOD	Customized sign can be displayed.	-

2. PERFORM ACTIVE TEST

HINT:

Performing the intelligent tester's Active Test allows relay, VSV, actuator and other items to be operated without removing any parts. Performing the Active Test early in troubleshooting is one way to save time. The Data List can be displayed during the Active Test.

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the ignition switch to the ON position.
- (c) Perform the Active Test.

WIPER:

Item	Test Details	Diagnostic Note
WIPER MOT (HI)	Front wiper motor HI operation ON / OFF	-
WIPER MOT (LO)	Front wiper motor LO operation ON / OFF	-

3. FAIL-SAFE FUNCTION

- (a) When the front wiper switch is in any position other than "OFF" and the wiper blades have been frozen, a malfunction is detected by the auto wiper ECU and the front wiper operation is stopped.

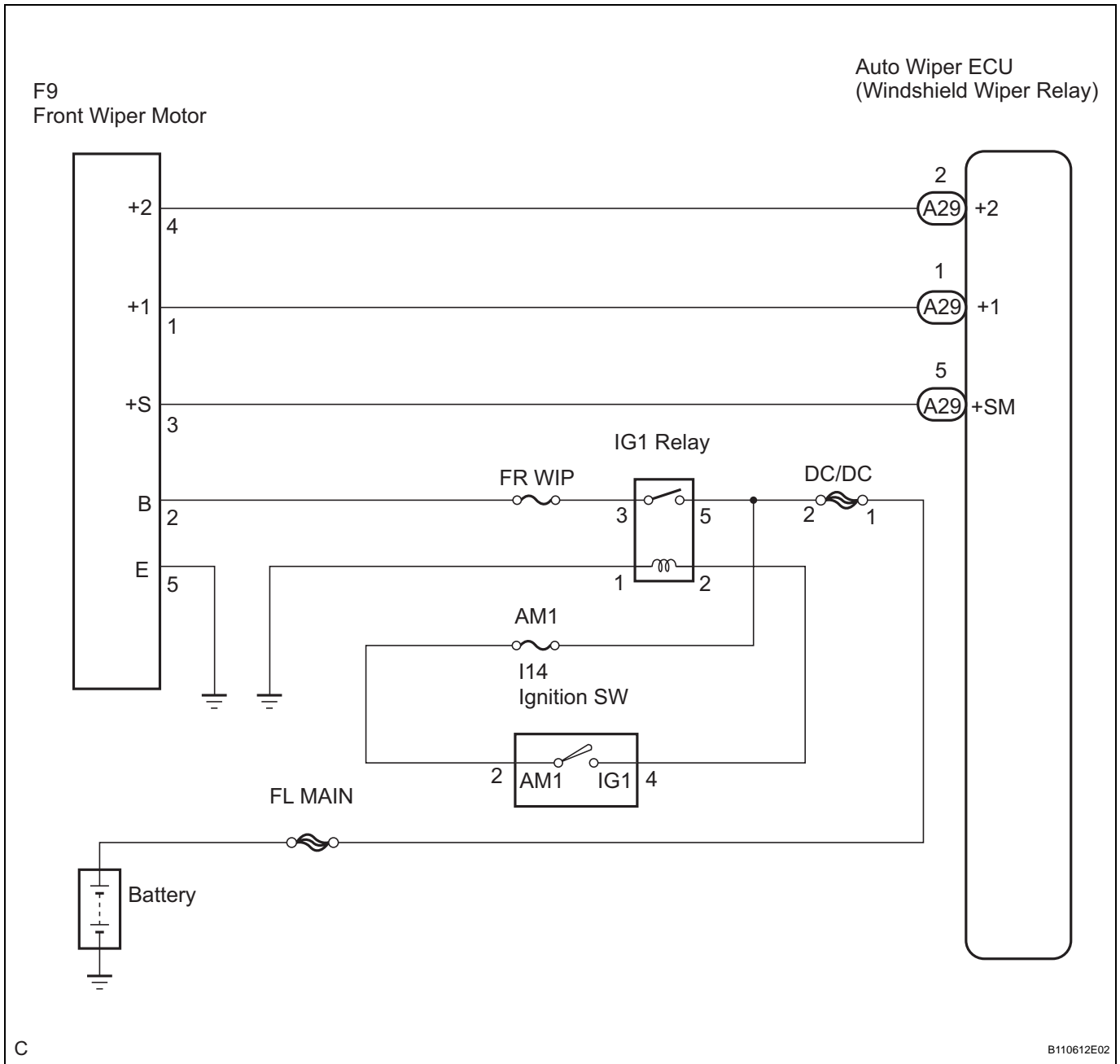
Front Wiper Motor Circuit

DESCRIPTION

The windshield wiper relay assembly controls the front wiper motor.

Even if the windshield wiper relay assembly is in failure, its circuit structure enables operation of the front wiper.

WIRING DIAGRAM



C

B110612E02

HINT:

Start the inspection from step 1 when using the intelligent tester, and start from step 2 when not using the intelligent tester.



1 PERFORM ACTIVE TEST BY INTELLIGENT TESTER

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the ignition switch to the ON position and turn the intelligent tester's main switch ON.
- (c) Select the item below in the ACTIVE TEST and then check that the relay operates.

Wiper:

Item	Test Details	Diagnostic Note
WIPER MOT (HI)	Front wiper motor HI operation ON / OFF	-
WIPER MOT (LO)	Front wiper motor LO operation ON / OFF	-

NG → **Go to step 2**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

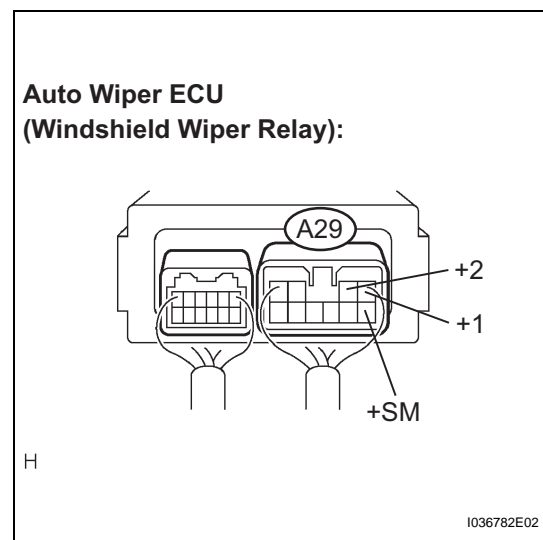
2 INSPECT FUSE

- (a) Inspect the AM1, FR WIP and INP J/B fuses.
 - (1) Measure the resistance between each terminal.
- Standard resistance:**
Below 1 Ω

NG → **CHECK FOR SHORT IN ALL HARNESS AND COMPONENTS CONNECTED FAILURE FUSE**

OK

3 INSPECT WINDSHIELD WIPER RELAY ASSEMBLY



- (a) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
+1 - Body ground	Ignition switch ON, Windshield wiper switch OFF → LO	Below 1 V → 10 to 14 V
+2 - Body ground	Ignition switch ON, Windshield wiper switch OFF → HI	Below 1 V → 10 to 14 V
+SM - Body ground	Ignition switch ON, Windshield wiper in automatic stop position → any position other than automatic stop position	Below 1 V → 10 to 14 V

NG → **Go to step 4**

OK**PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE****4 INSPECT WINDSHIELD WIPER MOTOR ASSEMBLY**

- (a) Inspect the windshield wiper motor assembly (See page [WW-38](#)).

NG**REPLACE WINDSHIELD WIPER MOTOR ASSEMBLY****OK****REPAIR OR REPLACE HARNESS AND CONNECTOR**