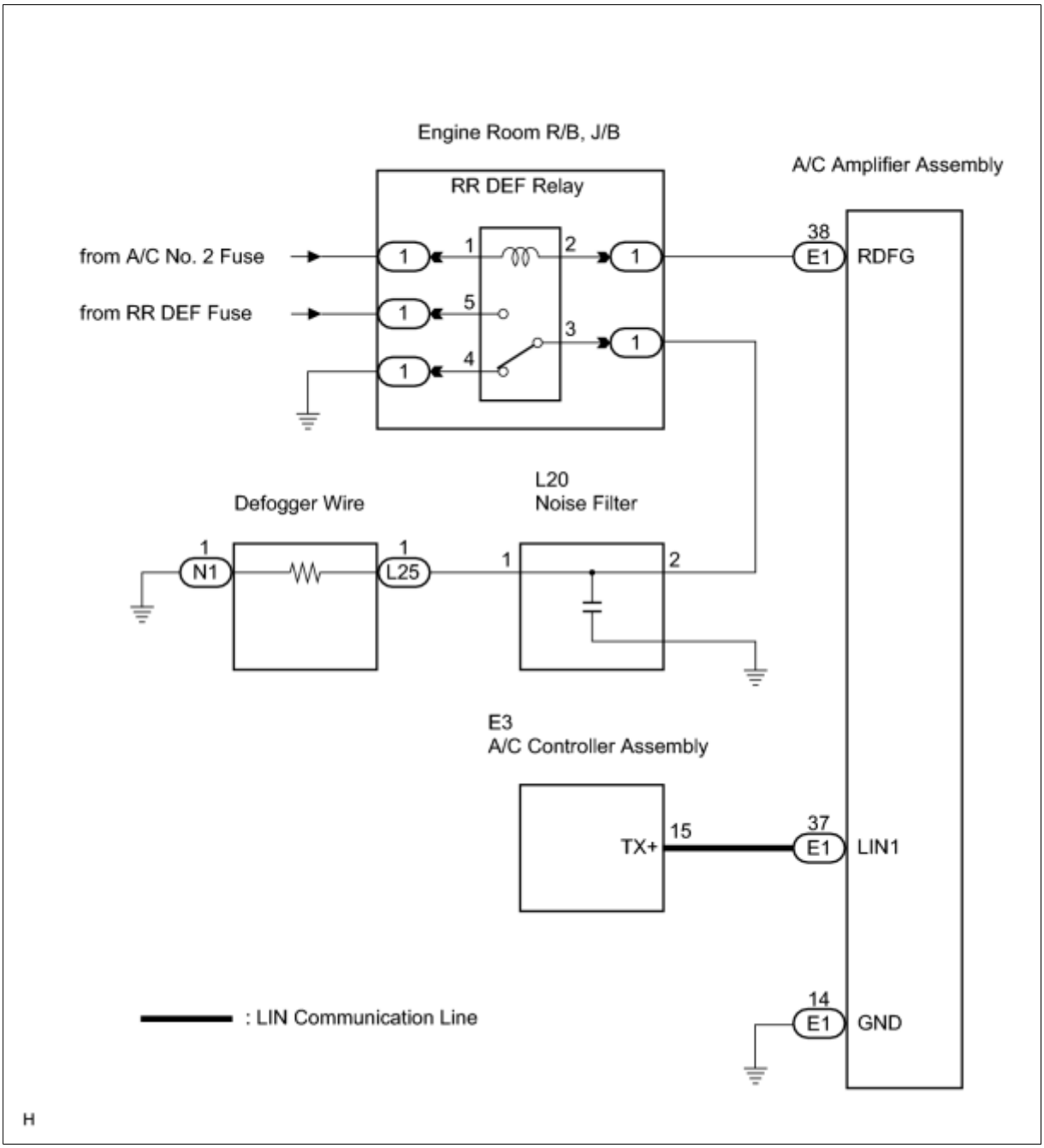
| | | |
|---|---|---|
| **Last Modified:** 7-13-2007 | | 1.6 J |
| **Service Category:** Vehicle Exterior | **Section:** Window/Glass | |
| **Model Year:** 2008 | **Model:** ES350 | **Doc ID:** RM0000020LP00SX |
| **Title:** WINDSHIELD / WINDOWGLASS: WINDOW DEFOGGER SYSTEM: Rear Window Defogger System does not Operate (2008 ES350) | | |

**Rear Window Defogger System does not Operate**

## DESCRIPTION

When the rear window defogger switch, which is built into the heater control assembly, is operated, the operation signals are transmitted to the A/C amplifier assembly through LIN. When the A/C amplifier assembly receives the signals, it turns on the RR DEF relay to operate the rear window defogger.

## WIRING DIAGRAM




## INSPECTION PROCEDURE

## PROCEDURE

| | |
|---|---|
| 1. | **CHECK FOR DTCs** |

(a) Select the DTC check on Techstream to check for communication errors.

Result:

| RESULT | PROCEED TO |
|---|---|
| No DTC is output | A |
| DTC are output (LIN communication) | B |

**B** **GO TO MULTIPLEX COMMUNICATION SYSTEM**

A

| 2. | PERFORM ACTIVE TEST BY TECHSTREAM |
|---|---|

(a) Select the Active Test, use Techstream to issue a control command, and then check the window defogger operation.

**Air Conditioner:**

| TESTER DISPLAY | TEST PART | CONTROL RANGE | DIAGNOSTIC NOTE |
|---|---|---|---|
| Defogger Relay (Rear) | Turns rear window defogger | OFF/ON | - |

OK → PERFORM ACTIVE TEST BY TECHSTREAM

NG

| 3. | REPLACE AIR CONDITIONER CONTROL ASSEMBLY |
|---|---|

(a) Replace the air conditioner control assembly.

NEXT

| 4. | CONFIRM REAR WINDOW DEFOGGER OPERATION |
|---|---|

(a) Turn the engine switch on (IG), press the defogger switch, and check that the window defogger operates.

NG → REPLACE A/C AMPLIFIER ASSEMBLY

OK → END

| 5. | PERFORM ACTIVE TEST BY TECHSTREAM |
|---|---|

(a) Select the Active Test, use Techstream to issue a control command, and then check the DEFOG relay operation.

(b) Check that operation sound of the RR DEF relay is heard.

:

| RESULT | PROCEED TO |
|---|---|
| Relay operating sound is heard | OK |
| Relay operating sound is not heard | NG |

OK ▶ INSPECT RR DEF RELAY

NG ▼

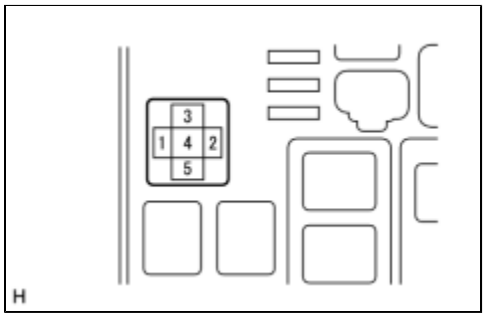
| 6. | INSPECT RR DEF RELAY |
|---|---|

INFO .

NG ▶ REPLACE RR DEF RELAY

OK ▼

| 7. | CHECK WIRE HARNESS (RR DEF RELAY - BATTERY POSITIVE) |
|---|---|




(a) Disconnect the RR DEF relay.

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

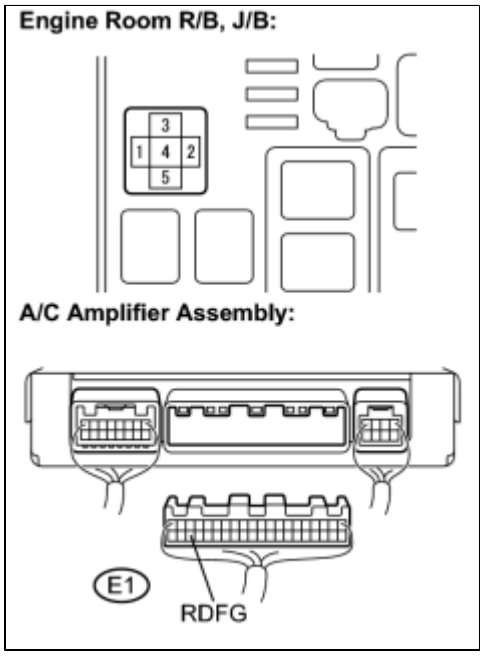
Standard voltage:

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| 1 - Body ground | Engine switch on (IG) | 10 to 14 V |

NG ▶ REPAIR OR REPLACE A/C NO. 2 FUSE, HARNESS OR CONNECTOR

OK ▼

| 8. | CHECK WIRE HARNESS (RR DEF RELAY - A/C AMPLIFIER ASSEMBLY) |
|---|---|




(a) Disconnect the RR DEF relay and A/C amplifier assembly connector.

(b) Measure the resistance according to the value(s) in the table below.

Standard resistance:

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| 2 - E1-38 | Always | Below 1 Ω |
| 2 - Body ground | Always | 10 kΩ or higher |

**NG** ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

**OK** ▶ **REPLACE A/C AMPLIFIER ASSEMBLY**

| | |
|---|---|
| **9.** | **INSPECT RR DEF RELAY** |

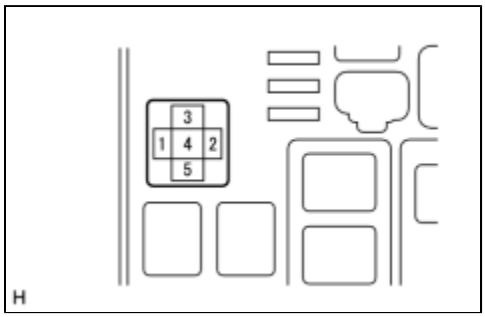
INFO .

**NG** ▶ **REPLACE RR DEF RELAY**

**OK**
▼

| | |
|---|---|
| **10.** | **CHECK WIRE HARNESS (RR DEF RELAY - BATTERY POSITIVE AND BODY GROUND)** |

(a) Disconnect the RR DEF relay.




(b) Measure the voltage and resistance according to the value(s) in the table below.

Standard resistance:

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| 4 - Body ground | Always | Below 1 Ω |

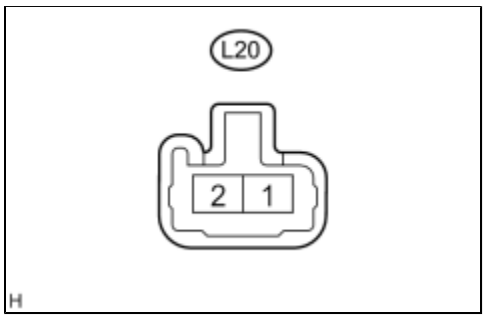
Standard voltage:

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| 5 - Body ground | Always | 10 to 14 V |

**NG** ▶ **REPAIR OR REPLACE RR DEF FUSE, HARNESS OR CONNECTOR**

**OK** ▼

| 11. | INSPECT NOISE FILTER |
|---|---|




(a) Disconnect the noise filter connector.

(b) Measure the resistance according to the value(s) in the table below.

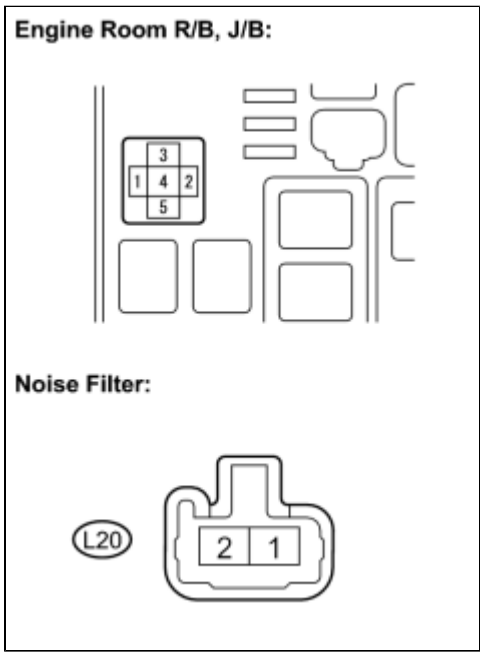
Standard resistance:

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| L20-1 - L20-2 | Always | Below 1 Ω |
| L20-1 - Body ground | Always | 10 kΩ or higher |

**NG** ▶ **REPLACE NOISE FILTER**

**OK**

| 12. | CHECK WIRE HARNESS (RR DEF RELAY - NOISE FILTER) |
|---|---|




(a) Disconnect the RR DEF relay and defogger wire connectors.

(b) Measure the resistance according to the value(s) in the table below.

Standard resistance:

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| 3 - L20-2 | Always | Below 1 Ω |
| 3 - Body ground | Always | 10 kΩ or higher |

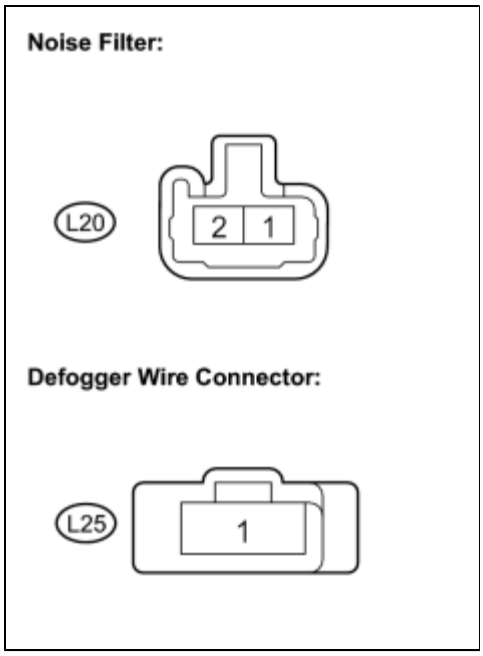
**NG** ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

**OK**

| 13. | CHECK WIRE HARNESS (NOISE FILTER - DEFOGGER WIRE CONNECTOR) |
|---|---|

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

Standard resistance:

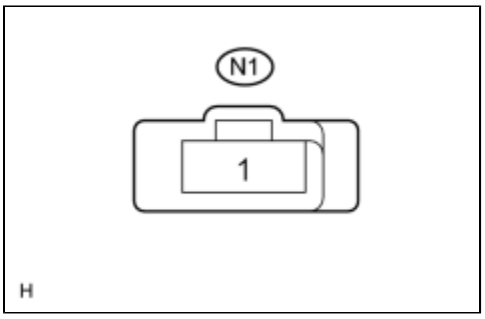



| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| L20-1 - L25-1 | Always | Below 1 Ω |
| L20-1 - Body ground | Always | 10 kΩ or higher |

**NG** ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

**OK** ▼

| 14. | CHECK WIRE HARNESS (DEFOGGER WIRE CONNECTOR - BODY GROUND) |
|---|---|




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

Standard resistance:

| TESTER CONNECTION | CONDITION | SPECIFIED CONDITION |
|---|---|---|
| N1-1 - Body ground | Always | Below 1 Ω |

**NG** ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

**OK** ▶ **REPAIR OR REPLACE REAR WINDOW DEFOGGER WIRE**