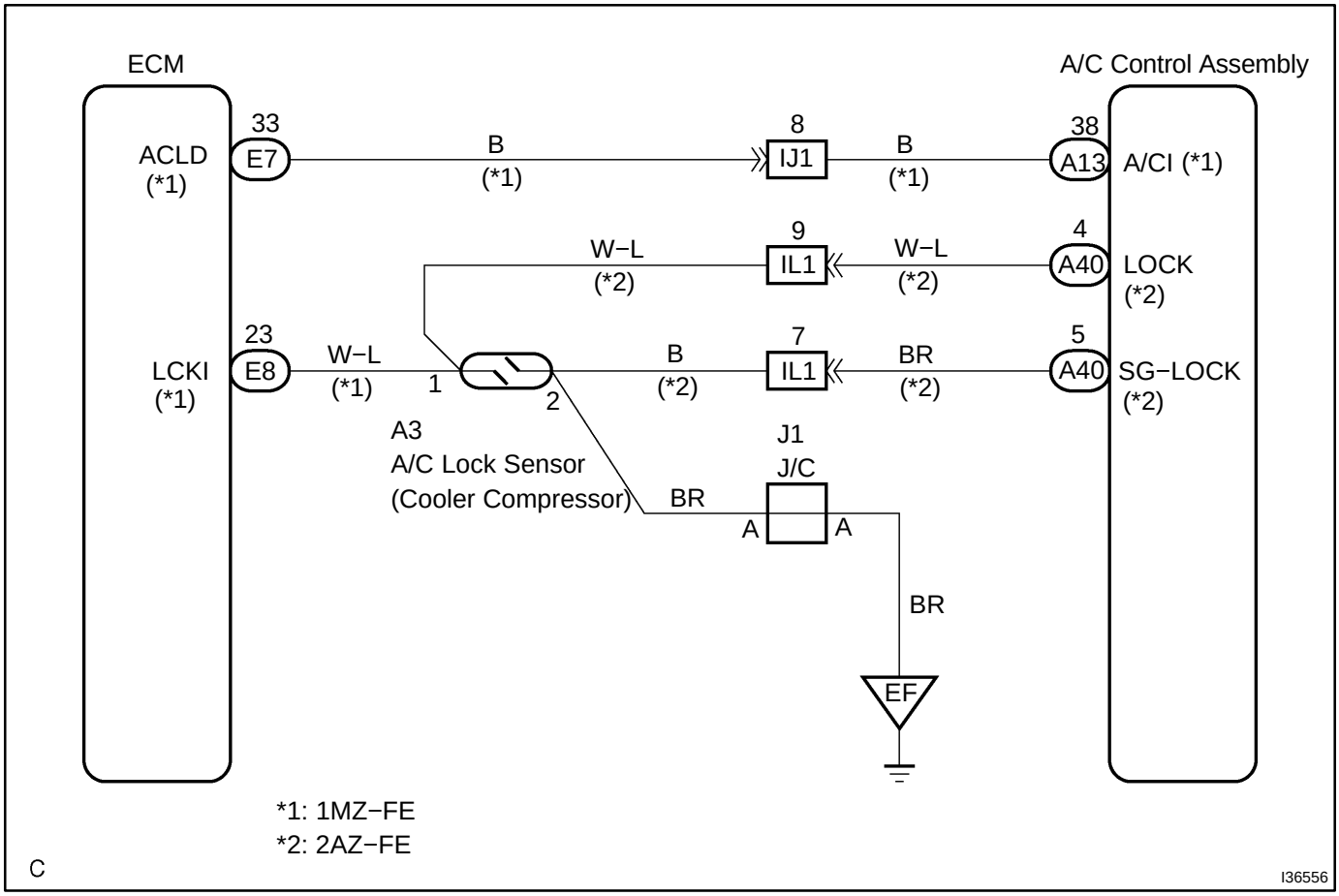
DTC	22	COMPRESSOR LOCK SENSOR CIRCUIT

CIRCUIT DESCRIPTION

This sensor sends 4 pulses par engine revolution to the A/C amplifier. If the number ratio of the compressor revolution divided by the engine revolution is smaller than a predetermined value, the A/C amplifier turns the compressor off. And, the indicator flashes at about 1 sec. intervals.

DTC No.	Detection Item	Trouble Area
22	All conditions below are detected for 3 sec. or more. (a) Engine speed : 450 rpm or more. (b) Ratio between engine and compressor revolution deviates 20% or more in comparison to normal operation.	• Compressor • Compressor drive belt • A/C lock sensor • Harness or connector between compressor and A/C amplifier • A/C amplifier • ECM (1MZ−FE)

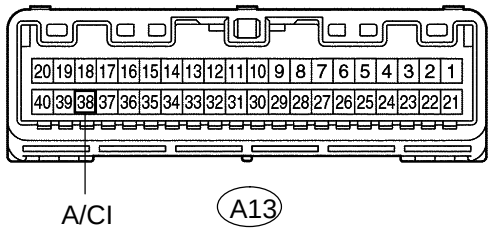
WIRING DIAGRAM



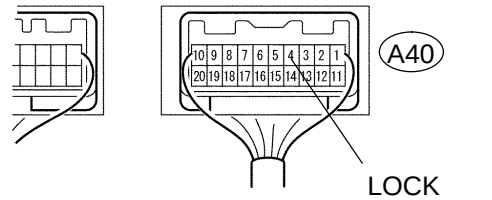
INSPECTION PROCEDURE

1	INSPECT HEATER CONTROL HOUSING SUB−ASSY(A/CI)

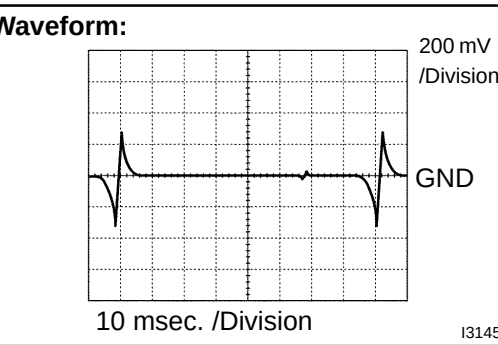
1MZ−FE: A/C Control Assembly Connector Wire Harness View:



2AZ−FE: A/C Control Assembly Connector Wire Harness View:



Waveform:



(a) Remove A/C amplifier assy with connectors still connected.

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

(c) 1MZ−FE:

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

Standard:

Terminal No.	Condition	Specified Condition
A13−38 (A/CI) − Body ground	Ignition switch ON Magnet clutch ON	Below 1.0 V

(d) 2AZ−FE:

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

Standard:

Tester connection	Condition	Specified condition
A40−4 (LOCK) − Body ground	Ignition switch ON Magnet clutch ON	Pulse generation (see waveform)

Result:

A	NG
B	OK (Checking from DTC)
C	OK (When checking from the PROBLEM SYMPTOMS TABLE)

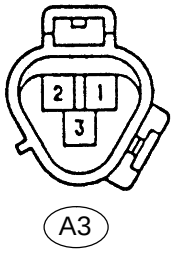
A

B → **CHECK AND REPLACE HEATER CONTROL HOUSING SUB−ASSY**

C → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

2 INSPECT COOLER COMPRESSOR ASSY

A/C Look Sensor Connector
Front View:



Ie−3−2 E05280

(a) Disconnect compressor connector.
(b) Measure the resistance according to the value(s) in the table below.

Standard:

Terminal No.	Condition	Specified Condition
A3−1 − A3−2	at 20°C (68°F)	165 to 205 Ω

NG → **REPLACE COOLER COMPRESSOR ASSY (SEE PAGE 55−61 or 55−68)**

OK

3 CONFIRM MODEL

Result:
A: 1MZ−FE
B: 2AZ−FE

B → **Go to step 8**

A

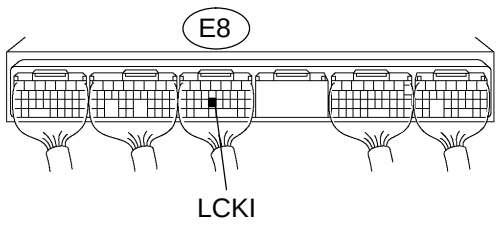
4 CHECK HARNESS AND CONNECTOR(COOLER COMPRESSOR ASSY − ECM)

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

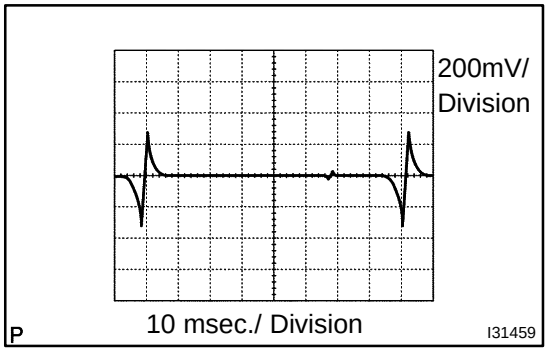
5 INSPECT ECM(LCKI)

ECM Wire Harness View:



(a) Remove ECM with connector.
(b) Turn ignition switch ON.
(c) A/C switch ON.
(d) Measure waveform between terminal LCKI of ECM and body ground.
Standard : Pulse generation

HINT:
The correct waveform is as shown.

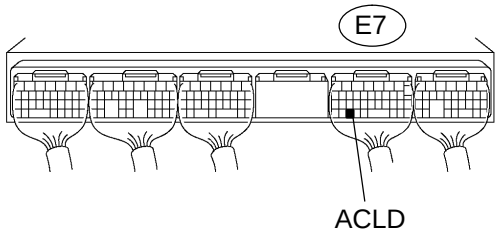


NG → **REPLACE ECM**

OK

6 INSPECT ECM(ACLD)

ECM Wire Harness View:



(a) Remove ECM with connector.
(b) Turn ignition switch ON.
(c) A/C switch ON.
(d) Measure voltage according to the value(s) in the table below.
Standard:

Terminal No.	Condition	Specified Condition
E7−33 (ACLD) − Body ground	Magnet clutch OFF	10 to 14 V
E7−33 (ACLD) − Body ground	Magnet clutch ON	Below 1.0 V

NG → **REPLACE ECM**

OK

7	**CHECK HARNESS AND CONNECTOR(ECM − HEATER CONTROL HOUSING SUB−ASSY)**

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

8	**CHECK HARNESS AND CONNECTOR(COOLER COMPRESSOR ASSY − HEATER CONTROL HOUSING SUB−ASSY)**

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

CHECK AND REPLACE HEATER CONTROL HOUSING SUB−ASSY