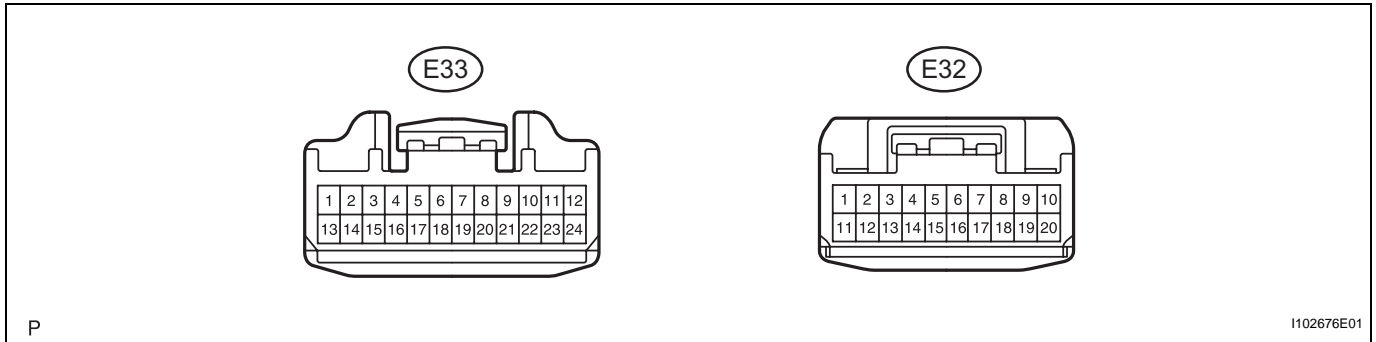


TERMINALS OF ECU

1. INSPECT AIR CONDITIONING AMPLIFIER ASSEMBLY

- (a) Disconnect the E32 and E33 connectors from the air conditioning amplifier assembly and inspect the connector on the wire harness side, as shown in the table below.



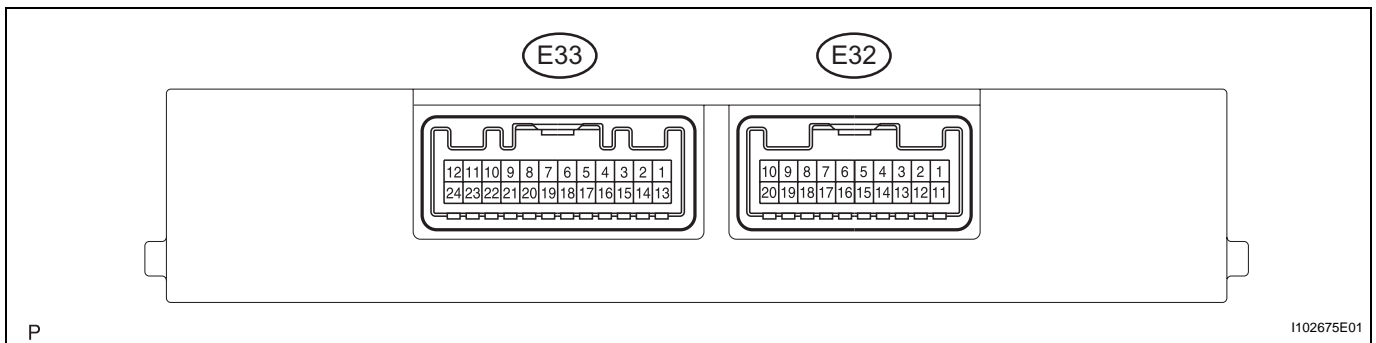
AC

Standard:

Symbols (Terminals No.)	Wiring Colors	Terminal Descriptions	Conditions	Specified Condition
IG+ (E32-1) - GND (E32-20)	Y-R - W-B	Power source (IG)	Ignition switch: OFF → ON	Below 1.0 → 11 to 14 V
B (E32-11) - GND (E32-20)	W-R - W-B	Power source (Back-up)	Always	11 to 14 V
SG-1 (E33 - 17) - Body ground	V-G - Body ground	Ground for mode control servo motor	Always	Below 1.0 Ω
SG-2 (E33 - 18) - Body ground	Y-G - Body ground	Ground for air mix control servomotor	Always	Below 1.0 Ω
SG-3 (E33 - 6) - Body ground	G-Y - Body ground	Ground for lock sensor	Always	Below 1.0 Ω
SG-4 (E32 - 9) - Body ground	GR-G - Body ground	Ground for A/C evaporator temperature sensor	Always	Below 1.0 Ω
TAMG (E33 - 16) - Body ground	GR - Body ground	Ground for ambient temperature sensor	Always	Below 1.0 Ω
GND (E32-20) - Body ground	W-B - Body ground	Ground for main power supply	Always	Below 1.0 Ω

If the results are not as specified, inspect the circuits connected to the other parts.

- (b) Reconnect the E32 and E33 connectors to the air conditioning amplifier assembly and inspect the wire harness side connector from the back side, as shown in the table below.



P

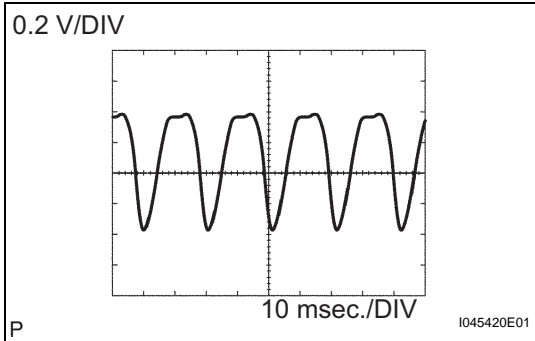
I102675E01

Standard:

Symbols (Terminals No.)	Wiring Colors	Terminal Descriptions	Conditions	Specified Condition
DEF (E33-9) - GND (E32-20)	LG - W-B	Mode switch signal	Ignition switch: ON Mode select switch: Except DEF → DEF	Below 1.5 → 11 to 14 V
LOCK (E33-8) - SG-3 (E33-6)	R-W - G-Y	Magnet clutch signal	Start engine Operate A/C system Magnet clutch: ON	Pulse generation (See waveform 1)
ACI (E33-24) - GND (E32-20)	G-W - W-B	Idle up request signal	Engine idling Operate A/C system Magnet clutch: OFF → ON	11 to 14 → Below 1.0 V
FRS (E32-6) - GND (E32-20)	V-W - W-B	Recirculation/Fresh switch signal	Ignition switch: ON Recirculation/Fresh switch: RECIRCULATION → FRESH	11 to 14 → Below 1.0 V
REC (E32-7) - GND (E32-20)	P-B - W-B	Recirculation/Fresh switch signal	Ignition switch: ON Recirculation/Fresh switch: FRESH → RECIRCULATION	11 to 14 → Below 1.0 V
MGC (E32-4) - GND (E32-20)	LG-B - W-B	Magnet clutch relay signal	Engine idling Operate A/C system Magnet clutch: OFF → ON	11 to 14 → Below 1.0 V
PSW (E33-22) - GND (E32-20)	LG-R - W-B	A/C pressure switch signal	Start engine Operate A/C system Refrigerant pressure: Normal (Less than 0.196 MPa (2.0 kgf/cm ²)) or more than 3.14 MPa (32.0 kgf/cm ²))	11 to 14 → Below 1.0 V
BLW (E32-8) - GND (E32-20)	Y - W-B	Blower switch signal	Ignition switch: ON Blower switch: ON OFF → ON (LO, M1, M2, HI)	11 to 14 → Below 1.0 V
TE (E32-10) - SG-4 (E32-9)	B - GR-G	A/C evaporator temperature sensor signal	Ignition switch: ON Evaporator temperature: 0 → 15°C (32 → 59°F)	1.7 to 2.1 → 0.9 to 1.3 V
TAM (E33-13) - TAMG (E33-16)	Y - GR	Ambient temperature sensor signal	Ignition switch: ON Ambient temperature: 25 → 40°C (77 → 104°F)	1.7 to 2.1 → 1.3 to 1.8 V
RDFG (E32-5) - GND (E32-20)	Y-V - W-B	Defogger switch signal	Ignition switch: ON Defogger switch: OFF → ON	11 to 14 → Below 1.0 V
S5 (E33-19) - SG-1 (E33-17)	P - V-G	Power supply for mode control servo motor	Ignition switch: OFF → ON	0 to 5.0 V
S5-1 (E33-7) - SG-2 (E33-18)	P-B - Y-G	Power supply for air mix control servomotor	Ignition switch: OFF → ON	0 to 5.0 V
SG-1 (E33 - 17) - Body ground	V-G - Body ground	Ground for mode control servo motor	Always	Below 1.0 Ω
SG-2 (E33 - 18) - Body ground	Y-G - Body ground	Ground for air mix control servomotor	Always	Below 1.0 Ω
SG-3 (E33 - 6) - Body ground	G-Y - Body ground	Ground for lock sensor	Always	Below 1.0 Ω
SG-4 (E32 - 9) - Body ground	GR-G - Body ground	Ground for A/C evaporator temperature sensor	Always	Below 1.0 Ω
TAMG (E33 - 16) - Body ground	GR - Body ground	Ground for ambient temperature sensor	Always	Below 1.0 Ω
GND (E32-20) - Body ground	W-B - Body ground	Ground for main power supply	Always	Below 1.0 Ω
IG+ (E32-1) - Body ground	Y-R - Body ground	Power source (IG)	Ignition switch: OFF → ON	Below 1.0 → 11 to 14 V
B (E32-11) - Body ground	W-R - Body ground	Power source (Back-up)	Always	11 to 14 V

If the results are not as specified, replace the air conditioning amplifier assembly with a new one. If the results are still not as specified after replacing the air conditioning control assembly, inspect the circuits connected to other parts.

(1) WAVEFORM 1:
Magnet clutch signal

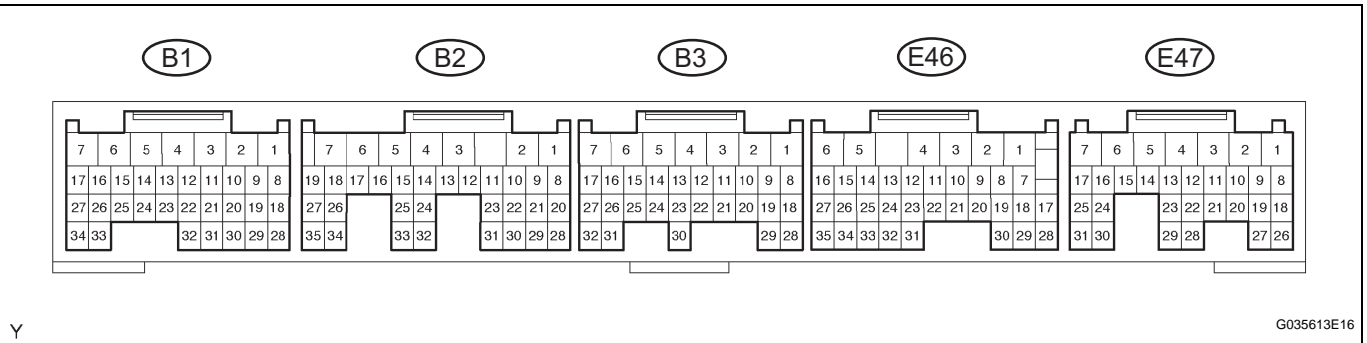


ECM Terminal Names	Between LOCK (E33-8) - SG-3 (E33-6)
Tester Ranges	0.2 V/DIV, 10 msec./DIV
Conditions	Idling

HINT:
The wavelength becomes shorter as the engine rpm increases.

2. INSPECT ECM

- (a) Connect the connector to the ECM and inspect the wire harness side connector from the back side, as shown in the table below.

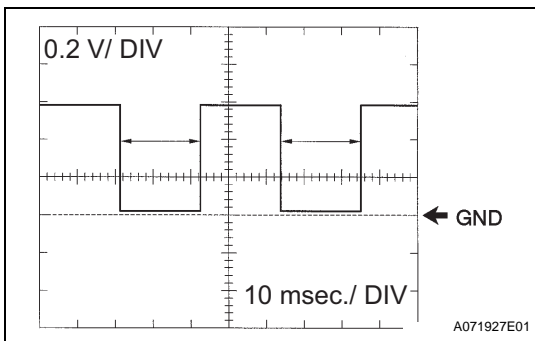


Standard voltage:

Symbols (Terminals No.)	Wiring Colors	Terminal Descriptions	Conditions	Specified Condition
ACT (E46-25) - E1 (B3-1)	L-W - BR	Magnet clutch ON permit signal	Start engine Operate A/C system A/C switch OFF Blower switch OFF → A/C switch ON Blower switch ON	Below 1.0 → 11 to 14 V
AC1 (E46-24) - E1 (B3-1)	G-W - BR	Idle-up request signal	Start engine A/C magnet clutch is engaged → not engaged	Below 1.0 → 11 to 14 V
THWO (E46-14) - E2 (B1-28)	BR-B - W-G	Engine coolant temperature sensor signal	Engine idling Engine coolant temperature 80°C (176°F)	Pulse generation (See waveform 1)

If the result is not as specified, the ECM may have a malfunction.

(1) WAVEFORM 1:
Magnet clutch signal



ECM Terminal Names	Between THWO (E46-14) - E2 (B1-28)
Tester Ranges	0.2 V/DIV, 10 msec./DIV
Conditions	Idling

HINT:
The wavelength becomes shorter as the engine rpm increases.