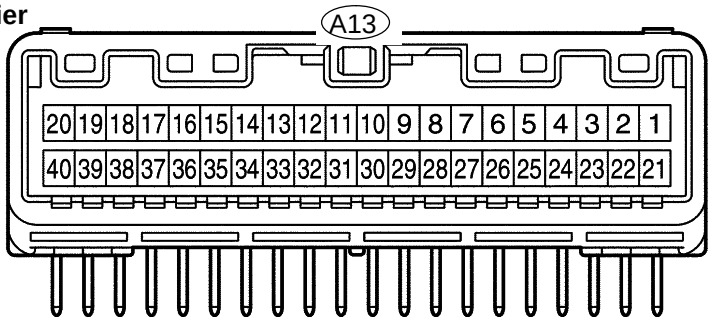
05MEJ−01

TERMINALS OF ECU

1. 1MZ−FE:

HEATER CONTROL HOUSING SUB−ASSY (A/C Amplifier)

Air Conditioning Amplifier Assy Connector Wire Harness View:



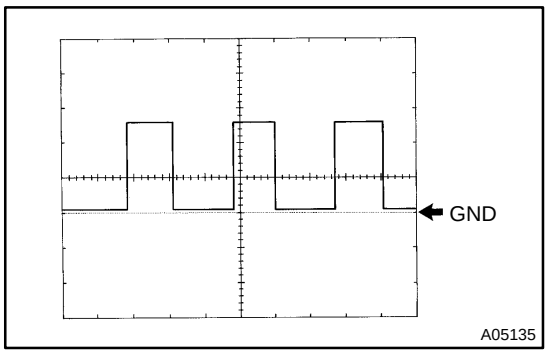
P

I31398

Terminal No. (Symbols)	Wiring Color	Terminal Description	Condition	Specification
A13−1 (GND) − Body ground	W−B − Body ground	Ground for main power supply	Always	Below 1.0 V
A13−2 (SG−1) − Body ground	LG−B − Body ground	Ground for air outlet damper position sensor	Always	Below 1.0 V
A13−3 (SG−3) − Body ground	LG−B − Body ground	Ground for air mix damper position sensor (Passenger side)	Always	Below 1.0 V
A13−4 (SG−2) − Body ground	LG−B − Body ground	Ground for air inlet damper position sensor	Always	Below 1.0 V
A13−5 (TPO) − A13−2 (SG−1)	B−Y − LG−B	Air outlet damper servo operation signal	Ignition switch: ON Set air flow setting: DEF → FACE	1.0 V → 4.0 V
A13−6 (TP) − SG−3 (A13−3)	L−R − LG−B	Air mix damper servo operation signal	Ignition switch: ON Set temperature: MAX. HOT → MAX. COOL	1.0 V → 4.0 V
A13−7 (TPI) − A13−4 (SG−2)	L−R − LG−B	Air inlet damper servo operation signal	Ignition switch: ON Rear defogger switch: FRESH → RECIRCULATION	1.0 V → 4.0 V
A13−8 (S5−1) − A13−1 (GND)	V − W−B	Power supply for air vent mode control servo motor	Ignition switch: LOCK → ON	0 → 5.0 V
A13−9 (S5−3) − A13−1 (GND)	V − W−B	Power supply for air mix control servo motor	Ignition switch: LOCK → ON	0 → 5.0 V
A13−10 (S5−2) − A13−1 (GND)	V − W−B	Power supply for air inlet control servo motor	Ignition switch: LOCK → ON	0 → 5.0 V
A13−11 (AOF) − A13−1 (GND)	P − W−B	Air outlet damper servo operation signal	Ignition switch: ON Mode select: DEF → FACE (*1)	Below 1.0 V → 10 to 14 V
A13−12 (AOD) − A13−1 (GND)	O − W−B	Air outlet damper servo operation signal	Ignition switch: ON Set air flow setting: FACE → DEF (*1)	Below 1.0 V → 10 to 14 V
A13−13 (AMH) − A13−1 (GND)	B−W − W−B	Air mix damper servo operation signal	Ignition switch: ON Set temperature: MAX. COLD → MAX. HOT (*1)	Below 1.0 V → 10 to 14 V
A13−14 (AMC) − A13−1 (GND)	LG−R − W−B	Air mix damper servo operation signal	Ignition switch: ON Set temperature: MAX. HOT → MAX. COOL (*1)	Below 1.0 V → 10 to 14 V
A13−15 (AIR) − A13−1 (GND)	R−L − W−B	Air inlet damper servo operation signal	Ignition switch: ON Rear defogger switch: FRESH → RECIRCULATION	Below 1.0 V → 10 to 14 V
A13−16 (AIF) − A13−1 (GND)	L − W−B	Air inlet damper servo operation signal	Ignition switch: ON Rear defogger switch: RECIRCULATION → FRESH	Below 1.0 V → 10 to 14 V

Terminal No. (Symbols)	Wiring Color	Terminal Description	Condition	Specification
A13−17 (TAM) − A13−1 (GND)	G−Y − W−B	Ambient temperature signal	Ignition switch: ON	see page 05−1382
A13−18 (SPD) − 13−1 (GND)	V−W − W−B	Vehicle speed signal	Start engine and turn wheel	Pulse generation (see waveform 1)
A13−19 (IG+) − A13−1 (GND)	L−B − W−B	Ignition switch signal	Ignition switch: LOCK → ON	0 → 10 to 14 V
A13−20 (B) − A13−1 (GND)	W−R − W−B	Main power supply	Always	10 to 14 V
A13−21 (SG) − Body ground	LG−B − Body ground	Ground for ambient temperature sensor	Always	Below 1.0 V
A13−22 (SG−5) − Body ground	LG−B − Body ground	Ground for room temperature sensor	Always	Below 1.0 V
A13−23 (TE) − A13−21 (SG)	L−W − LG−B	Evaporator temperature sensor signal	Evaporator temperature: 0°C (32°F) → 15°C (59°F)	2.0 to 2.4 V → 1.4 to 1.8 V
A13−24 (TR) − A13−22 (SG−5)	B − LG−B	Room temperature sensor signal	Ignition switch: ON Cabin temperature: 25°C (77°F) → 40°C (104°F)	1.8 to 2.2 V → 1.2 to 1.6 V
A13−25 (TS) − Body ground	O − Body ground	Solar sensor signal	Ignition switch: ON Solar sensor subject to electric light	0.8 to 3.3 V
A13−25 (TS) − Body ground	O − Body ground	Solar sensor signal	Ignition switch: ON Solar sensor is covered by a cloth	Below 0.8 V
A13−26 (PSW) − A13−1 (GND)	L−B − W−B	Pressure sensor signal	Start engine Refrigerant pressure: Normally → Less than 196 kpa (2.0 kgf/cm^2, 28 psi) or more than 3,140 kpa (32.0 kgf/cm^2, 455 psi)	0 → Below 1.0 V
A13−28 (S5) − A13−1 (GND)	V − W−B	Power supply for A/C solar sensor	Ignition switch: LOCK → ON	0 → 4.5 to 5.5 V
A13−30 (RDEF) − A13−1 (GND)	Y−G − W−B	Rear defogger relay signal	Rear defogger switch: ON → OFF	Below 1.0 V → 10 to 14 V
A13−31 (BLW) − A13−1 (GND)	L−O − W−B	Blower speed control signal	Ignition switch: ON Blower switch: OFF → LO	10 to 14 V → Below 1.0 V
A13−32 (HR) − A13−1 (GND)	L−W − W−B	Blower speed control signal	Ignition switch: ON Blower switch: OFF → LO	10 to 14 V → Below 1.0 V
A13−33 (LP) − A13−1 (GND)	V − W−B	Theft deterrent signal	During set preparation	3 to 5 V
A13−34 (SW1) − A13−1 (GND)	LG−B − W−B	Light control switch signal	Hazard switch: ON → OFF	0 → Below 1.0 V
A13−35 (ILL−) − A13−1 (GND)	W−G − W−B	Light control switch signal	Turn the light control switch to TAIL position	Below 1.0 V
A13−36 (AC1) − A13−1 (GND)	Y−B − W−B	Magnetic clutch signal	Ignition switch: ON Magnetic clutch: OFF → ON	3.7 to 4.5 V → 1.3 to 2.6 V
A13−37 (TW) − A13−1 (GND)	Y−G − W−B	Engine coolant temperature signal	Ignition switch: ON	Pulse generation
A13−38 (A/CI) − A13−1 (GND)	B − W−B	Magnetic clutch signal	Ignition switch: ON Magnetic clutch: OFF → ON	10 to 14 V → Below 1.0 V
A13−39 (A/CS) − A13−1 (GND)	P−L − W−B	Magnetic clutch signal	Ignition switch: ON A/C switch: OFF → ON	Below 1.0 V → 10 to 14 V
A13−40 (ILL+) − A13−1 (GND)	G − W−B	Light control switch signal	Turn the light control switch to TAIL position	10 to 14 V

*1: When the operating servomotor.



waveform 1:
Measure the voltage between terminal SPD of the A/C amplifier assy connector and body ground when turning the rear wheel slowly.

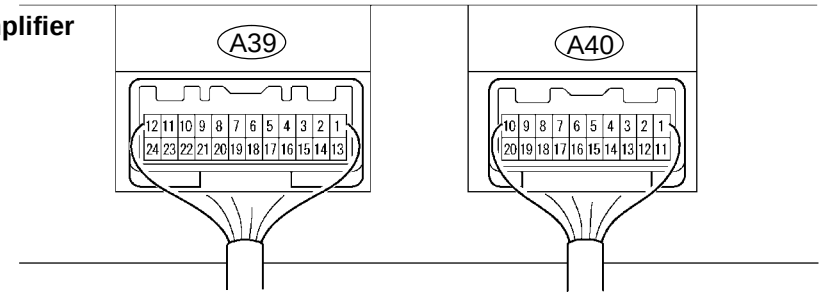
OK:

A waveform should be output as shown in the illustration.

HINT:
As vehicle speed increases,the cycle of the signal waveform narrows.

2. 2AZ−FE: AIR CONDITIONING CONTROL PANEL SUB−ASSY

Air Conditioning Amplifier Assy Connector Wire Harness View:

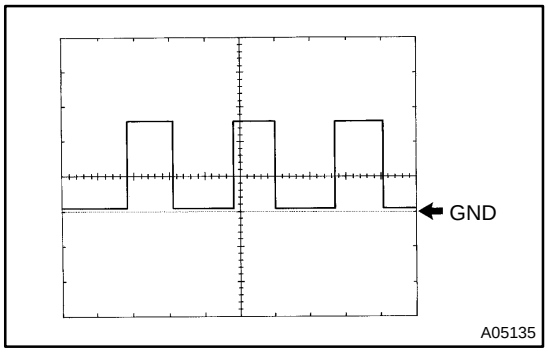


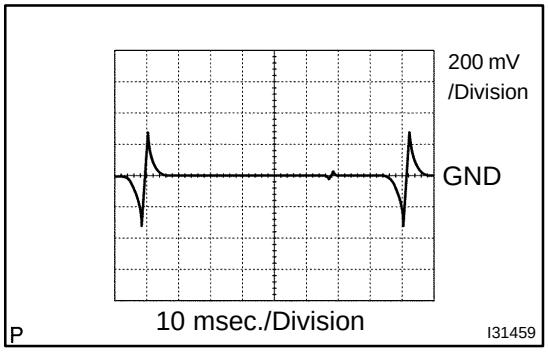
Symbols (Terminals No.)	Wiring Color	Terminal Description	Condition	Specified Condition
SG−TPM (A39−1) − Body ground	LG−B − Body ground	Ground for air outlet damper position sensor	Always	Below 1.0 V
SG−TP (A39−2) − Body ground	LG−B − Body ground	Ground for air mix damper position sensor	Always	Below 1.0 V
SG−TPI (A39−3) − Body ground	LG−B − Body ground	Ground for air inlet damper position sensor	Always	Below 1.0 V
TR (A39−4) − SG−TR (A39−19)	B − LG−B	Room temperature sensor signal	Ignition switch: ON Cabin temperature: 25°C (77°F) → 40°C (104°F)	see page 05−1378
TE (A39−5) − SG−TE (A39−20)	L−W − LG−B	Evaporator temperature sensor signal	Ignition switch: ON Evaporator temperature: 0°C (32°F) → 15°C (59°F)	see page 05−1385
TPM (A39−7) − SG−TPM (A39−1)	B−Y − LG−B	Air outlet damper position sensor signal	Ignition switch: ON Mode switch: DEF → FACE	1.0 V → 4.0 V
TP (A39−8) − SG−TP (A39−2)	L−R − LG−B	Air mix damper position sensor signal	Temperature set: Max. HOT → Max. COOL	1.0 V → 4.0 V
TPI (A39−9) − SG−TPI (A39−3)	L−R − LG−B	Air inlet damper position sensor signal	Air inlet control switch: FRESH → RECIRC	1.0 V → 4.0 V
S5−TPM (A39−10) − SG−TPM (A39−1)	V − LG−B	Power supply for air outlet servomotor	Ignition switch: LOCK → ON	Below 1.0 V → 5.5 V
S5−TP (A39−11) − SG−TP (A39−2)	V − LG−B	Power supply for air mix servomotor	Ignition switch: LOCK → ON	Below 1.0 V → 5.5 V
S5−TPI (A39−12) − SG−TPI (A39−3)	V − LG−B	Power supply for air inlet servomotor	Ignition switch: LOCK → ON	Below 1.0 V → 5.5 V
AIR (A39−13) − Body ground	R−L − Body ground	Air inlet servomotor operation voltage	Air inlet control switch: FRESH → RECIRC	Below 1.0 V → 10 to 14 V (*1)

Symbols (Terminals No.)	Wiring Color	Terminal Description	Condition	Specified Condition
AIF (A39−14) − Body ground	L − Body ground	Air inlet servomotor operation voltage	Air inlet control switch: RECIRC → FRESH	Below 1.0 V → 10 to 14 V (*1)
AOD (A39−15) − Body ground	O − Body ground	Air outlet servomotor operation voltage	Ignition switch: ON Mode switch: FACE → DEF	Below 1.0 V → 10 to 14 V (*1)
AOF (A39−16) − Body ground	P − Body ground	Air outlet servomotor operation voltage	Ignition switch: ON Mode switch: DEF → FACE	Below 1.0 V → 10 to 14 V (*1)
AMC (A39−17) − Body ground	LG−R − Body ground	Air mix servomotor operation voltage	Temperature set: Max. HOT → Max. COOL	Below 1.0 V → 10 to 14 V (*1)
AMH (A39−18) − Body ground	B−W − Body ground	Air mix servomotor operation voltage	Temperature set: Max. COOL → Max. HOT	Below 1.0 V → 10 to 14 V (*1)
SG−TR (A39−19) − Body ground	LG−B − Body ground	Ground for room temperature sensor	Always	Below 1.0 V
SG−TE (A39−20) − Body ground	LG−B − Body ground	Ground for evaporator temperature sensor	Always	Below 1.0 V
TS (A39−23) − Body ground	O − Body ground	Solar sensor signal	Ignition switch: ON Solar sensor subject to electric light	0.8 to 3.3 V
TS (A39−23) − Body ground	O − Body ground	Solar sensor signal	Ignition switch: ON Solar sensor is covered by a cloth	Below 0.8 V
S5−TS (A39−24) − Body ground	V − Body ground	Power supply for solar sensor	Ignition switch: LOCK → ON	0 → 4.5 to 5.5 V
GND (A40−1) − Body ground	W−B − Body ground	Ground for main power supply	Always	Below 1.0 V
SPD (A40−2) − GND (A40−1)	V−W − W−B	Vehicle speed signal	Ignition switch: ON Turn front wheel slowly	Pulse generation (see waveform 1)
LOCK (A40−4) − SG−LOCK (A40−5)	W−L − BR	Compressor lock sensor signal	Engine idling A/C switch: ON (Magnet clutch: ON)	Pulse generation (see waveform 2)
IGN (A40−6) − GND (A40−1)	B−O − W−B	Engine rotation signal	Engine idling	Pulse generation
PSW (A40−7) − GND (A40−1)	L −B − W−B	Pressure switch signal	Ignition switch: START Refrigerant pressure: Normally → Less than 196 kpa (2.0kgf/cm^2, 28 psi) or more than 3,140 kpa (32.0 kgf/cm^2, 455 psi)	Below 1.0 V → 10 to 14 V
TW (A40−8) − GND (A40−1)	Y−G − W−B	Water temperature sensor signal	Ignition switch: ON	Pulse generation
IG (A40−9) − GND (A40−1)	L−B − W−B	Power source (IG)	Ignition switch: LOCK or ACC → ON	Below 1.0 V → 10 to 14 V
B (A40−10) − GND (A40−1)	W−R − W−B	Power source (Back−up)	Always	10 to 14 V
TAMG (A40−11) − GND (A40−1)	G−Y − W−B	Ambient temperature sensor signal	Ignition switch: ON Ambient temperature: 10°C (50°F) → 35°C (95°F)	see page 05−1382
BLW (A40−12) − GND (A40−1)	L−O − W−B	Blower motor control signal	Ignition switch: ON Blower switch: OFF → ON	see page 05−1430
ACI (A40−13) − GND (A40−1)	Y−B − W−B	Engine idle−up demand signal	Ignition switch: ON A/C switch: OFF → ON	10 to 14 V → Below 1.0 V
RDFG (A40−14) − GND (A40−1)	Y−G − W−B	Rear defogger signal	Ignition switch: ON Rear defogger switch: OFF → ON	10 to 14 V → Below 1.0 V

Symbols (Terminals No.)	Wiring Color	Terminal Description	Condition	Specified Condition
HR (A40−15) − GND (A40−1)	L−W − W−B	Heater relay control signal	Ignition switch: ON Blower switch: OFF → ON	10 to 14 V → Below 1.0 V
MGCR (A40−16) − GND (A40−1)	B − W−B	Magnet clutch relay signal	Ignition switch: ON Blower switch: LO A/C switch: OFF → ON	10 to 14 V → Below 1.0 V
SWI (A40−17) − GND (A40−1)	LG−B − W−B	Hazard signal switch signal	Hazard switch: OFF → ON	10 to 14 V → Below 1.0 V
ACT (A40−18) − GND (A40−1)	Y−R − W−B	Magnet clutch ON permission signal	Ignition switch: ON A/C switch: OFF → ON	Below 1.0 V → 10 to 14 V

*1: When the operating servomotor.





waveform 1:

Measure the voltage between terminal SPD of the A/C amplifier assy connector and body ground when turning the rear wheel slowly.

OK:

A waveform should be output as shown in the illustration.

HINT:

As vehicle speed increases, the cycle of the signal waveform narrows.

waveform 2:

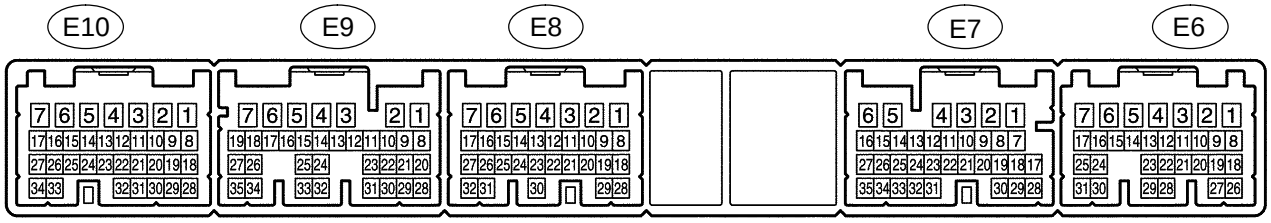
Measure the wave form between terminal LOCK of the A/C amplifier assy connector and body ground.

OK:

A waveform should be output as shown in the illustration.

3. 1MZ−FE: ECM

ECM Wire Harness View:



Terminal No. (Symbols)	Wiring Color	Terminal Description	Condition	Specification
E7−1 (HP) − Body ground	BR − Body ground	Pressure switch signal	Always	Below 1.0 V
E7−2 (ACMG) − E8−1 (E1)	B − BR	Magnetic clutch signal	Engine start A/C switch: OFF → ON	10 to 14 V → Below 1.0 V
E7−14 (THWO) − E8−1 (E1)	Y−G − BR	Engine coolant temperature	Ignition switch: ON	Pulse generation
E7−31 (A/CS) − E8−1 (E1)	P−L − BR	Magnetic clutch signal	Engine start A/C switch: OFF → ON	Below 1.0 V → 10 to 14 V
E7−32 (THE) − E8−1 (E1)	Y−B − BR	Magnetic clutch signal	Engine start A/C switch: OFF → ON	10 to 14 V → Below 1.0 V
E7−33(ACLD) − E8−1 (E1)	B − BR	Magnetic clutch signal	Engine start A/C switch: OFF → ON	10 to 14 V → Below 1.0 V
E8−23 (LCKI) − E8−1 (E1)	W−L − BR	Magnetic clutch signal	Engine start A/C switch: OFF → ON	Pulse generation
E8−1 (E1) − Body ground	BR − Body ground	Ground for main power supply	Always	Below 1.0 V