SYSTEM OUTLINE

1. HEATER BLOWER OPERATION

MANUAL BLOWER OPERATION

WHEN THE BLOWER CONTROL SW IS SET TO ANY BLOWER SPEEDS, THE A/C AMPLIFIER OPERATES AND THE CURRENT TO DRIVE THE BLOWER MOTOR FLOWS FROM **TERMINAL BLW** OF THE A/C AMPLIFIER TO **TERMINAL SI** OF THE BLOWER MOTOR CONTROL RELAY. THE CURRENT ACTIVATES THE RELAY AND THE VOLTAGE APPLIED TO **TERMINAL +B** OF THE BLOWER MOTOR CONTROL RELAY IS OUTPUT AT **TERMINAL M+** AS THE VOLTAGE FOR THE SELECTED BLOWER SPEED. THE CURRENT THEN FLOWS FROM **TERMINAL M+** OF THE BLOWER MOTOR CONTROL RELAY TO **TERMINAL 2 ➔ TERMINAL 1 ➔ TERMINAL M-** OF THE BLOWER MOTOR CONTROL RELAY ➔ **TERMINAL GND ➔ GROUND**, AND THE BLOWER MOTOR OPERATES AT THE BLOWER SPEED SELECTED.

AUTO FUNCTION

WHEN THE AUTO SW IS TURNED ON, THE A/C AMPLIFIER CALCULATES THE REQUIRED VENT TEMPERATURE BASE ON THE SET TEMPERATURE AND INPUT FROM EACH SENSOR. THEN **TERMINAL BLW** OF THE A/C AMPLIFIER INPUTS CURRENT TO **TERMINAL SI** OF THE BLOWER MOTOR CONTROL RELAY IN CONFORMITY WITH THE REQUIRED VENT OUTPUT. THIS CURRENT ACTIVATES THE BLOWER MOTOR CONTROL RELAY SO THAT CURRENT FLOWS FROM **TERMINAL M+** OF THE BLOWER MOTOR CONTROL RELAY ➔ **TERMINAL 2** OF THE BLOWER MOTOR ➔ **TERMINAL 1 ➔ TERMINAL M-** OF THE BLOWER MOTOR CONTROL RELAY ➔ **TERMINAL GND ➔ GROUND**, ACTIVATING THE BLOWER MOTOR. THE BLOWER MOTOR THEN OPERATES AT DIFFERENT STEPS IN CONFORMITY WITH VARIABLE CURRENT FLOW OUTPUT FROM **TERMINAL BLW** OF THE A/C AMPLIFIER TO **TERMINAL SI** OF HE BLOWER MOTOR CONTROL RELAY.

2. OPERATION OF AIR INLET CONTROL SERVO MOTOR

(SWITCHING FROM FRESH TO RECIRC)

WITH THE IGNITION SW TURNED ON, THE CURRENT FLOWS FROM **HTR** FUSE TO **TERMINAL 2** OF THE AIR INLET CONTROL SERVO MOTOR ➔ **TERMINAL 5 ➔ TERMINAL AIR** OF THE A/C AMPLIFIER ➔ **TERMINAL GND ➔ GROUND**, THE MOTOR ROTATES AND THE DAMPER STOPS AT **RECIRC** POSITION.

(SWITCHING FROM RECIRC TO FRESH)

WITH THE IGNITION SW TURNED ON, THE CURRENT FLOWS FROM **HTR** FUSE TO **TERMINAL 2** OF THE AIR INLET CONTROL SERVO MOTOR ➔ **TERMINAL 3 ➔ TERMINAL AIF** OF THE A/C AMPLIFIER ➔ **TERMINAL GND ➔ GROUND**, THE MOTOR ROTATES AND THE DAMPER STOPS AT **FRESH** POSITION.

3. OPERATION OF AIR VENT MODE CONTROL SERVO MOTOR

WITH THE IGNITION SW TURNED ON, THE CURRENT FLOWS FROM **HTR** FUSE TO **TERMINAL IG** OF THE A/C AMPLIFIER

(SWITCHING FROM DEF TO FACE)

THE CURRENT FROM **TERMINAL AOF** OF THE A/C AMPLIFIER ➔ **TERMINAL 1** OF THE AIR VENT MODE CONTROL SERVO MOTOR ➔ **TERMINAL 2 ➔ TERMINAL AOD** OF THE A/C AMPLIFIER ➔ **TERMINAL GND ➔ GROUND**. THE MOTOR ROTATES AND THE DAMPER MOVES TO FACE SIDE. WHEN THE DAMPER OPERATES WITH THE A/C SW AT **FACE** POSITION, THE DAMPER POSITION SIGNAL IS INPUT FROM **TERMINAL 3** OF THE SERVO MOTOR TO THE **TERMINAL TP0** OF THE A/C AMPLIFIER. AS A RESULT, CURRENT TO THE SERVO MOTOR CIRCUIT IS CUT OFF BY THE AMPLIFIER, SO THE DAMPER STOPS AT THAT POSITION.

(SWITCHING FROM FACE TO DEF)

THE CURRENT FLOWS FROM **TERMINAL AOD** OF THE A/C AMPLIFIER ➔ **TERMINAL 2** OF THE AIR VENT MODE CONTROL SERVO MOTOR ➔ **TERMINAL 1 ➔ TERMINAL AOF** OF THA A/C AMPLIFIER ➔ **TERMINAL GND ➔ GROUND**, THE MOTOR ROTATES AND THE DAMPER STOPS AT THAT POSITION.

4. OPERATION OF AIR MIX CONTROL SERVO MOTOR

WHEN THE TEMPERATURE SW IS TURNED TO THE “COOL” SIDE, THE CURRENT FLOWS FROM **TERMINAL AMC** OF THE A/C AMPLIFIER ➔ **TERMINAL 1** OF THE AIR MIX CONTROL SERVO MOTOR ➔ MOTOR ➔ **TERMINAL 2 ➔ TERMINAL AMH** OF THE A/C AMPLIFIER ➔ **TERMINAL GND ➔ GROUND** AND THE MOTOR ROTATES. THE DAMPER OPENING ANGLE AT THIS TIME IS INPUT FROM **TERMINAL 3** OF SERVO MOTOR TO **TERMINAL TP** OF THE A/C CONTROL ASSEMBLY, THIS IS USED TO DETERMINE THE DAMPER STOP POSITION AND MAINTAIN THE SET TEMPERATURE.

WHEN THE TEMPERATURE CONTROL SW IS TURNED TO THE “WARM” SIDE, THE CURRENT FLOWS FROM **TERMINAL AMH** OF THE A/C AMPLIFIER ➔ **TERMINAL 2** OF THE AIR MIX CONTROL SERVO MOTOR ➔ MOTOR ➔ **TERMINAL 1 ➔ TERMINAL AMC** OF THE A/C AMPLIFIER, ROTATING THE MOTOR IN REVERSE AND SWITCHING THE DAMPER FROM COOL TO WARM SIDE.

5. AIR CONDITIONING OPERATION

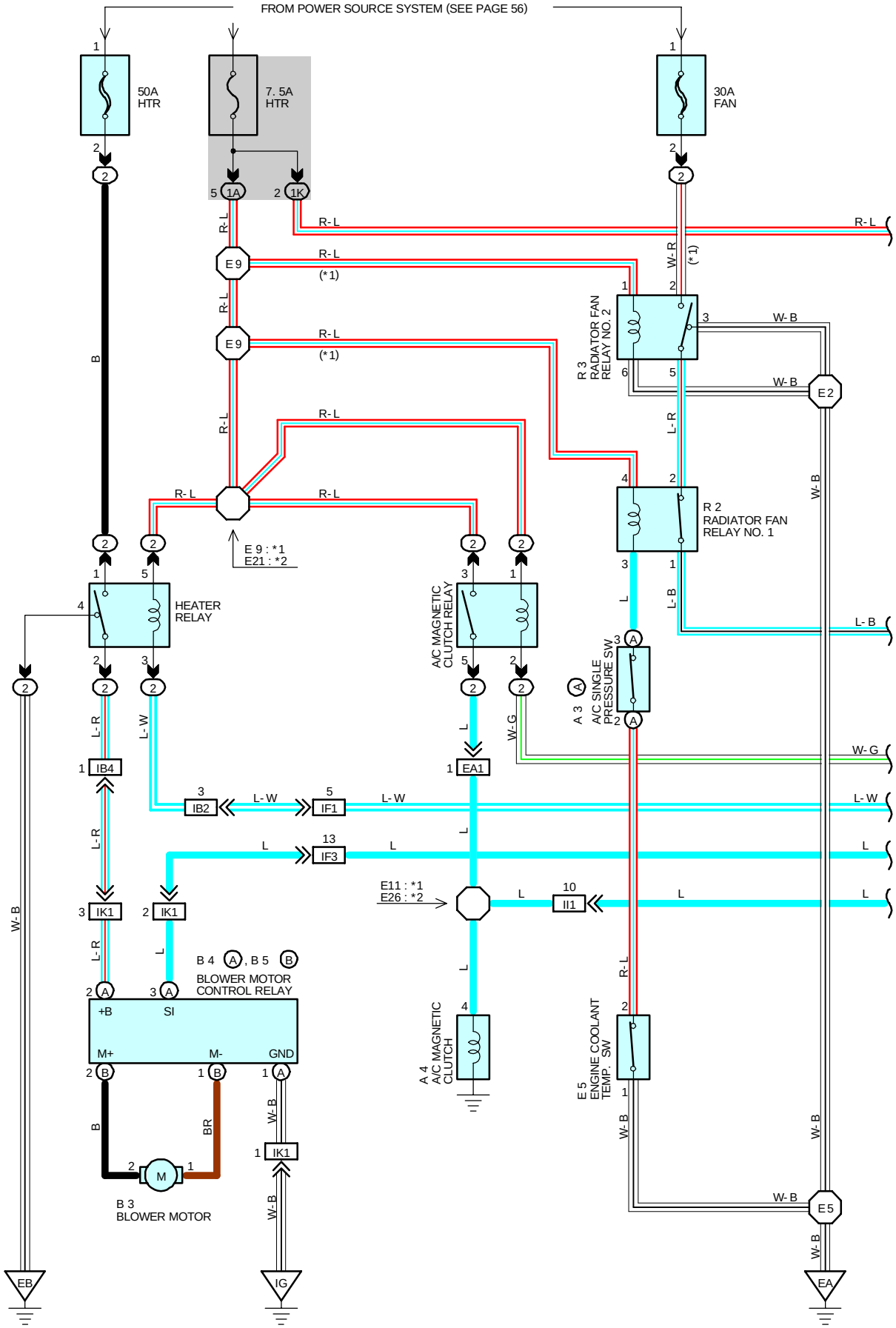
THE A/C AMPLIFIER RECEIVES VARIOUS SIGNALS, I.E., THE ENGINE RPM FROM THE IGNITER, OUTLET TEMPERATURE SIGNAL FROM THE A/C THERMISTOR, COOLANT TEMPERATURE FROM THE ENGINE COOLANT TEMP. SENSOR AND THE LOCK SIGNAL FROM THE A/C COMPRESSOR, ETC.

WHEN THE ENGINE IS STARTED AND THE A/C SW (HEATER CONTROL SW) IS ON, A SIGNAL IS INPUT TO THE A/C AMPLIFIER. AS A RESULT, THE GROUND CIRCUIT IN A/C AMPLIFIER IS CLOSED AND CURRENT FLOWS FROM **HTR** FUSE TO **TERMINAL 1** OF THE A/C MAGNETIC CLUTCH RELAY ➔ **TERMINAL 2** ➔ **TERMINAL ACMG** OF THE ENGINE CONTROL MODULE ➔ **TERMINAL A/C** ➔ **TERMINAL MGC** OF THE A/C AMPLIFIER ➔ **TERMINAL GND** ➔ **GROUND**, TURNING THE RELAY ON, SO THAT THE A/C MAGNETIC CLUTCH IS ON AND THE A/C AMPLIFIER OPERATES.

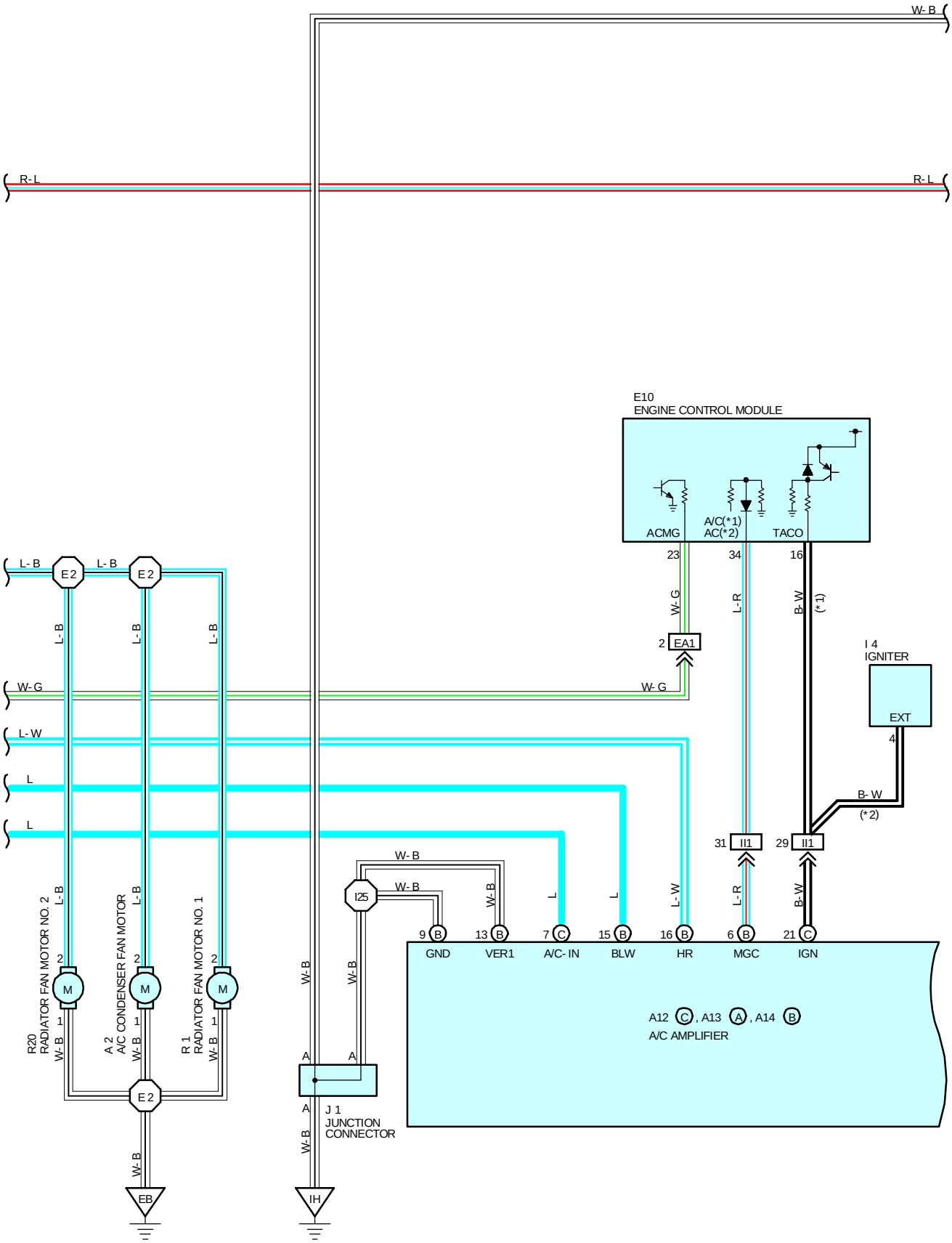
AT THE SAME TIME, THE ENGINE CONTROL MODULE DETECTS THE MAGNETIC CLUTCH IS ON AND THE A/C AMPLIFIER IS OPERATING AND OPENS DIRECTION TO AVOID LOWERING THE ENGINE RPM DURING A/C OPERATING.

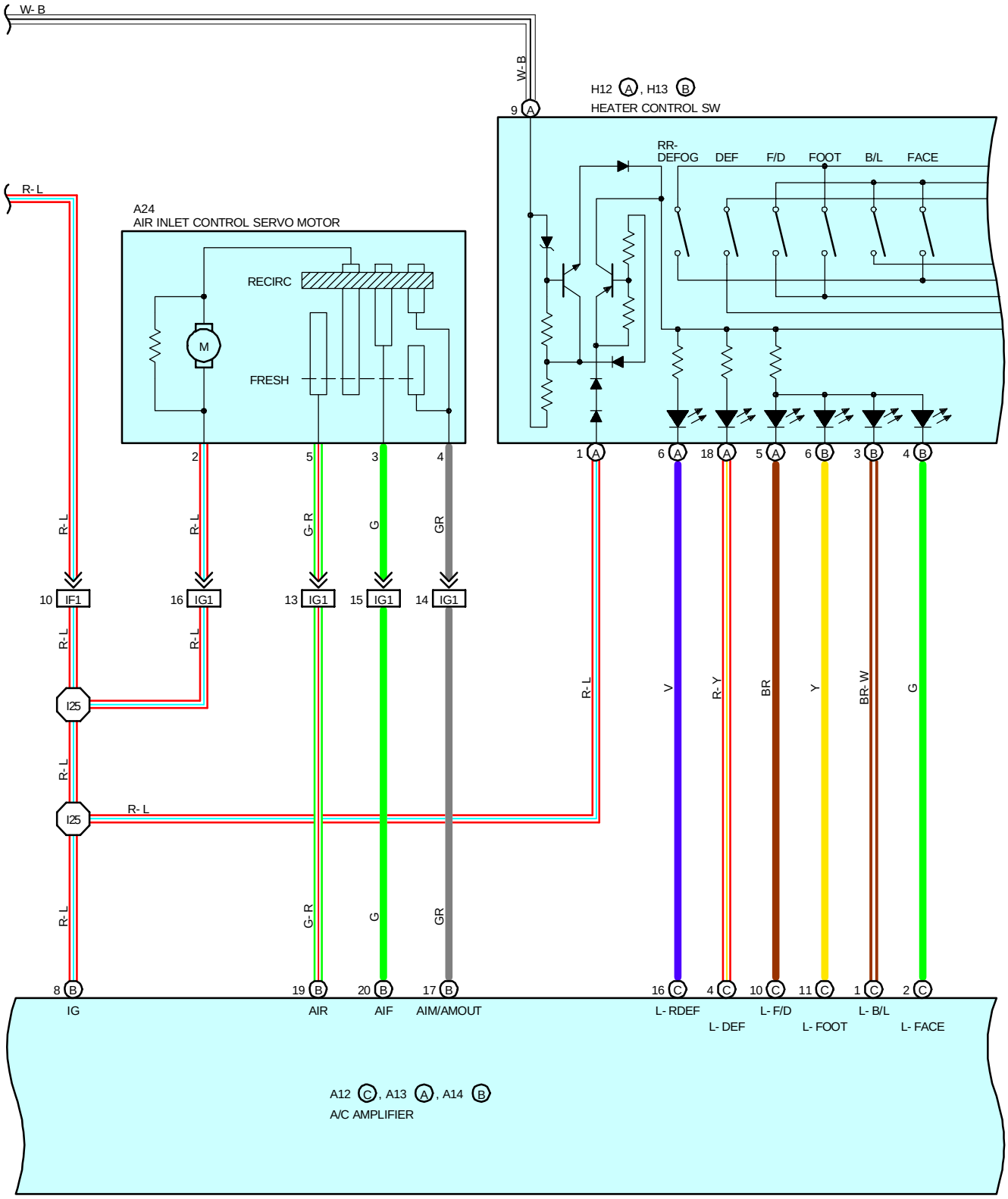
WHEN ANY OF THE FOLLOWING SIGNALS ARE INPUT TO THE A/C AMPLIFIER, THE A/C AMPLIFIER OPERATES TO TURN OFF THE AIR CONDITIONING.

* ENGINE RPM SIGNAL IS HIGH.
* COOLANT TEMP. SIGNAL IS HIGH.
* A SIGNAL THAT THE TEMPERATURE AT THE AIR OUTLET IS LOW.
* A SIGNAL THAT THERE IS A LARGE DIFFERENCE BETWEEN ENGINE SPEED AND COMPRESSOR SPEED.
* A SIGNAL THAT THE REFRIGERANT PRESSURE IS ABNORMALLY HIGH OR LOW.

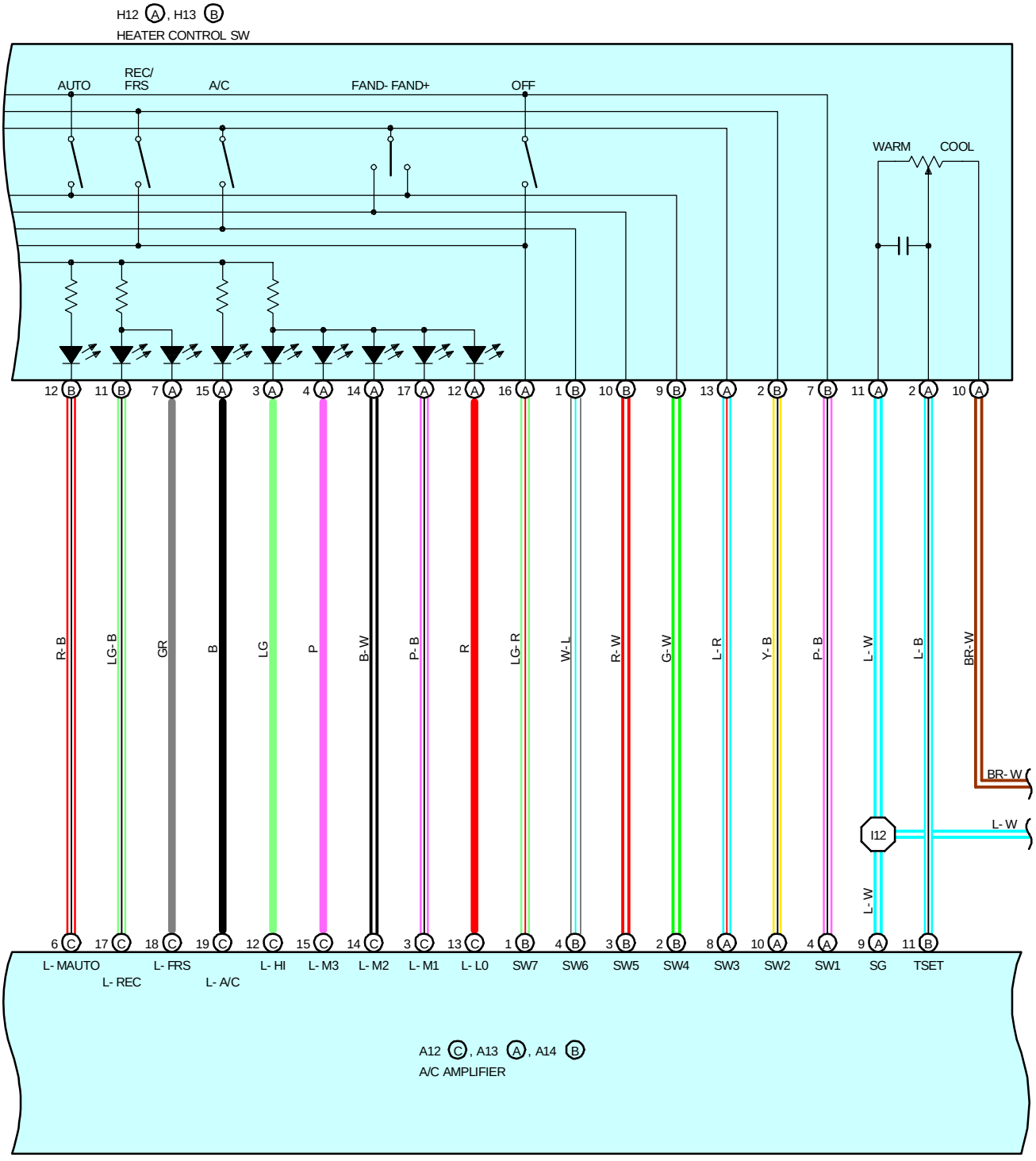

FROM POWER SOURCE SYSTEM (SEE PAGE 56)
50A HTR
7. 5A HTR
30A FAN
1A
1K
E 9
(*1)
R 3 RADIATOR FAN RELAY NO. 2
R 2 RADIATOR FAN RELAY NO. 1
E 9 : *1
E21 : *2
HEATER RELAY
A/C MAGNETIC CLUTCH RELAY
A 3 A/C SINGLE PRESSURE SW
E2
IB4
IB2
IF1
EA1
IF3
IK1
II1
E11 : *1
E26 : *2
B 4 , B 5
BLOWER MOTOR CONTROL RELAY
+B
SI
M+
M-
GND
B 3 BLOWER MOTOR
A 4 A/C MAGNETIC CLUTCH
E 5 ENGINE COOLANT TEMP. SW
E5
EB
IG
EA
R-L
L-R
L-W
W-B
W-R
W-G
L-B
B
BR
L

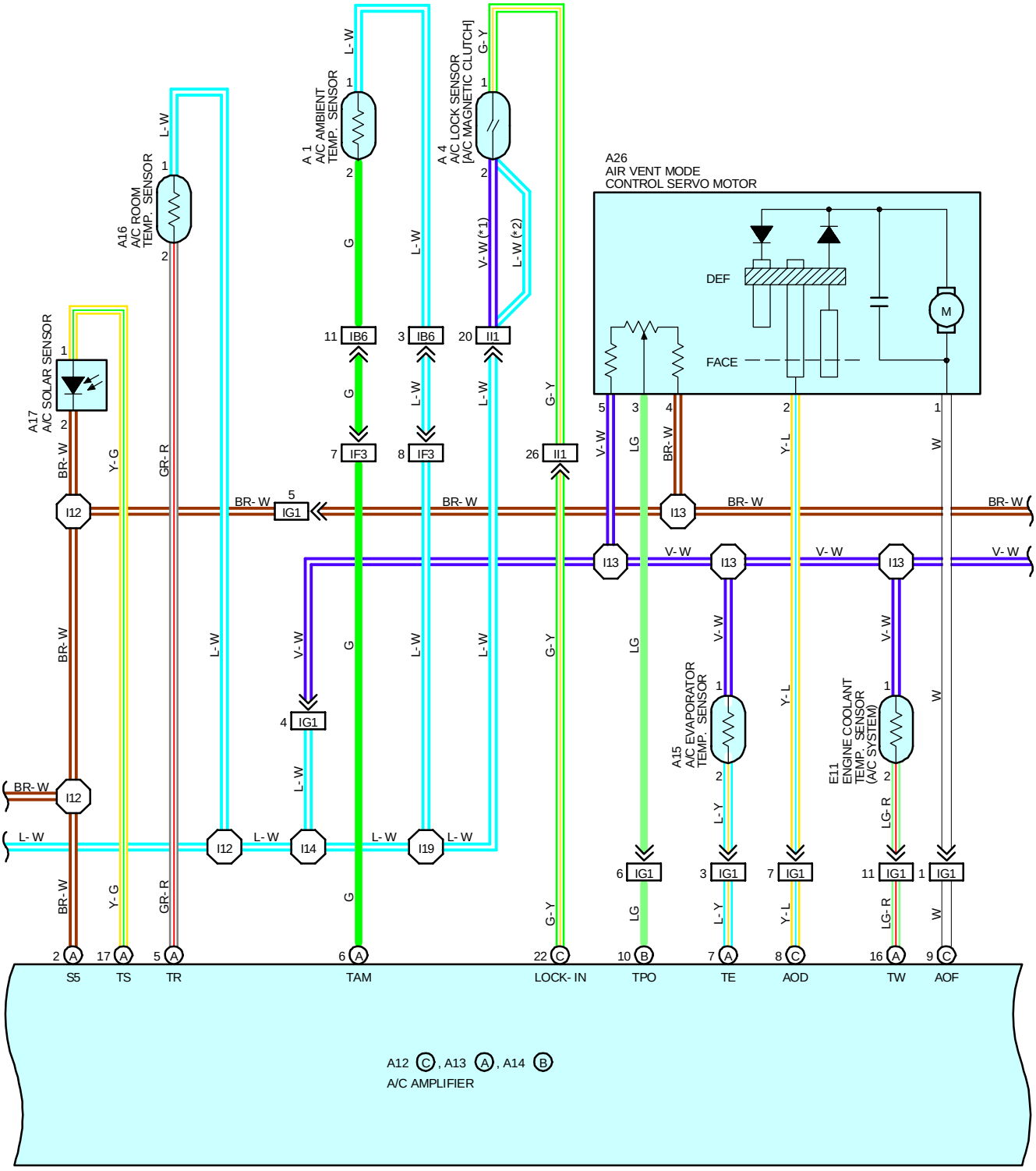
*1 : 2JZ- GTE
*2 : 2JZ- GE



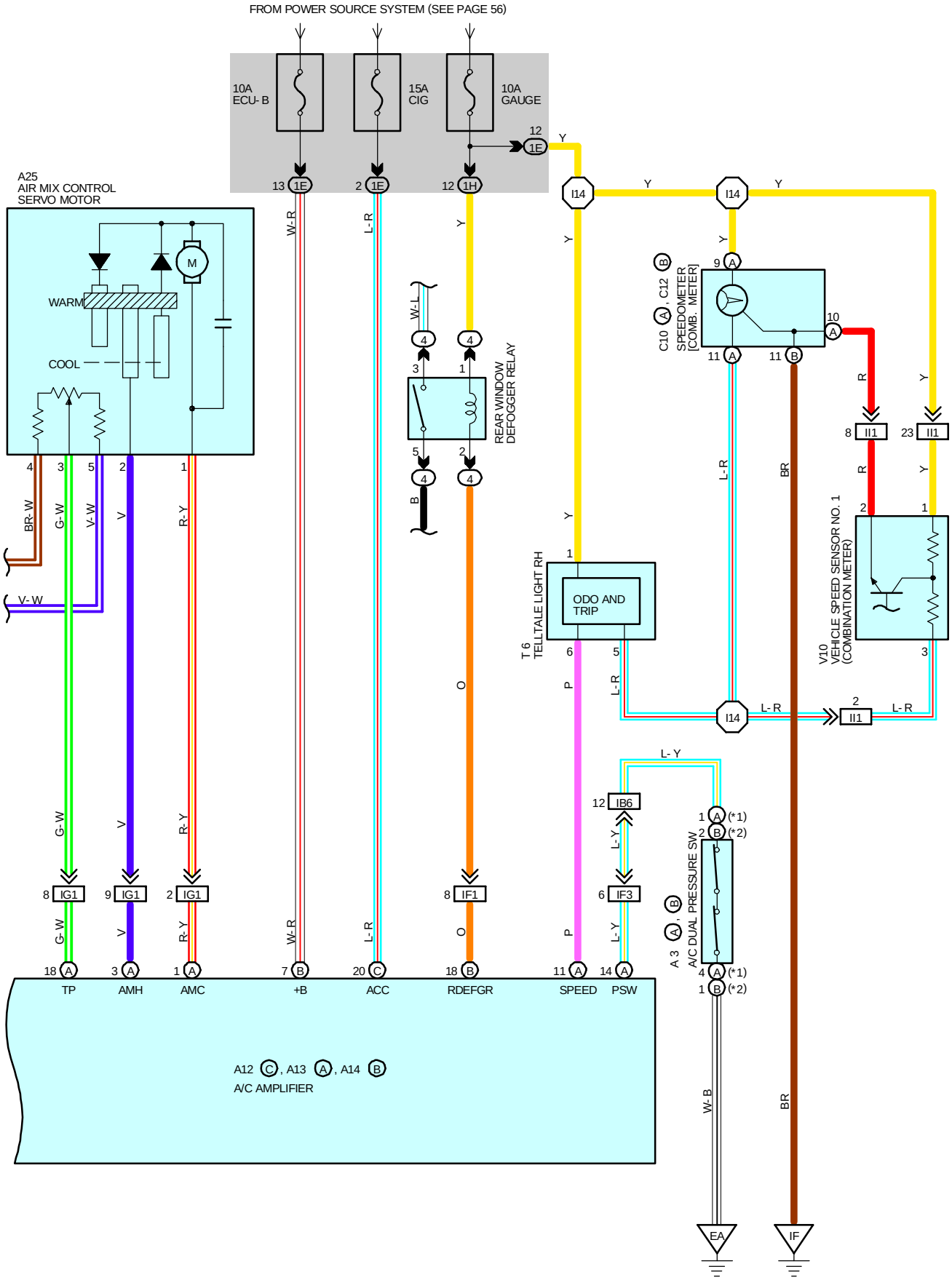

W- B
W- B
9 A
H12 A, H13 B
HEATER CONTROL SW
RR-
DEFOG
DEF
F/D
FOOT
B/L
FACE
R- L
A24
AIR INLET CONTROL SERVO MOTOR
RECIRC
FRESH
M
2
5
3
4
1 A
6 A
18 A
5 A
6 B
3 B
4 B
R- L
R- L
G- R
G
GR
10 IF1
16 IG1
13 IG1
15 IG1
14 IG1
R- L
R- L
I25
R- L
I25
R- L
R- L
V
R- Y
BR
Y
BR- W
G
R- L
G- R
G
GR
8 B
19 B
20 B
17 B
16 C
4 C
10 C
11 C
1 C
2 C
IG
AIR
AIF
AIM/AMOUT
L- RDEF
L- DEF
L- F/D
L- FOOT
L- B/L
L- FACE
A12 C, A13 A, A14 B
A/C AMPLIFIER

*1 : 2JZ- GTE
*2 : 2JZ- GE




A17
A/C SOLAR SENSOR
A16
A/C ROOM
TEMP. SENSOR
A 1
A/C AMBIENT
TEMP. SENSOR
A 4
A/C LOCK SENSOR
[A/C MAGNETIC CLUTCH]
A26
AIR VENT MODE
CONTROL SERVO MOTOR
DEF
FACE
M
A15
A/C EVAPORATOR
TEMP. SENSOR
E11
ENGINE COOLANT
TEMP. SENSOR
(A/C SYSTEM)
BR- W
Y- G
GR- R
L- W
G
V- W (*1)
L- W (*2)
G- Y
LG
Y- L
W
L- Y
LG- R
V- W
I12
I13
IG1
IB6
IF3
II1
I14
I19
S5
TS
TR
TAM
LOCK- IN
TPO
TE
AOD
TW
AOF
A12 C, A13 A, A14 B
A/C AMPLIFIER

*1 : 2JZ- GTE
*2 : 2JZ- GE



SERVICE HINTS

A4 A/C MAGNETIC CLUTCH

4-GROUND : APPROX. **3.7** Ω

A3 (A) A/C DUAL PRESSURE SW [A/C TRIPLE PRESSURE SW] (2JZ-GTE)

(A)1 -(A) 4 : OPEN ABOVE APPROX. **225** KPA (**33** PSI, **2.3** KG/CM^2) OR **3140** KPA (**458** PSI, **32** KG/CM^2)

A3 (B) A/C DUAL PRESSURE SW (2JZ-GE)

(B)1- (B)2 : OPEN ABOVE APPROX. **225** KPA (**33** PSI, **2.3** KG/CM^2) OR **3140** KPA (**458** PSI, **32** KG/CM^2)

A12 (C), A13 (A), A14 (B) A/C AMPLIFIER

+B-GROUND : ALWAYS APPROX. **10-14** VOLTS

IG-GROUND : APPROX. **10-14** VOLTS WITH THE IGNITION SW AT **ON** POSITION

HR-GROUND : APPROX. **10-14** VOLTS WITH THE IGNITION SW AT **ON** POSITION AND DO NOT TURN THE BLOWER MOTOR BELOW **1** VOLT WITH THE IGNITION SW AT **ON** POSITION AND TURN THE BLOWER MOTOR

ACC-GROUND : APPROX. **10-14** VOLTS WITH THE IGNITION SW AT **ACC** OR **ON** POSITION

TW-GROUND : **10-14** VOLTS AT START THE ENGINE AND MAX. COLD POSITION OF THE A/C TEMP. CONTROL SW BELOW **1** VOLT AT START THE ENGINE AND MAX. WARM POSITION OF THE A/C TEMP. CONTROL SW

MGC-GROUND :BELOW **1** VOLT AT START THE ENGINE, PUSH THE A/C AUTO SW AND THE A/C SW **ON** POSITION
10-14 VOLTS AT START THE ENGINE, PUSH THE A/C AUTO SW AND THE A/C SW **OFF** POSITION

BLW-GROUND : **1.0-3.0** VOLTS WITH THE IGNITION SW ON AND TURN THE BLOWER MOTOR

S5-GROUND : **4-6** VOLTS WITH THE IGNITION SW ON

SG-GROUND : ALWAYS CONTINUITY

AMH-AMC : **13-19** VOLTS WITH THE IGNITION SW OFF

AOF-GROUND : APPROX. **12** VOLTS WITH THE FACE SW ON

AOD-GROUND : APPROX. **12** VOLTS WITH THE DEF SW ON

GND-GROUND : ALWAYS CONTINUITY

○ : PARTS LOCATION

CODE		SEE PAGE	CODE		SEE PAGE	CODE		SEE PAGE
A1		24 (2JZ-GTE)	A17		28	H12	A	29
		26 (2JZ-GE)	A24		28	H13	B	29
A2		24	A25		28	I4		27
A3	A	24 (2JZ-GTE)	A26		28	J1		29
	B	26 (2JZ-GE)	B3		28	R1		25
A4		24 (2JZ-GTE)	B4	A	28	R2		25
		26 (2JZ-GE)	B5	B	28	R3		25
A12	C	28	C10	A	28	R20		25
A13	A	28	C12	B	28	T6		29
A14	B	28	E5		24	V10		25 (2JZ-GTE)
A15		28	E10		29			27 (2JZ-GE)
A16		28	E11		29			

⬭ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT LEFT)
4	23	R/B NO. 4 (LEFT KICK PANEL)

⬭ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1A	20	ENGINE ROOM MAIN WIRE AND J/B NO. 1 (LEFT KICK PANEL)
1E	20	INSTRUMENT PANEL WIRE AND J/B NO. 1(LEFT KICK PANEL)
1H	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)
1K		

▭ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EA1	32 (2JZ-GTE)	ENGINE WIRE AND ENGINE ROOM MAIN WIRE (NEAR THE R/B NO. 2)
	34 (2JZ-GE)	
IB2	36	ENGINE ROOM MAIN WIRE AND COWL WIRE (LEFT KICK PANEL)
IB4	36	ENGINE ROOM MAIN WIRE AND COWL WIRE (RIGHT KICK PANEL)
IB6		
IF1	36	INSTRUMENT PANEL WIRE AND COWL WIRE (INSTRUMENT PANEL REINFORCEMENT LH)
IF3	36	INSTRUMENT PANEL WIRE AND COWL WIRE (RIGHT KICK PANEL)
IG1	38	INSTRUMENT PANEL WIRE AND COWL NO. 3 WIRE (BEHIND HEATER CONTROL SW)
II1	38	ENGINE WIRE AND INSTRUMENT PANEL WIRE (RIGHT KICK PANEL)
IK1	38	COWL NO. 4 WIRE AND COWL WIRE (RIGHT KICK PANEL)

AIR CONDITIONING

: GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
EA	32 (2JZ-GTE) 34 (2JZ-GE)	FRONT SIDE OF RIGHT FENDER
EB	32 (2JZ-GTE) 34 (2JZ-GE)	FRONT SIDE OF LEFT FENDER
IF	36	LEFT KICK PANEL
IG IH	36	RIGHT KICK PANEL

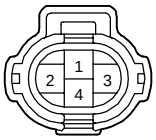
: SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
E2			I12	38	INSTRUMENT PANEL WIRE
E5	32	ENGINE ROOM MAIN WIRE	I13	38	COWL NO. 3 WIRE
E9			I14		
E11	32	ENGINE WIRE	I19	38	INSTRUMENT PANEL WIRE
E21	34	ENGINE ROOM MAIN WIRE	I25		
E26	34	ENGINE WIRE			

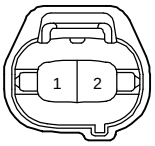
A 1 BLACK

A 2 BLACK

(2JZ-GTE) A 3 (A) BLACK

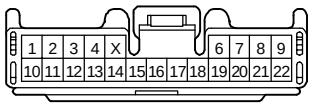


(2JZ-GE) A 3 (B) GRAY

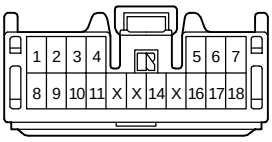


A 4 GRAY

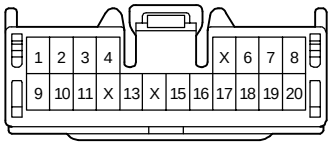
A12 (C) ORANGE



A13 (A) ORANGE

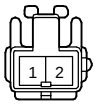


A14 (B) ORANGE



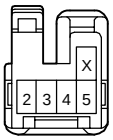
A15

A16 BLACK

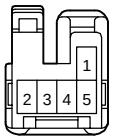


A17 GRAY

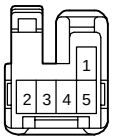
A24



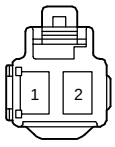
A25



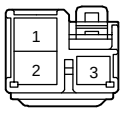
A26



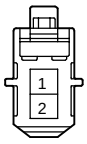
B 3 BLACK



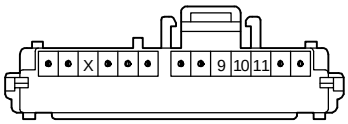
B 4 (A) BLACK



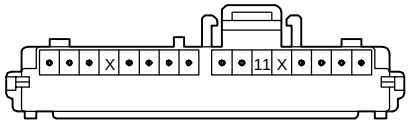
B 5 (B) BLACK



C10 (A) BLUE

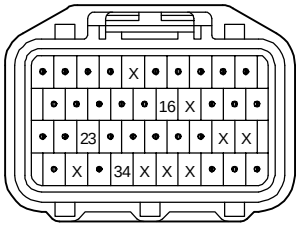


C12 (B)

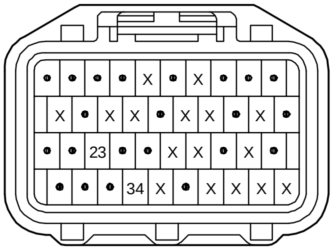


E 5 DARK GRAY

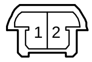
(2JZ-GTE) E10 DARK GRAY



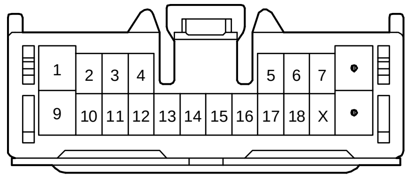
(2JZ- GE) E10 DARK GRAY



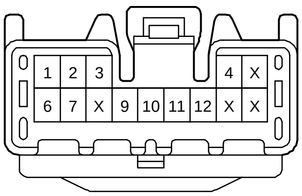
E11



H12 (A) ORANGE



H13 (B) ORANGE



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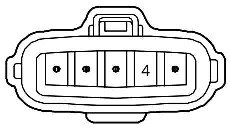
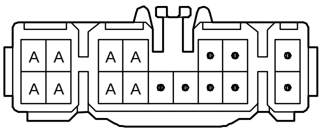


J 1



(HINT : SEE PAGE 7)

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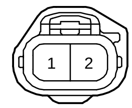

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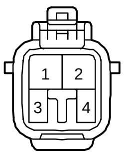
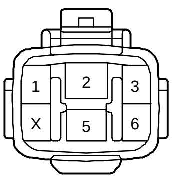


R 3 GRAY



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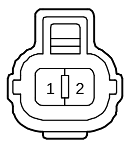
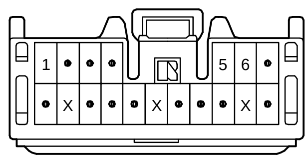


T 6



V10 BLACK