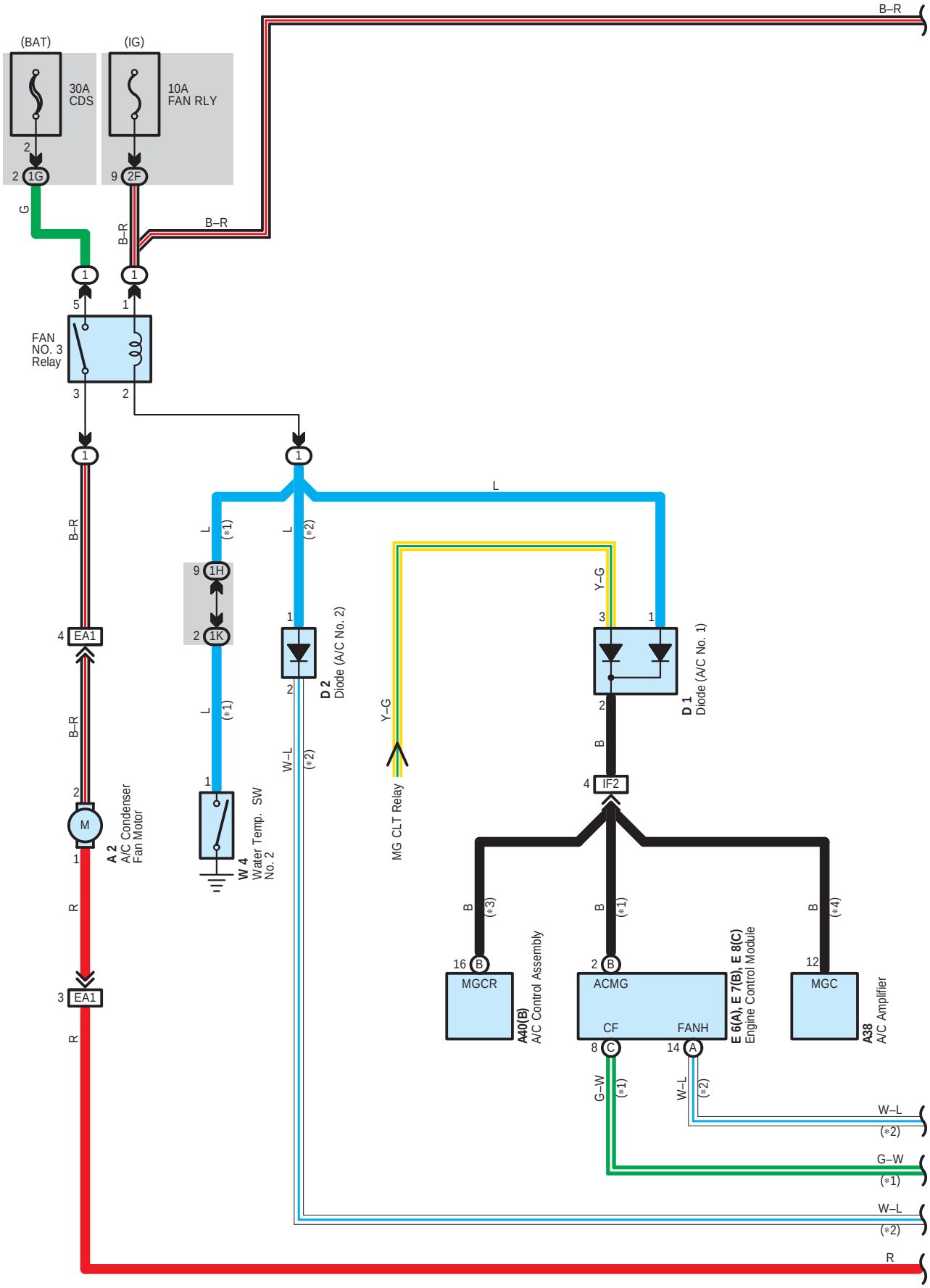
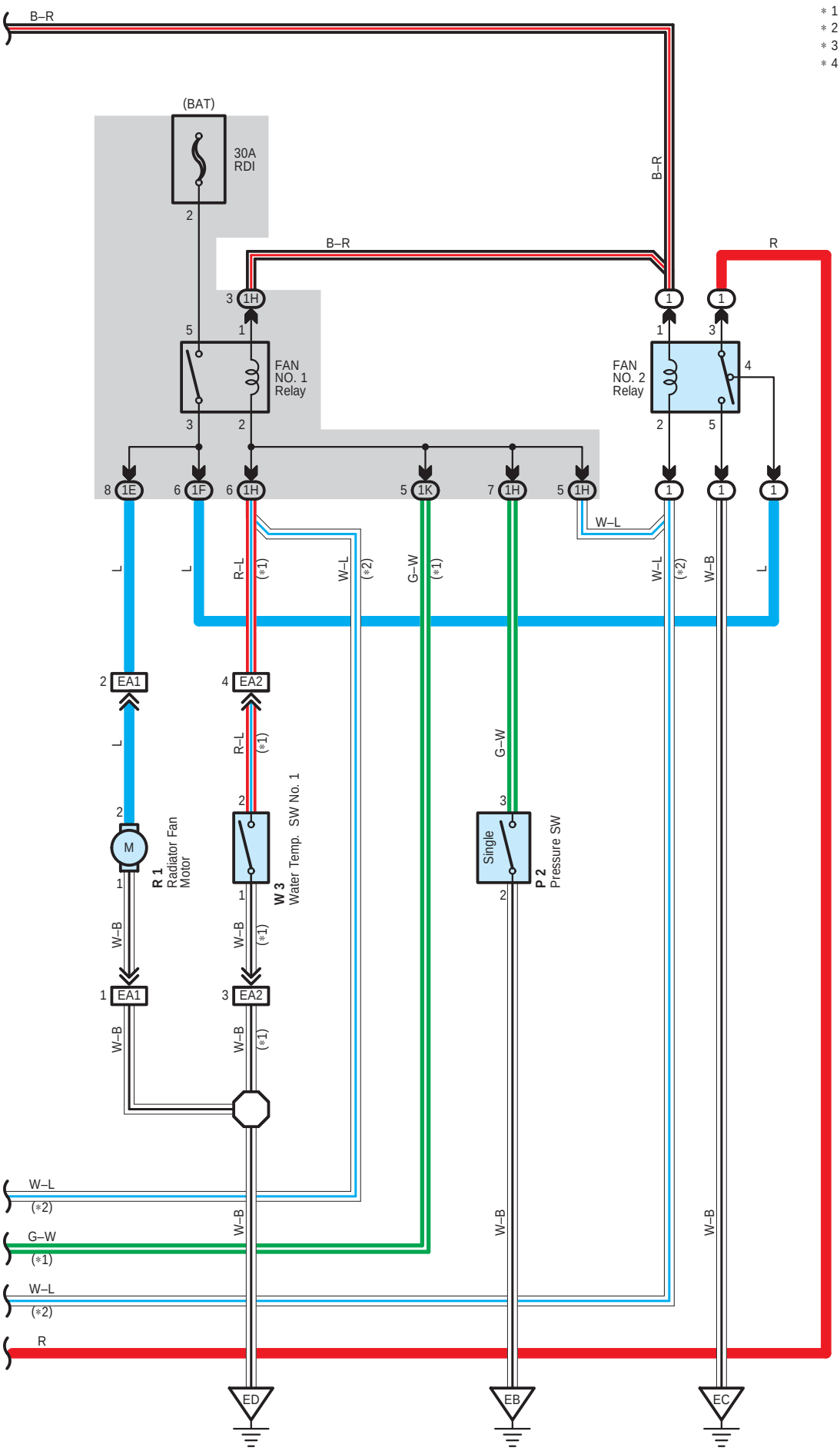
Radiator Fan and Condenser Fan




∗ 1 : 1MZ–FE, 3MZ–FE
∗ 2 : 2AZ–FE
∗ 3 : 2AZ–FE Automatic A/C
∗ 4 : 2AZ–FE Manual A/C
B–R
(BAT)
30A
RDI
2
B–R
B–R
R
3 1H
5
1
FAN
NO. 1
Relay
3
2
1
1
1
1
3
FAN
NO. 2
Relay
4
2
5
8 1E
6 1F
6 1H
5 1K
7 1H
5 1H
1
1
1
W–L
L
L
R–L
(∗1)
W–L
(∗2)
G–W
(∗1)
W–L
(∗2)
W–B
L
2 EA1
4 EA2
L
R–L
(∗1)
G–W
2
M
1
R 1
Radiator Fan
Motor
2
1
W 3
Water Temp. SW No. 1
3
Single
2
P 2
Pressure SW
W–B
W–B
(∗1)
1 EA1
3 EA2
W–B
W–B
(∗1)
W–L
(∗2)
G–W
(∗1)
W–L
(∗2)
R
W–B
W–B
W–B
ED
EB
EC

System Outline

Fan Motor Operation (3MZ–FE, 1MZ–FE)

With the ignition SW turned on, the current through the FAN RLY fuse flows to the FAN NO.1 relay (Coil side), FAN NO.2 relay (Coil side) and FAN NO.3 relay (Coil side).

1. Low Speed Operation

Only when the A/C system is activated or the water temp. SW No.2 is turned on, the A/C condenser fan motor and the radiator fan motor rotates at low speed.

When the A/C system is activated, the current from FAN RLY fuse flows to the FAN NO.3 relay (Coil side) to TERMINAL 1 of the diode to TERMINAL 2 to TERMINAL (B) 2 of the engine control module causing the FAN NO.3 relay to turn on. As a result, the current through the CDS fuse flows to TERMINAL 5 of the FAN NO.3 relay to TERMINAL 3 to TERMINAL 2 of the A/C condenser fan motor to TERMINAL 1 to TERMINAL 3 of the FAN NO.2 relay to TERMINAL 4 to TERMINAL 2 of the radiator fan motor to TERMINAL 1 to GROUND. As this flowing in series for the motors, the motors rotate at low speed.

When the water temp. SW No.2 is turned on, the current from FAN RLY fuse flows to the FAN NO.3 relay (Coil side) to TERMINAL 1 of the water temp. SW No.2 to GROUND, causing the FAN NO.3 relay to turn on. As a result, the current through the CDS fuse flows the same route as above, rotating the motors at low speed.

2. High Speed Operation

With the pressure SW is turned on and/or the water temp. SW No.1 is turned on, the A/C condenser fan motor and the radiator fan motor rotate at high speed.

When the pressure SW is turned on, the current through the FAN RLY fuse flows to the FAN NO.1 and FAN NO.2 relay (Coil side) to TERMINAL 3 of the pressure SW to TERMINAL 2 to GROUND, and the current through the FAN RLY fuse flows to the FAN NO.3 relay (Coil side) to TERMINAL 1 of the water temp. SW No.2 to GROUND. As a result, FAN NO.1, NO.2. and NO.3 relay is turned on. At the same time, the current from the RDI fuse flows to FAN NO.1 relay (Point side) to TERMINAL 2 of the radiator fan motor to TERMINAL 1 to GROUND, and the current from the CDS fuse flows to FAN NO.3 relay (Point side) to TERMINAL 2 of the A/C condenser fan motor to TERMINAL 1 to TERMINAL 3 of the FAN NO.2 relay to TERMINAL 5 to GROUND.

As the current flowing in parallel for motors as above, the motors rotate at high speed.

When the water temp. SW No.1 is turned on, the current through the FAN RLY fuse flows to the FAN NO.1 and NO.2 relay (Coil side) to TERMINAL 2 of the water temp. SW No.1 to TERMINAL 1 to GROUND, and the current through the FAN RLY fuse flows to the FAN NO.3 relay (Coil side) to TERMINAL 1 of the water temp. SW No.2 to GROUND. As a result, FAN NO.1, NO.2 and NO.3 relay is turned on. At the same time, the current from the RDI fuse flows to FAN NO.1 relay (Point side) to TERMINAL 2 of the radiator fan motor to TERMINAL 1 to GROUND, and the current from the CDS fuse flows to FAN NO.3 relay (Point side) to TERMINAL 2 of the A/C condenser fan motor to TERMINAL 1 to TERMINAL 3 of the FAN NO.2 relay to TERMINAL 5 to GROUND.

As the current flowing in parallel for motors as above, the motors rotate at high speed.

Fan Motor Operation (2AZ–FE)

With the ignition SW turned on, the current through the FAN RLY fuse flows to the FAN NO.1 relay (Coil side), FAN NO.2 relay (Coil side) and FAN NO.3 relay (Coil side).

1. Low Speed Operation

When the ignition SW is turned on and the A/C system is activated, the A/C condenser fan motor and the radiator fan motor rotates at low speed.

When the A/C system is activated, the current from FAN RLY fuse flows to the FAN NO.3 relay (Coil side) to TERMINAL 1 of the diode to TERMINAL 2 to TERMINAL (B) 16 of the A/C control assembly (Automatic A/C) or 12 of the A/C amplifier (Manual A/C) causing the FAN NO.3 relay to turn on. As a result, the current through the CDS fuse flows to TERMINAL 5 of the FAN NO.3 relay to TERMINAL 3 to TERMINAL 2 of the A/C condenser fan motor to TERMINAL 1 to TERMINAL 3 of the FAN NO.2 relay to TERMINAL 4 to TERMINAL 2 of the radiator fan motor to TERMINAL 1 to GROUND. As this flowing in series for the motors, the motors rotate at low speed.

2. High Speed Operation

When the pressure SW is turned on, the current through the FAN RLY fuse flows to the FAN NO.1 and NO.2 relay (Coil side) to TERMINAL 3 of the pressure SW to TERMINAL 2 to GROUND, and the current through the FAN RLY fuse flows to the FAN NO.3 relay (Coil side) to TERMINAL 1 of the diode to TERMINAL 2 to TERMINAL 3 of the pressure SW to TERMINAL 2 to GROUND. As a result, FAN NO.1, NO.2. and NO.3 relay is turned on. At the same time, the current from the RDI fuse flows to FAN NO.1 relay (Point side) to TERMINAL 2 of the radiator fan motor to TERMINAL 1 to GROUND, and the current from the CDS fuse flows to FAN NO.3 relay (Point side) to TERMINAL 2 of the A/C condenser fan motor to TERMINAL 1 to TERMINAL 3 of the FAN NO.2 relay to TERMINAL 5 to GROUND.

As the current flowing in parallel for motors as above, the motors rotate at high speed.

When the engine coolant is too high, the current through the FAN RLY fuse flows to the FAN NO.1 and NO.2 relay (Coil side) to TERMINAL (A) 14 of the engine control module to GROUND, and the current through the FAN RLY fuse flows to the FAN NO.3 relay (Coil side) to TERMINAL 1 of the diode to TERMINAL 2 to TERMINAL (A) 14 of the engine control module to GROUND. As a result, FAN NO.1, NO.2 and NO.3 relay is turned on. At the same time, the current from the RDI fuse flows to FAN NO.1 relay (Point side) to TERMINAL 2 of the radiator fan motor to TERMINAL 1 to GROUND, and the current from the CDS fuse flows to FAN NO.3 relay (Point side) to TERMINAL 2 of the A/C condenser fan motor to TERMINAL 1 to TERMINAL 3 of the FAN NO.2 relay to TERMINAL 5 to GROUND.

As the current flowing in parallel for motors as above, the motors rotate at high speed.

○ : Parts Location

Code	See Page	Code	See Page	Code	See Page
A2	38 (*1)	D2	40 (*2)	R1	39 (*1)
	40 (*2)	E6 A	42		41 (*2)
A38	42	E7 B	42	W3	39 (*1)
A40 B	42	E8 C	42	W4	39 (*1)
D1	38 (*1)	P2	39 (*1)		
	40 (*2)		41 (*2)		

▭ : Relay Blocks

Code	See Page	Relay Blocks (Relay Block Location)
1	22	Engine Room R/B (Engine Compartment Left)

▭ : Junction Block and Wire Harness Connector

Code	See Page	Junction Block and Wire Harness (Connector Location)
1E	25	Engine Room Main Wire and Engine Room J/B (Engine Compartment Left)
1F		
1G		
1H		
1K	25	Engine Wire and Engine Room J/B (Engine Compartment Left)
2F	28	Engine Room Main Wire and Driver Side J/B (Lower Finish Panel)

▭ : Connector Joining Wire Harness and Wire Harness

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
EA1	48 (*1)	Engine Room Main Wire and Engine Room No.2 Wire (Radiator Side Support LH)
	49 (*2)	
EA2	48 (*1)	
	49 (*2)	
IF2	50	Engine Room Main Wire and Instrument Panel Wire (Right Side of Steering Column Tube)

* 1 : 1MZ–FE, 3MZ–FE * 2 : 2AZ–FE * 3 : w/ Power Seat * 4 : w/o Power Seat

Radiator Fan and Condenser Fan

▽ : **Ground Points**

Code	See Page	Ground Points Location
EB	48 (*1)	Right Fender
	49 (*2)	
EC	48 (*1)	Left Fender
	49 (*2)	
ED	48 (*1)	
	49 (*2)	

* 1 : 1MZ–FE, 3MZ–FE * 2 : 2AZ–FE * 3 : w/ Power Seat * 4 : w/o Power Seat