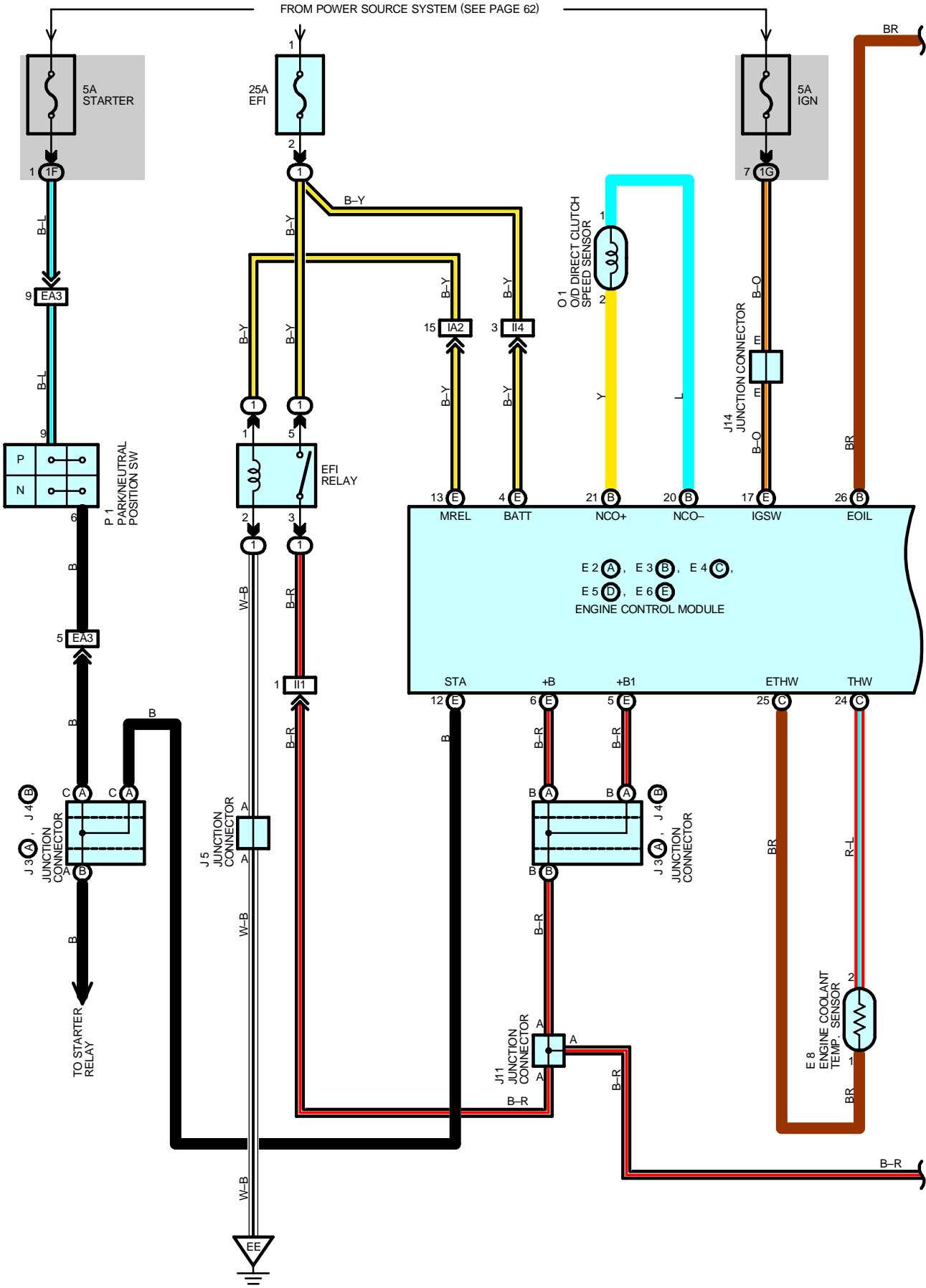
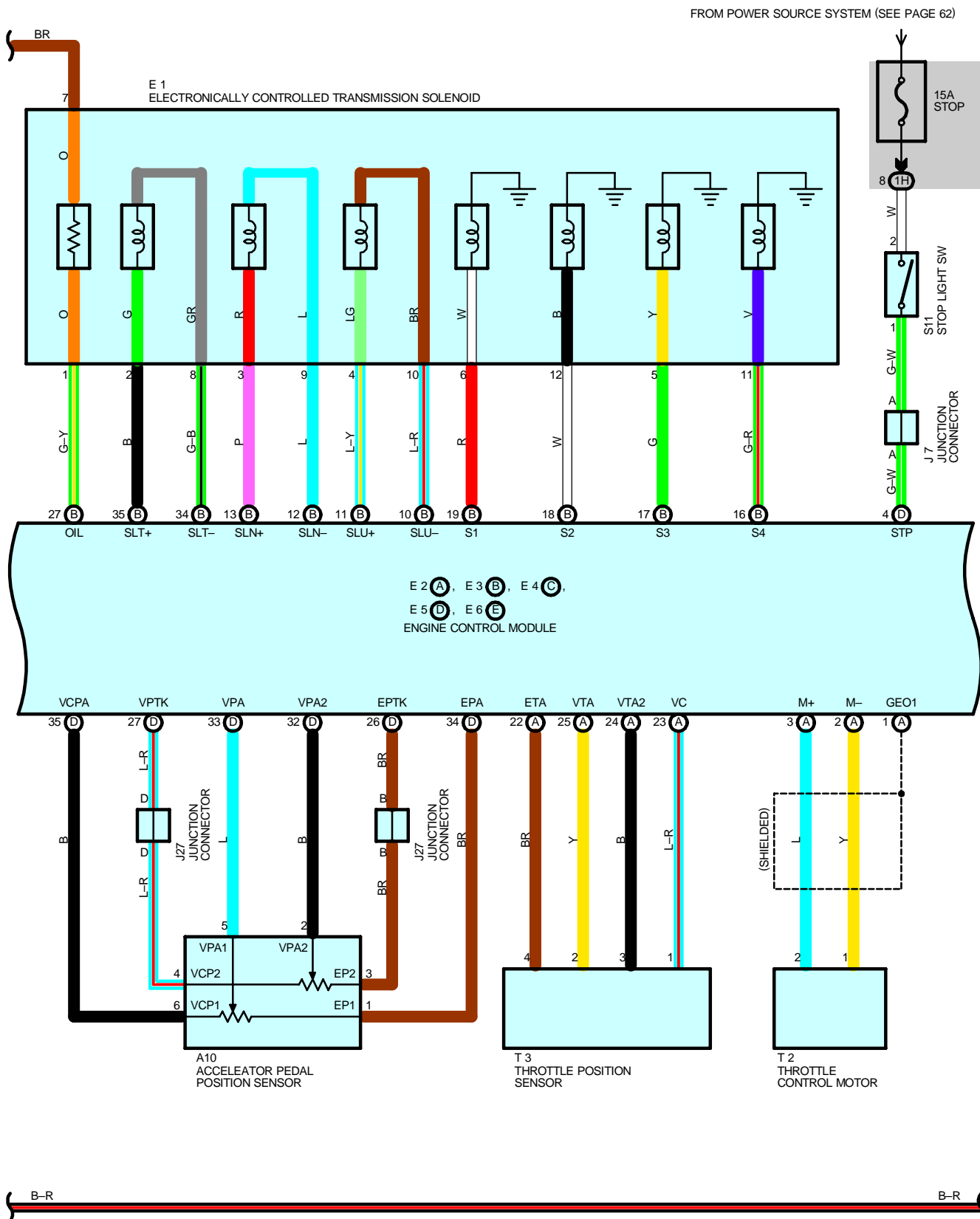
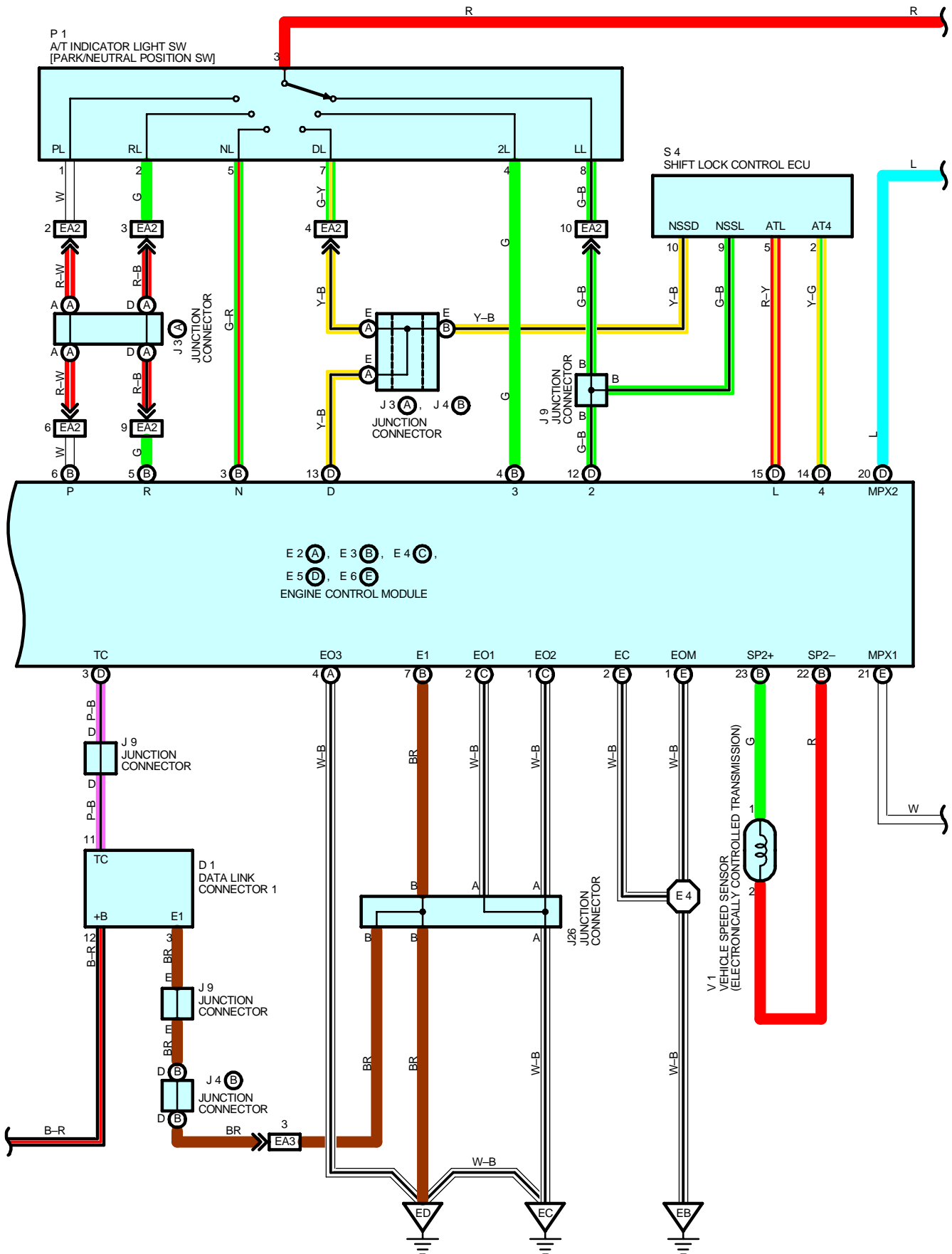


ELECTRONICALLY CONTROLLED TRANSMISSION AND A/T INDICATOR

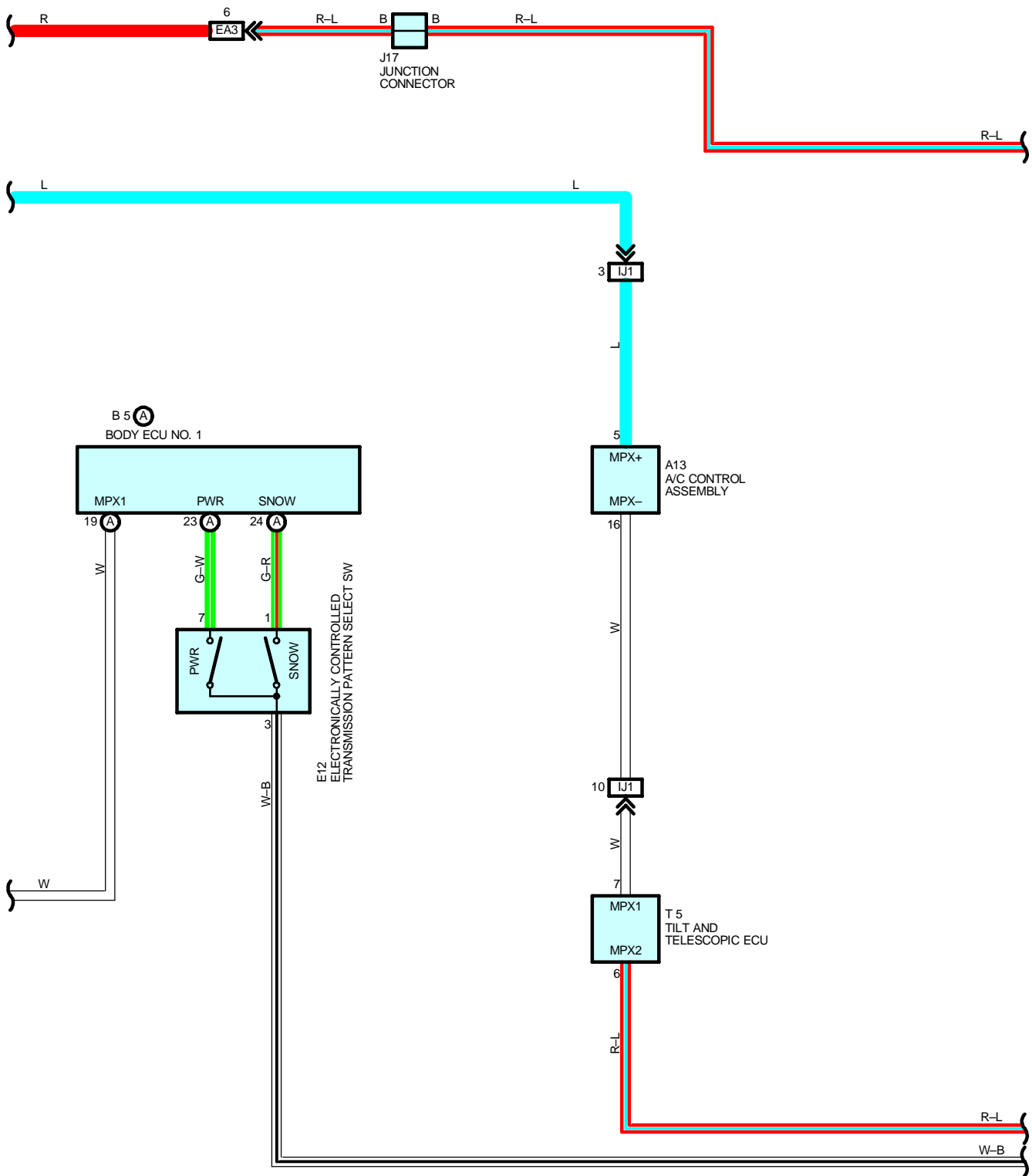




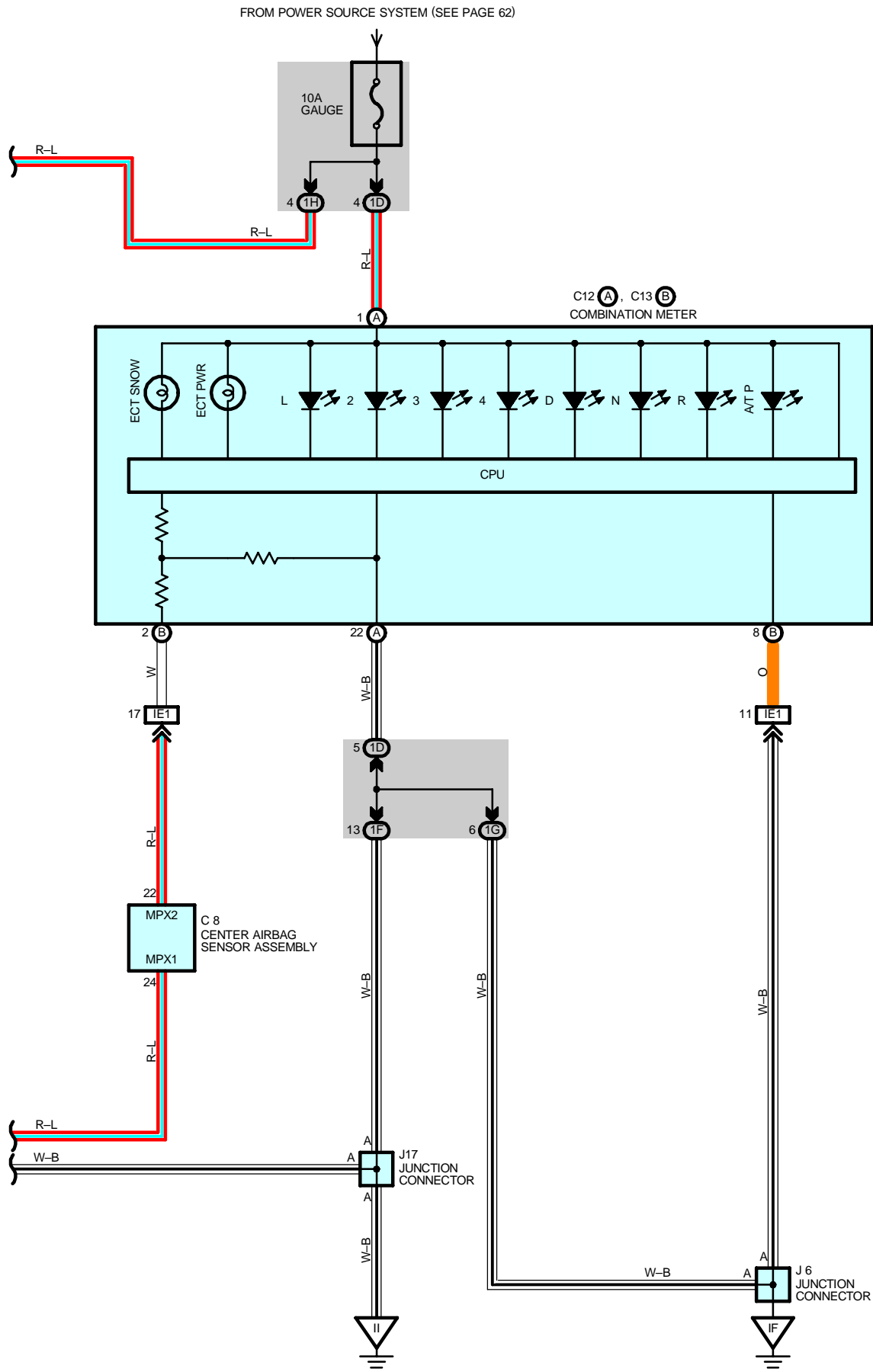
ELECTRONICALLY CONTROLLED TRANSMISSION AND A/T INDICATOR



(3UZ-FE)



ELECTRONICALLY CONTROLLED TRANSMISSION AND A/T INDICATOR



SYSTEM OUTLINE

Previous automatic transmissions have selected each gear shift using mechanically controlled throttle hydraulic pressure, governor hydraulic pressure and lock-up hydraulic pressure. The electronically controlled transmission, however, electrically controls the line pressure, throttle pressure, lock-up pressure and accumulator pressure etc. through the solenoid valve. The electronically controlled transmission is a system which precisely controls gear shift timing and lock-up timing in response to the vehicle's driving conditions and the engine condition detected by various sensors. It makes smooth driving possible by shift selection for each gear which is the most appropriate to the driving conditions at that time, and by preventing downing, squat and gear shift shock when starting off.

1. GEAR SHIFT OPERATION

When driving, the engine warm up condition is input as a signal to TERMINAL THW of the engine control module from the engine coolant temp. sensor and the vehicle speed signal from vehicle speed sensor is input to TERMINAL SP2+ of the engine control module. At the same time, the throttle valve opening signal from the throttle control motor and sensor is input to TERMINALS VTA and VTA2 of the engine control module as throttle angle signal.

Based on these signals, the engine control module selects the best shift position for the driving conditions and sends current to the electronically controlled transmission solenoid.

2. LOCK-UP OPERATION

When the engine control module decides based on each signal that the lock-up condition has been met, the current flows through TERMINAL SLU+ of the engine control module to TERMINAL 4 of the electronically controlled transmission solenoid to TERMINAL 10 to TERMINAL SLU- of the engine control module to GROUND.

3. STOP LIGHT SW CIRCUIT

If the brake pedal is depressed (Stop light SW on) when driving in lock-up condition, a signal is input to TERMINAL STP of the engine control module. The engine control module operates and cuts the current to the solenoid to release lock-up.

4. ELECTRONICALLY CONTROLLED TRANSMISSION PATTERN SELECT SW CIRCUIT

When the electronically controlled transmission pattern select SW is switched to PWR, a signal is input to TERMINAL PWR of the body ECU No.1, and control signals are distributed to the engine control module through communication control of the body ECU. This enables shift-up and shift-down at a higher speed range.

SERVICE HINTS**E1 ELECTRONICALLY CONTROLLED TRANSMISSION SOLENOID**

2-8 : **5.1-5.5 Ω**

3-9 : **3.5-3.9 Ω**

4-10 : **5.1-5.5 Ω**

5, 6, 11, 12-GROUND : **11-15 Ω**

E12 ELECTRONICALLY CONTROLLED TRANSMISSION PATTERN SELECT SW

7-3 : Closed with select SW at **PWR** position

1-3 : Only closed with select SW at **SNOW** position

V1 VEHICLE SPEED SENSOR (ELECTRONICALLY CONTROLLED TRANSMISSION)

1-2 : **560-680 Ω**

O1 O/D DIRECT CLUTCH SPEED SENSOR

1-2 : **560-680 Ω**

E6 (E) ENGINE CONTROL MODULE

BATT-E1 : Always approx. **12 volts**

+B-E1 : Approx. **12 volts** with ignition SW **ON** or **ST** position

+B1-E1 : Approx. **12 volts** with ignition SW **ON** or **ST** position

MREL-E1 : Approx. **12 volts** with ignition SW **ON** or **ST** position

STA-E1 : Approx. **12 volts** with ignition SW **ST** position and shift lever other than **P** or **N** position

P1 A/T INDICATOR LIGHT SW [PARK / NEUTRAL POSITION SW]

3-1 : Closed with shift lever in **P** position

3-2 : Closed with shift lever in **R** position

3-5 : Closed with shift lever in **N** position

3-7 : Closed with shift lever in **D** position or **4** position

3-4 : Closed with shift lever in **3** position

3-8 : Closed with shift lever in **2** position or **L** position

ELECTRONICALLY CONTROLLED TRANSMISSION AND A/T INDICATOR (3UZ-FE)

: PARTS LOCATION

| Code | | See Page | Code | | See Page | Code | See Page |
|------|---|-------------|------|---|-------------|------|-------------|
| A10 | | 42 (3UZ–FE) | E6 | E | 38 (3UZ–FE) | J26 | 39 (3UZ–FE) |
| A13 | | 42 | E8 | | 38 (3UZ–FE) | J27 | 43 |
| B5 | A | 42 | E12 | | 42 | O1 | 39 (3UZ–FE) |
| C8 | | 42 | J3 | A | 39 (3UZ–FE) | P1 | 39 (3UZ–FE) |
| C12 | A | 42 | J4 | B | 39 (3UZ–FE) | S4 | 43 |
| C13 | B | 42 | J5 | | 39 (3UZ–FE) | S11 | 43 |
| D1 | | 38 (3UZ–FE) | J6 | | 43 | T2 | 39 (3UZ–FE) |
| E1 | | 38 (3UZ–FE) | J7 | | 43 | T3 | 39 (3UZ–FE) |
| E2 | A | 38 (3UZ–FE) | J9 | | 43 | T5 | 43 |
| E3 | B | 38 (3UZ–FE) | J11 | | 43 | V1 | 39 (3UZ–FE) |
| E4 | C | 38 (3UZ–FE) | J14 | | 43 | | |
| E5 | D | 38 (3UZ–FE) | J17 | | 43 | | |

: RELAY BLOCKS

| Code | See Page | Relay Blocks (Relay Block Location) |
|------|----------|---|
| 1 | 24 | Engine Room No.1 R/B (Engine Compartment Right) |

: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

| Code | See Page | Junction Block and Wire Harness (Connector Location) |
|------|----------|---|
| 1D | 28 | Instrument Panel Wire and Driver Side J/B (Left Kick Panel) |
| 1F | 28 | Cowl Wire and Driver Side J/B (Left Kick Panel) |
| 1G | 29 | |
| 1H | | |

: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

| Code | See Page | Joining Wire Harness and Wire Harness (Connector Location) |
|------|-------------|--|
| EA2 | 48 (3UZ-FE) | Engine Wire and Cowl Wire (Inside of the ECU Box) |
| EA3 | | |
| IA2 | 52 | Engine Room Main Wire and Cowl Wire (Near the Driver Side J/B) |
| IE1 | 52 | Instrument Panel Wire and Cowl Wire (Left Side of the Steering Column) |
| II1 | 52 | Engine Room Main Wire and Cowl Wire (Near the Passenger Side R/B) |
| II4 | | |
| IJ1 | 54 | Instrument Panel Wire and Cowl Wire (Left Side of the Blower Unit) |

: GROUND POINTS

| Code | See Page | Ground Points Location |
|------|-------------|-------------------------------------|
| EB | 48 (3UZ-FE) | Left Fender |
| EC | 48 (3UZ-FE) | RH Bank of the Cylinder Head |
| ED | 48 (3UZ-FE) | LH Bank of the Cylinder Head |
| EE | 48 (3UZ-FE) | Under the ABS & TRAC & VSC Actuator |
| IF | 52 | Left Kick Panel |
| II | 52 | Right Side of the Cowl Panel |

: SPLICE POINTS

| Code | See Page | Wire Harness with Splice Points | Code | See Page | Wire Harness with Splice Points |
|------|-------------|---------------------------------|------|----------|---------------------------------|
| E4 | 48 (3UZ-FE) | Cowl Wire | | | |

