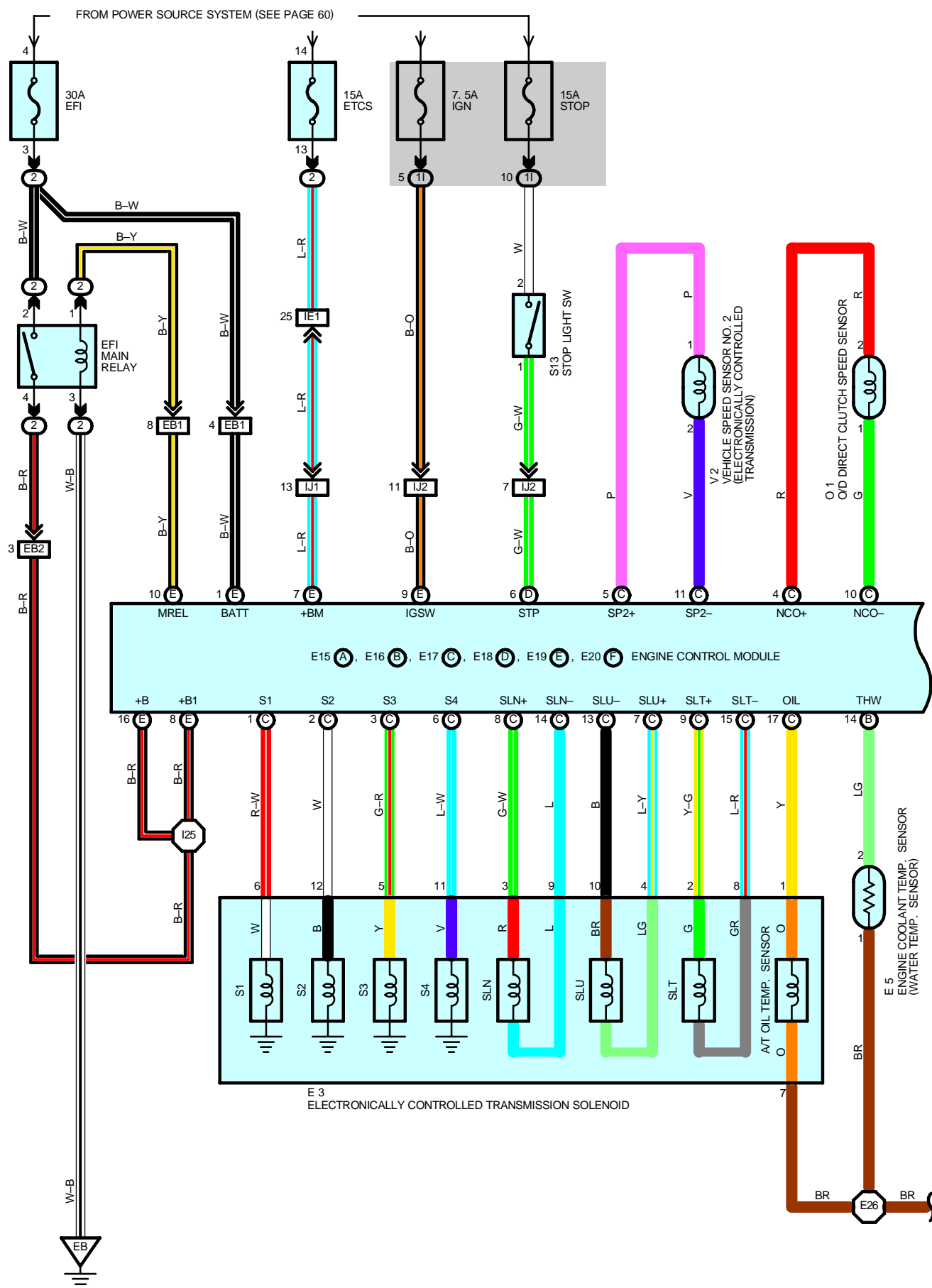


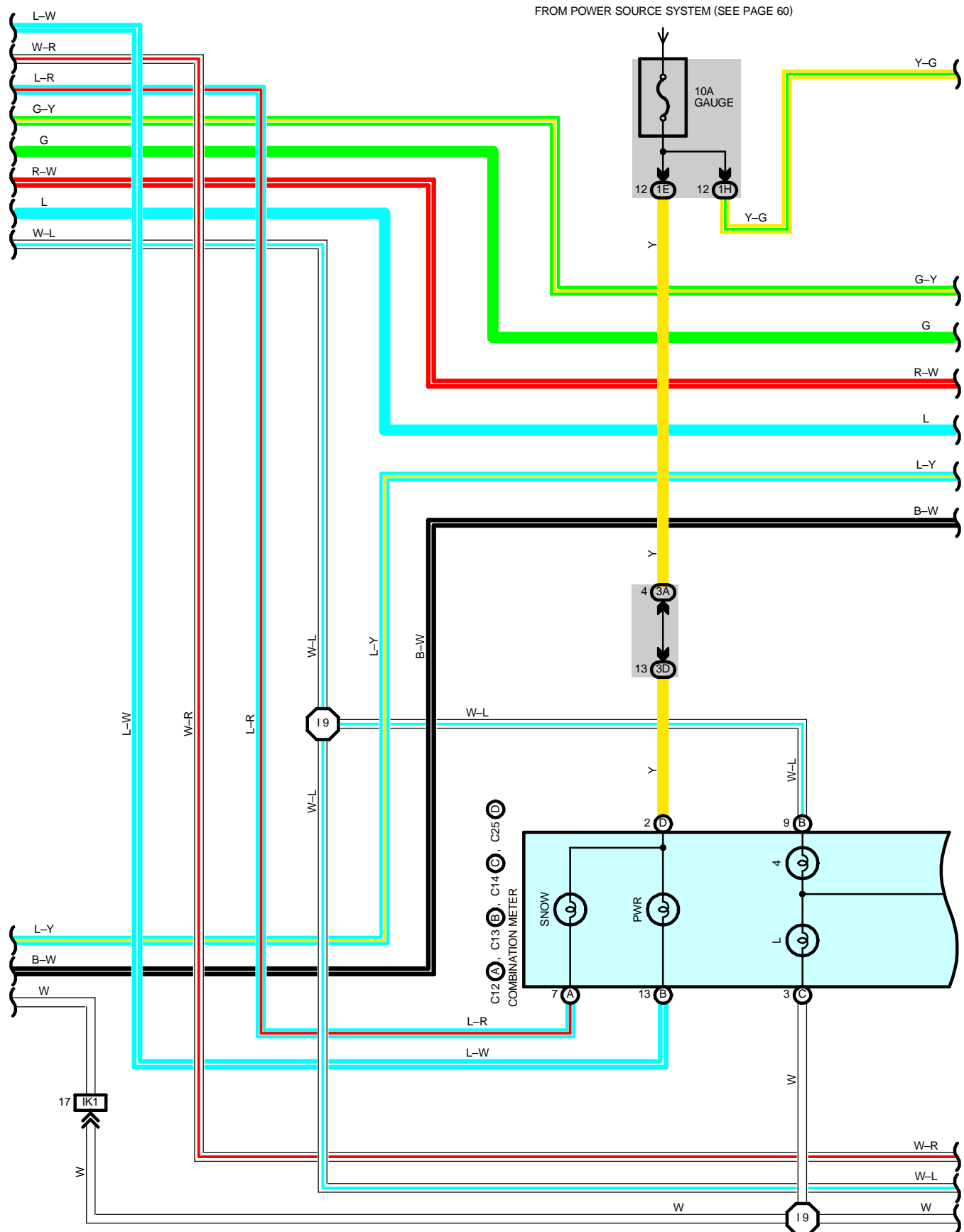
ELECTRONICALLY CONTROLLED TRANSMISSION

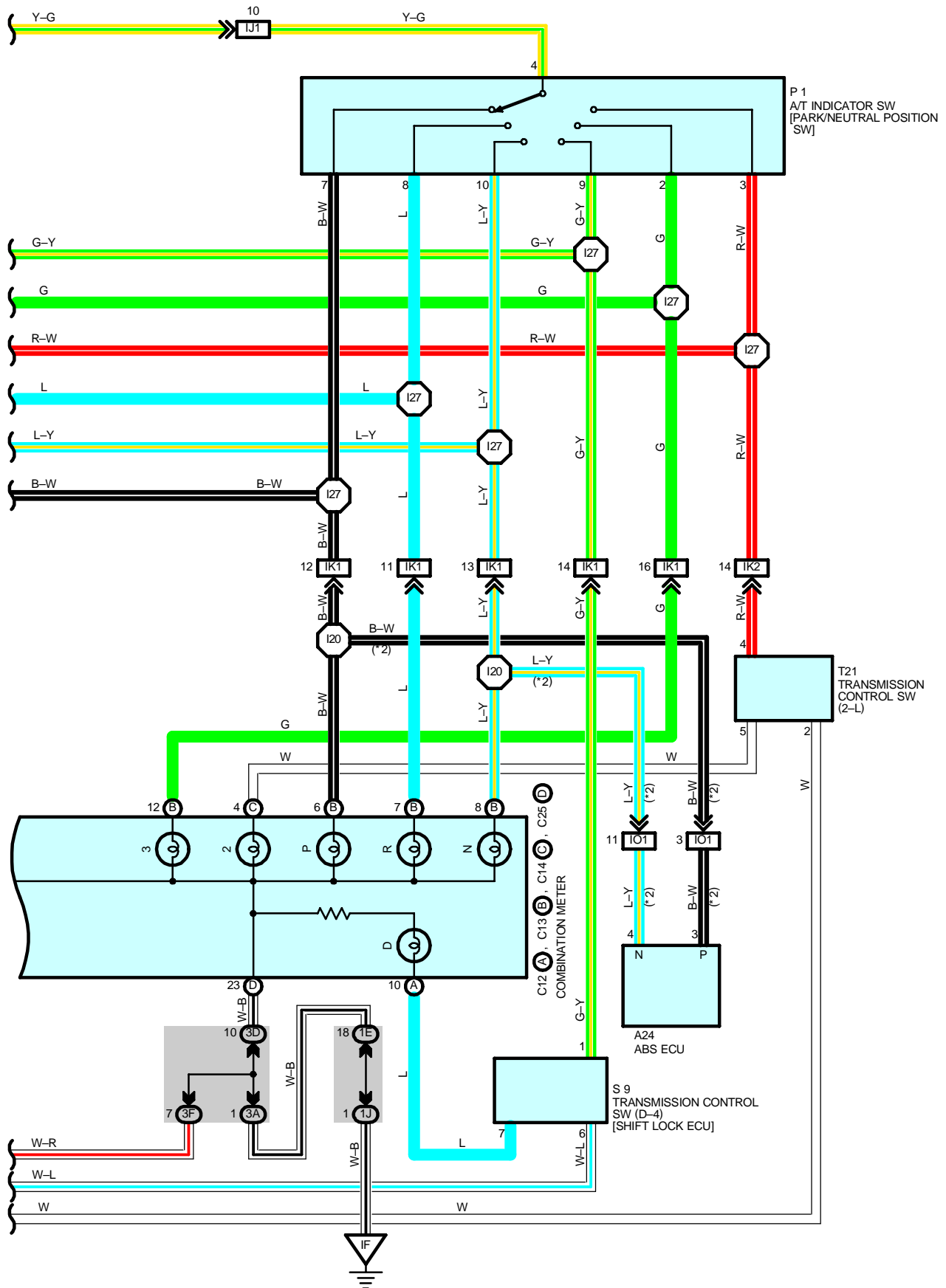


* 1 : W/ TRACTION CONTROL
* 3 : SHIELDED



ELECTRONICALLY CONTROLLED TRANSMISSION





ELECTRONICALLY CONTROLLED TRANSMISSION

SYSTEM OUTLINE

This system, 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 operating conditions detected by various sensors, making smooth driving possible by shift selection for each gear which is the most appropriate to the driving conditions at that time, and controls the engine torque during shifting to achieve optimum shift feeling.

1. GEAR SHIFT OPERATION

During driving, the engine warm up condition is input as a signal to **TERMINAL (B) 14** of the engine control module from the engine coolant temp. sensor and the vehicle speed signal from the vehicle speed sensor No. 2 is input to **TERMINAL (C) 5** of the engine control module. At the same time, the throttle valve opening signal from the throttle position sensor is input to **TERMINAL (B) 13** of the engine control module as a throttle angle signal.

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

When shifting to the 1st speed, the current flows from **TERMINAL (C) 1** of the engine control module to **TERMINAL 6** of the electronically controlled transmission solenoid to **GROUND**, and continuity to No. 1 solenoid causes the shift (No. 2 solenoid does not have continuity at this time).

For the 2nd speed, the current flows simultaneously from **TERMINAL (C) 2** of the engine control module to **TERMINAL 12** of the electronically controlled transmission solenoid to **GROUND**, and from **TERMINAL (C) 1** of the engine control module to **TERMINAL 6** of the electronically controlled transmission solenoid to **GROUND**, and continuity to No. 1 and No. 2 solenoids causes the shift.

For the 3rd speed, there is no continuity to No. 1 solenoid, only to No. 2 solenoid, causing the shift.

Shifting into the 4th speed (Overdrive) occurs when no current flows to No. 1 and No. 2 solenoids. The No. 4 solenoid (for accumulator back pressure modulation) is installed to adjust the back pressure on the accumulator and control the hydraulic pressure during shifting and lock-up in order to provide smooth shifting with little shift shock.

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 from **TERMINAL (C) 13** of the engine control module to **TERMINAL 10** of the electronically controlled transmission solenoid to **TERMINAL 4** to **TERMINAL (C) 7** of the engine control module to **GROUND**, so continuity to No. 3 solenoid (Lock-up) causes lock-up.

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 (D) 6** of the engine control module. The engine control module operates and cuts the current to the solenoid to release lock-up.

AND A/T INDICATOR (1UZ-FE)

SERVICE HINTS

E3 ELECTRONICALLY CONTROLLED TRANSMISSION SOLENOID

6-2 : 5.1-5.5 Ω

7-3 : 3.5-3.9 Ω

4, 8-GROUND : 10-16 Ω

E5 ENGINE COOLANT TEMP. SENSOR (WATER TEMP. SENSOR)

1-2 : Approx. 16.2 kΩ (-20°C, -4°F)

Approx. 2.5 kΩ (20°C, 68°F)

Approx. 0.32 kΩ (80°C, 176°F)

E15 (A), E16 (B), E17 (C), E18 (D), E19 (E), E20 (F) ENGINE CONTROL MODULE

BATT-E1 : Always 9-14 volts

+BM-E1 : Always 9-14 volts

+B-E1 : 9-14 volts with ignition SW on

IGSW-E1 : 9-14 volts with ignition SW on

MREL-E1 : 9-14 volts with ignition SW on

STP-E1 : 9-14 volts with stop light SW depressed

L-E1 : 9-14 volts with ignition SW on and shift lever **L** position

2-E1 : 9-14 volts with ignition SW on and shift lever **2** position

3-E1 : 9-14 volts with ignition SW on and shift lever **3** position

4-E1 : 9-14 volts with ignition SW on and shift lever **4** position

D-E1 : 9-14 volts with ignition SW on and shift lever **D** position

P-E1 : 9-14 volts with ignition SW on and shift lever **P** position

N-E1 : 9-14 volts with ignition SW on and shift lever **N** position

R-E1 : 9-14 volts with ignition SW on and shift lever **R** position

VTA-E2 : 3.2-4.8 volts with ignition SW on and accel pedal is fully depressed

VTA2-E2 : 2.0-2.9 volts with ignition SW on and accel pedal is not depressed

O1 O/D DIRECT CLUTCH SPEED SENSOR

1-2 : 560-680 Ω

V2 VEHICLE SPEED SENSOR NO. 2 (ELECTRONICALLY CONTROLLED TRANSMISSION)

1-2 : 560-680 Ω

S13 STOP LIGHT SW

2-1 : Closed with brake pedal depressed



: PARTS LOCATION

Code	See Page	Code	See Page	Code	See Page
A21	B 32	E5	26 (1UZ-FE)	O1	27 (1UZ-FE)
A22	C 32	E15	A 30	P1	27 (1UZ-FE)
A24	30	E16	B 30	S9	31
A35	26 (1UZ-FE)	E17	C 30	S13	31
C12	A 30	E18	D 30	T2	27 (1UZ-FE)
C13	B 30	E19	E 30	T19	27 (1UZ-FE)
C14	C 30	E20	F 30	T21	31
C25	D 30	E21	30	V2	27 (1UZ-FE)
E3	26 (1UZ-FE)	J2	32		



: RELAY BLOCKS

Code	See Page	Relay Blocks (Relay Block Location)
2	19	R/B No. 2 (Engine Compartment Left)

ELECTRONICALLY CONTROLLED TRANSMISSION



: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

Code	See Page	Junction Block and Wire Harness (Connector Location)
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)
1I		
1J		
3A	22	Instrument Panel Wire and J/B No.3 (Behind the Instrument Panel Center)
3D		
3F		



: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
EB1	36 (1UZ-FE)	Engine Wire and Engine Room Main Wire (Front Side of R/B No.2)
EB2		
IE1	40	Engine Room Main Wire and Cowl Wire (R/B No.4)
IJ1	40	Engine Wire and Cowl Wire (Right Kick Panel)
IJ2		
IK1	40	Engine Wire and Instrument Panel Wire (Right Kick Panel)
IK2		
IO1	42	Engine Room Main Wire and Instrument Panel Wire (Right Kick Panel)
Ig1	42	Instrument Panel Wire and Floor No.3 Wire (Right Kick Panel)
BX1	44	Floor No.3 Wire and Cowl Wire (Right Kick Panel)



: GROUND POINTS

Code	See Page	Ground Points Location
EB	36 (1UZ-FE)	Front Side of Left Fender
EE	36 (1UZ-FE)	Rear Side of Cylinder Head LH
IF	40	Left Kick Panel
IJ	40	Right Kick Panel

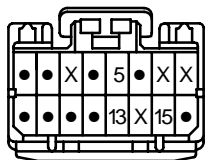


: SPLICE POINTS

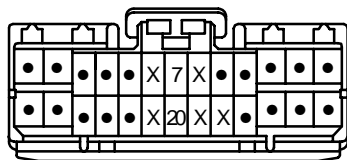
Code	See Page	Wire Harness with Splice Points	Code	See Page	Wire Harness with Splice Points
E26	36 (1UZ-FE)	Engine Wire	I20	42	Instrument Panel Wire
E28			I25	42	Engine Wire
E29			I27		
I9	42	Instrument Panel Wire			

AND A/T INDICATOR (1UZ-FE)

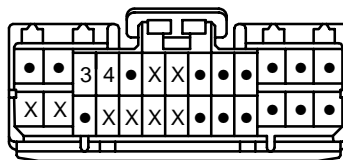
A21 (B)



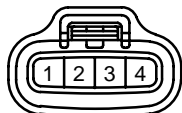
A22 (C)



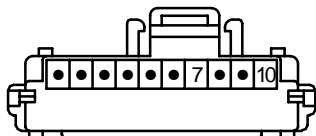
A24



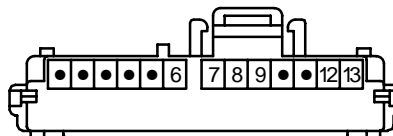
A35 BLACK



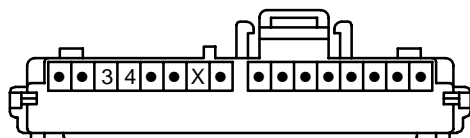
C12 (A) GRAY



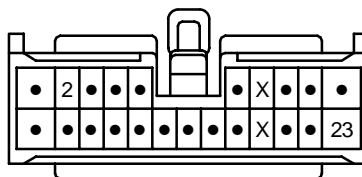
C13 (B) BLUE



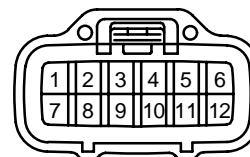
C14 (C)



C25 (D) ORANGE



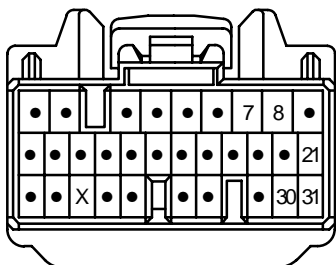
E3 GRAY



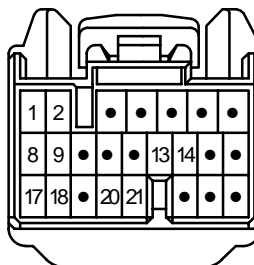
E5 GREEN



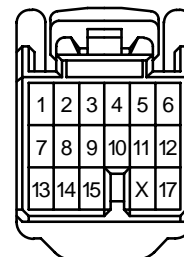
E15 (A)



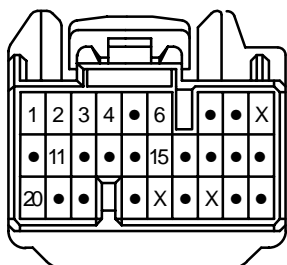
E16 (B)



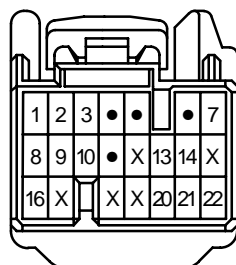
E17 (C)



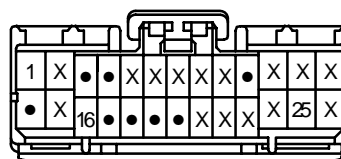
E18 (D)



E19 (E)



E20 (F)



ELECTRONICALLY CONTROLLED TRANSMISSION AND A/T INDICATOR
(1UZ-FE)

