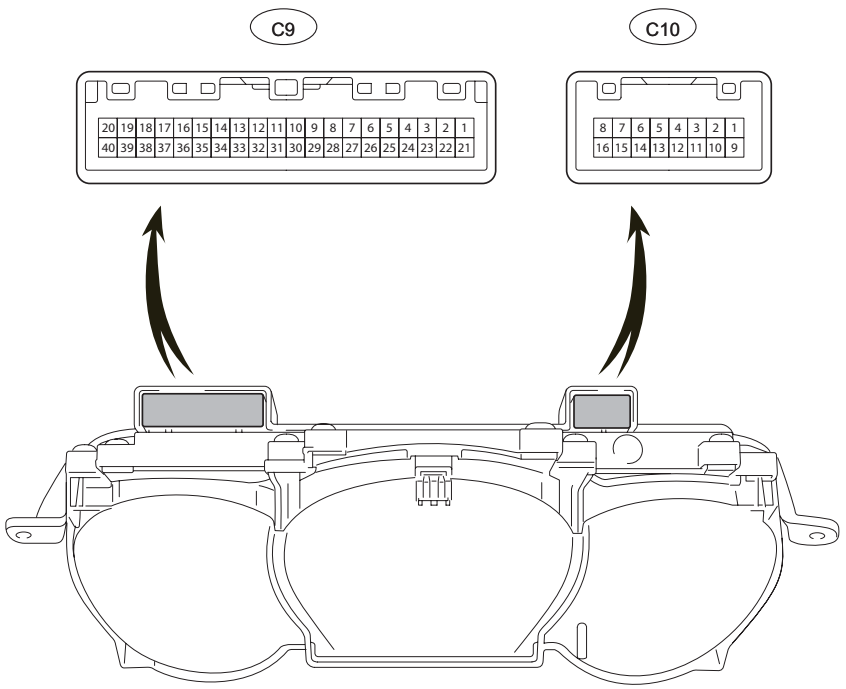
TERMINALS OF ECU

1. COMBINATION METER ASSEMBLY

Combination Meter:



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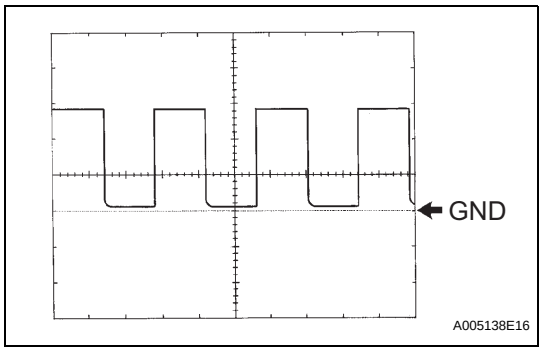
Symbols (Terminals No.)	Wiring Color	Terminal Description	Condition	Specified Condition
+B (C9-1) - Body ground	R - Body ground	Battery	Always	10 to 14 V
SIGNAL EARTH (C9-2) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
SPEED SIGNAL (C9-3) - Body ground	W - Body ground	Vehicle speed signal (input)	Ignition switch ON and wheel turning slowly	Pulse generation (See waveform 1)
FUEL EARTH (C9-4) - Body ground	Y-B - Body ground	Ground	Always	Below 1 Ω
SPEED SIGNAL (C9-6) - Body ground	R-Y - Body ground	Vehicle speed signal (input)	Ignition switch ON and wheel turning slowly	Pulse generation (See waveform 1)
TACHO (C9-7) - Body ground	B-W - Body ground	Tachometer signal	Idling	Pulse generation (See waveform 2)
FUEL SENDER (C9-8) - Body ground	O - Body ground	Fuel level signal	Ignition switch ON, fuel level FULL → EMPTY	Below 1 V → 4 to 7 V
TEMP IMPUT (C9-9) - Body ground	GR-B - Body ground	Engine coolant temperature	Ignition switch ON, engine coolant temperature 90°C(194°F)	Pulse generation (See waveform 3)
D-BELT (C9-10) - Body ground	B-O - Body ground	Seat belt condition signal (Driver side)	D-BELT indicator light ON	Below 1 V
			D-BELT indicator light OFF	10 to 14 V
KEY UNLOCK (C9-11) - Body ground	G-B - Body ground	Key switch condition signal	Key inserted	Below 1 V
			Key removed	10 to 14 V
D DOOR INPUT (C9-12) - Body ground	G-Y - Body ground	Driver side door open	Driver side door open	Below 1 V
			Driver side door closed	10 to 14 V

Symbols (Terminals No.)	Wiring Color	Terminal Description	Condition	Specified Condition
CHG- (C9-16) - Body ground	GR - Body ground	Change signal	Ignition switch ON	10 to 14 V
			Ignition switch OFF	Below 1 V
MIL (C9-17) - Body ground	BR - Body ground	MIL signal	MIL ON	Below 1 V
			MIL OFF	10 to 14 V
ALL DOOR INPUT (C9-18) - Body ground	G-W - Body ground	All door condition signal	All doors open	Below 1 V
			All doors closed	10 to 14 V
4P OUT (C9-19) - Body ground	V-W - Body ground	Vehicle speed signal (Input)	Ignition switch ON and wheel turning slowly	Pulse generation (See waveform 1)
ILL- (C9-20) - Body ground	BR-W - Body ground	Ground	Always	Below 1 Ω
IGN+ (C9-21) - Body ground	V - Body ground	Ignition switch signal (ON)	Ignition switch OFF	Below 1 V
			Ignition switch ON	10 to 14 V
TIRE PRESSURE (C9-23) - Body ground	L - Body ground	Tire pressure signal	Tire pressure indicator light ON	6.7 to 12 V
			Tire pressure indicator light OFF	Below 1 V
CRUISE (C9-24) - Body ground	LG - Body ground	Cruise signal	Cruise indicator ON	Below 1 V
			Cruise indicator OFF	10 to 14 V
OIL PRESSURE (C9-25) - Body ground	LG-B - Body ground	Oil pressure signal	Oil pressure warning light ON	Below 1 V
			Oil pressure warning light OFF	10 to 14 V
TURN R (C9-27) - Body ground	L-Y - Body ground	Turn signal R	Ignition switch ON, turn signal RH indicator OFF	Below 1 V
			Ignition switch ON, turn signal RH indicator ON	10 to 14 V
TURN L (C9-28) - Body ground	L-B - Body ground	Turn signal L	Ignition switch ON, turn signal LH indicator OFF	Below 1 V
			Ignition switch ON, turn signal LH indicator ON	10 to 14 V
HEAD (C9-32) - Body ground	R-B - Body ground	HEAD light signal	HEAD warning light ON	Below 1 V
			HEAD warning light OFF	10 to 14 V
AIRBAG (C9-33) - Body ground	B-Y - Body ground	AIRBAG signal	AIRBAG warning light ON	Below 1 V
			AIRBAG warning light OFF	10 to 14 V
AUTO LSD (C9-35) - Body ground	LG-R - Body ground	AUTO LSD signal	AUTO LSD indicator light ON	Below 1 V
			AUTO LSD indicator light OFF	10 to 14 V
SLIP (C9-36) - Body ground	R-W - Body ground	SLIP signal	SLIP warning light ON	Below 1 V
			SLIP warning light OFF	10 to 14 V
VSC OFF (C9-37) - Body ground	L-W - Body ground	VSC OFF signal	VSC OFF indicator ON	Below 1 V
			VSC OFF indicator OFF	10 to 14 V
VSC TRAC (C9-38) - Body ground	Y - Body ground	VSC TRAC signal	VSC TRAC indicator ON	Below 1 V
			VSC TRAC indicator OFF	10 to 14 V
A/T OIL TEMP (C9-39) - Body ground	P - Body ground	A/T oil temperature signal	A/T OIL TEMP warning light ON	Below 1 V
			A/T OIL TEMP warning light OFF	10 to 14 V
ILL+ (C9-40) - Body ground	G - Body ground	Illumination signal	Illumination switch OFF, rheostat maximum	Below 1 V
			Illumination switch ON (wake up), rheostat maximum	10 to 14 V

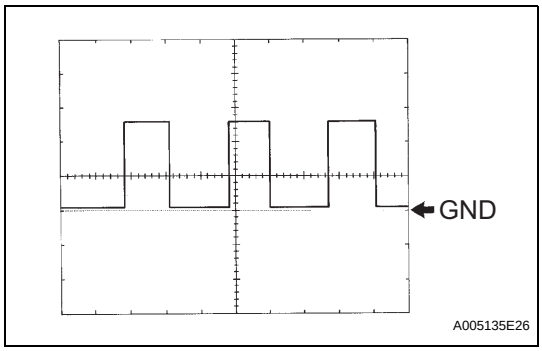
Symbols (Terminals No.)	Wiring Color	Terminal Description	Condition	Specified Condition
A/T P (C10-1) - Body ground	G-B - Body ground	A/T sift position signal (P)	A/T P indicator OFF	Below 1 V
			A/T P indicator ON	10 to 14 V
A/T R (C10-2) - Body ground	R-W - Body ground	A/T sift position signal (R)	A/T R indicator OFF	Below 1 V
			A/T R indicator ON	10 to 14 V
A/T N (C10-3) - Body ground	L-W - Body ground	A/T sift position signal (N)	A/T N indicator OFF	Below 1 V
			A/T N indicator ON	10 to 14 V
A/T D (C10-4) - Body ground	W - Body ground	A/T sift position signal (D)	A/T D indicator OFF	Below 1 V
			A/T D indicator ON	10 to 14 V
A/T 4 (C10-5) - Body ground	B - Body ground *1 Y - Body ground *2	A/T sift position signal (4)	A/T 4 indicator OFF	Below 1 V
			A/T 4 indicator ON	10 to 14 V
A/T 3 (C10-6) - Body ground	Y - Body ground *1 R-Y - Body ground *2	A/T sift position signal (3)	A/T 3 indicator OFF	Below 1 V
			A/T 3 indicator ON	10 to 14 V
A/T 2 (C10-7) - Body ground	V - Body ground *1 G-Y - Body ground *2	A/T sift position signal (2)	A/T 2 indicator OFF	Below 1 V
			A/T 2 indicator ON	10 to 14 V
A/T L (C10-8) - Body ground	G-Y - Body ground	A/T sift position signal (L)	A/T L indicator OFF	Below 1 V
			A/T L indicator ON	10 to 14 V
ACTIVE ABS (C10-9) - Body ground	O - Body ground	ACTIVE ABS signal	ACTIVE ABS warning light ON	Below 1 V
			ACTIVE ABS warning light OFF	10 to 14 V
ACTIVE BRAKE (C10-10) - Body ground	B-W - Body ground	ACTIVE BRAKE signal	ACTIVE BRAKE warning light ON	Below 1 V
			ACTIVE BRAKE warning light OFF	10 to 14 V
BRAKE LEVEL (C10-11) - Body ground	LG - Body ground	BRAKE signal	BRAKE warning light ON	Below 1 V
			BRAKE warning light OFF	10 to 14 V
BEAM+ (C10-12) - Body ground	P - Body ground	Hi-Beam signal	Hi-Beam OFF	Below 1 V
			Hi-Beam ON	10 to 14 V
DAC (C10-13) - Body ground	L-B - Body ground	DAC TRAC signal	DAC TRAC warning light ON	Below 1 V
			DAC TRAC warning light OFF	10 to 14 V
RR DIFF LOCK (C10-14) - Body ground	L-Y - Body ground	RR DIFF LOCK signal	RR DIFF LOCK warning light ON	Below 1 V
			RR DIFF LOCK warning light OFF	10 to 14 V
4LO (C10-16) - Body ground	BR-W - Body ground	4LO TRAC signal	4LO indicator light ON	Below 1 V
			4LO indicator light OFF	10 to 14 V
4WD (C10-15) - Body ground	R - Body ground	4WD signal	4WD indicator OFF	Below 1 V
			4WD indicator ON	10 to 14 V

*1: 1GR-FE
*2: 2TR-FE



(a) Waveform 1: Using an oscilloscope

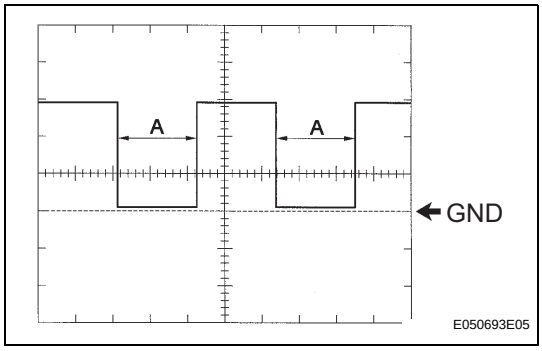
Item	Condition
Tool setting	5 V/DIV., 10 ms/DIV
Vehicle condition	Engine idle speed



(b) Waveform 2: Using an oscilloscope

Item	Condition
Tool setting	5 V/DIV., 20 ms/DIV
Vehicle condition	Driving at approx. 20 km/h (12 mph)

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



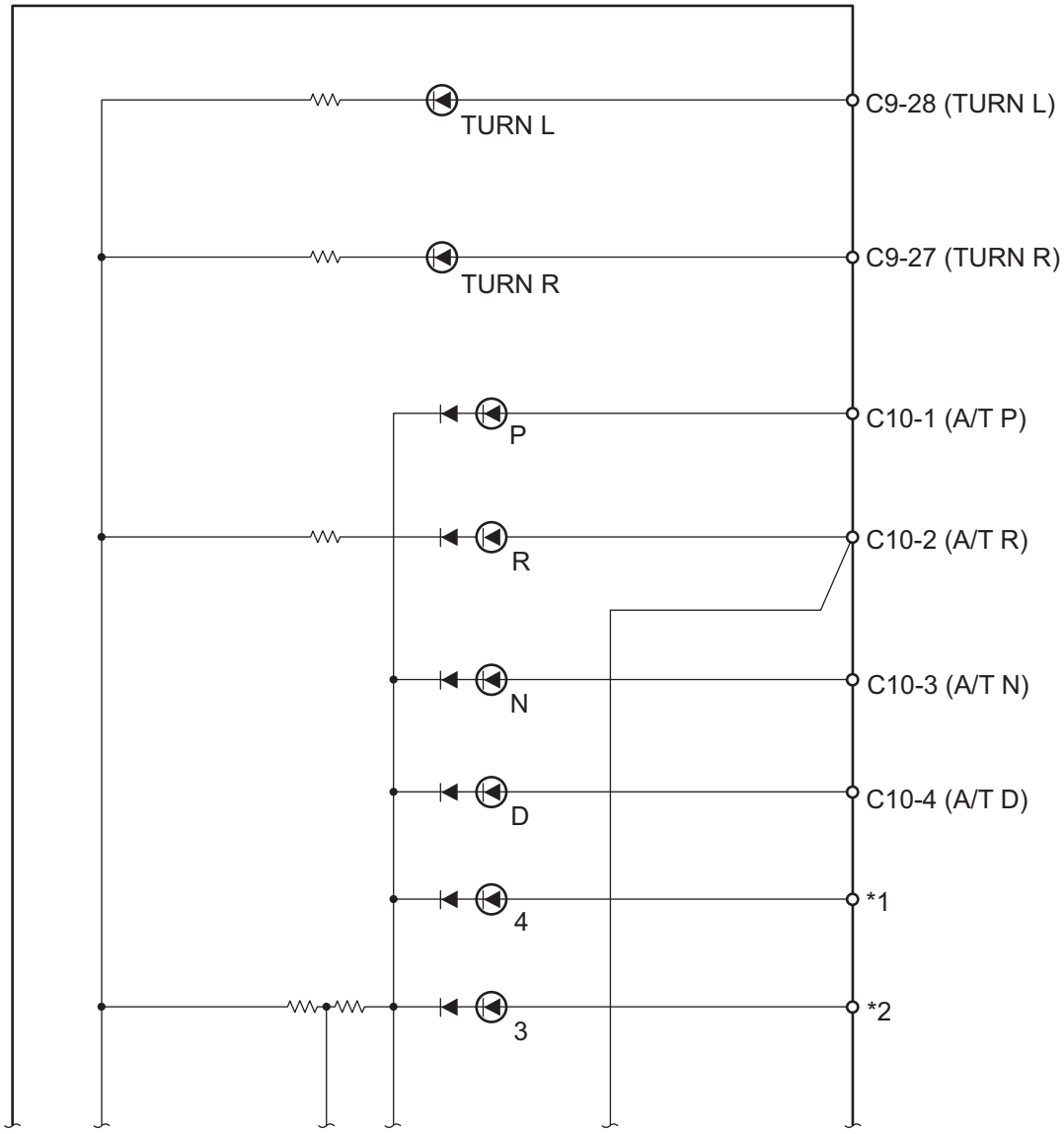
(c) Waveform 3: Using an oscilloscope

Item	Condition
Tool setting	5 V/DIV., 0.1 sec./DIV
Vehicle condition	Ignition switch ON

HINT:
A changes in accordance with the engine coolant temperature.

Coolant temperature	Below 30°C	Approximately 75°C	Above 90°C
A	Approximately 16 ms	Approximately 204 ms	Approximately 262 ms

2. COMBINATION METER INNER CIRCUIT



*1: C10-5 (A/T4)(1GR-FE)

*2: C10-6 (A/T3)(1GR-FE), C10-5 (A/T3)(2TR-FE)

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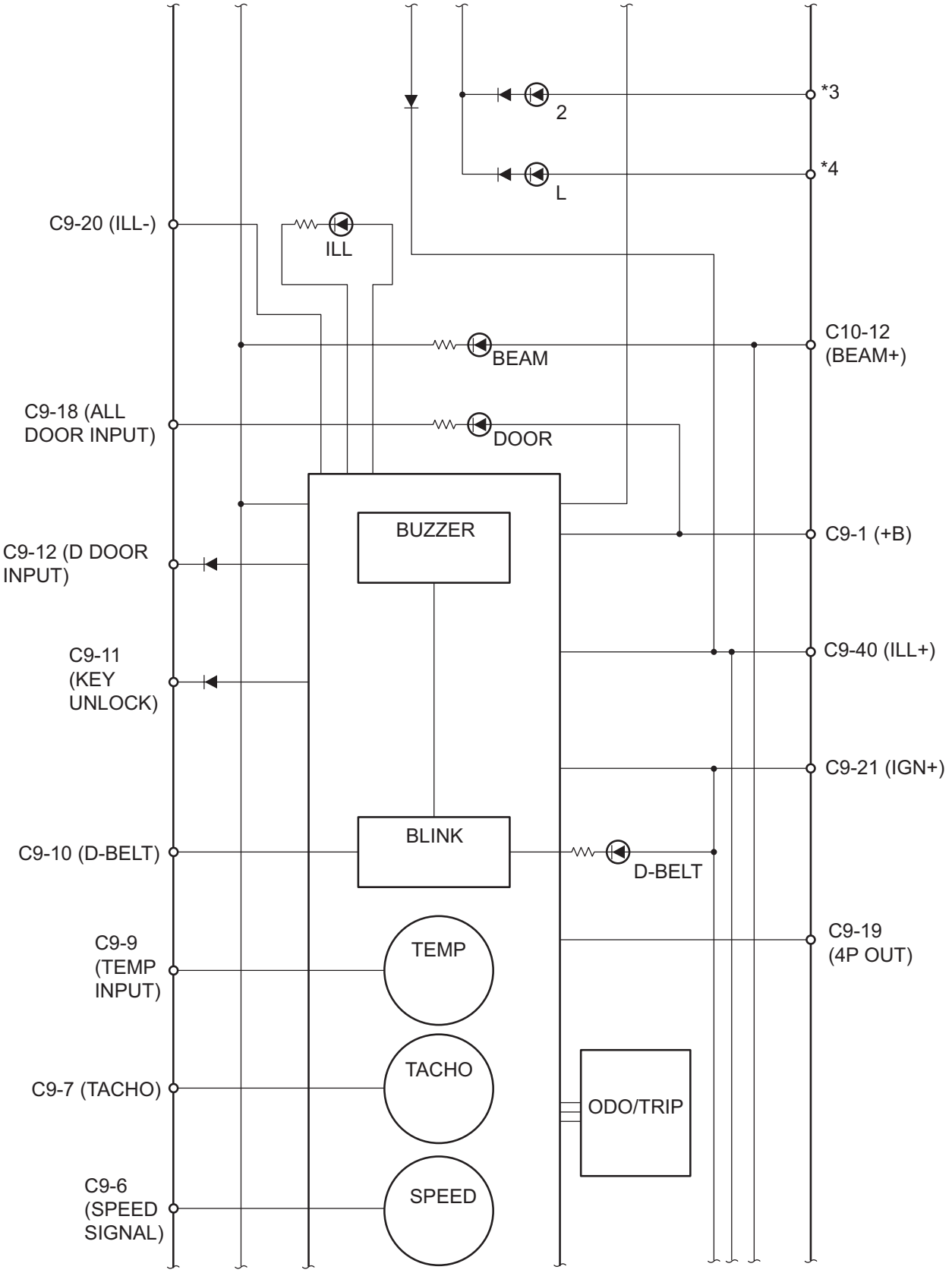

*3: C10-7 (A/T2)(1GR-FE), C10-6 (A/T2)(2TR-FE) *4: C10-8 (A/TL)(1GR-FE), C10-7 (A/TL)(2TR-FE)

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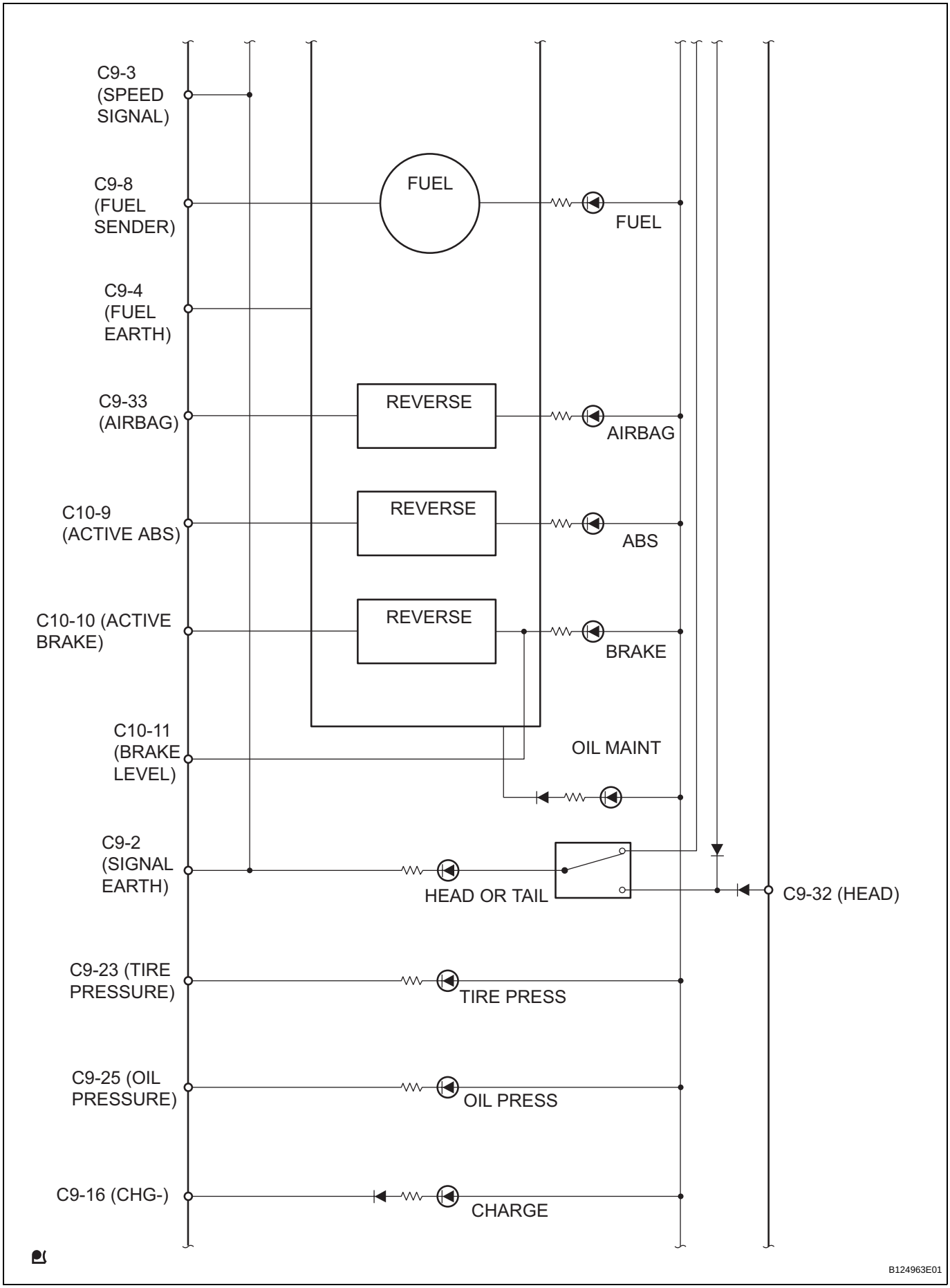
C9-3
(SPEED
SIGNAL)
C9-8
(FUEL
SENDER)
FUEL
FUEL
C9-4
(FUEL
EARTH)
C9-33
(AIRBAG)
REVERSE
AIRBAG
C10-9
(ACTIVE ABS)
REVERSE
ABS
C10-10 (ACTIVE
BRAKE)
REVERSE
BRAKE
C10-11
(BRAKE
LEVEL)
OIL MAINT
C9-2
(SIGNAL
EARTH)
HEAD OR TAIL
C9-32 (HEAD)
C9-23 (TIRE
PRESSURE)
TIRE PRESS
C9-25 (OIL
PRESSURE)
OIL PRESS
C9-16 (CHG-)
CHARGE
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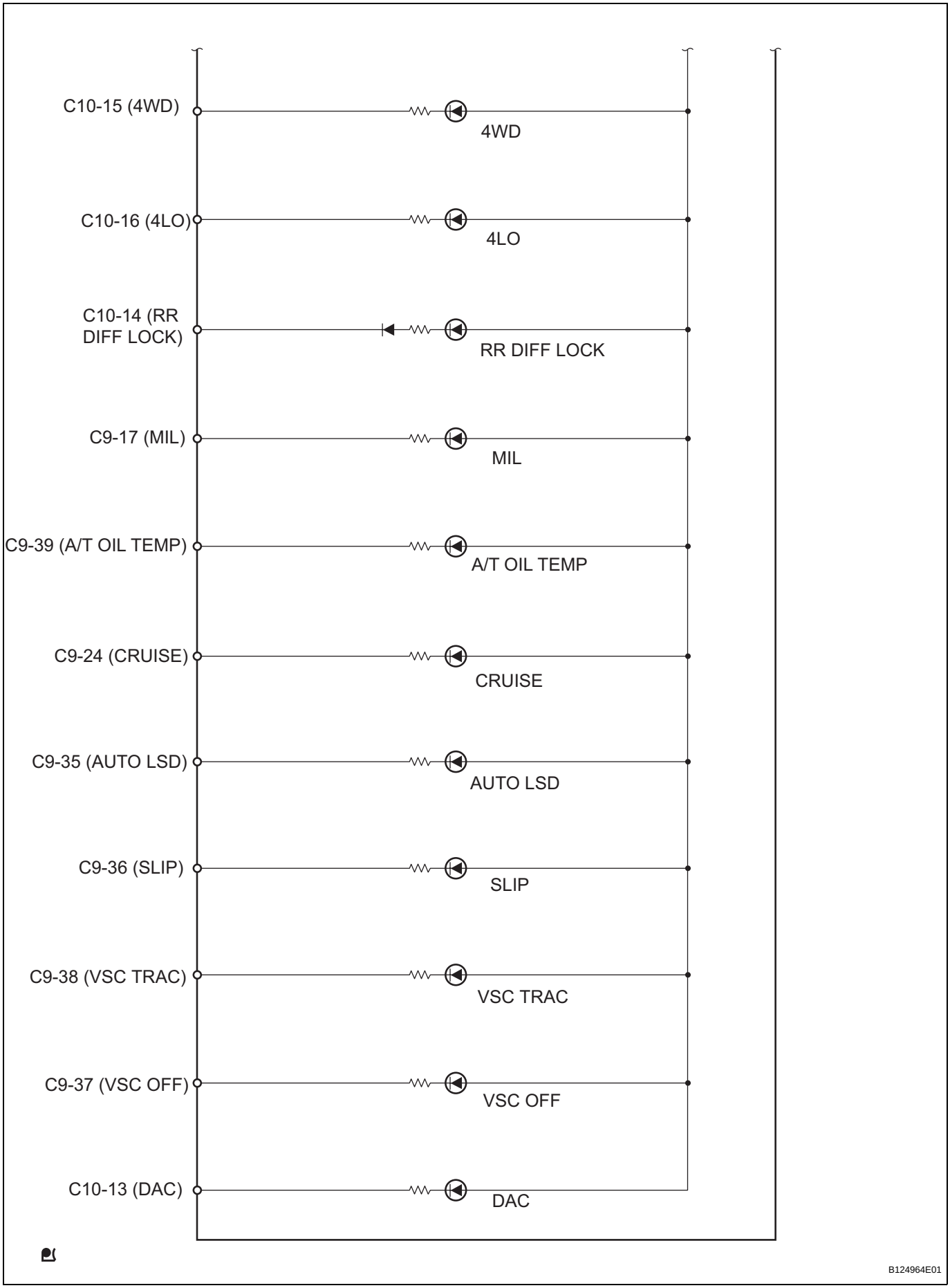
C10-15 (4WD)
4WD
C10-16 (4LO)
4LO
C10-14 (RR DIFF LOCK)
RR DIFF LOCK
C9-17 (MIL)
MIL
C9-39 (A/T OIL TEMP)
A/T OIL TEMP
C9-24 (CRUISE)
CRUISE
C9-35 (AUTO LSD)
AUTO LSD
C9-36 (SLIP)
SLIP
C9-38 (VSC TRAC)
VSC TRAC
C9-37 (VSC OFF)
VSC OFF
C10-13 (DAC)
DAC
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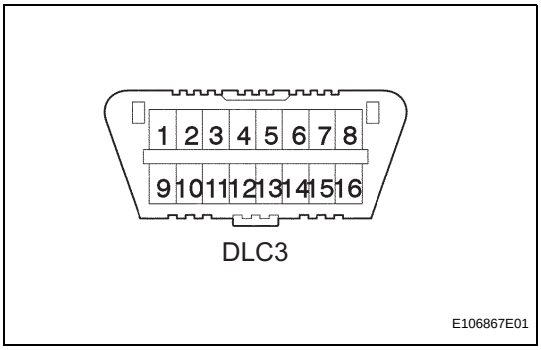
Connectors:

Terminal No.		Wire Harness Side
C9	1	ECU-B Fuse
	2	GND
	3	Vehicle Speed Sensor *1
	4	GND
	6	Skid Control ECU *2
	7	ECM
	8	Fuel Sender Gauge
	9	ECM
	10	Driver Seat Buckle Switch
	11	Key Unlock Warning Switch
	12	Multiplex Network Body ECU
	16	Generator (Alternator)
	17	ECM
	18	Multiplex Network Body ECU
	19	4P-OUT (Other Parts)
	20	Light Control Rheostat
	21	Gauge Fuse
	23	Tire Pressure Monitor ECU
	24	ECM
	25	Low Oil Pressure Warning Switch
	27	Flasher Relay
	28	Flasher Relay
	32	HEAD Fuse
	33	Center Airbag Sensor Assembly
	35	Skid Control ECU *6
	36	Skid Control ECU *4
	37	Skid Control ECU *4
	38	Skid Control ECU *4
	39	ECM *2
	40	TAIL Fuse

Terminal No.		Wire Harness Side
C10	1	Park/Neutral Start Switch *2
	2	Park/Neutral Start Switch *2
	3	Park/Neutral Start Switch *2
	4	Park/Neutral Start Switch *2
	5	Park/Neutral Start Switch *2
	6	Park/Neutral Start Switch *2
	7	Park/Neutral Start Switch *2
	8	Park/Neutral Start Switch *2
	9	Skid Control ECU
	10	Skid Control ECU
	11	Brake Fluid Level Warning Switch *3
	12	HEAD Fuse
	13	Skid Control ECU *5
	14	Rear Diff Lock Switch *7
	15	4WD Control ECU
	16	4WD Control ECU

*1: M/T
*2: A/T
*3: w/o VSC
*4: w/ VSC
*5: w/ DAC
*6: w/ AUTO LSD
*7: w/ Rear Diff Lock



DIAGNOSIS SYSTEM

1. CHECK DLC3

If the result is not as specified, the DLC3 may have a malfunction. Repair or replace the harness and connector.

Tester Connection	Condition	Specified Condition
7 (Bus "+" line) - 5 (Signal ground)	During transmission	Pulse generation
4 (Chassis ground) - Body ground	Always	Below 1 Ω
5 (Signal ground) - Body ground	Always	Below 1 Ω
16 (B+) - Body ground	Always	9 to 14 V

HINT:
If the display shows UNABLE TO CONNECT TO VEHICLE when you have connected the cable of the intelligent tester to the DLC3, turned the ignition switch to the ON position and operated the tester, a problem exists in either the vehicle or tester.

- If communication is normal when the tester is connected to another vehicle, inspect the DLC3 on the original vehicle.
- If communication is still impossible when the tester is connected to another vehicle, the problem is probably with the tester itself. Consult the Service Department listed in the tester's instruction manual.