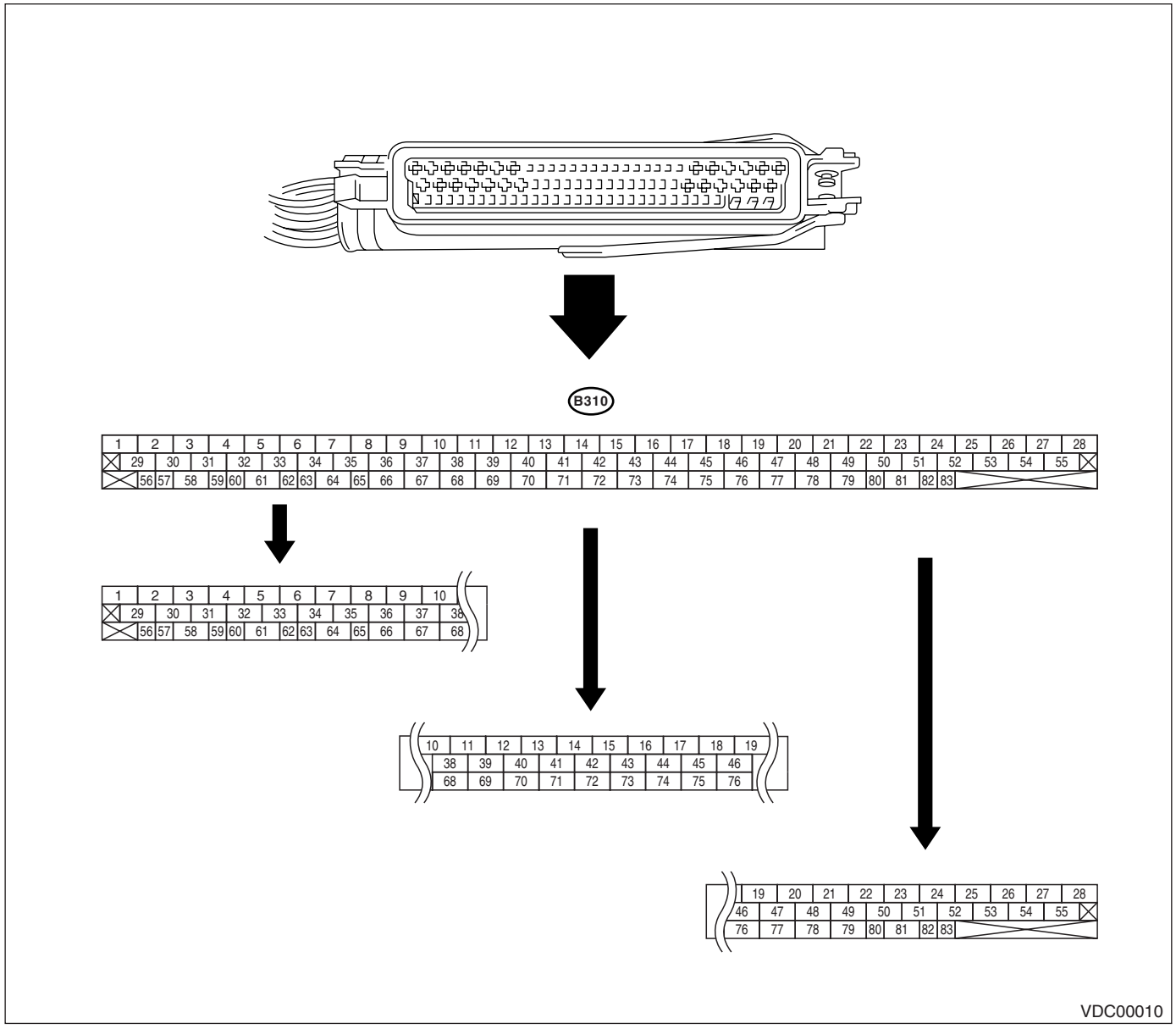
5. Control Module I/O Signal

A: ELECTRICAL SPECIFICATION

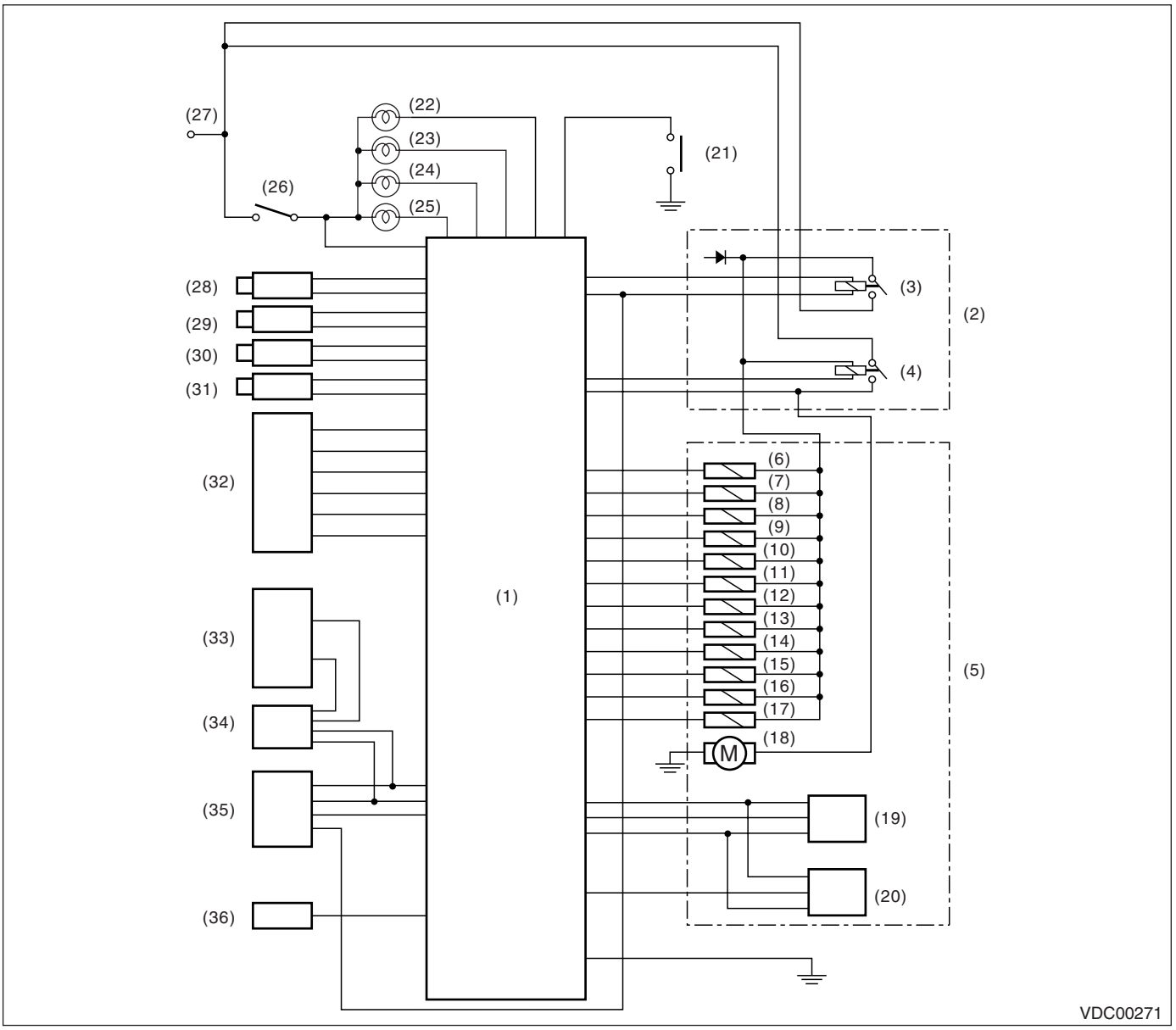


NOTE:
- Terminal numbers in the VDCCM connector are as shown in the figure.
- When the connector is removed from VDCCM, the connector switch closes the circuit between terminals No. 53 and 54. Then, ABS warning light and brake warning light (EBD warning light) illuminates.

Description		Terminal No. (+) — (–)	Input/Output signal Measured value and measuring condition
Ignition switch		28 — 1	When the ignition switch is ON, 10 — 15 V.
ABS wheel speed sensor (Wheel speed sensor)	Front wheel LH	19 — 21	0.12 — 1 V (at 20 Hz)
	Front wheel RH	13 — 14	
	Rear wheel LH	15 — 16	
	Rear wheel RH	17 — 18	
Yaw rate & lateral G sensor	Output (Lateral G sensor)	11 — 64	2.2 — 2.8 V, when the vehicle is on level surface
	Power supply	50 — 64	When the ignition switch is ON, 10 — 15 V.
	Output (Yaw rate sensor)	65 — 64	Waveform <Ref. to VDC(diag)-16, WAVEFORM, MEASUREMENT, Control Module I/O Signal.>
	Reference (Yaw rate sensor)	66 — 64	2.1 — 2.9 V
	Test	67 — 64	1 V — 5 cycles for a 40 ms pulse signal. <Ref. to VDC(diag)-16, WAVEFORM, MEASUREMENT, Control Module I/O Signal.>
	Ground	64	—
CAN communication line (+)		83 — 1	2.5 — 1.5 V pulse signal <Ref. to VDC(diag)-16, WAVEFORM, MEASUREMENT, Control Module I/O Signal.>
CAN communication line (–)		81 — 1	3.5 — 2.5 V pulse signal <Ref. to VDC(diag)-16, WAVEFORM, MEASUREMENT, Control Module I/O Signal.>
Relay box	Valve relay power supply	27 — 1	When the ignition switch is ON, 10 — 15 V.
	Valve relay drive	48 — 1	When the ignition switch is ON, less than 15 V.
	Motor relay drive	22 — 1	1.5 V or less (ABS/TCS/VDC Operation): 10 V or more (ABS/TCS/VDC not operated)
	Motor monitor	9 — 1	1.5 V or less (ABS/TCS/VDC Operation): 10 V or more (ABS/TCS/VDC not operated)
VDCH/M	Front inlet (hold) solenoid valve LH	24 — 1	When the valve turns OFF, 10 — 15 V. When the valve turns ON, less than 1.5 V.
	Front inlet (hold) solenoid valve RH	3 — 1	
	Rear inlet (hold) solenoid valve LH	31 — 1	
	Rear inlet (hold) solenoid valve RH	23 — 1	
	Front outlet (decompression) solenoid valve LH	26 — 1	
	Front outlet (decompression) solenoid valve RH	29 — 1	
	Rear outlet (decompression) solenoid valve LH	4 — 1	
	Rear outlet (decompression) solenoid valve RH	25 — 1	
	Primary cut solenoid valve	34 — 1	
	Secondary cut solenoid valve	35 — 1	
	Primary suction solenoid valve	32 — 1	
	Secondary suction solenoid valve	30 — 1	
Pressure sensor	Power supply	77 — 75	When the ignition switch is ON, 4.75 — 5.25 V.
	Primary output	76 — 75	0.48 — 0.72 V (when the brake pedal is released)
	Ground	75	—
	Secondary output	44 — 75	0.48 — 0.72 V (when the brake pedal is released)
VDC indicator light		72 — 1	After turning the ignition switch ON, less than 1.5 V during 1.5 seconds and 10 — 15 V after 1.5 seconds passed.
VDC warning light/VDC OFF indicator light		61 — 1	When the ignition switch is ON and light is ON, less than 1.5 V, and when the ignition switch is ON and light is OFF, 10 — 15 V.

Description		Terminal No. (+) — (–)	Input/Output signal
			Measured value and measuring condition
ABS warning light		53 — 1	After turning the ignition switch ON, less than 2.6 V during 1.5 seconds and 10 — 15 V after 1.5 seconds passed.
Subaru Select Monitor	Data received	38 — 1	Less than 1.5 V when no data is received.
	Send data		4.75 — 5.25 V when no data is sent.
VDC OFF switch		40 — 1	When the ignition switch is ON, 10 — 15 V. 0 V (While pressing the switch)
Ground		1	—
Ground		55	—
Brake warning light (EBD warning light)		54 — 1	After turning the ignition switch ON, less than 3.6 V during 1.5 seconds and 10 — 15 V after 1.5 seconds passed.

B: WIRING DIAGRAM



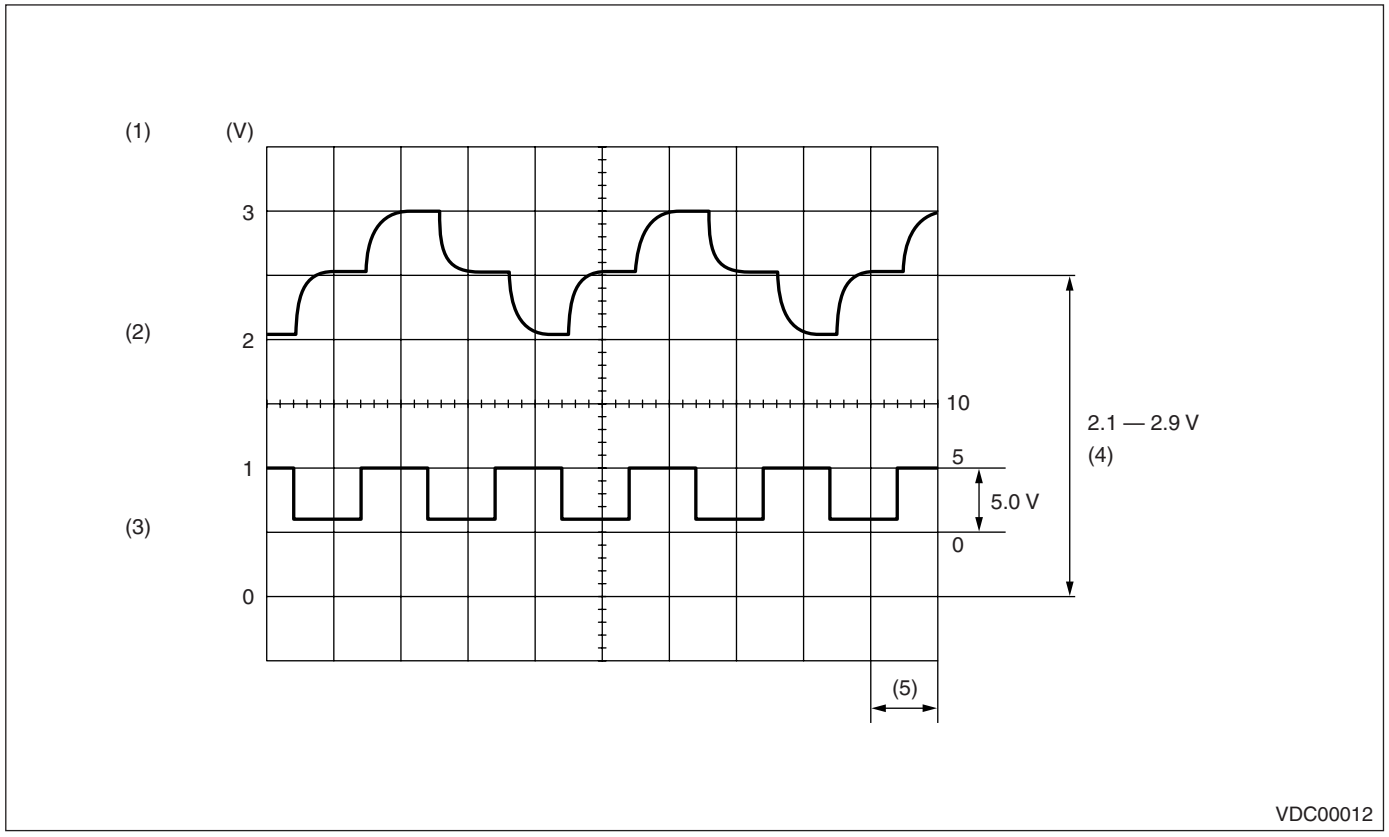
(1) VDC control module (VDCCM)
(2) Relay box
(3) Valve relay
(4) Motor relay
(5) VDC hydraulic control module (VDCH/M)
(6) Front inlet valve LH
(7) Front outlet valve LH
(8) Front inlet valve RH
(9) Front outlet valve RH
(10) Rear inlet valve LH
(11) Rear outlet valve LH
(12) Rear inlet valve RH
(13) Rear outlet valve RH
(14) Primary suction solenoid valve
(15) Primary cut solenoid valve
(16) Secondary suction solenoid valve
(17) Secondary cut solenoid valve
(18) Motor
(19) Primary pressure sensor
(20) Secondary pressure sensor
(21) VDC OFF switch
(22) ABS warning light
(23) VDC warning light/VDC OFF indicator light
(24) VDC indicator light
(25) Brake warning light (EBD warning light)
(26) Ignition relay
(27) Battery
(28) Front ABS wheel speed sensor LH
(29) Front ABS wheel speed sensor RH
(30) Rear ABS wheel speed sensor LH
(31) Rear ABS wheel speed sensor RH
(32) Yaw rate & lateral G sensor
(33) Engine control module (ECM)
(34) Transmission control module (TCM)
(35) Steering angle sensor
(36) Data link connector

C: MEASUREMENT

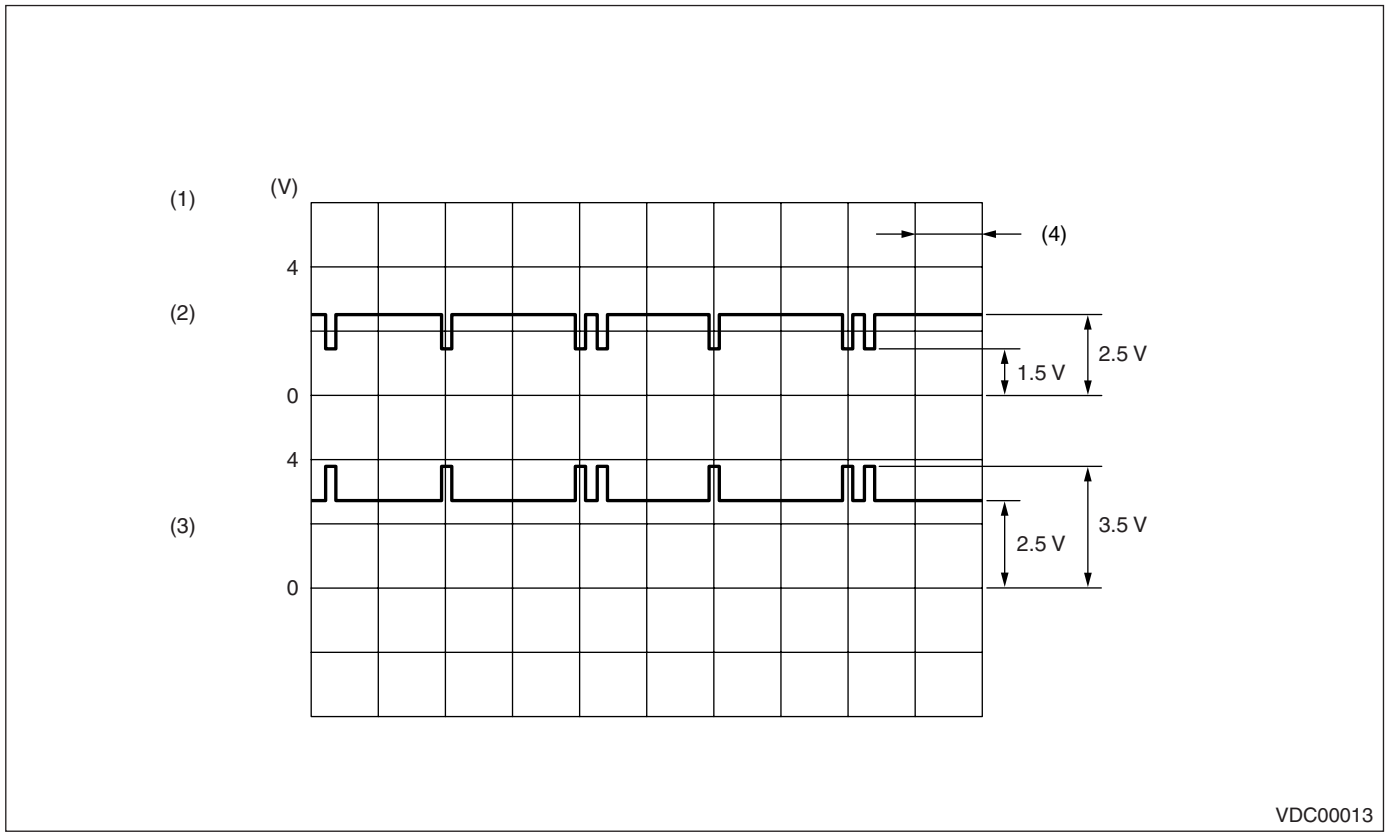
Measure the input and output signal voltages.

NOTE:
Measure while the VDCCM connector cover is removed. <Ref. to VDC(diag)-18, VDCCM Connector Cover.>

1. WAVEFORM



(1) Yaw rate sensor
(2) Terminals No. 65 — 64
(3) Terminals No. 67 — 64
(4) Vehicle is at a standstill.
(5) 20 ms



(1) CAN communication line
(2) Terminals No. 83 — 1
(3) Terminals No. 81 — 1
(4) 5 ms

NOTE:
For output waveform of ABS wheel speed sensor, refer to the “ABS DIAGNOSTICS”. <Ref. to ABS(diag)-15, WAVEFORM, Control Module I/O Signal.>