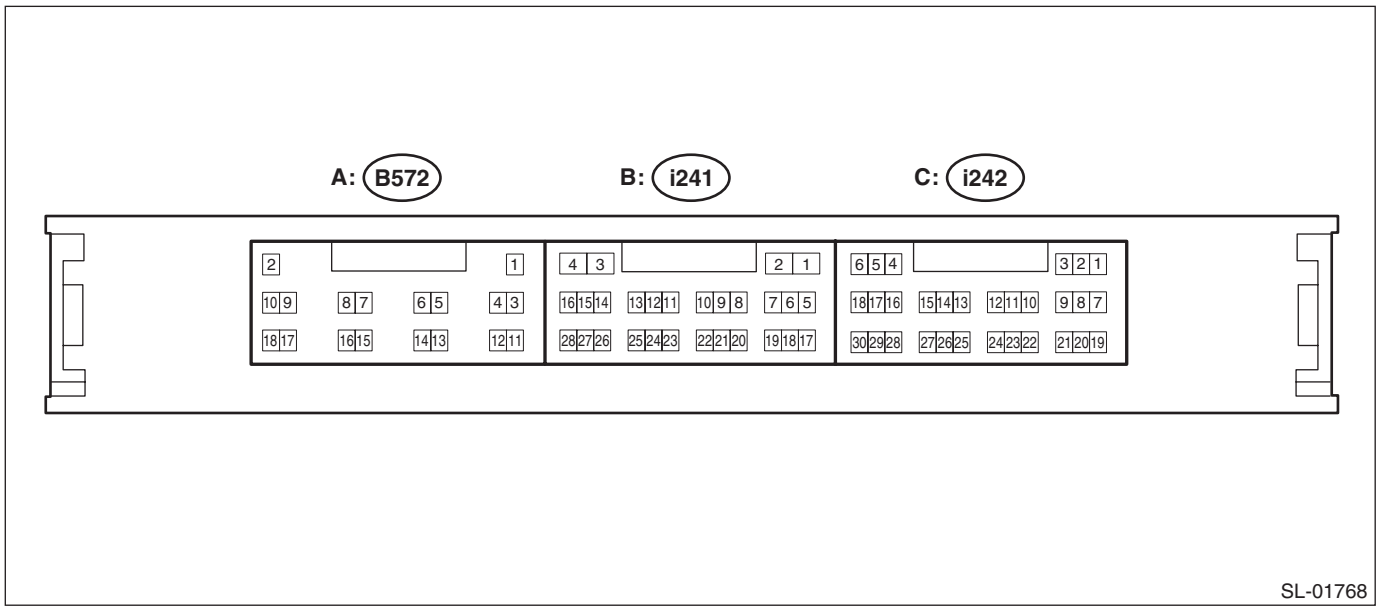
5. Control Module I/O Signal

A: ELECTRICAL SPECIFICATION

1. KEYLESS ACCESS CM



Disconnect the control module connector (B572) before checking the following items.

NOTE:
If the measured value is out of standard, it is possible that the vehicle has a fault.

Terminal No.	Item	Measuring condition	Standard
(B572) No. 2 (+B) ←→ (B572) No. 11 (E)	Voltage	Always	9.5 — 16 V
(B572) No. 11 (E) ←→ Chassis ground	Resistance	Always	Less than 1 Ω

Disconnect the control module connector (i241) before checking the following items.

NOTE:
If the measured value is out of standard, it is possible that the vehicle has a fault.

Terminal No.	Item	Measuring condition	Standard
(i241) No. 15 (IDW) ←→ Chassis ground	Continuity	Always	Continuity exists

Disconnect the control module connectors (i242) and (B572) before checking the following items.

NOTE:
If the measured value is out of standard, it is possible that the vehicle has a fault.

Terminal No.	Item	Measuring condition	Standard
(i242) No. 4 (ACCD) ←→ Chassis ground	Voltage	Always (20°C)	152.61 — 216.5 Ω
(B572) No. 9 (IG2D) ←→ Chassis ground	Resistance	Always (20°C)	74.15 — 460.88 Ω
(i242) No. 6 (IG1D) ←→ Chassis ground	Resistance	Always (20°C)	50.87 — 72.17 Ω
(B572) No. 18 (STP1) ←→ Chassis ground (AT model only)	Voltage	Brake pedal depressed → released	11 — 14 V → 1 V or less
(i242) No. 25 (P) ←→ Chassis ground (AT model only)	Resistance	Except for shift positions P → Shift position P	40 kΩ or more → 200 Ω or less
(i242) No. 27 (SPD) ←→ Chassis ground	Resistance	Always	30 kΩ or more
(i242) No. 28 (SSW1) ←→ Chassis ground	Resistance	Push button ignition switch pressed → released	Less than 1 Ω → 10 kΩ or more
(i242) No. 29 (SLR+) ←→ Chassis ground	Resistance	Always	10 kΩ or more
(i242) No. 30 (SSW2) ←→ Chassis ground	Resistance	Push button ignition switch pressed → released	Less than 1 Ω → 10 kΩ or more
(i242) No. 17 (LIN) ←→ Chassis ground	Continuity	Always	Continuity does not exist
(i242) No. 14 (CANH) ←→ Chassis ground	Pulse	ACC ON or IGN ON or ACC and IGN OFF and open/close the door	Pulse generation
(i242) No. 15 (CANL) ←→ Chassis ground	Pulse	ACC ON or IGN ON or ACC and IGN OFF and open/close the door	Pulse generation

Connect the control module connector before checking the following items.

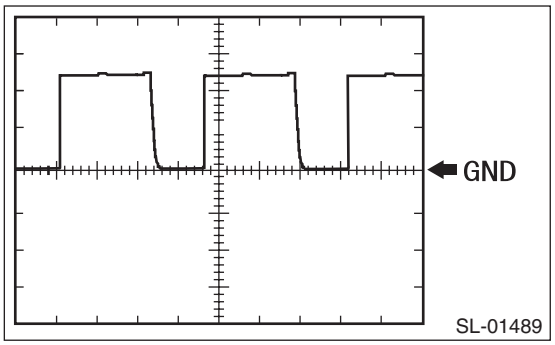
NOTE:
If the measured value is out of standard, it is possible that the keyless access CM has a fault.

Terminal No.	Item	Measuring condition	Standard
(i242) No. 1 (VC5) ←→ (i242) No. 24 (AGND)	Voltage	30 seconds or more have passed after the door was opened or closed with IG OFF and the brake pedal released.	1 V or less
	Waveform	Within 30 seconds after the push button ignition switch is pressed with IG OFF and access key not in the passenger room.	Waveform 1
(i242) No. 2 (CG5B) ←→ (B572) No. 11 (E)	Pulse	All doors closed, ACC and IG OFF, access key not in passenger room, front lock button OFF → ON	No pulse output → Pulse output detected
(i242) No. 3 (CLG5) ←→ (B572) No. 11 (E)	Pulse	All doors closed, ACC and IG OFF, access key not in passenger room, front lock button OFF → ON	No pulse output → Pulse output detected
(i242) No. 4 (ACCD) ←→ (B572) No. 11 (E)	Voltage	IG OFF → ACC ON	1 V or less → 9 — 14 V
(i242) No. 6 (IG1D) ←→ (B572) No. 11 (E)	Voltage	ACC ON → IG ON	1 V or less → 9 — 14 V
(i242) No. 7 (CODE) ←→ (i242) No. 24 (AGND)	Voltage	30 seconds or more have passed after the door was opened or closed with IG OFF and the brake pedal released.	1 V or less
	Waveform	Turn the ignition switch to OFF and with the access key near the push button ignition switch, press the push button ignition switch*1	Waveform 2

Terminal No.	Item	Measuring condition	Standard
(i242) No. 9 (TXCT) ←→ (i242) No. 24 (AGND)	Voltage	30 seconds or more have passed after the door was opened or closed with IG OFF and the brake pedal released.	1 V or less
	Waveform	Turn the ignition switch to OFF and with the access key near the push button ignition switch, press the push button ignition switch*1	Waveform 3
(i242) No. 10 (CG2B) ←→ (B572) No. 11 (E)	Pulse	ACC and IG OFF, all doors closed, all doors locked by lock operation with wireless remote control, access key not in passenger room	No pulse output → Pulse output detected
(i242) No. 11 (CLG2) ←→ (B572) No. 11 (E)	Pulse	ACC and IG OFF, all doors closed, all doors locked by lock operation with wireless remote control, access key not in passenger room	No pulse output → Pulse output detected
(i242) No. 12 (CLG1) ←→ (B572) No. 11 (E)	Pulse	ACC and IG OFF, all doors closed, all doors locked by lock operation with wireless remote control, access key not in passenger room	No pulse output → Pulse output detected
(i242) No. 13 (CG1B) ←→ (B572) No. 11 (E)	Pulse	ACC and IG OFF, all doors closed, all doors locked by lock operation with wireless remote control, access key not in passenger room	No pulse output → Pulse output detected
(i242) No. 19 (SEL1) ←→ (B572) No. 11 (E)	Voltage	ACC and IG OFF, access key carried, driver's seat touch sensor OFF → ON	9 — 14 V → less than 2V
(i242) No. 21 (SEL2) ←→ (B572) No. 11 (E)	Voltage	ACC and IG OFF, access key carried, driver's seat touch sensor OFF → ON	9 — 14 V → less than 2V
(i242) No. 24 (AGND) ←→ Chassis ground	Resistance	Always	Less than 1 Ω
(i242) No. 25 (P) ←→ (B572) No. 11 (E) (AT model only)	Voltage	Except for shift positions P → Shift position P	9 — 14 V or more → 1.5 V or less
(i242) No. 26 (SLP) ←→ (B572) No. 11 (E)	Voltage	With ignition switch OFF and shift position P, Steering lock → Steering unlock	11 — 14 V → 1.2 V or less
(i242) No. 27 (SPD) ←→ Chassis ground	Pulse	Driving at approx. 5 km/h	Pulse generation according to vehicle speed (approx. 5 km/h: 3.54 Hz)
(i242) No. 28 (SSW1) ←→ (B572) No. 11 (E)	Voltage	Push button ignition switch released → pressed	11 — 14 V → 1 V or less
(i242) No. 29 (SLR+) ←→ (B572) No. 11 (E)	Voltage	When the following conditions are met, the doors are closed → opened, and steering lock motor is driven • Steering lock is unlocked • IG OFF • Shift position P	11 — 14 V (Steering lock motor is stopped) → 1 V or less (Steering lock motor is driven)
(i242) No. 30 (SSW2) ←→ (B572) No. 11 (E)	Voltage	Push button ignition switch released → pressed	11 — 14 V → 1 V or less
(i241) No. 1 (CG8B) ←→ (B572) No. 11 (E)	Pulse	ACC and IG OFF, all doors closed, trunk or rear gate opener button OFF → ON	No pulse output → Pulse output detected
(i241) No. 2 (CLG8) ←→ (B572) No. 11 (E)	Pulse	ACC and IG OFF, all doors closed, trunk or rear gate opener button OFF → ON	No pulse output → Pulse output detected
(i241) No. 5 (RCO) ←→ (B572) No. 11 (E)	Voltage	ACC and IG OFF, access key is locked or unlock switch OFF → ON	1 V or less → 4.5 — 5.5 V
(i241) No. 8 (CG7B) ←→ (B572) No. 11 (E)	Pulse	All doors closed, ACC and IG OFF, access key not in passenger room, front lock button OFF → ON	No pulse output → Pulse output detected

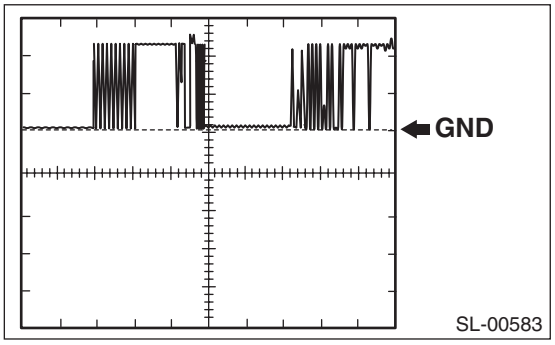
Terminal No.	Item	Measuring condition	Standard
(i241) No. 9 (CLG7) ←→ (B572) No. 11 (E)	Pulse	All doors closed, ACC and IG OFF, access key not in passenger room, front lock button OFF → ON	No pulse output → Pulse output detected
(i241) No. 19 (RSSI) ←→ (B572) No. 11 (E)	Voltage	All doors closed, all doors locked, access key is locked or unlock switch OFF → ON	11 — 14 V → 2 V or less
(i241) No. 27 (TSW5) ←→ (B572) No. 11 (E)	Voltage	ACC and IG OFF, all doors locked, trunk or rear gate lock button OFF → ON	9 V or more → less than 2 V
(B572) No. 9 (IG2D) ←→ (B572) No. 11 (E)	Voltage	ACC ON → IG ON	1 V or less → 9 — 14 V
(B572) No. 13 (EGIO) ←→ (i242) No. 24 (AGND)	Voltage/ pulse	IG ON	11 — 14 V → pulse generation (waveform 4)
(i242) No. 8 (TSW2) ←→ (B572) No. 11 (E)	Voltage	ACC and IG OFF, all doors closed, all doors locked, access key carried, passenger's front lock button OFF → ON	9 V or more → less than 2 V (→ 9 V or more)
(i242) No. 18 (TSW1) ←→ (B572) No. 11 (E)	Voltage	ACC and IG OFF, all doors closed, all doors locked, access key carried, driver's front lock button OFF → ON	9 V or more → less than 2 V (→ 9 V or more)
(i242) No. 23 (SEN2) ←→ (B572) No. 11 (E)	Voltage	ACC and IG OFF, all doors closed, all doors locked, access key carried, passenger's seat touch sensor OFF → ON	9 V or more → less than 2 V (→ 9 V or more)
(i242) No. 22 (SEN1) ←→ (B572) No. 11 (E)	Voltage	ACC and IG OFF, all doors closed, all doors locked, access key carried, driver's seat touch sensor OFF → ON	9 V or more → less than 2 V (→ 9 V or more)
(i242) No. 16 (SWIL) ←→ (B572) No. 11 (E)	Voltage	When illumination of start switch goes off, headlight goes off after setting the illumination control to MAX	Less than 2 V → 9 V or more
(i242) No. 17 (TACH) ←→ Chassis ground	Waveform	While engine idling	Pulse generation (waveform 5)
(i241) No. 28 (ACCR) ←→ (B572) No. 11 (E)	Voltage	Brake pedal depressed, push button ignition switch pressed (while cranking) → Except when cranking	Less than 2 V → 9 V or more
(B572) No. 5 (N-SW) ←→ (B572) No. 11 (E) (AT model only)	Voltage	Shift position N → other than P or N	Less than 2 V → 9 V or more
(i241) No. 10 (CG6B) ←→ (B572) No. 11 (E)	Pulse	All doors closed, ACC and IG OFF, access key not in passenger room, front lock button OFF → ON	No pulse output → Pulse output detected
(i241) No. 11 (CLG6) ←→ (B572) No. 11 (E)	Pulse	All doors closed, ACC and IG OFF, access key not in passenger room, front lock button OFF → ON	No pulse output → Pulse output detected
(B572) No. 17 (RDA) ←→ (B572) No. 11 (E)	Pulse	All doors closed, all doors locked, access key is locked or unlock switch OFF → ON	2 V or less → 11 — 14 V → 2 V or less
(B572) No. 7 (STSW) ←→ (B572) No. 11 (E)	Voltage	Shift lever is in position P or position N and access key is in passenger room. While depressing the brake pedal, press the push button ignition switch. (Engine start)	Less than 2 V → 9 V or more
(B572) No. 3 (INDS) ←→ (B572) No. 11 (E)	Voltage	Depress the brake pedal.	9 V or more
(i242) No. 18 (INDW) ←→ (B572) No. 11 (E)	Voltage	With ACC ON or IG ON, brake pedal not depressed.	9 V or more

NOTE:
*1: Remove the access key battery before checking.
1. Waveform 1



Item	Content
Measured terminal	(i242) No. 1 (VC5) ←→ (i242) No. 24 (AGND)
Equipment setting	2 V/DIV, 200 ms/DIV
Measuring condition	Within 30 seconds after the push button ignition switch is pressed with IG OFF and access key not in the passenger room.

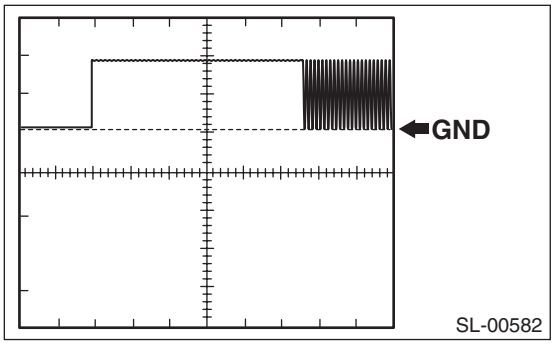
2. Waveform 2



Item	Content
Measured terminal	(i242) No. 7 (CODE) ←→ (i242) No. 24 (AGND)
Equipment setting	2 V/DIV, 20 ms/DIV
Measuring condition	Turn the ignition switch to OFF and with the access key near the push button ignition switch, press the push button ignition switch. *1

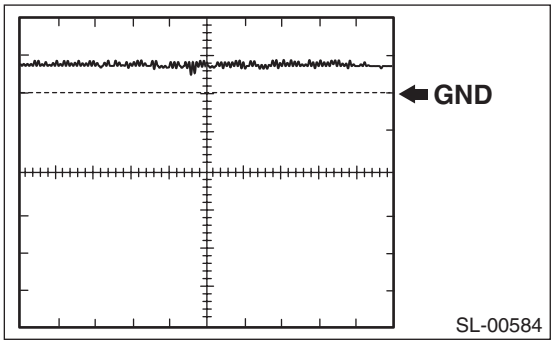
NOTE:
*1: Remove the access key battery before checking.

3. Waveform 3



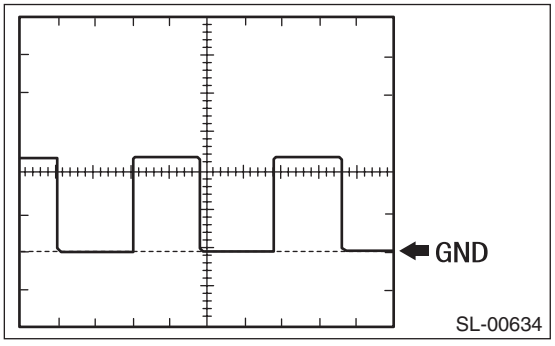
Item	Content
Measured terminal	(i242) No. 9 (TXCT) ←→ (i242) No. 24 (AGND)
Equipment setting	2 V/DIV, 20 ms/DIV
Measuring condition	Within 30 seconds after the push button ignition switch is pressed with IG OFF and access key not in the passenger room.

4. Waveform 4



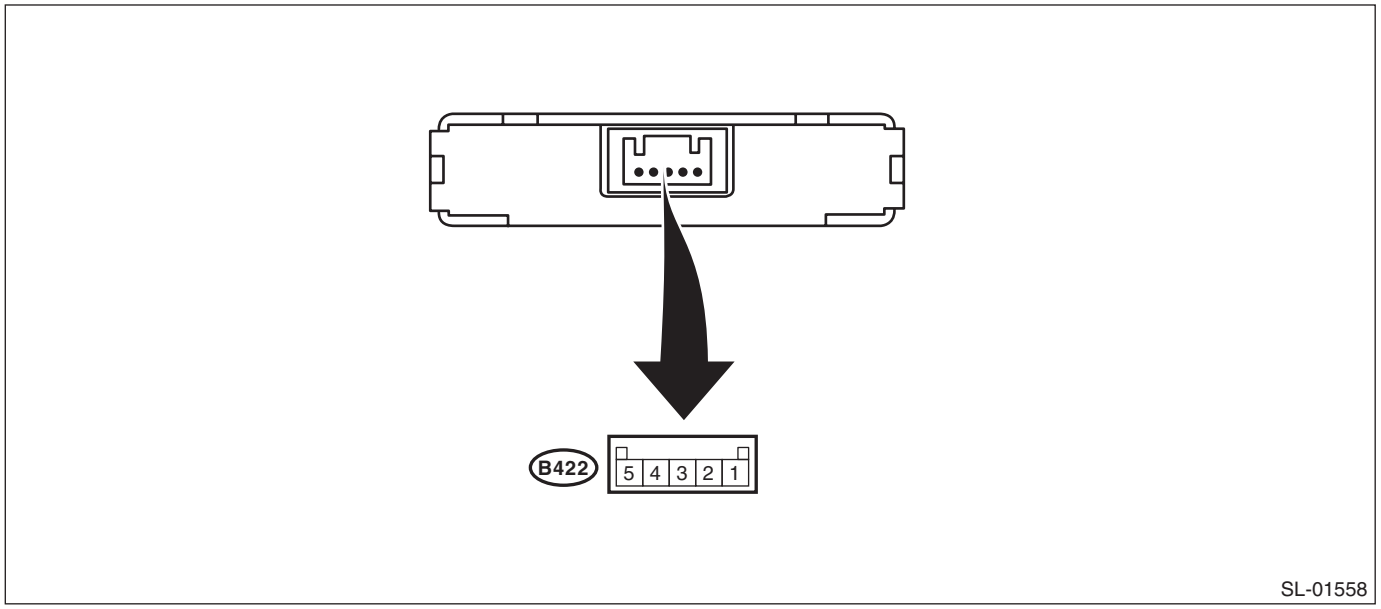
Item	Content
Measured terminal	(B572) No. 11 (EFIO) ←→ (B572) No. 11 (E)
Equipment setting	10 V/DIV, 100 ms/DIV
Measuring condition	Ignition ON

5. Waveform 5



Item	Content
Equipment setting	5 V/DIV, 100 ms/DIV

2. ID CODE BOX



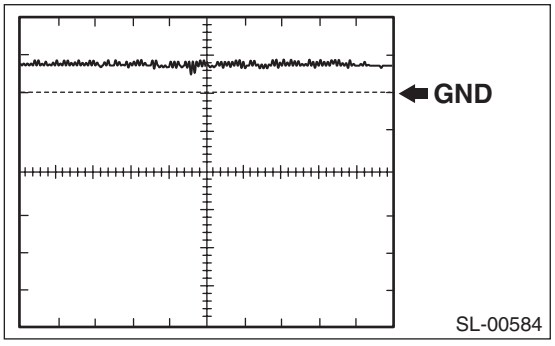
NOTE:
Disconnect the control module connector before checking the following items.

Terminal No.	Standard	Measuring condition	Item
1 (+B) ←→ 5 (GND)	10 — 14 V	Always	Voltage
3 (IMO2) ←→ 5 (GND)	0 V	Ignition OFF	Voltage
5 (GND) ←→ Chassis ground	Continuity exists	Always	Continuity

NOTE:
Connect the control module connector before checking the following items.

Terminal No.	Standard	Measuring condition	Item
3 (IMO2) ←→ 5 (GND)	0 V	Ignition OFF	Voltage
3 (IMO2) ←→ 5 (GND)	Waveform 1	Ignition ON	Voltage

Waveform 1

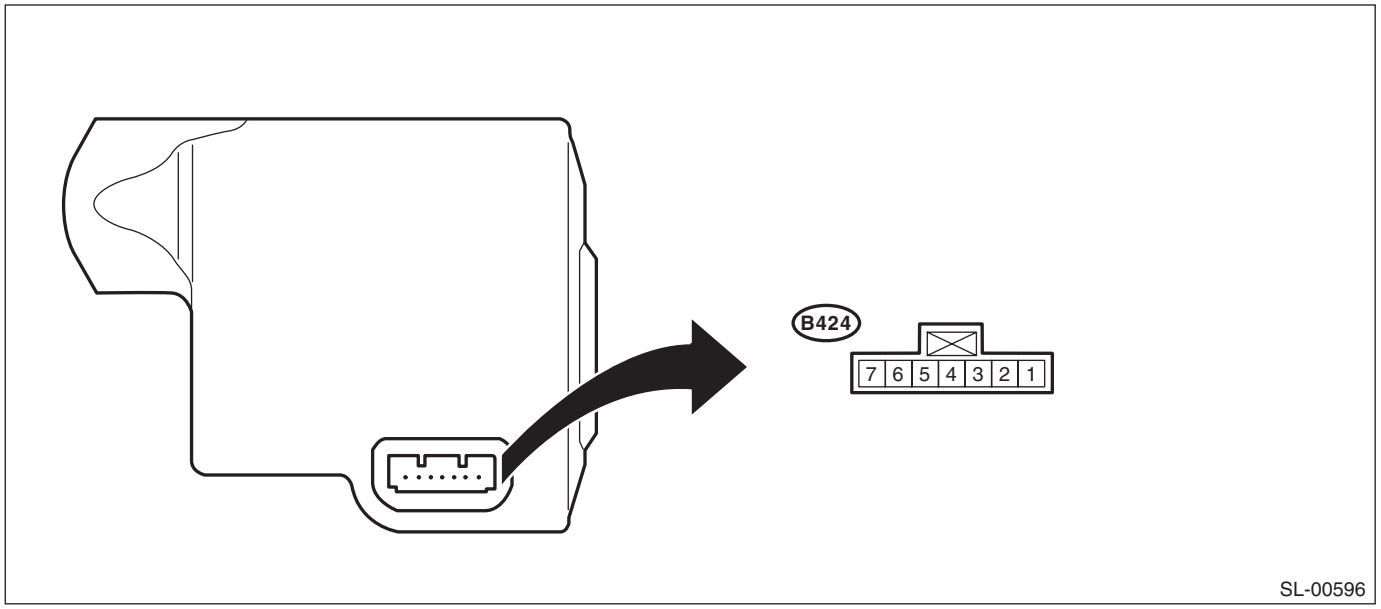


Item	Content
Measured terminal	4 (IMO1) ←→ 5 (GND)
Equipment setting	10 V/DIV, 100 ms/DIV
Measuring condition	Ignition ON

3. BODY INTEGRATED UNIT

Refer to the BODY CONTROL SYSTEM (DIAGNOSTICS) for the I/O Signal of the body integrated unit. <Ref. to BC(diag)-7, ELECTRICAL SPECIFICATION, Control Module I/O Signal.>

4. STEERING LOCK CM



NOTE:
Perform the following check from the back side of the connector, with the connector of the control module connected.
If the measured value is out of standard, it is possible that the vehicle has a fault.

Terminal No.	Standard	Measuring condition	Item
1 (GND) ←→ chassis ground	Continuity exists	Always	Continuity
—	—	—	—
3 (SLR+) ←→ chassis ground	10 — 14 V → 1 V or less	Motor not operating → Motor operating	Voltage
4 (SLP) ←→ chassis ground	10 — 14 V → 1 V or less	Lock → Unlock	Voltage
5 (LIN)	Input/output signal	—	—
6 (IG2) ←→ chassis ground	10 — 14 V	Ignition ON	Voltage
7 (B) ←→ chassis ground	10 — 14 V	Always	Voltage

B: WIRING DIAGRAM

<Ref. to WI-208, WIRING DIAGRAM, Keyless Access System.>