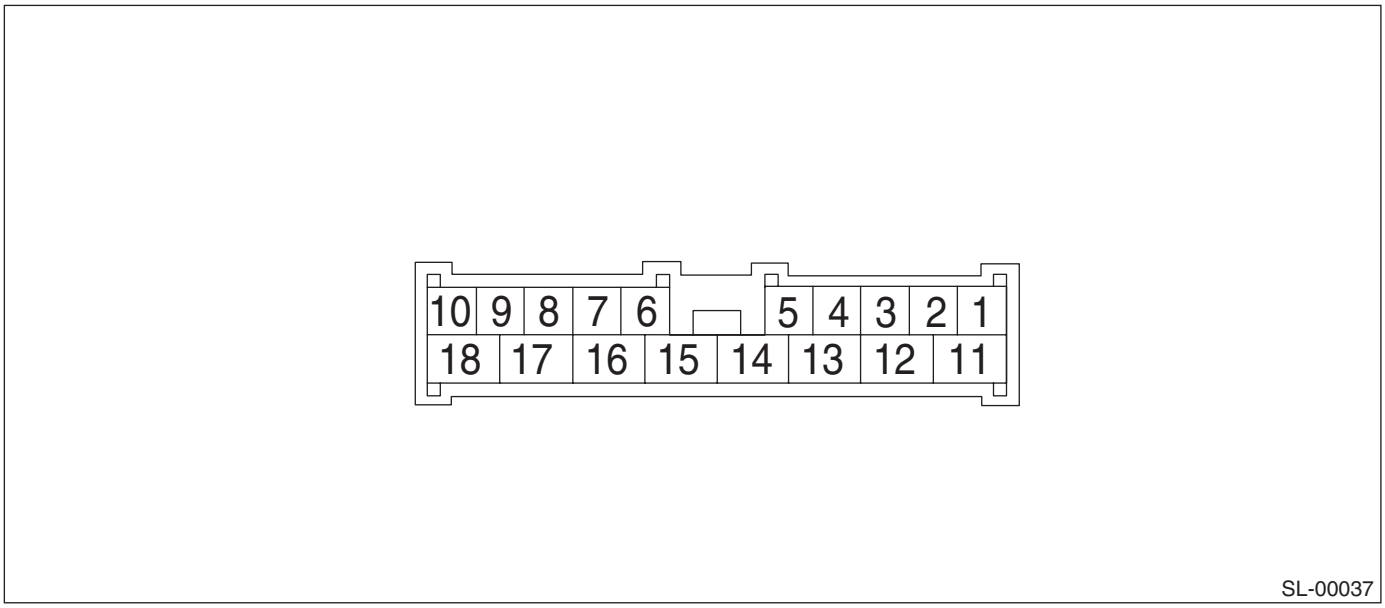
4. Security System

A: SCHEMATIC

<Ref. to WI-128, SCHEMATIC, Security System.>

B: ELECTRICAL SPECIFICATION



Content	Terminal No.	Measuring condition
Empty	1	—
Ignition switch (ON)	2 (INPUT)	Battery voltage is present when ignition switch is turned ON.
Program connector	3	—
Trunk room light switch (Sedan), rear gate latch switch (Wagon)	4 (INPUT)	0 V is present when trunk room light switch or rear gate latch switch is open.
Door switch	5 (INPUT)	0 V is present when any door is open.
Empty	6	—
Keyless entry control module	7	—
Keyless entry control module	8	—
Security indicator light	9 (OUTPUT)	0 V is present when activating the alarm operation.
Keyless entry control module	10	—
Power supply for clearance light (Back-up)	11	Battery voltage is constantly present.
Clearance light	12 (OUTPUT)	Battery voltage is present when activating the alarm operation.
Power supply (Back-up)	13	Battery voltage is constantly present.
Ground	14	0 V is constantly present.
Interrupt relay	15 (OUTPUT)	Battery voltage is present when activating the alarm operation.
Security horn relay	16 (INPUT)	Battery voltage is present when activating the alarm operation.
Security horn	17 (OUTPUT)	Battery voltage is present when activating the alarm operation.
Security horn relay	18 (INPUT)	Battery voltage is present when activating the alarm operation.

C: INSPECTION

1. BASIC DIAGNOSTIC PROCEDURE

	Step	Check	Yes	No
1	**CHECK SECURITY SYSTEM SET OPERATION.** 1)Before starting this diagnosis, open all windows. 2)Remove the key from ignition key cylinder, and then close all doors and rear gate or trunk lid. 3)Press the LOCK/ARM button of transmitter. Can the security system be set?	The security system can be set.	Go to step **2.**	Go to symptom 1. <Ref. to SL-25, SYMPTOM CHART, INSPECTION, Security System.>
2	**CHECK SECURITY INDICATOR LIGHT AND CLEARANCE LIGHT BLINKING.** Check the security indicator light and clearance light blinking. Do the security indicator light and clearance light blink?	The security indicator light and clearance light blink.	Go to step **3.**	Go to symptom 2. <Ref. to SL-25, SYMPTOM CHART, INSPECTION, Security System.>
3	**CHECK SECURITY ALARM OPERATION.** 1)Unlock all doors using the door lock switch on front door. 2)Open any door, rear gate or trunk lid. Does the security system operate when any of the doors, rear gate or trunk lid is opened?	The alarm operates when any of the doors, rear gate or trunk lid is opened.	Go to step **4.**	Go to symptom 3. <Ref. to SL-25, SYMPTOM CHART, INSPECTION, Security System.>
4	**CHECK SECURITY ALARM OPERATION.** Check the security alarm operation. Does the security alarm (horn, clearance light and security indicator light) operate while the starter motor is deactivated?	The security alarm operates while the starter motor is deactivated.	Go to step **5.**	Go to symptom 4. <Ref. to SL-25, SYMPTOM CHART, INSPECTION, Security System.>
5	**CHECK SECURITY ALARM CANCEL OPERATION.** Press the UNLOCK/DISARM button of transmitter. Is the security alarm (horn, clearance light and security indicator light) disarmed and the starter motor becomes operative?	The security alarm is disarmed and the starter motor becomes operative.	Go to step **6.**	Go to symptom 5. <Ref. to SL-25, SYMPTOM CHART, INSPECTION, Security System.>
6	**CHECK BATTERY DISCONNECT PROTECTION.** Check the battery disconnect protection. <Ref. to SL-24, CHECK BATTERY DISCONNECT PROTECTION, INSPECTION, Security System.> Is the battery disconnect protection OK?	OK.	Go to step **7.**	Replace the security control module.
7	**PERFORM IMPACT SENSITIVITY TEST.** Perform the impact sensitivity test. <Ref. to SL-49, IMPACT SENSITIVITY TEST, INSPECTION, Security Control Module.> Is the impact sensitivity OK?	OK.	Press the UNLOCK/DISARM button of transmitter, and finish the diagnosis.	Replace the security control module.

2. CHECK BATTERY DISCONNECT PROTECTION

1) Remove the key from the ignition switch.
2) Close all the doors and rear gate or trunk lid.
3) Open the front hood.
4) Press the LOCK/ARM button of the transmitter.
5) Disconnect the ground cable from the battery.
6) Reconnect the cable to the battery.
7) Check that the security indicator light blinks after reconnecting the battery cable.
If NG, replace the security control module.

3. SYMPTOM CHART

Symptom			Repair order	Reference
1	The security system cannot be set.		1. Check the transmitter function.	<Ref. to SL-16, CHECK TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
			2. Check the fuse.	<Ref. to SL-26, CHECK FUSE, INSPECTION, Security System.>
			3. Check the security control module power supply and ground circuit.	<Ref. to SL-26, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Security System.>
			4. Check the door switch.	<Ref. to SL-26, CHECK DOOR SWITCH, INSPECTION, Security System.>
			5. Replace the security control module.	<Ref. to SL-49, Security Control Module.>
2	The security system can be set, but the security indicator light or clearance light does not blink.	Security indicator light	Check the security indicator light circuit.	<Ref. to SL-27, CHECK SECURITY INDICATOR LIGHT CIRCUIT, INSPECTION, Security System.>
		Clearance light	Check the clearance light operation.	<Ref. to SL-30, CHECK CLEARANCE LIGHT OPERATION, INSPECTION, Security System.>
3	The security system does not alarm when one of the door is opened.		Check the door switch.	<Ref. to SL-26, CHECK DOOR SWITCH, INSPECTION, Security System.>
4	The security alarm does not activate.	All functions	Check the door switch.	<Ref. to SL-26, CHECK DOOR SWITCH, INSPECTION, Security System.>
		Security indicator light	Check the security indicator light circuit.	<Ref. to SL-27, CHECK SECURITY INDICATOR LIGHT CIRCUIT, INSPECTION, Security System.>
		Security horn	Check the security horn.	<Ref. to SL-29, CHECK SECURITY HORN, INSPECTION, Security System.>
		Clearance light	Check the clearance light operation.	<Ref. to SL-30, CHECK CLEARANCE LIGHT OPERATION, INSPECTION, Security System.>
		Starter motor deactivation	Check the interrupt relay circuit.	<Ref. to SL-31, CHECK INTERRUPT RELAY CIRCUIT, INSPECTION, Security System.>
5	The security system cannot be canceled.	Transmitter	Check the transmitter function.	<Ref. to SL-16, CHECK TRANSMITTER BATTERY AND FUNCTION, INSPECTION, Keyless Entry System.>
		Ignition switch	Check the ignition switch circuit.	<Ref. to SL-31, CHECK IGNITION SWITCH CIRCUIT, INSPECTION, Security System.>

4. CHECK FUSE

	Step	Check	Yes	No
1	**CHECK FUSE.** Remove and visually check the fuse No. 2 and 7 (in main fuse box). Is the fuse blown?	The fuse is not blown.	Check the power supply and ground circuit. <Ref. to SL-26, CHECK POWER SUPPLY AND GROUND CIRCUIT, INSPECTION, Security System.>	Replace the fuse with a new one.

5. CHECK POWER SUPPLY AND GROUND CIRCUIT

	Step	Check	Yes	No
1	**CHECK POWER SUPPLY.** 1)Disconnect the security control module harness connector. 2)Measure the voltage between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B93) No. 11 (+) — chassis ground (–):*** Is the measured value more than the specified value?	10 V	Go to step **2.**	Check the harness for open circuits and shorts between the security control module and fuse.
2	**CHECK POWER SUPPLY.** 1)Disconnect the security control module harness connector. 2)Measure the voltage between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B93) No. 13 (+) — chassis ground (–):*** Is the measured value more than the specified value?	10 V	Go to step **3.**	Check the harness for open circuits and shorts between the security control module and fuse.
3	**CHECK GROUND CIRCUIT.** Measure the resistance between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B93) No. 14 — chassis ground:*** Is the measured value less than the specified value?	10 Ω	The power supply and ground circuit are OK.	Repair the harness.

6. CHECK DOOR SWITCH

	Step	Check	Yes	No
1	**CHECK DOOR SWITCH CIRCUIT.** Measure the voltage between the security control module harness connector terminal and chassis ground. ***Connector & terminal*** ***Front and rear door:*** ***(B93) No. 5 (+) — chassis ground (–):*** ***Rear gate or trunk lid:*** ***(B93) No. 4 (+) — chassis ground (–):*** Is the measured value less than the specified value when each door, rear gate and trunk lid is opened?	0 V	Go to step **2.**	Go to step **3.**

	Step	Check	Yes	No
2	**CHECK DOOR SWITCH CIRCUIT.** Measure the voltage between the security control module harness connector terminal and chassis ground. ***Connector & terminal*** ***Front and rear door:*** ***(B93) No. 5 (+) — chassis ground (–):*** ***Rear gate or trunk lid:*** ***(B93) No. 4 (+) — chassis ground (–):*** Is the measured value more than the specified value when each door, rear gate and trunk lid is closed?	10 V	The door switch is OK.	Go to step **3.**
3	**CHECK DOOR SWITCH.** 1)Disconnect the door switch harness connector. 2)Measure the resistance between the door switch terminals. ***Terminal*** ***Front LH No. 1 — No. 3:*** ***Front RH No. 1 — No. 3:*** ***Rear LH No. 1 — No. 3:*** ***Rear RH No. 1 — No. 3:*** ***Rear gate No. 1 — No. 2:*** ***Trunk lid No. 1 — No. 2:*** Is the measured value more than the specified value when the door switch is pushed?	1 MΩ	Go to step **4.**	Replace the door switch.
4	**CHECK DOOR SWITCH.** Measure the resistance between the door switch terminals. ***Terminal*** ***Front LH No. 1 — No. 3:*** ***Front RH No. 1 — No. 3:*** ***Rear LH No. 1 — No. 3:*** ***Rear RH No. 1 — No. 3:*** ***Rear gate No. 1 — No. 2:*** ***Trunk lid No. 1 — No. 2:*** Is the measured value less than the specified value when the door switch is released?	1Ω	Check the harness for open circuits and shorts between the security control module and door switch.	Replace the door switch.

7. CHECK SECURITY INDICATOR LIGHT CIRCUIT

	Step	Check	Yes	No
1	**CHECK SECURITY INDICATOR LIGHT.** 1)Disconnect the security control module harness connector. 2)Ground the harness connector terminal with a suitable wire. ***Connector & terminal*** ***(B93) No. 9 — chassis ground:*** Does the security indicator light illuminate?	The security indicator light illuminates.	Replace the security control module.	Go to step **2.**

	Step	Check	Yes	No
2	**CHECK POWER SUPPLY FOR SECURITY INDICATOR LIGHT.** 1)Disconnect the connector from the combination meter. 2)Measure the voltage between the combination meter harness connector terminal and chassis ground. ***Connector & terminal*** ***(i10) No. 10 (+) — chassis ground (–):*** Is the measured value more than the specified value?	Is the voltage more than 10 V?	Go to step **3.**	Check the harness for open circuits and shorts between the combination meter and the fuse.
3	**CHECK SECURITY INDICATOR LIGHT CIRCUIT.** Measure the resistance between the combination meter harness connector terminal and security control module harness connector terminal. ***Connector & terminal*** ***(i11) No. 6 — (B93) No. 9:*** Is the measured value less than the specified value?	Is the resistance less than 10 Ω?	Replace the combination meter printed circuit.	Check the harness for open circuits and shorts between the combination meter and security control module.

8. CHECK SECURITY HORN

	Step	Check	Yes	No
1	**CHECK SECURITY HORN RELAY.** Remove and check the security horn relay. <Ref. to SL-51, Security Horn Relay.> Is the security horn relay OK?	The security horn relay is OK.	Go to step **2.**	Replace the security horn relay.
2	**CHECK POWER SUPPLY FOR SECURITY HORN RELAY.** Measure the voltage between the security horn relay harness connector terminal and chassis ground. ***Connector & terminal*** ***(B243) No. 1 (+) — chassis ground (–):*** Is the measured value more than the specified value?	10 V	Go to step **3.**	Check the harness for open circuits and shorts between the security horn relay and horn relay.
3	**CHECK POWER SUPPLY FOR SECURITY HORN RELAY.** Measure the voltage between the security horn relay harness connector terminal and chassis ground. ***Connector & terminal*** ***(B243) No. 2 (+) — chassis ground (–):*** Is the measured value more than the specified value?	10 V	Go to step **4.**	Check the harness for open circuits and shorts between the security horn relay and the fuse.
4	**CHECK HARNESS BETWEEN SECURITY HORN RELAY AND SECURITY CONTROL MODULE.** 1)Disconnect the security control module harness connector. 2)Measure the resistance between the security horn relay harness connector terminal and security control module harness connector terminal. ***Connector & terminal*** ***(B243) No. 3 — (B93) No. 18:*** Is the measured value less than the specified value?	10 Ω	Go to step **5.**	Check the harness for open circuits and shorts between the security horn relay and security control module.
5	**CHECK HARNESS BETWEEN SECURITY HORN RELAY AND SECURITY CONTROL MODULE.** Measure the resistance between the security horn relay harness connector terminal and security control module harness connector terminal. ***Connector & terminal*** ***(B243) No. 4 — (B93) No. 16:*** Is the measured value less than the specified value?	10 Ω	Go to step **6.**	Check the harness for open circuits and shorts between the security horn relay and security control module.
6	**CHECK HARNESS BETWEEN SECURITY CONTROL MODULE AND SECURITY HORN.** 1)Disconnect the security horn harness connector. 2)Measure the resistance between the security control module harness connector terminal and security horn harness connector terminal. ***Connector & terminal*** ***(B93) No. 17 — (B204) No. 1:*** Is the measured value less than the specified value?	10 Ω	Go to step **7.**	Check the harness for open circuits and shorts between the security control module and security horn.

	Step	Check	Yes	No
7	**CHECK SECURITY HORN.** Remove and check the security horn. <Ref. to SL-50, Security Horn.> Is the security horn OK?	The security horn is OK.	Replace the security control module.	Replace the security horn.

9. CHECK CLEARANCE LIGHT OPERATION

	Step	Check	Yes	No
1	**CHECK CLEARANCE LIGHT OPERATION.** Turn the parking switch ON and check if the clearance light illuminates. Does the clearance light illuminate?	The clearance lamp illuminates.	Go to step **2.**	Check the clearance light circuit.
2	**CHECK POWER SUPPLY FOR SECURITY CONTROL MODULE.** 1)Turn the parking switch OFF. 2)Disconnect the security control module harness connector. 3)Measure the voltage between the security control module harness connector terminal and chassis ground. ***Connector & terminal*** ***(B93) No. 11 (+) — chassis ground (–):*** Is the measured value more than the specified value?	10 V	Go to step **3.**	Check the harness for open circuits and shorts between the security control module and the fuse.
3	**CHECK HARNESS BETWEEN SECURITY CONTROL MODULE AND FUSE BOX.** 1)Disconnect the fuse box harness connector (B152). 2)Measure the resistance between the security control module harness connector terminal and fuse box harness connector terminal. ***Connector & terminal*** ***(B93) No. 12 — (B152) No. 11:*** Is the measured value less than the specified value?	10 Ω	Replace the security control module.	Check the harness for open circuits and shorts between the security control module and the fuse.

10.CHECK INTERRUPT RELAY CIRCUIT

	Step	Check	Yes	No
1	**CHECK INTERRUPT RELAY.** Remove and check the interrupt relay. <Ref. to SL-52, Interrupt Relay.> Is the interrupt relay OK?	The interrupt relay is OK.	Go to step **2.**	Replace the interrupt relay.
2	**CHECK POWER SUPPLY FOR INTERRUPT RELAY.** Measure the voltage between the interrupt relay harness connector terminal and chassis ground. ***Connector & terminal*** ***(B59) No. 1 (+) — chassis ground (–):*** Is the measured value more than the specified value when the ignition switch is turned to START?	10 V	Go to step **3.**	Check the harness for open circuits and shorts between the interrupt relay and ignition switch.
3	**CHECK HARNESS BETWEEN INTERRUPT RELAY AND SECURITY CONTROL MODULE.** Measure the resistance between the interrupt relay harness connector terminal and security control module harness connector terminal. ***Connector & terminal*** ***(B59) No. 4 — (B93) No. 15:*** Is the measured value less than the specified value?	10 Ω	Replace the security control module.	Check the harness for open circuits and shorts between the interrupt relay and security control module.

11.CHECK IGNITION SWITCH CIRCUIT

	Step	Check	Yes	No
1	**CHECK IGNITION SWITCH SIGNAL.** 1)Disconnect the security control module harness connector. 2)Turn the ignition switch ON. 3)Measure the voltage between the harness connector terminal and chassis ground. ***Connector & terminal*** ***(B93) No. 2 (+) — chassis ground (–):*** Is the measured value more than the specified value?	10 V	The ignition switch circuit is OK.	Check the harness for open circuits and shorts between the security control module and ignition switch.