
KEYLESS ENTRY SYSTEM

id091400109400

Outline

- A keyless entry system has been adopted in which locking/unlocking is performed by operation of the remote transmitter button, even from a location away from the vehicle.
- The start stop unit performs keyless entry system fail-safe. (See START STOP UNIT.)

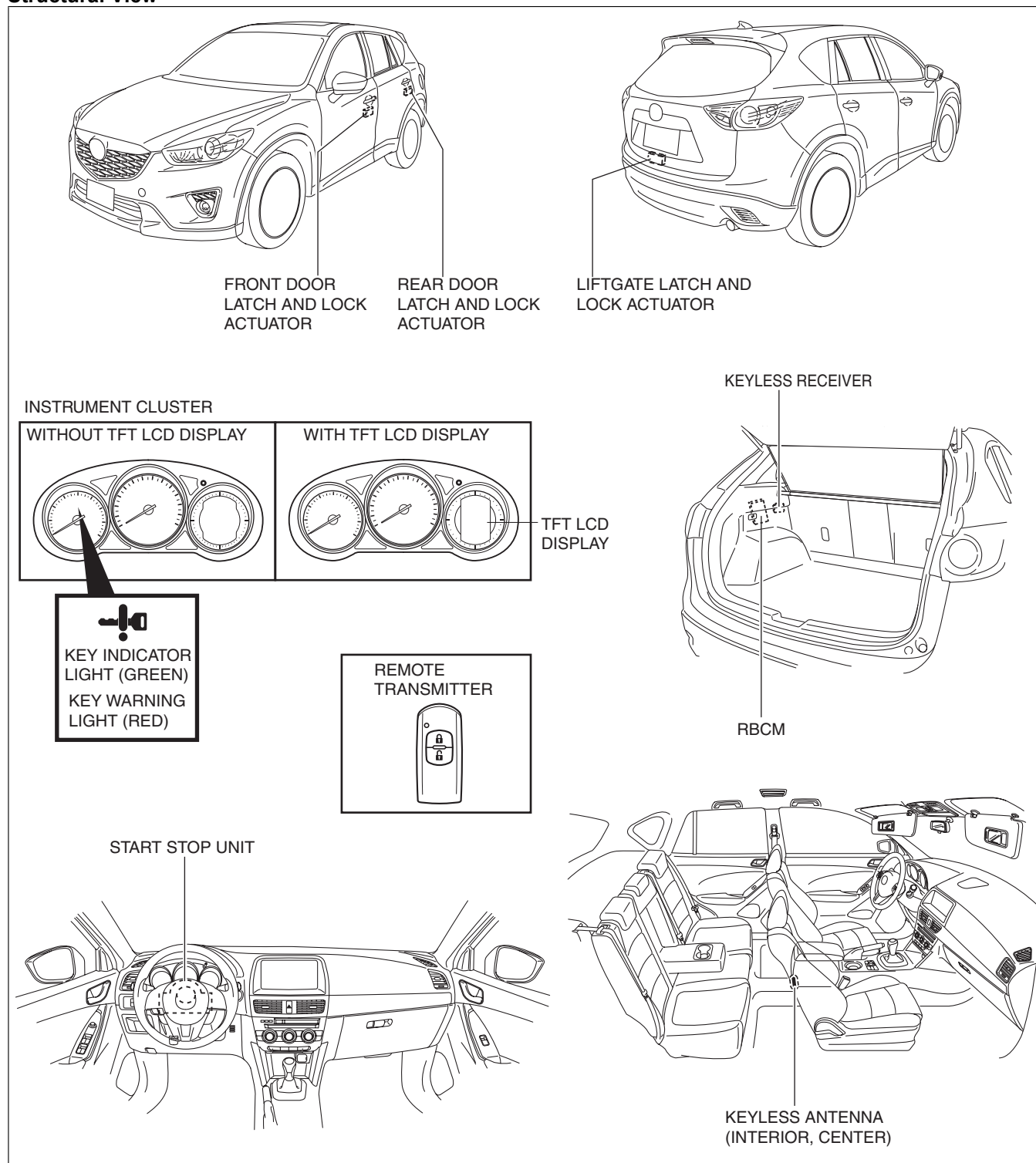
Function

- When the following operation is performed, the start stop unit verifies the remote transmitter ID data.
 - Locking/unlocking using a remote transmitter
- The keyless entry system has the following functions in the event that the user operates the system incorrectly or to prevent the user from leaving the vehicle without locking.
 - Auto re-lock function: After unlocking, if any door or the liftgate is not opened and a period of time according to the customize setting has elapsed, all doors are automatically locked.
 - Remote transmitter pause function: All the functions of the remote transmitter other than the remote transmitter used for the door lock are paused.
 - Alert function: If the system is operated incorrectly which results in a possible problem occurring, the system warns the user by using the indicator light, warning light, LCD display, and buzzer in the instrument cluster.

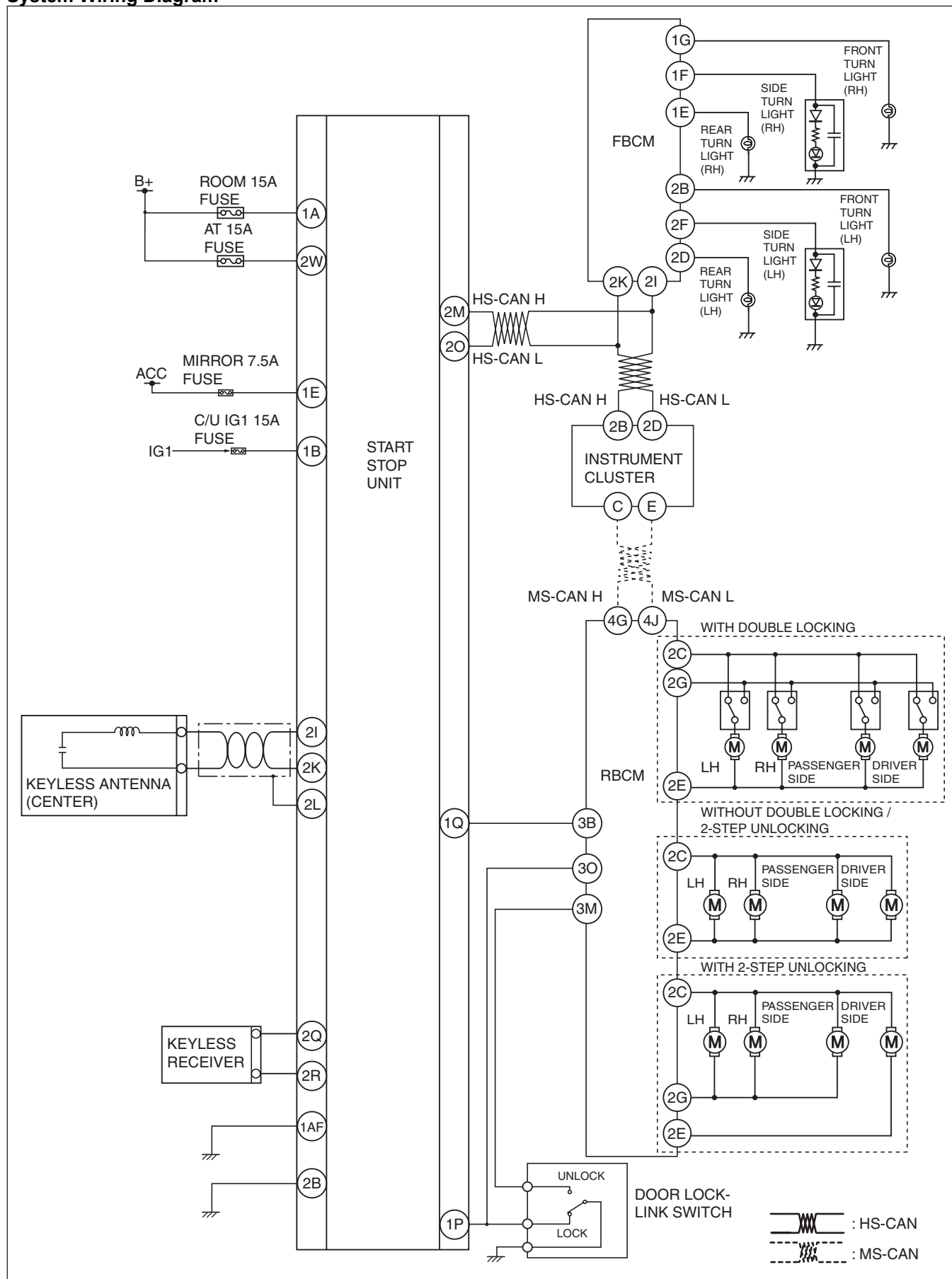
Remote transmitter battery voltage low indication function

- This function notifies the user that the battery voltage of the remote transmitter is low.

Structural View



System Wiring Diagram



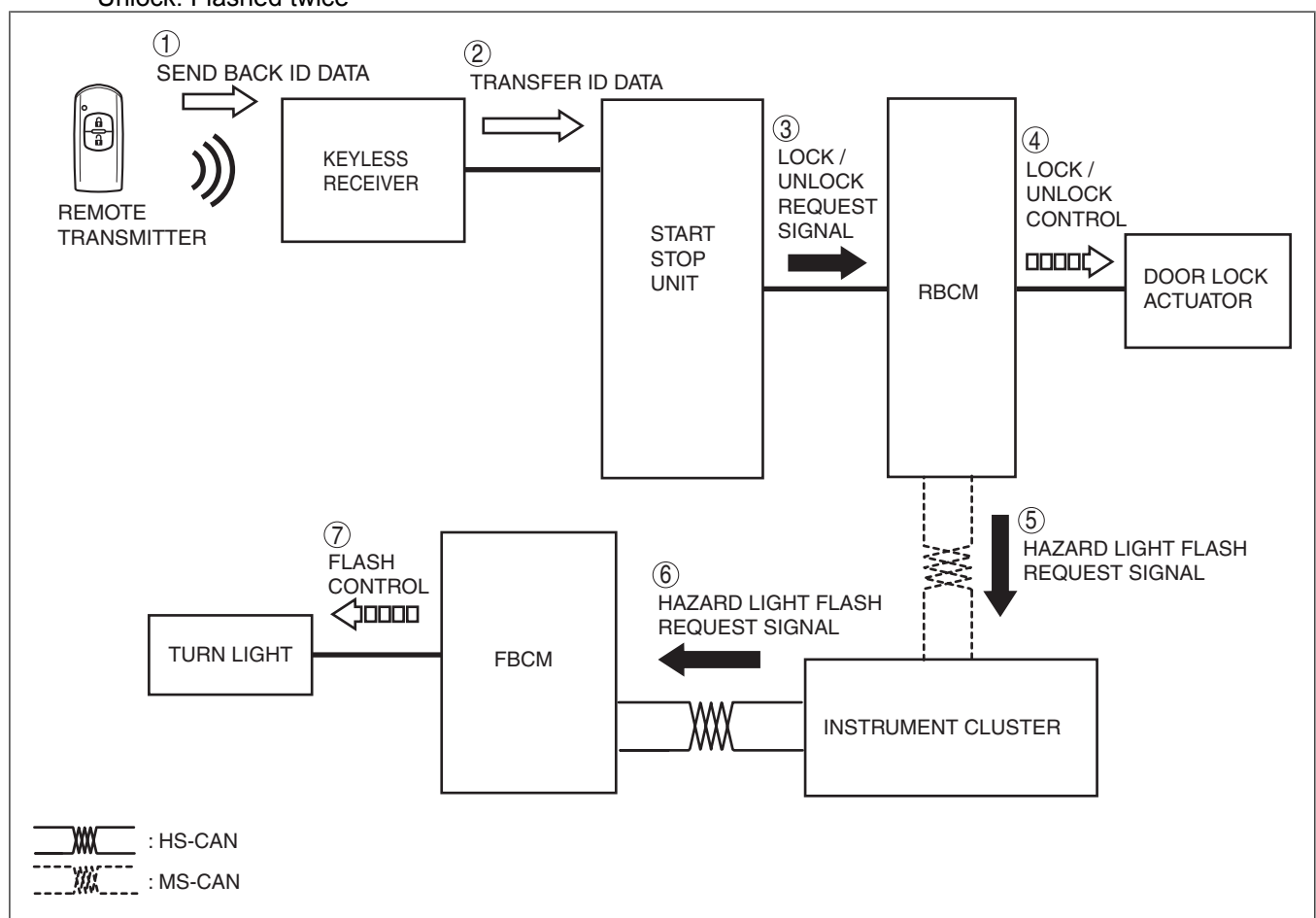
Operation

Lock/unlock operation using remote transmitter

Note

- If the lock button of the remote transmitter is operated when all of the following conditions are met, all the doors and the liftgate are locked.
 - Ignition is switched off (LOCK)
 - All doors are closed
- If the unlock button of the remote transmitter is operated when all of the following conditions are met, all the doors and the liftgate are unlocked.
 - Ignition is switched off (LOCK)

1. When the lock or unlock button of the remote transmitter is pressed, the remote transmitter sends ID data.
2. The keyless receiver receives ID data and transmits the data to the start stop unit.
3. The start stop unit verifies the ID data, and if the ID data matches, it sends a lock/unlock request signal to the rear body control module (RBCM).
4. The rear body control module (RBCM) operates the front/rear door lock actuator motor to lock/unlock the front/rear doors.
5. At the same time as the door lock/unlock operation, it sends a hazard light flash request signal to the instrument cluster as a CAN signal.
6. The instrument cluster sends the hazard light flash request signal to the front body control module (FBCM) as a CAN signal.
7. The front body control module (FBCM) controls the hazard lights to flash for the following number of times to signal that the lock/unlock operation is completed.
 - Lock: Flashed once
 - Unlock: Flashed twice



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Auto re-lock function operation

- After the start stop unit sends an unlock request signal to the rear body control module (RBCM), if any of the following operations is not performed in 30 s^{*1} , it sends a lock request signal to the rear body control module (RBCM) to lock the front/rear doors.

- A door or the liftgate is opened
- A lock/unlock operation is performed using the driver's side front door key cylinder.
- A lock/unlock operation is performed using the driver's side front door lock knob.
- A lock/unlock operation is performed using the remote transmitter.
- The ignition is switched to ACC or ON (engine off).

*1 : Customization setting time

Remote transmitter pause function operation

When door locking is performed

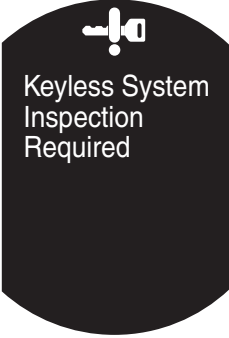


- If a door is locked by the remote transmitter operation when all the following conditions are met, all the functions of the remote transmitter other than the remote transmitter used for the door lock operation are paused.
 - All doors and liftgate are closed
 - Ignition is switched off (LOCK)

Remote transmitter pause cancel operation

- The functions of the paused remote transmitter are restored when the following conditions is met:
 - A remote transmitter with which the engine can be started is brought inside the vehicle.
 - The lock/unlock button on the paused remote transmitter is pressed.

Alert function operation

- Under the following conditions, the start stop unit sends a warning request signal to the instrument cluster via CAN communication to illuminate the push button start indicator light (amber).
- When the instrument cluster receives the warning request signal, it displays the warning indicator in the TFT LCD display (with TFT LCD display) or it flashes the KEY warning light (without TFT LCD display).

Condition	Instrument cluster			Push button start
	Keyless warning alarm	KEY warning light (red)	TFT LCD display	Indicator light (amber)
Keyless entry system malfunction	—	On		Flash
Driver's door is opened with ignition in ACC	European (L.H.D. U.K.) specs. <ul style="list-style-type: none"> • Pattern A*1×6 times Without European (L.H.D. U.K.) specs. <ul style="list-style-type: none"> • Pattern A*1×Continuous 	—		—
Remote transmitter cannot be detected inside vehicle when all doors are closed with ignition not switched off (LOCK)	Pattern B*1	Flash		—

*1 : For the keyless warning alarm sound pattern, refer to the keyless warning alarm. (See KEYLESS WARNING ALARM.)

Remote transmitter battery voltage low indication function operation

- When the ignition is switched from ON (engine off or on) to off (LOCK) under the condition indicated in the table, the start stop unit sends a battery voltage low indication request signal to the instrument cluster as a CAN signal.
- When the instrument cluster receives the battery voltage depletion display request signal, it performs the remote transmitter battery voltage low indication in the TFT LCD display (with TFT LCD display) or it flashes the KEY indicator light (without TFT LCD display).

Condition	Instrument cluster	
	KEY indicator light (green)	Indication on LCD
Start stop unit receives code for low remote transmitter battery voltage	Flash (for approx. 30 s after ignition switched off)	