POSITION MEMORY SYSTEM [(E)]

Outline

- A position memory system has been adopted in which the position of the driver's seat can be programmed and positioned.
- The body control module (BCM) controls the position memory system.

Outline

- The position memory system stores/recalls a safe and appropriate driving posture for the occupant.

Function

Seat position detection function

- The position memory control module detects the seat position using the pulse signals it receives from the position sensors integrated with each motor.

Memory storage function

- The body control module (BCM) can program the seat position corresponding to each individual remote transmitter, or the seat position corresponding to each switch of the position memory switch.
- The body control module (BCM) also programs the active driving display indication position, brightness level, and display information when the seat position is programmed.
- The door-electrical supply unit also programs the outer mirror angles when the seat position is programmed.

Memory recall function

- The body control module (BCM) can automatically position the seats programmed to each individual remote transmitter or each position memory switch.
- The body control module (BCM) also recalls the programmed active driving display indication position, brightness level, and display information when the seat position is recalled.
- The door-electrical supply unit recalls the programmed outer mirror angles when the seat position is recalled.

Memory clearing function

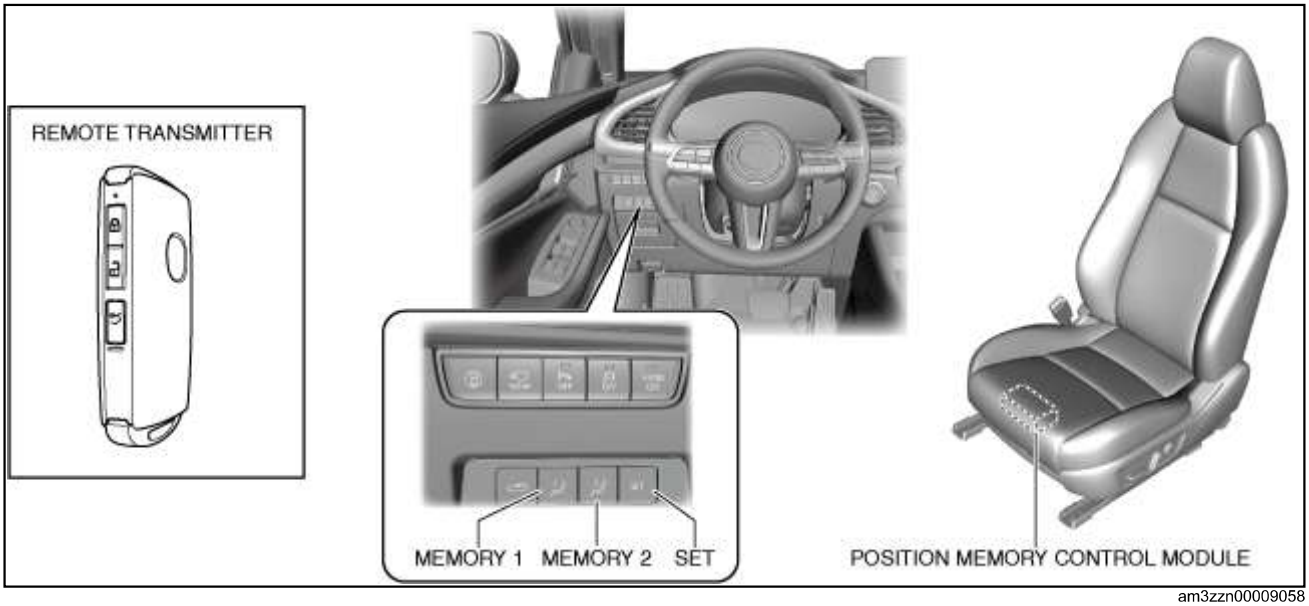
- The body control module (BCM) can clear all programmed seat positions programmed with the position memory switch and remote transmitter when any of the following conditions is met.
  - Remote transmitter is programmed, replaced, or cleared
  - Malfunction occurred in a position sensor and body control module (BCM) activated fail-safe function
- The body control module (BCM) can clear the programmed seat position on each individual remote transmitter by performing the following operation using a remote transmitter.

  Note

  - Clearing of programmed seat positions can be performed while the power seat system and seat positioning functions are not operating.

  1. Ignition is switched OFF
  2. Press the SET switch of the position memory switch.
  3. Within approx. 5 s after Step 2, press the LOCK button of the remote transmitter.
- If any of the following parts is replaced, all the seat positions programmed by using the M-MDS can be cleared. For details, refer to [POSITION MEMORY SYSTEM MEMORY CLEARING PROCEDURE] in the workshop manual.
  - Position memory control module
  - Body control module (BCM)
  - Door-electrical supply unit

Structural View



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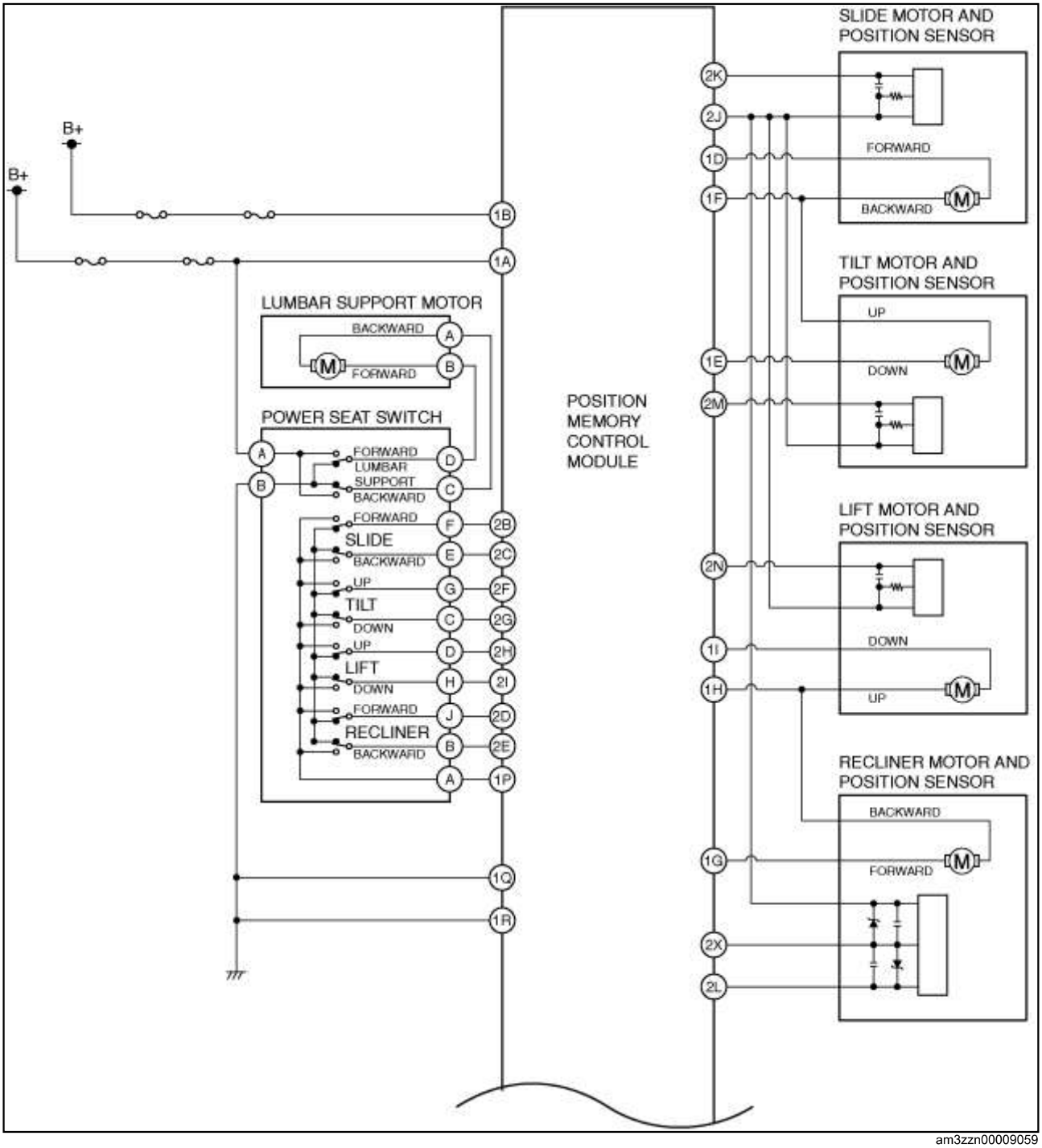
System Diagram



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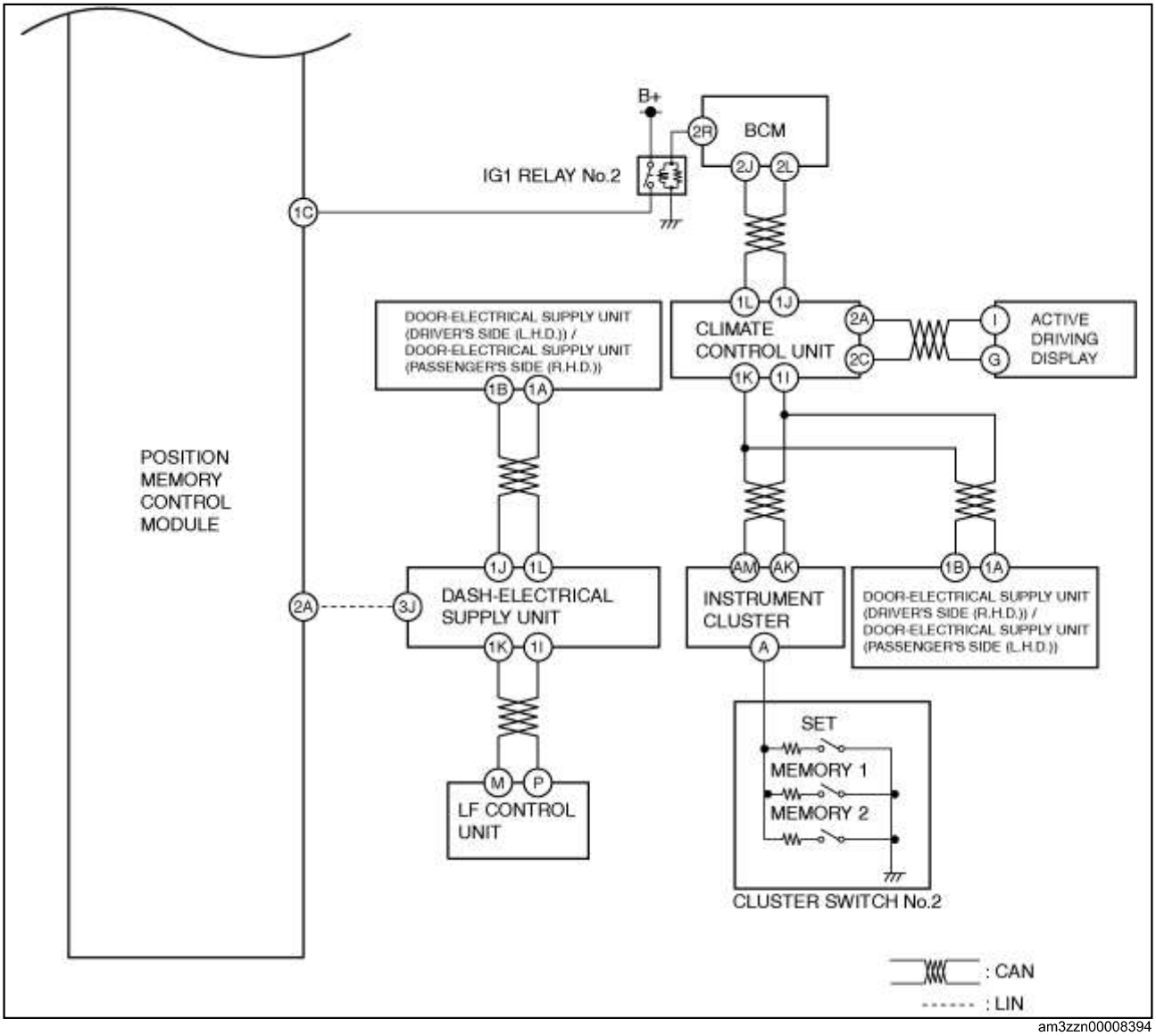

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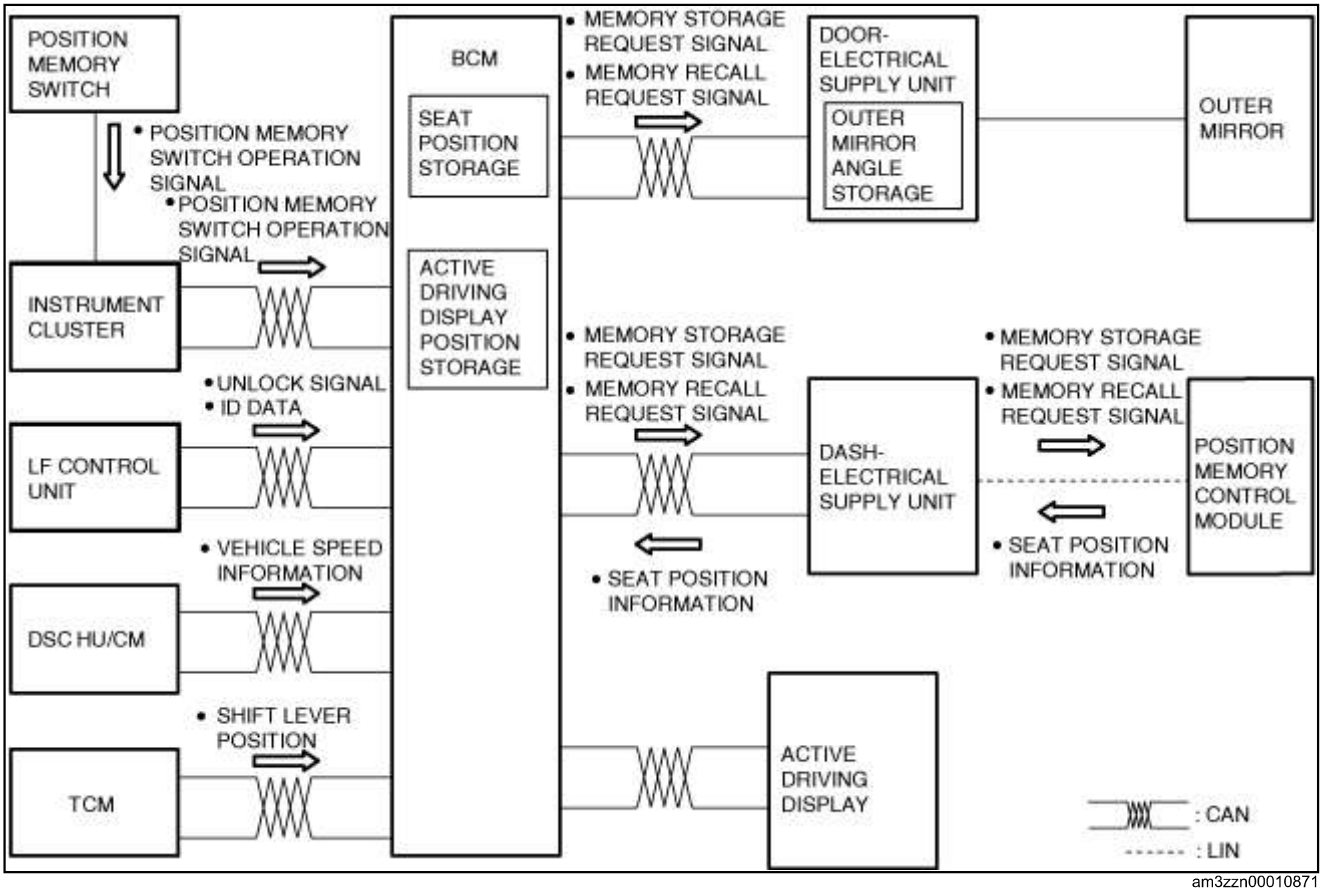
Block Diagram



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Function

Seat position detection function

- The memory can be programmed using the remote transmitter or the position memory switch when all of the following conditions are met.
  - — Using remote transmitter
    - Ignition is switched ON
    - Power seat system is not operating
    - Power outer mirror system is not operating
    - Active driving display is not operating
    - Seat positioning function is not operating
  - — Using position memory switch
    - Ignition is switched ON
    - Power seat system is not operating
    - Power outer mirror system is not operating
    - Active driving display is not operating
    - Seat positioning function is not operating
- The programmed memory can be automatically recalled using the remote transmitter or the position memory switch when all of the following conditions are met.
  - — Using remote transmitter
    - Power seat system is not operating
    - Power outer mirror system is not operating
    - Active driving display is not operating
    - Seat positioning function is not operating
    - Seat position is programmed using remote transmitter
    - The driver's door is opened within approx. 90 s after the doors are unlocked using a touch sensor or the remote transmitter.
  - — Using position memory switch
    - Power seat system is not operating
    - Seat positioning function is not operating
    - Seat position is programmed using position memory switch
    - Vehicle speed is 3 km/h or less
    - ATX: Shift lever is in P position
    - MTX: Parking brake is applied

Memory storage function

- Using remote transmitter
  1. Operate the power seat switch to move the seat to the position you want to program.

     Note

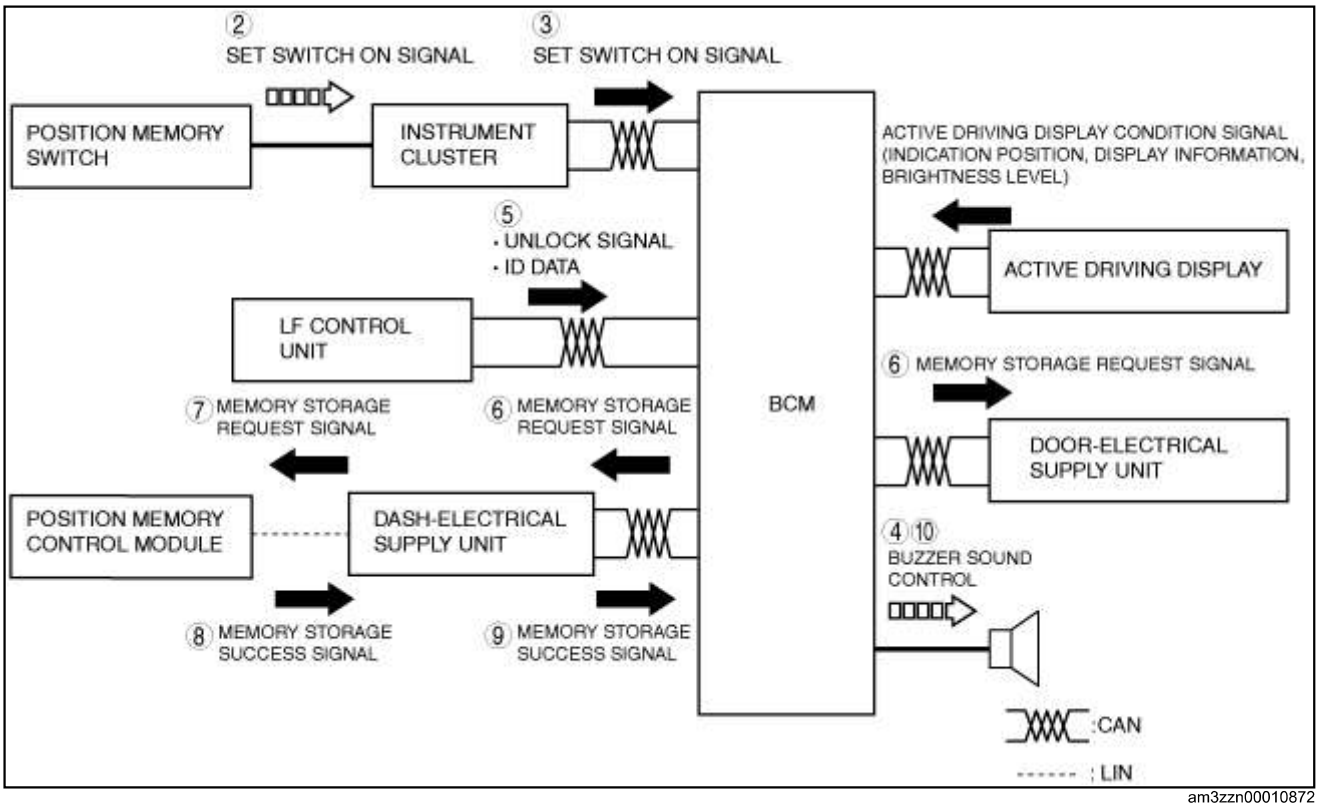
     • The body control module (BCM) also programs the active driving display indication position, brightness level, and display information when the seat position is programmed. Refer to [ACTIVE DRIVING DISPLAY] for the setting procedure of the active driving display.
     (See ACTIVE DRIVING DISPLAY.)
     • The door-electrical supply unit also programs the outer mirror angles when the seat position is programmed. Refer to [POWER OUTER MIRROR] for the setting procedure of the outer mirrors.

(See POWER OUTER MIRROR [(E)].)

2. When the SET switch of the position memory switch is pressed, a SET switch on signal is input to the instrument cluster.
3. The instrument cluster receives the SET switch on signal and transmits it to the body control module (BCM).
4. When the body control module (BCM) receives the SET switch on signal, it enters the seat position programming mode and sounds the buzzer.
5. When the unlock button on the remote transmitter is pressed within approx. 5 s after entering seat position programming mode, the LF control unit sends ID data and an unlock signal to the body control module (BCM).
6. When the body control module (BCM) receives the ID data and unlock signal, it sends a memory storage request signal to the dash-electrical supply unit and the door-electrical supply unit.
7. When the dash-electrical supply unit receives the memory storage request signal, it transmits the signal to the position memory control module.
8. When the position memory control module receives the memory storage request signal, it stores the seat position and sends a memory storage success signal to the dash-electrical supply unit.
9. The dash-electrical supply unit receives the memory storage success signal and transmits it to the body control module (BCM).
10. When the body control module (BCM) receives the memory storage success signal, it returns to normal mode and sounds the buzzer.

Note

- The body control module (BCM) programs the active driving display indication position, brightness level, and display information when the seat position is programmed based on the active driving display status signal.
- The door-electrical supply unit programs the outer mirror angles when it receives the memory storage request signal from the body control module (BCM).



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- Using position memory switch (Ex.: Memory switch 1 is used)

1. Operate the power seat switch to move the seat to the position you want to program.

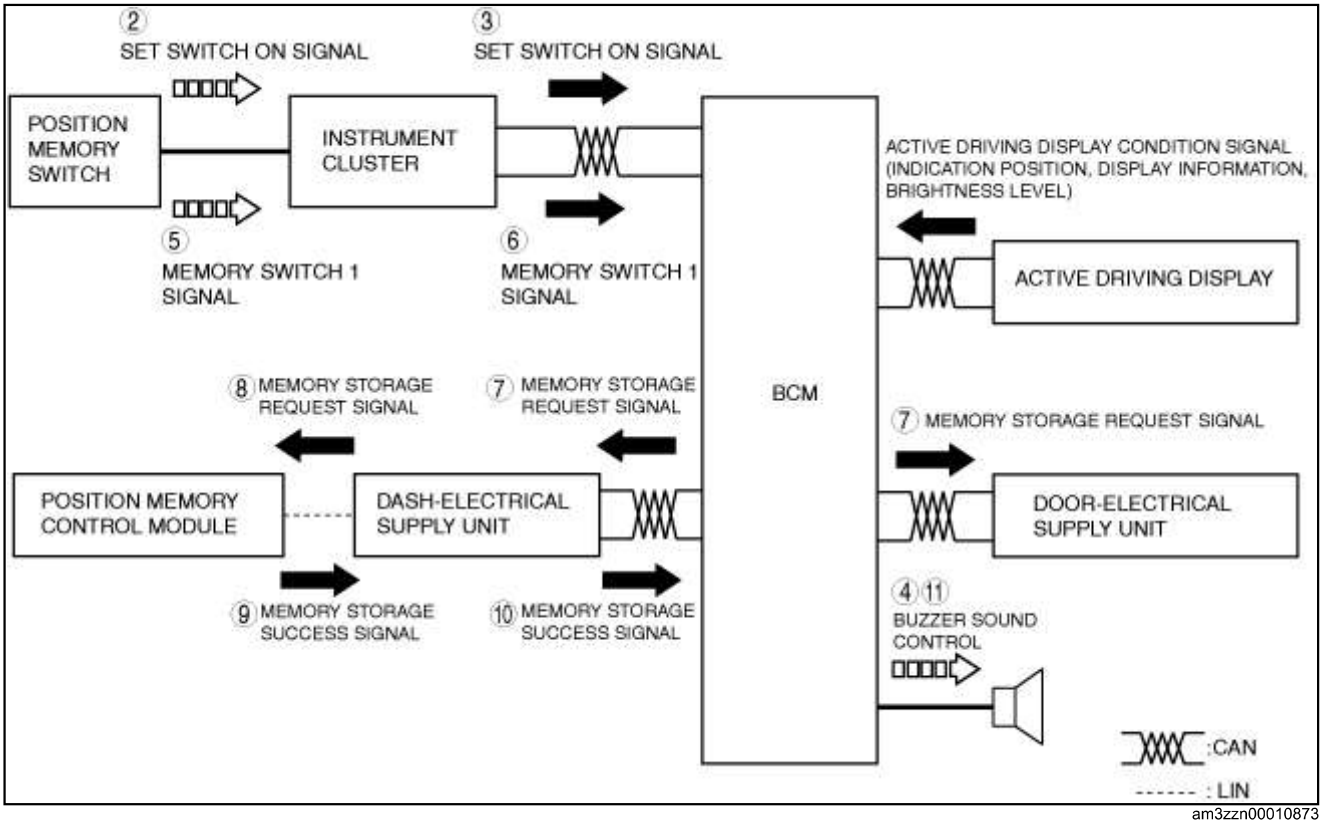
Note

- The body control module (BCM) also programs the active driving display indication position, brightness level, and display information when the seat position is programmed. Refer to [ACTIVE DRIVING DISPLAY] for the setting procedure of the active driving display.
(See ACTIVE DRIVING DISPLAY.)
- The door-electrical supply unit also programs the outer mirror angles when the seat position is programmed. Refer to [POWER OUTER MIRROR] for the setting procedure of the outer mirrors.
(See POWER OUTER MIRROR [(E)].)

2. When the SET switch of the position memory switch is pressed, a SET switch on signal is input to the instrument cluster.
3. When the instrument cluster receives the SET switch on signal, it transmits the signal to the body control module (BCM).
4. When the body control module (BCM) receives the SET switch on signal, it enters the seat position programming mode and sounds the buzzer.
5. When memory switch 1 is pressed within approx. 5 s after entering seat position programming mode, a memory switch 1 signal is sent to the instrument cluster.
6. When the instrument cluster receives the memory switch 1 signal, it transmits the signal to the body control module (BCM).
7. When the body control module (BCM) receives the memory switch 1 signal, it sends a memory recall request signal to the dash-electrical supply unit and the door-electrical supply unit.
8. When the dash-electrical supply unit receives the memory storage request signal, it transmits the signal to the position memory control module.
9. When the position memory control module receives the memory storage request signal, it stores the seat position and sends a memory storage success signal to the dash-electrical supply unit.
10. The dash-electrical supply unit receives the memory storage success signal and transmits it to the body control module (BCM).
11. When the body control module (BCM) receives the memory storage success signal, it returns to normal mode and sounds the buzzer.

Note

- The body control module (BCM) programs the active driving display indication position, brightness level, and display information when the seat position is programmed based on the active driving display status signal.
- The door-electrical supply unit programs the outer mirror angles when it receives the memory storage request signal from the body control module (BCM).



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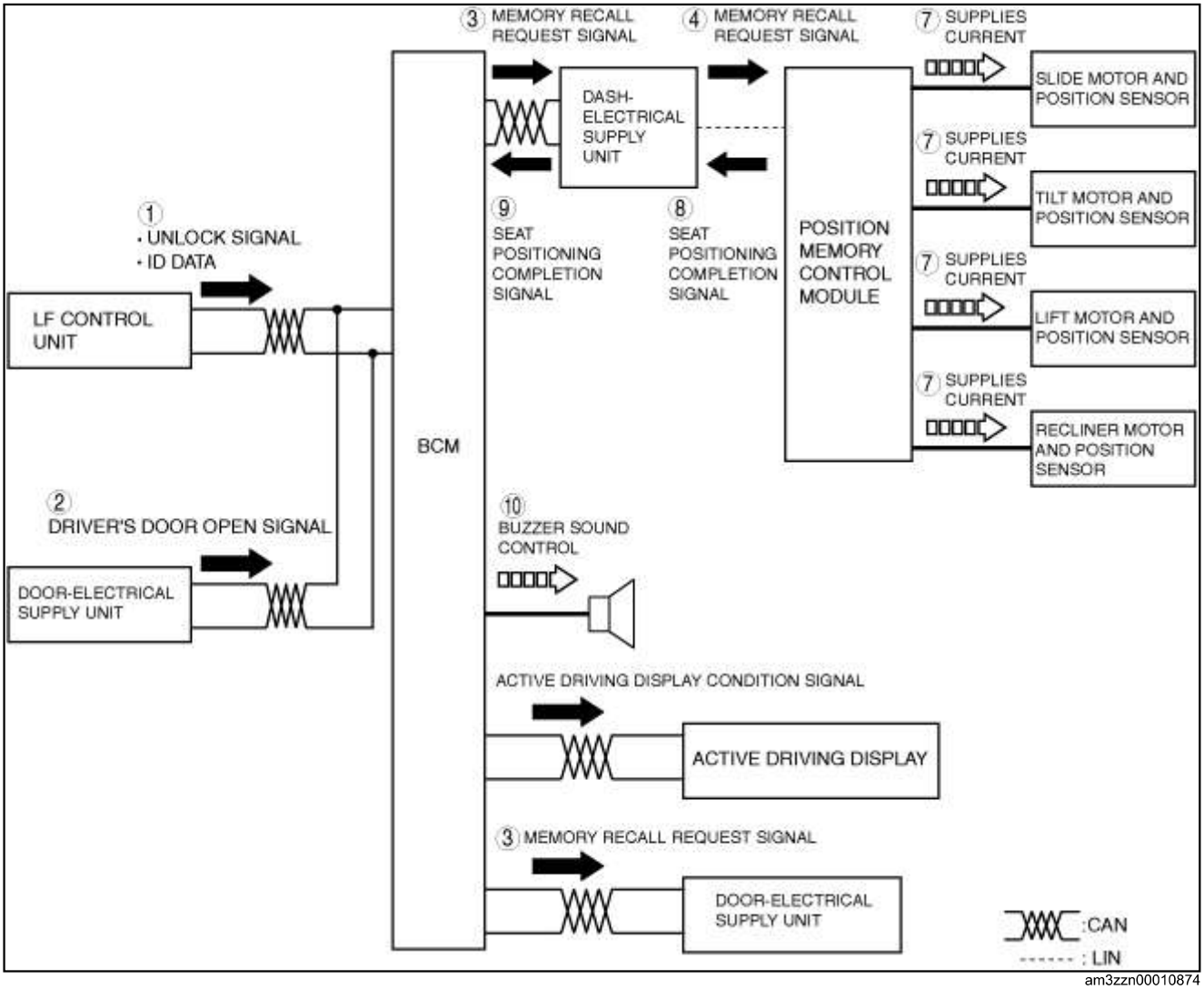
Memory recall function

- Using remote transmitter
  1. When an unlock operation is performed using a remote transmitter or front door touch sensor, the LF control unit sends ID data and an unlock signal to the body control module (BCM).
  2. When the driver's door is opened, the door-electrical supply unit sends a driver's door open signal to the body control module (BCM).
  3. When the body control module (BCM) receives the ID data, unlock signal, and driver's door open signal, it sends a memory recall request signal to the dash-electrical supply unit and the door-electrical supply unit.
  4. The dash-electrical supply unit receives the memory recall request signal and transmits the signal to the position memory control module.
  5. When the position memory control module receives the memory recall request signal, it starts the seat positioning operation.
  6. When the position memory control module starts the seat positioning operation, it calculates the difference between the current seat position and the programmed seat position, and determines the direction of movement and distance for each motor.
  7. The position memory control module supplies power to each motor based on the determined direction of movement and distance.
  8. When the position memory control module detects that the seat has moved to the programmed position, it stops the seat positioning operation and sends a seat positioning completion signal to the dash-electrical supply unit.
  9. The dash-electrical supply unit receives the seat positioning completion signal and transmits it to the body control module (BCM).
  10. When the body control module (BCM) receives the seat positioning completion signal, it sounds the buzzer.

  Note

  - The body control module (BCM) sends an active driving display status signal at the same time the seat is moved to the programmed position, and it moves the active driving display to the programmed position (indication position, brightness level, display information).
  - When the door-electrical supply unit receives the memory recall request signal from the body control module (BCM), it moves the outer mirrors to the programmed angles.



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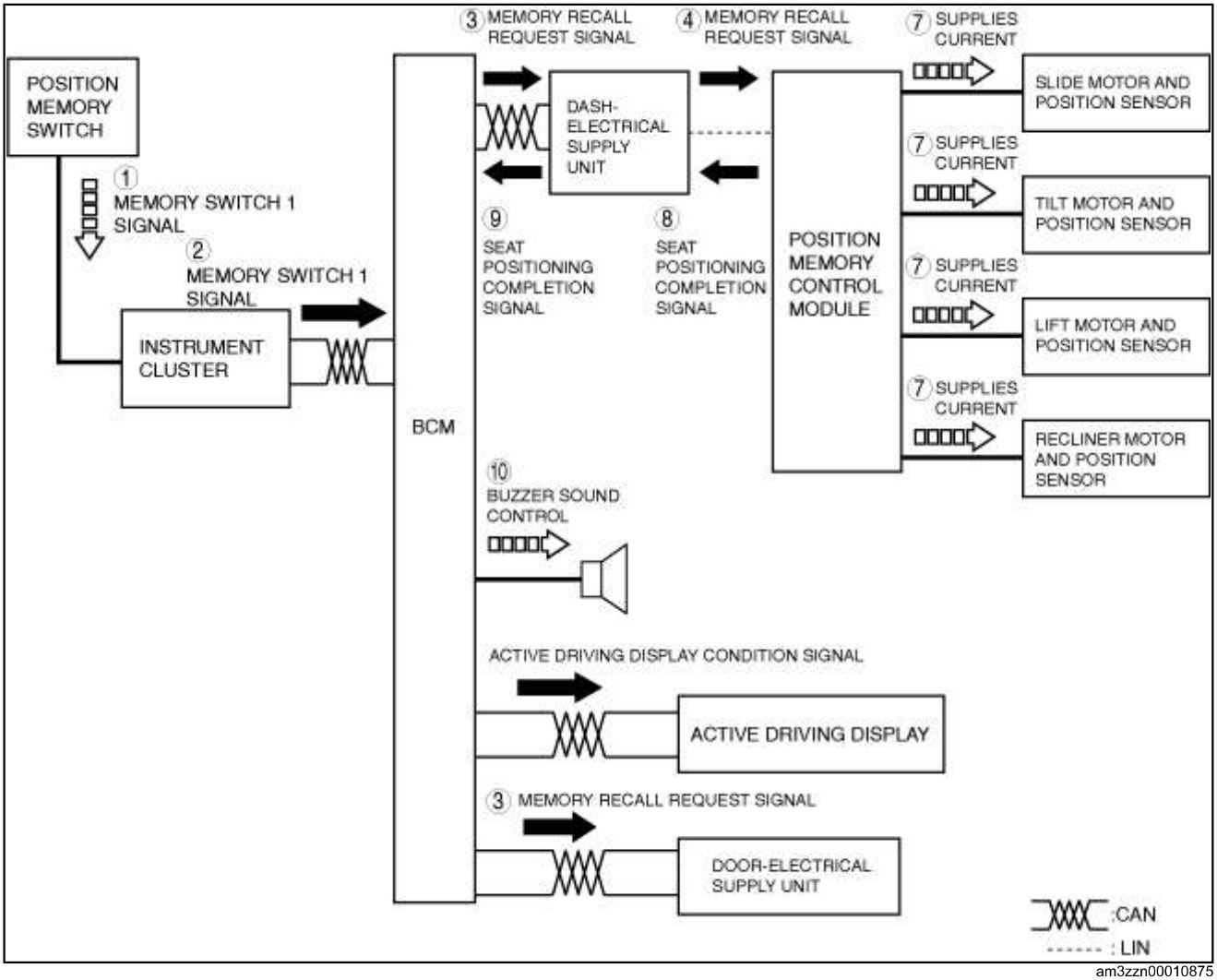
- Using position memory switch (Ex.: Memory switch 1 is used)
  1. When memory switch 1 is pressed, a memory switch 1 signal is input to the instrument cluster.
  2. When the instrument cluster receives the memory switch 1 signal, it sends the signal to the body control module (BCM).
  3. When the body control module (BCM) receives the memory switch 1 signal, it sends a memory recall request signal to the dash-electrical supply unit and the door-electrical supply unit.
  4. The dash-electrical supply unit receives the memory recall request signal and transmits the signal to the position memory control module.
  5. When the position memory control module receives the memory recall request signal, it starts the seat positioning operation.
  6. When the position memory control module starts the seat positioning operation, it calculates the difference between the current seat position and the programmed seat position, and determines the direction of movement and distance for each motor.
  7. The position memory control module supplies power to each motor based on the determined direction of movement and distance.
  8. When the position memory control module detects that the seat has moved to the programmed position, it stops the seat positioning operation and sends a seat positioning completion signal to the dash-electrical supply unit.
  9. The dash-electrical supply unit receives the seat positioning completion signal and transmits it to the body control module (BCM).
  10. When the body control module (BCM) receives the seat positioning completion signal, it sounds the buzzer.

Note

- The body control module (BCM) sends an active driving display position signal at the same time the seat is moved to the programmed position, and it moves the active driving display to the programmed position (indication position, brightness level, display information).
- When the door-electrical supply unit receives the memory recall request signal from the body control module (BCM), it moves the outer mirrors to the programmed angles.



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