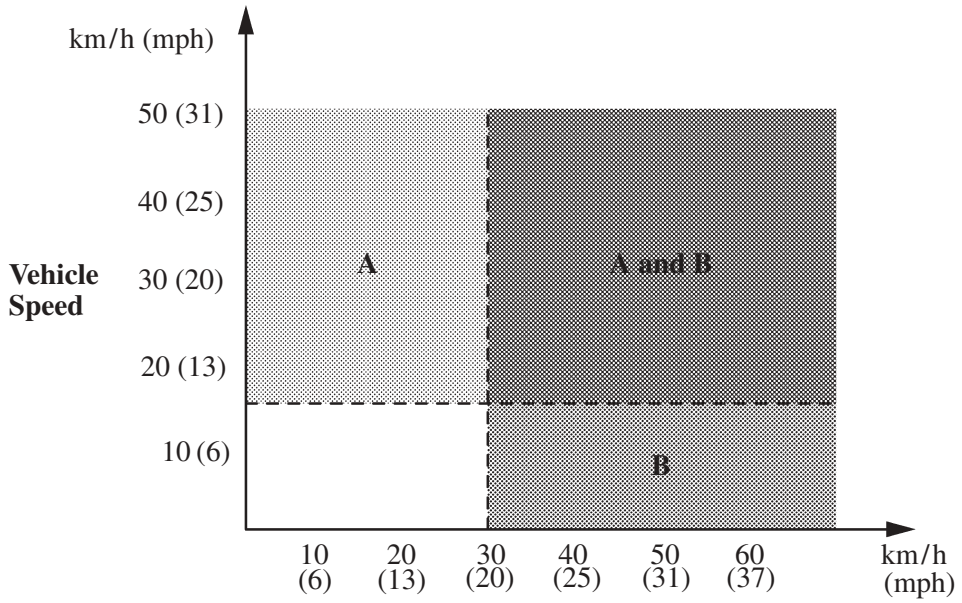
■SYSTEM OPERATION

1. General

The pre-crash safety system consists of the following three operations: a pre-crash safety (unavoidable collision) operation, front or rear wheel skid tendency operation and sudden braking operation. The impact dampening components consists of the operation ranges indicated below.

Range	Operation	Operation Condition	Impact Dampening Component
A	Front or Rear Wheel Skid Tendency Operation Sudden Braking Operation	● Power source is IG-ON. ● Seat belt is buckled. ● Vehicle speed is approx. 15 km/h (10 mph) or above.	● Seat Belt Retracting Operation
B	Pre-crash safety Operation	● Power source is IG-ON. ● Seat belt is buckled. ● Vehicle Speed is approx. 0 km/h (0 mph) or above. ● Oncoming vehicle relative speed is approx. 30 km/h (20 mph) or above.	● Seat Belt Retracting Operation ● Brake Assist Standby Condition



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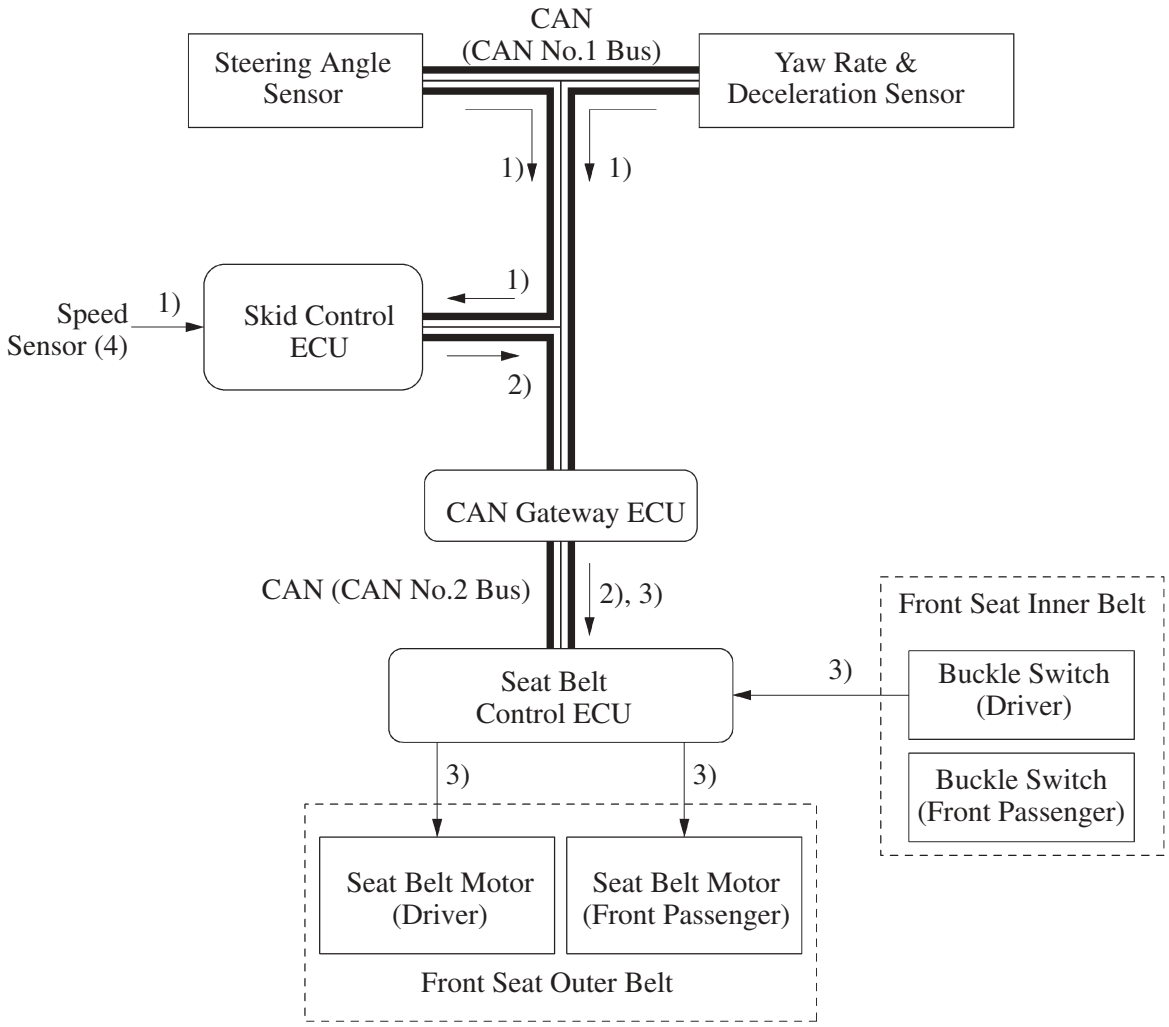
2. Front or Rear Wheel Skid Tendency Operation

1) While the vehicle is traveling at approx. 15 km/h (10 mph) or above, the skid control ECU determines the front or rear wheel skid tendency condition based on the signals from the steering angle sensor, yaw rate & deceleration sensor and speed sensors.

2) The skid control ECU outputs a seat belt operation request signal to the seat belt control ECU.

3) The seat belt control ECU determines the seat belt motor operation conditions based on this signal and the seat belt buckle switch signal. Then, it retracts slack in the seat belts by operating the seat belt motors.

4) The seat belts return to a normal state when the relevant conditions of the vehicle have stabilized.

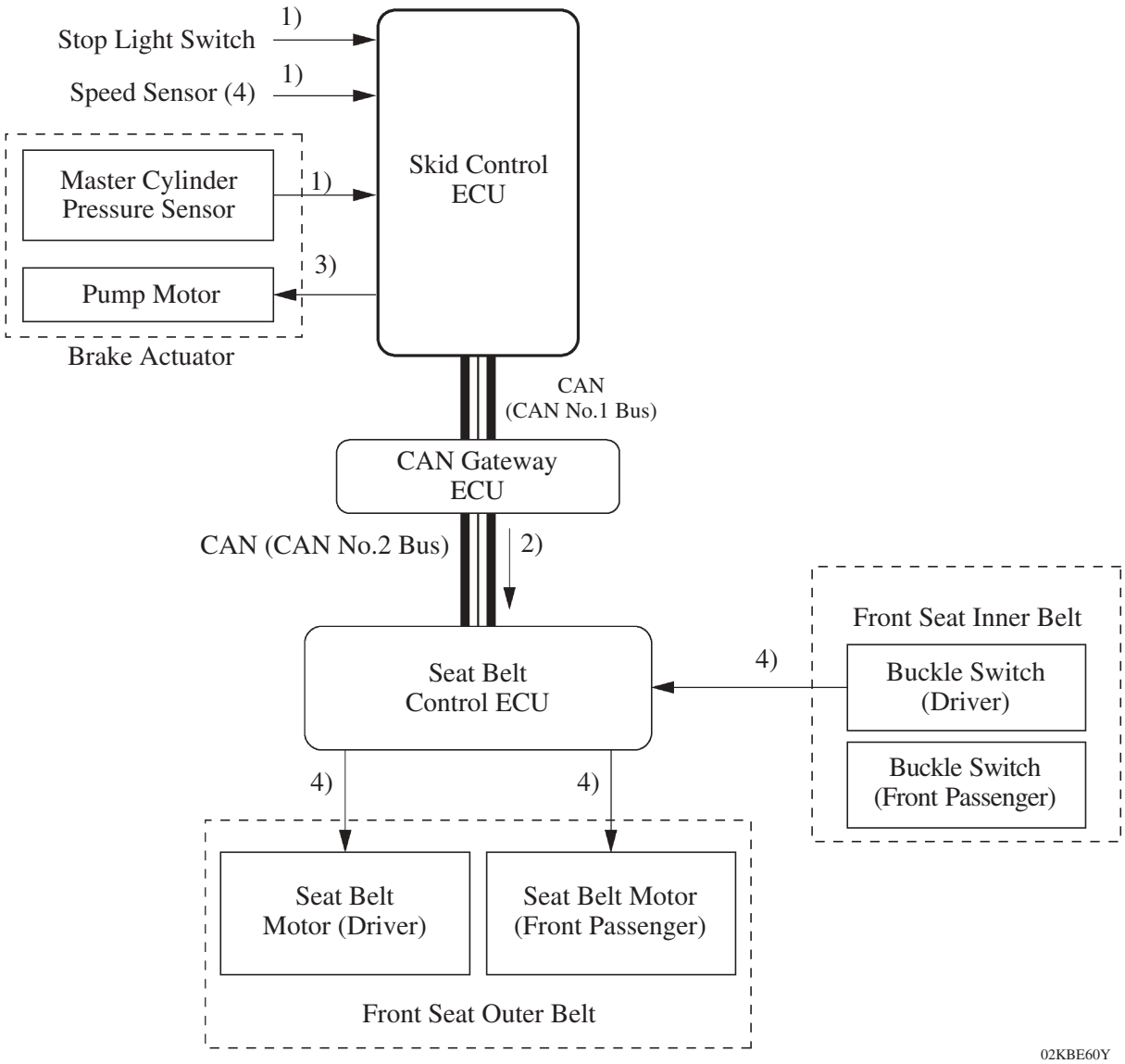


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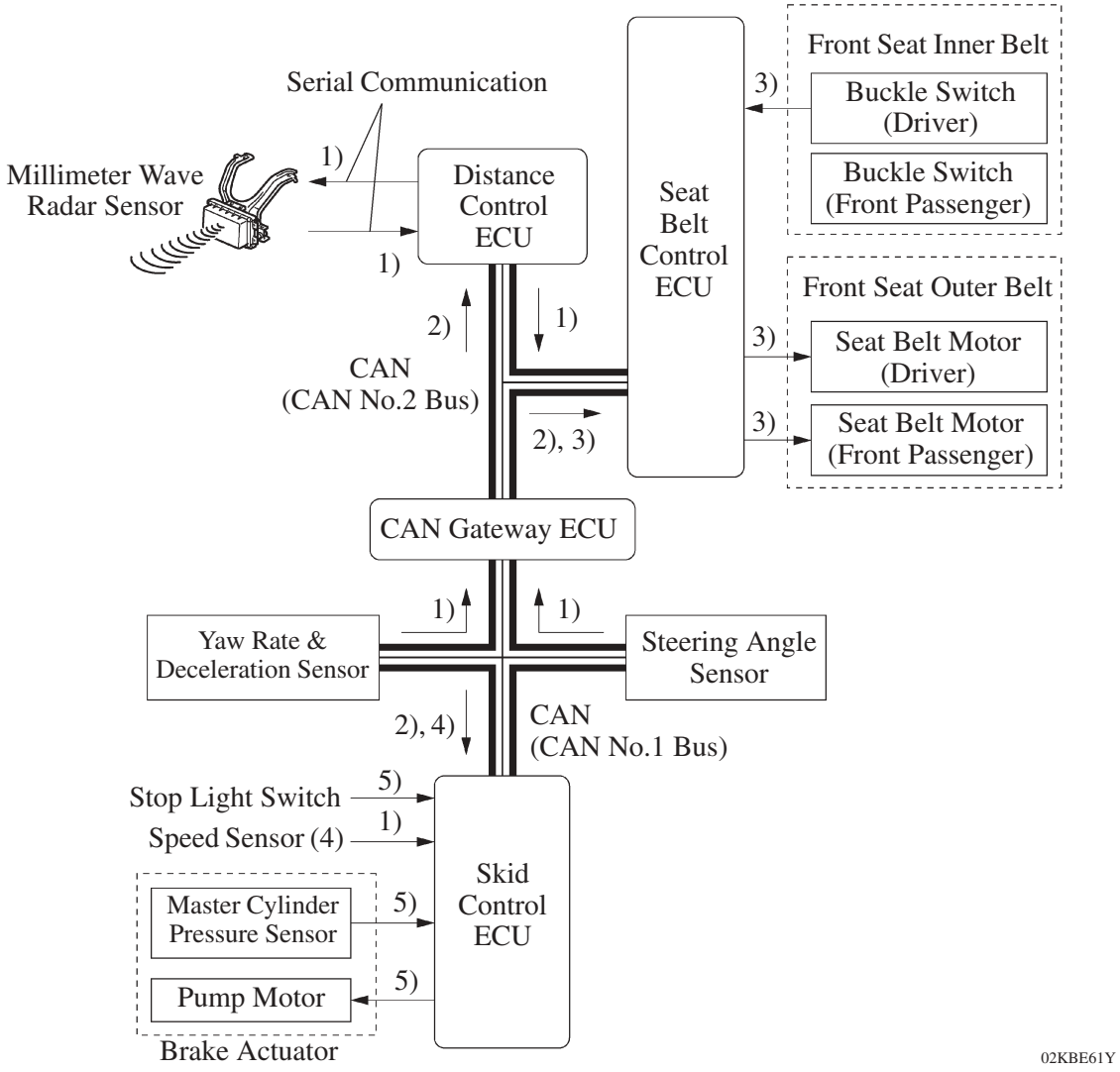
3. Sudden Braking Operation

1) While the vehicle is traveling at approx. 15 km/h (10 mph) or above, the skid control ECU can determine a sudden braking condition based on the signals from the master cylinder pressure sensor, stop light switch and speed sensors.
2) At this time, the skid control ECU outputs a seat belt operation request signal to the seat belt control ECU.
3) Brake assist control enters standby mode according to the determination of the skid control ECU.
4) The seat belt control ECU determines the seat belt motor operation conditions based on this signal and the seat belt buckle switch signal. Then, it retracts slack in the seat belts by operating the seat belt motors.
5) The seat belts return to a normal state when the brake pedal is released.



4. Pre-crash safety Operation

1) The distance control ECU determines that an unavoidable collision condition exists based on the signals received from the millimeter wave radar sensor, speed sensor, steering angle sensor, and yaw rate & deceleration sensor.
2) At this time, the distance control ECU outputs a seat belt operation request signal to the seat belt control ECU, a brake assist standby request signal to the skid control ECU.
3) The seat belt control ECU determines the seat belt motor operation condition based on this signal and the seat belt buckle switch signal, and retracts the slack in the seat belts by operating the seat belt motors.
4) Upon receiving this signal, the skid control ECU switches the brake assist to the standby mode.
5) When the brake assist is in the standby mode and the stop light switch ON signal is input into the skid control ECU, this ECU operates the brake assist based on the master cylinder pressure sensor signal.
6) If no collision occurs, the seat belts and the brake assist will return to their normal states.



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