



System Functions

- Multiplex Control System (Multiplex function, Wake up/sleep function, Fail-safe function, Self-diagnosis function*)
*: Self-diagnosis function mode 1 is the self-diagnosis for the multiplex control system.
Self-diagnosis function mode 2 is the failure diagnosis for the input line of each system.
- Integrated Control System (Engine oil pressure indicator flasher circuit, Key-in reminder circuit, Light-on reminder circuit, Seat belt reminder circuit)
- Dash Lights Brightness Control
- Entry Light Control System
- Rear Window Defogger
- Trunk lid Opener
- Power Door Locks (with keyless entry system)
- Power Window (with key-off timer operation)
- Wiper/washers (with speed respondent intermittent wiper)
- Security Alarm System
- Interlock System (see [section 14](#))

Multiplex Communication System

Multiplex Communication Functions

- To reduce the number of wire harnesses, digital signals are sent via shared multiplex communication lines rather than sending normal electrical signals through individual wires.
- The input signals from each switch are converted to digital signals at the central processing unit (CPU). The digital signals are sent from the transmitter unit to the receiver unit as serial signals.
- The transmitted signal is converted to a switch signal at the receiver unit, and it operates the related component.
- There are exclusive communication lines between each of the multiplex control units:
 - Door → Driver's (from the door to the driver's multiplex control units) Wire color: BRN/YEL
 - Driver's → Passenger's (from the driver's to the passenger's multiplex control units) Wire color: BRN/WHT
 - Passenger's → Driver's (from the passenger's to the driver's multiplex control units) Wire color: RED/YEL
- The control units always communicate via these lines when the system is operating, and they stop communicating when the system is OFF.

Wake-up and Sleep Functions

- The multiplex control system has "wake-up" and "sleep" functions to decrease parasitic draw on the battery when the ignition switch is OFF.
- In the sleep mode, the multiplex control unit stops the functions (communication and CPU control) when it is not necessary for the system to operate.
- As soon as any operation is done (for example, a door is unlocked), the related control unit in the sleep mode wakes up and begins to function at once. This control unit also sends a wake-up signal to the other control units via the communication lines.
- When the ignition switch is turned OFF, there is about a 30 second delay before the control units go from the wake-up mode to the sleep mode.
- If any door is open, the sleep mode will not function.

Fail-safe Functions

- To prevent improper operation, the multiplex control system has a fail-safe function. In the fail-safe mode, the output signal is fixed when any part of the system malfunctions (for example, a faulty control unit or communication line).
- Each control unit has a hardware fail-safe function that fixes the output signal when there is any CPU malfunction and a software fail-safe function that ignores the signal from the malfunctioning control unit and allows the system to operate normally.