

Interior Lighting Systems Description and Operation

Interior Lamps

The interior lighting consist of the following three groups. This first group includes lamps that may not be dimmed.

- The courtesy lamps
- The cargo lamp
- The dome/reading lamps
- The driver and passenger door control switch illumination
- The IP compartment lamp
- The rear audio control illumination
- The underhood lamp
- The vanity mirror lamps

Courtesy/Illuminated Entry Lamps

The second group include lamps that may be manually turned on or off by placing the dome lamp defeat switch in the ON or OFF position, by placing the interior lamp switch in the DOME position, or by opening a door.

- The courtesy lamps
- The dome lamps
- The cargo lamp

When the driver places the dome lamp defeat switch in the OFF position, the courtesy lamps, dome lamps and cargo lamp will be disabled. If the dome lamp defeat switch is in the ON position and a front outside door handle is lifted or any door is opened, all of the courtesy lamps illuminate. After all the doors have been closed and the handles are at rest the courtesy lamps will remain illuminated approximately 20 seconds after the last door closes. The body control module (BCM) will immediately turn off the courtesy lamps if a door lock command is received with all the doors closed, or if the ignition switch is turned to either the RUN or START position.

The CTSY LP fuse in the IP fuse block supplies battery positive voltage to the inadvertent power relay coil and supply circuit. The BCM supplies ground to activate the inadvertent power relay to supply all interior courtesy lamps and the courtesy lamp relay with supply voltage. When any door is opened or a courtesy lamp request input is received by the BCM, the BCM will energize the courtesy lamp relay. The normally open courtesy lamp relay switch closes, grounding the courtesy lamp circuit to G200. Some of the courtesy lamps may also be used as reading lamps by placing the lamp switch in the ON or OFF position.

The driver and passenger door control switch illumination, rear audio control illumination and IP ash tray lamp are supplied battery positive voltage from the headlamp switch in the PARK or HEAD positions.

Grounds for these component lamps are supplied by the same ground that supports the individual switch function.

Keyless Entry Interior Illumination

When the driver uses the door key in order to unlock the doors, the body control module (BCM) receives a door unlock signal. The BCM must have inputs that indicate that the ignition switch is OFF, the courtesy lamp switch is OFF and all the doors are closed with the handles at rest. The BCM will then activate all of the interior courtesy lamps. All of the courtesy lamps will remain on approximately 20 seconds after the door is closed. If the door locks are activated to the LOCK position, or if the ignition switch is turned to either the RUN or START position, all of the courtesy lamps will turn off immediately.

When the driver uses the remote function actuator transmitter to unlock the doors or presses the panic button, the BCM will keep the courtesy lamps on approximately 20 seconds. If the door locks are activated to the UNLOCK or LOCK position, or if the ignition switch is turned to either the RUN or START position, the courtesy lamps will turn off immediately. The BCM will also keep the courtesy lamps on approximately 40 seconds after an alarm event is completed.

Vanity Lamps

The inadvertent power relay also provides battery positive voltage to each vanity mirror lamp. When the vanity mirror cover on the sunshade is opened, the internal switch closes to provide a ground circuit and the vanity lamp illuminates.

IP Compartment and Underhood Lamp

The inadvertent power relay also provides battery positive voltage to the instrument panel compartment and underhood lamps. When the IP compartment or hood is opened, the internal switch closes to provide a ground circuit and the lamp illuminates.

Battery Rundown Protection/Inadvertent Power

In the event that any of the interior lamps supplied voltage by the inadvertent power relay and ground from the courtesy lamp relay were to remain on when the ignition is OFF after a period of 20 minutes, the BCM will deactivate the inadvertent power relay turning OFF all of the lamps on that circuit to prevent total battery discharge. Only when the ignition switch is cycled back to the RUN position will the BCM reset the internal timer and reactivate the inadvertent power relay. When the inadvertent power relay is not energized, the BCM utilizes the inadvertent power courtesy lamp supply voltage circuit to monitor for a courtesy lamp switch request signal. If a courtesy lamp switch is activated, the BCM will receive the signal to energize the inadvertent power relay by grounding the control circuit.

Interior Lamps Dimming

The third group includes lamps which may be dimmed. This group may use a combination of vacuum fluorescent (VF) illumination and incandescent lamps.

- Automatic transmission controller indicator lamp switch
- Automatic transmission preference switch
- Front fog lamp switch
- Headlamp leveling switch (Export)

- HVAC control head assembly
- Inflatable restraint IP module switch
- Instrument panel cluster (IPC)
- Radio and remote tape/CD player
- Rear fog lamp switch (Export)
- Rear wiper/washer and endgate/liftgate window release switch
- Rear window defog switch
- Steering wheel radio controls
- Transfer case shift control switch
- Overhead driver information display module

When the ignition switch is turned to the ON position, the radio and driver information display module vacuum fluorescent (VF) displays turn on at maximum brightness. When the park lamps are on, all incandescent backlighting turn on at the dimming level indicated by the IP dimmer switch. At the same time, all vacuum fluorescent (VF) displays are controlled by the BCM to match the indicated IP dimmer switch dimming level. Battery positive voltage is supplied from the PARK LP fuse in the underhood fuse block to the headlamp and panel dimmer switch and to the ILLUM and STR WHL ILLUM fuses located in the IP fuse block. The IP panel dimmer switch potentiometer receives both its voltage and ground from the headlamp switch and is also an input to the BCM. When the driver selects a dimming setting by moving the IP dimming switch potentiometer, all incandescent backlighting lamps are provided with a specific voltage. The incandescent backlighting lamps are then grounded at G200, G203 and G206. When the IP dimmer switch is moved from MIN to MAX, all vacuum fluorescent (VF) displays, as well as all incandescent backlighting respond from minimum intensity to maximum brightness in response to the IP dimmer switch.

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