

2021+ Light Duty (DT) Optional Snow Plow Lighting Interface

Overview of Snow Plow Lighting Interface

Traditionally, when installing a snow plow, the vehicle’s headlights are disabled in favor of those mounted on the snow plow itself. In order to do this, the snow plow manufacture provides an electrical interface that installs between the OEM headlight harness and the headlight itself. When the plow is installed, the power to the vehicle headlights is re-routed through the snow plow electrical interface to the snow plow headlights. As a result, the vehicle headlights are disabled.

As headlight design becomes more complex with the introduction of new lighting sources, connectors, and even integrated diagnostics; it becomes less and less feasible to install snow plow lights using traditional methods. To counter this, Ram has a wiring interface that provides all the signaling necessary to control relays controlling the lights of a snow plow without modification of the OEM headlight harnesses. We do not recommend modifying RAM front lighting circuitry. Use the snow plow lighting blunt cut control wires.

This interface is optional on 1500 (DT) trucks.

Wire Function and Coloring

The snow plow wiring interface has six wires, one for each headlight function, turn signals/DRL and Park Lamps , and an enable wire. When battery positive is applied to the enable wire, the vehicle high and low beams will automatically disable and the other 5 snow plow output wires will enable. The 5 lighting output wires cannot be used to control exterior lighting without a snow plow attached. They are only enabled in Snow Plow Lighting Enabled Mode when the vehicle’s headlights are disabled. The snow plow lighting outputs are made to control relays to power the snow plow lamps they cannot be used to drive the lamps themselves.

The table below shows the wire information; function, circuit number, size, color and driver or input type of each of the snow plow wires. A driver can either be active high (or high side drive) or active low (low side drive). It’s important to pay attention to which type of drive a specific output it as they do vary.

Function	Number	Size (mm)	Color	Driver Type
Park Lamp	L177	0.75	White / Brown	Active Low Output
Snow Plow Lighting Enable	L312	0.75	Black / Violet	Active High Input Signal
Low Beam	L313	0.75	Black / Light Green	Active Low Output
High Beam	L315	0.75	Black / Light Blue	Active Low Output
Left Turn	L317	0.75	White / Violet	Active High Output
Right Turn	L318	0.75	Violet / Brown	Active High Output

An active high output is switched to battery positive when active and therefore the opposite end of the load (relay coil) must be wired to a ground. In contrast, an active low output is switched to battery negative (ground) when active so the opposite load (relay coil) must be wired to battery positive voltage.

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Snow Plow Lighting Enabled Mode

When the snow plow lighting enable circuit (L312 Black/Violet) is powered with 12V+, signaling to the vehicle that snow plow is present, the ICON below will appear in the cluster. **When the vehicle is in snow plow present mode the Adaptive Cruise Control, Front Park Assist and Front Collision Warning systems will be turned off.**

As in previous models when the snow plow present wire is enabled, the vehicle's high and low beams will be disabled and the snow plow interface wires will be enabled. This means that the snow plow lights will now replicate all functionality of the vehicle's headlights when requested (headlights, flash to pass, lock/remote start, etc.). The vehicle's turn signals and park lights will remain active on the vehicle as well as becoming active on the plow.

When high beams are requested on with the snow plow attached, the low beam output will remain on as well replicating the existing dual bulb headlight design on Ram trucks. This functionality is often called quad beam because it is intended for headlight designs that have 4 headlights total (2 low and 2 high). If dual filament bulbs are used on the plow (total of 2 bulbs used in the headlights), normally the low beam filaments should be shut off while the high beam headlights are on using an external relay or other type of switching device. Follow the snow plow manufacturer's instructions.

For trucks either sold in regions requiring Daytime Running Lamps (DRLs) or where the option was ordered or DRL lamps are turned on. The snow plow DRL function uses the turn signal output drivers.

*** Provisions must be made by the plow manufacturer or installer to insure the plow lighting meets governmental requirements.**

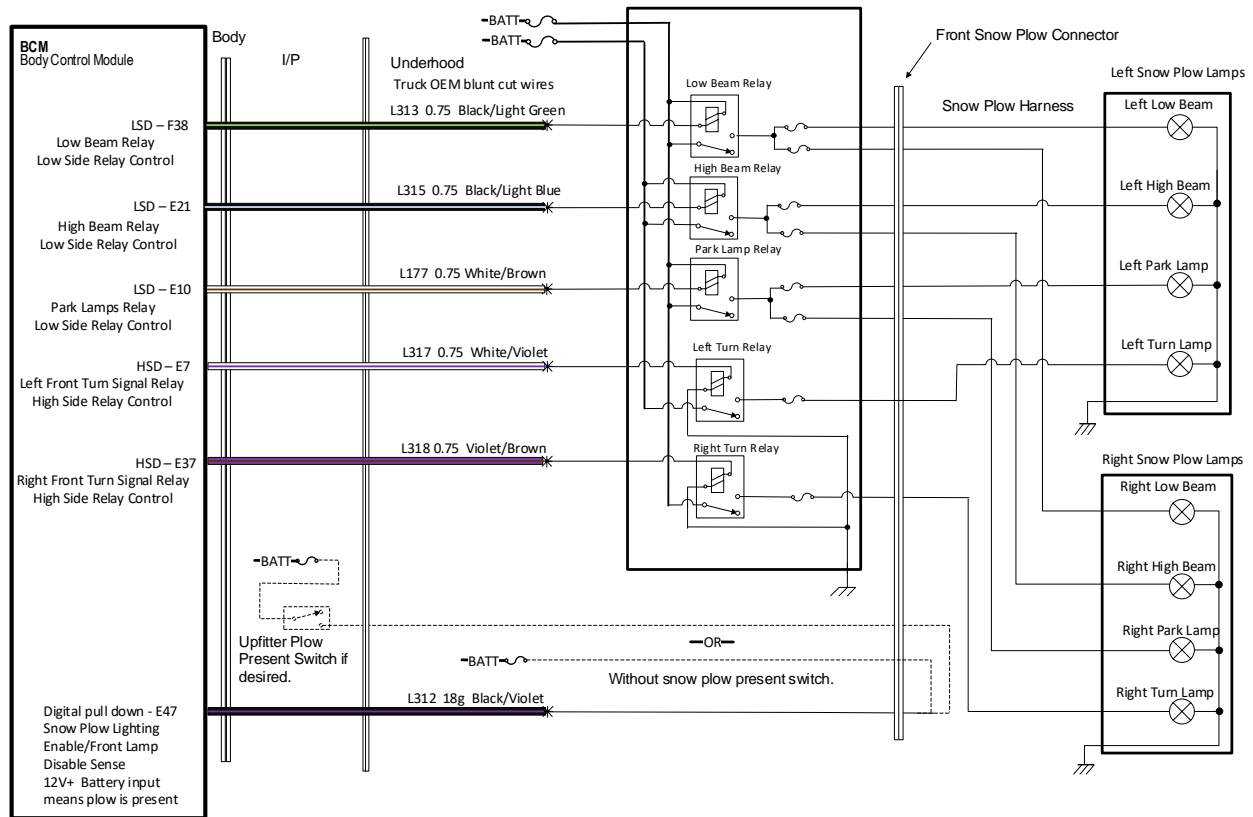
Snow Plow Lighting Enabled ICON
Signaling the vehicle is in snow plow mode



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An example of how to wire these outputs can be seen below. However, many snow plow manufactures offer a solution that may differ from the diagram seen below. Always follow the instructions provided with the snow plow when applicable.

EXAMPLE OF POSSIBLE SNOW PLOW LIGHTING CONFIGURATION

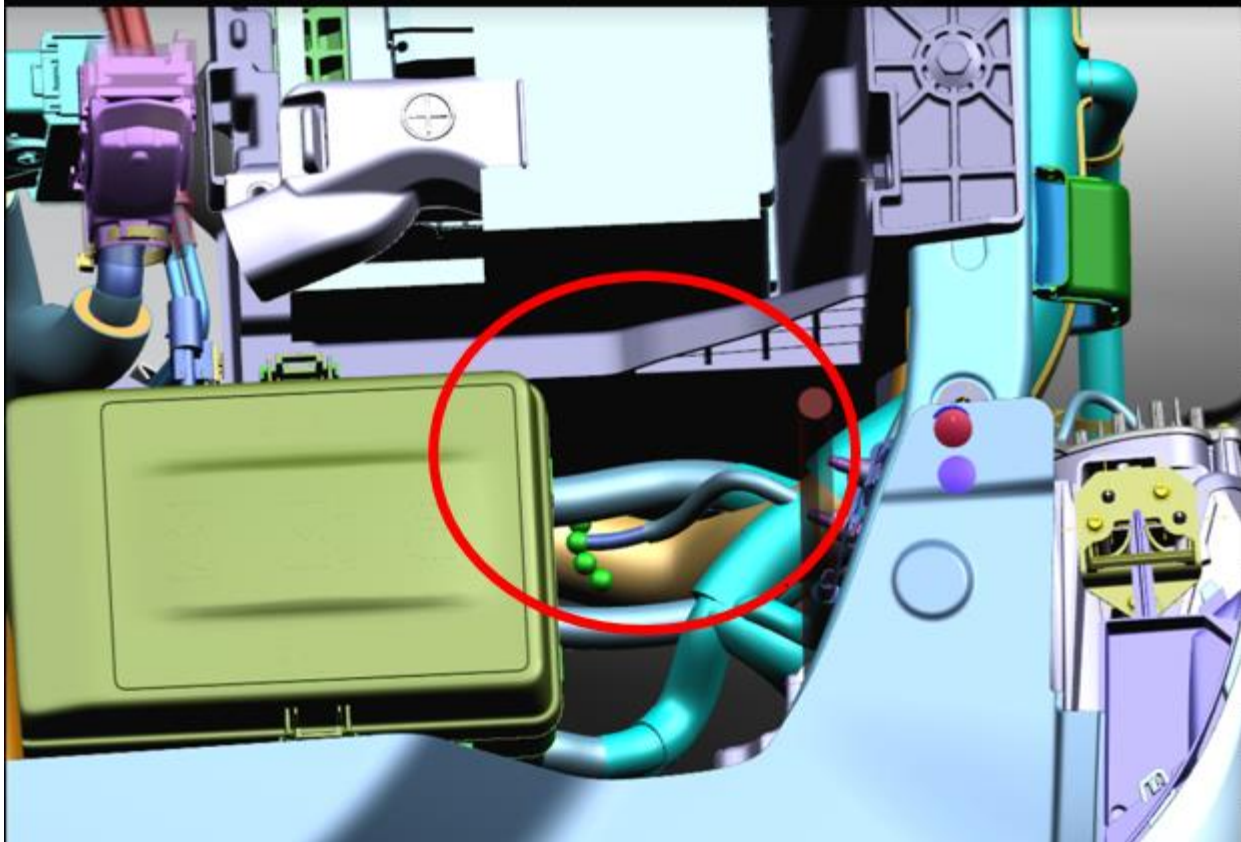


As can be seen in the diagram above, all lighting output drivers are wired directly to a relay. These lighting outputs are intended for driving relays only, and cannot be used to directly drive lights. Each output is rated for 200mA continuous.

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Location

The snow plow lighting interface wires can be found under hood near the front Power Distribution Center and the Battery on the driver side of the vehicle. The will be a group of blunt cut wires with heat shrink tubing over the ends of the wires.



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