Volvo 240 Headlamp Step Relay, PN 1307991
How to substitute available relays for the Volvo step relay. By Dave Barton

Original Volvo step relay circuits. Wire colors may vary slightly depending on year.

<table>
<thead>
<tr>
<th>Circuit</th>
<th>Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Blue</td>
<td>12V Battery (common with 81a)</td>
</tr>
<tr>
<td>81a</td>
<td>Blue</td>
<td>12V Battery (common with 15)</td>
</tr>
<tr>
<td>31b</td>
<td>Brown</td>
<td>High Beam Stalk (negative ground switched)</td>
</tr>
<tr>
<td>56</td>
<td>Yellow</td>
<td>12V from Lamp Switch or Headlamp Relay for 1986+</td>
</tr>
<tr>
<td>56a</td>
<td>Red/White, Red</td>
<td>Dash Indicator Light (Red/White), High Beam Headlamp (Red)</td>
</tr>
<tr>
<td>56a</td>
<td>Red</td>
<td>High Beam Headlamp</td>
</tr>
<tr>
<td>56b</td>
<td>Blue/White</td>
<td>To Bulb Failure Sensor, then Low Beam Headlamps</td>
</tr>
</tbody>
</table>

Headlight Hi-Lo Latching Relay available for VW, motorcycles, etc.

31b | 56a | 56b
---|-----|-----
STALK GROUND | HIGH BEAMS | LOW BEAMS

12V BATTERY | HEADLAMP SWITCH
81a | 56 | 15

Standard ISO Mini Relay, 40A, SPST.

85 | 87b | 87
---|-----|---
86 | 30  | 30

12V BATTERY | 12V BATTERY | 12V BATTERY

As the original Volvo 240 headlight step relays become more expensive and less common, here is a viable alternative that I have designed that you can create yourself if it becomes necessary. You will need to locate this relay shown. Search for “VW latching headlight relay.”

This is basically a copy of an old VW headlamp dip relay. Cost will be about $20. This is a special mechanical latching relay that does the latching part of what the Volvo relay does.

The latching outputs are poles 56a and 56b and they will alternate with each tug of the stalk. The second relay is a common 4 or 5 pole relay (40 amp recommended).

Remove all of the harness terminals from the old plastic relay connectors and wire the new relays to those circuits as shown here. The three circuits you see here that are connected or “bridged” will need to be connected as shown.

This setup accurately mimics what the original Volvo step relay does. It does not eliminate the recommendation or need for additional headlight relays to feed high current headlights if you have them. It simply copies the Volvo relay.

Your feedback is welcome. If you build one of these for your car, I would like to hear from you.

Thank you, Dave Barton
Latching relay controls switching from low to high beams when headlight switch is ON.

Standard mini relay controls momentary high beam flash when headlight switch is OFF.

Headlamp Switch
Column Stalk

Relay pins viewed from the bottom.