

This document is for initial review by the DCC Working Group. It has not been approved by the WG, reviewed by the General Technical Committee or approved by the Board of Trustees. Send comments to reinhard@dcc-mueller.de.

## Appendix A: Improved Wiring of the Small Connector

5 The small connector does not include a pin for the blue wire "Common (V+)". Therefore the easiest method is to use the frame, connected to one rail side, as common for the lamps of the front and rear lights.

With a decoder in DC power conversion mode and this wiring the lamps are operational only in the direction with the frame connected to the right (positive) rail. The decoder may not control the light in the same way as the lights would work without decoder.

10 Additionally the lamps work as an asymmetric load, which may impose problems, if the asymmetrical DCC signal is used for localized decoder control.

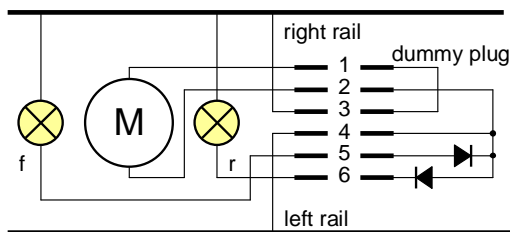
Therefore another wiring approach is proposed solving these problems without additional parts.

### Proposed wiring

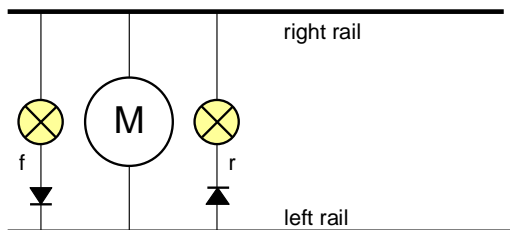
15 There should be two diodes with their anode connected to the two rail connections producing a positive common for the lights. This allows full control over the lights by the decoder even in DC power conversion mode. The two extra diodes are saved on the dummy plug delivered with the loco for operation without a decoder.

### 20 Wiring diagrams

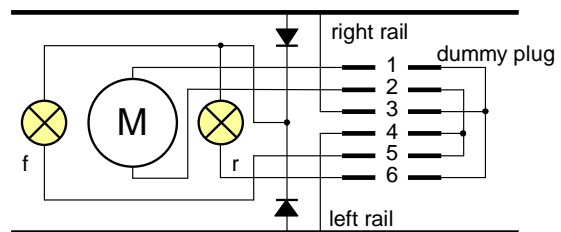
Classical Wiring



resulting circuit



Proposed Wiring



resulting circuit

