

Technical Bulletin

No. 098

HW Relay Failures on Dover DMC Power Unit Relay Boards

An investigation into malfunctioning relays on Dover DMC units indicates that during the next regular maintenance visit for all Dover DMC units, mechanics must inspect a few specific relays on the Power Unit Relay Board and verify proper operation and condition. Malfunctioning relays on a small number of DMC units could remain energized (picked) continuously.

While many factors affect relay longevity and durability (environment, duty demand, etc.), relays from about the same time appear to be in perfect condition on one job, and in very poor condition on another. This is unexpected, because we use the same design and build specifications for all units. Therefore, we recommend the replacement of all aging relays, especially those in critical life safety circuits. This is not a public safety issue and presents no risk to riders.

Affected Equipment

Dover DMC-I controllers.

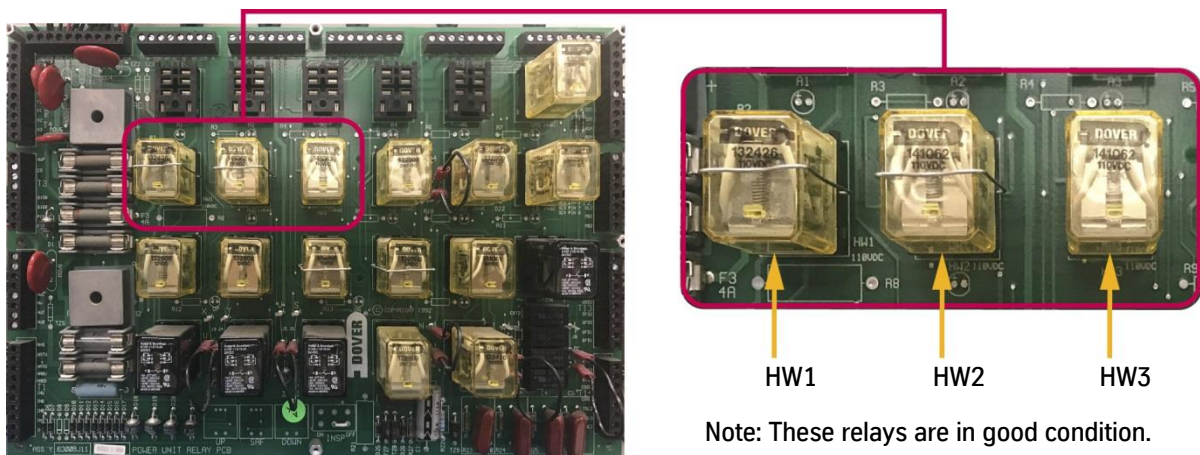


Figure 1 – DMC Power Unit Relay Board PN:6300BJ11 and Contacts HW1, HW2, and HW3

Problem

The plastic cases on some HW1, HW2, and HW3 relays are cracked and / or warped. This could cause them to malfunction and stick in the energized position when the circuit is de-energized. This malfunction may render the door lock circuit active at unexpected times, possibly even if the hoistway doors are open.

Service Tasks

During the next scheduled service visit for all Dover DMC units; inspect these relays to verify proper function and condition. DO NOT return units to service unless, or until, they pass inspection.

1. Visually inspect relays to find damage (see Figure 2).
 - Cracked or deformed cases (cracks of any size, and for any reason)
 - Overheated electrical components
 - Scratched cases above the retainer spring tab (on the inside top face of the case)

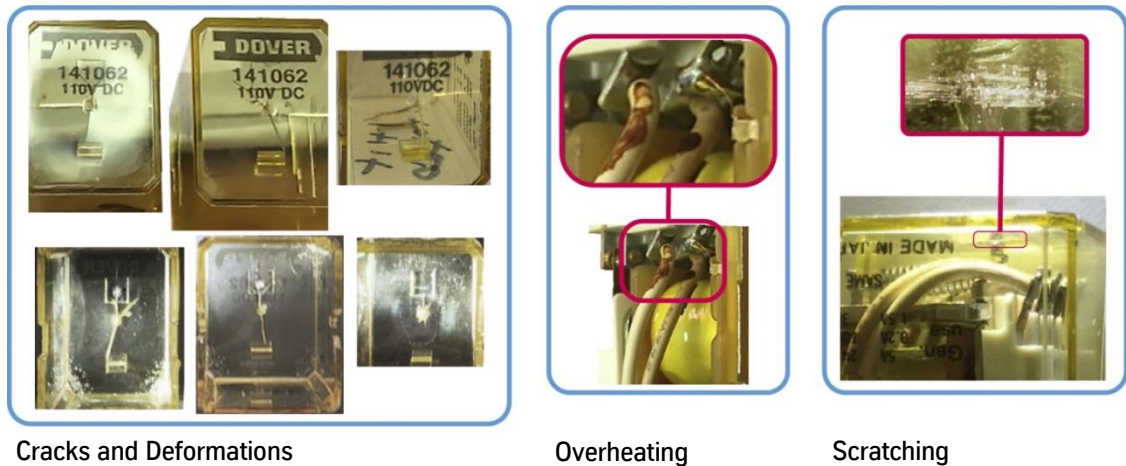


Figure 2 – Relay Damage Examples

2. Test relays to verify normal operation.
 - A. Cycle the door while monitoring the HW1, HW2, and HW3 relays on the Power Unit Relay Board.
 - B. Confirm each relay drops immediately as the doors open.
3. Immediately replace damaged relays, and relays that do not operate normally.

NOTE: Always replace an existing relay with the appropriate new relay from thyssenkrupp parts.

- For HW1 relays use thyssenkrupp Relay Part # 9832427 (Print # 132426) K10 110VDC DPDT.
- For HW2 and HW3 relays use thyssenkrupp Relay Part # 9811060 (Print # 141062) KH 110V 4PDT.

All work must be performed in compliance with the thyssenkrupp safety policy.
