

Conventional relays

High inrush currents on conventional relays damage contact surfaces. This results in relay failure.

As shown on right, 16A Tungsten cycling after 50,000 cycles using conventional relays. High temperature electric arcs cause relay contacts to erode and weld together.

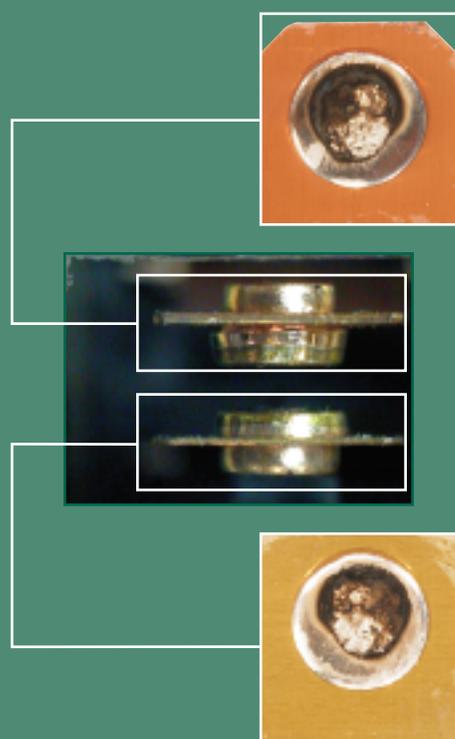


(enlarged photographs, actual contact diameter is 4.05 mm)

Softswitch relays

Softswitch relays minimize the effects of high inrush on relay contact surfaces. Relay contact lifetime is only limited to mechanical wearout.

As shown on right, 16A Tungsten cycling after 50,000 cycles using Softswitch relays. The Softswitch relays use an additional electronic circuit design to completely eliminate arcing during the switching process.



(enlarged photographs, actual contact diameter is 4.05 mm)

Softswitch relays offer much lower expected failures than conventional relay

In a typical installation of 5,000 relays, one would expect to see 1,252 failures after 10 years using conventional relay technology, while during the same period one would expect only two failures using Lutron's Softswitch relays.

| No. of relays | Years of operation*** | | | | | |
|---------------|-----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | 5 | | 10 | | 15 | |
| | Conventional relay* | Lutron Softswitch** | Conventional relay* | Lutron Softswitch** | Conventional relay* | Lutron Softswitch** |
| 1,000 | 4 | 0 | 250 | 0 | 962 | 2 |
| 5,000 | 22 | 0 | 1,252 | 2 | 4,812 | 22 |
| 10,000 | 45 | 0 | 2,503 | 4 | 9,624 | 44 |

* Based on a rating of 50,000 cycles (MTBF).

** These figures represent statistically expected component failures in the electronic circuit. Statistically, the relay contacts are not expected to fail during the conditions indicated.

*** Assumes 12 on/off cycles per day.



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