

Delcon-relays and inductive loads

Even very small inductive loads, which appear for example in solenoid valves, can destroy control relays and cause considerable costs due to unexpected production downtime.

Clamp diodes and zener diodes are normally used to solve relay problems with inductive loads. Clamp diode is used as a protection element with inductive DC-loads. Problem is that it lengthens the off delay dramatically. Zener diode is used by many magnetic valve manufacturers because it can be used as a protection element with both AC and DC loads. Zener diode also lengthens the off delay but bigger problem is that it does not totally switch off the sparking between relay contacts. This shortens life time of the electromechanical relay.

Delcon offers solution for controlling inductive loads where extra protection components are not needed. Protection element in these Delcon relays is varistor which guarantees fast operation and protects the relay itself from the load side.

Delcon has two relay types (for each control voltage) for inductive DC loads:

- SLO XXXCRA, which can control max. 100 ms inductive load up to 1,8 A current when load voltage is 24 VDC - without any deration.
 - SLO XXXCRA4, which can control max. 50 ms inductive load up to 4,0 A current when load voltage is 24 VDC - without any deration.
- (XXX = control voltage of the relay, available voltages are 5 ... 220 VDC).

For inductive AC loads Delcon offers SLO ...TR relays, which can handle inductive loads up to 3 A without derating. Available control voltages of the relay are 5, 12 and 24 VDC.

Terms

L/R-value

Describes the load inductivity in ms. This value is not normally known and it is difficult to find from datasheets.

Thumb of a rule can be that valve's L/R in milliseconds is smaller than valve's power in Watts.

Varistor

In Delcon's DC-output relays, which are meant for high voltages and inductive loads uses varistors as protection component.

Zener-diode

Magnetic valve manufacturers recommend use of zener diodes in the poles of the loads.



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