23rd August 2004

To: **All Members**
cc: **The Quality and Technical Committee** (Code No. 645)
The Maintenance Committee

Dear Member,

UP-DATE ON SAFETY BULLETIN FROM BUCHER HYDRAULICS

Further to their earlier Safety Bulletin, circulated to the membership on 3rd June 2003, Bucher Hydraulics are concerned that the recommendations contained within their original statement are not being followed.

In this connection, please find enclosed a further statement from Bucher Hydraulics, from which you should be guided accordingly.

Yours faithfully

Robert N Lee
Director, Technical Services

BUCHER HYDRAULICS

Potential Safety Issue

Bucher Hydraulics wish to draw to your attention the following:

We issued a statement via LEIA in May 2003 and since that time have been made aware that our recommendations in that statement have not been followed. Proper circuit design and system maintenance is essential for all safety critical systems.

Two main issues raised were:

1. The need to maintain oil filters in a clean condition

All Beringer valves are designed and manufactured in accordance with EN81-2 and fulfil all specified safety requirements. Beringer lift control valve incorporate filters as specified in EN81-2. These filters need to be cleaned on a regular basis in compliance with the manufacturers instructions. Should the recommended maintenance procedure not be adhered to a system malfunction would gradually become evident, resulting in eventual breakdown.

Dirty filters

If the lift control valve is operated with contaminated oil, the filters will eventually clog. This will also affect the driving comfort of the lift by overshooting the floors more and more frequently. To clog the filters completely requires many travels and it will be progressive over weeks or even months. During this time it is probable that the lift stops several times due to the inbuilt monitoring circuit for the demand feedback difference. The services of the lift company will then be required to place the lift back into service. We have been made aware that in numerous instances the SIU-1 contact is not wired into circuit.

Completely clogged filters

Up direction
The lift will accelerate very slowly, because the main spool is not able to close normally due to shortage of oil. If the difference between demand and feedback value is to great, the electronic card opens up the spool immediately and the lift will stop. The opening of the up spool and the stopping of the lift is not constricted by the clogged filter. Again the SIU-1 contact is frequently not connected.

Down direction
The lift accelerates faster than normal, because the oil flow required to close the valve is restricted by the clogged filter. If the difference between the demand and feedback values is to great, the electronic card tries to close the spool again, due to the lack of required oil, the down spool closes slower than normal. This can result in an overshooting of floor level.

2. Safety relays

To prevent dangerous situations EN81-2 lays down that in the up direction two motor contactor contacts and in the down direction two safety relay contacts for the down solenoid be used. These safety contacts have to open immediately if the lift leaves the door zone with open doors and stop the lift. These safety contacts are provided by the lift controller manufacturer. They are clearly defined within our documentation. It is very disturbing that frequently these contacts are not connected into the circuit creating an extremely dangerous situation.

Whilst we have incorporated multiple preventative safety measures they are useless if proper maintenance is not carried out.

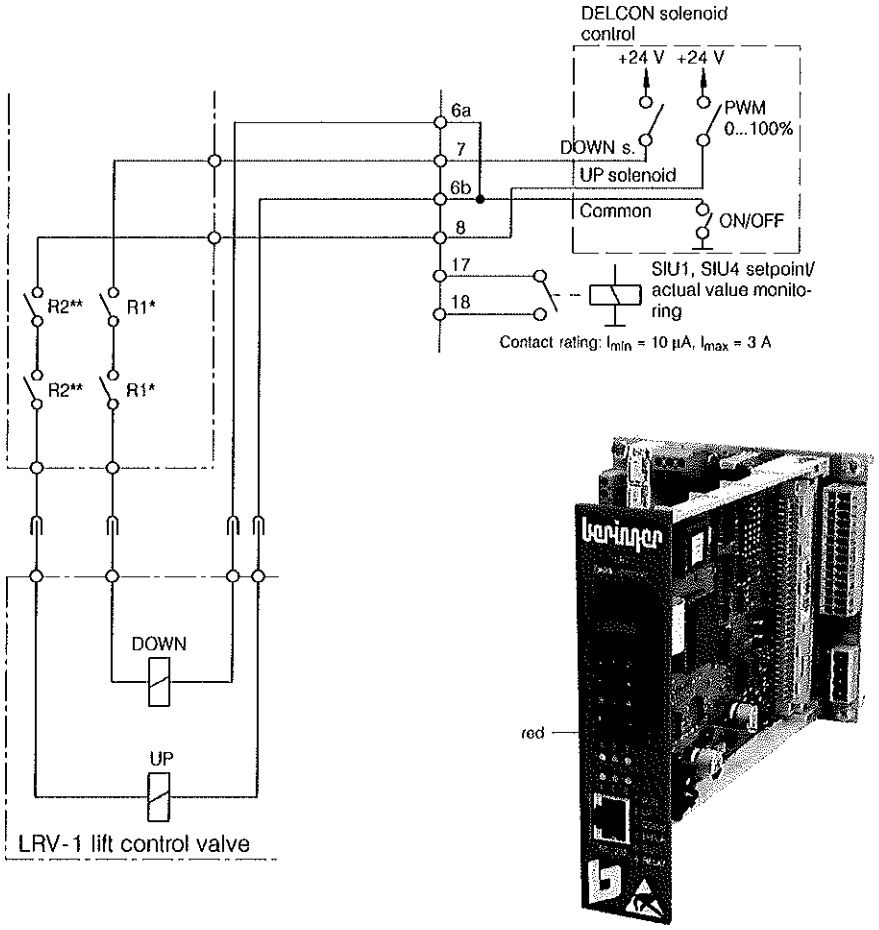
To decrease the probability of a malfunction during stopping caused by contaminated oil it is possible on request to add a special electrically operated safety valve (door lock valve) after the lift control valve. This then provides two independent valves in series, that will substantially increase the safety under these conditions because it is extremely unlikely that both valves will malfunction at the same instance.(This being the same approach as on the electrical side with two contacts in series.

Please note, that such a door lock valve is not a requirement of EN81-2, it is in fact in the Australian code, but can be added on customers specific requests.

In conclusion we would recommend a close scrutiny of maintenance procedures to ensure correct performance and operational safety.

Reference: 300-P-9000000-E-00/08.04

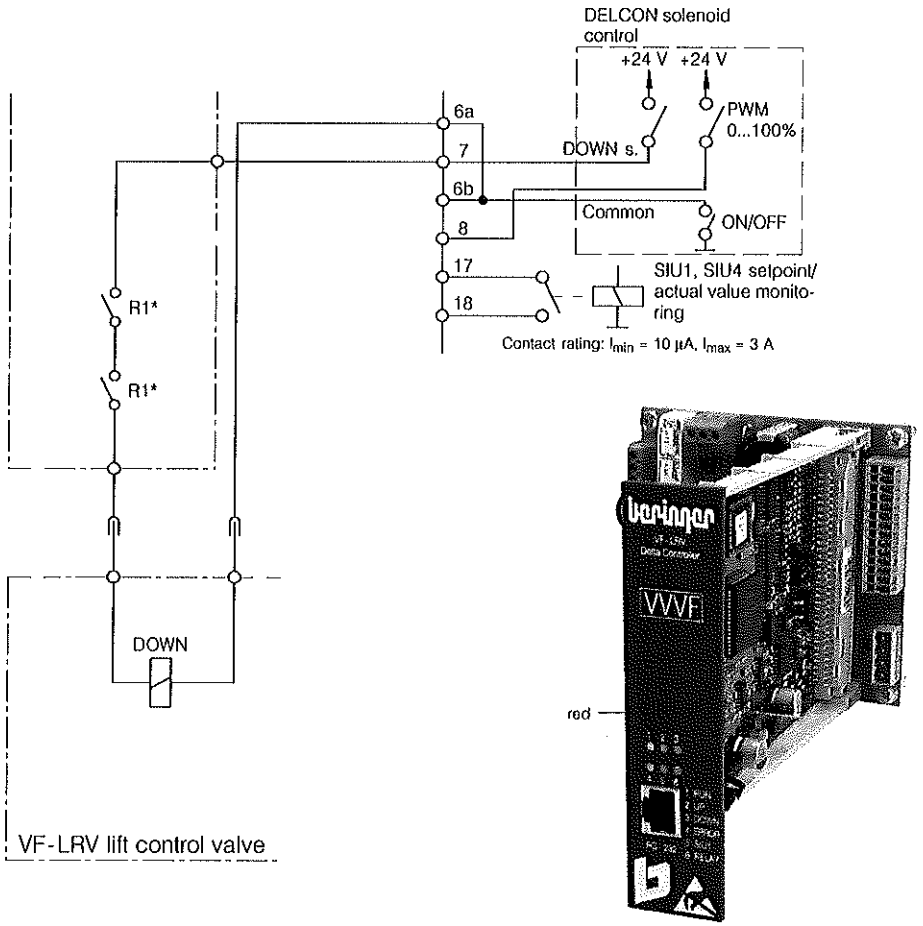
3. Wiring diagram safety relays for LRV-1 with DELCON / NTA-1 / NTA-2



* Safety relays R1 in the DOWN solenoid circuit are required by EN81-2

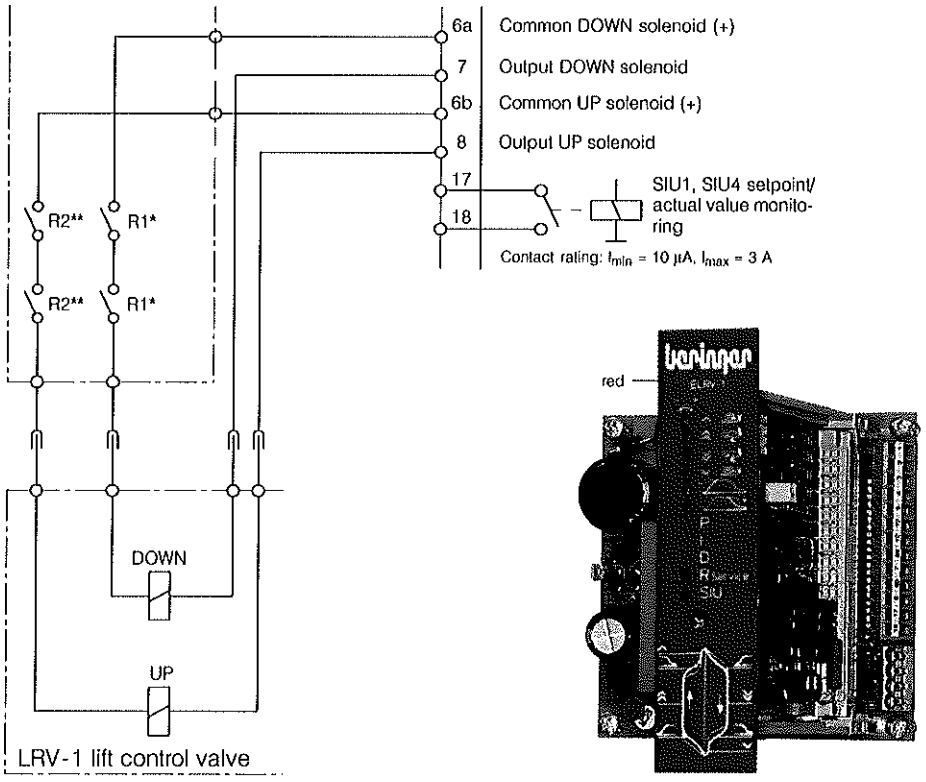
** Safety relays R2 in the UP solenoid circuit are required by EN81-2, if only one motor contactor is present

4. Wiring diagram safety relays for VF-LRV with DELCON / VF-NTA-1 / VF-NTA-2



* Safety relays R1 in the DOWN solenoid circuit are required by EN81-2

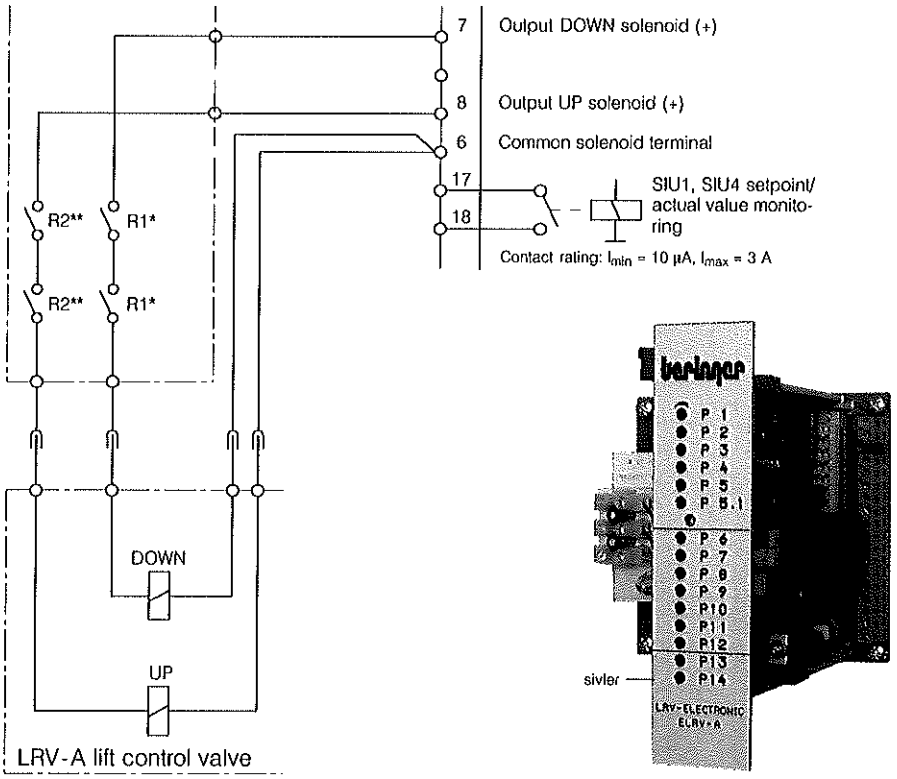
5. Wiring diagram safety relays for ELRV-1 / NTA-1



* Safety relays R1 in the DOWN solenoid circuit are required by EN81-2

** Safety relays R2 in the UP solenoid circuit are required by EN81-2, if only one motor contactor is present

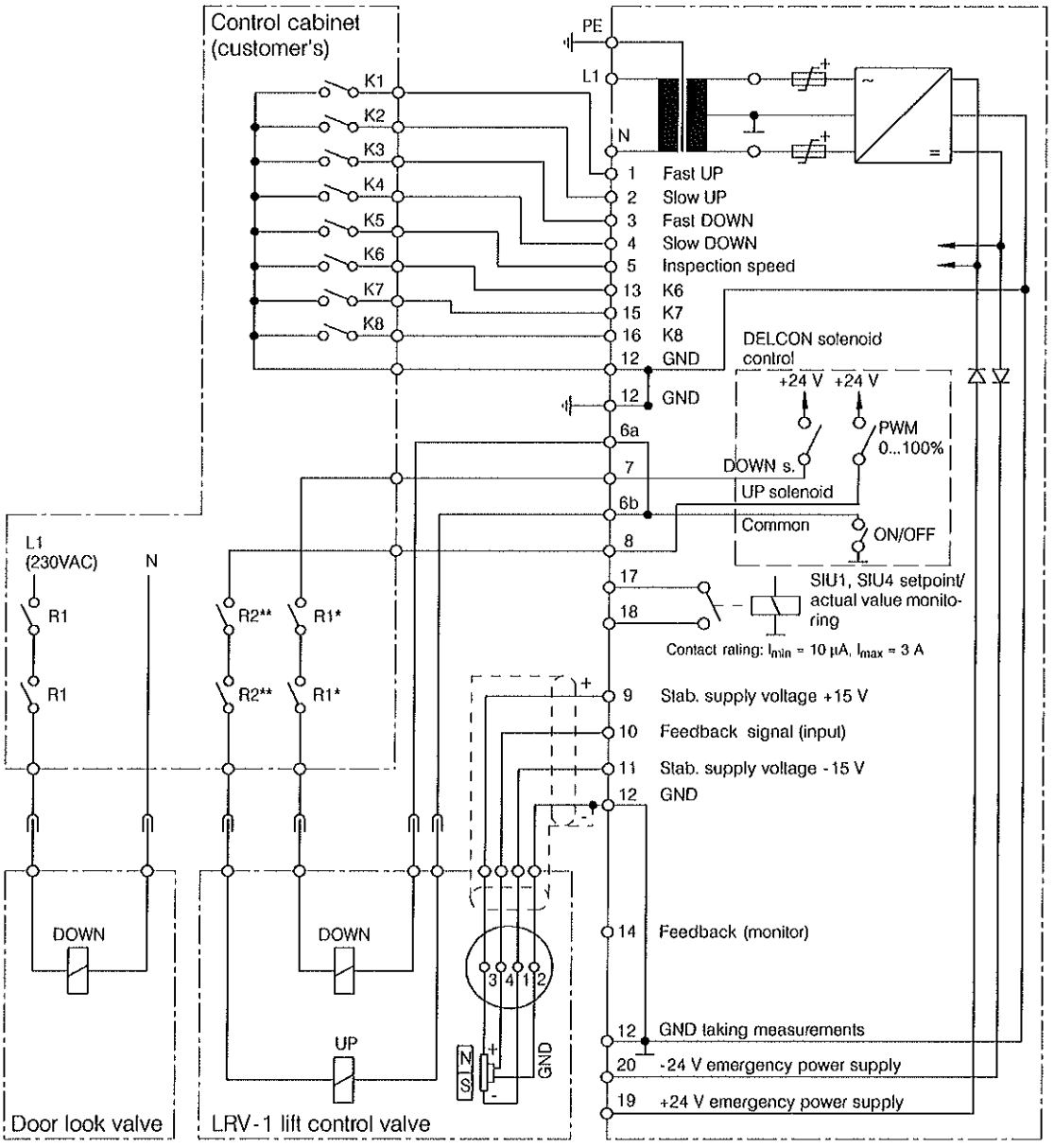
6. Wiring diagram safety relays for ELRV-A / NTA-A



* Safety relays R1 in the DOWN solenoid circuit are required by EN81-2

** Safety relays R2 in the UP solenoid circuit are required by EN81-2, if only one motor contactor is present

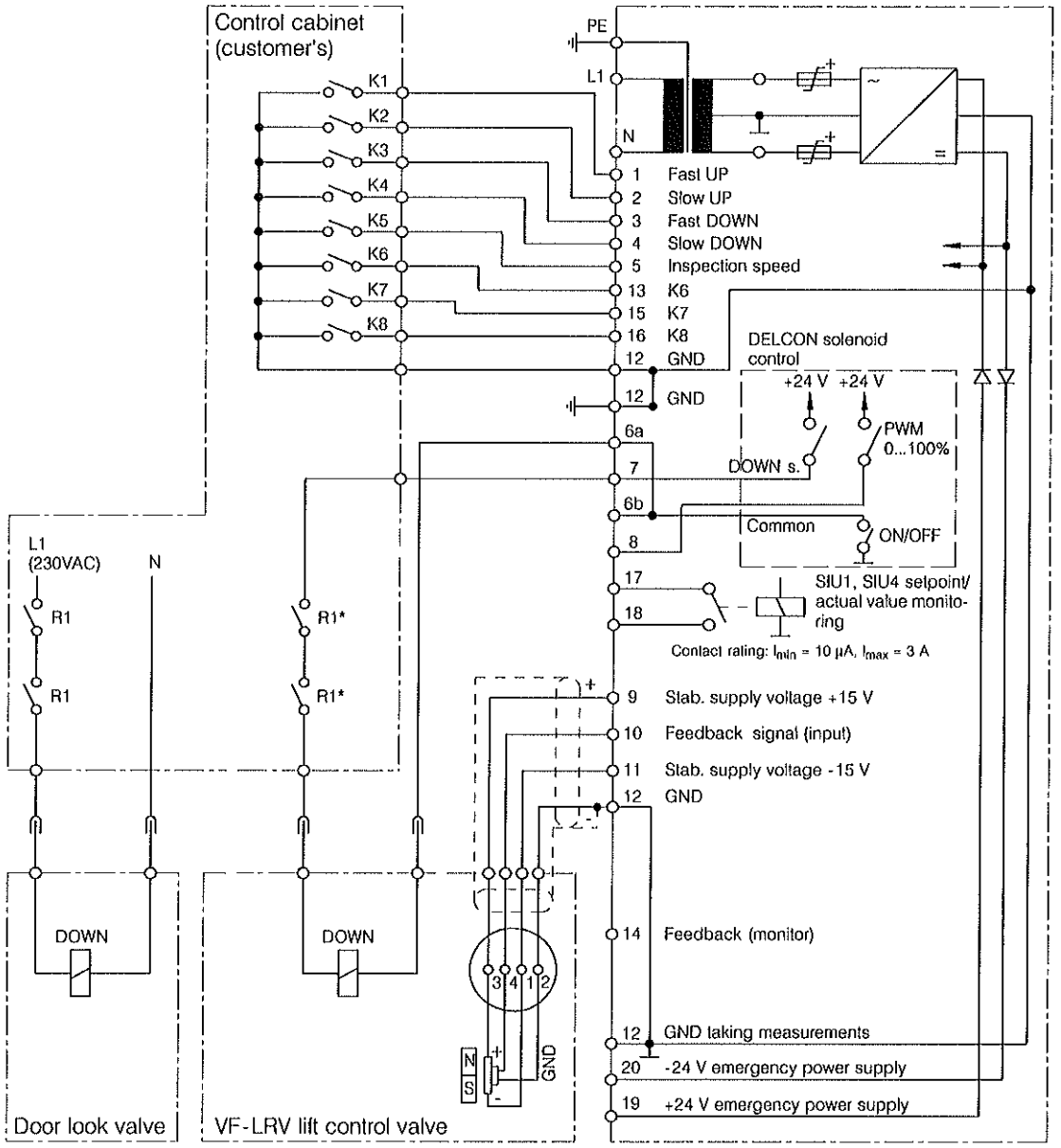
7. Wiring diagram DELCON / LRV-1 including door lock valve



* Safety relays R1 in the DOWN solenoid circuit are required by EN81-2

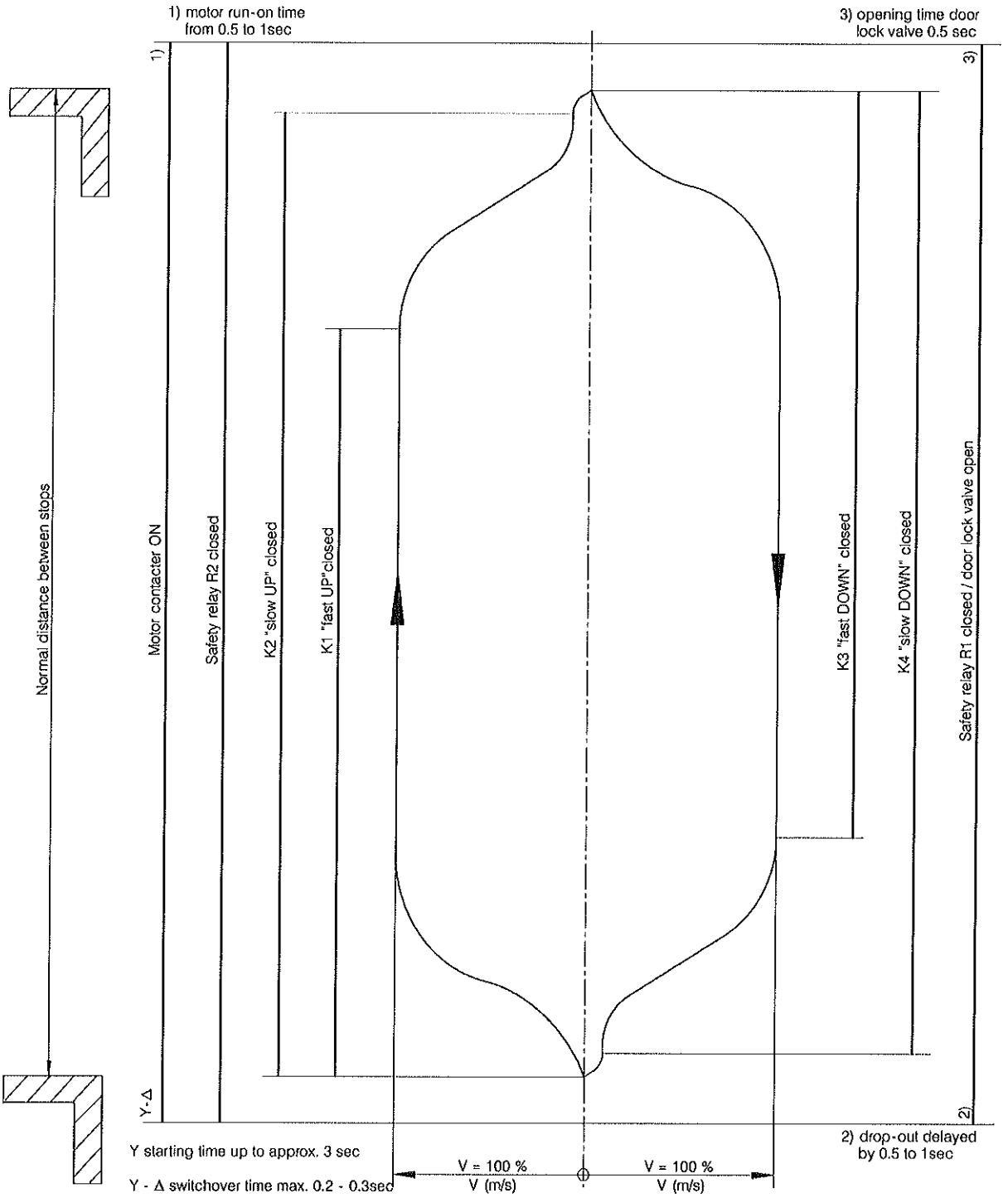
** Safety relays R2 in the UP solenoid circuit are required by EN81-2, if only one motor contactor is present

8. Wiring diagram DELCON / VF-LRV including door lock valve



* Safety relays R1 in the DOWN solenoid circuit are required by EN81-2

9. Travel and switching diagram DELCON / LRV-1 with door lock valve



With Y-Δ, K1 and K2 only with Δ-connection

10. Travel and switching diagram DELCON / VF-LRV with door lock valve