Fail-Safe-Function with Power Cut-Off NL-C1

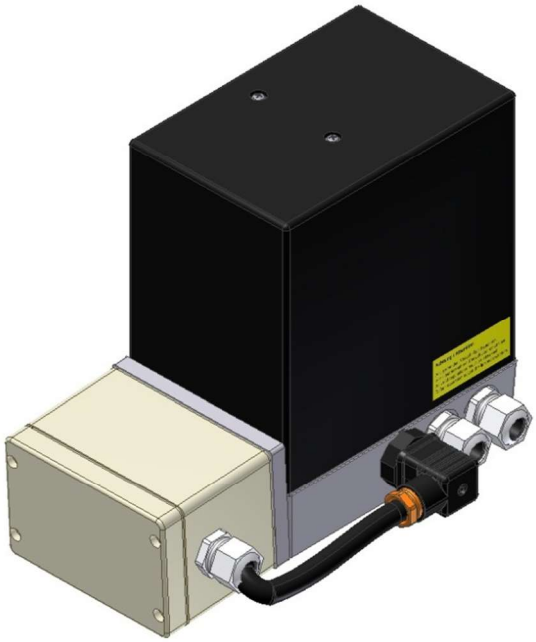
Fail-Safe-Function via Capacitor:

The Fail-Safe-Function with Power Cut-Off NL-C1 is used to drive a DC-Actuator in case of missing power supply into a choosable final position or to switch off the actuator in case of heaviness / blocking.

If the 24VDC-power supply gets lost at terminals +24V and GND, the actuator drives into the via jumper „Err.-Drive“ set end position. At the same time, the relay „Power-Fail“ picks up and the LED (Power-Fail) flashes. On return of the 24VDC-power supply, the system switches back to normal operation. The maintenance-free capacitor memory is loaded again within maximum 10 minutes.

In case of heaviness or blocking of the actuator, the control switches off the actuator over the increased current consumption. At the same time, the relay „Motor-Err“ picks up and the LED (Mot-Err) flashes. The drive is ready for use again by reversing or switching off the supply voltage for approx. 1s.
Caution! The emergency function is activated when the supply voltage is switched off. This can be prevented by removing the plug on the capacitor memory.

Before commissioning of the drive, the stabilized 24VDC-power supply should be connected to the terminals + 24V and GND first and the limit switches as well as any additional installed options set. Meanwhile, the relay "Power Fail" is picked up and the LED (Con-Low).



At last, the Fail-Safe capacitor memory should be connected via the plug to the actuator. The charging time of an empty capacitor is about 10 minutes. In case of sufficient capacitor memory voltage, the relay "Power Fail" drops off and the LED goes out (Con-Low).

In case of less capacitor memory voltage, the fail safe relay (Power-Fail) picks up and the LED flashes (Con-Low).

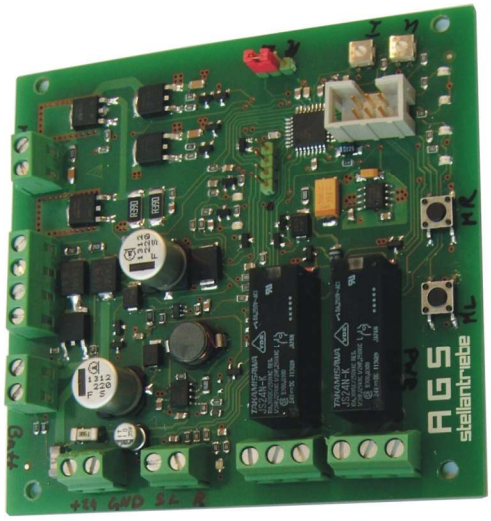
Reverse polarity or wrong connection may destroy the circuit.

Technical data:
Power supply: 24VDC, stabilized
Control input: +24VDC
Current consumption: Imax: 2,8A
Capacitor memory capacities: 5,5F or 11F
Capacitor memory voltage: 24VDC

General:

The Fail-Safe-Function with power cut-off NL-C1 offers the following features:
Fail-Safe in case of missing power supply
Power cut-off
Change of regulating time
Soft start and short stop times
Single pole reversion
Button for drive in left/right direction

Control board
(built-in the actuator)



Normalbetrieb:

The drive gets supplied with power via the terminals + 24V and GND, the LED lights up (VCC OK). The actuator can be driven manually in the left or right direction by using the buttons “ML” and “MR”. The control inputs 2 (LL) and 3 (LR) automatically offer this possibility.

The potentiometer (I) can be used to adjust a current limit in the range from 0 to 2A. When exceeding the current limit (e.g. overload), the drive will stop and attracts the fail safe relay (MotorErr). The switch-off of the motor and the fault message remain as long as the supply voltage gets interrupted for approx. 1 s or will be reversed.

Caution! The emergency function is activated when the supply voltage is switched off. This can be prevented by removing the plug on the capacitor memory.

The motor voltage and hence the speed of the motor or resp. of the drive can be changed with the potentiometer “U”.

The “U” and “I” potentiometers on the PC board have been set in the factory and should only be changed upon approval.

The limit switches SL and SR plug in the end positions. At the terminals SL/4 and SR/5 is 24VDC supply voltage in the end positions, that can be used with a maximum load of 20 mA as external position indicators.