

Technical Note

SR Relay – Operation and Selection

Many positioning applications, such as conveyors and vertical lifts, require a minimal and accurate stopping distance. Therefore, the time lapse between the moment that the motor power ceases and the moment that the brake engages must be minimal.

One SEW solution requires the user to supply an auxiliary contact and wiring from the motor contactor located inside the control panel to an SEW brake rectifier located inside the motor conduit box. Upon braking, this extra circuit changes the path of the brake coil current, allowing the coil to demagnetize quickly. The faster the coil loses energy, the faster the brake engages, and the faster the motor stops.



Another SEW solution is an inexpensive SR relay. It is a normally-open switch that screws directly into the motor conduit box. By not requiring extra wiring from the control panel, it offers a true cost savings. The switching function of either an SR relay or an auxiliary contact is sometimes referred to as “rapid reaction” since the brake “reacts” quickly to stop the motor.

Motor Energized

To illustrate the functionality of an SR relay, refer to Figure 1. The white wires of the SR connect in series with one phase of the AC motor. Notice how it replaces a jumper between T6 and T9 on a high voltage connection (Y). When the motor is energized, ac current flows across the white wires, which causes an actuator inside the SR to close the switch.

Now, dc current is able to flow between the red and blue wires of the SR to provide a short circuit between terminals 4 and 5 of the rectifier. Observe the circuit path in red, beginning at the brake voltage (In 3, Out 3, In 4, Out 4, In 5, Out 2).

(Aside: The rectifier pathway shown is the same for a BG as for a BGE rectifier after 120ms).

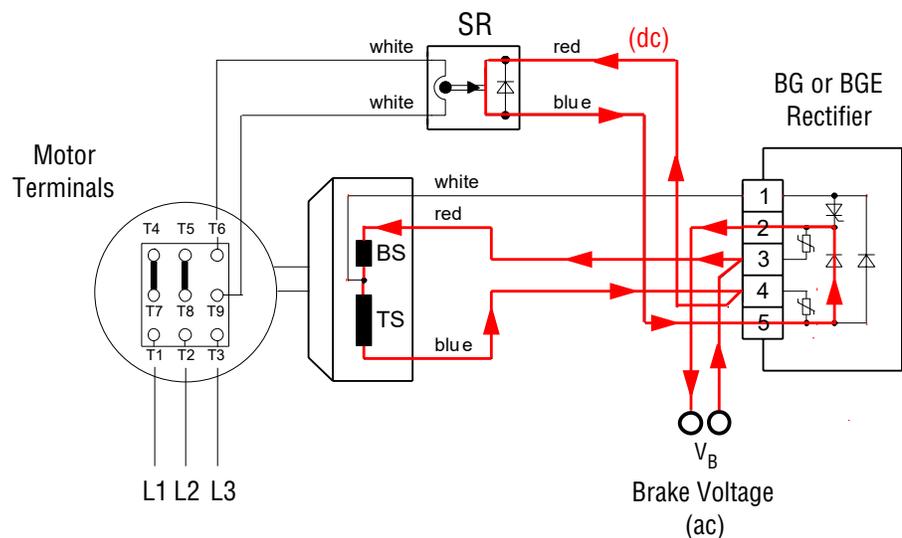


Figure 1 - Motor Energized

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SR Selection

The following table lists the assignment of SR relays per motor and motor voltage.

Motor	AC Motor Voltage in Y wiring (ex: 230YY/460Y, 230Δ/400Y)																					
	40-58	59-66	67-73	74-82	83-92	93-104	105-116	117-131	132-147	148-164	165-185	186-207	208-233	234-261	262-293	294-329	330-369	370-414	415-464	465-522	523-690	
DT56M...BMG																						
DT56L...BMG																						SR10
DR63S...BR																						
DR63M...BR																						
DR63L...BR																						
DT71D...BMG																						SR11
DT80K...BMG																						
DT80N...BMG																						
DT90S...BMG																						
DT90L...BMG																						
DT100LS...BMG																						
DT100L...BMG																						
DV100M...BMG																						
DV100L...BMG																						
DV112M...BMG																						
DV132S...BMG																						
DV132M...BM																						SR15
DV132ML...BM																						
DV160M...BM																						
DV160L...BM																						Not Available
DV180M...BM																						
DV180L...BM																						
DV200L...BM																						SR19
DV225S...BM																						
DV225M...BM																						
DV250M...BMG																						
DV280S...BMG																						
DV280M...BMG																						

Per Technical Data 09 856 04 93.

