



### Important Safety Information

All electrical equipment for operating on low voltages contain devices which are capable of causing serious or fatal injuries.

Any person involved in installation or maintenance of this equipment should be fully competent to conduct the work. Such persons should be familiar with the Health and Safety at Work Act, Electricity at Work Regulations and have a working knowledge of the IEE Wiring Regulations.

**If in doubt please contact,  
Crompton Controls Ltd  
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**The 400V S10 brake module must be connected in accordance with the above circuit to operate correctly!**

### Terminal Description

<b>L1</b> Common phase connection	<b>B2</b> Voltage sense input
<b>L2</b> Phase connection - connected to <b>M2</b>	<b>17</b> Relay input
<b>M1</b> Motor connection	<b>18</b> Relay output - motor contactor via stop start circuit
<b>M2</b> Motor connection - connected directly to <b>L2</b>	<b>28</b> Relay output connects to brake contactor

### Operation

The unit is powered at operational voltage on **L1** and **L2**, **L1** is the common side. At power on there is a short initial delay and RL1, one of the two internal relays, is energized giving an output on terminal 18, provided terminal 17 has a supply. This output is wired to the main start contactor which can be energised to start the motor; an auxiliary terminal on this contactor is used to connect a voltage to the **B2** sensing input. When voltage is applied to **B2** nothing happens, until on removal of this voltage when the timing sequence starts:-

- 1) 25mS dwell, then recheck no voltage on **B2** – to prevent the startup voltage drop causing dc injection
- 2) RL1 opens removing the feed to **18** preventing the main contactor from operating
- 3) 500mS dwell period to allow the contactor arcs and motor emf to decay – the setting potentiometers are also read at this time.
- 4) RL2 is then energised to bring in the external brake contactor, connecting terminals **M1** and **M2** directly to the motor.
- 5) This enables DC to be injected for the time and voltage as set on the potentiometers.  
The DC is increased progressively to the set value to avoid mechanical shock.
- 6) RL2 is then de-energized after turning off the DC
- 7) Dwell period to allow the DC to decay
- 8) RL1 is then re-energized to allow the motor to be started again.

**DC CURRENT:** 25A nominal current flows through **L1**, **L2**, **M1** and **M2**

**FREQUENCY:** The unit is for rated 50 Hz.

**TIME RANGE:** The braking time range is up to 12 seconds

**DC VOLTAGE:** The voltage range is up to approx. 160 volts, with the minimum voltage dependent on thyristor latching current

**DUTY CYCLE:** Limited by software to 10%. For every second of braking 10 is added to a register. For every second not braking 1 is subtracted. Restart is inhibited if the register is above a value of 250.

Note:- if the unit will not start it will be waiting for this register to count down below 250. The maximum delay is approx. 2 minutes.

**DIMENSIONS:** 81H x 45W x 121D (mm) - DIN Rail mounting

**PROTECTION:** IP20

**RELAYS:** Internal 8A rated contacts, 440Vac max breaking voltage.

**NOTE:** **DC injection braking is an approved method of stopping AC electric motors and requires the mains supply to be present to operate correctly.**