

Motor Brake Relay

Type SX 9033N
ministop

New!! with single pot adjustment



Model SX 9033N

Description

A compact IP65 screw mounted motor brake relay starter combination, designed for DOL 3 phase motors.

See also SX9033 230V datasheet for single phase option.

SX 9033N is suitable for motors rated from 500W to 7.5kW, braking current (IB) is adjustable via a potentiometer scaled 10-100% (2.5A to 25A). Indication is via three LEDs which indicate power connected (green), fault indication (red) and DC current injection (yellow).

The BA9034N brake module incorporates standstill monitoring and an internal contactor connecting the DC output of the brake relay to the motor.

The inter-lock contact X5-X6 is utilised to avoid motor restart while injecting braking current and a built in safety brake override timer will stop the braking cycle if standstill is not detected within the safety time.

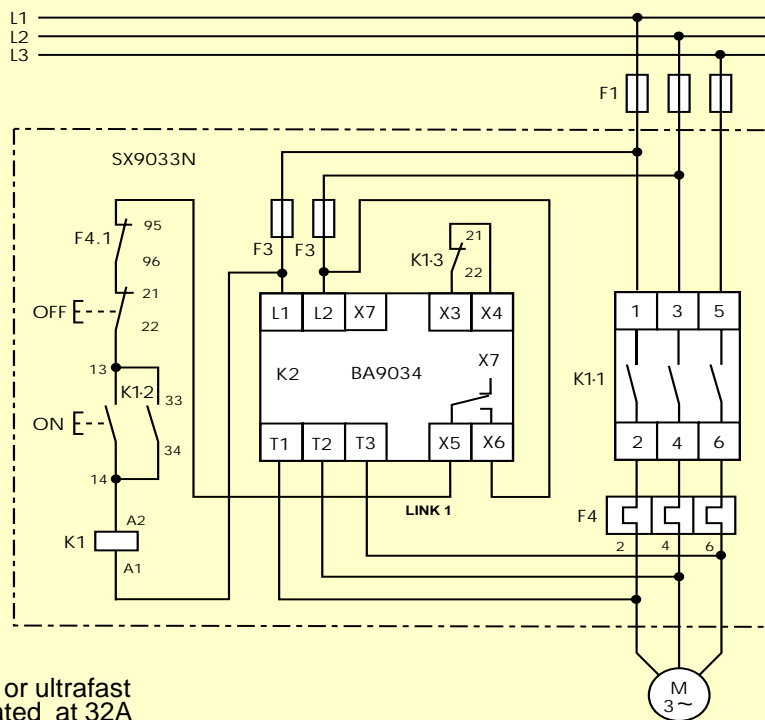
Braking is normally initiated by a close - open - close Volt free contact sequence at terminals X3-X4,

Special Note

When monitoring the injected DC current we recommend the use of a **true RMS or moving iron instrument** to limit the injected current to no more than 2.8 x the motor rated current or 25A which ever is achieved first, as low reading errors will occur with other types of instrument.

Application Circuit Diagram

DOL



Fuses F3 to be superfast or ultrafast semi-conductor fuses rated at 32A

Diag 1

Braking Current Setting

Connect power to L1 - L2 - L3, (green LED on), set current pot (IB) to min (anti clockwise) and initiate a braking cycle via X3 - X4, (yellow LED (IB) on), slowly turn up the current pot until the motor starts to brake, then turn pot up further to a maximum of no more than 2.8 or 2 x the motor line current measured at terminal T2. Restart the motor and re initiate a braking cycle, if necessary re adjust until the desired stopping time is achieved. The yellow LED (IB) should turn off 1 -1.5sec after motor standstill has been detected. If standstill monitoring is not detected either adjust stopping time to 7 to 9 sec and the safety timer will then turn off the brake current after 11sec or contact Dold Industries for further application advice. If the red LED (Error) flashes and contacts X5 - X6 remain open, the unit has detected a fault, please see fault diagnosis overleaf. The red LED should not illuminate under normal operation, the fault can be reset by removing power to the starter.

Wiring Information

Connect wiring for L1, L2, L3 to terminals L1(1), L2(3), L3 (5) on the starter contactor K1. The motor should be connected to terminals T1(2), T2(4) and T3(6) on the starter overload F4.

For single phase options see also SX9033 230V.

If a remote E- Stop button is required, remove link "1" fitted between terminal "X5" on BA9034N and terminal "95" on the overload. Wire the N/C contact of the remote E -Stop button across these terminals.

All wiring to be 2.5 mm² min, Conduit or gland entry, 20 mm or 25 mm.

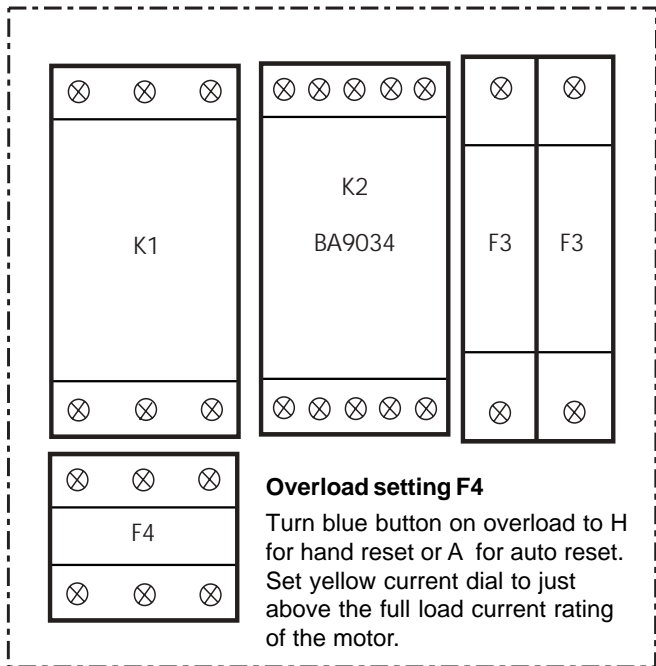
Warning: Please ensure this starter is only installed and adjusted by electrically qualified personnel and the wiring to the starter and associated fusing is correct for the rated motor current.

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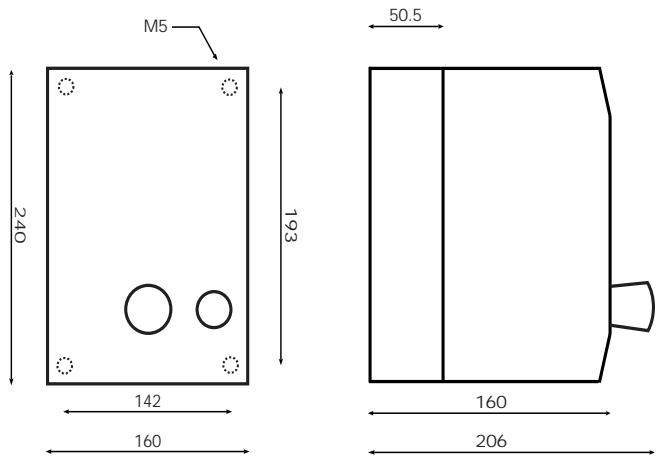
Layout



Indication

- Green LED, (Run)** (On) Power connected
- Yellow LED, (IB)** (On) DC injection braking
- Red LED, (Error)** (Off) System healthy
- Red LED, (Error)** (On Flashing) System fault.
- Flashing x 1 pulse** **Incorrect mains frequency.**
Contact manufacturer for advice.
- Flashing x 2 pulses** **Set brake current is not achieved.**
Brake current circuit broken.
Motor winding resistance too high.
Repair circuit or reduce braking current and allow longer braking time.
- Flashing x 3 pulses** **Overtemperature of brake unit.**
Duty cycle exceeded.
Reduce braking cycle time.
Increase cooling in enclosure.
- Flashing x 4 or 5 pulses** **System error**
Return to manufacturer.
- To reset Error fault (X5 - X6 open), cycle power to starter.**

Dimensions



Specifications

- Nominal Voltage 400Vac
- Voltage Tolerance 0.9 – 1.1Vn
- Frequency 50Hz +/- 1hz
- Braking Current (IB) 2.5 – 25A (10 -100%)
- Starter DOL kW Rating @ 400V 4 kW, 5.5kW, 7.5kW
- Braking Voltage (400V) 10 – 190V dc @ T1 - T2
- Safety Time Delay 11sec max
- Reaction Time 0.2 to 2 sec
- motor back EMF dependant
- Standstill detection range 5 – 25A
- Stops Per Hour @ 25A 60 / Hr @ 5 sec duration
- Control Contact Ratings 400V (AC1) 3A
- Semiconductor rating 1250 A²/ s
- Temperature Range 0 – +45°C
- Protection Class Case IP40 Terminals IP20
- Enclosure Material Thermoplastic Vo rating UL94
- Terminations 2 x 2.5mm² solid
2 x 1.5mm² stranded ferruled

WARNING !!
Please ensure this product is only installed and adjusted by electrically qualified personnel and the wiring to the unit and associated fusing is correct for the rated motor current. If in any doubt please contact Dold Industries Ltd.

kW / Current Overload Options

Motor kW Rating @ 400V	Amps
1.5 - 4 kW	4 - 6A
5.5 kW	6 - 10A
7.5 kW	10 - 16A

Motor kW Rating For 230V See SX9033 230V

Information Required With Order
 • Model type • Motor supply Voltage • kW • O/L current
 Example: Motor Brake Relay, SX 9033N, 400V, 5.5kW, 6-10A

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