

Motor Brake Relay

Type SX9033/200N
ministop



Model SX 9033/200N

NB: Due to the many variations of contactor and machine design this unit is not supplied prewired.

Description

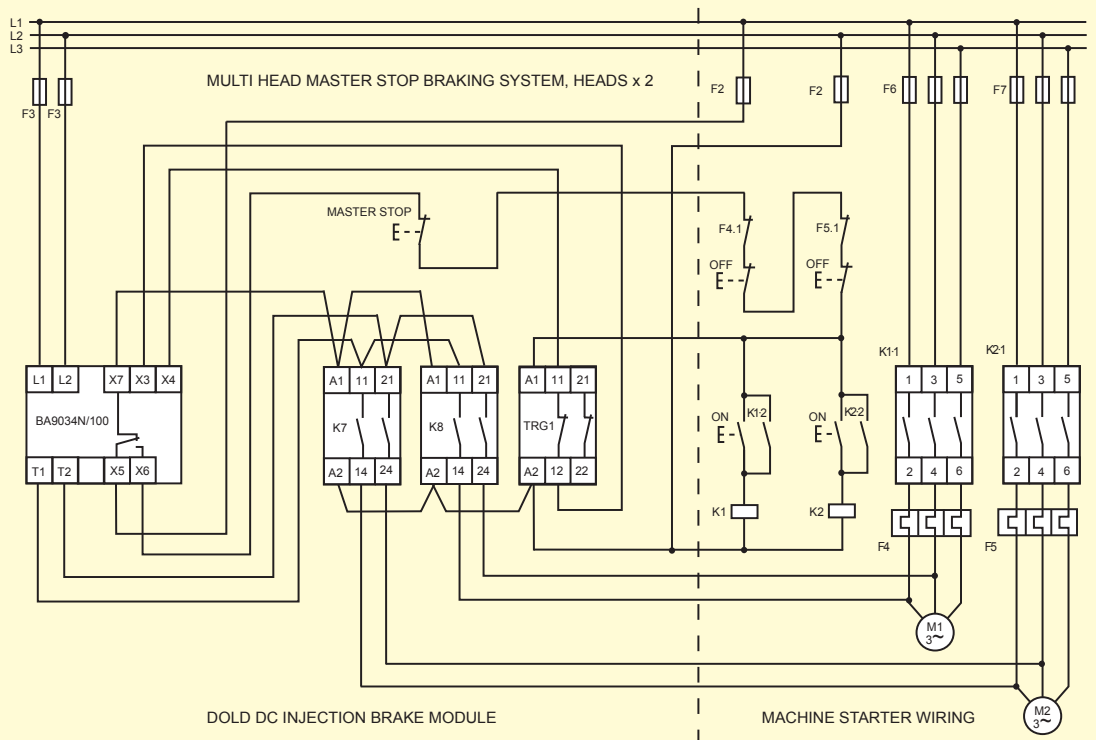
A compact IP65 screw mounted motor brake relay assembly, designed for retrofitting to existing DOL multi head starter systems. SX9033/200N is suitable for braking up to 5 motors individually rated from 500 W to 7.5 kW max, up to a total combined power of 15kW. Dependant on the number of motors and the total power SX9033/200N is required to brake. It may comprise of one or two BA9034N/100 motor brake relay modules, superfast semiconductor fuses and the necessary trigger, interlock and DC current isolation relays required to interface to a multi headed master stop controlled machine. An enclosure mounted master stop button is also provided which may be wired in series with the machines existing master stop circuit. To select which version is required, the number and power of the motors that require DC injection braking must be divided into groups of 7.5 kW maximum per brake relay, the maximum number of motor groups allowed is two. Each motor group should be of similar size and load to allow similar stopping times to be achieved. If the motor loads vary then the maximum loads should be used when setting the unit.

Application Circuit Diagram

Warning!!

Please ensure the machine's starter contactors are in good condition before commencing, as permanent damage to the braking system may occur if starter contactors remain closed during braking

NB: If replacing BA9024 with BA9034N/100 terminal X7 is now mounted on the top terminal row.

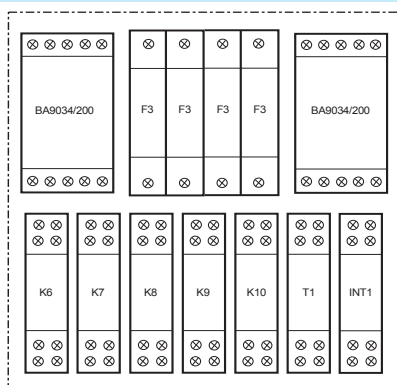


Fuses F3 to be superfast or ultrafast semi-conductor fuses rated at 32A, Fuse F2 to be 2A Max

NB: Masterstop pushbutton on enclosure should be wired in series with existing 400V stop pushbuttons on the machine as shown. Relays K7 to K8 and TRG1 are IK8701.12. Please note supply Voltage is present on terminals X3-X4.

Diag 1

Layout



Special Note

When monitoring the injected DC current we recommend the use of a **moving iron instrument** to limit the injected current to no more than 2.8 x the total motor rated current for delta wired motors or 2 x the total motor rated current for star wired motors or 32A which ever is achieved first. Low reading errors will occur with other types of instrument.

Further set up information can be supplied on request.

If frequent stopping of the motors is required, it is recommended that thermister protection relays are used to monitor the temperature of the motors to protect them from overheating.

All wiring to be 2.5 mm² min, conduit or gland entry 20 mm or 25 mm. Fuse F2 to be 25A max.

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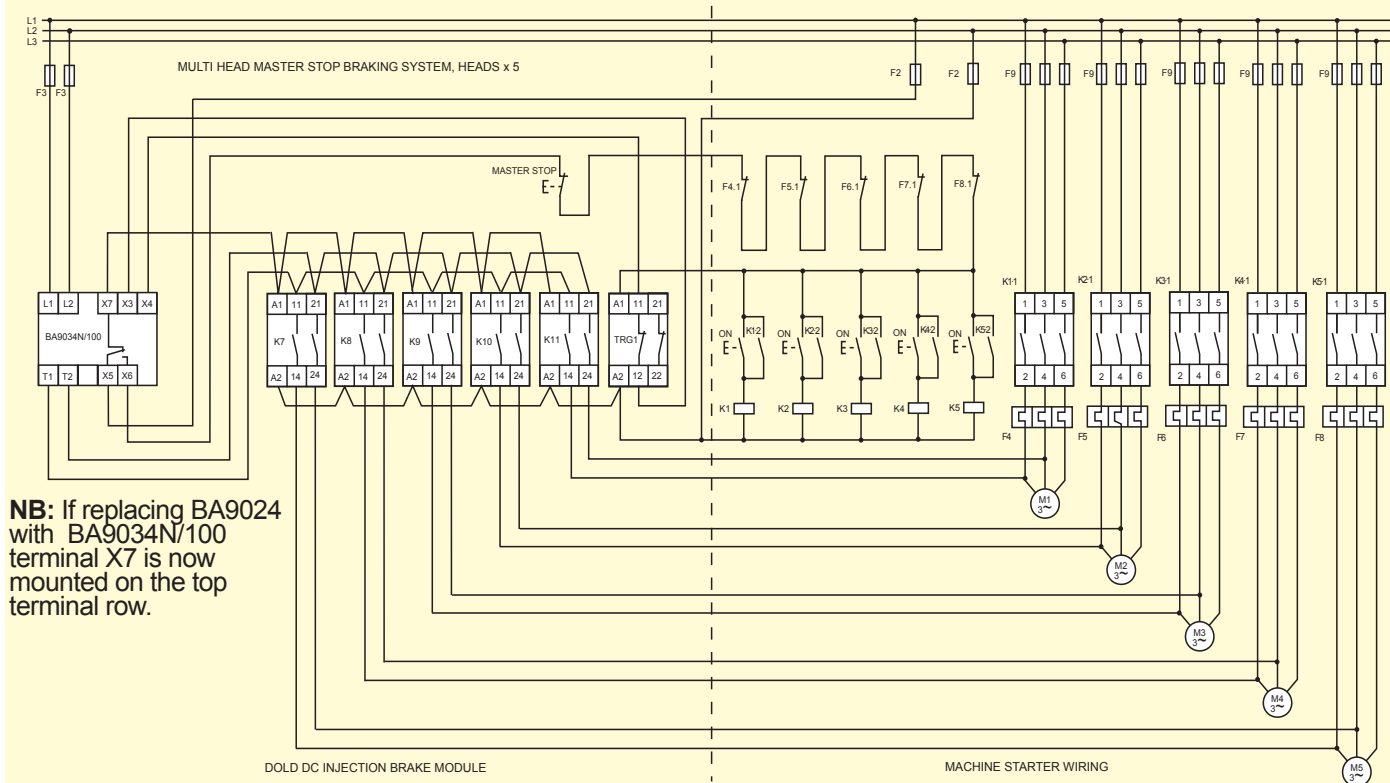
Application Circuit Diagram

SX 9033/200N

5 x heads one bank of
motors

Warning!!

Please ensure the machine's starter contactors are in good condition before commencing, as permanent damage to the braking system may occur if starter contactors remain closed during braking.



NB: If replacing BA9024 with BA9034N/100 terminal X7 is now mounted on the top terminal row.

Diag 2

Fuses F3 to be superfast or ultrafast semi-conductor fuses rated at 32A, Fuses F2 to be 2A max.

NB: Masterstop pushbutton on enclosure may be wired in series with existing 400V master stop pushbutton on the machine.

Relays K7 to K11 and TRG1 are IK8701.12. Please note supply Voltage is present on terminals X3-X4.

Setup

Function : Braking current on BA9034N/100 (ib) is adjustable via a potentiometer from 0.2A to 32A, with an adjustable brake time of up to 15 sec, Indication on the braking module is via a green LED (run) for power connected and a yellow LED (ib) for DC current injection and a red LED for fault indication. The braking module incorporates an internal contactor which connects the DC output of the brake relay to the DC isolation relays K7- K11. Inter-lock contact X5 –X6 –X7, and relay INT1, inhibit motor restart while DC current is being injected, contact X7 is used to control the DC isolation relays. Braking is initiated by a close - open - close Volt free contact sequence at terminals X3 – X4, this can be manually triggered by the red button on the trigger relay TRG 1, for system testing, providing the motors are **not connected** to terminals 14 – 24 of the DC isolation relays. **Basic Setting :** Set pot (tb) to 15 sec, set pot (ib) on BA9034N/100 to min (anti clockwise). Initiate a braking cycle and turn up the current pot (ib) until the motors start to brake, then turn up further to a maximum of no more than 2.8 x the total motor line currents. A compromise setting will be required if motors of different size or load are being braked on the same bank. I.e the largest load may stop in 10 sec and the smallest load in 5 sec, so care must be taken to not brake the small loads too quickly. Restart the motors and re initiate a braking cycle, adjust timer pot (tb) so that units time out in approx two secs longer than the time taken to stop the largest load. If a 15kW two brake unit is being used, repeat this process for the second bank of motors. **NB:** See also BA9034N datasheet for red LED error codes.

Specifications

Nominal Voltage	400V ac (to be specified)
Voltage Tolerance	0.9 – 1.1Vn
Frequency	50 Hz +/-1Hz
Burden	30VA
Braking Current (ib)	0.2 – 32A (10 - 100%)
Braking Time Delay	1-15 sec adjustable
Reaction Time	Self Adjusting
Stops Per Hour @ 25A	30 / Hr @ 10 sec duration
Control Contact Ratings	400V (AC1) 5A
Temperature Range	0 – +45°C
Protection Class	Case IP65, Terminals IP20
Enclosure Material	Thermoplastic Vo rating UL94
Terminations	2 x 2.5mm ² solid 2 x 1.5mm ² stranded ferruled

Options :

- 7.5kW x 2 Head (One Brake)
- 7.5kW x 3 Head (One Brake)
- 7.5kW x 4 Head (One Brake)
- 7.5kW x 5 Head (One Brake)

- 15kW x 2 Head (Two Brakes)
- 15kW x 3 Head (Two Brakes)
- 15kW x 4 Head (Two Brakes)
- 15kW x 5 Head (Two Brakes)

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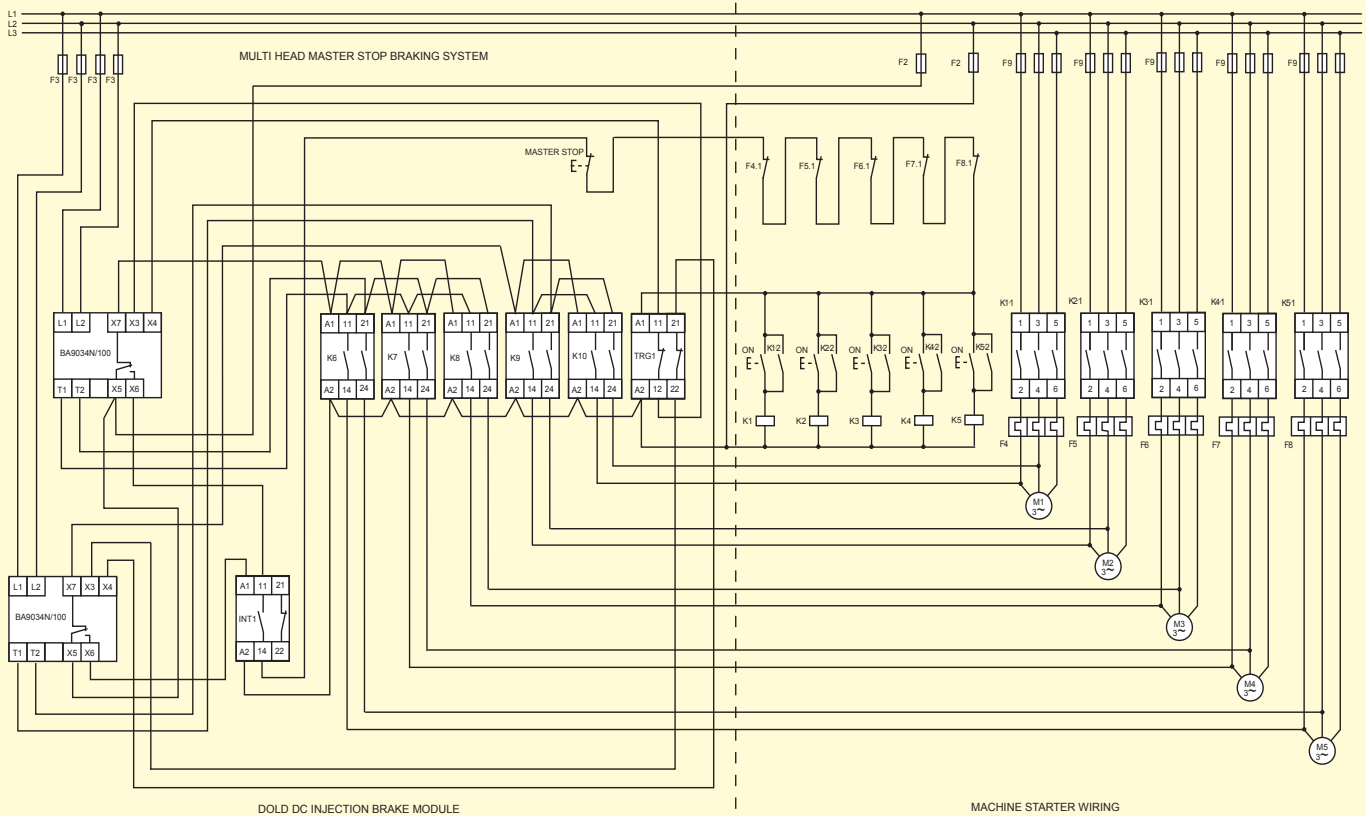
Application Circuit Diagram

SX 9033/200N
5 x heads two
banks of motors

NB: If replacing BA9024 with BA9034N/100 terminal X7 is now mounted on the top terminal row.

Warning!!

Please ensure the machine's starter contactors are in good condition before commencing, as permanent damage to the braking system may occur if starter contactors remain closed during braking.

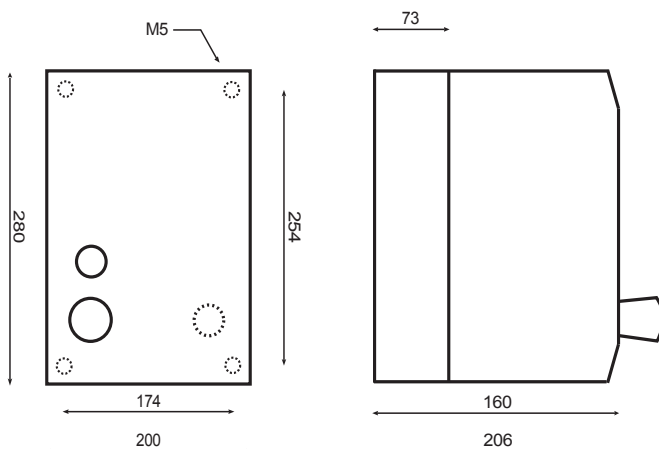


Fuses F3 to be superfast or ultrafast semi-conductor fuses rated at 32A, Fuses F2 to be 2A max.

NB: Masterstop pushbutton on enclosure may be wired in series with existing 400V master stop pushbutton on the machine.

Diag 3

Dimensions



NB: Relays K6 to K10, INT1 and TRG1 are IK8701.12. If retrofitting BA9034N/100 to older SX9033/200 15kW systems with BA9024 or BA9034/200 fitted, please contact Dold for additional retrofit information.

WARNING !!

This device contains high Voltages and should only be installed by a qualified electrician. If you are unsure about any part of the installation please contact Dold Industries Ltd for advice.

NB: We recommend that **all DC** connections to the motors (14-24) are only made after the system sequence has been proved. Please note supply Voltage is present on terminals X3-X4.

Do Not operate the motor contactors manually during a brake cycle, as this will result in damage to the brake units.

Information Required With Order

• Model type • Motor supply • Number of heads • kW total
Example: Motor Brake Relay, SX 9033/200N
400V, 5 Head, 15kW

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