

Motor Brake Relay

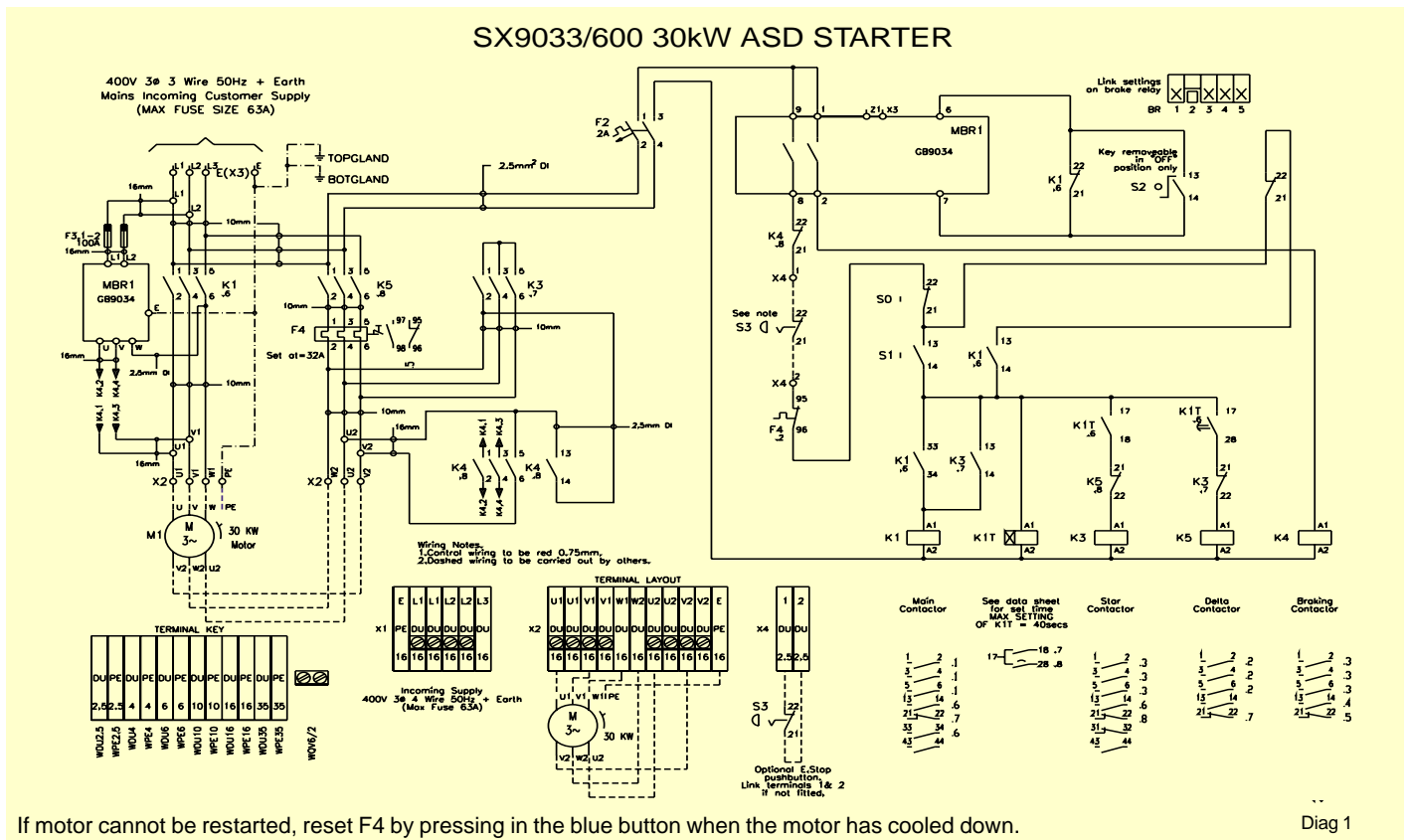
Type SX 9033/600 30kW
ministop



Description

An IP65 screw mounted Motor Brake Star Delta combination starter, designed to completely replace existing 3 phase star delta starters. SX 9033/600 is suitable for motors rated from 22kW to 30 kW and has a built in adjustable motor protection overload. Braking current (I_b) is adjustable via a potentiometer on GB 9034 brake module, from 1A to 100A (30kW), with adjustable safety braking time delays of up to 40 sec set via links on BR. GB 9034 incorporates an integral automatic standstill monitoring function which turns off the braking current 1 to 2 sec after motor standstill is detected via terminal (W). Star starting time is adjustable via potentiometer (Time) on Star delta timer K1T from 1 to 60 sec, however please note that full load start times of 40 sec should not be exceeded. The motor overload F4 should be set to 58% of the full load current of the motor before starting is initiated. Key switch S2 may be used to override the Braking function for machine set up purposes only (machine jogging). **NB:** The key should always be removed before the machine is used.

Application Circuit Diagram



If motor cannot be restarted, reset F4 by pressing in the blue button when the motor has cooled down.

Diag 1

Warning

Attention !! this device must be wired and set up according to the instructions provided on this datasheet.

This unit **must be disconnected** from the mains supply before any work is carried out on the motor.

Adjustments and wiring should only be carried out by qualified persons.

Key switch S2 should only be activated for machine set up purposes. The **Key should always be removed** before the machine is used.

Fuses F3 to always be replaced with 100A rated superfast or ultrafast semiconductor fuses.

Special Note

We recommend that the injected DC current is monitored when setting up the unit a **Moving Iron or true RMS current measuring instrument**, should be connected to terminal "U", to allow the amount of DC current flowing in the motor to be limited to no more than **2 times** the rated motor full load current or (100A). However scaling on pot (I_b) is linear and proportional to the full MBR rated current.

NB: Motor overload F4 is placed in the Delta loop to facilitate heavy duty starting, it should be set to 58% of the rated motor full load current. If lighter loads are applied, F4 can be placed in series with the connections to K1 and uprated to **100% FLC**, to allow full protection during startup. Star start times must be limited to no more than 40 sec.

If a remote E stop button is required remove the link 1 - 2 on Terminal block X4 and connect a N/C E stop contact in place of the link.

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Basic Setting : Set pot (Ib), on GB 9034 (MBR1) to min (anti clockwise) set pots (t1, t2) to 0, links or DIP switch on BR (on bottom right of GB9034) to XOXXX, (X= linked (switch up (on)), (O = open) and Set pot (n0) to midway. Setting is now: Standstill monitoring on, 40sec safety time, auto reset.
Set star timer (K1T) pot (Time) to required start time (no more than 40 sec). Set overload F4 to 58% of motor FLC. Initiate a start cycle and re adjust Star timer until the motor starts and holds a constant speed for a few seconds before the automatic changeover to Delta.

LED 1 and LED 3 are on, Initiate a stop cycle and turn up current pot (Ib) on GB 9034 slowly to a maximum of no more than 2 x the motor line current or 100A, until the motor stops in the desired time and the motor current turns off when standstill is detected, LED 1 is on, LED 2 and 3 stop flashing. Restart the motor and fine tune the settings until the required start and stop times are achieved.

Wiring Information

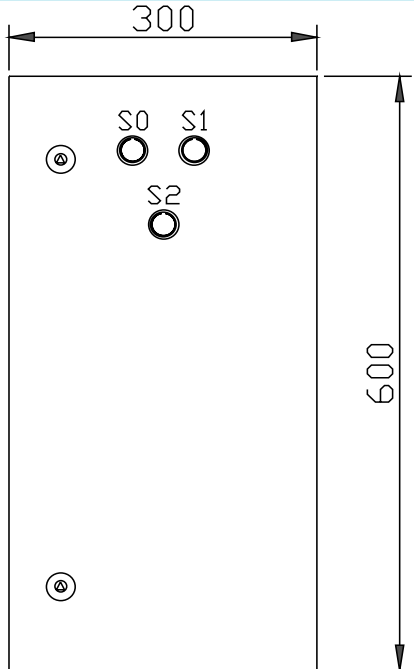
Connections
The three phase supply is connected to terminals L1, L2, L3 on terminal block X1.

The motor is connected to terminals U1-W2, V1-U2, W1-V2 respectively on terminal block X2.

All wiring to be 16mm²

NB: If the braking current is not automatically turned off within 2 sec period after the motor has stopped, adjust pot (n0) clockwise in small increments until standstill is detected, if the brake current turns off too early, adjust pot (n0) anti clockwise. If motor cannot be restarted please check overload F4 has not tripped, press in blue button to reset when motor has cooled. **(please see commissioning instructions for GB 9034 for other fault indications)** .

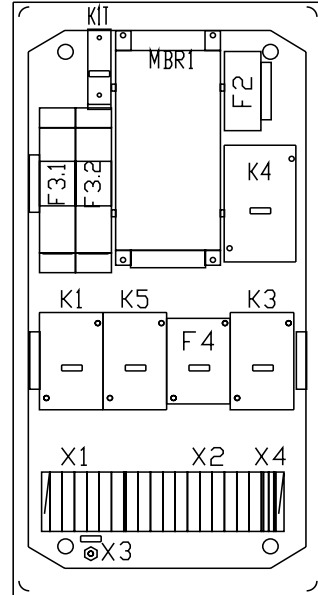
Dimensions and Layout



EXTERNAL LAYOUT

DIMENSIONS IN MM

DEPTH
200



INTERNAL LAYOUT

Notes

Jogging the machine on set up
With the key switch S2 enabled, when the start button is depressed, the machine will only run while the start button is held down, when released the machine will coast to a stop.

It is only permissible to Jog the machine for **up to three 10 sec cycles in any 3 min period**, after this a cooling down period of 10 mins is required before jogging the machine again.

Auxiliary Supply Connection Options

Nominal Voltage	400Vac
Voltage Tolerance	0.8 – 1.1Vn
Frequency	50 to 60Hz
kW Rating @ 400V	22 to 30kW
Burden	35VA
Star Start Time (time)	1 to 40 sec
Braking Current (Ib)	1 to 100A
Safety Time Delay (tb)	40 sec (link adjustable via BR)
Reaction Time	1 to 3 sec
Starts Per Hour	15 / Hr @ 30 sec duration
Stops Per Hour @ 100A	15 / Hr @ 30 sec duration
Overload Rating	24 to 40A @ 58% (55A FLC max)
Control Contact Ratings	400V (AC1) 3A
Temperature Range	-20 – +40°C
Protection Class	Case IP65, Terminals IP20
Enclosure Material	Steel Painted
Terminations	16mm ² stranded ferruled

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Information Required With Order
• Model type • Supply voltage • kW •
Example: Soft Start Brake Module, SX 9033/600, 400V, 30kW