

SIB Enclosed Soft Start User Guide

(18.5kW – 75kW)



V2.1.0

Contents

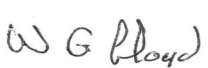
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Declaration of Conformity

Willpower Electrical Limited trading as Motor Control Warehouse hereby states that the Enclosed Soft Start range of products adheres to manufactures instructions and the following standards;

EN61000-6-2	EMC immunity in industrial environment
EN61000-6-4	EMC emission in industrial environment
EN61010-1	Safety
EN60529: 1992	Specifications for the degrees of protection provided by enclosures

Model	kW Rating	Input Voltage
SIB185EN400V	18.5kW	380-440VAC
SIB220EN400V	22kW	380-440VAC
SIB300EN400V	30kW	380-440VAC
SIB370EN400V	37kW	380-440VAC
SIB450EN400V	45kW	380-440VAC
SIB550EN400V	55kW	380-440VAC
SIB750EN400V	75kW	380-440VAC

Signed	
Name	Gareth Lloyd
Position	Technical Director
Date	20.05.2021

Safety Information

This chapter provides important information so that you can use the **SIB Enclosed Soft Start** safely, prevent injury or death, or damage to equipment. Please read this information thoroughly and make sure you observe all the safety information shown below and elsewhere in this manual and in the Schneider ATS Soft Start User Guides. Please make this User Guide and the Schneider ATS Soft Start User Guide available for the end user.

Please read this safety information in conjunction with the safety information in the Schneider ATS Soft Start User Guide. Please read the Schneider ATS Soft Start User Guide for details such as Fuse/MCB and cable sizes etc.

Safety symbols



Danger: Danger of electrical shock which can cause injury or death, or damage to equipment



Warning: Potential hazard, other than electrical, that can cause physical injury or damage to equipment



Danger

- The SIB Enclosed Soft Start should **ONLY** be installed, commissioned, and maintained by qualified and competent personnel.
- The SIB must be installed to the latest IEE wiring regulations considering local regulations.
- Before power is applied to the SIB, ensure the SIB cubicle door is closed.
- Dangerous voltages are present when the input power supply is connected to the SIB. Before attempting any work on the SIB cubicle or motor, isolate and lock off the input power supply. Prove dead using a voltage tester. The voltage tester itself should be proved immediately before and after testing using a proving unit with a low power output.
- The SIB cubicle must be connected to system ground using the cubicles earth terminals. The size of the earth conductor and earth loop impedance must comply with national and local electrical regulations.
- Do not flash test the components within the SIB cubicle.
- If the SIB cubicle is supplied from a pluggable power connector, the SIB interlocked isolator must be turned off before unplugging the connector.
- The SIB is a non-field repairable unit. Contact the supplier of the SIB.
- The SIB cubicle must be protected by the recommended fuses/MCB (See Schneider ATS Soft Start User Guide).



Warning

- All machinery, in which this SIB is used, within the European Union, must comply with directive 98/37/EC, Safety of Machinery.
- Do not install the SIB in an explosive environment.
- The motor must be used within the manufacturer's guidelines.
- Do not allow conductive material to enter the components within the SIB, e.g. from drilling during installation.
- **The RED mushroom type Emergency Stop Button on this equipment gives a 'category zero stop' (coast to stop). It is a low integrity level, PLa system. Therefore, a single fault can lead to a loss of the safety function. Please check this is adequate for your machine/equipment.**

Technical data

Model	kW rating	Input phases	A Typical motor current (A)	Dimensions (H x W x D) Trip Class 10	Dimensions (H x W x D) Trip Class 20	Weight (kg)
SIB185EN400V	18.5	3	41	600xW500xD250	600xW500xD250	25
SIB220EN400V	22	3	41	600xW500xD250	600xW500xD250	25
SIB300EN400V	30	3	55	600xW500xD250	800xW600xD300	35
SIB370EN400V	37	3	66	800xW600xD300	800xW600xD300	40
SIB450EN400V	45	3	80	800xW600xD300	800xW600xD300	40
SIB550EN400V	55	3	97	800xW600xD300	800xW600xD300	45
SIB750EN400V	75	3	132	800xW600xD300	800xW600xD300	50

Approvals	CE approval	CE
Environment	Altitude	1000m rated 1000m~2000m, 1% rated current de-rating per 100m
	Operating Temperature	0°C~+40°C
	Max. Humidity	≤85%RH, non-condensing
	Vibration	≤5.9m/s ² (0.6g)
	Storage Temperature	-25°C~+60°C
	Running Environment	Non-flammable, No corrosive gasses, no contamination with electrically conductive material
Supported Power Supply Systems		TT TN
SIB Enclosure		IP65
Breaking capacity of protective devices		10kA
Supply frequency		50 to 60Hz (±2%)
Supply voltage		3 phase 400VAC ±10%
Trip Class		10 or 20

SIB Features

Door interlocked mains isolator
 10kA control MCBs
 Schneider Altistart 22 softstarter
 Integral bypass relay
 Full motor phases isolation on stop
 Motor connections on DIN rail terminals
 Tri-rated cable
 Customer terminal

Starts Per Hour

In a Standard application, the soft start is designed to provide:

- in S1 duty: Starting at 3.5 for 40 seconds from a cold state.
- In S4 duty: a load factor of 90% and n starts per hour (see table below), with 3.5 in for 20 seconds or an equivalent thermal cycle.

Frame size	In S4 duty, number of starts (1) per hour	
	Standard	With Fan
18.5-22kW	6	10
30-45kW	6	10
55-75kW	4	10

- (1) Note: in case of both soft starts and soft stops, the number of starts must be divided by 2.
(2) Note: If you've been supplied for a trip class 20, the soft start is overrated as per the table below. Soft starters set to trip class 20 should have parameter **t H P** set to 20

Starting Current	Protection Class		
	Class 10	Class 20	Class 30
<3.5 i n Max Starting time	Nominal* 16 s	Nominal + 1** 32 s	Nominal + 2*** 48 s

Enclosed Soft Start Trip Class

The MCW Enclosed soft starters are set to **Trip Class 10** thermal overload relay as standard which is suitable for most of the light to medium industrial type load applications. As an option the soft start can be converted to trip class 20 (medium to heavy industrial loads) at time of purchase. This involves a larger soft start unit. **Please note on some models when upgrading to trip class 20 the enclosure size may increase.**

The MCW Enclosed Soft Starter range are not suitable for applications that have a very heavy load on start that takes greater than 20s to start or very high inertia loads such as high inertia fans, centrifuges or loaded crushers.

Starting the MCW Enclosed Soft Starters more than once every 10 minutes will alter the thermal overload tripping characteristics making the overload trip more quickly for a given thermal overload current setting.

Trip Class Explained

At 600% of the maximum current rating of the motor the **Trip Class 10** unit will trip in 10 seconds or less, **Trip Class 20** will trip in 20 seconds or less, and **Trip Class 30** will trip in 30 seconds or less.

To set your devices motor thermal protection see below screenshot from the manufacturer's documents

SET

IEHP 10 20 30	☐ Motor thermal protection		R/W	10
	To select the class of motor thermal protection, see explanations and curves page 22.			
	☐ IEC class 10 ☐ IEC class 20 ☐ IEC class 30 (heavy duty)			
	Note: To activate the Motor thermal protection, set IEH to ErUn or On , page 59			

Setting Motor Current

The desired motor current can be set, the table below only shows typical motor currents. To set your motor's current check the motors nameplate.

SET

In	☐ Motor rated current		R/W*	0.4 ICL up to ICL	According to the soft starter rating (pages 11 to 22)
	- Soft starter in line connection: In = rated current of the motor. - Soft starter inside delta connection: In = rated current of the motor / $\sqrt{3}$.				

Model	kW rating	Input phases	Typical motor current (A)
SIB185EN400V	18.5kW	3	35
SIB220EN400V	22kW	3	41
SIB300EN400V	30kW	3	55
SIB370EN400V	37kW	3	66
SIB450EN400V	45kW	3	80
SIB550EN400V	55kW	3	97
SIB750EN400V	75kW	3	132

Operation

The SIB range of enclosed motor soft starters is designed to be as close to a plug and play product as possible. They require a suitable 3 phase and earth power supply and a three wire and earth motor cable.

NOTE: The SIB range of Soft Starters are recommended for light to medium type industrial loads only (Trip Class 10). They are not suitable for heavy industrial type loads or very high inertia loads.

The SIB is equipped with:

- Green start button
- Red stop button
- Reset button
- Twist to release Emergency Stop Button
- An interlocked mains isolator is also provided

The SIB will provide a soft start and a soft stop along with motor thermal protection.

The Emergency Stop button on this equipment provides a 'Category 0' emergency stop only by removing power immediately from the motor and has no built-in redundancy or safety relay control. This is a low integrity PLa emergency stop system. Please Note This may not be adequate for all machinery so please inspect yours before installing the equipment.

Start Button - When pressed the Soft Start will enable and run the motor up to speed.

Stop Button - When pressed the Soft Start will either disable or ramp to a stop depending on the setting of the soft stop time potentiometer.

Reset Button – This resets the e-stop circuit, providing power to the soft start. It will need to be pressed after a power down cycle or after the e-stop is pressed and released.

Emergency Stop Button - When pressed the E-stop will remove power from the soft start.

Mains Isolator - With the mains isolator in the off-position mains power will be removed from the control box. Mains power will still be present at the input connections to the isolator only.

Motor thermal overload – This is built into the soft start from sizes 15kW upwards.

 Mettler Control Warehouse	Motion Control Warehouse Unit 43 Metcra Industrial Estate, Newton Poulton, 576 4LE www.motcontrolwarehouse.co.uk	Soft Starter 18.5kW - 132kW	Project:	Drawing no:	Int.:	Rev.:	Sheets:
			Date:				
			SIB_18.5-45kW_TC10	01/12/2020	M/CW	0.0	1

NOTES

NOTES

Expand Your Motor Control Solutions

Reliable enclosed motor control systems built for industrial performance



ENCLOSED STAR DELTA STARTERS

7.5kW – 90kW | Three Phase

High performance starters designed for medium industrial applications

Key Features:

- ✓ Powder-coated IP65 enclosure
- ✓ Door-interlocked isolator
- ✓ Motor and control MCB/fuse protection
- ✓ Thermal overload motor protection
- ✓ Start, stop and emergency stop controls
- ✓ Adjustable changeover timer
- ✓ Internal motor and control terminals
- ✓ Smooth reduced-current motor starting



ENCLOSED INVERTERS

0.75kW – 45kW | Single & Three Phase

Compact variable speed control in durable industrial enclosures

Key Features:

- ✓ Robust IP54 powder-coated steel enclosure
- ✓ Interlocked isolator with MCB protection
- ✓ Variable speed control for precise motor tuning
- ✓ Forward/Reverse and Start/Stop control
- ✓ Built-in speed potentiometer & indicator lamps
- ✓ Thermostatically controlled cooling
- ✓ Suitable for both 230V single-phase and 400V three-phase inputs

Need a Custom Configuration?

We build enclosed solutions to your specifications

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