Many more

SAFESAV

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SAFESAV

Selection Guide

SST-ES/MS series
Built-in bypass motor soft starter

Zhejiang Saikong Electrical Technology Co., Ltd.

General

(SST-ES series)

(SST-MS series)

◎ Product Overview

- SST-MS/ES series soft starter is a mini Soft starter
- Small size, large capacity
- Built-in bypass, compact structure
- Dedicated thyristor module and high-current magnetic latching relay, the machine has strong overload capacity
- All-aluminum body, simple and elegant, open mold design
- The main circuit terminal is designed with open mold, which makes wiring convenient and reliable, and has strong overload capacity
- The main circuit is made of copper bar, which does not generate heat and has strong overload capacity
- Control terminal: programmable input + programmable output + Rs485
- Friendly human-machine interface and rich display content
- 15 protection functions, some of which can be turned off

◎ Technical Reference

Power supply	Standard wiring AC 220V , 380V ±15% , 50Hz, 60Hz.
Nominal current	2.2 A-- 45 A, 9 ratings in total
Power level	1.1-55kW, 9 ratings in total
Starting current	100~500%
Control object	Three-phase asynchronous motor
Start and stop frequency	<10 times/hour
Protected Mode	Input and output phase loss, start timeout, overheating, overcurrent, overload, overvoltage, undervoltage, three-phase imbalance, external fault, etc.
Protection grade	Ip20

◎ Technical Reference

Cooling method	Natural cooling or forced air cooling
Installation method	Wall-mounted, rail-mounted
Communication	Modbus
Programmable digital inputs	3-Way
Programmable relay outputs	2-Way
Ambient temperature	-10℃ ~ 40℃
Ambient humidity	<90%, no condensation
Installation location	No direct sunlight

Product Specification

Specifications	230V Rated power (KW)	400V Rated power (KW)	Rated current (A)	Overall dimensions (L*W*H) (mm)	Installation dimensions (L*W*H) (mm)
SST-MS Series (with digital panel + keyboard + RS485)	0.75	1.1	3	131*52*112	113*41*112
	1.1	2.2	5		
	1.1	3.7	8		
	2.2	5.5	13		
	3.7	7.5	17		
	5.5	11	25		
	7.5	15	32	145*52*112	127*41*112
	7.5	18.5	37		
	11	22	45		
	15	30	60	190*75*122	174*75*122
	18.5	37	75		
	22	45	90		
	30	55	110		
SST-ES Series (with potentiometer + indicator light)	0.75	1.1	2.2	131*52*112	113*41*112
	1.1	2.2	4.5		
	1.1	3.7	7.5		
	2.2	5.5	13		
	3.7	7.5	17		
	5.5	11	25		
	7.5	15	32	145*52*112	127*41*112
	7.5	18.5	37		
	11	22	45		
	15	30	60	190*75*122	174*75*122
	18.5	37	75		
	22	45	90		
	30	55	110		

Installation Dimension

◎ SST-ES series

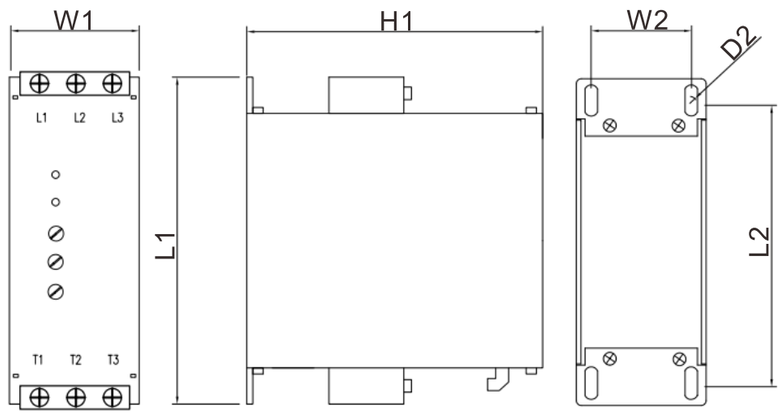


Figure -1: Dimensional drawing of screw fixing method

Specifications	Dimensions (mm)			Installation size (mm)				Max cross section of line (mm)	Max width of terminal(mm)
	L1	W1	H1	L2	W2	H2	D2		
1.1-11kw	131	52	112	113	41	112	M4	16	8
15-22kw	145	52	112	127	41	112	M4	16	8
30-55kw	190	75	122	174	61	122	M4	35	15

(Table -1: Screw fixing method dimensions)

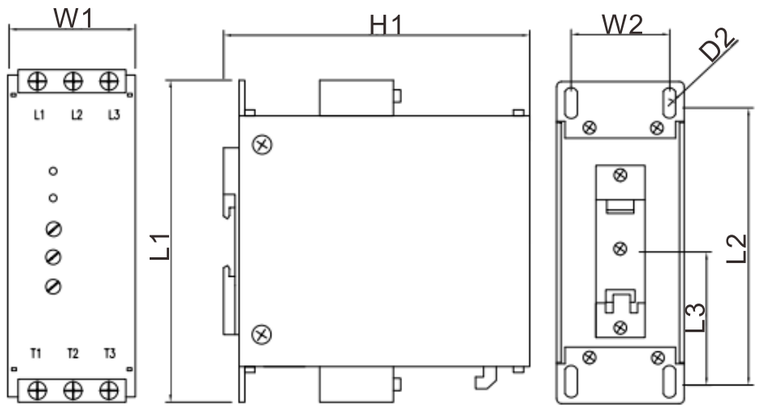


Figure -2: Dimensional drawing of guide rail fixing method

Specifications	Dimensions (mm)			Installation size (mm)					Max cross section of line (mm)	Max width of terminal(mm)
	L1	W1	H1	L2	W2	H2	L3	D2		
1.1-11kw	131	52	118.5	113	41	118.5	63	M4	16	8
15-22kw	145	52	118.5	127	41	118.5	70	M4	16	8
30-55kw	190	75	122	174	61	128.5	87	M4	35	15

(Table -2: Dimensions of guide rail fixing methods)

Installation Dimension

◎ SST-MS series

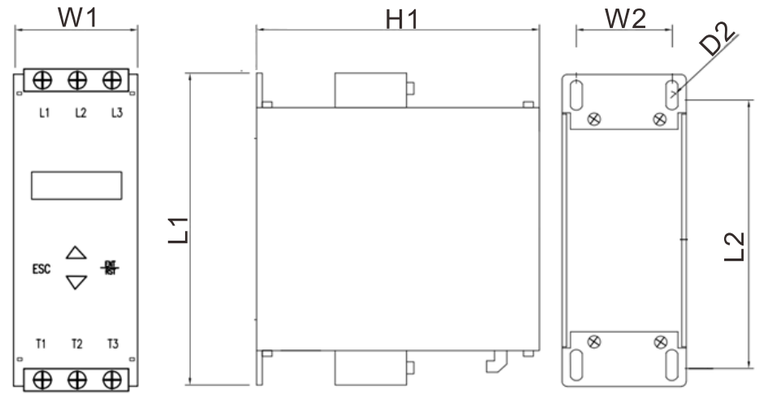


Figure -3: Dimensional drawing of screw fixing method

Specifications	Dimensions (mm)			Installation size (mm)				Max cross section of line (mm)	Max width of terminal(mm)
	L1	W1	H1	L2	W2	H2	D2		
1.1-11kw	131	52	112	113	41	112	M4	16	8
15-22kw	145	52	112	127	41	112	M4	16	8
30-55kw	190	75	122	174	61	122	M4	35	15

(Table -3: Screw fixing method dimensions)

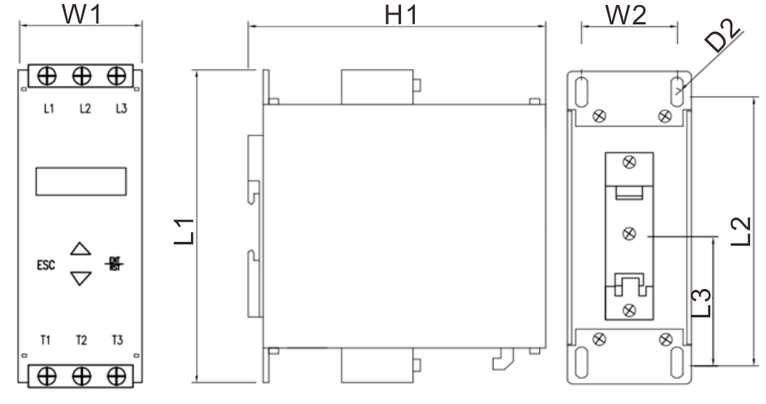


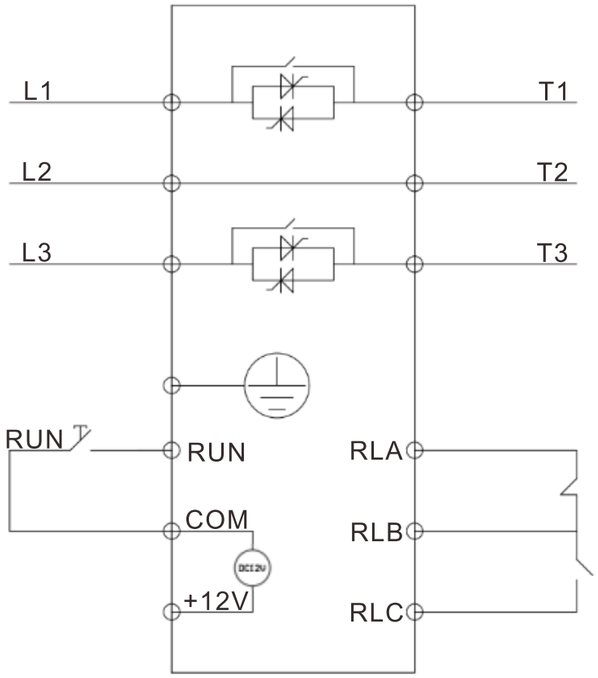
Figure -4: Dimensional drawing of guide rail fixing method

Specifications	Dimensions (mm)			Installation size (mm)					Max cross section of line (mm)	Max width of terminal(mm)
	L1	W1	H1	L2	W2	H2	L3	D2		
1.1-11kw	131	52	118.5	113	41	118.5	63	M4	16	8
15-22kw	145	52	118.5	127	41	118.5	70	M4	16	8
30-55kw	190	75	122	174	61	128.5	87	M4	35	15

(Table -4: Dimensions of guide rail fixing methods)

External terminal description

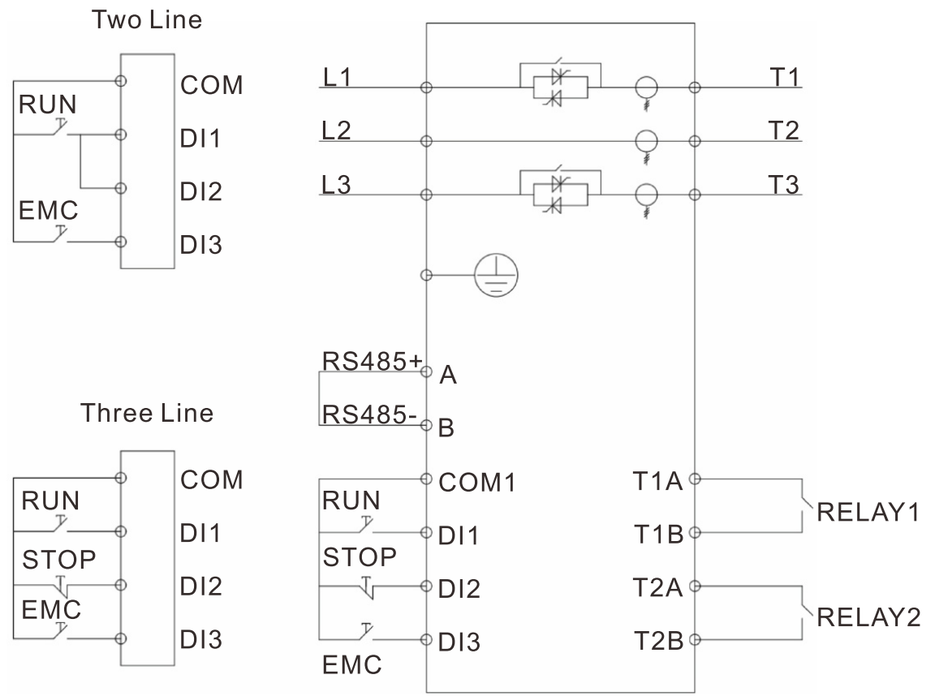
◎ SST-ES control terminal



RUN	COM	+12V	RLA	RLB	RLC

Terminal Model	Terminal No.	Terminal name		illustrate	
Main circuit	L1 , L2 , L3	Soft start input		Connect to three-phase AC power supply	
	T1 , T2 , T3	Soft start output		Connect to three-phase asynchronous motor	
Run enter	RUN	/		Start/Stop	/
	COM	Public			Provide 12v/100mA power supply for external use
	+12V	Power+		/	
Relay Output	RLA	Normally Closed	/	Running status indication, running on, stopping off	
	RLB		Normally Open		
	RLC	RLC			

◎ SST-MS control terminal



RS485		Programmable digital inputs				RELAY1		RELAY2	
A	B	COM	DI1	DI2	DI3	T1A	T1B	T2A	T2B

Terminal Model	Terminal No.	Terminal name	illustrate
Main circuit	L1 , L2 , L3	Soft start input	Connect to three-phase AC power supply
	T1 , T2 , T3	Soft start output	Connect to three-phase asynchronous motor
Communication	A	RS485+	Modbus Communication
	B	RS485-	
Programmable Digital Input	COM	Public	Digital ground , used together with DI1 , DI2, and DI3
	DI1	Terminal 1	0: Emergency stop 1: Stop 2: Start 3: Reset 4: External fault
	DI2	Terminal 2	
	DI3	Terminal 3	
Programmable Relay Output	RELAY1A	Relay 1 Normally open contact	0: Fault state (positive logic) 1: Normal operation (positive logic) 2: Stop state (positive logic) 3: Soft start state (positive logic) 4: Soft stop state (positive logic) 5: Fault state (negative logic) 6: Normal operation (negative logic) 7: Stop state (negative logic) 8: Soft start state (negative logic) 9: Soft stop state (negative logic)
	RELAY1B		
	RELAY2A	Relay 2 Normally open contact	
	RELAY2B		

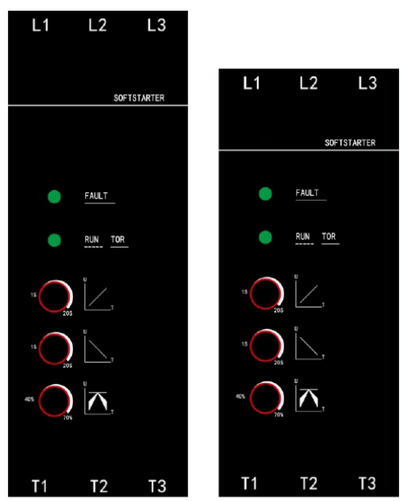
Operation panel

◎ SST-ES operation panel

1. Start time knob: used to adjust the soft start time of the soft starter , the range is : 1~20S . The longer the time setting, the smoother the soft start process, which is beneficial to reduce the impact on the power grid and machinery .

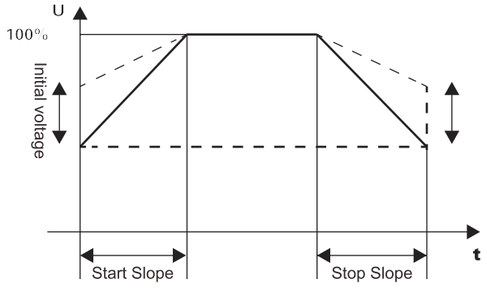
2. Parking time knob: used to adjust the soft stop time of the soft starter , the range is : 1 ~ 20 S. When the knob is adjusted to 0 S , it means that the motor stops in free parking mode, and the soft start stops output immediately .

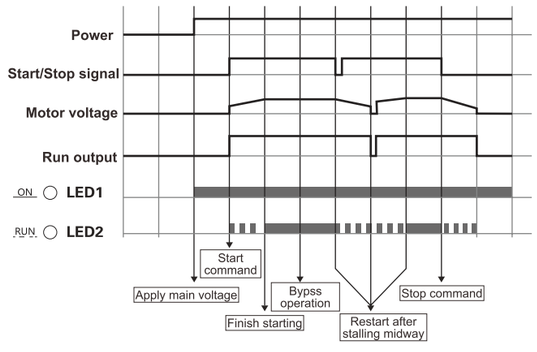
3. Starting voltage knob: used to adjust the starting voltage of the soft starter , the range is : 40 % ~ 70%. When the motor starts, it needs to overcome the friction in the static state. Properly increasing the starting voltage can obtain a larger starting torque. Users should refer to the actual load conditions and coordinate the start and stop time to obtain the SST-ES balance. Steady start effect.



Indicator light			
RUN / ON	Always on	Off	Flash
Always on	Bypass operation	Hardware abnormality	Input or output phase loss hardware fault
Flash	Soft start or soft stop in progress	Hardware abnormality	Hardware abnormality
Off	Equipment powered	Soft start power failure	Input or output phase missing, motor not connected
	Ready to start	Or indicator light failure	
FAULT	Faulty	No trouble	/

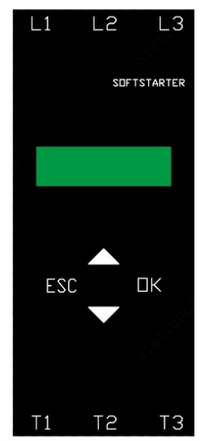
◎ Startup timing diagram





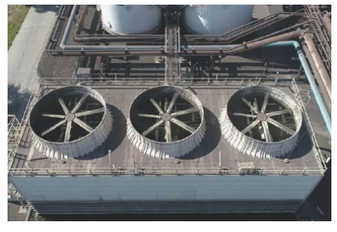
◎ SST-MS operation panel

Button	Function
ESC	1. Enter parameter setting 2. Return to the previous menu
▲	1. Normal state: You can view the current of phase A, phase B, phase C, grid voltage, and radiator temperature 2. Menu status: parameter number and parameter value can be modified
▼	1. Menu status: select parameter number and confirm parameter value 2. Fault status: Reset fault
ENT/RST	1. Normal state: You can view the current of phase A, phase B, phase C, grid voltage, and radiator
ENT+ ▲ Combination	1. Keyboard operation
ENT+ ▼ combination	1. Keyboard stop



Application scenarios

Water pump



Fan

Conveyor belts

Air compressor

Injection molding machine

Forging machine