



## User Manual of SST Soft Starter



SHUEN, control and protect your motors.

### Warning message



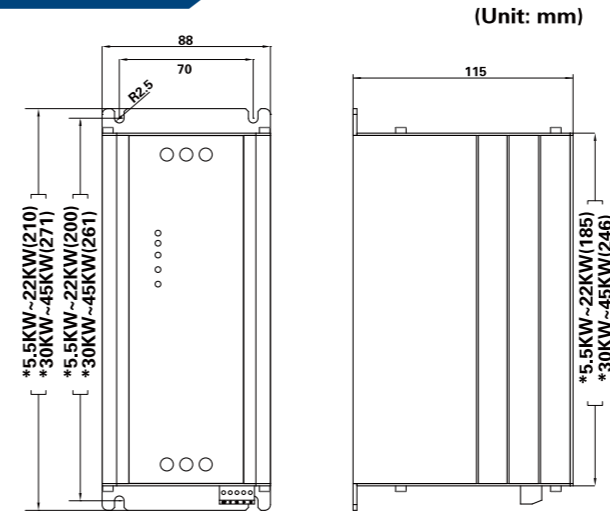
The product should be operated by qualified electricians as per safety specifications, including installation, pilot run and maintenance, etc;  
The voltage used by the product is dangerous, which may cause serious injury or death of others. Prohibit touching terminal after electrifying the device or during operation. Although the device is switched off, voltage may still exist in output terminal;  
The product should be used under rated specification of product. Before use, please check the accuracy of various parameters such as power, motor and frequency of product or device.  
The product has passed insulation test before leaving factory. Incorrect megger test may damage product or shorten product life.

This product does not support overload protection. Please attach a heating relay or motor protector to ensure overload protection.

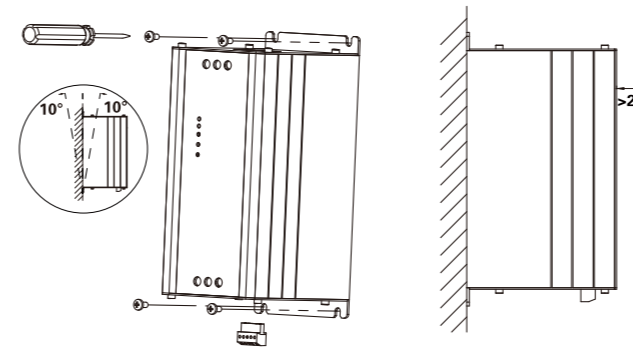
### Electrical parameters

Standard	GB 14048.6-2008/IEC 60947-4-2: 2002	
Rated operation voltage	200~415V(-15%+10%)	
Max.length between soft starter and cable	300m	
Permissible ambient environment	Operation	-25°C~+60°C(when the ambient temperature is over 40°C,for each additional 1°C, the Soft Starter rated current is reduced by 1%.
	Storage	-40°C~+70°C
Protection grade	IP20	
Rated frequency	50/60Hz	
Permissible installation height	5000m(start to reduce capacity for above 1000m. For every 1000m increase, the Soft Starter rated current is reduced by 5%)	
Starting frequency	=20 times/hour(class10 standard load)	
	It is recommended that the single start interval be longer than 3 min.	

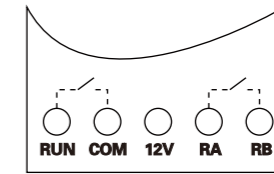
### Product dimensions



### Installation sketch



### Terminal description



### Major Loop

Terminal marking	Terminal name	Function description
L1, L2, L3	Mains input of major loop	Connect three-phase source
T1, T2, T3	Output connection of soft start	Connect three-phase motor

### Control Loop

Terminal marking	Terminal name	Function description
RUN	Enable input	When closing run and com, start to operate. When breaking run and com, motor slows down and halts.
COM	Common port	run and common port at 12V
12V	Power terminal	Interior power output terminal at 12V, 300mA at maximum, prohibit overload.
RA, RB	Indication of working status	Working status: relay output, normally open contact, close during operation, break if stall or fault, relay capacity 250V/AC 0.3A.

### Parameter setting

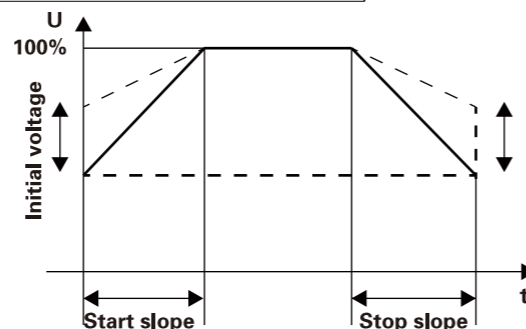
#### Panel parameters

**Knob of soft starting time:** adjust soft starting time of soft starter and range is 1~20S. The longer the time setting, the more gentle the soft starting process, which is helpful to reduce the impact on power grid.

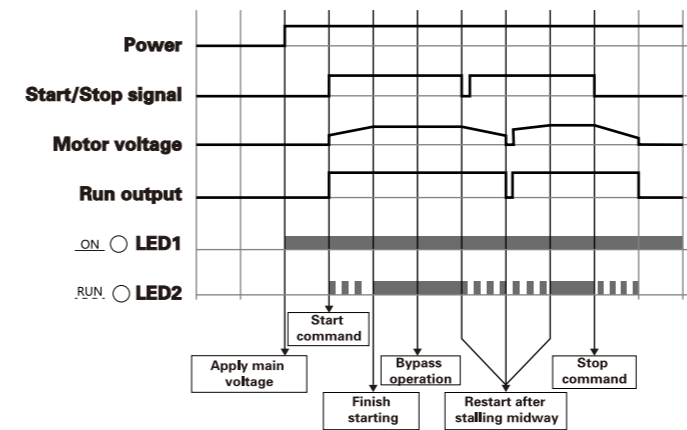
**Knob of soft stopping time:** adjust soft stopping time of soft starter and range is 0~20S. In some application occasions of water pump, soft stopping function can effectively avoid "water hammer effect" generated by the halt of water pump. When the knob is adjusted to be 0S, it indicates that the stalling way of motor is free stalling, which will stop output immediately after soft starting.

**Knob of initial voltage:** adjust initial voltage of soft starter and range is 40%~70%. When the motor starts, it needs to overcome the friction under stationary state. Properly increasing the initial voltage can obtain larger starting torque. The users should refer to actual load condition to coordinate starting and stopping time, thus obtaining the best effect of smooth starting.

**WARNING:**  
 • Read the user manual before operation.  
 • Risk of electrical shock, wait 5 minutes after removing power before servicing.  
 • Do not connect AC power to output terminals.



### Operation sequence diagram



### Indicator light

Indicator light			
Run/On	Steady lighting	Flashing	Off
Steady lighting	Bypass operation	Input/output phase loss	Hardware failure
		Hardware failure	
Flashing	Soft start/soft stop in progress	Hardware failure	Hardware failure
Off	The device is ready for power on	Input/output phase loss	Soft start power failure or indicator light failure
		No motor connected	

### Power diagram

Model	230V/KW	400V/KW	500V/KW	Rated current A
SST-5R5	3	5.5	5.5	13
SST-7R5	4	7.5	7.5	17
SST-11	5.5	11	11	25
SST-15	7.5	15	15	32
SST-18	7.5	18.5	22	37
SST-22	11	22	30	45
SST-30	15	30	37	60
SST-37	18.5	37	45	75
SST-45	22	45	55	90

### Wiring Parameter

Model	Rated power	Main Circuit Diameter	Main Circuit Tightening Torque	Control Circuit Diameter	Tightening Torque Control Circuit
	KW	GB Copper Core(mm <sup>2</sup> )	Lbf/inch	(mm <sup>2</sup> )	Lbf/inch
SST-5R5	5.5	2.5	10.6~13	0.64~1	2~2.2
SST-7R5	7.5	2.5	10.6~13	0.64~1	2~2.2
SST-11	11	4	10.6~13	0.64~1	2~2.2
SST-15	15	6	10.6~13	0.64~1	2~2.2
SST-18	18.5	10	10.6~13	0.64~1	2~2.2
SST-22	22	10	10.6~13	0.64~1	2~2.2
SST-30	30	16	18~22	0.64~1	2~2.2
SST-37	37	25	18~22	0.64~1	2~2.2
SST-45	45	35	18~22	0.64~1	2~2.2

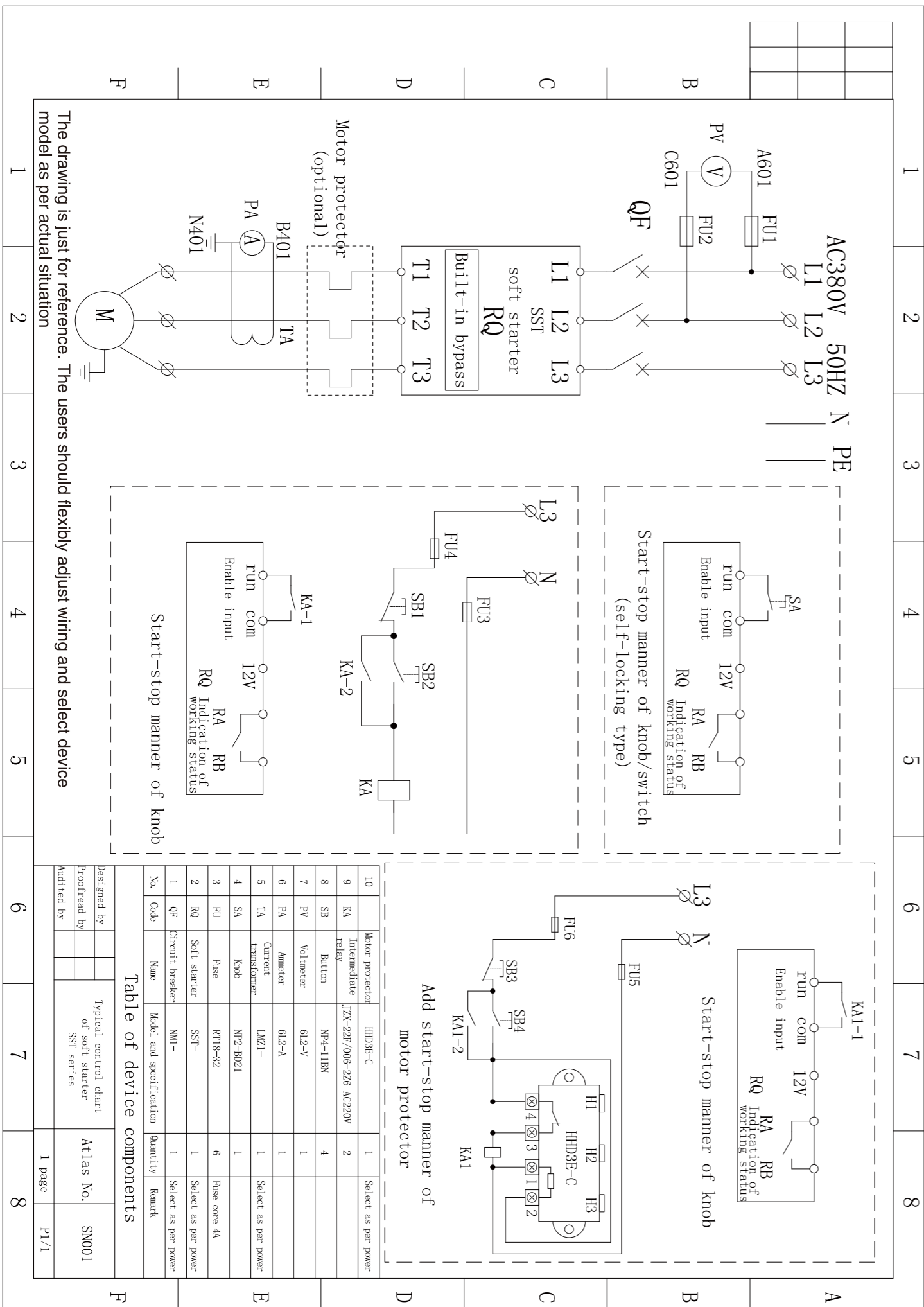
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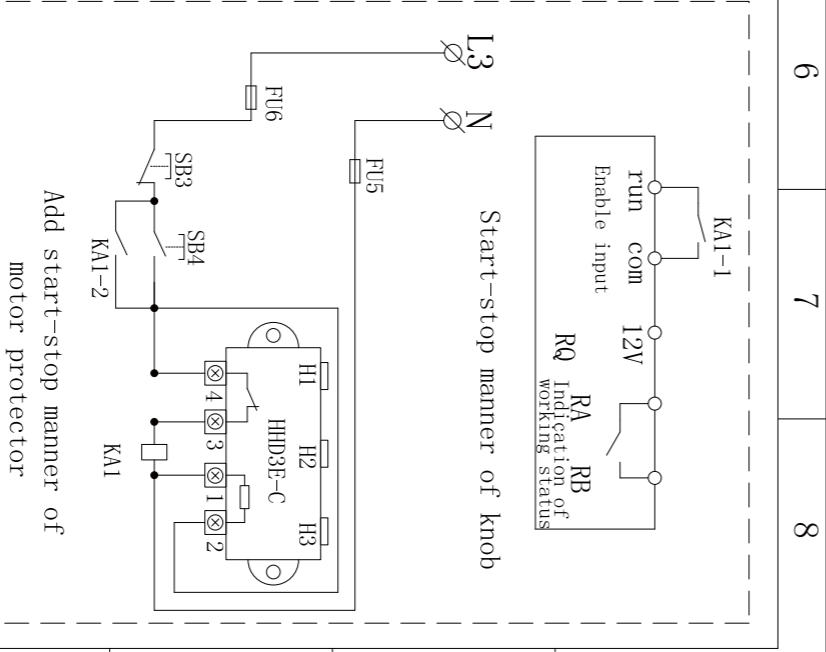
Please forward this user manual to the end user

# Wiring diagram



The drawing is just for reference. The users should flexibly adjust wiring and select device model as per actual situation

No.	Code	Name	Model and specification	Quantity	Remark
1	QF	Circuit breaker	NH-	1	Select as per power
2	RQ	Soft starter	SST-	1	Select as per power
3	FU	Fuse	RT18-32	6	Fuse core 4A
4	TA	Current transformer	NP2-8021	1	Select as per power
5	SA	Knob	LWZ1-	1	Select as per power
6	PA	Ammeter	61.2-A	1	
7	PV	Voltmeter	61.2-V	1	
8	SB	Button	NP4-11B	4	
9	KA	Intermediate relay	JZC-22F/006-226 AC220V	2	Select as per power
10	KA	Motor protector	HHD3E-C	1	Select as per power



# Setting-up process

**Start setting up.**

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**First, connect the main power supply of L 1 – L 3, and check Power-on Reset for the soft starter. For the first time use, a power-on reset must be carried out, in case there is uncompleted commands. At this stage, output terminal T2 is electriferous, so please pay attention to safe operation.**

↓

**Disconnect the main power supply and connect the output terminals with three-phase motor.**

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**After connecting the motor, the ON light is flashing and turns into a steady lighting. If it keeps flashing , please check the line and do not perform subsequent steps.**

↓

**Pre start the motor by terminals RUN and COM.**

↓

**A.Raise the starting voltage if the motor has a delaying rotation.  
B.Lower the starting voltage or extend start-up time if the rotation of the motor is too fast.**

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**Adjust starting voltage, starting time and soft stopping time to obtain optimum effect, after which step the setting-up process is completed.**

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**Setting up is completed.**

# FAQ

- Customer:** Q1. How to solve the common overheating problem of the the soft starter?  
**SHUEN:** A: Reduce starting frequency or replace it with a soft starter of bigger capacity.
- Customer:** Q2. How to solve the problem that a big noise will be made when the motor starts?  
**SHUEN:** A:The starting voltage is too low or the starting load is too big, so the problem will be improved by increasing the starting voltage properly.
- Customer:** Q3. What is to be done when the motor doesn't run but buzzes?  
**SHUEN:** A:Check whether there is phase-loss of input or output if the motor doesn't work abnormally.
- Customer:** Q4. Why does the motor start itself abnormally?  
**SHUEN:** A:Check the connecting line between Run and Com. Please note that the distance between the switch and the soft starter shouldn't be too big.
- Customer:** Q5. Why is there still no protecting effect even if motor protector is added?  
**SHUEN:** A: Please check whether the tripping level is set too high. Level 10 or below level is suggested. Rated protecting current should be set according to the rated value of the motor, and it should not be set too high.
- Customer:** Q6. Why does the motor start or stop repeatedly?  
**SHUEN:** A: Please check whether the line or the switch between Run and Com is normal.
- Customer:** Q7. Why does the power-on light keep flashing and the soft starter not run after the power is on?  
**SHUEN:** A: Please check whether there is phase loss of input or output, or whether the motor is connected correctly.

# Warranty card



# Related information

User name \_\_\_\_\_ Phone number \_\_\_\_\_

Address \_\_\_\_\_

Product model \_\_\_\_\_ Serial No. \_\_\_\_\_

Purchasing way \_\_\_\_\_ Purchasing time \_\_\_\_\_

Maintenance site \_\_\_\_\_ Invoice No. \_\_\_\_\_

# Terms of no maintenance, return & exchange

Within warranty period, the situations caused by below reasons are beyond warranty scope:

- (1)Product fault caused by users of violating the operation in User Manual;
- (2)Product damage during transportation or caused by external forces;
- (3)Product fault caused by users of repairing or remolding product arbitrarily without communication with manufacturer;
- (4)Product fault caused by users of using product beyond standard application range;
- (5)Product fault caused by users under poor service environment;
- (6)Product damage caused by force majeure factors such as earthquake, fire, lightning stroke, abnormal voltage or other natural disasters, etc;
- (7)Product marking such as nameplate, trademark and serial number are damaged or unidentified

**Please keep product packaging after receiving the product in case of being required for return and exchange.**