



Innovation/Technology/High Quality

## VEIKONG VKS-6000 soft starter



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SHENZHEN VEIKONG ELECTRIC CO., LTD  
VEIKONG INDUSTRIAL CO., LIMITED



### Brife introduction

Shenzhen Veikong Electric CO.,Ltd. a high-tech enterprise which has been specializing in researching, manufacturing and trading high, medium and low voltage inverter, providing our clients with integrated system solutions. We have professional R&D and devoted management team with more than 20 years' experience of theoretical research, product development and quality management. Veikong also is one of the first independent AC drives company in China. We adopt SPWM, sensorless vector control and vector and torque control technology in our VFD series inverters, which has reached the international advanced standard. The products can directly replace and be equivalent of Europe and the United States, Japan and other brands, providing customers with a powerful technical support. We have achieved popularity and qualification in VFD industry. Quality is the life of enterprise.

Veikong drives keeps following ISO9001 standard to manage and supervise quality. Our products have passed CE certification and other technical approval. To better meet customer requirements and market needs, Veikong drives keeps on upgrading new technologies and new products.

The customer is the source of enterprise. We are honored to put top priority on customers' requirements as well as achieving their requirements. Our products have been widely used in petroleum, chemical, melting, hoisting, electric power, building materials, water supply, plastics, textiles, printing, packing and other industries to create value for customers.



PCBA Production Line and Test



Burn-in

Lacquer

Assemble



Automatic DT test platform

Automatic PCBA ATE test platform

Automatic FLASH test platform





## VKS-6000 series ▶ Online intelligent motor soft starter



## ◀ VKS-6000 series Online intelligent motor soft starter



### ▶ Product description

VKS-6000 is the latest development of online soft starter, is a new type of motor starting equipment developed by the international advanced level based on power electronics technology, microprocessor technology and modern control theory and technology, which can effectively limit the starting voltage when starting the motor. It can be widely used in overloaded equipment such as fans, pumps, conveyors and compressors. It is an ideal replacement for step-down starting equipment such as star / delta conversion, self-coupling buck and magnetron buck. No need to install a bypass contactor, greatly reducing user costs.

### ▶ More control methods

- ▶ SCKR1-6000 soft starter with 6 kinds of start-up mode, 12 kinds of protection, two parking.
- ▶ To MCU as the core, the use of intelligent digital control for a variety of load squirrel-cage induction motor start; allows the motor under any conditions can be smooth start, a good protection of the drag system, reducing the starting current on Power grid impact, to ensure reliable start of the motor: smooth deceleration stop, drag the system to eliminate the reaction of inertia: a complete system protection, extend system life, reduce system cost, improve system reliability: compatible with all start. The various functions of the device, is the traditional star triangle, since the anti-pressure relief.

### ▶ Product technical characteristics

- ▶ Main circuit working voltage: AC380V (+ 10% ~ - 25%);
- ▶ Main circuit working current: 22A ~ 560A;
- ▶ Main circuit frequency: 50Hz / 60Hz (± 2%);
- ▶ Soft start rise time: 2 ~ 60s;
- ▶ Soft parking time: 0 ~ 60s;
- ▶ Current limit multiples: 1.5 ~ 5.0Ie;
- ▶ Initial voltage: 30% ~ 70% Ue;
- ▶ Cooling method: fan cooling;
- ▶ Communication method: RS485 serial communication;
- ▶ Starting times: ≤ 20 times / hour

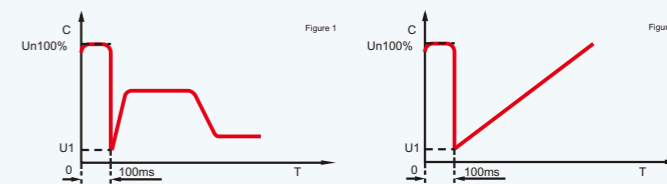
### ▶ Technical characteristics

- ▶ Six kinds of starting parameters are available to facilitate a motor soft starter to start different power of the motor load;
- ▶ Dynamic fault memory function, easy to find the cause of the malfunction;
- ▶ Over-current, three-phase current imbalance, overheating, lack of phase, motor overload and other comprehensive motor integrated protection;
- ▶ Powerful software features, rich hardware configuration, easy to meet the changing needs of various industries;
- ▶ Profibus / Modbus two communication protocols to choose from;
- ▶ Compact structure design, easy to install, easy to use;
- ▶ User-friendly mode of operation, the display interface can be flexibly selected: LED or LCD display. Make the operation handy;
- ▶ Menu tree grouped by function for easy operation.

### ▶ Kick mode

Kickstart mode output change waveform. In some heavy occasions, due to mechanical static friction can not start the motor, you can use this starting mode. At start-up, a high fixed voltage is applied to the motor for a limited period of time to overcome the static friction of the motor load, causing the motor to rotate and then starting in either current-limiting (Figure 1) or voltage ramp (Figure 2).

Before using this mode, you should start the motor with non-sudden jump mode. If the motor can not rotate because the static friction force is too big, then select this mode or you should avoid using this mode to start, so as to reduce unnecessary high current impact.



VKS- 6000- 7.5kW-45kW

VKS- 6000- 55kW-90kW

VKS- 6000-115kW-160kW

VKS- 6000-185kW-280kW





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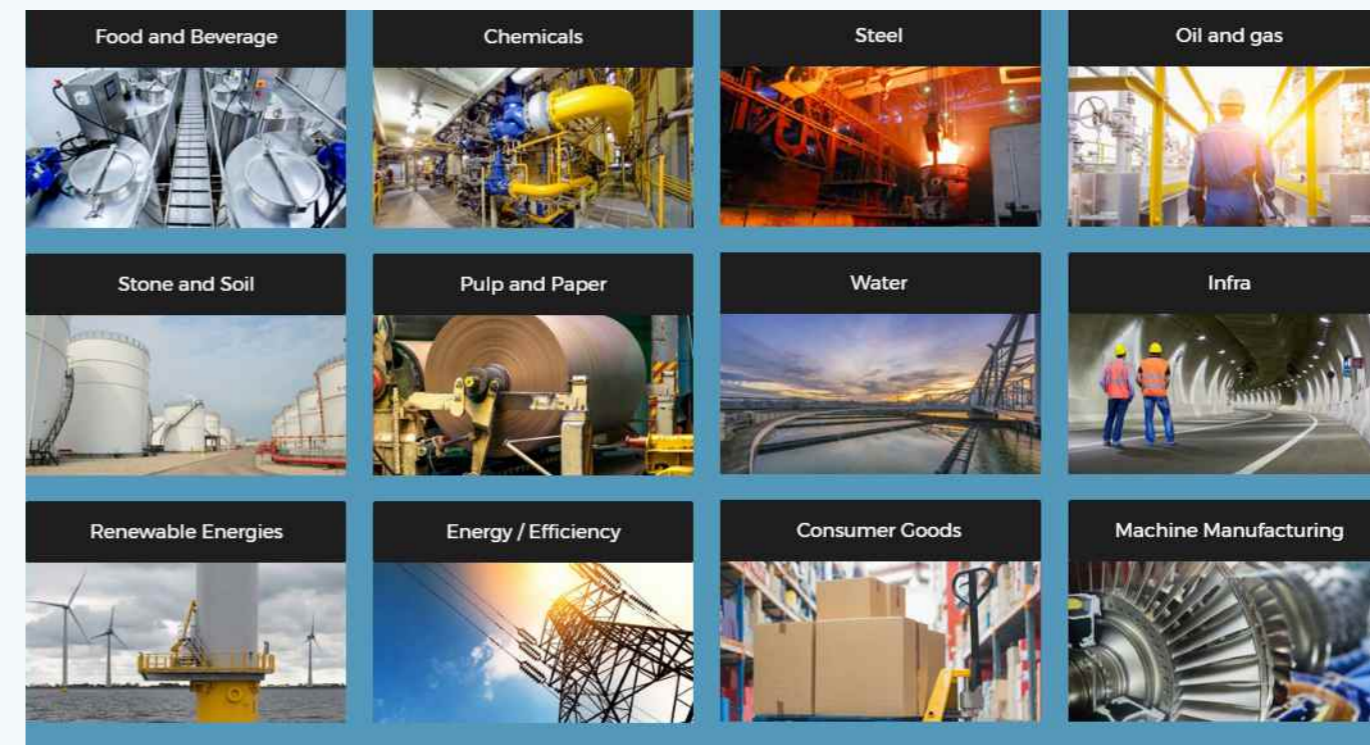
► General technical date

VKS. No.	Model reference	Current(A)	Power and Voltage	Size H/W/D(mm)	N.W/KG
1	VKS-6000-5.5-Z	11A	5.5KW/380V	315/145/215	7
2	VKS-6000-7.5-Z	15A	7.5KW/380V	315/145/215	7
3	VKS-6000-011-Z	22A	11KW/380V	315/145/215	7
4	VKS-6000-015-Z	30A	15KW/380V	315/145/215	7
5	VKS-6000-18.5-Z	37A	18.5KW/380V	315/145/215	7
6	VKS-6000-022-Z	43A	22KW/380V	315/145/215	7
7	VKS-6000-030-Z	60A	30KW/380V	315/145/215	7
8	VKS-6000-037-Z	75A	37KW/380V	315/145/215	7
9	VKS-6000-045-Z	90A	45KW/380V	315/145/215	7
10	VKS-6000-055-Z	110A	55KW/380V	360/210/255	14
11	VKS-6000-075-Z	150A	75KW/380V	360/210/255	14
12	VKS-6000-090-Z	180A	90KW/380V	360/210/255	14
13	VKS-6000-115-Z	230A	115KW/380V	465/330/255	30
14	VKS-6000-132-Z	264A	132KW/380V	465/330/255	30
15	VKS-6000-160-Z	320A	160KW/380V	465/330/255	30
16	VKS-6000-185-Z	370A	185KW/380V	562/490/295	60
17	VKS-6000-200-Z	400A	200KW/380V	562/490/295	60
18	VKS-6000-250-Z	500A	250KW/380V	562/490/295	60
19	VKS-6000-280-Z	560A	280KW/380V	562/490/295	60



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► Application industries



► Application photos







## VKS-6000 series ▶ Online intelligent motor soft starter

### ▶ Real language real-time display

Veikong wants to make your work easy and peace of mind, so SCKR1-6000 in real language feedback, you do not have to check the code to understand what happened. With real-time meter displays and 10 event log records, it has never been easier to track motor performance.



### ▶ Remote monitor installation

With an optional operator panel mounting kit, the operator panel is easily mounted outside the cabinet. If you install multiple soft starters in a single cabinet, this allows for centralized control in one place, with all the relevant information. You can also install multiple monitors side-by-side to quickly diagnose problems. (After installation the protection level is IP65)

### ▶ Higher Ultra-intelligent move

VKS-6000 allows you to control the motor starting. You can choose the best soft start control method for your application.

For applications that require precise control of the motor starting current, the VKS-6000 offers you a choice of dual closed-loop or current-ramp start-up options.

### ▶ Installation easier

If the motor control center has limited space, using the compact design of the VKS-6000 saves 70% space, eliminates the need for bypassing the contactor, and reduces primary and secondary costs by more than 30%.



### ▶ Detachable connectors and unique connectors

Plug-in control wiring board, it is easy to install. Just unplug each terminal block, then plug the line back into the terminal block.

VKS-6000 can use the unique flexible cable routing effective arrangement of the cable, the cable can be from the top, left or bottom line.



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### ▶ Debug faster

The VKS-6000 is easy to use at design time considering the ease of use menu is not surprising. After installation, the quick setup menu assists you in configuring the starter for common applications: it suggests a typical value that you can fine tune to your own needs, all with an easy-to-use dashboard.



### ▶ Cooling innovation

High speed fan plus out of the wind grille, 360 degrees all-round cooling, when the soft-start fan high-speed operation, soft start and stop the fan chime five minutes to automatically stop functioning, to achieve intelligent cooling, so that users are not wasting every kWh.



### ▶ Software innovation

A wider range of applications Built-in smart power motherboard, but Paul remote places, low voltage or voltage instability led to the device can not get up, intelligent power supply board can be within the voltage 150V- 460V application equipment to achieve the normal starting requirements.

New current-voltage coefficient, built-in power board can be directly calibrated current and voltage.

Start delay parameters, when the equipment power failure, the soft starter automatically delayed after 5 minutes

### ▶ Communication innovation

(RJ-45, DB9 and other plug-in, built-in RS485, RS232 interface, providing Chinese PC software, user-friendly remote debugging and control)





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### ▶ Start-up mode and protection level



### ▶ Soft starter features

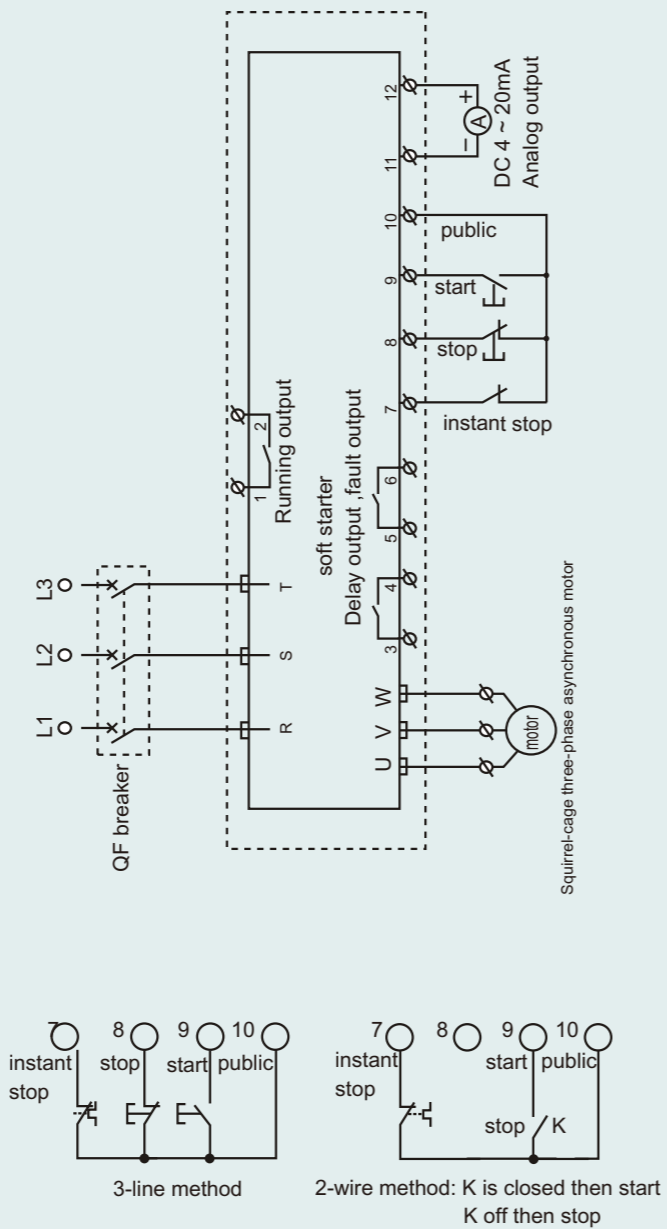




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External wiring diagram

- ▶ Conventional  
Current Range ..... 23A-560A (Rated)
- ▶ Current  
Supply voltage (R, S, T)
- ▶ Terminal ①, ② for the bypass output: used to control the run indicator (output), normally open passive contact, the closure of the successful start. Contact capacity: AC250V / 5A.
- ▶ Terminal ③, ④ for the programmable relay output: delay time by setting items  
F4 setting, the output time is set by setting item FJ.  
Normally open passive contact, closed when output is valid.  
Contact capacity of AC250V / 5A.
- ▶ Terminals ⑤, ⑥ for fault output: soft-start cabinet failure or loss of power when closed, open the way when the work is normal, passive contact. Contact capacity, AC250V / 0.3A.
- ▶ Terminal ⑦ for the instantaneous stop output: soft starter normal operation of this terminal must be shorted to terminal ⑩. If this terminal and terminal ⑩ open, Soft starter cabinet to stop working unconditionally, in the state of fault protection. this terminals can be controlled by the normally closed output point of the external protection device. Set when FA is set to 0 (primary protection), this terminal function is disabled.
- ▶ Terminals ⑧, ⑨, ⑩ external control start, stop button input terminal child. Wiring method as shown.
- ▶ Terminal (I1), (I2) 4 ~ 20mA DC Analog Output: For real-time  
Monitor the motor current, indicating that the motor current is full when full 20mA 4 times the nominal rated current of the starter, which can connect 4 ~ 20mA DC Ammeter observation.
- ▶ Do not connect the external terminal line wrong, otherwise it may cause the soft start damaged cabinet.
- ▶ Operating temperature ..... -10 °C to 40 °C
- ▶ Storage temperature ..... -10 °C to +40 °C
- ▶ Humidity ..... 5% to 95% relative humidity



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Soft starter shape and installation dimensions

voltage	rated current	rated power	Display method	parameter Number	protection	number of input & Output terminals	Overload capacity
380V	22A- 560A	11kW- 280kW	English LCD	18	12	12	150%le,35s 200%le,15s

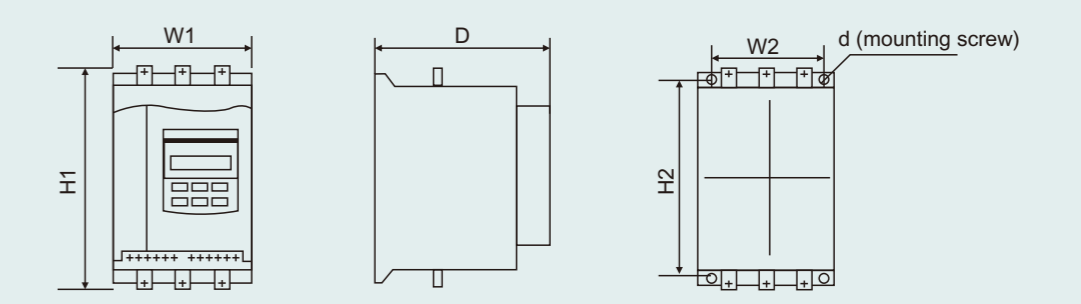


figure 1

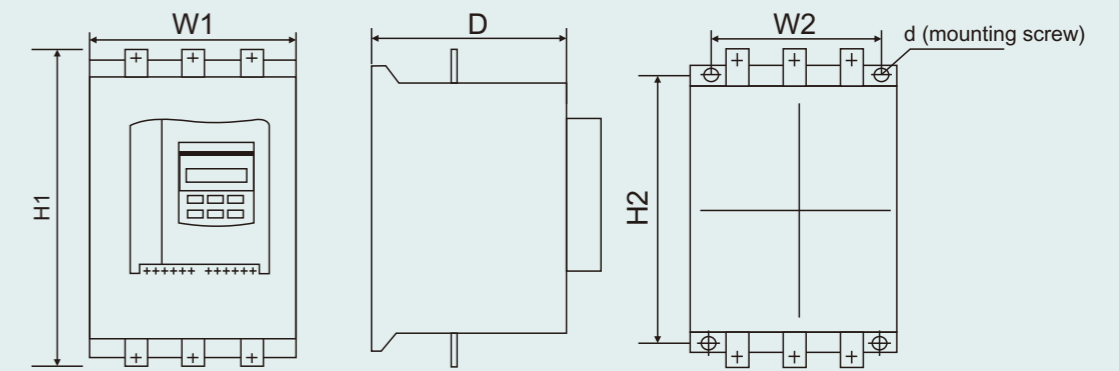


figure 2

model	Overall dimensions (mm)			Installation size (mm)			Outline
	W1	H1	D	W2	H2	d	
7.5kW- 45kW	145	315	215	85	298	M6	figure 1
55kW- 90kW	210	360	255	150	343	M8	figure 2
115kW- 160kW	330	465	255	260	440	M8	figure 2
185kW- 280kW	490	562	295	335	535	M8	figure 2



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► Soft starter basic wiring diagram



► VKS-6000 wiring diagram

