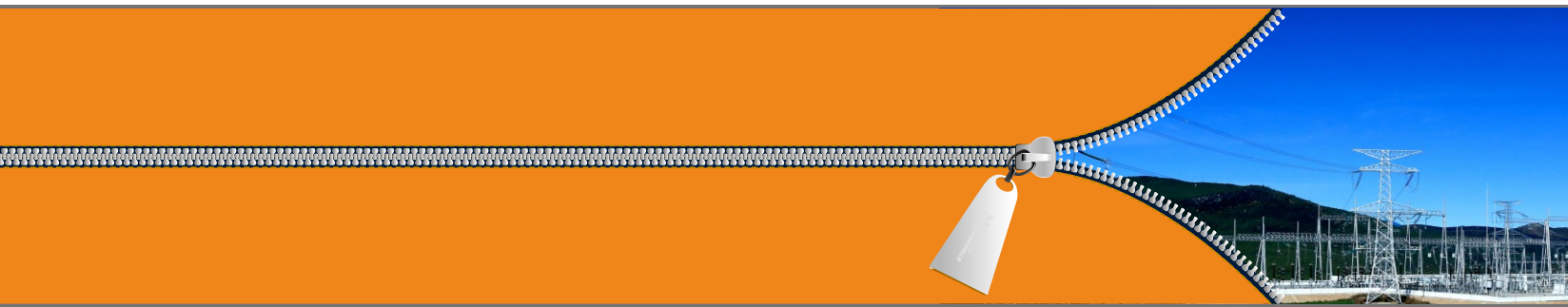


Optimize power quality Improve power environment



STRONG POWER ELECTRIC PRODUCT MANUAL

COMPANY PROFILE



Strong Power Electric was founded in 2006. It is a high-tech enterprise integrating R&D, production and sales of distribution automation, power quality, energy efficiency management and other products. The products are not only spread all over the country, but also exported to Southeast Asia, the Middle East, Europe, Africa and other places.

Power grids products mainly include voltage management, fault diagnosis and isolation, primary and secondary fusion circuit breakers, pole-mounted circuit breakers, online monitoring equipment, three-phase unbalance management, recloser controller, arc flash protection unit, reactive power compensation and other power quality products.

User engineering channel products mainly include power distribution automation and energy efficiency management, reactive power compensation, harmonic control and power regulating equipment, etc.

Power grids channel products mainly include APF (Active Power Filter), SVG (Static Var Generator), capacitor switching switch, power factor controller, arc flash protection unit, power controller module, intelligent capacitor, power distribution protection, online monitoring, etc.

Strong Power Electric has focused on the power quality of power distribution automation for 15 years and participated in the formulation of industry standards. It took the lead in winning the bid of State Grid, the first batch of manufacturers to break through the technology of in-depth integration of Primary and secondary power control, with millions of core component product applications for commercial and industrial applications and Power Grid and distribution systems, there are lots of power quality management project experiences, including rolling mills, internal mixers, hoists, welding machines, electric furnaces, frequency converters, rectifier, commercial real estate, substations, power transmission and distribution, etc. energy quality solutions, hundreds of invention patents and new utility patents, dozens of software copyrights.

Put into operation in more than ten provinces of the State Grid and China Southern Power Grid. Reduce hundreds of millions of yuan in power quality losses for power grids companies every year. Thousands of power quality control devices have been put into operation in automobile manufacturing, steel smelting, petrochemical and other industries, avoiding tens of millions of economic losses for customers such as power penalty, equipment damage, etc., in order to reduce air emissions, the control of haze plays a positive role in promoting. Strong Power Electric expects to complement mutual resources and seek common development with the sincerity and truthfulness!



PRODUCTION EQUIPMENT



DEDICATED AND PROFESSIONAL
KEEP MOVING

CORPORATE CULTURE

CORE VALUE

Make products with soul

Be a responsible enterprise

Be a respected Strong Power Person

CORPORATE VISION

Create a lasting and competitive team and products

Build Strong Power Electric into a platform to practice benevolence,
realize value and share results

Let creators have more sense of accomplishment and happiness

The user has a greater sense of pleasure and care

Structure characteristic

Make products with soul



Be a responsible enterprise



Be a respected Strong Power Person



ENTERPRISE HONOR



Henan Province Science and Technology Small and Medium-sized Enterprise Certificate



Software Enterprise Certification



Software Product Registration Certificate

CORPORATE

CULTURE DO THE MOST COMPETITIVE PRODUCT SERIES

STRONG POWER
ELECTRIC'S
PRODUCT SERIES

Power Grid channel:

The products such as voltage management, fault diagnosis and isolation, primary and secondary fusion circuit breakers, pole-mounted circuit breakers, online monitoring equipment, three-phase unbalance management, recloser controller, arc flash protection unit, and reactive power compensation.

User engineering channels:

Distribution automation, energy efficiency management, reactive power compensation, harmonic control and power adjustment equipment, etc.

Power Grids channel:

APF, SVG, capacitor switching switch, controller, arc protection, power adjustment module, intelligent capacitor, power distribution protection, online monitoring, etc.





ZBSVR single-phase automatic voltage regulator



Core features

32 levels of high precision: within the setting range, 32 levels of voltage regulation can be achieved

Long service life: unique voltage regulation tap design to avoid arcing during voltage regulation, which can guarantee 1.2 million operation life

Large capacity: the regulating capacity can reach 25MVA (the regulating capacity of other similar products can reach 20MVA)

Strong network function: realize SCADA distribution automation through the LAN interface of the controller

Complete function: can separate phase voltage regulation, solve three-phase imbalance

Flexibility: It can be flexibly installed in lines and substations, when necessary it can be withdrawn from operation and bypass

Maintenance-free: Fully sealed design, high protection level, excellent weather resistance, maintenance-free for 20 years



Can extend the power supply radius of the substation, suitable for long-distance power transmission in rural areas

The voltage qualification rate of the entire line can reach 100%

The high and low values of the voltage adjustment interval can be set arbitrarily

It can effectively reduce line loss and distribution transformer loss

No need to power off operation when the voltage regulator is put into or out

Perfect protection function

Friendly man-machine interface

Flexible communication interface, can remotely monitor the operation of equipment, and record operating data

Core features

ZBSVR 6~10KV three-phase line automatic voltage regulator

Suitable for transmission lines with long power supply radius, large voltage drop and low voltage

ZBDVR 0.4KV terminal low voltage control device



Suitable for transmission lines with long power supply radius, large voltage drop and low voltage

Core features

Control system:

Intelligent control technology of fully digital design,
Four-quadrant analysis,
It integrates functions such as voltage adjustment, reactive power compensation,
power quality online analysis, data acquisition and storage and fault alarm.

Voltage regulating module:

Low magnetic flux density, low line loss;
The pressure regulating module has a large regulating range;
The adjustment gear can be customized according to the on-site working conditions;
Convenient operation, simple maintenance and long service life.

Intelligent reactive power compensation module:

Adopting phase-to-phase compensation technology, it can compensate active power
while compensating reactive power;
Composed of intelligent measurement and control module, zero-crossing switching
module, protection module, intelligent communication module, man-machine dialogue
module, power capacitor, etc.

Core features

Simple installation, flexible and universal, small size, light weight, convenient installation and maintenance;

The whole device adopts an integrated structure, which is easy to install and has good heat insulation, waterproof and anti-corrosion performance;

Using non-connected current transformer, there is no need to disconnect the line during installation, which is convenient for installation and maintenance;

With LCD display, man-machine interface;

The capacitor switching switch uses a special vacuum switch equipped with a permanent magnet mechanism, which is flexible and reliable in action and has a long life;

A variety of optional controllers, electromagnetic compatibility can be as high as level four;

Possibility of power distribution monitoring function, data storage for up to 60 days;

It can be equipped with remote data communication interface, which can realize remote monitoring and data collection through GPRS module;

With fault protection function, the capacitor can be quickly cut off in the case of overvoltage, undervoltage, overcurrent, and lack of equivalence;

With loss-of-voltage protection function, the device will be powered on immediately after the power is cut off to prevent the capacitor from turning on itself.



ZBTBB 6~10KV pole-mounted (line) high-voltage reactive power automatic compensation device



Applicable to power grids, industrial and mining power distribution

Three-phase load imbalance treatment device (phase commutation switch)

Three-phase load automatic adjustment technology.

Remote operation control, can call to test various equipment parameters in real time, and observe the running status of line equipment online.

Double authentication technology. Comprehensive identification, completely separates the human body from electric shock and the sudden leakage caused by the switching and cutting of leakage equipment.

Transformer oil temperature and junction temperature monitoring.

SCADA dispatch system.



Core features



Suitable for use in areas with large voltage fluctuations, unbalanced three-phase power, unstable grid channels frequency, and requiring reactive power and stable voltage



Suitable for use in areas with large voltage fluctuations, unbalanced three-phase power, unstable power grid frequency, and requiring reactive power and stable voltage

The product is based on three-phase unbalanced current and reactive current, the target optimization algorithm is used to combine the three-phase unbalance compensation with reactive power compensation, and the three-phase unbalance is treated, which can also solve the problem of reactive power compensation.

The three-phase unbalance is controlled within 15%.

Using zero-crossing switch to switch capacitors, there is no inrush current during switching, and no loss during operation.

Core features

Three-phase load imbalance control device (capacitor type)

Terminal DTU of distribution automation station

Core features



Meet the State Grid safety protection requirements.

Obtained the two-way encryption security test qualification report of China Electric Power Research Institute.

The measurement and control capacity is large, and a single machine can complete the measurement and control of 16 loops.

With dual network ports, dual IP communication functions, it can connect to multiple different master station functions.

Multi-power design, dual AC power supply and backup battery power supply.

The device has a multi-level watchdog to ensure the self-recovery of the equipment.

The functions of monitoring, locating, isolating and restoring power to non-faulty areas can be realized on the spot.





Distribution automation feeder terminal FTU

Core features

Take the high-performance Freescale K64 processor as the hardware development platform.

Take MQX embedded real-time operation as the software development platform.

The chassis adopts a standard 4U half-layer chassis, and the inner layer adopts a modular chassis, which is easy to install and has a clear structure.

High-speed sampling technology is adopted to realize the functions of feeder fault identification and three remote monitoring.

It can be connected to other station-side equipment and forward data.

With equipment self-diagnosis and self-recovery functions.

Harmonic analysis function.

It has the intelligent maintenance function of the battery.

With online battery backup power supply.

Electromagnetic compatibility complies with IEC61000-4, GB/T13729, DL/T630, DL/T721 standards, and can adapt to strong electromagnetic environments.

4U4I design, with independent zero sequence circuit, zero sequence voltage acquisition channel.

It can meet the different requirements of grounding protection for zero sequence accuracy.



ZBDWGZ comprehensive online monitoring device

Compared with traditional lightning identification devices, the monitoring efficiency is greatly improved.

Installing a monitoring point can realize a wide range of lightning fault monitoring.

A monitoring device can monitor a range of about 20 kilometers to the left and right, which greatly improves the efficiency of monitoring.

The fault location is accurate. Measure transient traveling wave signals at relatively close distances, overcome the influence of interference signals, waveform attenuation and wave speed on positioning;

And combined with interval positioning, the positioning is more reliable.

The monitoring device has high reliability.

The field device adopts double-layer shielding (including double-layer shielded cable and double-layer chassis structure design),

The internal components are made of military products, which are anti-vibration, moisture-proof and work stably.



Core features



Core features

The integrated design of energy extraction device and vacuum circuit breaker,

Solved the power supply problem of each power unit and FTU of the vacuum circuit breaker,

The investment is small and will not be affected by factors such as environment, weather and load.

Integrated design of front-end acquisition device to realize information acquisition and automatic control.

Integrated design of isolation knife and switch, with visible isolation disconnection point.

It is convenient for on-site installation, and all secondary connections are completed in the factory to prevent on-site wiring errors.

It adopts a fully enclosed structure with good insulation performance.

The circuit breaker adopts a three-phase pillar type fully enclosed structure with good sealing performance.

It has moisture-proof and anti-condensation performance, especially suitable for use in severe cold or high temperature and humidity areas.



Primary and secondary fusion circuit breaker

Using overall error calibration, the error is more accurate and stable

- (1) Adopting primary and secondary fusion technology to put forward the concept of overall error.
- (2) There is no secondary wiring, there is no secondary voltage drop problem, and the measurement accuracy is not affected by on-site installation conditions.
- (3) The product adopts an overall fixed structure. When the product is calibrated, it is in a high-voltage and high-current state, which is consistent with the actual operating conditions, and the error is more accurate and stable.

Outstanding anti-theft ability

- (1) There is no secondary wire and meter on the low-voltage side of the traditional metering scheme, so it is more difficult for users to steal electricity.
- (2) The metering function and data storage are integrated on the 10kV high-voltage side; it communicates with the high-voltage meter body through wireless communication, the installation position is flexible.

A more complete power supply solution

Provide an optional external energy acquisition device to provide low-voltage power supply for the display terminal. The energy absorbing device is installed together with the high-voltage meter body through the supporting insulator type.

Easy to install

Equipped with a dedicated cable accessory adapter, it solves the difficult installation problem caused by the large number of on-site cable accessory manufacturers and different sizes.

The adaptability and installation success rate of this product are improved, and the risk of the on-site power outage time, construction difficulty and construction failure are greatly reduced.

Save materials, energy saving and environmental protection

The use of electronic voltage, current transformers, to reduce the use of copper, iron material, thereby substantially reducing the copper loss, iron loss and loss itself, can significantly reduce the accident rate prone ferreresonance circuit failure due to electromagnetic transformer.

Core features



ZDWS-8L intelligent analysis device
for cable line operation status





Core parameters

Rated current: 800A (optional);

Connecting wire diameter size: 95~300mm²;

Input and output form: fast plug-in type;

Anti-misplugging protection: each connector is marked with yellow, green, red, and blue according to the phase sequence;

Housing protection level: IP56;

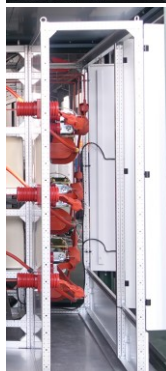
Installation way: floor type or pole type.

Emergency power supply is quickly connected to the device box

10KV line variable series compensation device

Core features

- Microsecond level protection, high controllability;
- Embedded system structure, high degree of integration;
- Use variable series capacitance compensation to realize replacement compensation;
- The two sets of protection are completely independent, the starting element plus the protection exit action mode;
- Independent double sets of protection and lockout circuits;
- Dual configuration of electronic transformer and merging unit.



Power grids channels



Suitable for use in areas with large voltage fluctuations, unbalanced three-phase power, unstable power grid frequency, and requiring reactive power and stable voltage

Core features

- The overall size and weight are small, and it is easier to configure equipment on the column;
- The internal module adopts the plug-in method, which can realize the maintenance on the column;
- Modules are operated in parallel to realize equipment expansion in a simple environment;
- Multiple zero line compensation capabilities to eliminate zero line current and reduce line loss;
- Fully intelligent automatic operation;
- Strong functions, and have the ability to deal with three-phase imbalance, compensate reactive power, and control harmonics;
- Possess complete protection function, with system start-up self-diagnosis function;
- Dynamic compensation, compensated reactive power can achieve continuous and smooth two-way adjustment;
- Energy saving and consumption reduction, the effect is remarkable;
- Good safety and stability, and will not resonate with the power grid impedance;
- The response time is short, and it has an important response speed advantage;
- The operation loss is small, and the operation economy is better;
- The operation and maintenance are simple, the workload is small, and the maintenance is basically free.

Three-phase load imbalance control device (SVG type)



Optimize power quality

Improve power environment

Focus on power quality for 15 years

Dozens of software copyrights Independent invention patents and new utility patents

Participate in the formulation of several industry standards

Have more than a thousand project operation experience

Arc protection Domestic manufacturers that have won bids in the State Grid and China Southern Power Grid for a long time

Have independent intellectual property rights

A large number of engineering achievements in the State Grid and China Southern Power Grid

Millions of core component products are used in various industrial, mining, power transmission and distribution systems

There are special filtering compensation solutions for rolling mills, internal mixers, hoists, welding machines, electric furnaces, inverters, rectifiers, commercial real estate, substations, power transmission and distribution, etc.

Optimize the power quality Improve the power environment



Suitable for filtering compensation in steel, metallurgy,



petrochemical, railway,



wind power, large hoist,



substation, and other occasions with large harmonic content



ZBSVG high-voltage static dynamic (instantaneous) reactive power compensation device

Core characteristics

Core Features

Faster response time/Stronger ability to suppress voltage flicker/Wider operating range/Diversified compensation functions/Active filter funct

ZBSVC-MCR high voltage dynamic reactive power compensation device

Core features

- High reliability
- Quick response ability
- Large adjustment range
- Small footprint
- Small harmonics
- Strong overload capacity
- Low loss
- Strong overvoltage capability
- Steinmetz method can be used

Realize balance compensation of three-phase asymmetric load



Suitable for filtering compensation in steel / metallurgy / petrochemical / railway / wind power / large hoist / substation and other occasions with large harmonic content



ZBTBB high-voltage centralized reactive power compensation device

Core features

Voltage and reactive power integrated controller

According to the system voltage, reactive power and power factor, it can automatically switch the capacitor bank and control the on-load voltage regulation of the main transformer to achieve the best voltage and reactive power control effect.

Realize automatic cycle switching, three groups of unequal volume, and four groups of unequal volume, realize combined switching and achieve the best compensation effect.

Configure the capacitor bank microcomputer protection unit

It can realize the second stage over-current, first stage over-current and zero-sequence voltage protection functions for each group of capacitors. When a group fails, the group of capacitors can be automatically cut off and blocked, without affecting the normal switching of the entire device.

Configure reactors with different ratios

Reactors such as 5%, 6%, 7% and 14% can be connected in series. The system has powerful remote control, display and self-inspection functions; when the system has an alarm, it will display the alarm information in a cycle preferentially.

It is suitable for filtering compensation in places with large harmonic content such as steel, metallurgy, petrochemical railways, wind power large-scale hoisting substations, etc.

Core features

- It can filter out harmonic currents below 2-50 times at the same time
- Using sliding window iterative DET detection algorithm, fast calculation speed
- The main current switching device adopts IGBT of international famous brand,
-which is extremely reliable
- Three-level structure, higher output waveform quality, lower switching loss
- Reliable current limiting control link
- Reliable lightning surge protection device

ZBAPF low voltage active filter



Wall-mounted active filter module



Rack-mounted active filter module



Cabinet type active filter

It is widely used in substations, factories, industrial and mining enterprises, large power plants, petrochemical enterprises, large steel plants, high-rise building power centers, reactive power compensation metering, power distribution and other occasions.



ZBTSF low voltage filter compensation device



Core features

- Apply a number of patented technologies and software works to use two-stage over-current, unbalanced alarm and -protection, voltage over-limit, over-temperature and other protection technologies to ensure stability and reliability
- Using touch screen human-computer interaction, the design is more humane, convenient and beautiful
- Big data collection and management can be implemented through APP, handheld terminal, PC and other channels
- The filter channel and the compensation channel are adopted, which can be processed according to the on-site -situation, which has obvious advantages in cost and performance

It can be used in sites with fast load changes and serious harmonic pollution, such as rectifier and high-power frequency conversion, internal mixer, rolling mill, electric welding machine

ZBSVG low voltage dynamic reactive power compensation device

DSP automatic control, hardware and software dual watchdog design, improve the safety factor of the system.

Advanced harmonic detection technology and control methods, ensure the rapid response of the equipment and the accuracy of steady-state compensation.

Double protection function with software and hardware protection

Realize the monitoring of multiple operating states of the equipment and take corresponding control measures.

The device layout , strong and weak electrical interface fully consider the requirements of electromagnetic compatibility.

The HMI is simple and clear, which is convenient for user operation.

Core features

Widely used in factories, petrochemicals, shipbuilding, automobiles, hotels, railroads, welding machines, tobacco, UPS, wind power generation and variable frequency drive equipment and other fields





Core features

ZBSVC low-voltage dynamic filter compensation device

Reliable controllability: The controller of the SVC type compensation device uses high-performance industrial SOC chips to realize the integrated hardware design of human-machine interface, control strategy, switching management and protection, which greatly improves the reliability and stability of the controller.

Quick response capability: no inrush current, no operating overvoltage, no arc reignition during the switching process, fast dynamic response, up to 6.7 -20ms.

Convenient compensation: After the capacitor is cut off, it can be switched on again without discharging, so it can be switched on frequently; if the user requires multiple compensation, it can be in place at one time, and it can be three-phase compensation or split-phase compensation.

Complete protection measures: short-circuit, overload, under-voltage, and lack of equal protection; the controller can be switched on and off manually; various parameter settings are convenient; when there is an external fault, it will automatically exit operation, and automatically resume operation after power-on.

Safe and maintenance-free function: The capacitor intelligent switching switch has a long service life, does not generate closing inrush current, does not generate heat, low power consumption, simple structure, convenient installation, and low failure rate, so that the whole machine is maintenance-free for a long time.

The core part of the SVC compensation device: The new phase-controlled adjustable reactor (TCR) has the characteristics of continuous adjustment, large adjustment range, no harmonic pollution, and high reliability. It is an alternative to fixed reactors.

Applicable to industries such as automobile charging piles, ports, metallurgy, etc.



ZBTSC low voltage reactive power compensation device

Passed the 3C certification of CQC center;

Modular structure of the control system, convenient installation and simple maintenance;

The capacitor switching switch adopts a high-power non-contact switch (high-power filter module) with independent intellectual property rights;

Mature technology, complete protection functions and stable performance;

The reactor adopts foil-wound reactor, which has strong flow capacity and good heat dissipation effect;

The performance is more reliable than the wire wound reactance, and the appearance is more beautiful;

The capacitor adopts a hybrid AC power filter capacitor with strong over-current capability;

The system design adopts the mixed compensation method to obtain higher compensation accuracy and improve the service life of the equipment;

With resistance-capacitance absorption protection circuit design, the filter bank can be switched on and off frequently and continuously without affecting the life of the switch;

Fast dynamic response time;

There is no transient impact during switching, no closing inrush current, and no arc reignition.

Core features

Applicable to the load site of the automobile manufacturing industry, chemical industry and ordinary motors
Widely used in electric power, metallurgy, petroleum, chemical and other industries

Core features

ZBTSVG is a combination of ZBTSC and ZBSVG functions,
Make full use of the advantages of the two to complement each other.
Have the advantages of both ZBTSC and ZBSVG,
The entire reactive power compensation is more cost-effective.

ZBTSVG low voltage dynamic reactive
power compensation device



Widely used in factories, petrochemicals, shipbuilding, automobiles, hotels, railroads, welding machines, tobacco, UPS, wind power generation and variable frequency drive equipment and other fields



Using high-performance detection devices, synchronous detection technology and phase-locked loop technology to achieve zero-crossing detection, strong anti-interference ability;

Optimizing the best digital control pulse frequency;

SCR conduction angle is large;

Adopt dual CPU control, effectively improve the operating efficiency and reliability of the system;

Adopt large-screen low-power LCD display;

Dynamic real-time display of various data, easy to operate;

The system interface is convenient and flexible, and the multi-function communication port facilitates the realization of data transmission and remote centralized control;

Equipped with manual control interface, which can realize the conversion between manual and automatic model;

With soft-start and soft-off function, curb the current impact caused by magnetic saturation;

High-reliability isolation circuits are used in many places in the system to effectively suppress interference signals;

Complete alarm function;

The Dc system balances the power distribution and automatically adjusts at startup to avoid instantaneous impact and damage to the power grid and electrical equipment.

Core features



ZBKW series power regulating cabinet (power regulating cabinet)

Used for resistive load and inductive load to realize the power adjustment of various industrial electric heating equipment

Solution for rubber chemical industry



Filter compensation control system

Advanced control algorithm, perfect combination of filtering and compensation

Accurate harmonic data analysis

Remote data analysis and remote control technology

Capacitor protection unit

Adopting advanced industrial-grade chips

Adopt high-precision A/D conversion chip and high-speed single-chip microcomputer

Ensure the safe operation of capacitors



Filter module

Automatic circulation heat dissipation control system

Fail-safe control system

Imported silicon wafer flat plate crimping technology

Fast zero-crossing trigger technology, adjustable filtering times, high-efficiency passive filtering

Core technology



Benefit expectations

- The average power factor that can be received is increased to above 0.9 to avoid power fines;
- The temperature of the transformer is reduced by about 20°C;
- Effectively eliminate the harmonics of the power grid and make it meet the national assessment standards;
- The power saving rate can reach about 20%;
- Lower the wiring of distribution lines;
- It can reduce the voltage fluctuation and suppress the voltage flicker, the voltage is stable, and the quality is improved;
- It can improve the load efficiency of the distribution transformer.

Power quality problems in rubber chemical industry?

Internal mixers, mills, vulcanizers, molding machines, inverter DC motors and other equipment mainly used in the production of the rubber chemical industry, their biggest feature is their short working cycle, fast speed belongs to shock load, and reactive power usually fluctuates rapidly between 0.5 and 0.9.

In addition, the electronic internal mixer uses variable frequency airflow technology, except for the power factor problem, it will also produce higher harmonics.

Will power quality problems lead to consequences?

- ☑ If the power factor is too low, which will cause power penalty, causing the existing capacitor compensation equipment to switch abnormally or cause the capacitor and other components to be damaged.
- ☑ Overvoltage will cause premature aging of electrical equipment.
- ☑ Various measuring instruments produce errors.
- ☑ Causes neutral wire heating or even fire.
- ☑ The equipment failure rate has increased, even leading to frequent shutdowns.
- ☑ Harmonics will cause the protection device to malfunction and endanger safe production.

Analysis of Rubber Chemical Industry

According to the power quality characteristics of the rubber chemical industry, Strong Power Electric applies advanced power electronic technology and intelligent control technology, and adopts scientific, economic and effective technical means to develop a series of special filtering compensation products for internal mixers.

The installation and use of special filter compensation equipment developed and produced by Strong Power Electric can not only solve the switching problem of shunt capacitor compensation under harmonic conditions, but also suppress or control harmonics according to the actual conditions and requirements of users, and the power supply network and improve power factor.

Iron and steel smelting industry solutions



Filter compensation control system

Advanced control algorithm, perfect combination of filtering and compensation,
Accurate harmonic data analysis,
Remote data analysis and remote control technology

Capacitor protection unit

Adopting advanced industrial-grade chips
Adopt high-precision A/D conversion chip and high-speed single-chip microcomputer
Ensure the safe operation of capacitors



Filter module

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Fail-safe control system
Imported silicon wafer flat plate crimping technology
Fast zero-crossing trigger technology, adjustable filtering times, high-efficiency passive filtering

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- Lower the wiring of distribution lines
- It can reduce the voltage fluctuation and suppress the voltage flicker, the voltage is stable, and the quality is improved
- It can improve the load efficiency of the distribution transformer.

Power quality problems in smelting industry?

Medium frequency furnace, high frequency furnace, power frequency furnace and arc are mainly used in smelting industry. Furnace, rolling mill and other equipment are nonlinear loads, which will produce a large number of harmonics. Current is injected into the power grid, which distorts the voltage of the power grid. This harmonic is "dirty" Pollution will cause serious harm to the power grid and users.

Will power quality problems lead to consequences?

- If the power factor is too low, which will cause power penalty, causing the existing capacitor compensation equipment to switch abnormally or cause the capacitor and other components to be damaged.
- Overvoltage will cause premature aging of electrical equipment.
- Various measuring instruments produce errors.
- Causes neutral wire heating or even fire.
- The equipment failure rate has increased, even leading to frequent shutdowns.
- Harmonics will cause the protection device to malfunction and endanger safe production.

Analysis of smelting industry




According to the power quality characteristics of smelting industry, Zhongbao Electric applies advanced power Sub-technology and intelligent control technology, using scientific, economic and effective technical means, open Issue special filter compensation series products for smelting industry. Installation and use of Zhongbao Electric R&D students The special filter compensation equipment can not only solve the problem of shunt capacitors under harmonic conditions The problem of compensation switching can also be suppressed or treated according to the actual situation and requirements of users Manage harmonics, clean power supply network and improve power factor.

SELECTION TABLE		PRODUCT PARAMETER					
							
		ZBWKG-5000	ZBWKG-3500B	ZBWKG-3500	ZBWKG-3000	ZBWKG-2000	ZBWKG-1000
Application	Line		Yes		Yes		Yes
	Concentrated			Yes	Yes	Yes	
	Substation	Yes					
Communication parameters	485	Yes	Yes	Yes	Yes	Yes	
	232	Yes	Yes	Yes	Yes	Yes	
	Wireless communication		Yes				
	GPRS		Yes		Yes		
Data storage	Data storage	Yes	Yes		Yes		
Installation method	Wall-mounted		Yes		Yes		
	Embedded	Yes		Yes	Yes	Yes	Yes
Background software	Background software	Yes	Yes	Yes	Yes		
Communication parameters	Power supply voltage (V)	AC/DC 85~250	AC220	AC/DC85-250	AC/DC85-250	AC220	AC220
	Sampling voltage (V)	0-150	100/220	0-150	0-150	100/220	220
	Sampling current (A)	0~5	0~5	0~5	0~5	0~5	0~5
	Frequency (Hz)	50±5%	50±5%	50±5%	50/60	50±5%	50±5%
	Response speed	1min	1min	1min	1min	1min	1min
Size	Appearance	265x200X220	230x125x80	270X165x75	270X140x80	144X144x105	168X108X118
	Perforation	247X124	220X65	242X152	258X65	138X138	162X102

Selection table of high voltage controller

Comparison table of capacitor switching switch selection

SELECTION TABLE								
PRODUCT	PARAMETER	ZBLBMZ-3-300	ZBLBMZ-2-300-2	ZBLBMZ-2-150	ZBLBMZ-2-100	ZBTSC-60	ZBTSC-40	ZBFK-3-30
Application	Line dynamic compensation							Yes
	Centralized dynamic compensation	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Filter dynamic compensation	Yes	Yes	Yes	Yes			
Basic parameters	Power supply voltage (V)	AC220	AC220	AC220	AC220	AC220	AC220	AC220
	Control voltage (V)	9~12	9~12	9~12	9~12	9~12	9~12	9~12
	Frequency (Hz)	50±5%	50±5%	50±5%	50±5%	50±5%	50±5%	50±5%
	Responding speed	≤20ms	≤20ms	≤20ms	≤20ms	≤20ms	≤20ms	≤2S
Compensation	Compensation method	Co-complement/Sub-complement	Co-complement	Co-complement	Co-complement	Co-complement/Sub-complement	Co-complement/Sub-complement	Co-complement/Sub-complement
	Compensation capacity	≤300kvar	≤150x2kvar	≤150kvar	≤100kvar	≤60kvar	≤40kvar	Co-complement ≤30 Sub-complement ≤10
Protection function	Overload protection	Yes	Yes	Yes	Yes			
	Overcurrent protection	Yes	Yes	Yes	Yes			
	Unbalance protection	Yes	Yes	Yes	Yes			
Size	Appearance	360X525X300	360X600X300	320X342X265	285x184x185	155x215x180	155x180x160	105x158x87

PRODUCT PARAMETERS TABLE									
SELECTION TABLE		ZBWKN-3800	ZBWKN-3600	ZBWKN-3500	ZBWKF-18C/12C	ZBWKE	ZBWKD	ZBWK C	ZBWK A
Application	Power line				Yes	Yes	Yes		Yes
	Concentrated	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
	Substation								
Communication parameters	485	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
	232	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
	Wireless communication				Yes				
	GPRS				Yes				
Data storage	Data storage				Yes		Yes		
Installation method	Wall-mounted	Yes	Yes						
	Embedded		Yes	Yes	Yes	Yes	Yes	Yes	Yes
Compensation method	Co-complement			Yes				Yes	Yes
	Mixed supplement	Yes	Yes		Yes	Yes	Yes		
Display mode	Digital display								Yes
	Liquid crystal display		Yes	Yes	Yes	Yes	Yes	Yes	
	Extended touch screen	Yes	Yes						
Background software	Background software	Yes	Yes	Yes	Yes	Yes	Yes		
Communication parameters	Power supply voltage (V)	85~265	85~265	220±20%	220±20%	220±20%	220±20%	380±20%	380±20%
	Sampling voltage (V)	100/220/380	100/220/380	380	220	220	220	380	380
	Sampling current (A)	0~5	0~5	0~5	0~5	0~5	0~5	0~5	0~5
	Frequency (Hz)	50±5%	50±5%	50±5%	50±5%	50±5%	50±5%	50±5%	50/60
	Response speed	20ms	20ms	20ms	1s	20ms	20ms	20ms	1s
Size	Appearance	190x90X67	275x142x75	270X165x75	144X144x105	144X144x105	144X144x105	144X144x105	168X108X118
	Perforation		248X108	242X152	138X138	138X138	138X138	138X138	162X102

Low-voltage controller selection table

Comparison table of capacitor protector
(special relay protection for capacitor cabinet)

■ ZBCP-2 reference table



Power supply	220V 80%~120%
Protection function	Second stage overcurrent, first stage over-current, unbalance protection, over-voltage (open voltage) protection Two groups of capacitors can be protected separately
Alarm output	Normally open or normally closed two groups
Overcurrent protection features	0.1s < action time < 990s
Recovery method	The control loop is automatically restored, and the control loop button is restored
Output interface capacity	AC250V/5A
The output interface disconnects the leakage current of the loop	< 2mA
Current accuracy	≤ ±2%
How to work	Uninterrupted work system
Current analog	5A 5%~100%

■ ZBCP-3 reference table



Working temperature	-5°C ~ ±50°C, the average temperature within 24h does not exceed ±35°C	
Atmospheric pressure	80-110Kpa	
Basic parameters	Power supply	AC/DC 85~265V
	frequency	50HZ
	Power consumption	Voltage: not more than 1.0VA/phase; current: not more than 1.0VA/phase
Protection function	Second stage overcurrent, first stage over-current, zero sequence voltage protection Three groups of capacitors can be protected separately	
Alarm output	Level/pulse optional	
Voltage analog	AC phase difference current 0~5A	
Communication	Physical interface	RS485/232 port, can use twisted pair as transmission medium

Optimize the power quality

Improve the power environment



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