

SGA Active Power Filter Device



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Product Usage

The active power filter device is connected to the power grid in parallel, and monitors the load current in real time through a high-precision sampling CT. After converting it into a signal readable by a digital processor, it goes through a series of operations and uses PWM modulation to control the core intelligent power module to output a current that is equal to the harmonic component and opposite in phase, thereby achieving the purpose of eliminating harmonics and purifying the power grid.

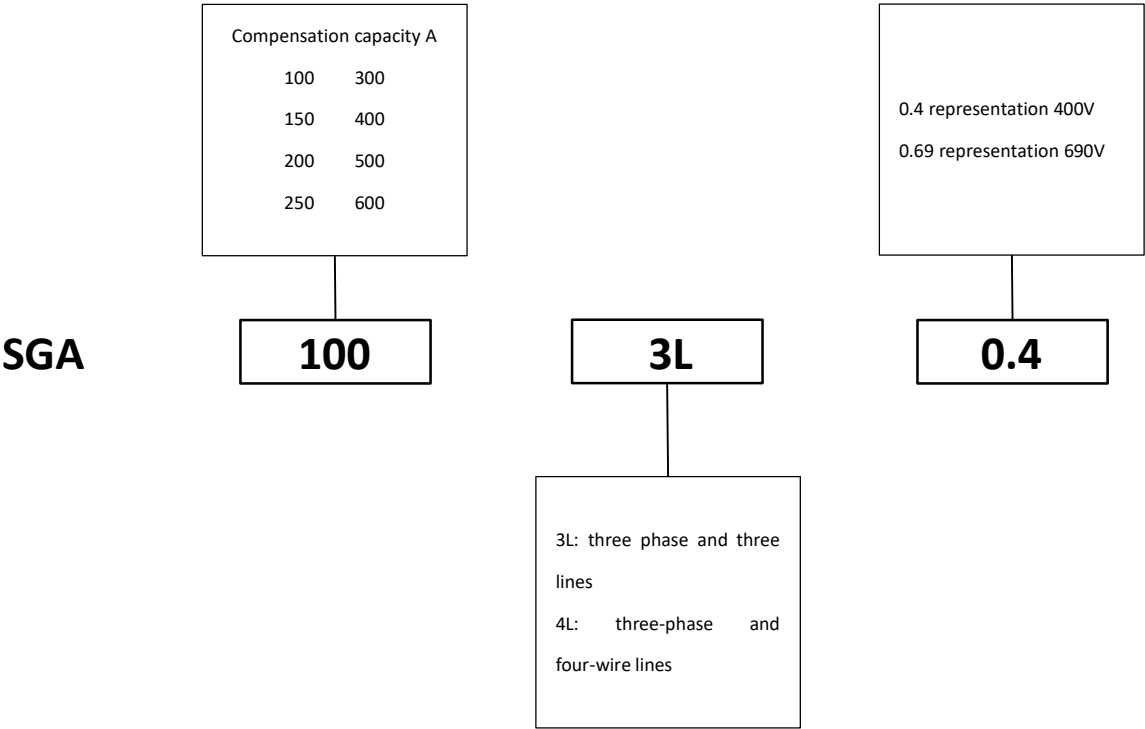
Features

- 1. Fast response capability: advanced algorithms make dynamic response time less than 1ms and transient response time less than 100s;
- 2. High reliability: multi-layer software and hardware dual protection system with automatic disconnection from the grid function;
- 3. Large-capacity compensation capability: The compensation capability of active power filters is limited by the capacity of power modules (IGBTs), making it difficult to compensate for large-capacity harmonics. This product can be connected to cabinets without restrictions, making it possible to compensate for large-capacity harmonics and reducing costs.
- 4. Double closed-loop control technology: the outer loop is a DC voltage control loop, and the inner loop is an AC current control loop;
- 5. Simple operation method and structure: The operation is simple, just connect the load to the system, no other operations are required. The internal structure is simple, the converter is modular, easy to install and maintain, and after connecting to the system, it can operate normally without human intervention.

Normal use conditions

- 1. For indoor installation, it is recommended that the installation altitude should not exceed 2000 meters (higher altitudes require reduced capacity);
- 2. Operating environment temperature -25℃~45℃.

Quick Selection Table



Technical Parameters

model parameter	Three-phase three-wire SGA-(100A~600A)-3L-400V(690V)	Three-phase four- wire SGA-(100A~600A)-4L-400V(690V)
Harmonic frequency that can be filtered out	2-50th order (eliminate all or selected harmonics)	
Harmonic filtering degree setting	Automatically eliminate harmonics to the maximum extent at rated capacity	
Total harmonic current distortion	$\leq 55\%$	
Total response time	$\leq 1\text{ms}$	
Compensation	Harmonic compensation , reactive power compensation , or harmonic and reactive power compensation	
On-off level	20KHz	
Parallel operation capability	N units in parallel , professional recommendation is 10 units at most	
Effective power loss	$< \text{Rated capacity } 3\%$	
Display function (user interface)	Grid power , power factor , voltage and current values of each phase , total current distortion , spectrum diagram , current size , total load current value , total filter output current value display , operation mode setting , dry node setting , fault information and operation time query	
Protection method	Grid over-voltage and under-voltage , device over-current , device overheating , DC bus over-voltage and under-voltage , overload automatic current limiting protection	
cooling method	Forced cooling	
noise	$\leq 65\text{dB (A)}$	
Protection level	IP20 (higher protection level can be customized)	
color	RAL7035 (other colors available on request)	
Line direction	Upper /lower inlet	
environment	For indoor installation , the recommended installation altitude is no more than 2000m (higher altitudes require reduced capacity)	
Ambient temperature	$-25^{\circ}\text{C}\sim 45^{\circ}\text{C}$	

Model (three-phase three-wire/four-wire)	Rated current A	System voltage V	Reference dimensions	Remark
SGA-100-3L(4L)-0.4	100	400/690	600*800*2200 800*800*2200 800*1000*2200	Other dimensions can also be customized
SGA-150-3L(4L)-0.4	150			
SGA-200-3L(4L)-0.4	200			
SGA-250-3L(4L)-0.4	250			
SGA-300-3L(4L)-0.4	300		800*1000*2200 1000*1000*2200	
SGA-400-3L(4L)-0.4	400			
SGA-500-3L(4L)-0.4	500		1200*1200*2200	
SGA-600-3L(4L)-0.4	600			

SGA Active Power Filter Module

Product Usage

The active power filter module is connected to the power grid in parallel, and monitors the load current in real time through a high-precision sampling CT. After converting it into a signal readable by a digital processor, it goes through a series of operations and uses PWM modulation to control the core intelligent power module to output a current that is equal to the harmonic component and opposite in phase, thereby achieving the purpose of eliminating harmonics and purifying the power grid.

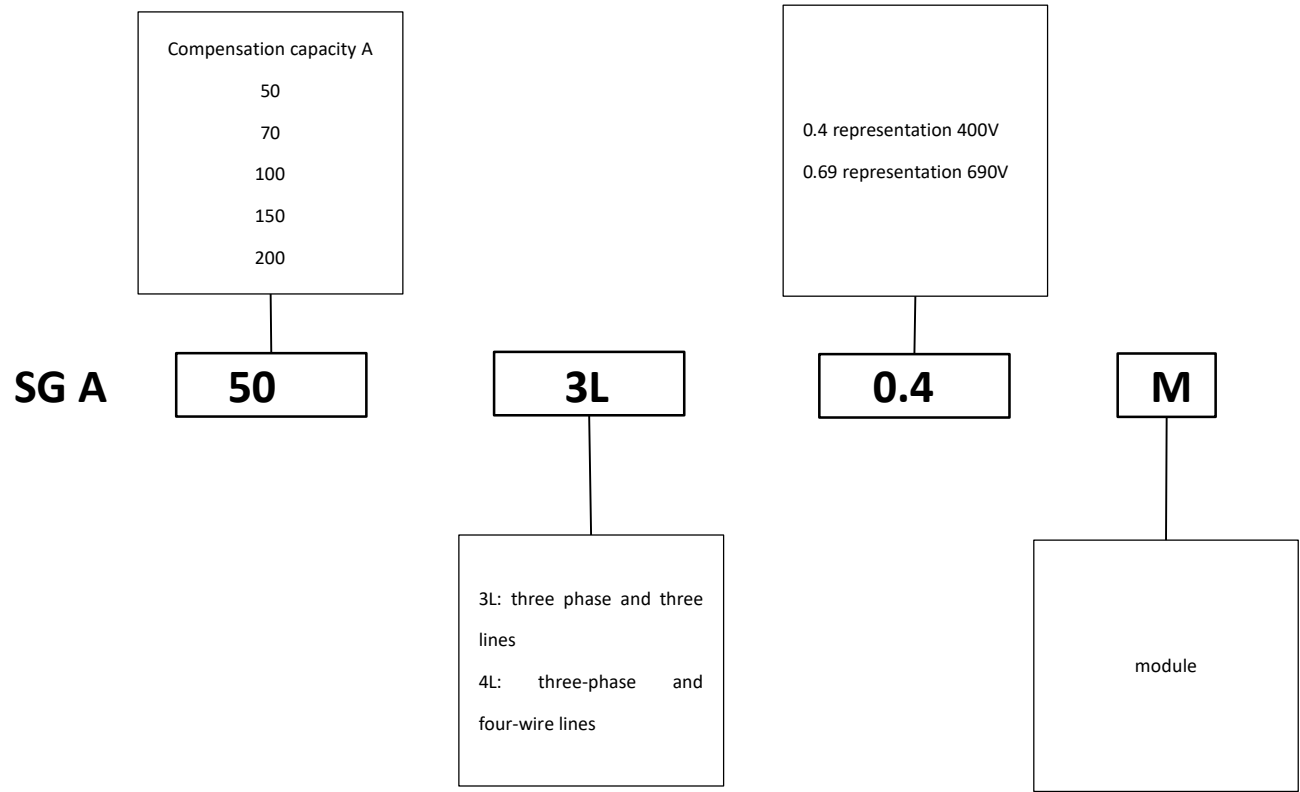
Features

- 1. The capacity of a single active power filter module is 50150A;
- 2. Simple interface, convenient wiring and easy parallel connection;
- 3. Automatically eliminate harmonics to the maximum extent at rated capacity;
- 4.N units can be operated in parallel.

Normal use conditions

- 1. For indoor installation, it is recommended that the installation altitude should not exceed 2000 meters (higher altitudes require reduced capacity);
- 2. Operating environment temperature -25℃~45℃.

Quick Selection Table



Technical Parameters

model parameter	Three-phase three-wire SGA-(50A~150A)-3L-0.4/M	Three-phase four- wire SGA-(50A~150A)-4L-0.4/M
Harmonic frequency that can be filtered out	2-50th order (eliminate all or selected harmonics)	
Harmonic filtering degree setting	Automatically eliminate harmonics to the maximum extent at rated capacity	
Total harmonic current distortion	$\leq 5\%$	
Total response time	$\leq 1\text{ms}$	
Compensation	Harmonic compensation , reactive power compensation , or harmonic and reactive power compensation	
On-off level	20KHz	
Parallel operation capability	N units in parallel	
Effective power loss	< Rated capacity 3%	
Display function (user interface)	Grid power , power factor , voltage and current values of each phase , total current distortion , spectrum diagram , current size , total load current value , total filter output current value display , operation mode setting , dry node setting , fault information and operation time query	
Protection method	Grid over-voltage and under-voltage , device over-current , device overheating , DC bus over-voltage and under-voltage , overload automatic current limiting protection	
cooling method	Forced cooling	
noise	$\leq 65\text{dB (A)}$	
Protection level	IP20 (higher protection level can be customized)	
color	Black (other colors on request)	
Line direction	Upper /lower inlet	
environment	For indoor installation , the recommended installation altitude is no more than 2000m (higher altitudes require reduced capacity)	
Ambient temperature	$-25^{\circ}\text{C}\sim 45^{\circ}\text{C}$	

Model (three-phase four-wire)	Rated current A	System voltage V	Reference dimensions	Remark
SGA-50-4L-0.4/M	50	400	470*550*200	
SGA-75-4L-0.4/M	75		470*570*250	
SGA-100-4L-0.4/M	100		500*640*250	
SGA-150-4L-0.4/M	150		530*650*320	
SGA-200-4L-0.4/M	200			