

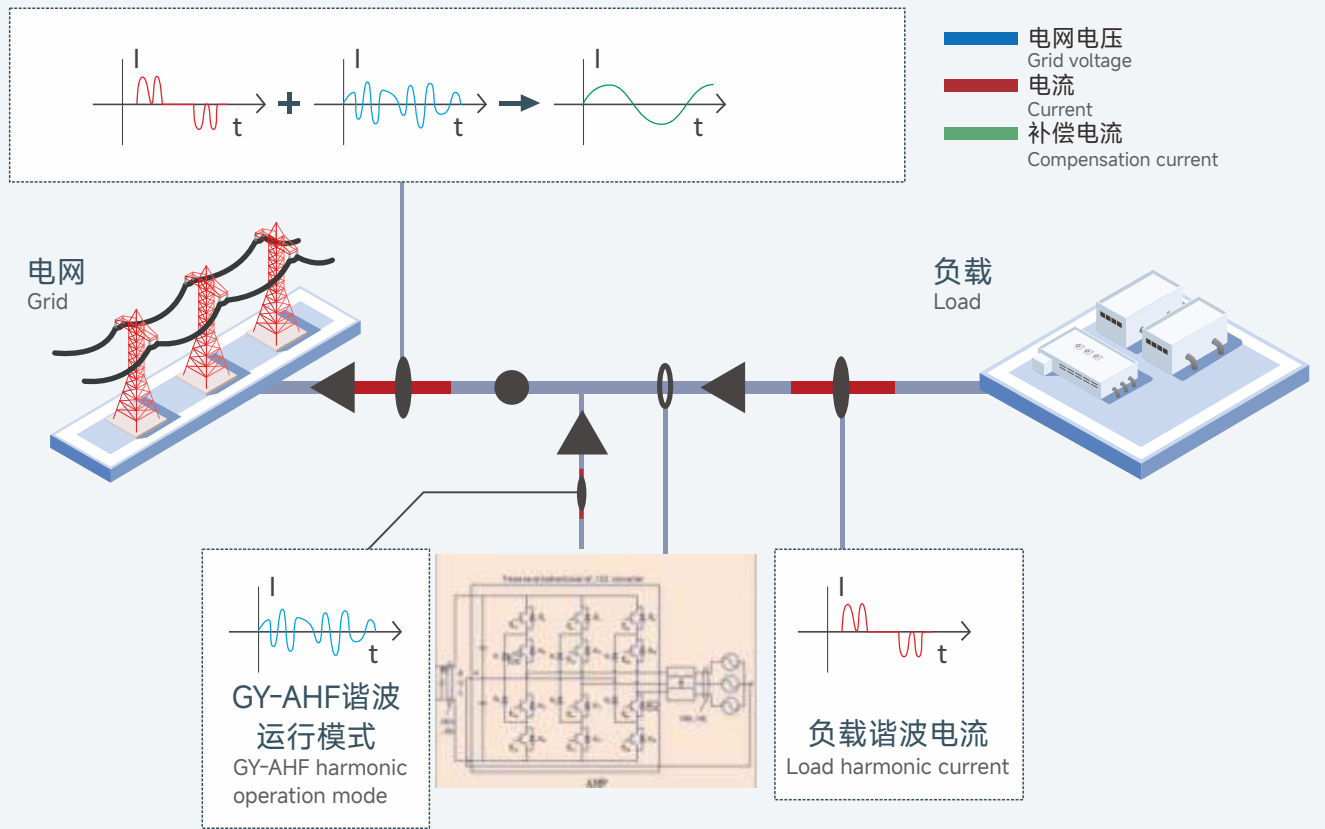
高配型有源电力滤波装置

High-spec Active Harmonic Filter

GY-AHF-PLUS

有源电力滤波装置-高配机型（GY-AHF-PLUS）的工作原理是将电压源变流器通过滤波器并联在电网上，通过实时检测负载的电流，基于指定次谐波电流检测算法将谐波电流逐次分离，按照设定的滤波百分比生成控制信号，驱动IGBT输出与负载谐波电流幅值相同相位相反的补偿电流，实现谐波补偿功能。同时，装置中性线零序电流滤波能力可达相线三倍，EMC电磁兼容性能更优，稳定性更好。

Working Principle of the High-configuration Model Active Power Filter (GY-AHF-PLUS):
The device connects a voltage source converter (VSC) to the power grid via a filter in parallel. By detecting the load current in real time, it separates the harmonic currents sequentially based on a specific-order harmonic current detection algorithm. According to the set filtering percentage, it generates control signals to drive the IGBT to output a compensation current that has the same amplitude as but opposite phase to the load harmonic current, thereby achieving harmonic compensation. In addition, the device's neutral line zero-sequence current filtering capability can reach three times the phase line current. It also offers better EMC electromagnetic compatibility performance and improved stability.



性能特点 Performance characteristics

- 1) DSP+CPLD全数字控制核心，三电平拓扑技术、先进的谐波检测算法和PWM控制策略。
 - 2) 模块化设计，可多模块并联，占地空间小、维护方便。
 - 3) 独立风道和独立板仓结构设计，保证设备的稳定运行。
 - 4) 可设定100%限流输出，保证设备长期稳定运行。
 - 5) 支持谐波补偿、谐波补偿+三相不平衡补偿模式可选。
 - 6) 不平衡补偿能力：补偿后不平衡度≤5%。
 - 7) 电流谐波补偿能力：补偿率≥95%；2~50次，单次补偿率可调。
 - 8) 中性线零序电流滤波能力为相线三倍。
 - 9) EMC电磁兼容RE、CE项目满足Class A测试标准。
- 1.DSP+CPLD full-digital control core, three-level topology technology, advanced harmonic detection algorithm and PWM control strategy.
 - 2.Modular design with multi-module parallel connection capability; small footprint and easy maintenance.
 - 3.Independent air duct and independent board compartment structural design to ensure stable operation of the equipment.
 - 4.Supports 100% current-limiting output to ensure long-term stable operation of the equipment.
 - 5.Supports selectable compensation modes: harmonic compensation only, or harmonic compensation + three-phase unbalance compensation.
 - 6.Unbalance compensation capability: unbalance degree after compensation ≤5%.
 - 7.Current harmonic compensation capability: compensation rate ≥95%; 2nd to 50th harmonics, individual compensation rate adjustable.
 - 8.Neutral line zero-sequence current filtering capacity is three times that of the phase line.
 - 9.EMC (Electromagnetic Compatibility) – Radiated Emission (RE) and Conducted Emission (CE) meet Class A test standard.

技术参数 Technical parameters

机型 Model	220V	380V
海拔高度 Altitude	<2000m,2000米以上按照GB/T3859.2降额使用 <2000 m; above 2000 m, derate according to GB/T 3859.2	
环境温度 Ambient temperature	-10~+50℃(40℃以上降容不超过30%) -10 to +50 °C (above 40 °C, capacity derating ≤30%)	
相对湿度 Relative humidity	≤90%，月最低温度25℃表面无凝露 ≤90% relative humidity, no condensation on the surface at a monthly minimum temperature of 25 °C	
污秽等级 Pollution degree	III级以下 Pollution degree ≤ Class III	
工作电压 Operating voltage	AC220V (-20%~+20%)	380V (-20%~+20%)
工作频率 Operating frequency	50Hz/60Hz (45Hz~63Hz)	
额定补偿容量 Rated compensation capacity	100A、150A	
电网结构 Grid configuration	三相三线，三相四线 Three-phase three-wire, three-phase four-wire	
并联台数 Number of parallel units	不限 unlimited	
整机效率 Overall efficiency	≥97%	
开关频率 Switching frequency	16kHz	
功能选择 Function selection	谐波补偿、谐波补偿+三相不平衡补偿 Harmonic compensation, harmonic compensation + three-phase unbalance compensation	
电流谐波补偿能力 Current harmonic compensation capability	电流谐波补偿≥95% Reactive power compensation ≥95%	
电流谐波补偿范围 Current harmonic compensation range	2~50次，单次补偿率可调 2nd to 50th harmonics, adjustable individual compensation rate	
不平衡补偿能力 Unbalance compensation capability	补偿后不平衡度≤5% Unbalance degree after compensation ≤5%	
全响应时间 Full response time	< 40ms	
噪音 Noise level	≤65dB	
通讯方式 Communication method	2路RS485通信接口（支持Wi-Fi） 2 RS485 communication ports (Wi-Fi supported)	
保护功能 Protection functions	过载、软/硬件过流、电网过欠压、电网电压不平衡、电源故障、过温、频率异常、短路保护、谐振保护等 Overload, software/hardware overcurrent, grid overvoltage/undervoltage, grid voltage unbalance, power supply failure, overtemperature, frequency anomaly, short circuit protection, resonance protection, etc.	
过载能力 Overload capability	额定1.2倍过载60秒 Rated 1.2 times overload for 60 seconds	
安装方式 Installation method	机架/壁挂 Rack / wall-mounted	
进线方式 Cable entry	后进线(机架式)、上进线(壁挂式) Rear cable entry (rack-mount), top cable entry (wall-mounted)	
防护等级 Protection rating	IP20(IP54可定制) IP20 (IP54 customizable)	
中性线滤波能力 Neutral line filtering capability	中性线滤波能力为相滤波能力的3倍 Neutral line filtering capacity is 3 times that of phase filtering capacity	
冷却方式 Cooling method	强制风冷 Forced air cooling	
电磁兼容 Electromagnetic compatibility	EMC电磁兼容RE、CE项目满足Class A测试标准 EMC (Electromagnetic Compatibility) – Radiated Emission (RE) and Conducted Emission (CE) meet Class A test standard	