

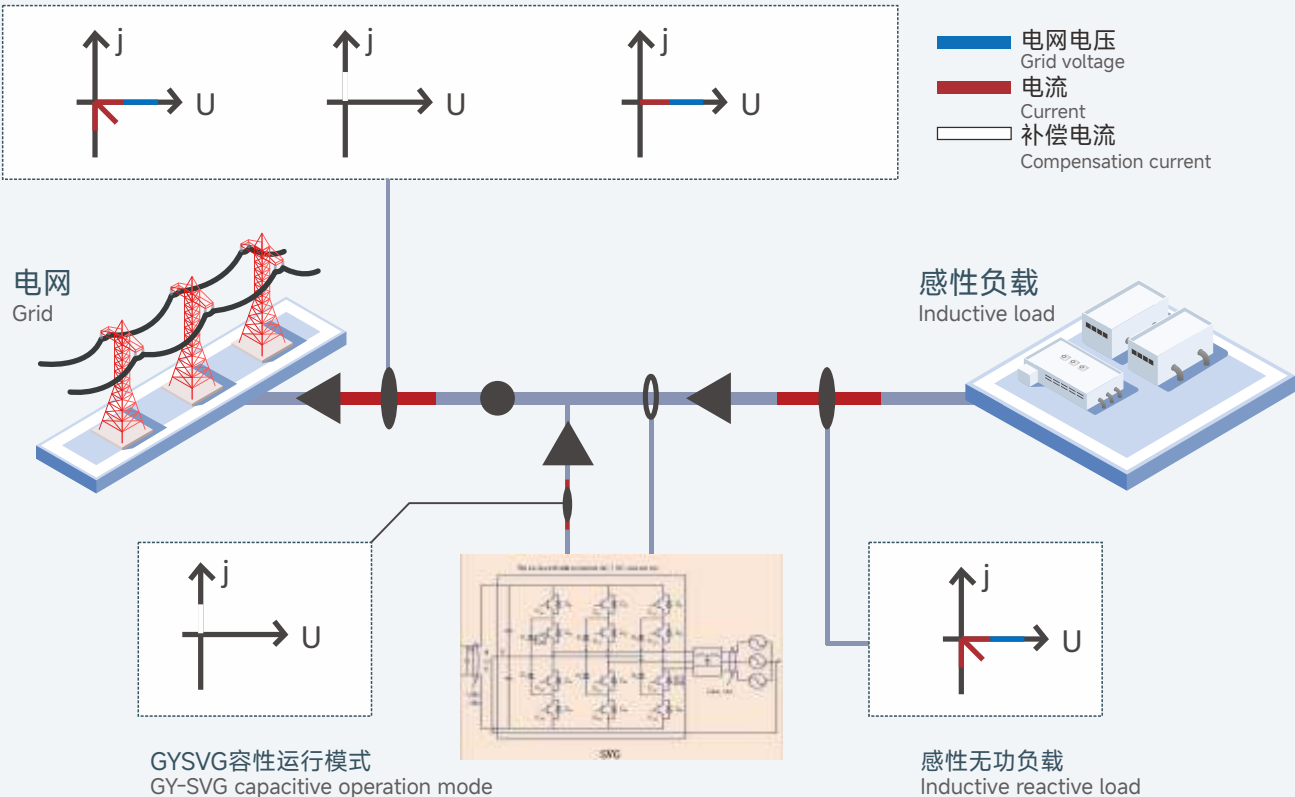


静止无功发生装置 整柜
Static Var Generator - Cabinet
GY-SVG-cabinet

静止无功发生装置（GYSVG）主要由交流配电、GYSVG 模块、监控系统等组成。静止无功发生装置（GYSVG）将电压源变流器通过滤波器并联在电网上，通过调节变流器交流侧输出电压的幅值和相位，针对电网系统中无功功率进行动态精准补偿，瞬态响应时间小于 50us，全响应时间小于 10ms，避免过补和欠补的发生。采用模块化设计，集成度高，安装方便灵活。

The Static Var Generator (GYSVG) is mainly composed of an AC distribution section, GYSVG power modules, a monitoring system, and other auxiliary components. The device connects a voltage source converter (VSC) to the grid in parallel via a filter. By regulating the amplitude and phase of the output voltage on the AC side of the converter, it provides dynamic and precise compensation for reactive power in the power grid system. The transient response time is less than 50 μ s, and the full response time is less than 10 ms, effectively preventing both over-compensation and under-compensation. Adopting a modular design, the system features high integration density and offers convenient, flexible installation.

系统图 System diagram



性能特点 Performance characteristics

- (1) DSP+CPLD 全数字控制核心，三电平拓扑技术，先进的无功检测算法和 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) 具有两路外部电流采样通道，可支持低压侧采样低压侧补偿、高压侧采样低压侧补偿、无功分量补偿等多种补偿方式。
- (5) 支持无功补偿、无功补偿+三相不平衡补偿模式可选。
- (6) 无功补偿能力：补偿率 $\geq 99\%$ 。
- (7) 不平衡补偿能力：补偿后不平衡度 $\leq 5\%$ 。
- (8) 对负载的动态响应速度为毫秒级，能实现对冲击性负荷无功功率的动态精准补偿。

- (1) DSP + CPLD all-digital control core, three-level topology technology, advanced reactive power detection algorithm, and PWM control strategy.
- (2) Modular design, supporting parallel connection of multiple modules, with a small footprint and easy maintenance.
- (3) Independent air duct and separate board compartment structure design to ensure stable and reliable operation of the equipment.
- (4) Equipped with two external current sampling channels, supporting multiple compensation modes, including low-voltage side sampling with low-voltage side compensation, high-voltage side sampling with low-voltage side compensation, and reactive power component compensation.
- (5) Supports selectable operating modes: reactive power compensation only, or reactive power compensation combined with three-phase unbalance compensation.
- (6) Reactive power compensation capability: compensation rate $\geq 99\%$.
- (7) Unbalance compensation capability: after compensation, the unbalance degree $\leq 5\%$.
- (8) Dynamic response speed to loads is at millisecond level, enabling dynamic and precise reactive power compensation for impact loads.

技术参数 Technical parameters

机型 Model	220V	380V	500V	690V	800V
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°C (40°C以上降容不超过30%) -10 to +50 °C (above 40 °C, capacity derating $\leq 30\%$)				
相对湿度 Relative humidity	$\leq 90\%$ ，月最低温度25°C表面无凝露 $\leq 90\%$ 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 $\leq$ Class III				
工作电压 Operating voltage	AC220V (-20%~+20%)	AC380V (-20%~+20%)	AC500V (-20%~+20%)	AC690V (-20%~+15%)	AC800V (-20%~850V Max)
工作频率 Operating frequency	50Hz/60Hz (45Hz~63Hz)				
额定补偿容量 Rated compensation capacity	50kvar~ 300kvar	100kvar~ 600kvar	90kvar~ 540kvar	100kvar~ 720kvar	150kvar~ 900kvar
电网结构 Grid configuration	三相三线，三相四线 Three-phase three-wire Three-phase four-wire				三相三线 Three-phase three-wire
并联台数 Number of parallel units	不限 No restrictions				
整机效率 Overall efficiency	$\geq 97\%$				
开关频率 Switching frequency	16kHz		12.8kHz		
功能选择① Function selection	无功补偿、无功补偿+三相不平衡补偿 Reactive compensation/Reactive compensation+Three-phase unbalance compensation				无功补偿 Reactive compensation
无功补偿率 Reactive compensation rate	无功补偿 $\geq 95\%$ Reactive power compensation $\geq 95\%$				
不平衡补偿能力 Unbalance compensation capability	补偿后不平衡度 $\leq 5\%$ Unbalance degree after compensation $\leq 5\%$				
冷却方式 Cooling mode	强制风冷 Forced air cooling				
全响应时间 Full response time	无功 < 10ms，谐波 < 40ms Reactive power: < 10ms, Harmonics: < 40ms				
噪音 Noise level	≤ 75 dB				
通讯方式 Communication method	2路RS485通信接口（支持Wi-Fi） 2 RS485 communication interfaces (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、短路保护等 Overload, software/hardware overcurrent, grid overvoltage/undervoltage, grid voltage unbalance, power supply failure, overtemperature, frequency anomaly, short circuit protection, etc.				
过载能力 Overload capability	额定1.2倍过载60秒 Rated overload 1.2 times for 60 seconds				
安装方式 Installation method	立式安装 vertical installation				
进线方式 Cable entry	上进线、下进线 Entering the upper line and entering the lower line				
防护等级 Protection rating	IP20 (IP54可定制) IP20 (IP54 available on request / customizable)				
尺寸 Size	1250*1000*2200（最大容量尺寸，可根据不同容量调整） 1250 * 1000 * 2200 (maximum capacity size, adjustable according to different capacities)				
重量 Weight	与容量相关，最大 450KG Related to capacity, maximum 450KG		与容量相关，最大 620KG Related to capacity, maximum 620KG		