

Active Harmonic Filter

SFR-APF Module

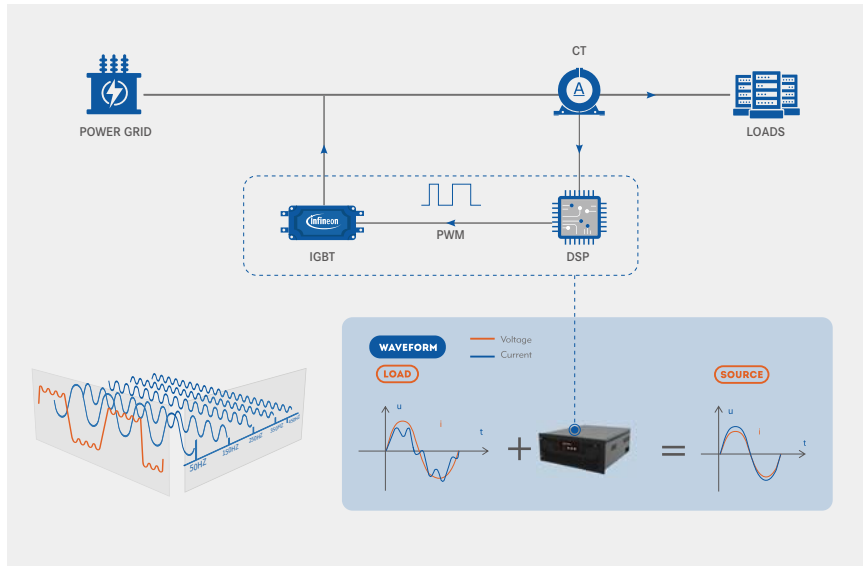
Overview

SFR-APF active harmonic filter is a new type of power quality improvement production for dynamically filtering harmonics and compensating reactive power. It can filtering and compensate harmonic (variable in orders and frequency) and dynamic reactive power in real time. It is used to overcome the shortcomings of conventional harmonic suppression and reactive power compensation methods such as passive harmonic filters, and achieve the harmonic filtering function and reactive power compensation function of the system. SFR-APF is widely used in power, metallurgy, petroleum, port, chemical industry and industrial and mining enterprises.



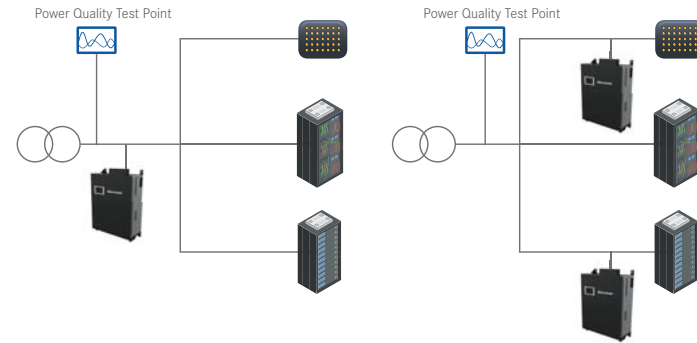
Working Principle

The increase in power energy productivity has improved living standards, and most of the electrical loads used in the intelligent power consumption are nonlinear nowadays. Harmonic current is generated by these nonlinear loads, and is formed by the superposition of countless sinusoidal currents whose frequencies are integer multiples of the fundamental current. When all the waveforms are superimposed, they will become distorted waveform.

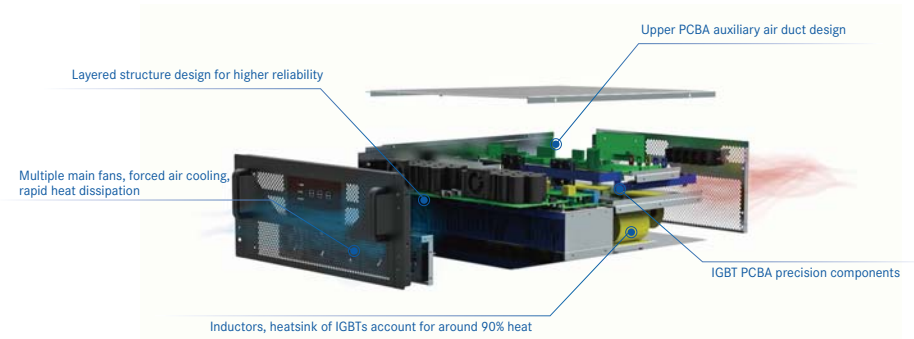


The APF acquires the current signal of the load by the CT, separating the harmonic by the intelligent FFT(Fast Fourier Transform) by the DSP then send to the internal IGBT by the PWM signal. The APF will generate the compensation current with the same value but opposite phase as the system harmonic in order to achieve the real-time dynamic filtering function.

Application



Structure and Characteristics



- Various Application
- Excellent filtering performance
- Excellent protection for equipment and system
- User-friendly HMI

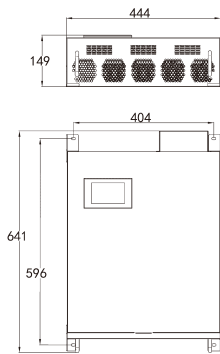
Model Description

SFR-APF 4 - 300 /0.4 B

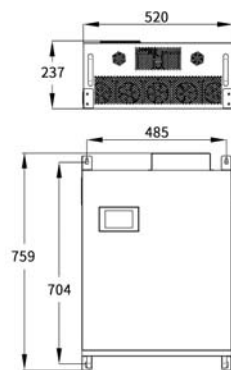
- Installation mode: M-Rack-mounted type
B-Wall-mounted type
- Voltage class(kV)
- Compensation capacity(A)
- Wiring mode:3-Three-phase three-wire
4-Three-phase four-wire
- Model of Company' s Product

Dimensions

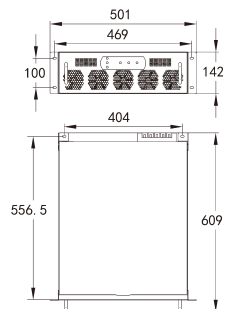
30-75A Wall-mounted



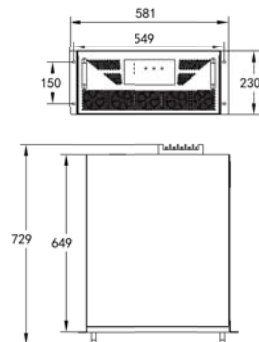
100-150A Wall-mounted



30-75A Rack-mounted



100-150A Rack-mounted



Technical Parameter

Item	Parameter			
SFR-APF	Grid	380,400,415V 3P3W/3P4W		
	Mounting Type	Wall-mounted	Rack-mounted	
		690V 3P3W		
System	Rated Input	340 ~ 460V		
	Power Grid Frequency	50/60Hz ±5%		
	Parallel Operation	8 modules, customizable		
	Overall Efficiency	≥97%(laboratory data)		
	Circuit Topology	3-level		
	Rated Capacity	30A/ 50A/ 75A/ 100A/ 150A	100A/125A/150A	
	Compensation Mode	Harmonic, reactive power, unbalance		
Filtering Range	2 to 51 orders			
Filtering Order	Selectable from 2 to 51			
Filtering Degree	Adjustable from 2 to 51			
Reaction Time	<100μs			
Response Time	<5ms			
Target Power Factor	Adjustable from -1 to +1			
Control Algorithm	FFT, Intelligent FFT and instantaneous reactive power			
Switching Frequency	20kHz			
Cooling Mode	Forced air cooling			
Noise Level	≤65dB			
Communications & Display	Communications Port	RS485		
	Communications Protocol	Modbus-RTU		
	Module Display Interface	4.3in LCD	LED indicator	LED indicator
	Protection Function	Automatic current limit protection for power grid over-voltage and under-voltage, power grid over-frequency and under-frequency, inverted sequence of input voltage, over-current, over-heating and over-load, and busbar short-circuit.		
	Monitoring Alarm	Available		
	Monitoring	Independent monitoring and centralized monitoring		
Mechanical Properties	Net Weight	24.5kg/51kg	130kg	
	Dimensions (W*D*H mm)	444×149×641 520×237×759	501×609×142 581×729×230	300×635×1370.5
Ambient Standards	Altitude	1,000m, for every increased 100m, the power is reduced by 1%.		
	Operating Temperature	-20°C-45°C		
	Relative Humidity	5% to 95%,non-condensing		
	Protection Class	IP20		
Related Standards	Directive	2014/30/EU 2014/35/EU		
	Standards Compliance	EN 61000-6-2:2005+AC:2005 EN 61000-6-4:2007+A1:2011 EN 50178:1997 IEEE519		