

AHF

Active Harmonic Filters



Active Harmonic Filter (AHF) An active harmonic filter is a type of electronic device that is used to mitigate or eliminate harmonic distortions in electrical power systems. Harmonic distortion refers to the presence of unwanted frequencies in the power system that can lead to issues such as increased heating of equipment, reduced system efficiency, and even equipment failure.

AHF operates by sensing the harmonic currents in the system and generating a counter-current of the same magnitude and opposite phase. This counter-current cancels out the harmonic current and prevents it from being fed back into the power system. Active harmonic filters are designed to be fast and accurate in their response to changing harmonic conditions in the power system.

Active harmonic filters are commonly used in industrial and commercial settings where there are high levels of non-linear loads, such as variable frequency drives, uninterruptible power supplies, and computer equipment. They are also used in power quality improvement applications in residential and commercial buildings.

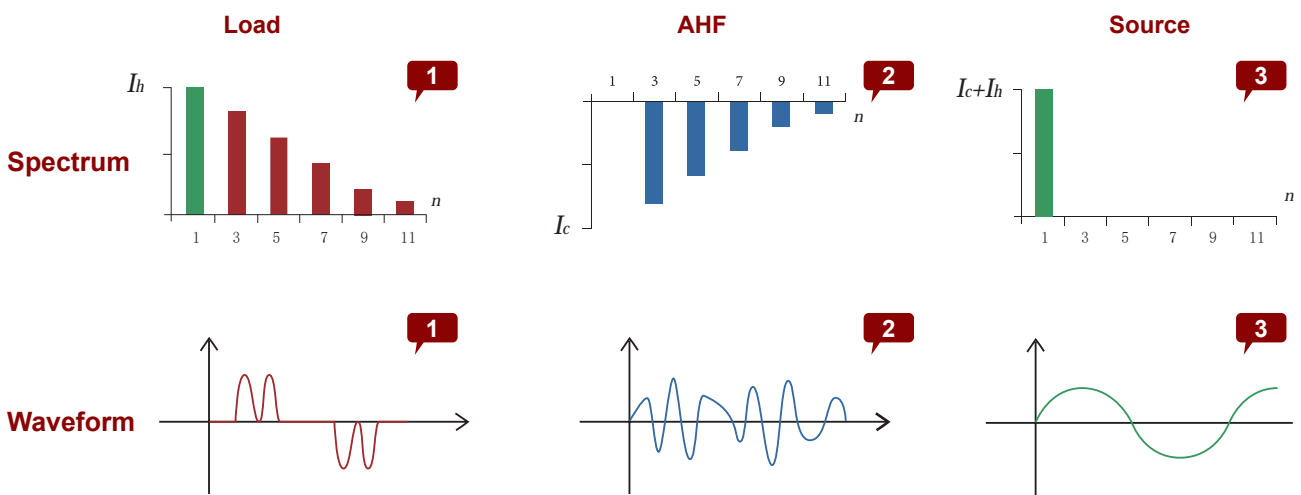
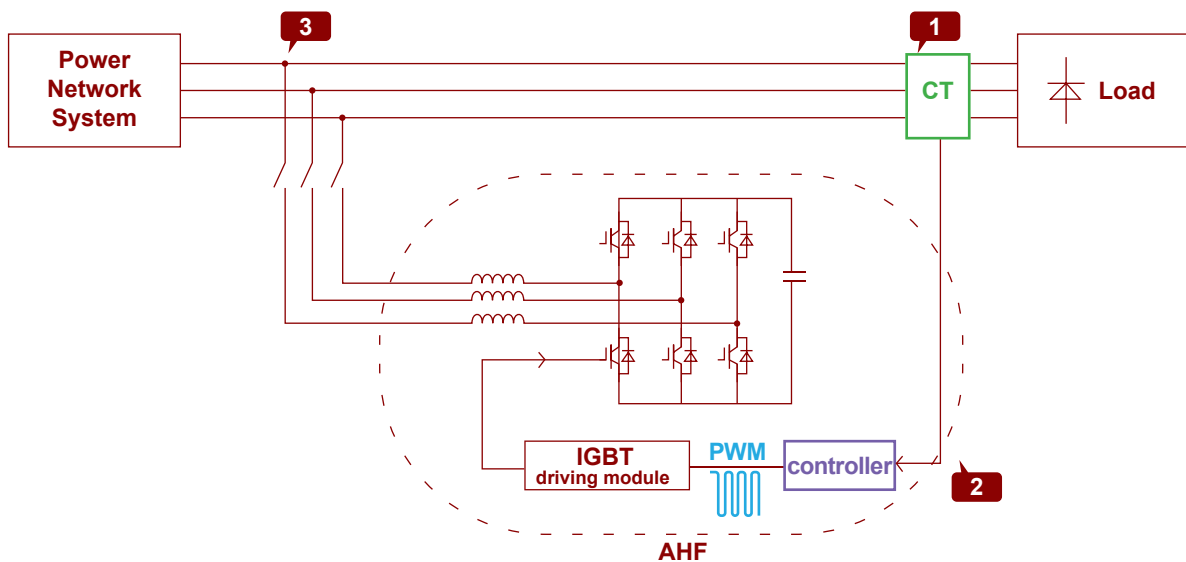
• Product Features

- 2nd to 50th harmonic mitigation
- Real-time compensation
- Modular design
- Protect equipment from being over heated or failure
- Improve working efficiency of equipment

• Working Principle

With the load current detected by external CT, DSP as CPU has advanced logic control arithmetic, could quickly track the instruction current, divide the load current into active power and reactive power by using the intelligent FFT, and calculate the harmonic content rapidly and accurately. Then it sends PWM signal to internal IGBT's driver board to control IGBT on and off at 20KHZ frequency. Finally, it generates opposite phase compensation current on inverter induction. In the meanwhile, CT also detects the output current and negative feedback goes to DSP. Then DSP proceeds the next logical control to achieve more accurate and stable system.

Working Principle

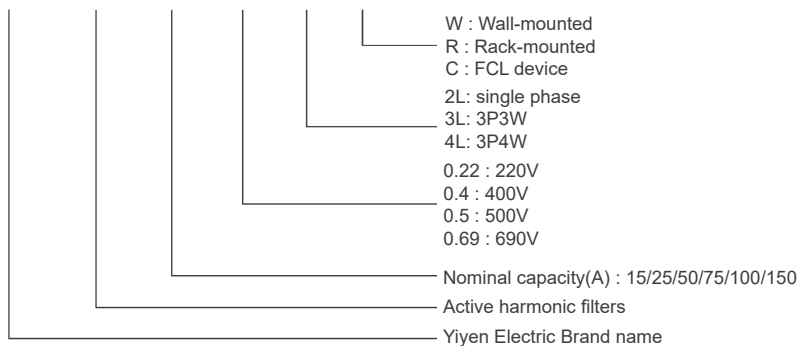


• Technical Specifications

TYPE	220V Series	400V / 220V Series	500V Series	690V Series
Rated compensation current	23A	15A、25A、50A、 75A、100A、150A	100A	100A
Nominal voltage	AC220V (-20%~+20%)	AC400V (-40%~+15%) / 220V(-20%~+20%)	AC500V (-20%~+15%)	AC690V (-20%~+15%)
Rated frequency	50/60Hz±5%			
Network	Single phase	3 phase 3 wire/3 phase 4 wire		
Response time	<40ms			
Harmonics filtering	2nd to 50th Harmonics, The number of compensation can be selected, and the range of single compensation can be adjusted			
Harmonic compensation rate	>92%			
Neutral line filtering capability	/	The filtering capacity of 3 phase 4 wire neutral line is 3 times of that of phase filtering		
Machine efficiency	>97%			
Switching frequency	32kHz	16kHz	12.8kHz	12.8kHz
Function	Deal with harmonics			
Numbers in parallel	No limitation. A single centralized monitoring module can be equipped with up to 8 power modules			
Communication methods	Two-channel RS485 communication interface (support GPRS/WIFI wireless communication)			
Altitude without derating	<2000m			
Temperature	-20~+50°C			
Humidity	<90% RH, The average monthly minimum temperature is 25°C without condensation on the surface			
Pollution level	Below level III			
Protection function	Overload protection, hardware over-current protection, over-voltage protection, power failure protection, over-temperature protection, frequency anomaly protection, short circuit protection, etc			
Noise	≤50dB	≤60dB	≤65dB	
Installation	Rack/Wall-mounted			
Into the way of line	Back entry (rack-mounted type), top entry (wall-mounted type)			
Protection grade	IP20			

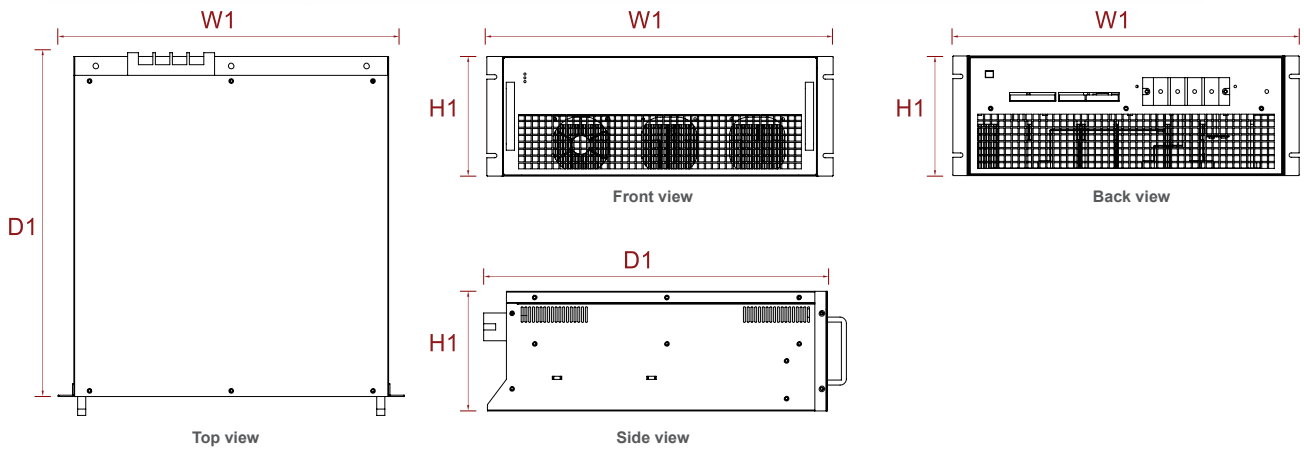
• Type Code

YIY AHF - 75 - 0.4 - 4L -W



• Product Dimensions

Rack-Mount



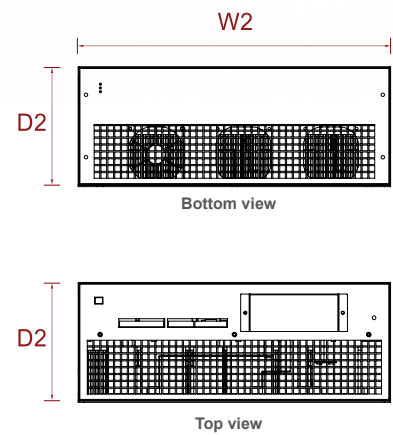
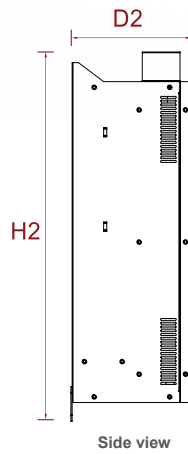
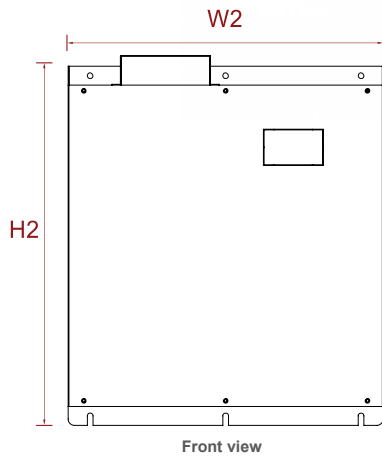
• Models

Model	Capacity	System Voltage	Size(W1*D1*H1)(mm)	Cooling Mode
YIY AHF-23-0.22-2L-R	23A	220V(-20%~+15%)	250*355*161	Forced air cooling
YIY AHF-15-0.4-4L-R	15A	400V(-40%~+15%)	550*520*89	Forced air cooling
YIY AHF-25-0.4-4L-R	25A	400V(-40%~+15%)	550*520*89	Forced air cooling
YIY AHF-50-0.4-4L-R	50A	400V(-40%~+15%)	550*520*89	Forced air cooling
YIY AHF-75-0.4-4L-R	75A	400V(-40%~+15%)	550*540*190	Forced air cooling
YIY AHF-100-0.4-4L-R	100A	400V(-40%~+15%)	550*580*240	Forced air cooling
YIY AHF-150-0.4-4L-R	150A	400V(-40%~+15%)	550*580*240	Forced air cooling
YIY AHF-100-0.5-4L-R	100A	500V(-20%~+15%)	539*711*275	Forced air cooling
YIY AHF-100-0.69-4L-R	100A	690V(-20%~+15%)	539*711*275	Forced air cooling

*If you need any other sizes, please contact us for customization.

• Product Dimensions

Wall-Mounted



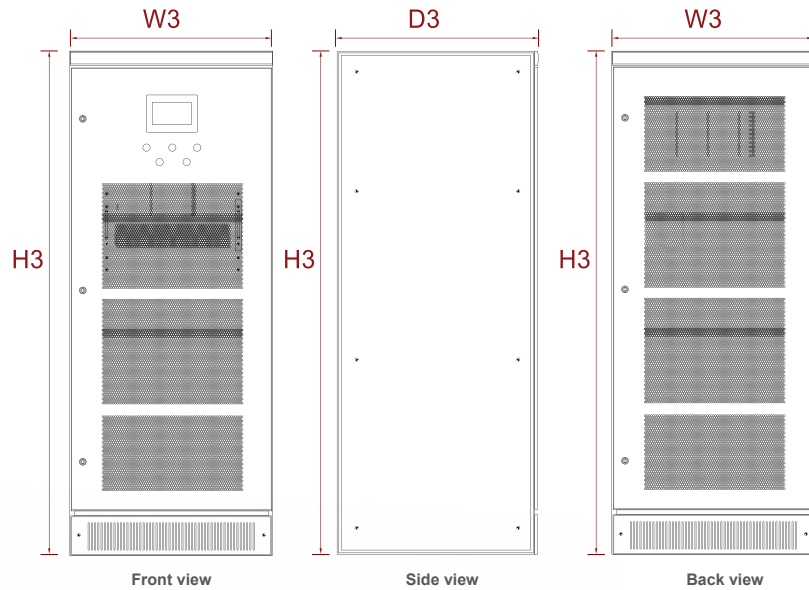
• Models

Model	Capacity	System Voltage	Size(W2*D2*H2)(mm)	Cooling Mode
YIY AHF-23-0.22-2L-W	23A	220V(-20%~+15%)	250*161*351	Forced air cooling
YIY AHF-15-0.4-4L-W	15A	400V(-40%~+15%)	460*89*557	Forced air cooling
YIY AHF-25-0.4-4L-W	25A	400V(-40%~+15%)	460*89*557	Forced air cooling
YIY AHF-50-0.4-4L-W	50A	400V(-40%~+15%)	460*89*557	Forced air cooling
YIY AHF-75-0.4-4L-W	75A	400V(-40%~+15%)	500*190*587	Forced air cooling
YIY AHF-100-0.4-4L-W	100A	400V(-40%~+15%)	500*240*627	Forced air cooling
YIY AHF-150-0.4-4L-W	150A	400V(-40%~+15%)	500*240*627	Forced air cooling
YIY AHF-100-0.5-4L-W	100A	500V(-20%~+15%)	495*275*735	Forced air cooling
YIY AHF100-0.69-4L-W	100A	690V(-20%~+15%)	495*275*735	Forced air cooling

*If you need any other sizes, please contact us for customization.

• Product Dimensions

FCL



• Models

Model	Capacity	System Voltage	Size(W3*D3*H3)(mm)	Cooling Mode
YIY AHF-100-0.4-4L-C	100A	400V(-40%~+15%)	800*1000*2200(Cabinet 1) 800*1000*1600(Cabinet 2) optional	Forced air cooling
YIY AHF-150-0.4-4L-C	150A	400V(-40%~+15%)	800*1000*2200(Cabinet 1) 800*1000*1600(Cabinet 2) optional	Forced air cooling
YIY AHF-200-0.4-4L-C	200A	400V(-40%~+15%)	800*1000*2200(Cabinet 1) 800*1000*1600(Cabinet 2) optional	Forced air cooling
YIY AHF-250-0.4-4L-C	250A	400V(-40%~+15%)	800*1000*2200(Cabinet 1) 800*1000*1600(Cabinet 2) optional	Forced air cooling
YIY AHF-300-0.4-4L-C	300A	400V(-40%~+15%)	800*1000*2200(Cabinet 1) 800*1000*1600(Cabinet 2) optional	Forced air cooling
YIY AHF-400-0.4-4L-C	400A	400V(-40%~+15%)	800*1000*2200(Cabinet 1) 800*1000*1600(Cabinet 2) optional	Forced air cooling
YIY AHF-300-0.5-4L-C	300A	500V(-20%~+15%)	800*1000*2200(Cabinet 1)	Forced air cooling
YIY AHF-300-0.69-4L-C	300A	690V(-20%~+15%)	800*1000*2200(Cabinet 1)	Forced air cooling

*Cabinet 1 can accommodate 5 modules. Cabinet 2 can accommodate 3 modules.

*If you need any other sizes, please contact us for customization.