CLARIANT® FRAKO

In collaboration with Frako-Germany

Trusted Name in Power Quality Management Since 1998

Clariant Power System Ltd.

Active Harmonic Filter (AHF)

More Power by Saving Energy

It's all about saving your money!

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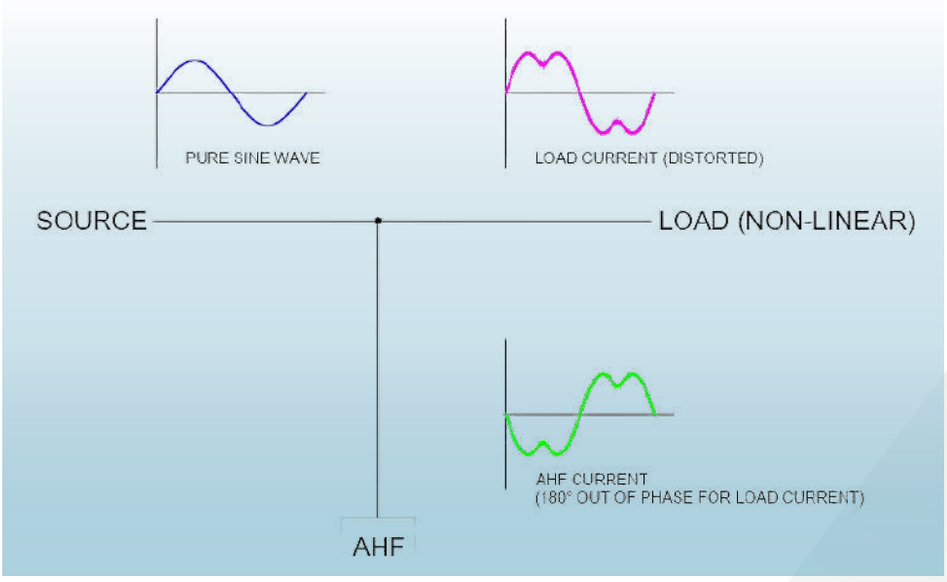
www.clariantindia.co.in

Clariant Active Harmonic Filter (AHF) is a high speed IGBT based device that is connected in parallel to the load. AHFs are equipped with newest generation IGBTs that are intelligently controlled using Artificial Neural Network (ANN) based Architecture.

Our AHF is most advanced and effective power quality improvement solution to mitigate harmonic, unbalance and reactive currents.

Why AHF

- Cancels the load generated current harmonics.
- Maintains unity power factor operation.
- Ensure balance three-phase source currents
- Compensates neutral current (only with 3P4W network)



How it Works?

- AHF identifies the downstream load current composition (such as active, reactive, harmonic & unbalance components) using ANN based control technique and cancels the unwanted components at load end through precise control of IGBTs.
- Based on the selective harmonic compensation, CPSL AHF computes the magnitude of individual harmonic, fundamental reactive and unbalanced currents that are to be compensated.
- For requirements higher than the rated capacity, compensation current is dynamically limited to AHF capacity using in-built real time current limiting algorithm

Key Features

- Harmonic Mitigation
- Current Balancing
- No Prerequisite
- Power Factor Control
- Optimum Design
- Neutral Current Compensation
- Wide Range of Harmonic Selection
- Energy Efficiency

Key Benefits to Users

- Close to pure sinusoidal plant current (enhanced power quality)
- Compliance to power quality standards (no harmonics penalty)
- Unity power factor operation (saving in electricity bill as per the state board tariffs/schemes)
- Reduced energy losses with improved plant efficiency
- Reduced plant downtimes from the nuisance tripping due to harmonics
- Improved plant equipment life
- Restored ability of existing electrical infrastructure to operate at full load capacity

Technical Data & Specifications

System Voltage	400	480V	690V
Voltage Range	-20%, +20%	-20%, +10%	-20%, +10%
System Configuration	3P3W & 3P4W (single phase option available)		
Power semiconductor device	IGBTs (2 Level /3Level)		
Rated Current	30, 50, 100, 150, 200	50, 100, 150, 200	75, 100
Peak Current	2.25 times of Rated Current (No need of oversizing with VFD loads)		
Harmonic Compensation Range	2nd to 50th Order	2nd to 71th Order	2nd to 71th Order
Selective Harmonic Compensation	0 to 100% for all harmonic order		
Reactive Power Compensation	Any Power Factor (Inductive or Capacitive) fully dynamic control		
Cooling	Forced Air Cooling		
Mounting Type	Wall Mounting / Floor Mounting		
Control Type / Method	Digital Control Based		
Dynamic Response Time	100 μs		
Operating Temperature	0 to 50°C		
Active Power Loss	Less than 3%		
Efficiency	97.5%		
Protection	Short circuit, Over voltage, Under Voltage, Temperature, DC Overvoltage		
Display	7” HMI		
Noise Levels	<69DB		
Communication	Modbus (RTU)/RS 485 (optional)		
Protection Class	IP 20 (As per requirement		
Operation Modes	Harmonic compensation, Reactive Power compensation, Unbalance Compensation		

AHF Module		Approx. Dimensions (L x W x H) – In mm
400/480V	30 Amps	538 x 355 x 200
	50 Amps	538 x 355 x 200
	100 Amps	720 x 700 x 260
	150 Amps	750 x 750 x 300
	200 Amps	750 x 750 x 400
690V	75/100 Amps	800 x 800 x 350

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