CLARIANT®

CLARIANT POWER SYSTEM LTD.

It's all about saving your money!

ACTIVE HARMONIC FILTERS (AHF)

Clariant Active Harmonic Filter (AHF) is a high speed IGBT based device that is connected in parallel to the plant. 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.

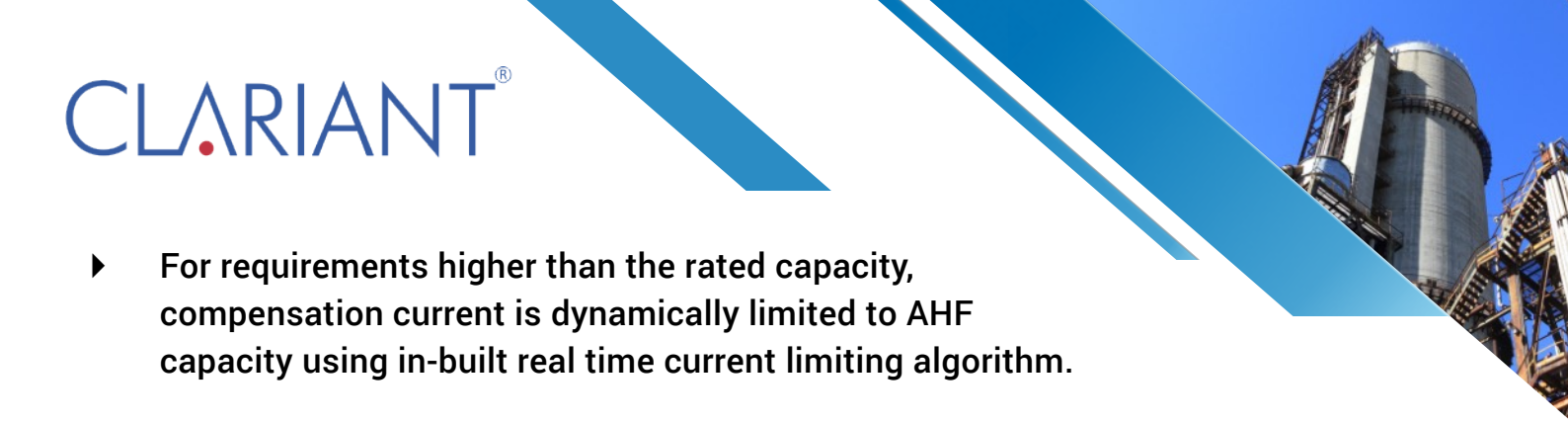
Why AHF?

- Cancels the load generated current harmonics.
- Maintains unity power factor operation.
- Ensure balance three-phase source currents and
- 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.

More Power by Saving Energy



- For requirements higher than the rated capacity, compensation current is dynamically limited to AHF capacity using in-built real time current limiting algorithm.

Product Specification

Parameters	
System Voltage (RMS)	(RMS)350 – 450 V
System Configuration	3P3W and 3P4W (single phase option available)
Power Semiconductor Device	IGBTs
Output Current Ratings (RMS)	25/50/100/150/200/300 Amps
Peak Compensating Current	2.25 times RMS Value “No Need of Oversizing with VFD Loads”
Harmonic Compensation Range	All odd harmonics up to 71st Order “Widest range of harmonic filtration available in India”
Selective Harmonic Compensation	From 0 to 100% for all 71 Harmonics “No limit on the number of harmonics selection at a time”
Reactive Power Compensation	Any power factor (inductive or capacitive). Full dynamic control
Cooling/Mounting Type	Forced Air Cooling, Wall Mounting/Floor Mounting
Control Type/Method	Digital Control Based on Adaptive Artificial Neural Network (ANN) “Ultra-fast Computation”
Dynamic Response Time	100 Micro Seconds
User Interface	Monitoring Waveforms & Parameters through software on USB port
Operating Temperature Range	0 to 50°C “No derating required in the entire operating range”
Active Power Loss	Less than 3%
Protection	Short Circuit Protection

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AHF Key features

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

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

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