

ACTIVEPHASE® ACTIVE HARMONIC FILTER SYSTEM



On Active Harmonic Filter



Rack Mount



HMI Display



AHF Mesh
for Door

Compatible with

NAAC CONNECTAX™



IGBT / SiC Based inbuilt Modular Active Filters Unit



Intelligent Air Cooling Technology



Advanced Protection Technology



High Resolution Touch Screen Display Unit



Highly Flexible & Scalable Solution



Long Life and Low Operational Cost



Ambient Temperature upto 55°C



Monitor Filters Remotely

Overview

Our **ACTIVEPHASE®** series is an advanced modular **Active Harmonic Filter (AHF) System**. The modularity of the **AHF System** enables the deployment of a single unit of multiple units as per the specified requirements.

Filter modules and controller, both are embedded in our standard cabinets. CT terminations are fixed in a standard cabinet, and the **AHF capacity** can be configured accordingly to user requirement.

The filter capacity can be easily expanded at the user's site by adding extra filter modules as per the site requirement.

Advantages of ACTIVEPHASE® AHF System

- Supports flexible configuration with capabilities for both vertical and horizontal expansion.
- Compatible with diesel generators and harsh ambient conditions (temperatures up to 55°C).
- Eliminates harmonics, thereby avoiding the risk of resonance.
- Increases power factor, avoiding reactive power penalties.
- Can compensate for harmonics from the 2nd to the 51st order.
- Reduces voltage distortion and fluctuation, extending the service life of electrical devices.
- Suppresses harmonics and compensates Reactive Power, which reduces the total current, allowing more loads to be driven by the same transformer.

ACTIVEPHASE®

ACTIVE HARMONIC FILTER SYSTEM

ACTIVEPHASE® Active Harmonic Filter

Our ACTIVEPHASE series is an Advanced Modular Active Harmonic Filter (AHF) System. The AHF system is constructed of one or several filter modules with the System Controller.

Filter modules and controller, both are embedded in our standard cabinets. CT terminations are fixed in a standard cabinet, and the AHF capacity can be configured accordingly to user requirement.

The filter capacity can be easily expanded at the user's site by adding extra filter modules as per site requirement.

The Activephase AHF system is a comprehensive solution for managing power quality issues, offering dynamic and efficient harmonic mitigation and power factor correction for a wide range of applications.

Benefits of ACTIVEPHASE® Active Harmonic Filter



Enhanced Power Quality: Significantly reduces Total Harmonic Distortion (THD) of both voltage (THD-V <5%) and current (THD-I <8%), complying with standards like IEEE-519-2022.



Energy Savings: By additional correcting Power Factor and they contribute to lower electricity bills and increased energy efficiency.



Extended Equipment Lifespan: Minimizes stress on electrical equipment (motors, transformers, cables, switchgear) caused by harmonics, leading to reduced wear and tear, less overheating, and longer service life.



Increased System Reliability and Uptime: Prevents issues like tripping of protective devices, voltage fluctuations, and equipment failures, enhancing the overall stability and reliability of the electrical system.



Avoids Resonance: Actively eliminates harmonics, thus avoiding the risk of resonance, which can be a problem with passive filters.



Compliance with Standards: Helps users meet stringent regulations regarding harmonic levels, avoiding potential penalties.

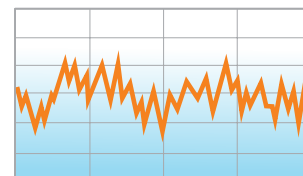


Cost-Effective Solution: While initial investment might be higher than passive filters, the long-term benefits in energy savings, reduced maintenance, and increased equipment lifespan often lead to a fast return on investment.

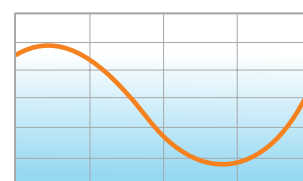
Active Filtering Working Principle



Harmonic Current Source



NAAC ACTIVEPHASE® FILTER



Result

Adaptability

- Compatible with diesel generators
- Wider range of input voltage, frequency and faster response time
- Low thermal loss
- Compensates a wide range of harmonics from 2nd order to 51st order harmonics
- HMI Display Unit available in 7" and 10" display size

Flexibility

- Designers have more choices with flexible configuration
- Capability to expand vertically as well as horizontally
- Higher operating temperature up to 50°C

Reliability

- Intelligent air cooling technology
- High quality components of international brands
- Advanced production technology

Applications of AHF Systems

Industrial Applications

- Automotive
- Arc Welding
- Steel / Metal
- Cement
- Chemicals
- Textile
- Petrochemicals
- Pharmaceuticals
- Lifts, Port Cranes
- Pulp and Paper Industry
- Wind Farms and Solar Power
- Water and Waste Water Treatment
- Crushers and Shredders

Commercial Applications

- Data Centers and IT-Facilities
- Offices and Buildings
- Traction and Metro Stations
- Fluorescent or HID Lighting
- Hospitals
- Airports
- Shopping Malls

Specification of ACTIVEPHASE® Active Harmonic Filter

Electrical

Rated Voltage	: 415V AC +20% to -20% (Other Voltages like 480V, 690V and 800V on request)
Electric Connection	: 3 Phase 3 Wire / 3 Phase 4 Wire
Rated Frequency	: 50Hz (60Hz) $\pm 10\%$
Input Voltage THD with stand	: Up to 15%
Harmonic compensation range	: 2nd ~ 51st order (Selectable)
Harmonic compensation degree	: 0 ~ 100% (Selectable)
Harmonic Filtration Efficiency	: Near 99% in AHF with SiC Modules
Reactive Power Compensation Capacity	: Positive, Negative, Zero Sequence Reactive
Full response time	: < 10ms
Instant time response	: < 25us
Thermal Loss	: $\leq 3\%$
Output Current Limitation	: Automatic (100% rated current)
MTBF	: > 100,000 hours
Operating Modes	: Harmonic Filtration (HF), Power Factor (PF) and PF + HF (Hybrid)
Parallel Operation	: Unlimited
Protections	: CPU Higher Temp., Phase IGBT Higher Temp., Grid Voltage Low, Grid Voltage Higher, Grid Overcurrent, Grid Frequency Abnormal, Grid Voltage Unbalanced and many more
Display Parameters	: All electrical and power quality parameters of Grid, Load and AHF Waveforms, Alarms, Harmonic spectrums, fault logger

Control Technology

Switching Frequency	: 60 Khz
Controller	: HMI Control
Communication	: Modbus Protocol, RS232/485

Physical Dimension

Single Module Rating	:	50A, 75A, 100A, 125A, 150A, 175A, 200A						
Module Qty.	:	1	2	3	4	5	6	7
Dimension (Width)	:	600	600	600	600	600	1200	1200
Dimension (Depth)	:	800	800	1200	1200	1200	800	800
Dimension (Height)	:	700	1000	1400	1700	2000	2000	2000
Weight (Approx.)	:	100/110/160 Kg		160 Kg		210/330 Kg		410/490 Kg
IP Grade	:	IP 20						
Noise	:	< 65dB (A)						
Cooling Method	:	Intelligent Forced Air Cooling (Inbuilt High Speed Fans)						

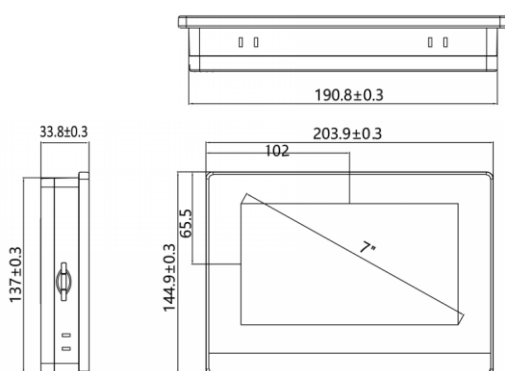
Certification

Certification	:  
---------------	---

Environment Requirement

Ambient Temperature	: -10 ~ 55°C
Relative Humidity	: (RH) 0~95% (Non-condensing)
Altitude	: < 1000m Rated Capacity / 1000-2000m (derating 1% per 100m)

ACTIVEPHASE® HMI Display Unit Dimension



Rack Mount ACTIVEPHASE - Ready to fit

Description	Included with Package
Control Wiring	✓
Power Wiring	✓
CT Terminal & Wiring	✓
HMI Power Supply	✓
Backup Fuses	✓
Surge Protection	✓
HMI Display Unit	included (to be mounted on Front Door)
Door Mesh for AHF	included (to be mounted on Front & Rear Door)
HMI Cutout	Width 192 mm x Height 138 mm

NAAC ENERGY CONTROLS Product Range

- ACTIVECOMP® Thyristor Switched Real Time Power Factor Correction System
- REALCOMP® Thyristor Switched Tuned Harmonic Filtration System
- Automatic Detuned Harmonic Filtration System
- Passive Harmonic Filter System for VFDs
- Modular Active Harmonic Filter System (SiC Mosfet Based)
- Hybrid Harmonic Filter System (Modular AHF Units with Passive Banks)
- Modular Advanced Static Var Generator System (SiC Mosfet Based)
- Detailed Power Quality Studies with Advanced PQ Analyzers
- Design & Implementation of Harmonic Filtration for Medium and Low Voltage to achieve Total Power Quality Improvement
- Design & Implementation of Automatic Power Factor Correction System for Medium & Low Voltage network
- Digital Metering Power Analyzers and Smart Industrial Sensors
- **NAAC CONNECTAX™** Industrial IoT Solution



www.naacenergy.com



Years of Excellence in Power Quality and Energy Management Solutions

Specifications and characteristics mentioned in this document are subject to change without notification.
The information in this document is purely illustrative, and not contractually binding.

GET IN TOUCH



NAAC ENERGY CONTROLS PVT LIMITED

-  C-135, Hosiery Complex, Phase-II Extn.
Noida - 201305 (UP) INDIA
-  Email : info@naacenergy.com | Web : www.naacenergy.com
-  Toll-free : 1800 203 0595