

ACTIVEPHASE[®] ADVANCED STATIC VAR GENERATOR SYSTEM



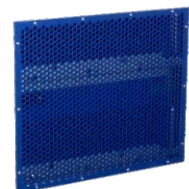
On Advanced Static Var Generator



Rack Mount



HMI Display



ASVG Mesh
for Door

Compatible with

NAAC CONNECTAX[™]



IGBT / SiC Based inbuilt Modular ASVG Filters Unit



Correct Leading & Lagging Power Factor



Mitigate Harmonic upto 15th Order



High Resolution Touch Screen Display Unit



Intelligent Air Cooling Technology



Fast Response to Dynamic Load Variations



Ambient Temperature upto 55°C



Monitor ASVG Remotely

Overview

The **ACTIVEPHASE[®]** series represents a cutting-edge solution in Power Quality Management, specifically an Advanced Modular **Advanced Static Var Generator Filter (ASVG) System**. More than just a simple device, it's a comprehensive Reactive Power Compensation System engineered to address a wide spectrum of electrical load challenges.

The **ASVG System** is composed of a fixed-type ASVG module, a door mounted display monitor and a ASVG system cabinet. The external CT is used for the detection of load current and extraction of reactive power that needs compensation, based on which, the ASVG Controller controls the main power circuit to generate reverse reactive current in this way, the load-carrying reactive power is counteracted.

Advantages of ACTIVEPHASE[®] ASVG System

- Supports flexible configuration with both vertical and horizontal expansion capabilities.
- Provides stable reactive power compensation for capacitive, inductive loads.
- Mitigate Harmonic upto 15th Order
- Offers rapid dynamic responses, stable parameters, and high precision in reactive power compensation.
- Achieves intelligent energy saving through high efficiency, low thermal loss, and an advanced ECO mode.
- Features an advanced system structure utilizing DSPs, programmable controllers, and high-power electronics, ensuring excellent performance and superior reliability.
- Supports remote power on/off functions via computer monitoring.

ACTIVEPHASE® ADVANCED STATIC VAR GENERATOR SYSTEM

ACTIVEPHASE® ASVG System

The **ACTIVEPHASE® ASVG System** is a modern power electronics-based device used for Reactive Power Compensation and Power Quality Improvement in electrical grids and industrial facilities.

Benefits of Activephase ASVG systems include:

Correct Leading and Lagging Power Factor: They can precisely compensate for both leading (capacitive) and lagging (inductive) Power Factors. Harmonic mitigation upto 15th Order.

Fast response: ASVGs have very rapid response times (less than 15ms full response) to dynamic load variations, making them ideal for applications with fast-changing loads.

Stepless and precise compensation: Unlike traditional capacitor banks, ASVGs provide continuous, step-less reactive power compensation.

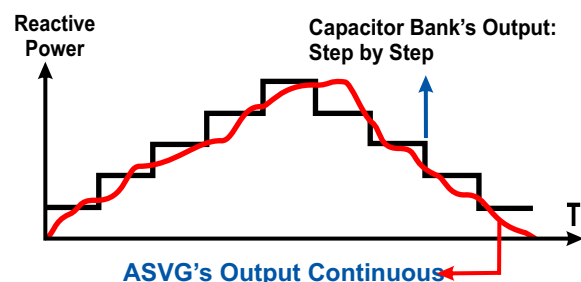
Load balancing: ASVGs can also actively balance unbalanced loads across phases.

Features of ACTIVEPHASE® ASVG System

- ASVG has high reactive power compensation accuracy
- ASVG can correct both Leading & Lagging PF
- Mitigate Harmonics upto 15th Order
- Fast response to Dynamic load variations
- Complete response time (from reactive power generation to elimination) of ASVG is less than 15ms (less 1 cycle), with instant response time of < 50 micro sec. which enables ASVG to improve Power Factor for fast changing dynamic loads
- ASVG capacity increase in pace with load changes
- High adaptability, reliability and stability
- For harmonic filtration, the ASVG can be complimented with tuned filter banks of 3rd, 5th, 7th & other as per network requirement
- ASVG ambient temperature: -10°C to +55°C
- Input voltage range: 308V~480V (For 415-440V Network) 432V~880V (For 480-690V Network), 50/60Hz ±10%
- ASVG is not affected by harmonic currents
- The ASVG is completely modular in structure. Each module can work independently, and modules can be paralleled to increase the capacity
- Active compensation technology avoids harmonic resonance
- Actual output capacity is the same as rated capacity

ASVG Working Principle

Reactive Power Compensation Comparison



A standard ASVG system cabinet can house up to 7 no. modules in parallel. For non-standard cabinets, the number of modules varies based on the required rating. A display monitor allows for online monitoring and control of the ASVG modules.

Adaptability

- Compatible with diesel generators
- Wider range of input voltage, frequency and faster response time
- Low thermal loss
- 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 55°C

Reliability

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

Applications of ASVG 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® Advanced Static Var Generator System

Electrical

Rated Voltage	: 415V AC +20% to - 20% (Other Voltages like 480V, 690V and 800V on request)
Electric Connection	: 3 Phase 3 Wire
Rated Frequency	: 50Hz (60Hz) $\pm 10\%$
Input Voltage THD with stand	: Up to 15%
Reactive Power Compensation	: Leading and Lagging Compensation
Full response time	: < 15ms
Instant time response	: < 50us
Thermal Loss	: $\leq 1\%$
Output Current Limitation	: Automatic (100% rated current)
MTBF	: > 100,000 hours
Parallel Operation	: Upto 32 nos.
Function	: Reactive Power / 3 Phase Unbalanced Compensation

Control Technology

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

Physical Dimension

Single Module Rating	: 50KVAR, 75KVAR, 100KVAR, 125KVAR, 150KVAR, 175KVAR, 200KVAR						
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						

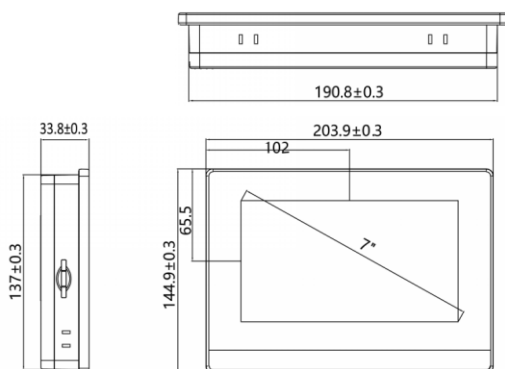
Certification

Certification	:  
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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 ASVG	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



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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.

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