leenhoo

SILICON CARBIDE POWER QUALITY

SiC Series

Static Var Generator

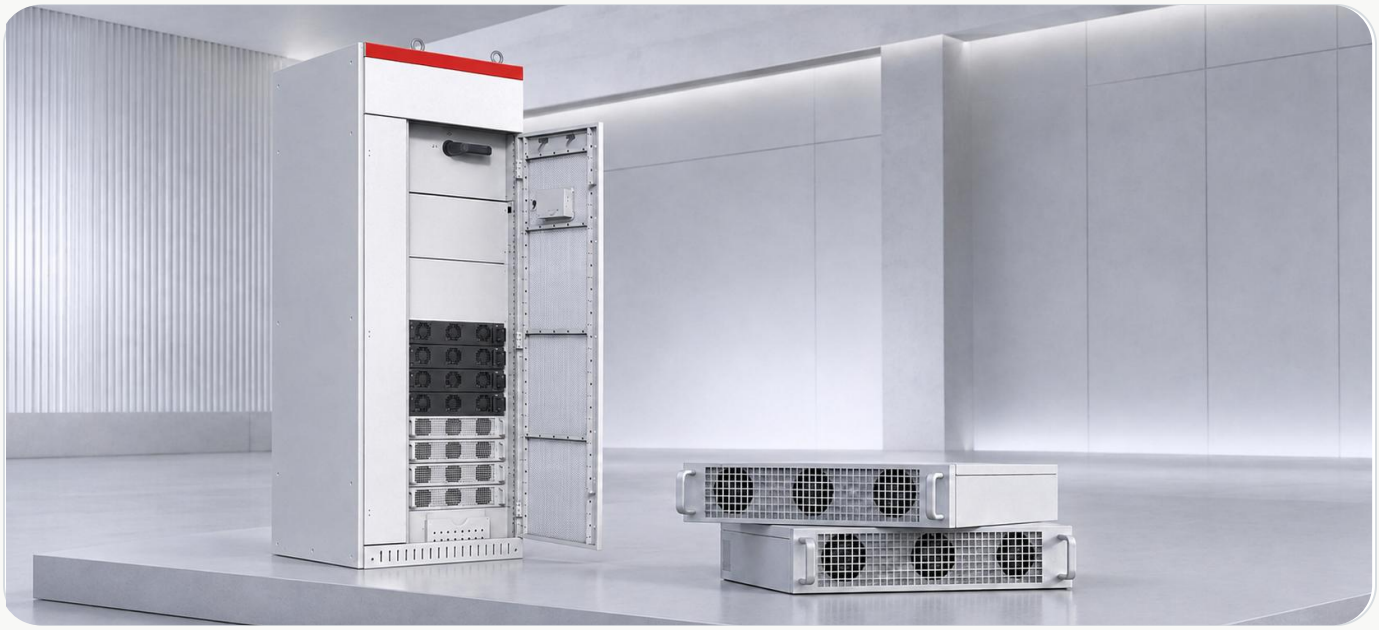
High-efficiency reactive-power control, engineered for modern electrical systems.

99% PEAK EFFICIENCY · 30–200 kVAr · <15 ms



SiC technology advances reactive power control

Ieenhoo SiC SVG applies silicon carbide power devices to improve conversion efficiency, thermal performance and integration. The system provides real-time reactive-power and three-phase unbalance compensation across a flexible modular platform.



99%

Peak efficiency

220 / 400 / 480V

Nominal voltage families

Unlimited

Parallel quantities

01

Flexible top-vent cabinet

Space-saving installation with configurable size, capacity and IP class.

02

Optional potting protection

Improved resistance to corrosion and conductive dust.

03

Hybrid PQ configuration

AHF handles harmonics while SVG compensates reactive power.

04

Scalable modular design

30K, 50K, 75K, 100K and 200K ratings.

Performance breakthrough enabled by SiC

Silicon carbide (SiC) MOSFETs achieve ultra-high efficiency through a wide bandgap, lower on-state resistance, faster switching and reduced switching losses. These properties support higher operating frequencies and temperatures with improved overall performance.



SiC

WIDE-BANDGAP POWER DEVICE

01

Lower switching loss

Fast switching reduces energy dissipated during transitions.

02

Higher frequency

Improved power density and a more compact thermal design.

99%

Peak efficiency

40 kHz

Average switching frequency

95 kHz

Maximum switching frequency

What can 99% efficiency deliver?

Calculation example from the supplied manual: 400V, 100kVAr SVG. The comparison is presented as an efficiency and operating-cost illustration rather than a site-specific reference.

400V / 100kVAr SVG

99%	>2%	97%
Ieenhoo SiC SVG	EFFICIENCY DIFFERENCE	STANDARD SVG

ANNUAL BENEFIT

>18,890	>2,834
kWh ENERGY SAVING	USD / YEAR ELECTRICITY FEE SAVING

01 **Lower power consumption**

Higher conversion efficiency reduces internal operating loss.

02 **Higher return on investment**

Energy savings accumulate over continuous operation.

Tiny dimensions, high capacity

High heat resistance, high thermal conductivity and high switching frequency reduce heat dissipation and ripple-current output, enabling a compact modular design.



400V SiC SVG

30 / 50 kVAr	500*470*88 mm
100 kVAr	500*520*100 mm
200 kVAr	500*600*220 mm

Dimensions are shown as W*D*H, exactly as listed in the supplied manual.

Scale to 800kVAr in one cabinet



8
Maximum Ultra modules

IP20
Standard protection grade

Custom
IP grade available

A modular cabinet supports capacity expansion while preserving a clean, serviceable mechanical layout.

01 **High power density**
More reactive-power capacity within a compact cabinet footprint.

02 **Flexible configuration**
Cabinet capacity and protection grade can be tailored.

Designed for space-efficient installation

The top-vent architecture supports wall-adjacent placement and helps save distribution-room space. Cabinet size, capacity and IP class can be selected for project requirements.



1

Wall-adjacent installation

High power density saves usable electrical-room space.

2

Configurable system

Cabinet size, capacity and IP class are optional.

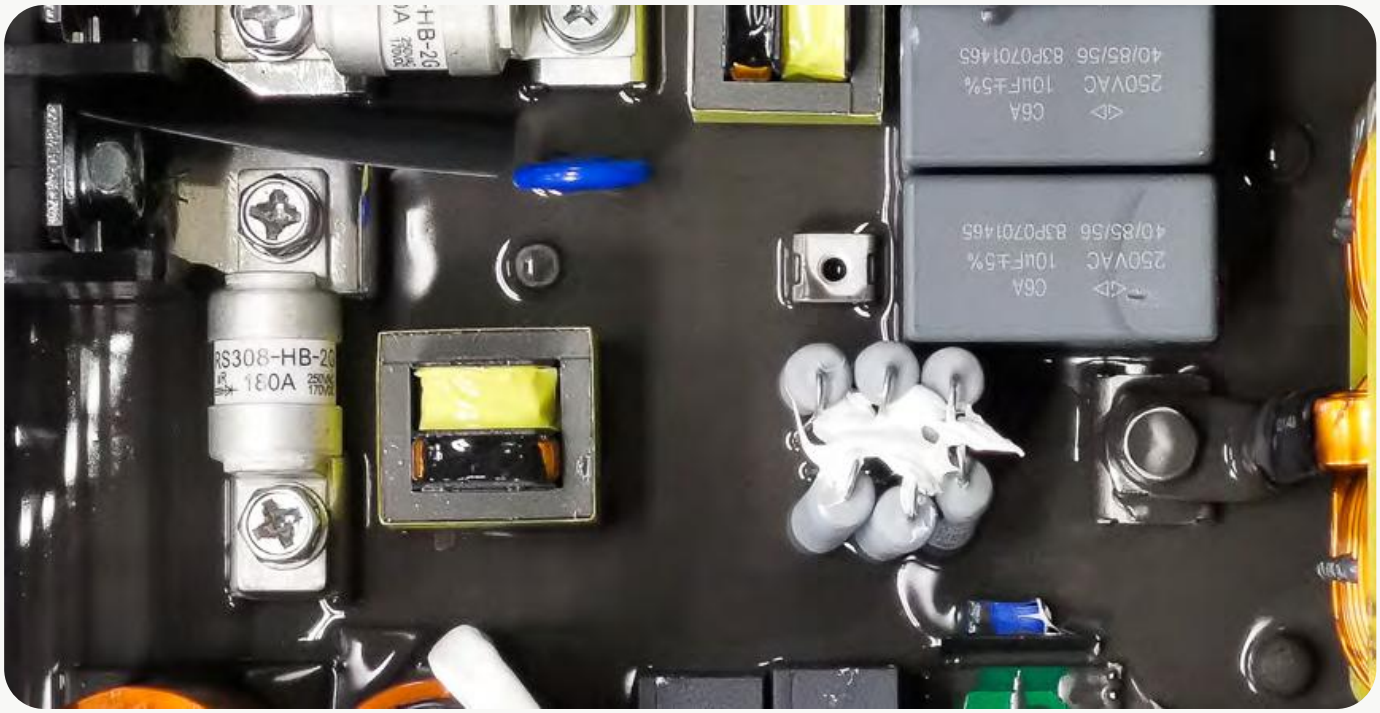
3

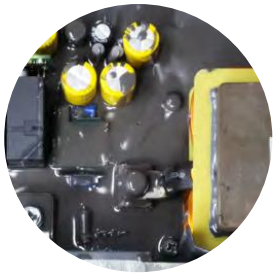
Collapsible design

Smaller transport package helps reduce logistics cost.

Added resilience for harsh environments

Special potting material is applied inside the Ultra SVG. It improves resistance to corrosion and conductive dust, supporting dependable performance and longer service life in demanding environments.





Anti-corrosion

Improved protection against aggressive environmental exposure.



Conductive dust

Encapsulation helps isolate sensitive components from contaminants.

Fast control in a scalable platform

The Ultra SVG platform combines instantaneous reactive-power control with flexible sensing, communications and mounting options.

<50us

Fast response time

<15ms

Full response time

-1 to +1

Adjustable target power factor

RS485 + RJ45

Communications ports

SYSTEM OPTIONS

01 **CT location**

Load / Supply side, close loop sampling.

02 **Installation**

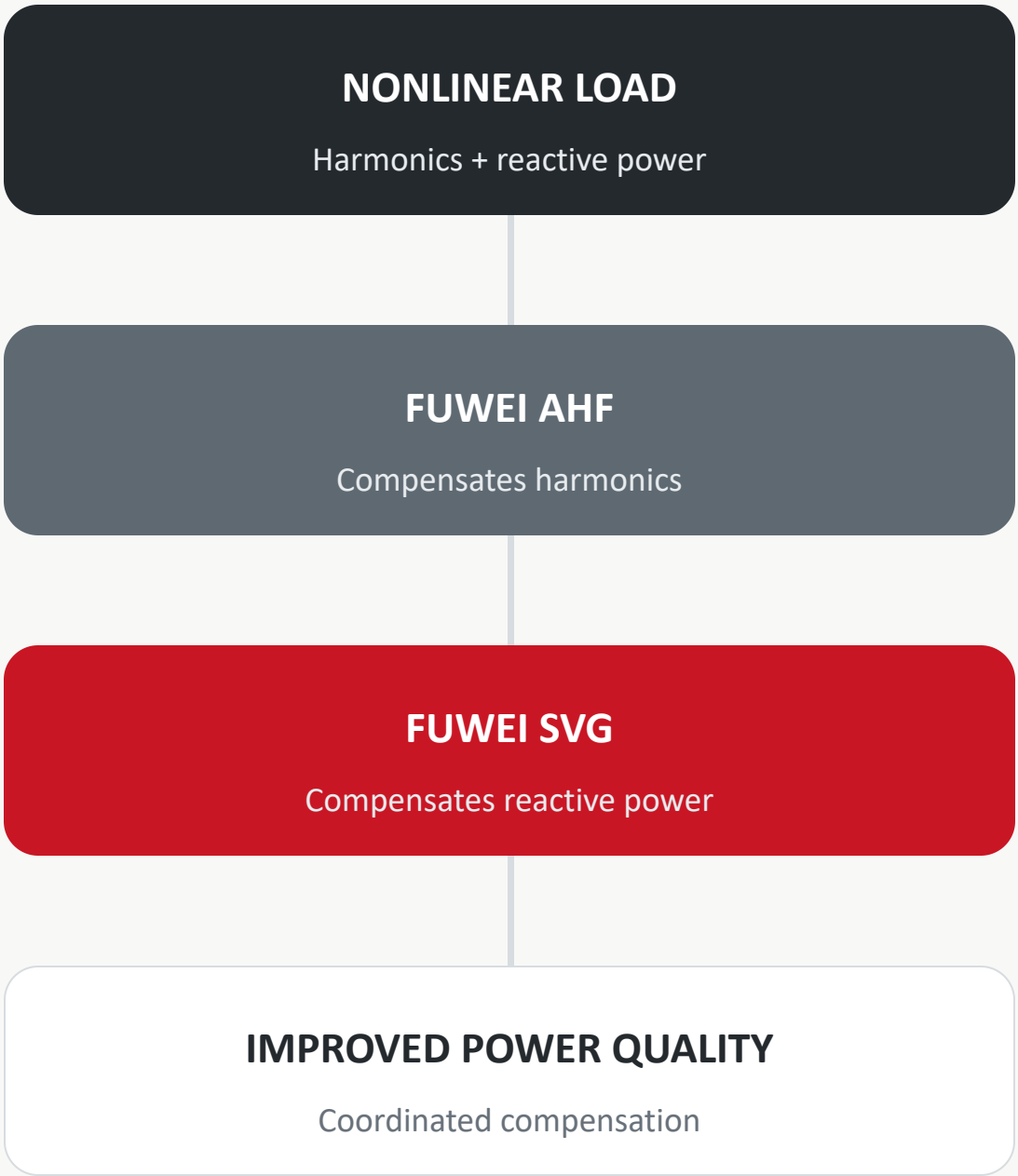
Wall-mounted, rack-mounted and cabinet configurations.

03 **Parallel operation**

Unlimited parallel quantities for scalable capacity.

Coordinate harmonic and reactive-power compensation

A more economical power-quality solution assigns AHF to harmonic compensation and SVG to reactive-power compensation at the same time.



AHF + SVG / COMPLEMENTARY FUNCTIONS

TECHNICAL SPECIFICATIONS

SVG Specification

Items	SVG				
Rating	30K	50K	75K	100K	200K
Function	Reactive power and three-phase unbalance compensation				
System parameters					
Nominal voltage	220V(176V~264V, -20%~20%)/400V(228~456V, -40%~20%)/480V(384V~528V, -20%~10%)				
Nominal frequence	50/60Hz, auto sensing(Range : 45Hz~62.5Hz)				
Parallel quantities	Unlimited				
Efficiency	99%			99% for 220V/400V module 98.5% for 480V module	98.5%
Connection type	3 Phase 3 Wire / 3 Phase 4 Wire (480V module can support 3 Phase 3 Wire can't support 3P4W)				
CT location	Load / Supply side ,close loop sampling				
Performance indicators					
Control algorithm	FFT, intelligent FFT, and instantaneous reactive power				
Fast response Time	<50us				
Full response Time	<15ms				
Target power factor	Adjustable from -1 to +1				
Switching frequency	Average 40kHz,up to 95kHz				
Cooling air requirement	240CFM		310CFM	310CFM for 220V/400V module 600CFM for 480V module	600CFM
Noise level	<56dB (Full load)		<60dB (Full load)	<60dB(Full load)for 220V/400V module <64dB(Full load)for 480V module	<64dB (Full load)
Communications ports	RS485 and Ethernet port(RJ45)				
Communications protocols	Modbus RTU, TCP/IP				
Module display interface	4.3-inch HMI(module), 7-inch HMI(central monitor) and LED				
Protection functions	Over-voltage protection, under-voltage protection, inverter bridge inverse protection, over-compensation protection and so on				
Mounting type	Wall-mounted, Rack-mounted and Cabinet				Wall-mounted and Rack-mounted
Dimensions(W x D x H mm)	500*470*88		500*520*100	500*520*100 for 220V/400V module 500*600*220 for 480V module	500*600*220
Net weight	18kg		30kg	30kg for 220V/400V module 60kg for 480V module	60kg
Storage temperature	-40°C~70°C				
Operating Ambient temperature	-10°C~50°C (will derate capacity if ambient temperature exceeds 40°C)				
Relative humidity	5% to 95%, non-condensing				
Altitude	≤1500m, 1500-4000m, capacity is derating 1% for every 100m altitude increased.				
Protection class	IP20 (IP degree can be customizable)				
Certificate	CE				

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POWER QUALITY / ENGINEERED WITH PRECISION

Precise Power.
Cleaner Systems.

Ieenhoo SVG combines SiC efficiency, precise reactive-power compensation and flexible modular design for modern power-quality systems.

SILICON CARBIDE · MODULAR DESIGN · FAST RESPONSE

Specifications subject to change without notice.