

Technical specifications

Item	Sinexcel ASVG 30/50/100Kvar	
System parameters	Voltage of rated AC input line	380V(-40% ~ +20%) ; 228V ~ 456V
	Mains frequency	41Hz ~ 63Hz
	Parallel operation	Unlimited
	CT setting	150/5 ~ 10,000/5
	Network configuration	3P3W, 3P4W
	Efficiency	≥97%
	Power losses	≤3%
Characteristics	Topology design	3-level
	Rated compensation capacity	30/50/100Kvar
	Response time	< 15ms
	Operation range	-1 to 1, capacitive to inductive continuously adjustable
	Cooling air requirement	Smart air cooling
	Noise level	<65db
Communication capacity	Communication interface	RS485 CAN
	Communication protocol	Modbus RTU
	Alarm events	Yes
	Monitoring	LCD monitor/HMI centralized monitor (optional)
Physical aspects	Mounting type	Wall / Rack/Cabinet
	Cable entry	Back (for module); Top or bottom(for cabinet)
	Dimensions	same size as SVG
	Weight	21KG 30Kavar, 35KG 50Kvar, 100Kvar 48KG
	Color	RAL7035
Environmental conditions	Altitude	1,500m/derating up to 4,000m, 1% / 100m
	Ambient temperature	-10 ~ 40(°C)
	Relative humidity	5%~95%, non-condensing
	Protection class	IP20



A Safety "One-stop" General Compensation Technique

Power factor, Three-phase unbalanced and Low-order harmonic synchronization control

- Mainly compensate power factor and three-phase unbalance
- Support low-order (3, 5, 7, 9, 11 orders) small capacity (50% rated power) harmonic compensation

Resonance avoidance

- ASVG is a current source device which avoids resonance phenomena in mechanism.

Multiple compensation applications

- ASVG separate compensation
- ASVG+SVC combined compensation

Excellent harmonic characteristics

- No harmonic is generated, no harmonic is amplified and the odd harmonic orders lower than 13th can be filtered.

Stepless adjustment

- ASVG can realize dynamic stepless adjustment without over-compensation and short-compensation.

Modularized product design

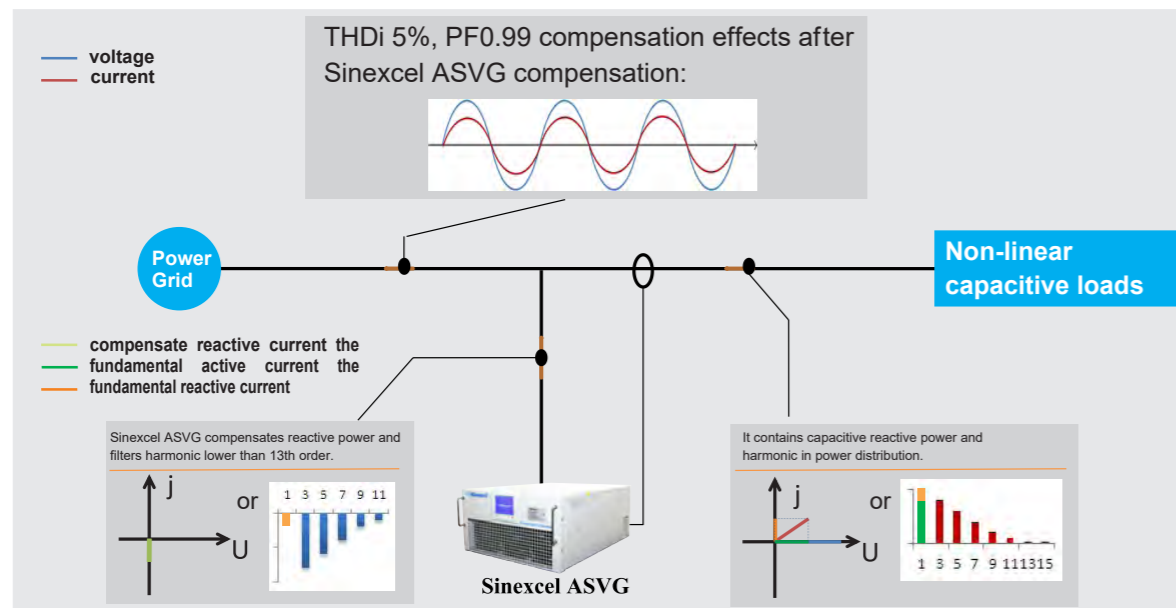
- ASVG adopts modular product design and cabinet installation.
- It features convenient engineering design and installation.

Operating principle

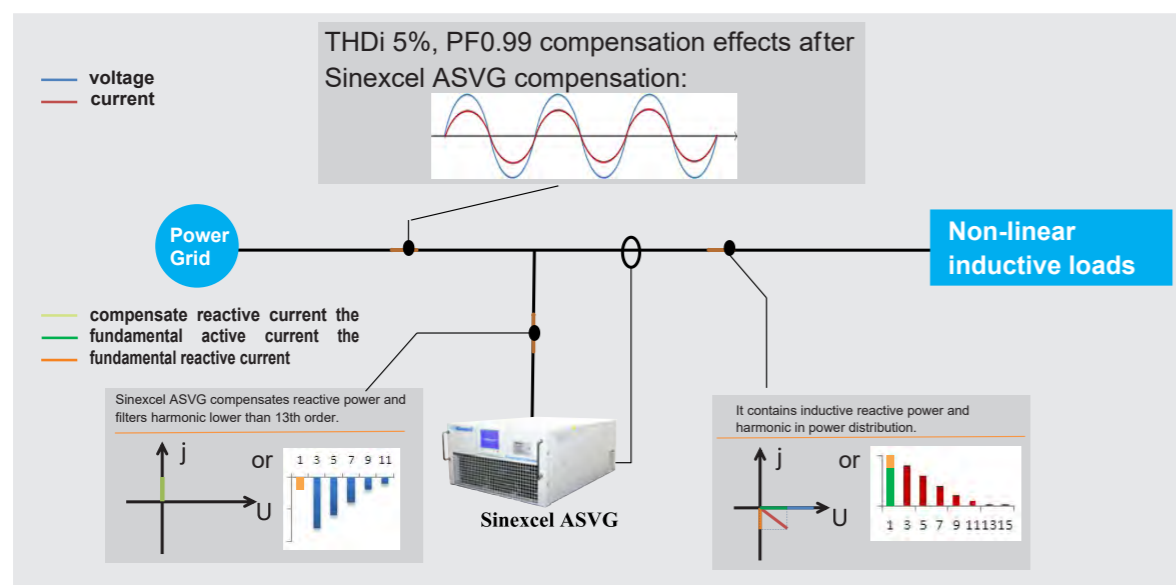
Sinexcel Advanced Static Var Generator (ASVG) conducts real-time monitoring to load current through external Current Transformer (CT) and detects reactive components and harmonic from load current through the calculation of internal Digital Signal Processor (DSP), then transmits PWM signal to internal Insulated Gate Bipolar Transistor (IGBT). Conforming reactive current and low-order harmonic current are generated by inverter with control settings to achieve reactive compensation and control harmonic.

ASVG operating principle diagram

Sinexcel SVG compensate non-linear capacitive loads



Sinexcel SVG compensate non-linear inductive loads



ASVG mode definition

Type Arrangement	
Sinexcel	XXX ASVG 4 4L/R L
	L:LCD
	R : Rack mount H : Wall mount
	3L : 3P3W 4L : 3P4W
	4 : 400V voltage
	ASVG : Advance static var generator
	400Vcapacity (kvar):035/070/100
	Sinexcel Brand

ASVG function comparison

Category	Item	General dynamic reactive power compensation (SVC)	Static Var Generator(SVG)	Advanced Static Var Generator (ASVG)
Harmonic control function	Harmonic control	Special design,	Unavailable	Available
	Compensation range	Single order, normally 3rd order		3, 5, 7, 9, 11 (orders)
Reactive compensation function	Reliability	Common easily influenced by system fluctuation	Dynamic real-time compensation, stable and reliable	Dynamic real-time compensation, stable and reliable
	Compensation range	Normally 0.6~1	-1~1	-1~1
Imbalance compensation function	Phase by Phase Compensation	Special Design	Available	Available
	Imbalance compensation	Unavailable	Available	Available
	Active imbalance compensation	Unavailable	Available	Available
Key feature	Compensation mode	Compensation capacity cannot be adjusted continuously, which makes it difficult to reach complete equilibrium with reactive system, and easy leading to over-compensation and short-compensation	Dynamic real-time compensation	Dynamic real-time compensation, increase a harmonic compensation function lower than 13th order
	Response time	> 10ms	< 5ms	< 5ms
	Capacity characteristic	The installed capacity of traditional compensation device is usually more than actual capacity	The compensation capacity of SVG is installed capacity.	The compensation capacity of SVG is installed capacity.
	Space	Large	The SVG floor space is always 50% of other reactive compensation type which has same capacity, even smaller.	The SVG floor space is always 50% of other reactive compensation type which has same capacity, even smaller.