Sinexcel

Technical specifications

Item	Sinexcel ASVG 70/140/210/280/350/420/490/560/630/700	
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
	Eficiency	≥96%
	Power losses	≤4%
Characteristics	Topology design	3-level
	Rated compensation capacity	70Kvar
	Response time	< 10ms
	Operation range	-1 to 1, capacitive to inductive continuously adjustable
	Cooling air requirement	Smart air cooling
	Noise level	58db
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)
	Approx. dimensions (W*D*H), mm³	440x575x232
	Approx. weight	40KG
	Color	White
Environmental conditions	Altitude	1,500m/derating up to 4,000m, 1% / 100m
	Ambient temperature	-10~40(°C)
	Relative humidity	Max.< 95%, non-condensing
	Protection class	IP20

ASVG Capacity Table

Transformer Capacity(kva)		315	630	800	1000	1250	1600	2000	2500
ASVG	Capacity	140	210	280	350	420	560	630	770
	MountingType	Cabinet	Cabinet	Cabinet	Cabinet	Cabinet	Cabinet	Cabinet	Cabinet
	Thenumber of cabinets	1	1	1	2	2	2	3	3

Sinexcel

A Saftey "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

Excellent harmonic characteristics

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

Resonance avoidance

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

Stepless adjustment

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

Multiple compensation applications

- ASVG separate compensation
- ASVG+SVC combined compensation

Modularized product design

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

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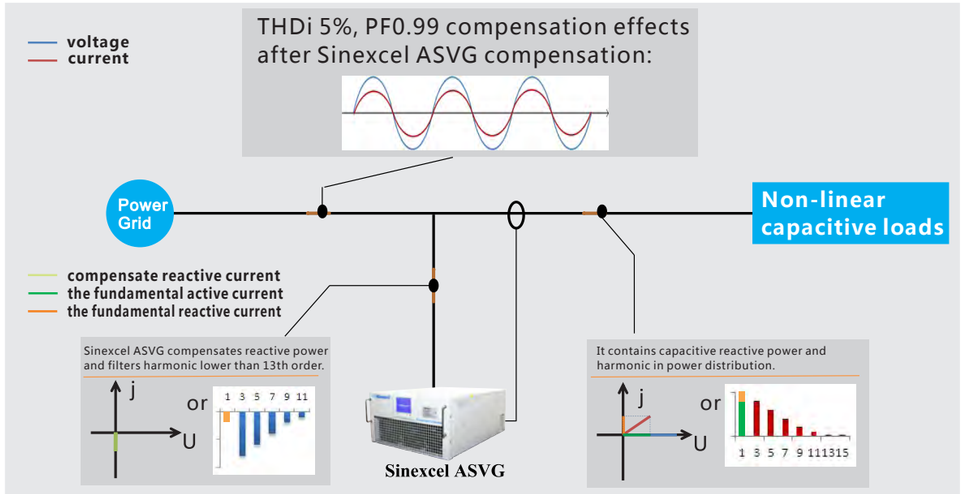
Operating principle

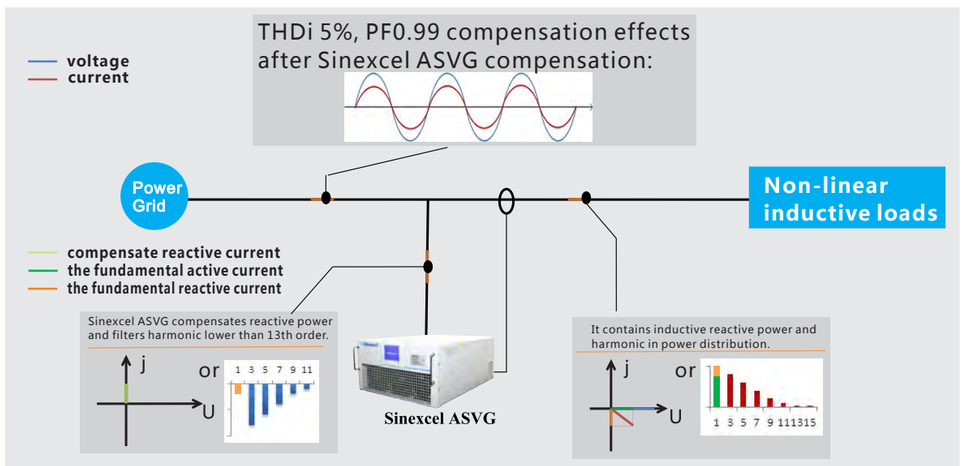
Sinexcel Advanced Static Var Generator (ASVG) conducts real-time monitoring to load current through external Current Transformer (CT) and detects reactive components and harmonic from load current through the calculation of internal Digital Signal Processor (DSP) , then transmits PWM signal to internal 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
- 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	Normally unavailable. Special design required to make single tuned circuit.	Unavailable	Available
	Compensation range	Single order, normally 3rd		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	Unavailable, special design required	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-compersation and short-compersation	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.

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