

# ASVG

## Advanced Static Var Generator

Reactive Power Compensation, Harmonic Control, Three Phase Unbalance



**Advanced Static Var Generator (ASVG)** is a new type of dynamic reactive power compensation product, combining power factor correction and harmonic mitigation in one unit. It provides the same dynamic performance for compensating reactive power as the SVG with the added benefit of combining harmonic mitigation and controlling three phase unbalance. Advanced static var generators (ASVGs) are high-performance, compact, flexible, modular, and cost-effective to provide immediate and efficient responses to power quality problems in high and low voltage power systems.

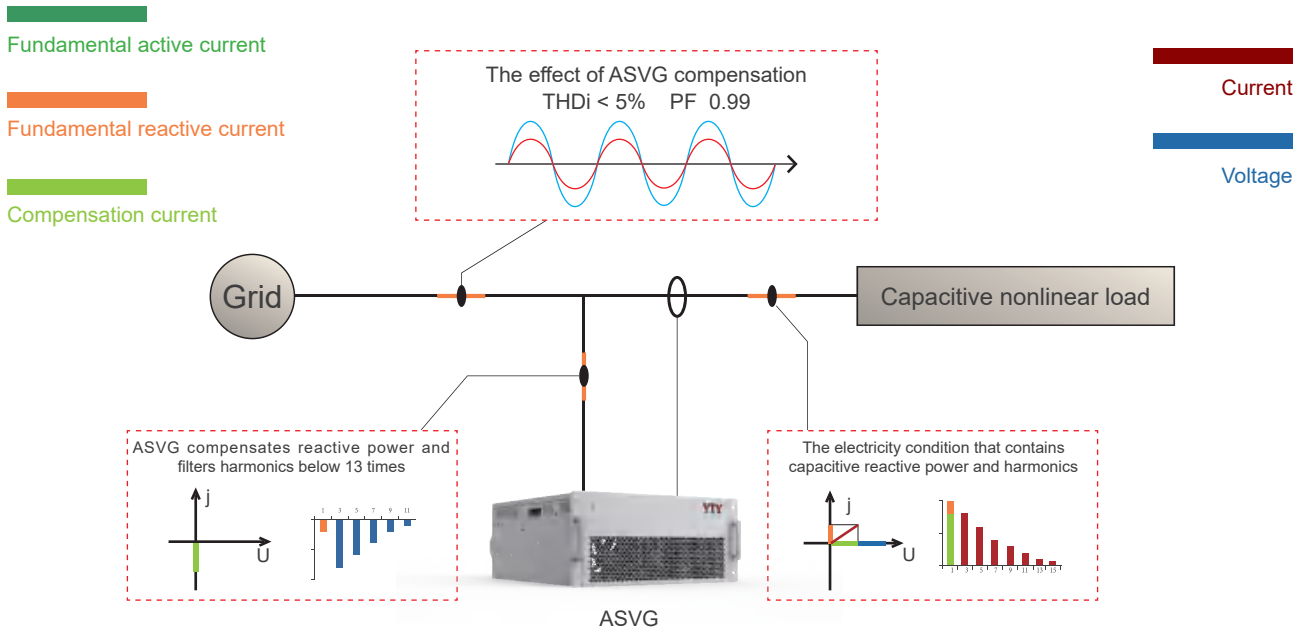
### • Product Features

- Reactive power compensation:  $\cos \phi = 1.00$
- Capacitive and Inductive compensation: -1 to +1
- All the features and benefits of the SVG.
- Mitigation of 3rd, 5th, 7th, 9th, 11th harmonic orders
- Unit capacity can be selected in any proportion between power factor correction and harmonics correction
- Capacitive inductive load-1~1
- Current unbalance correction can correct for load unbalance across all three phases

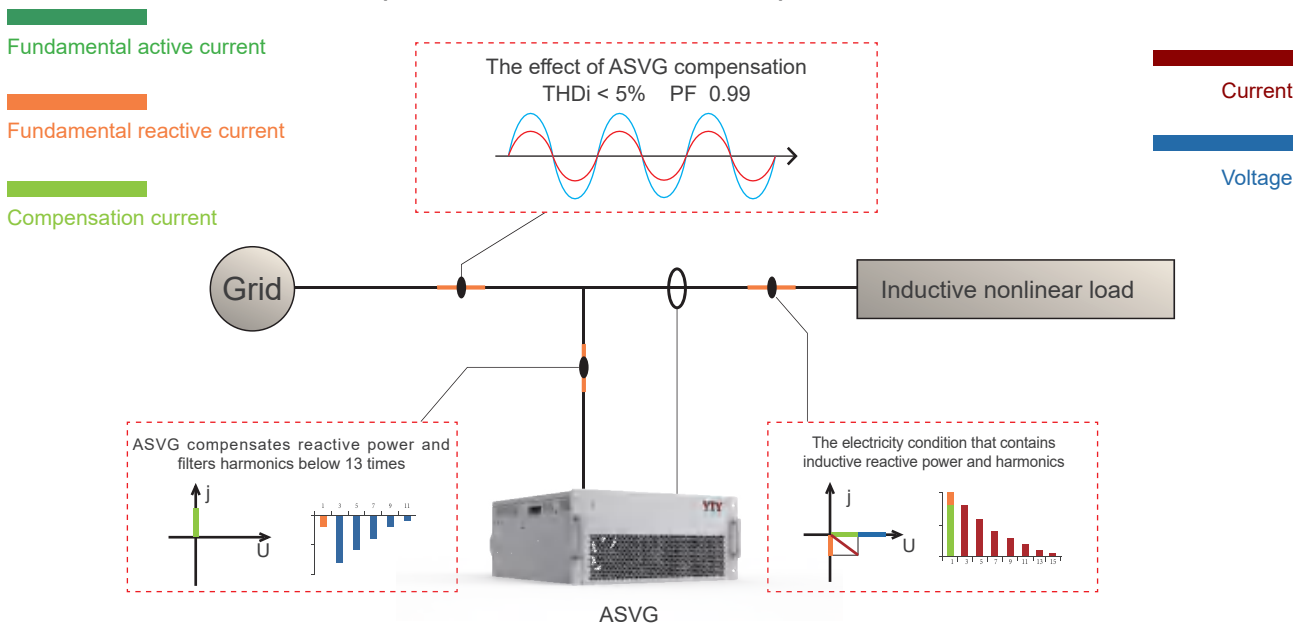
## • Working Principle

With external CT detecting the load current in real time, internal DSP calculate and abstract the reactive power and harmonic content of load current, then send the PWM signal to internal IGBT and adjust the phase and amplitude of the output voltage on the AC side of the inverter or directly control the phase and amplitude of the current on the AC side of the inverter, so as to quickly absorb or emit the required reactive power and harmonic current, and realize the purpose of fast dynamic adjustment of reactive power and harmonic compensation. Not only the reactive current of the load, but also the harmonic current can be tracked and compensated.

### ASVG Compensates capacitive reactive power and harmonics



### ASVG Compensates inductive reactive power and harmonics

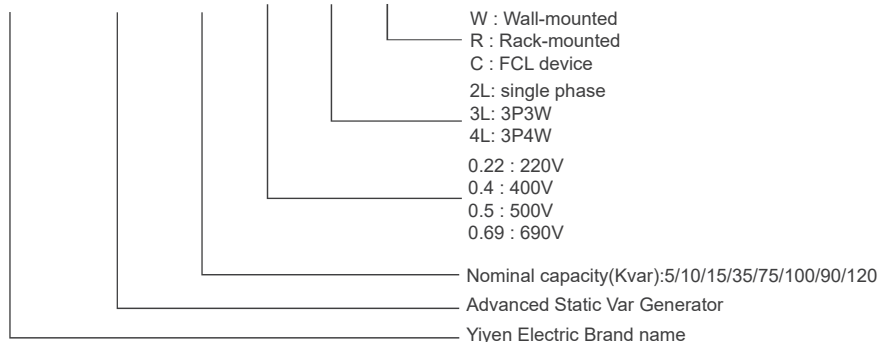


## • Technical Specifications

| Technical Specification             | 220V Series                                                                                                                                                                                                                                                                           | 220V Series                                                          | 400V Series                                        | 500V Series           | 690V Series           |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------|-----------------------|-----------------------|
| Rated Compensation Capacity         | 5KVar                                                                                                                                                                                                                                                                                 | 10kvar/20kvar/<br>30kvar/45kvar/<br>60kvar                           | 10KVar/15KVar/<br>35KVar/50KVar/<br>75KVar/100KVar | 90KVar                | 100KVar/120KVar       |
| Nominal Voltage                     | AC220V<br>(-20%~+20%)                                                                                                                                                                                                                                                                 | AC220V<br>(-20%~+20%)                                                | AC400V<br>(-40%~+15%)                              | AC500V<br>(-20%~+15%) | AC690V<br>(-20%~+15%) |
| Rated Frequency                     | 50/60Hz±5%                                                                                                                                                                                                                                                                            |                                                                      |                                                    |                       |                       |
| Grid Structure                      | Single phase                                                                                                                                                                                                                                                                          | 3 phase 3 wire/3 phase 4 wire                                        |                                                    |                       |                       |
| Number of parallel                  | No limitation. A single centralized monitoring module can be equipped with up to 8 power modules.                                                                                                                                                                                     |                                                                      |                                                    |                       |                       |
| Machine Efficiency                  | >97%                                                                                                                                                                                                                                                                                  |                                                                      |                                                    |                       |                       |
| Switching Efficiency                | 32kHz                                                                                                                                                                                                                                                                                 | 16kHz                                                                | 16kHz                                              | 12.8kHz               | 12.8kHz               |
| Function                            | Reactive / Reactive<br>and Harmonic                                                                                                                                                                                                                                                   | Reactive / Reactive and harmonic / Reactive and imbalance (optional) |                                                    |                       |                       |
| Reactive Power Compensation<br>Rate | >99%                                                                                                                                                                                                                                                                                  |                                                                      |                                                    |                       |                       |
| Harmonic Compensation<br>Capacity   | 70%SOC                                                                                                                                                                                                                                                                                |                                                                      |                                                    |                       |                       |
| Harmonic Compensation<br>Times      | 2-13 times                                                                                                                                                                                                                                                                            |                                                                      |                                                    |                       |                       |
| Response Time                       | <10ms                                                                                                                                                                                                                                                                                 |                                                                      |                                                    |                       |                       |
| Noise                               | <50dB                                                                                                                                                                                                                                                                                 | <65dB                                                                | <60dB                                              | <65dB                 |                       |
| Communication Method                | Two-channel RS485 communication interface (support GPRS/WIFI wireless communication)                                                                                                                                                                                                  |                                                                      |                                                    |                       |                       |
| Monitoring Method                   | 4.3 inch LCD small-sized screen / 7 inch LCD centralized monitoring screen                                                                                                                                                                                                            |                                                                      |                                                    |                       |                       |
| Protection                          | Over load protection, hardware/software over current protection, over grid power protection /under grid power protection, grid power voltage imbalance protection, power failure protection, over temperature protection, frequency anomaly protection, short circuit protection, etc |                                                                      |                                                    |                       |                       |
| Altitude                            | ≤2000Meters                                                                                                                                                                                                                                                                           |                                                                      | ≤2000Meters                                        | ≤2000Meters           | ≤2000Meters           |
| Ambient Temperature                 | -20~+50 ℃                                                                                                                                                                                                                                                                             |                                                                      | -20~+50 ℃                                          | -20~+50 ℃             | -20~+50 ℃             |
| Relative Humidity                   | <90% ,The average monthly minimum temperature is 25℃ without condensation on the surface                                                                                                                                                                                              |                                                                      |                                                    |                       |                       |
| Pollution Level                     | Below level III                                                                                                                                                                                                                                                                       |                                                                      |                                                    |                       |                       |
| Installation                        | Rack/Wall-mounted                                                                                                                                                                                                                                                                     |                                                                      |                                                    |                       |                       |
| Wiring Patter                       | Back entry (rack-mounted type) Top entry (wall-ounted type)                                                                                                                                                                                                                           |                                                                      |                                                    |                       |                       |
| Protection Grade                    | IP20                                                                                                                                                                                                                                                                                  |                                                                      |                                                    |                       |                       |
| Color                               | White                                                                                                                                                                                                                                                                                 |                                                                      |                                                    |                       |                       |

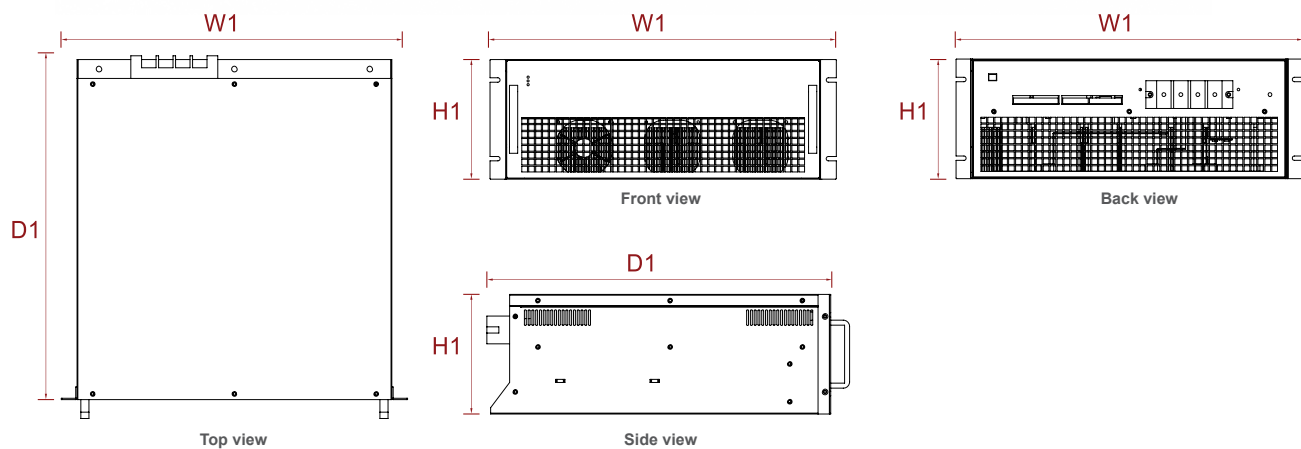
## • Type Code

YIY ASVG - 35 - 0.4 - 4L -W



## • Product Dimensions

### Rack-Mount



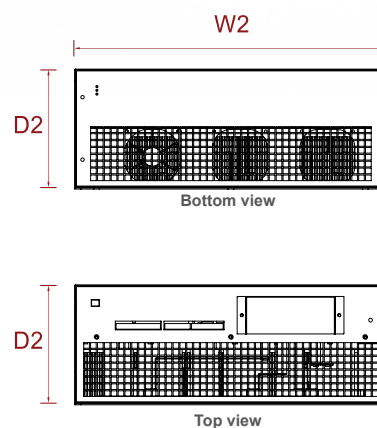
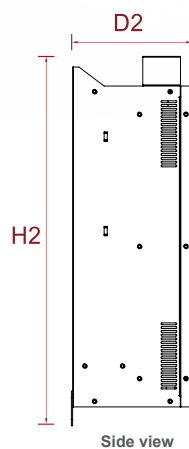
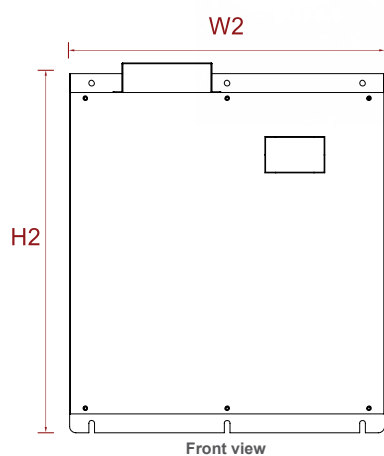
## • Models

| Model                  | Capacity | System Voltage  | Size(W1*D1*H1)(mm) | Cooling Mode       |
|------------------------|----------|-----------------|--------------------|--------------------|
| YIY ASVG-5-0.22-2L-R   | 5Kvar    | 220V(-20%~+15%) | 250*355*161        | Forced air cooling |
| YIY ASVG-10-0.4-4L-R   | 10Kvar   | 400V(-40%~+15%) | 550*520*89         | Forced air cooling |
| YIY ASVG-15-0.4-4L-R   | 15Kvar   | 400V(-40%~+15%) | 550*520*89         | Forced air cooling |
| YIY ASVG-35-0.4-4L-R   | 35Kvar   | 400V(-40%~+15%) | 550*520*89         | Forced air cooling |
| YIY ASVG-50-0.4-4L-R   | 50Kvar   | 400V(-40%~+15%) | 550*540*190        | Forced air cooling |
| YIY ASVG-75-0.4-4L-R   | 75Kvar   | 400V(-40%~+15%) | 550*580*240        | Forced air cooling |
| YIY ASVG-100-0.4-4L-R  | 100Kvar  | 400V(-40%~+15%) | 550*580*240        | Forced air cooling |
| YIY ASVG-90-0.5-4L-R   | 90Kvar   | 500V(-20%~+15%) | 539*711*275        | Forced air cooling |
| YIY ASVG-100-0.69-4L-R | 100Kvar  | 690V(-20%~+15%) | 539*711*275        | Forced air cooling |
| YIY ASVG-120-0.69-4L-R | 120Kvar  | 690V(-20%~+15%) | 539*711*275        | Forced air cooling |

\*If you need any other sizes, please contact us for customization.

## • Product Dimensions

### Wall-Mounted



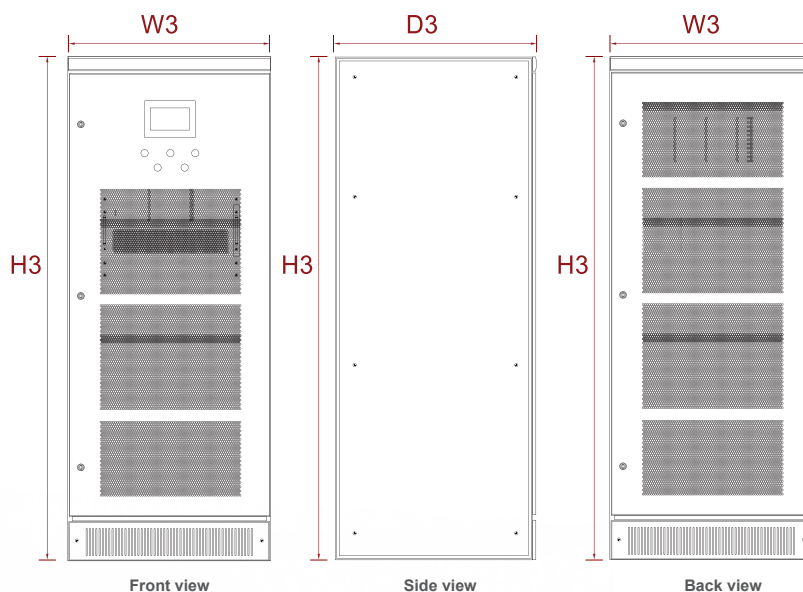
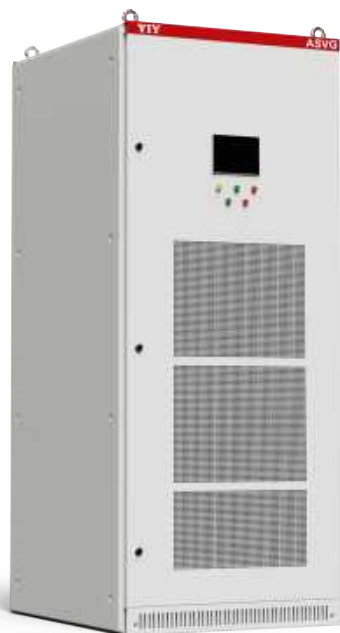
## • Models

| Model                  | Capacity | System Voltage  | Size(W2*D2*H2)(mm) | Cooling Mode       |
|------------------------|----------|-----------------|--------------------|--------------------|
| YIY ASVG-5-0.22-2L-W   | 5Kvar    | 220V(-20%~+15%) | 250*161*351        | Forced air cooling |
| YIY ASVG-10-0.4-4L-W   | 10Kvar   | 400V(-40%~+15%) | 460*89*557         | Forced air cooling |
| YIY ASVG-15-0.4-4L-W   | 15Kvar   | 400V(-40%~+15%) | 460*89*557         | Forced air cooling |
| YIY ASVG-35-0.4-4L-W   | 35Kvar   | 400V(-40%~+15%) | 460*89*557         | Forced air cooling |
| YIY ASVG-50-0.4-4L-W   | 50Kvar   | 400V(-40%~+15%) | 500*190*587        | Forced air cooling |
| YIY ASVG-75-0.4-4L-W   | 75Kvar   | 400V(-40%~+15%) | 500*240*627        | Forced air cooling |
| YIY ASVG-100-0.4-4L-W  | 100Kvar  | 400V(-40%~+15%) | 500*240*627        | Forced air cooling |
| YIY ASVG-90-0.5-4L-W   | 90Kvar   | 500V(-20%~+15%) | 495*275*735        | Forced air cooling |
| YIY ASVG-100-0.69-4L-W | 100Kvar  | 690V(-20%~+15%) | 495*275*735        | Forced air cooling |
| YIY ASVG-120-0.69-4L-W | 120Kvar  | 690V(-20%~+15%) | 495*275*735        | Forced air cooling |

\*If you need any other sizes, please contact us for customization.

• **Product Dimensions**

**FCL**



• **Models**

| Model                  | Capacity | System Voltage (V) | Size(W3*D3*H3)(mm)                                               | Cooling Mode       |
|------------------------|----------|--------------------|------------------------------------------------------------------|--------------------|
| YIY ASVG-50-0.4-4L-C   | 50Kvar   | 400V(-40%~+15%)    | 800*1000*2200(Cabinet 1)<br>800*1000*1600(Cabinet 2)<br>optional | Forced air cooling |
| YIY ASVG-100-0.4-4L-C  | 100Kvar  | 400V(-40%~+15%)    | 800*1000*2200(Cabinet 1)<br>800*1000*1600(Cabinet 2)<br>optional | Forced air cooling |
| YIY ASVG-200-0.4-4L-C  | 200Kvar  | 400V(-40%~+15%)    | 800*1000*2200(Cabinet 1)<br>800*1000*1600(Cabinet 2)<br>optional | Forced air cooling |
| YIY ASVG-250-0.4-4L-C  | 250Kvar  | 400V(-40%~+15%)    | 800*1000*2200(Cabinet 1)<br>800*1000*1600(Cabinet 2)<br>optional | Forced air cooling |
| YIY ASVG-300-0.4-4L-C  | 300Kvar  | 400V(-40%~+15%)    | 800*1000*2200(Cabinet 1)<br>800*1000*1600(Cabinet 2)<br>optional | Forced air cooling |
| YIY ASVG-400-0.4-4L-C  | 400Kvar  | 400V(-40%~+15%)    | 800*1000*2200(Cabinet 1)<br>800*1000*1600(Cabinet 2)<br>optional | Forced air cooling |
| YIY ASVG-270-0.5-4L-C  | 270Kvar  | 500V(-20%~+15%)    | 800*1000*2200(Cabinet 1)                                         | Forced air cooling |
| YIY ASVG-360-0.69-4L-C | 360Kvar  | 690V(-20%~+15%)    | 800*1000*2200(Cabinet 1)                                         | Forced air cooling |

\*Cabinet 1 can accommodate 5 modules. Cabinet 2 can accommodate 3 modules.

\*If you need any other sizes, please contact us for customization.