Power factor correction and harmonic filtering

SVG Static Var Generator

The most versatile compensation system

Applications

Industry

Tertiary sector

Telecommunications

Technical features

Network voltage
- Voltage: 230 - 480 V phase-phase +/-10%
- Frequency: 50/60 Hz +/-5%
- Maximum THDv: 25%

Power
- SVG-3WS-30k-480
  - Maximum consumption: 1050 W
  - Maximum reactive power: 30 kvar
  - Maximum current (phase): 44 Arms
- SVG-3WF-30k-480
  - Maximum consumption: 4600 W
  - Maximum reactive power: 100 kvar
  - Maximum current (phase): 145 Arms
- SVG-3WM-100k-480
  - Maximum consumption: 8000 W
  - Maximum reactive power: 200 kvar
  - Maximum current (phase): 290 Arms

Current measurement
- Type: 3 or 2x transformer: S/5 ... S/2500/5 A
- Class: 1 or higher (0.5 - 0.2-0.2 S)
- Frequency response up to 2500 Hz / 3000 Hz (60 Hz)

Features
- Power factor correction: Adjustable, target 0.7 inductive...0.7 capacitive
- Parallel installation: Up to 100 devices/racks (SVG 30 kvar / SVG 100 kvar)
  Up to 50 devices/racks (SVG 200 kvar)
  Connection of CT, only to the “master” unit
  Advanced processing algorithm:
  - Maximisation of the working life of units (alternating unit operation).”
  - Maximisation of operating efficiency (only the required filters are activated).
  - Allows redundancy (system operation in the event of unit failure).

User interface
- Colour 3.5” touch screen
- Web server and datalogger

Ethernet
- TCP/IP
- Modbus TCP

Installation
- Installation category: CAT III 300 V
- Pollution degree: 2
- Operating temperature: -10 ... 45 °C
- Storage temperature: -20 ... 50 °C
- Relative humidity: 0...95% (without condensation)
- Maximum altitude: 2000 m
- Degree of protection: IP20

Build features
- Dimensions (width x height x depth):
  - SVG-3WS-30k-480: (435 x 600 x 257 mm)
  - SVG-3WF-30k-480: (435 x 705 x 257 mm)
  - SVG-3WF-100k-480: (600 x 1836 x 822 mm)
  - SVG-3WF-200k-480: (600 x 1836 x 822 mm)
- Weight:
  - SVG-3WS-30k-480: 31 kg
  - SVG-3WF-30k-480: 31 kg
  - SVG-3WF-100k-480: 206 kg
  - SVG-3WF-200k-480: 276 kg
- Noise: < 65 dBA
- Standards: EN 6477-1:2012, EN 55011:2011, EN 61000-6-2:2006,
  EN 61000-6-4:2007, IEC 61439-1:2011

References

<table>
<thead>
<tr>
<th>Type</th>
<th>Code</th>
<th>Phase current (A)</th>
<th>Total reactive power (kvar)</th>
<th>EMI filter</th>
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<td>R7NST8</td>
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<td>SVG-3WF-200k-480</td>
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More accurate compensation

The **SVG** Static Var Generator is an electronic reactive power compensation system, for both capacitive and inductive power. It has the same operating principle as an active filter; the **SVG** injects a current in the opposite direction to counteract the installation’s non-useful power (inductive and capacitive), thus ensuring that the target $\cos \phi$ is achieved.

The **SVG** instantly compensates and adjusts according to demand in a matter of milliseconds. It also compensates phase to phase in unbalanced systems. The **SVG** is the perfect device for installations where there are strict penalties for the consumption of reactive power.

Benefits

- **Instant compensation**
  The system has a response time below 20 ms, offering highly efficient operation thanks to the development of IGBT technology.
- **Minimal maintenance**
  It has no electromechanical components, so no spare parts are required.
- **Stable network voltage**
  The output current is not affected by fluctuations in the network voltage.
- **No resonance**
  SVG technology generates no resonance with the installation’s harmonics.

Zero penalties

For installations that have problems with fluctuating load currents and imbalances, the **SVG** is the system that fixes these problems when a capacitor bank is unable to correct them. The **SVG** continuously reduces the reactive power, always ensuring that the target $\cos \phi$ is achieved, both for inductive and capacitive loads.

- **Built-in web server**
  SVG features an Ethernet port to access its web site from any browser, to enable you to monitor instantaneous parameters and download data and events stored online, without having to download a software application.
- **Touch-screen display**
  Touch-screen HMI display for quick management and configuration of the unit. It can also display the onsite filter data.

2 MODELS

- **Wall-mounted**: 30 kvar
- **Rack**: 100 and 200 kvar

**Suitable for any installation**

**Individualised compensation for unbalanced installations**

<table>
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<th>( \cos \phi = 0.8 )</th>
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<tbody>
<tr>
<td>S = 50 kVA</td>
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<tr>
<td>Q = 30 kvar</td>
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<td>P = 40 kW</td>
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**TARGET**

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<th>( \cos \phi = 1 )</th>
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<tbody>
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<td>S = 40 kVA</td>
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