



## OPTIM SVGm-200-440

OPTIM SVGm-200-440, Hybrid var compensators

Code: RG20F1.

- > Frequency (Hz): 50 Hz
- > Nr steps: 2
- > kvar (400 V): 182
- > kvar (440 V): 200
- > Composition: 1 x 100 kvar + 100 kvar
- > Use voltage (V): 400

### Description

The Hybrid var compensators **OPTIM SVGm** range consist of a combination of a static reactive power generator, **SVGm**, and a set of steps of rejection filters tuned to 189 Hz ( $p = 7\%$ ), operated by a contact and controlled by a Computer SMART III power factor regulator.

The use of both technologies in a single compensation unit yields accurate reactive power compensation, with a high capacity to react to power changes that require compensation that represent a percentage of the device's total power, while providing a high cost to effectiveness ratio, all in a smaller size than the model consisting solely of regulated capacitor steps.

Similarly, the use of a **SVGm** as a supplement to the contactor-operated steps also provides capacitive power compensation, which is increasingly in demand, and it reduces problems related to the compensation of reactive power in installations containing a self-supply photovoltaic system.

### Application

The Hybrid var compensators **OPTIM SVGm** range are suitable for reactive power compensation in any installation where the use of rejection filters is required due to the presence of harmonics in the network, but especially in those where, due to the compensation requirements, using a conventional capacitor bank based on steps operated by contactors does not guarantee proper power factor correction that rules out the possibility of being penalized for excess reactive power consumption.

Installations where part of the total power of the compensation device has to respond quickly.

Installations where the addition of a self-supply system based on photovoltaics varies the demand for active power from the network such that a bank with steps does not cover the compensation needs, or those where at certain times, there is excess capacitive power, which is also subject to penalization.



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### Specifications

#### AC power supply

|                       |                       |
|-----------------------|-----------------------|
| Installation category | 4 kV, CAT III Class 1 |
| Frequency             | 50 ± 5 %              |

#### Electrical characteristics

|                                                      |                      |
|------------------------------------------------------|----------------------|
| Reinforcement voltage                                | 440 V                |
| Conditional short-circuit current (I <sub>cc</sub> ) | 40 kA                |
| Earthing system                                      | TN, TT               |
| Voltage                                              | 400 V ~ Ph-Ph ± 10 % |

#### Mechanical characteristics

|                                  |                       |
|----------------------------------|-----------------------|
| Size (mm) width x height x depth | 627 x 1959 x 804 (mm) |
| Noise                            | < 63 dBA              |
| Weight (kg)                      | 261                   |

#### Environmental characteristics

|                                          |                |
|------------------------------------------|----------------|
| Protection class                         | IP20           |
| Relative humidity (without condensation) | 0 ... 95 %     |
| Storage temperature                      | -20 ... +50 °C |
| Working temperature                      | -10 ... +45 °C |

#### Current measurement circuit

|                      |                  |
|----------------------|------------------|
| Consumption          | 1,5 VA x transf. |
| Transformation ratio | 5/5A ... 9000/5A |

#### Standards

|                                              |             |
|----------------------------------------------|-------------|
| Electrical safety, Maximum height (m)        | 2000 m      |
| Electrical safety, Contamination level/class | Category 2  |
| Standards                                    | IEC 61439-2 |

#### Protection

|         |                                                                                            |
|---------|--------------------------------------------------------------------------------------------|
| Element | Individual protection of each step with fuses with high rupture power (HRP). NH-00 Series. |
|---------|--------------------------------------------------------------------------------------------|

#### OPTIM-SVGm

Hybrid var compensators



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| CODE    | TYPE               | kvar (400 V) | kvar (440 V) | Composition             | Nr steps | Frequency (Hz) |
|---------|--------------------|--------------|--------------|-------------------------|----------|----------------|
| 50 Hz   |                    |              |              |                         |          |                |
| RG20F1. | OPTIM SVGm-200-440 | 182          | 200          | 1 x 100 kvar + 100 kvar | 2        | 50 Hz          |
| RG20F3. | OPTIM SVGm-300-440 | 264          | 300          | 2 x 100 kvar + 100 kvar | 3        | 50 Hz          |
| RG20F5. | OPTIM SVGm-400-440 | 346          | 400          | 3 x 100 kvar + 100 kvar | 4        | 50 Hz          |
| RG20F7. | OPTIM SVGm-500-440 | 428          | 500          | 4 x 100 kvar + 100 kvar | 5        | 50 Hz          |
| RG20F9. | OPTIM SVGm-600-440 | 510          | 600          | 5 x 100 kvar + 100 kvar | 6        | 50 Hz          |
| RG20FB. | OPTIM SVGm-700-440 | 592          | 700          | 6 x 100 kvar + 100 kvar | 7        | 50 Hz          |
| RG20FD. | OPTIM SVGm-800-440 | 674          | 800          | 7 x 100 kvar + 100 kvar | 8        | 50 Hz          |



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### Dimensions

