gae1250-gae1250kmax
1\textsuperscript{ry} Distribution Switchgear
Up to 24 kV
IEC standards

Reliable innovation.
Personal solutions.
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I. Introduction

Preface

gae1250-gae1250kmax

Fully gas insulated modular switchgear

- gae1250 up to 24 kV / 1250A / 20 kA 1 s / 50 Hz. IEC standards
- gae1250kmax up to 24 kV / 1250A / 25 kA 1 s / 50 Hz. IEC standards

- First ga RMU was launched in 1985, gae630 in 2001. In 2004 gae was upgraded to 1250 A
- Completely designed in Germany
- gae1250 in service in +30 countries
- Application: SSS (Substation Solutions for primary distribution)

Your business and SSS applications

Segments

- Smart Grid
  - Transmission & Distribution
  - Generation
- End Users
  - Infrastructures
  - Industrial
  - Tertiary
- RES
  - Wind
  - Solar
  - Dispatchable RES
II. Main features

Safety
• **Internal arc** tested AFL
• All live components inside a **hermetically sealed gas tank**
• Mechanical and electrical **interlocks** to prevent unsafe operations

Reliability
• **Fully insulated** and **sealed** for life
• **100 % routine tested** at factory
• **Screened** cable **connectors**

Efficiency
• **Modular design** suitable to any electrical single line diagram
• **Easy frontal access** to install and to test MV cables and HRC fuses
• **Small size** and **light weight**

Sustainability
• **No SF$_6$** use during **installation**
• **En-of-life** management
• Use of highly **recyclable material**

Continuous innovation
• **Smart-grid** ready system
• Ambient temperature in **-5 / +40ºC**
III. Technical details

**gae1250-gae1250kmax range**

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**gae1250**

- 1lsv
- 1lsvg
- 1lsf
- 1k
- 1ts

1. Vacuum CB
2. Bus sectionalizer CB
3. SF6 Circuit Breaker
4. Load-break switch (LBS)
5. Fused LBS

1a, ht, 1e, 1m1

- Cable connection with isolating switch
- Busbar riser
- Busbar earthing
- Metering

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**gae1250kmax**

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- 1lsvg
- 1k
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2. Bus sectionalizer CB
3. Load-break switch (LBS)
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1a, ht, 1e, 1m1

- Cable connection
- Busbar riser
- Busbar earthing
- Metering
### III. Technical details

#### General ratings

<table>
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<tr>
<th></th>
<th>ga1250-gae1250kmax</th>
<th>IEC</th>
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<tbody>
<tr>
<td>Rated Voltage</td>
<td>Ur [kV]</td>
<td>7.2 12 17.5 24</td>
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<tr>
<td>Rated frequency</td>
<td>fr [Hz]</td>
<td>50</td>
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<tr>
<td>Rated normal current</td>
<td>Ir [A]</td>
<td>1250</td>
</tr>
<tr>
<td>Busbars and cubicle interconnection</td>
<td>[A]</td>
<td>630-1250</td>
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<tr>
<td>Feeder</td>
<td>Output to transformer</td>
<td>200</td>
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<tr>
<td>Rated short-time withstand current</td>
<td></td>
<td></td>
</tr>
<tr>
<td>with tk = 1 s – 3 s</td>
<td>Ik [kA]</td>
<td>20 (gae1250) / 25 (gae1250kmax)</td>
</tr>
<tr>
<td>Peak value</td>
<td>Ip [kA]</td>
<td>50 (gae1250) / 62.5 (gae1250kmax)</td>
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<tr>
<td>Rated insulation level</td>
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<td></td>
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<tr>
<td>Rated power-frequency withstand voltage [1 min]</td>
<td>Ud [kV]</td>
<td>20 28 38 50</td>
</tr>
<tr>
<td>Rated lightning impulse withstand voltage</td>
<td>Up [kV]</td>
<td>60 75 95 125</td>
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<td>Internal arc classification according to IEC 62271-200</td>
<td>IAC AFL</td>
<td>AFL 20 kA (gae1250) – 25 kA (gae1250kmax) 1 s</td>
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<tr>
<td>Degree of protection</td>
<td>IP</td>
<td>IP65 (Gas tank) IP3XD / IP44 (enclosure)</td>
</tr>
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<td>Colour of equipment</td>
<td>RAL</td>
<td>Grey 7035</td>
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<td>Loss of service continuity category</td>
<td>LSC</td>
<td>LSC2</td>
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<td>Partition class</td>
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<td>PM</td>
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IV. Design characteristics
Constructive structure: Modular cubicles

General view

1. Gas tank
2. Busbar
3. Driving mechanism
4. Cable compartment
5. Control box

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<th>1k</th>
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<tr>
<td>Width</td>
<td>[mm]</td>
<td>500</td>
<td>600</td>
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<tr>
<td>Depth</td>
<td>[mm]</td>
<td>665</td>
<td>665</td>
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<tr>
<td>Height</td>
<td>[mm]</td>
<td>2000 / 2300</td>
<td>2000 / 2300</td>
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<tr>
<td>Weight</td>
<td>[kg]</td>
<td>330</td>
<td>225</td>
</tr>
</tbody>
</table>
V. References

Project References

Utility
- **Germany**: E.on, EnBW, RWE, RheinEnergie, Vattenfall….
- **Indonesia**: PLN electricity
- **Sweden**: E.on
- **Philippines**: Meralco

End Users
- **Germany**:
  - Freiburg university
  - Dresden TV tower
  - Datacenter Hetzner Online AG
  - Tile industry, Ascherslebe
- **Congo**: Kinsevere mine
- **Bulgaria**: Sofia metropolitan
- **Czech Republic**: Teplárna plant in Loučovice

RES
- **Germany**:
  - Schopfloch wind farm
  - Windfarm in automotive industry

Main countries with gae installed:

- Germany
- China
- South Africa
- Dominican Rep.
- Czech Rep.
- Slovakia
- Poland
- Romania
- Switzerland
- Hungary
- Bulgaria
- Sweden
- Ukraine
- Turkey
- Egypt
- Thailand
- Indonesia
- Malaysia
- Philippines
- Vietnam
V. References

Solution Notes

Utility

RES

Premnitz
110 kV substation

Windfarm in automotive industry

Germany

Germany
Thank you!

more information:

www.ormazabal.com

and

social networks

We are launching a new website

Designed for you, letting you know everything about Ormazabal

gae1250-gae1250kmax downloads:

Brochure: CA-502
Flyer: CA-440
Manuals: OL_yyyy_GAE1250 / AL_yyy_GAE1250