Gas Insulated Switchgear
~ up to 36kV
Gas Insulated Switchgear
~up to 36kV

Suitable for large current carry
Function of large-current carry and high short-circuit capacity
Minimized space requirement for installation
Easy to control and operate by the integration of control unit
LSIS Gas Insulated Switchgears are suitable for the power plants and substations that require greater capacity and performance which need the large-current carry and high short-circuit capacity. Our GIS also feature the minimized space requirement for installation and the maximized convenience in control and operation by the integration of control unit.

Gas Insulated Switchgears from 25.8KV to 362KV with advanced technology of LS Industrial Systems

LSIS GIS complies with the latest international standards & requirement by performing global test laboratory within the range from 25.8kV to 362kV. LSIS scompact size GIS is comparable with other manufactures within the same rating and we can provide economical & feasible solutions for the customers who has only limited space for GIS.

GIS Line - up

<table>
<thead>
<tr>
<th>Voltage</th>
<th>25.8/36kV</th>
<th>72.5kV</th>
<th>145/170kV</th>
<th>245kV</th>
<th>362kV</th>
</tr>
</thead>
</table>

LSIS Gas Insulated Switchgears are suitable for the power plants and substations that require greater capacity and performance which need the large-current carry and high short-circuit capacity. Our GIS also feature the minimized space requirement for installation and the maximized convenience in control and operation by the integration of control unit.
Leading Solution LSIS

Gas Insulated Switching Mechanism to perform large-current carry and 40kA high short-circuit interruption

- 40kA, 3150A high performance
- Specially designed Vacuum Interrupter
- Analysis and design of temperature flow for large current

- Optimum design of insulation
- Compact mechanism with high performance
- Compact Insulator
- Simplified main circuit part

LSIS’s Gas Insulated Switchgears meet the electric systems requirements of increasing capacity according to expansion of consumers and large plants.

The design and constitution of our GIS offers high reliability, safety and convenience in such a compact size LSIS adopts procedures for production, delivery and technical service which are fully environment-friendly under control of ISO 14001 for our future generation, which include minimizing the user of SF6 gas.
Insulation
Thanks to our advanced electric field analysis and optimum insulation design we can offer 30% higher performance than standard in short-duration power-frequency and lightning impulse withstand voltage.

Thermal current
Our technology of the heat analysis according to interrupting part arrangement and the using of high quality materials have secured 15 to 25% of allowance at the temperature rising test.

Mechanical endurance
CB secures M2 class (10000 operations)
DS and ES secure M1 class (2000 operations)

Safety and high reliability
Features of Units

CB Unit

- Vacuum Interrupter, VI designed specially for medium voltage GIS with large capacity is adopted.
- Energy loss is minimized thanks to the optimum design of the linkage between the outside operator and the inside CB.

DS/ES Unit

- The 3-position switch is combination of disconnector and earthing switch
- Put together, which eliminates the need for an additional mechanical interlock between the disconnector and earthing switch, and also electric interlock.

Gas Monitoring

- Gas monitor which includes gas pressure gauge and pressure switch is installed at each gas compartment.
- Monitoring system for alarm signal and interruption in case of gas pressure drops below the certain line.

GIS Control Panel

- LSIS's Digital Protective Relay adopted
- Easy to monitor each unit, convenient to operate and safe to control
- Installed on the front of GIS to enable access
  - Control switches for CB, DS/ES
  - Selection switch of Remote/Local
  - Open/close indicator
  - Fault indicator
  - Auxiliary relay
  - Mimic diagram
## Ratings

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>GESG 0222-NC</th>
<th>GESG 0243-NC</th>
<th>GESG 0342-NC</th>
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</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>kV, rms</td>
<td>25.8</td>
<td>25.8</td>
<td>25.8</td>
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<tr>
<td>Rated short-time withstand current (3sec.)</td>
<td>kA, rms</td>
<td>25</td>
<td>25</td>
<td>40</td>
</tr>
<tr>
<td>Rated normal current</td>
<td>A, ms</td>
<td>600</td>
<td>2,000</td>
<td>1,250</td>
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<tr>
<td>Withstand power-frequency voltage</td>
<td>kV, ms</td>
<td>70</td>
<td>70</td>
<td>70</td>
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<tr>
<td>Rated lightning impulse</td>
<td>kV, peak</td>
<td>150</td>
<td>150</td>
<td>150</td>
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<tr>
<td>Rated frequency</td>
<td>Hz</td>
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<td>50/60</td>
</tr>
<tr>
<td>Rated short-circuit breaking current</td>
<td>kA, rms</td>
<td>25</td>
<td>25</td>
<td>40</td>
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<tr>
<td>Rated break time</td>
<td>Cycle</td>
<td>5</td>
<td>5</td>
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<tr>
<td>Operating sequence</td>
<td>O-0.3sec-CO-3min-CO</td>
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<tr>
<td>Operating Mechanism</td>
<td>CB</td>
<td>Motor spring</td>
<td>Motor spring</td>
<td>Motor spring</td>
</tr>
<tr>
<td></td>
<td>DS</td>
<td>Motor</td>
<td>Motor</td>
<td>Motor</td>
</tr>
<tr>
<td></td>
<td>ES</td>
<td>Motor</td>
<td>Motor</td>
<td>Motor</td>
</tr>
<tr>
<td>Rated gas pressure</td>
<td>(kgf/cm² G)</td>
<td>0.5</td>
<td>0.5</td>
<td>1.0</td>
</tr>
<tr>
<td>Minimum gas pressure</td>
<td>(kgf/cm² G)</td>
<td>0.35</td>
<td>0.35</td>
<td>0.8</td>
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<tr>
<td>Applicable standards</td>
<td>ES 5925-0001</td>
<td>IEC-62271-1/100/102, 200</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Single Line Diagram (25.8kV 40kA Double-Bus)

![Single Line Diagram](image)
Construction & Single Line Diagram

- Operating mechanism for CB
- Operating mechanism for 3 position switch
- Vacuum interrupter
- 3 position switch
- Insulating spacer
- Main bus
- Earth bushing
- Cable
- Current Transformer
- Rupture disk
- Absorbent
- Local control panel
- DS/ES unit
- Circuit breaker
- Earth bus bar
- Earth bus bar

<table>
<thead>
<tr>
<th>NO</th>
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<tbody>
<tr>
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<td>9</td>
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<td>2</td>
<td>Operating mechanism for 3 position switch</td>
<td>10</td>
<td>Rupture disk</td>
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<td>3</td>
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<td>13</td>
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</tr>
<tr>
<td>6</td>
<td>Main bus</td>
<td>14</td>
<td>Circuit breaker</td>
</tr>
<tr>
<td>7</td>
<td>Earth bushing</td>
<td>15</td>
<td>Earth bus bar</td>
</tr>
<tr>
<td>8</td>
<td>Cable</td>
<td>16</td>
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</tbody>
</table>
Main/Feeder Circuit

Bus Section Circuit

Bus Tie Circuit
# Construction of 25.8kV 40kA

## Construction & Single Line Diagram

- Operating mechanism for CB
- Operating mechanism for 3 position switch
- Vacuum interrupter
- 3 position switch
- Insulating spacer
- Main bus
- Earth bushing
- Current Transformer
- Rupture disk
- Absorbent
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Construction of 36kV 40kA

Construction & Single Line Diagram

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### Main Circuit

![Main Circuit Diagram](image)

### Feeder Circuit

![Feeder Circuit Diagram](image)

### Bus Section Circuit

![Bus Section Circuit Diagram](image)

### Bus Tie Circuit

![Bus Tie Circuit Diagram](image)
Transport & Installation
Commission & Maintenance

Transport

Compact design makes it convenient to deliver GIS to the site.
It is possible to transport even 2 or 3 bays of GIS at a time to reduce time and cost in transportation.

Installation

Modular design makes customers easy & fast installation & extension.
Space and work required for installation are the most effective in case of 5-bay installation.

Maintenance

• Warranty period: for 2 years since installation
• Lifespan: 20 years

<table>
<thead>
<tr>
<th>Inspection</th>
<th>Interval of Inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CB</td>
</tr>
<tr>
<td>Daily</td>
<td>Every day</td>
</tr>
<tr>
<td>Periodic</td>
<td>Every 6 year</td>
</tr>
<tr>
<td>Detailed</td>
<td>Every 12 year</td>
</tr>
</tbody>
</table>

Commissioning

LSIS's PT&T (Power Testing & Technology Institute) is a KOLAS-qualified (Korea Laboratory Accreditation Scheme) accredited testing laboratory that provides a worldwide testing service with a 1600MVA-capacity High Power Laboratory, a High Voltage Laboratory, and a Reliability Testing Laboratory.

Its testing has been fully acknowledged and recognized by overseas testing certification bodies, such as KEMA of Netherlands, UL of America, and CE of the EU for its low voltage testing.
Quality Assurance

Through ERP (Enterprise Resource Planning) program and Quality System (ISO 9001), LSIS strictly control the quality of GIS and maintain best delivery service to the customers. LSIS adopts procedures for production, delivery and technical service which are fully environment-friendly under control of ISO 14001 for our future generation.

Certifications

Gas Insulated Switchgear (GIS)
LSIS is accredited for leading research and development in the country, and its R&D Center focuses on overall research and development activities related to power supply systems such as low and high voltage equipment as well as integrated digital networks, automatic switchboards and integrated power protection.

We continue to invest in developing the best GIS product for our customers worldwide. Each unit is optimized and designed from the advanced technologies such as 3D electric field analysis, arc diagnosis, multiphysics analysis, statics analysis, fatigue & vibration analysis, structure and temperature analysis to produce highest quality of GIS.
GIS

With compact GIS
LSIS provide a differentiated value
Solid Insulated Switchgear

Environmental Safety without SF6 gas
25.8kV 25kA 2000/630A SIS

SIS Solid Insulated Switchgear is a epoxy-insulated type medium voltage switchgear that is designed specially according to the policy of the environmental safety by removing SF6 gas. The circuit breaker, disconnector and earthing switch positioned in a cubicle are insulated by epoxy resin, and which shows truly environment-friendly and maintenance-free product with high performance.

Feature

Safety
- Phase isolation & Earth of outer surface by metalizing
- Prevention of miss-operation by preparing for electrical interlocking
- Easy to handle by modulation of each component

Reliability
- Eco-friendly epoxy embedded vacuum interrupter (New excellent technology in Korea)
- Permanent Magnetic Actuator offering high performance
- Reliability of insulation proven in the test of over-voltage, long service life, thermal shock and moisture penetration

Economic and practical
- SF6 Gas free eco-friendly devices
- Compact and light weight
- Flexibility in the system organization module type

Reliability & Solid Insulated

Compact and light weight

Environment-friendly SF6 free

Flexibility in the system organization
The advanced switchgear by solid insulation technology
-SIS (Solid Insulated Switchgear)

- SF₆ gas insulation
- VI with gas insulation
- Electric spring mechanism
- Assembly of welding tanks
- Conventional CT/PT

- Solid insulation with epoxy resin
- Epoxy embedded VI
- PMA mechanism
- Modulation of components
- ECT/EVT, conventional CT/PT available

Advanced component

- Embedded VI (NET registered technology)
  - Non-cushion combination technology
  - Interfacing technology between VI and Epoxy resin
  - Design technology of embedded VI shield

- Disconnecting & Earthing S/W
  - Epoxy sliding technology in DS/ES parts

- PMA Mechanism
  - Suitable for VI characteristics
  - Stable and intelligent characteristics of operation
  - Maintenance-free, No wearing, High reliability
Safety Instructions

For your safety, please read user’s manual thoroughly before operating.

Contact the nearest authorized service facility for examination, repair, or adjustment.

Please contact a qualified service technician when you need maintenance.

Do not disassemble or repair by yourself!

Any maintenance and inspection shall be performed by the personnel having expertise concerned.

Specifications in this catalog are subject to change without notice due to continuous product development and improvement.

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