WETOWN BUSWAY

WETOWN BUSWAY CO., LTD. is a leading busway company in China. It boasts the most complete lines of busway product & solution in the industry and modern manufacturing facility with state-of-art manufacturing equipment and process. The company complies with quality management system ISO 9001, Environment Management System ISO14001 and Occupational Health & Safety Management System OHSAS18001. The products made by WETOWN have obtained over 30 national and international patents and passed the type tests of international authority including CCC, KEMA, UL, and CE etc. All these strength together with our strong market position and financial status have allowed us to become the No. 1 national brand of busway. With long history and rich experience in product design, manufacturing expertise as well as proven quality of thousands of installations through out China and the rest of world, Wetown is striving to become a global leading manufacturer in busway system by helping customer to solve problems with innovative and efficient solutions.
Mission

WETOWN BUSWAY,
ENGINE of BUSWAY TOWN

Making Electrical Transmission & Distribution

More Reliable, More Efficient and More Economical
Culture and value

WETOWN BUSWAY
Currently No.1 China National Brand in Busway
Striving to be a leading global expert with full solution

Our culture and value
Integrity & Commitment
Commitment to society, customer and our people

Customer Orientation
It is the first priority among everything we do.
Seeking to be your first choice partner by excellence.
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Medium Voltage Enclosed Bus duct System

System Diagram

1. Generator
2. Main transformer
3. Plant transformer
4. Excitation transformer
5. Starting (spare) transformer
6. Generator out-going cabinet
7. Neutral cabinet
8. PT-LA cabinet
9. Generator breaker

Product Type and Definition

- Code features
  - Ⅰ Micro-pressure
  - Ⅱ Fast saturation reactor
  - Ⅲ Micro-pressure coexisted with fast saturation reactor
  - Ⅳ Heat tracing device
  - Ⅴ Busway drying device
  - Ⅵ Natural cooling
  - Ⅶ Forced cooling
  - Ⅷ Partial cooling

- Cooling method

- Rated voltage (kV)

- Rated Current (A)

- Busway type
  - QLFM isolated phase enclosed busway
  - GFM non-segregated phase enclosed busway
  - GGM isolated phase non-segregated enclosed busway
QLFM series Isolated Phase Bus

Application

Isolated phase enclosed bus duct is a kind of high-current transmission device which is extensively applied in generator main lead-out wire loop and power station Service/auxiliary Transformers.

Main circuit

Main transformer connection

Auxiliary transformer connection

Station Auxiliary circuit

Generator connection
QLFM series Isolated Phase Bus

Excitation transformer connection

CT assembly structure

Wall-through seal and expansion joint structure

Removable expansion joint structure

PT-LA cabinet connection
QLFM series Isolated Phase Bus

Feature

Aluminum Construction and Insulator Support
Both the enclosure and all the conductor of isolated phase enclosed bus duct are all welded by aluminum plate, providing high conductivity, corrosion-free operation. The conductor is supported by tripod insulator and the pressure is evenly applied on the insulators with more stability being ensured.

Contamination Protection
Bus system can be effectively prevented from the grounding fault caused by moisture, dust and external factors under the protection of enclosure. Short-circuit will be avoided between phases because of isolated phase enclosed structure. Conical insulator is adopted as contamination barrier when necessary, e.g. bus connection and device interface with IP protection up to IP54 and above, and so bus duct can run safely and steadily by means of micro-positive pressure without the impact by moisture, dust and condensation on insulator.

Low Heat Loss and Temperature Rise
The metal housings are electrically connected so that induced current, nearly of the magnitude of the phase current, can flow through the housing, in the opposite direction from the phase current. The magnetic field produced by this current nearly exactly offset the magnetic field produced by the phase current, so there is almost no external magnetic field produced. As a result nearly no heat loss or temperature rise will occur with the steel structure or reinforced concrete around the bus duct system.

Earthing Ground
The enclosure of IPB which connected along the length are in the same phase (including each branch circuit). The enclosures of each phase are connected by short-circuit boards at the terminal of bus duct so that the external housings of the conductors remain at equal potential.

Expansion Joint
When the length of bus duct reaches between twenty and thirty meters, expansion joint can be set up in the basic settlement department. Thus, the bus duct can be adjusted horizontally or vertically to offset thermal expansion of the bus duct and errors caused by basic settlement.

Electrical Isolation and Termination
At the joint of the equipment, insulating rubber bellows are applied at the enclosure for electrical isolation and avoid the impact of induced current.

The conductors inside are all connected with flexible braided straps to eliminate the vibration of connected equipment.

Metering and Protection
Current transformer can be set up according to the requirement for the purpose of measurement and protection.
## QLFM Series Isolated Phase Bus

The Diagram of Bus Duct

![Diagram of Bus Duct](image)

### Main Technical Parameter and Dimension

<table>
<thead>
<tr>
<th>Rated voltage (KV)</th>
<th>Rated current (A)</th>
<th>BIL(KV)</th>
<th>Dimensions (mm)</th>
<th>Weight Kg/m</th>
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</thead>
<tbody>
<tr>
<td>Less than 24</td>
<td>Less than 2000</td>
<td>75/150</td>
<td>Ø650 Ø150</td>
<td>≥900 490</td>
</tr>
<tr>
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<td>Less than 2500</td>
<td>75/150</td>
<td>Ø700 Ø150</td>
<td>≥950 515</td>
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<td>Ø750 Ø200</td>
<td>≥1000 540</td>
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<td>75/150</td>
<td>Ø750 Ø200</td>
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<td>Ø900 Ø400</td>
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<tr>
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<td>75/150</td>
<td>Ø1050 Ø500</td>
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<tr>
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<td>27000-30000</td>
<td>100/185</td>
<td>Ø1650 Ø1000</td>
<td>≥2000 990</td>
</tr>
</tbody>
</table>

Table 5-1
QLFM Series Isolated Phase Bus Accessories

PT-LA Cabinet
Reliable construction and ease of operation: the cabinet is of draw-out type structure. The compartments are constructed without being accessible during operation. In open position, the primary and secondary contacts of the transformer are disconnected with the primary terminal grounded.

Neutral Grounding Cubicles
The optimized design of structure gives the improved capacity of preventing disturbance, with the features of reduced weight, ease of installation and operation.
QLFM Series Isolated Phase Bus

Application of Isolated Phase Bus Duct

Supply Scope

 Equipments and spare parts will be provided with the requirements of consumers as follows:

- Isolated phase bus duct: it starts from the generator terminal and then the main lead out bus duct circuit at the low-voltage side of the transformer; branch circuit from main circuit to Station Service/Auxiliary Transformers, excitation transformer, PT, arrester cabinet, excitation cabinet, Load Switchgear and so on.

- Subordinate equipment cabinets, such as PT cabinet, arrester cabinet, load switchgear and so on.

- Current transformer.

- Hydrogen gas detection device.

- Intelligent micro-pressure device, device of maintaining hot or drying air, heaters, dehumidification device with silica respirator, etc..

- On-line, portable infrared TME, Platinum resistance TME.

- Galvanized steel construction install.

- Argon arc welding machine, welding stick, etc..

- Air-cooled device.
GFM Series Non-segregated Phase Bus Duct

Purpose

GFM Series non-segregated phase bus duct is suitable for transmission system of 3.6~40.5Kv, rated current from 1000 to 6800A, AC 50~60 Hz, which is mostly applied in:

- The electrical connection between generator and transformer;
- The electrical connection between transformer and high-voltage distribution cabinet;
- The electrical connection of AC excitater and rectifier cabinet;
- The electrical connection of the excitation switchgear and generator rotor ring;
- The electrical connection between other high-voltage main circuits.
GFM Series Non-segregated Phase Bus Duct

Features

Housing Design
GFM series bus duct provides consistent strength and high short-circuit ratings. Under the protection of the enclosure made of aluminum or low magnetic plate, no hysteresis loss occurs on the distribution system with low temperature rise on housing, reduce energy loss on the whole system.

The hole for installation or maintenance can be set up at top or bottom of GFM, ventilated shutter can be set up on both side and bottom of the enclosure to improve heat dissipation.

Expansion joint
When the length of bus duct reaches between twenty and thirty meters, expansion joint can be set up in the basic settlement department. Thus, the bus duct can be adjusted horizontally or vertically to offset thermal expansion of the bus duct and errors caused by basic settlement.

Connection of equipment
Flexible braided straps are applied to eliminate the vibration of connected equipment. Rubber gaskets are adopted as shock absorber in the system to provide the elastic support to the insulator and the conductor. Moreover, the shock absorber can avoid the machinery vibration caused by equipment and the damage caused by earthquake.

Painting on enclosure
Enclosure are painted with light grey painting in a very durable finish on the external surface with minimum absorption of visible light for better heat dissipation. Black painting on the internal surface would reinforce radiation and prevent the corona at the same time.

Condensation
In winter, segregation device can be applied in the wall to avoid condensation happened due to temperature variation between indoor and outdoor in winter.

Highly Durable Silver-Plating
Silver-plating is applied to all joint and connection area. Silver-plating provides an extremely durable contact surface with better performance of lower contact resistance and anti-corrosion.

Temperature monitoring system
Observation window can be installed in the connection area of bus duct and transformer cabinet and generator cabinet, distribution cabinet so as to monitor the temperature rise by means of temperature measurement device or online intelligent monitoring system, which greatly improve the level of safety and reliability of operation and maintenance.
GFM Series Non-segregated Phase Bus Duct

Main Technical Parameters

![Diagram](image)

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient</td>
<td>°C</td>
</tr>
<tr>
<td>Relative humidity</td>
<td>Daily averages ≤95%. Monthly average ≤90%</td>
</tr>
<tr>
<td>IP</td>
<td>IP40, IP54</td>
</tr>
<tr>
<td>Rated voltage</td>
<td>kV</td>
</tr>
<tr>
<td>Max operating voltage</td>
<td>kV</td>
</tr>
<tr>
<td>Insulation level</td>
<td>kV</td>
</tr>
<tr>
<td>Rated frequency</td>
<td>Hz</td>
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<tr>
<td>Rated operating current</td>
<td>Dimension (W×H)(mm×mm)</td>
</tr>
<tr>
<td>1000-3000</td>
<td>A I 750×400 I 900×560 I 900×560 I 1500×920</td>
</tr>
<tr>
<td>3500</td>
<td>A I 750×440 I 900×560 I 900×560 I 1500×920</td>
</tr>
<tr>
<td>4000</td>
<td>A I 750×440 I 900×560 I 1000×560 I 1500×920</td>
</tr>
<tr>
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</tr>
<tr>
<td>5000</td>
<td>A I 1350×500 I 1500×600 I 1500×600 I 1500×600</td>
</tr>
<tr>
<td>6300-6800</td>
<td>A I 1350×500 I 1500×600 I 1500×600 I 1500×600</td>
</tr>
</tbody>
</table>

Note: groove conductor can be applied in the NPB over 4000A.
LV busway provides a stable and efficient power transmission, with a high short-circuit withstand capability. LV busway has been certified by KEMA to be in compliance with IEC60439-1 and-2 short circuit withstand test for 1 second.

Excitation Non-segregated Phase Bus Duct of AC, DC

<table>
<thead>
<tr>
<th>Rated voltage (V)</th>
<th>380</th>
<th>1000</th>
<th>1500</th>
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<tbody>
<tr>
<td>Rated power frequency withstand voltage (kV)</td>
<td>2.5</td>
<td>4.2</td>
<td>5.4</td>
</tr>
<tr>
<td>Rated current (A)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ac excitation (I)</td>
<td>Cu electrical conductor</td>
<td>Al electrical conductor</td>
<td>Cu electrical conductor</td>
</tr>
<tr>
<td>400-2250</td>
<td>550×400</td>
<td>550×400</td>
<td>650×400</td>
</tr>
<tr>
<td>2500-3250</td>
<td>650×400</td>
<td>750×400</td>
<td>800×400</td>
</tr>
<tr>
<td>3500-6300</td>
<td>700×500</td>
<td>800×500</td>
<td>900×500</td>
</tr>
<tr>
<td>5000-6300</td>
<td>600×500</td>
<td>700×500</td>
<td>800×500</td>
</tr>
</tbody>
</table>

| DC excitation (II) | Cu electrical conductor | Al electrical conductor | Cu electrical conductor | Al electrical conductor | Cu electrical conductor | Al electrical conductor |
| 400-2250 | 450×400 | 450×400 | 550×400 | 550×400 | 500×400 | 500×400 |
| 2500-3250 | 500×400 | 600×400 | 650×400 | 650×400 |
| 3500-6300 | 600×500 | 700×500 | 800×500 |
| 5000-6300 | 700×500 | 800×500 |

Note: 1. The standard and dimension in the form above are the standard offer by the company.
2. We can provide special design per customers’ requirement.
Insulated Pipe Busway

Overview

With the increased capacity of the main transformer in the substation, the rated current of power connection for 10 kV and 35 kV transformers increases accordingly. Multiple rectangular conductors, commonly adopted in the previous works, are no longer suitable for large current loops. Furthermore, from technical and structural prospective, it is difficult for rectangular bus bar to solve the heating problem and to meet electric power requirements, thus leading to additional loss, increased coefficient of skin-effect, and causing a decline in current carrying capacity.

By the new product of pipe bus duct, the above mentioned problems can be resolved properly, with increased span of busway length, and reduced consumption of land. Insulated composite shielding is adopted to improve the utilization of materials and enhance mechanical strength. By new technology of semi-insulation and full-insulation can guarantee the personal safety and reliable operation on the system without the issue of short circuits caused by metal objects felling on the system. Insulated pipe busway has been widely used in developed countries. It is also a new trend in China with many successful applications in Guangdong, Guangxi, Jiangsu, Beijing, Tianjin, Shandong, Hunan, Jiangxi, Shanxi and other places. With the features of safe operation in the substation, improved reliability in power supply, reduced losses in power transmission & distribution, it is a more efficient and economical solution for customers.

Application

*Power plant:* the busway connection from the machine set to the transformer.

*Transformer substation:* the connection from transformer to the busway of the high voltage room and the connection of the busway between the high voltage devices.
Insulated Pipe Busway

Features

The feature of Insulated pipe busway:

**Capacity for High Current Transmission and Distribution**

Insulated pipe busway is tubular conductor with more capacity to handle large current. Therefore, the insulated busway is particularly suitable for high operating current circuit.

**Low Skin Effect & Low Power Loss**

Insulation pipe busway’s skin effect coefficient is low, $K_f \leq 1$, and AC resistance is small, therefore the power loss of the busway is small. When the multiple pieces of rectangular conductor being adopted, the effective carrying capacity per unit cross-section will be decreased with the increasing of the skin effect coefficient. The current distribution through multiple pieces of bus bar will be uneven, additional loss will increase and the dissipation is not good.

**Good Dissipation & Low Temperature Rise**

Insulation pipe busway is tubular conductor. The inside diameter air channel can form hot air convection naturally with good dissipation (the pressure difference between indoor and outdoor can form hot air convection naturally).

**High Allowable Stress** and **Mechanical Strength**

Insulated pipe busway’s allowance stress is 4 times of the rectangular busway’s allowance stress which can withstand high short-circuit current and high mechanical strength, resulting in increased support span of busway. Under the case of 50KA short circuit current, $\Phi 100 \times 5$mm insulated busway’s suspended span reaches 9 meters which is good for the support bracket of the busway. The span of the busway can be reach 13 meters. Due to large suspension span, the busway can access to the high voltage room directly to connect with the indoor current-limiting reactor or the 10KV switchgear, reducing the corresponding supporting insulator, busway fittings as well as the basis of the civil engineering support.

**High Dielectric Strength**

The insulated pipe busway has the features of high dielectric strength by adopting sealed & shielding insulation and the electrical potential of the earthing is zero. The electrical shield possesses the following features: a. making the electric field evenly distributed; b. controlling the electric potential and limiting the electric field; c. avoiding the partial discharge which come from the insulator surface; d. conducting the leakage current and the charging current; e. protection from the dangerous voltage.

**Insulation Material with High Heat-resistance Factor**

The main insulation material of insulation pipe busway is PTFE, which can work within $-250 \degree C \sim +250 \degree C$ environment. It owns good electrical specification and chemical stability, low mediator loss, flame retardant, anti-aging and the life span over 40 years.

**High Capacity for Anti-vibration**

Fixing the insulation pipe busway to the steel framework or concrete support directly, and then removing the wall-through casing pipe and supporting insulator, it owns strong capacity of anti-vibration.

**High Reliability and Capacity to Resist External Interference**

The every phase of insulation pipe busway uses closure shield insulation, there is no condensation inside the busway, and eliminates the humidity, dust caused by outside condition and the fault which caused by grounding and short-circuit between phases. The busway can run with high reliability.
Insulated Pipe Busway

Main Technical Parameter

Product Type and Definition

- Busway system rated voltage (kV)
- Busway rated current (A)
- Conductors type and code: I—— Copper conductor
  II—— Aluminum conductor
- Busway type: QJGM—— Full-insulation pipe busway
  BJGM—— Half-insulation pipe busway

Technical Parameter

1. BJGM Half-insulation Pipe Busway Parts

10kV Half-insulation Pipe Busway Technical Parameter

<table>
<thead>
<tr>
<th>Specification</th>
<th>Rated current</th>
<th>Conductor specification</th>
<th>Rated peak withstand current (KA)</th>
<th>Rated short time withstand current low (4s) kA</th>
<th>Temperature rise K</th>
<th>IP level</th>
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<tbody>
<tr>
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<td>1600A</td>
<td>φ60×5</td>
<td>125</td>
<td>50</td>
<td>&lt;65</td>
<td>IP54</td>
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<td>50</td>
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<td>IP54</td>
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<td>2500A</td>
<td>φ80×8</td>
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<td>125</td>
<td>50</td>
<td>&lt;65</td>
<td>IP54</td>
</tr>
<tr>
<td>BJGM- II -2500A/10kV</td>
<td>2500A</td>
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<td>125</td>
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<td>BJGM- II -4000A/10kV</td>
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<td>6300A</td>
<td>φ150×10</td>
<td>160</td>
<td>63</td>
<td>&lt;65</td>
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## Insulated Pipe Busway

### 35KV Half-insulation Pipe Busway Technical Parameter

<table>
<thead>
<tr>
<th>Specification</th>
<th>Rated current</th>
<th>Conductor specification</th>
<th>Rated peak withstand (KA)</th>
<th>Rated short time withstand current Icw (4s) kA</th>
<th>Temperature rise K</th>
<th>IP level</th>
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</thead>
<tbody>
<tr>
<td>BJGM- I -1600A/10kV</td>
<td>1600A</td>
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<td>BJGM- I -2000A/10kV</td>
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<td>&lt;65</td>
<td>IP54</td>
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<td>50</td>
<td>&lt;65</td>
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### 10KV Full-insulation Pipe Busway Parts

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<tr>
<th>Specification</th>
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<th>Conductor specification</th>
<th>Rated peak withstand (KA)</th>
<th>Rated short time withstand current Icw (4s) kA</th>
<th>Temperature rise K</th>
<th>IP level</th>
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<tr>
<td>QJGM- I -2000A/10kV</td>
<td>2000A</td>
<td>φ60×8</td>
<td>125</td>
<td>50</td>
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<tr>
<td>QJGM- I -2500A/10kV</td>
<td>2500A</td>
<td>φ80×8</td>
<td>125</td>
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<tr>
<td>QJGM- II -1600A/10kV</td>
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<td>IP54</td>
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<td>QJGM- II -2000A/10kV</td>
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<td>φ80×10</td>
<td>125</td>
<td>50</td>
<td>&lt;65</td>
<td>IP54</td>
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<tr>
<td>QJGM- II -2500A/10kV</td>
<td>2500A</td>
<td>φ100×8</td>
<td>125</td>
<td>50</td>
<td>&lt;65</td>
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<td>QJGM- II -3150A/10kV</td>
<td>3150A</td>
<td>φ80×10</td>
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<td>125</td>
<td>50</td>
<td>&lt;65</td>
<td>IP54</td>
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<td>QJGM- II -6300A/10kV</td>
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<td>φ120×10</td>
<td>125</td>
<td>50</td>
<td>&lt;65</td>
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</table>

### 35KV Full-insulation Pipe Busway Technical Parameter

<table>
<thead>
<tr>
<th>Specification</th>
<th>Rated current</th>
<th>Conductor specification</th>
<th>Rated peak withstand (KA)</th>
<th>Rated short time withstand current Icw (4s) kA</th>
<th>Temperature rise K</th>
<th>IP level</th>
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<tbody>
<tr>
<td>QJGM- I -1600A/10kV</td>
<td>1600A</td>
<td>φ60×5</td>
<td>125</td>
<td>50</td>
<td>&lt;65</td>
<td>IP54</td>
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<td>2000A</td>
<td>φ60×8</td>
<td>125</td>
<td>50</td>
<td>&lt;65</td>
<td>IP54</td>
</tr>
<tr>
<td>QJGM- I -2500A/10kV</td>
<td>2500A</td>
<td>φ80×8</td>
<td>125</td>
<td>50</td>
<td>&lt;65</td>
<td>IP54</td>
</tr>
<tr>
<td>QJGM- II -1600A/10kV</td>
<td>1600A</td>
<td>φ80×8</td>
<td>125</td>
<td>50</td>
<td>&lt;65</td>
<td>IP54</td>
</tr>
<tr>
<td>QJGM- II -2000A/10kV</td>
<td>2000A</td>
<td>φ80×10</td>
<td>125</td>
<td>50</td>
<td>&lt;65</td>
<td>IP54</td>
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<tr>
<td>QJGM- II -2500A/10kV</td>
<td>2500A</td>
<td>φ100×8</td>
<td>125</td>
<td>50</td>
<td>&lt;65</td>
<td>IP54</td>
</tr>
</tbody>
</table>

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2. QJGM Whole-insulation Pipe Busway Parts
Gas Insulated Line Bus Duct (GIL)

System Overview

Compared with traditional method cable and overhead line, WT-GIL has the features of high transmission capacity, more flexible with less space consumption, High EM compatibility. The benefit for customer: more safe, reliable and more economical. WETOWN GIL product is suitable for high power transmission system at 126KV to 550KV, rated current up to 5500A.

GIL is very flexible and suited for almost any kind of routing, like through built-up areas or road crossings, on marshy ground, under tunnel, and vertical shaft; Less implementation time is required than cable. Key application as below:

GIS As Grid Connections
- Connection between overhead line and transformer;
- Connection of busbar for outdoor substation.

Long Vertical Shafts
- Suitable for transmission of the energy over large vertical distances, especially for Hydroelectric generating stations.

Line Crossing
- Crossing air-insulated bus or overhead line.

Optimize Grid Integration
- With large current carrying capacity, GIL allows the combination of outputs from multiple generator step-up transformers into feeder circuits, with more compact transmission line and GIS arrangements than cable.

Retrofit of Existing Substation
- Upgrade existing facilities, or to replace damaged equipment with new equipments.
Gas Insulated Line Bus Duct (GIL)

System Description of WT-GIL

WETOWN SF6 GIL is suitable for 3-phase, 50 Hz power system, and the bus is assembled by section and fully factory tested. The section is up to 8 meters in length. The elbows is pre-assembled in the factory per requirement, with the changing direction range from 89° to 179°. Other fittings like Tee is available for branch extension and connection with other components, e.g. SF6 arrester and PT.

Each single-phase of GIL consists of a grounded aluminum enclosure tube containing a concentric tubular aluminum alloy conductor arranged in a coaxial configuration. The conductor is supported by epoxy insulators. The system is suitable for the most stringent application environment in steady and reliable operation.

WETOWN GIL has the advantage of low cost in installation, operation and maintenance. The unique design of joint contact provides a low-resistance and efficient current transfer path (lower loss meaning lower operation cost). GIL is easy for maintenance by annual check & inspection on humidity and pressure of SF6, the status of enclosure, supporting base for GIL and fittings. The enclosure is maintenance free internally due to no wearing parts or switches inside. With the robust structure and logical design, WETOWN GIL is intended for power transmission with long life up to 50 years, reliably, safely and economically.

Design Consideration

WETOWN GIL is design in consideration of below criteria:

• Rated System voltage
• Rated Lightning impulse Withstand Voltage (BIL)
• Rated Switching Impulse Withstand Voltage (SIL)
• Power Frequency Withstand Voltage
• Rated operating current
• Rated short circuit current

The lightning impulse requirements (BIL) is the critical design parameter for gas insulated transmission lines. Another key factor is the amperage rating which influences the dimensions of the coaxial system. For a high current transmission system, the current requirements determine the size of the conductor. WT-GIL is a system optimized in considering the dielectric strength, current capacity and material cost.
Gas Insulated Line Bus Duct (GIL)

The Parameters of WETOWN GIL

<table>
<thead>
<tr>
<th>Parameter</th>
<th>kV</th>
<th>126</th>
<th>252</th>
<th>550</th>
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</thead>
<tbody>
<tr>
<td>Aluminium busway size (mm)</td>
<td></td>
<td></td>
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<tr>
<td>Power Frequency Withstand Voltage (1min)</td>
<td>kV</td>
<td>230</td>
<td>460</td>
<td>680</td>
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<tr>
<td>Lightning Impulse Withstand Voltage</td>
<td>kV</td>
<td>550</td>
<td>1050</td>
<td>1550</td>
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<tr>
<td>Switching Surge Insulation Level</td>
<td>kV</td>
<td>-</td>
<td>-</td>
<td>1175</td>
</tr>
<tr>
<td>Frequency</td>
<td>Hz</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Open Air Current Rating</td>
<td>A</td>
<td>3150</td>
<td>3150/4000</td>
<td>5000</td>
</tr>
<tr>
<td>Open Air Power Loss at Rated Current (per Single-phase Meter)</td>
<td>W</td>
<td>124</td>
<td>150</td>
<td>232</td>
</tr>
<tr>
<td>Direct Buried Current Rating</td>
<td>A</td>
<td>1450</td>
<td>1500/1850</td>
<td>2600</td>
</tr>
<tr>
<td>Direct Buried Power Loss at Rated Current (per Single-phase Meter)</td>
<td>W</td>
<td>36</td>
<td>39</td>
<td>51</td>
</tr>
<tr>
<td>Short Circuit Current (3sec)</td>
<td>kA</td>
<td>40</td>
<td>50/63</td>
<td>80/100</td>
</tr>
<tr>
<td>Capacitance (per Single-phase Meter)</td>
<td>Pf</td>
<td>59.5</td>
<td>41.6</td>
<td>54.2</td>
</tr>
<tr>
<td>Inductance (per Single-phase Meter)</td>
<td>μH</td>
<td>0.204</td>
<td>0.268</td>
<td>0.205</td>
</tr>
<tr>
<td>Surge Impedance</td>
<td>Ω</td>
<td>72</td>
<td>80</td>
<td>61.2</td>
</tr>
<tr>
<td>Enclosure Inside Diameter</td>
<td>mm</td>
<td>508</td>
<td>359</td>
<td>508</td>
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<tr>
<td>Conductor inside Diameter</td>
<td>mm</td>
<td>90</td>
<td>90</td>
<td>180</td>
</tr>
<tr>
<td>Weight of GIL without SF6 (per Single-phase Meter)</td>
<td>Kg</td>
<td>47.8</td>
<td>30</td>
<td>47.31</td>
</tr>
<tr>
<td>SF6 weight (per Single-phase Meter)</td>
<td>Kg</td>
<td>5.48</td>
<td>2.24</td>
<td>5.72</td>
</tr>
</tbody>
</table>

Table 18-1

Application

GIL has wide applications with the major installations listed here:

**Nuclear & Thermal Power Plant**

- Power Plant Optimization
- Flexibility for installation
- High power extension And long distance transmission
- Line crossing
- Under ground transmission

**Hydro Power Plan**

- Vertical shaft
- Tunnel installation
- GIS retrofit & extension
- Connection for(AIS)
Catalogue serial number: WTMVHV2010-1

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