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北京电力设备总厂（BPEG）是电力系统最大的综合性制造厂家，工厂始建于1952年，占地面积130万平方米，拥有员工4000多名，下设十个专业生产厂。金属封闭母线厂是北京电力设备总厂生产金属封闭母线的专业厂。

BPEG于70年代开发出金属封闭母线产品。目前产品已为大型水电、火电、核电站（站）设计制造金属封闭母线700余套，产品遍布全国三十多个省、直辖市、自治区，还远销到巴基斯坦、土耳其、印度、马来西亚、印度尼西亚、越南等国。

BPEG承担额定电压35kV及以下、额定电流40000A及以下水电、火电、核电站（站）及交直流站需要的各种形式的金属封闭母线的设计、制造任务。

Beijing Power Equipment Group (BPEG) is the largest multimanufacturing factory in Power System. The factory was founded in 1952. Now it covers an area of 1.3 million square meters with 4,000 employees and has ten special manufacturing works. The Enclosed Bus Works, subordinate to the BPEG, is a special factory dealing in manufacturing the enclosed bus.

BPEG developed metal-enclosed bus in 1970’s. Up to now, it has supplied up to 700 sets of metal-enclosed bus for various hydro, thermal and nuclear power plant. The products have been sold to more than thirty provinces, cities and autonomous regions of the nation and to Pakistan, Turkey, India, Malaysia, Indonesia and Vietnam, etc.

BPEG designs and produces the enclosed bus to 35kV (rated voltage) and up to 40000A (rated current) for hydro, thermal and nuclear power plants as well as substations.
组织机构
Organization Chart

产品特点
Characteristics

- 科学化的管理，国内首家封闭母线产品ISO9001认证厂家。
- 封闭母线采用国际先进的一体化制造工艺，设计优化，合理，运行稳定可靠，采用自冷冷却系统。
- 采用阻燃性材料，适用于中高压变配电系统。
- 科学的生产流程，确保产品的制造质量。
- 设备简单，灵活，方便。
- 不需日常维护。
- Scientific management, BPEG is the first enclosed bus manufacture factory in China which has successfully obtained the ISO9001 Quality Certificate.
- Isolated phase bus adopts the international advanced entire connection structure; optimum and rational structure design; stable and reliable operation; use natural cooling or forced cooling system.
- The non-segregated phase bus adopts three conductor types: bare conductor, external insulated conductor and cable conductor, suitable for special requirement under different operating conditions.
- Adopt computer aid design, which ensures advanced, speedy and accurate product design to meet the special requirement of customers.
- Design and manufacture products in accordance with any international standard.
- Imported advanced manufacture equipment, which guarantees the manufacture quality.
- Simple, flexible and convenient in erection.
- No need for operating maintenance.
产品主要结构及作用

Main Structure and Function

1. 焊接膨胀结构。调节封闭母线因温差变化造成的伸缩，并能调节不同基础沉降造成的封闭母线的位移。

Welding Expansion Structure Adjust expand or contract according to the change of temperature and displacement of bus due to different foundation outside.

2. 可拆卸结构。除了能调节热胀冷缩、基础沉降外，还为用户检修提供了方便。

Demounting Flexible Structure Addition to adjusting Expand or Contract, and also makes overhaul convenient.
### Main Structure and Function

- **Isolated Insulation**
  - **Basin Type Insulator Act as dust insulation, hydrogen insulation and sealing function, ensuring the safe and reliable operation.**

- **Conductive Attachment**
  - **Conductor Joint Make the connection with conductor flexible, convenient, SEGMENT vibration, and adjust expand or contract.**

- **Vacuum Ion Plated Plate**
  - **Reduce the resistance of the surface of the conductor bolt connection and lower the temperature of the bolt connection surface, ensure the safe operation of the bus.**

- **Conductive Structure**
  - **Conductor and Enclosure Structure**

- **Expansion Joint**

### Accessory Equipment

- **Neutral Point Grounding Cubicle**
- **Potential Transformer Cubicle**
- **Micro-positive Pressure Charging Device**

**Superior quality equipment ensuring safe operation**
**Preventing Condensation Device for IPB**

### Main Devices

1. **Desiccant Adsorption Device**
   - Desiccant adsorption device of molecular sieve or refrigeration dryer
   - Desiccant adsorption device of molecular sieve or refrigeration dryer

2. **Drying Device**
   - Drying device
     - Drying unit
     - Drying unit
     - Drying unit

3. **Humidity Sensing Device**
   - Humidity sensing device
     - Humidity sensor
     - Humidity sensor
     - Humidity sensor

### Classification of Preventing Condensation Device

<table>
<thead>
<tr>
<th>Classification of Preventing Condensation Device</th>
<th>Main Device</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Desiccant Adsorption Device</strong></td>
<td>Desiccant adsorption device of molecular sieve or refrigeration dryer</td>
</tr>
<tr>
<td>2. <strong>Drying Device</strong></td>
<td>Drying device</td>
</tr>
<tr>
<td>3. <strong>Humidity Sensing Device</strong></td>
<td>Humidity sensing device</td>
</tr>
</tbody>
</table>

**Non-Segregated Phase Bus**

Various types of nonsegregated phase bus meet the different requirements of customers.

1. **Bare Conductor Non-Segregated Phase Bus**
2. **External Insulated Conductor Non-Segregated Phase Bus**
3. **Cable Conductor Non-Segregated Phase Bus**
Modern manufacture equipment guarantees accurate, speedy, and reliable products.
**Quality Assurance**

**Test**

- Welded Seam X-ray Nondamage Inspection
- Measurement of Insulation Resistance
- Power Frequency Voltage Withstanding Test
- Gas Sealing Test
- Water-tightness Test
- Temperature Rise Test
- Impulse Voltage Withstanding Test
- Dynamic Stability Test
- Thermal Stability Test

**Design and Development**

Products design is advanced, scientific, accurate and speedy, meeting special requirements of customers.
产品类型及用途

### Type and Use

#### 金属封闭母线

Metal-enclosed Bus

适用于额定电压35kV及以下，额定电流40000A及以下大容量发电机与主变变压器及分支回路的电气连接

Applicable to electrical connection between the large capacity generator up to 35kV (rated voltage), 40000A (rated current) and main transformer, tap circuit.

#### 参数及尺寸

### Data and Dimensions

#### 离相封闭母线参数及尺寸

**Data and Dimensions of Isolated Phase Bus**

<table>
<thead>
<tr>
<th>Rated Voltage (kV)</th>
<th>Rated Current (A)</th>
<th>D (mm)</th>
<th>H (mm)</th>
<th>H.(mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 – 15</td>
<td>3000 – 5000</td>
<td>550</td>
<td>800</td>
<td>455</td>
</tr>
<tr>
<td></td>
<td>6000 – 7000</td>
<td>750</td>
<td>.1000</td>
<td>530</td>
</tr>
<tr>
<td>15 – 24</td>
<td>8000 – 10000</td>
<td>900</td>
<td>.1150</td>
<td>635</td>
</tr>
<tr>
<td></td>
<td>12000 – 15000</td>
<td>1050</td>
<td>.1300</td>
<td>705</td>
</tr>
<tr>
<td></td>
<td>20000 – 24000</td>
<td>1450</td>
<td>.1800</td>
<td>940</td>
</tr>
<tr>
<td>20 – 35</td>
<td>24000 – 28000</td>
<td>1530</td>
<td>.1800</td>
<td>1000</td>
</tr>
<tr>
<td></td>
<td>26000 – 32000</td>
<td>1580</td>
<td>.2000</td>
<td>1070</td>
</tr>
</tbody>
</table>

#### 共箱封闭母线参数及尺寸

**Data and Dimensions of common enclosure bus**

<table>
<thead>
<tr>
<th>Rated Voltage (kV)</th>
<th>Rated Current (A)</th>
<th>D (mm)</th>
<th>H (mm)</th>
<th>H.(mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10kV</td>
<td>&lt;2000</td>
<td>800</td>
<td>800</td>
<td>850</td>
</tr>
<tr>
<td></td>
<td>2500</td>
<td>800</td>
<td>850</td>
<td>900</td>
</tr>
<tr>
<td></td>
<td>3150</td>
<td>800</td>
<td>880</td>
<td>1000</td>
</tr>
<tr>
<td></td>
<td>4000</td>
<td>800</td>
<td>880</td>
<td>1100</td>
</tr>
<tr>
<td></td>
<td>5000</td>
<td>1050</td>
<td>1050</td>
<td>1150</td>
</tr>
<tr>
<td></td>
<td>6300</td>
<td>1050</td>
<td>1060</td>
<td>1290</td>
</tr>
</tbody>
</table>

The data and dimensions only for reference, the final data and dimension confirmed according project requirement.
## 产品运行实例

### Operating Practices

- 图片1
- 图片2
- 图片3

### 订货需知

**Placing an order**

- 用户应按照要求提出以下参数和技术要求:
  - 电压等级
  - 额定电流
  - 动热稳定性及时间
  - 环境条件及设计标准

- 如有特殊要求，请直接与我司联系。

Customers should forward the following data and technical requirements in writing:

- Rated voltage
- Rated current
- Dynamic and thermal stability current and time
- Environmental condition and design criteria

- If any special requirements, please contact us directly for any special requirements.

### 一流的产品 一流的的服务是产品安全运行的保障

BPEG are obliged to offer you first class products and service to guarantee the safe and reliable operation.

### 金属封闭母线典型业绩

**REPRESENTATIVE REFERENCE OF METAL ENCLOSED BUS**

<table>
<thead>
<tr>
<th>电厂类型 Type</th>
<th>序号 No.</th>
<th>电厂名称 Name</th>
<th>电压等级(kV)</th>
<th>电流等级(A)</th>
<th>电压等级(kV)</th>
<th>电流等级(A)</th>
</tr>
</thead>
</table>
| 火 电
Thermal Power Plant | 1 | 大唐高桥二厂 | 2×1000 | 27(35) | 28000 | 24 |
| 2 | 华电佛山电厂 | 2×1000 | 27(35) | 28000 |
| 3 | 上海核电 | 2×1000 | 27(35) | 28000 |
| 4 | 重庆华能 | 2×1000 | 27(35) | 28000 |
| 5 | 漳州华能 | 2×1000 | 27(35) | 28000 |
| 6 | 大唐宜春 | 2×1000 | 27(35) | 28000 |
| 7 | 华能太湖 | 2×1000 | 27(35) | 28000 |
| 8 | 东方电机 | 2×1000 | 27(35) | 28000 |
| 9 | 东方电机 | 2×1000 | 27(35) | 28000 |
| 10 | 东方电机 | 2×1000 | 27(35) | 28000 |
| 水 电
Hydropower Plant | 1 | 九龙水电站 | 6×550 | 20 | 23000 |
| 2 | 黄河水电站 | 6×550 | 20 | 23000 |
| 3 | 黄河水电站 | 6×550 | 20 | 23000 |
| 4 | 黄河水电站 | 6×550 | 20 | 23000 |
| 5 | 黄河水电站 | 6×550 | 20 | 23000 |
| 核 电
Nuclear Power Plant | 1 | 东方电机 | 3×130 | 20 | 10000 |
| 2 | 东方电机 | 3×130 | 20 | 10000 |
| 3 | 东方电机 | 3×130 | 20 | 10000 |
| 4 | 东方电机 | 3×130 | 20 | 10000 |
| 5 | 东方电机 | 3×130 | 20 | 10000 |
| 出口
Export | 1 | 东方电机 | 2×1000 | 24 | 3000 |
| 2 | 东方电机 | 2×1000 | 24 | 3000 |
| 3 | 东方电机 | 2×1000 | 24 | 3000 |
| 4 | 东方电机 | 2×1000 | 24 | 3000 |
| 5 | 东方电机 | 2×1000 | 24 | 3000 |

**北京电力设备总厂欢迎国内外各界朋友前来参观访问洽谈业务**

BPEG welcomes friends from home and abroad to visit us and talk over business.