PRODUCTS CATALOGUE

Liaoning MEC Group Co., Ltd.
Introduction

Liaoning MEC Group Co., Ltd. is an integrated group company located in the coastal city of Dalian, China. The government-owned company was established in 1978 and became a shareholding company in 1994. Our group company engages in the business of industrial manufacturing, international trade, logistics, real estate and we also invest in various fields as shareholders of many corporations.

As one of the first-class power equipment suppliers in China, our product line covers flexible AC/DC transmission system, motor frequency converting & energy saving system, control system for new energy, coal mine safety & automation system and etc which can improve power quality, increase power safety level and realize energy saving.

Our products are widely used in various fields such as power generation & transmission, photovoltaic power & wind power generation, petrochemical industry, metallurgy, coal mining, electric railway, shipping industry and etc. Our products have been supplied to many companies all over the world which enjoy high reputations from our customers with high quality and excellent service.

Our advantages:

● Quality Assurance
   -- From the very beginning, MEC ensures quality in every step to achieve the best quality.

● Experience Sharing
   -- With more than 30 years' experience in power industry, MEC brings you an optimized solution.

● Global Service
   -- Wherever you are, MEC global network will support and provide you with value.

● Quick Response
   -- In response to your needs without delay, MEC knows the value of your time.
Flexible AC/DC transmission system

1、Static Var Compensator (SVC)

FUNCTION
Effect solution to: voltage fluctuation, flicker, voltage drop, increased line loss, low transmission capacity, harmonic distortion, low power factor and energy saving

VOLTAGE
6kV / 10kV / 27.5kV / 35kV / 66 kV / 69 kV

CAPACITY
6Mvar - 300Mvar
1. Standardized Variable Frequency Drive

**FUNCTION**
MV motor speed regulation; energy saving

The new generation variable frequency drive has high reliability and 30% less in volume in comparison with those ordinary drives.

2. Shoreside power supply AMP

AMP equipment is used to power supply hotelling ship at berth, providing clean energy and establishing “Green Port”

**PARAMETERS:**

**RATED CAPACITY**
The same capacity of substation at port

<table>
<thead>
<tr>
<th>INPUT VOLTAGE</th>
<th>OUTPUT FREQUENCY RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>6kV/10kV</td>
<td>0 ~ 60Hz</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>OUTPUT VOLTAGE</th>
<th>STRUCTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 ~ 6.6kV/10kV</td>
<td>Fixed Type/Mobile Type with container enclosure</td>
</tr>
</tbody>
</table>
2. Static Synchronous Compensator (STATCOM)

**FUNCTION**
Stabilizing grid voltage, reducing system loss, increasing transmission efficiency, improving transient limit, mitigating harmonics, and energy saving.

**VOLTAGE**
6kV / 10kV / 27.5kV / 35kV

**CAPACITY**
0.5MVA - 200MVA

3. Light DC transmission HVDC

**FUNCTION**
Remote area passive network power supply, island and offshore drilling platform power supply, renewable energy grid connection and so on.

**PARAMETERS:**

**RATED CAPACITY**
10MVA~200MVA

**DC VOLTAGE**
+/-20kV +/-200kV

**TRANSMISSION LENGTH**
40km~100km

**STRUCTURE**
Container Enclosure
3. Power converter for Test station

Applicable Area: Large power motor and transformer

PARAMETERS:

RATED CAPACITY
In accordance with motor and transformer to be tested

INPUT VOLTAGE
6kV/10kV

OUTPUT VOLTAGE
In accordance with the requirements of customer

VARIABLE FREQUENCY RANGE
Motor test station 0~120Hz; Transformer test station 0~200Hz

LOAD TYPE
Synchronous motor, Asynchronous motor, DC motor, Transformer

RUNNING MODE
Four-quadrant

4. Power converter with container enclosure for railways

Applicable Area: Electric railway power supply systems

5. Low Voltage Ride Through (LVRT) Detection Device VSG

To detect the capability of LVRT of wind power generator and photovoltaic generation system

PARAMETERS:

RATED CAPACITY
5000kVA

RATED VOLTAGE
35kV

OUTPUT FREQUENCY
0~60Hz
Photovoltaic Inverter/Wind power converter

Photovoltaic Inverter/Wind Power Converter converts energy from photovoltaic array and wind power generator, and achieves the process of grid connection.

**PARAMETERS:**

**GRID SIDE**

- **RATED CAPACITY**
  690V ±10%/-20%

- **FREQUENCY**
  47.5Hz～52Hz

- **CURRENT THD**
  <5% (satisfies the index under 50% load)

**GENERATOR SIDE**

- **DIRECT DRIVE GENERATOR POWER**
  1.5MW

- **RATED VOLTAGE**
  690V

- **FREQUENCY**
  6Hz～20Hz

- **IP RATING**
  IP54
1. Mine Explosion-Proof & Intrinsical Safe Static Var Generator

**FUNCTION**
Provide reactive power compensation for coal mine power system; energy saving

**VOLTAGE CLASS**
1140V

**POWER CLASS**
300kVar / 500kVar

2. Mine Explosion-Proof & Intrinsical Safe Frequency Converter

**FUNCTION**
Motor speed regulation and soft starting for mine used belt conveyor, fan and pump; energy saving

**VOLTAGE CLASS**
660V / 1140V

**POWER CLASS**
75kW - 400kW
3. Special anti-explosion frequency converter for ventilator

**FUNCTION**
High-concentrated gas control in coal mine; energy saving

**VOLTAGE CLASS**
660V

**POWER CLASS**
Single Machine type  110kW  
Dual Machine type  2×110kW

4. Mine Explosion-Proof & Intrinsical Safe MV Soft Starter

**FUNCTION**
Soft starting and soft braking for underground mining used motors; reduce the impact to grid

**VOLTAGE CLASS**
6kV

**POWER CLASS**
2000kW
1. Solid-state transfer switch

**FUNCTION**
Dual power supply design with automatic switch upon faults ensures the safety of sensitive equipment.

**VOLTAGE CLASS**
- Low voltage: 400V-1500V
- Medium voltage: 7.2 kV-10 kV
- High voltage: 35 kV

**SHUTDOWN CURRENT**
- 20-50kA

**SWITCHING TIME**
- < 5ms

**RECOVERY TIME**
- Approximately zero

2. Fault Current Limiter

**FUNCTION**
Limit short-circuit current so as to protect power equipment.

**VOLTAGE / CURRENT RATING**
- 66kV—500kV / 1000A—9000A

**SHORT-CIRCUIT CURRENT DECAY RATIO (CURRENT-LIMITING IMPEDANCE)**
- Below 40kA or custom design

**RESPONSE TIME**
- 2ms

**RECOVERY TIME**
- Approximately zero
TRT & waste heat power generating system

Top Pressure Recovery Turbine Unit (TRT) generating system

Sinter waste heat generating system

Converter saturated steam generating system

Coke oven waste heat generating system

Pelletizing waste generating system

Converter fume purification (OG) system

Cement kiln low temperature waste heat generating system
DL9006 Active Power Filters target is the harmonic current filtering including zero sequence currents (harmonics multiple of three generated by single phase rectifiers), load current balance across phases and between phases and neutral wire and reactive current compensation.

The operating principle of Active Power Filters is to detect the difference between the required sinus wave and the signal deformed by the effect of the harmonics. Therefore the Active Power Filter injects the difference of currents between both waves.

<table>
<thead>
<tr>
<th>Voltage</th>
<th>380V(-20%~+15%)</th>
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</thead>
<tbody>
<tr>
<td>Rated Current</td>
<td>50A</td>
</tr>
<tr>
<td></td>
<td>100A 150A 200A</td>
</tr>
<tr>
<td></td>
<td>250A 300A</td>
</tr>
<tr>
<td></td>
<td>350A 400A 450A</td>
</tr>
<tr>
<td></td>
<td>500A 550A 600A</td>
</tr>
<tr>
<td>Frequency</td>
<td>50Hz</td>
</tr>
<tr>
<td>Filter Range</td>
<td>2~60rd</td>
</tr>
<tr>
<td>Size(W x D x H mm)</td>
<td>550 x 252.5 x 627.5</td>
</tr>
<tr>
<td></td>
<td>600 x 800 x 2200</td>
</tr>
<tr>
<td></td>
<td>600 x 800 x 2200</td>
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<tr>
<td></td>
<td>(600 x 800 x 2200) x 2</td>
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</tbody>
</table>
Product Category and Utility

According to the basic function, dry-type air-core reactors can be classified as three applications. Connected in series with circuit: the reactance of dry-type air-core can be used to limit the impulse current or fault current which may arise in the circuit, such as damping reactor, series reactor, current-limiting reactor, starting reactor and so on. Connected in parallel with circuit: reactive current generated in the circuit will compensate the capacitive current in the original circuit, such as shunt reactor of electric system, thyristor controlled reactor. Series or parallel with capacitors: Series resonance or parallel resonance will occur when reactors match with capacitors appropriately in a certain frequency. And it will form low impedance or high impedance blocking, such as filter reactor.

6kV/10kV/27.5kV/35kV/66kV  CAPACITY GRADE:  3kvar-62000 kvar

Utility:

Series or parallel with capacitors: Series resonance or parallel resonance will occur when reactors match with capacitors appropriately in a certain frequency. And it will form low impedance or high impedance blocking.

6kV/10kV/27.5kV/35kV/66kV  CAPACITY GRADE:  3kvar-10000 kvar
CONTACT US

LIAONING MEC GROUP CO., LTD.
Add: 28F, World Trade Center, No. 25, Tongxing Street, Dalian, China
Tel: +86-411-39803853/3858/3831/3838
Fax: +86-411-39803309
Email: power@mec.com.cn
Web: www.mec-power.com