

Flexible Busbar

Qingneng Electric





清能电气
QINGNENG ELECTRIC

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1 Introduction

01: Background 02: Advantage 03: Comparison



Background

Flexible copper busbars are versatile electrical components used in power distribution systems, industrial applications, and various equipment. Qingneng combines the excellent electrical and thermal properties of copper with enhanced flexibility, developing and producing ideal products for scenarios where traditional rigid busbars cannot be installed, tailored to different user site requirements.



Polymer Insulation

Using high-molecular-weight epoxy polymer as the insulation material ensures the product's safety performance under high temperature and high humidity.



High-purity Foil

High-purity conductor ensures that the temperature rise remains within a controllable range under higher current carrying capacity, thus maintaining system stability.



Optimized Design

A more rational space design allows customers to connect various functional components more flexibly within a limited space.



Advantage



- High flexibility
- Excellent thermal conductivity
- Vibration and shock resistant
- Highly customization
- Weldable and connectable



Comparison

Traditional Connector

Copper plates/wires as conductors and outer plastic (PVC, heat shrink tubing, rubber, etc.) as insulation material, only ensures the circuit conduction.

Tend to age

Limited transmission power

Rigid installation

Low space utilization

VS

Flexible Busbar

High-quality copper foil, epoxy resin and other polymer insulation materials effectively ensures that the system can operate safely under higher temperatures and humidity conditions.

Long lifetime

Higher power density

Flexible installation

Compact structure

2 Parameter

01: Basic

02: Conductor

03: Plating

04: Insulation





Basic

Item	Characteristics
Conductor	Cu(T2Y2)/Al(1060-H24/1060-H12)
Conductor Thickness (mm)	1.0~12.0
Electroplating	Sn/Ni
Insulation Material	PVC/PE/EVA
Insulation Method	Dip Coating/Heat Shrink
Working Voltage (V)	1500
Temperature Raise (K)	≤40
Ambient Temperature (°C)	-40~+125



Conductor

	Cu	Al
Density (kg/m ³)	8950	2710
Melting Point(K)	1355	932
Resistivity (μΩ·mm)	17.8	26.5
Thermal Conductivity (W/(m·K))	401	237
Specific Heat Capacity (J/(kg·K))	386	900
Expansion Coefficient (ppm/K)	17.5	23.2
Mohs Hardness	3.0	2.75



Plating

	Sn	Ni
Density (kg/m ³)	7300	8902
Melting Point (K)	505	1726
Resistivity (μΩ·mm)	113	68.5
Thermal Conductivity (W/(m·K))	66.8	90.5
Specific Heat Capacity (J/(kg·K))	227	440
Expansion Coefficient (ppm/K)	22	13.4
Mohs Hardness	1.5	4

Notes: Min. Thickness: 5μm



Insulation

Item	Value	Test Method
Dielectric Strength (kV/mm)	>15	ASTM D149
Dielectric Loss (%)	<1	ASTM D150
Dielectric Constant	2.0~3.5	ASTM D150
Volume Resistivity ($\Omega \cdot \text{cm}$)	$>10^{14}$	ASTM D257
Thickness (mm)	1.0-1.5	
Flame Retardance	Pass	UL94/V-0
Withstand Voltage (VDC)	>4000	1min

3 Showcase





Showcase



Distribution Busbar



Dip-coating Busbar



Universal Connection



Multi-layer Busbar

4 Application

01: E-Vehicle

02: New Energy

03: Power Distribution



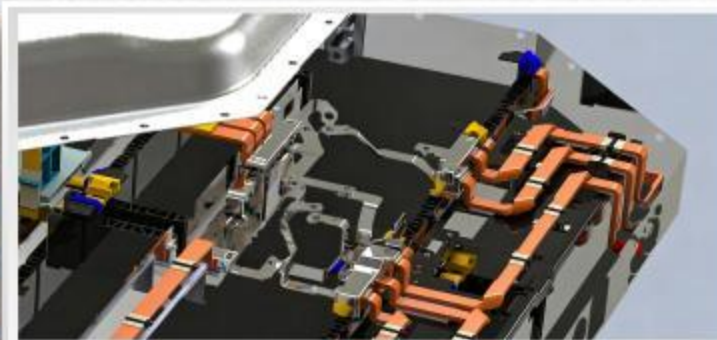


01



Drive System

Compact structure is a crucial aspect and key point of automotive design. Qingneng flexible busbars perfectly solve this user pain point.



02



Cell Contact

Combining conductivity and shock resistance, copper foil current busbars offer unparalleled advantages in battery contact systems.



New Energy



WIND POWER

Achieves optimal electromagnetic compatibility, and greatly reduces power loss during transmission.



HYDROGEN

Applied flexibly in every stage of hydrogen energy, from production and transportation to utilization.

SOLAR POWER

Efficient/reliable electrical solutions for the photovoltaic energy industry, contributing to the development of clean energy.



POWER STORAGE

We optimize the circuit structure to minimize installation difficulty and error probability, gaining a compact system layout with improved space utilization.





Power Distribution



Generation



Substation



Transmission



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The End



Contact



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