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Power Converter Module Solutions



Pingalax Digital Energy Technology Co., Ltd.

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ABOUT PINGALAX

Pingalax Digital Energy Technology Co., Ltd. is a technology enterprise dedicated to the R&D, production, sales and service of products in new energy fields such as electric vehicle charging, power supplies, photovoltaics, and energy storage. PINGALAX is committed to deeply integrating research accumulation in the semiconductor field and digital AIoT technology with the new energy industry, building a more efficient, cleaner, more economical and safer modern energy system, and providing global customers with full-scenario digital energy solutions.

PINGALAX makes layouts on the entire chain of chips, modules, core components, software and system design, and has a well-proportioned and experienced innovative R&D team. As of now, the proportion of the company's R&D personnel exceeds 60%, among which the proportion of masters and doctors exceeds 30%. The company has applied for and obtained hundreds of patents.

PINGALAX's main products include electric vehicle charging equipment, photovoltaic inverters, mobile energy storage power supplies, household and industrial and commercial energy storage systems, etc. The company's core products have successively passed many domestic and foreign authoritative certifications and tests such as TÜV, CNAS, CE, CCC, and UN38.3, and have been sold to more than 30 countries and regions around the world.

PINGALAX has been successively approved as a national high-tech enterprise, a national post-doctoral scientific research workstation, and a national "specialized, refined, peculiar and new" little giant, and has passed certifications such as the IATF16949 automotive industry quality management system, ISO9001 quality management system, and ISO/IEC27001 information security management system.

PINGALAX always adheres to the corporate culture of "customer-centric", adheres to the development concepts of technological innovation, low-carbon intelligent manufacturing, green development, and digital empowerment, adheres to open cooperation, and is willing to jointly develop clean energy technologies with global partners, accelerate the green energy revolution, and build a better future.

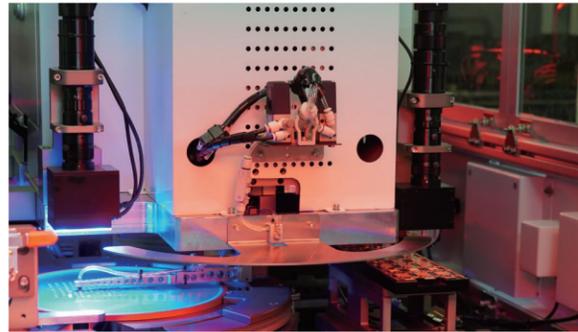
// R&D strength, Scientific innovation

PINGALAX adheres to independent R&D and innovation. We invest a large amount of resources in the entire chain of chips - application end products - system integration - cloud services, builds a complete R&D system, and sets up R&D centers in Chongqing, Shenzhen and Southeast Asia to gather top global talents. In the field of digital energy, we are committed to creating technologies and products with core competitiveness and creating greater value for customers.

◆ Professional chip design



◆ Advanced manufacturing technology



◆ Comprehensive performance testing



◆ Complete R&D process



R&D personnel



Master&PhD

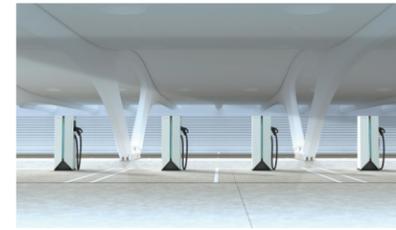


Patent applications



R&D invest

// Main Business



Intelligent charging network



Distributed energy system



Portable&Home energy



New energy application solutions



Digital energy AIoT service

// Our Global Partners



30+



Coverage countries/regions

200+



Global customers

70000+



Product registered users

70000+



Energy terminal connections

30/40 kW Charging Modules

With self-developed SiC MOSFET and SiC SBD, modules' peak efficiency surpass 96.5%. They boast a wide constant power voltage range, high efficiency, high power factor, high power density, efficient heat dissipation and extremely low electromagnetic radiation and interference, which enable our products to meet fast charging needs of various application scenarios and charging in harsh environments.

Application Scenarios

 Different types of standard chargers

 Chargers for electric forklifts and electric tractors

 High voltage electric vehicles

 Chaoji Standard Charging Station



Product Features



High Efficiency

- Use SiC MOSFET and SiC SBD, with peak efficiency > 96%
- Constant power output: 300VDC~1000VDC

High Reliability

- Built-in discharge circuit that automatically releases residual charge to ensure system safety
- Emergency stop feature to quickly respond to emergency situations
- Real-time temperature monitoring to detect internal temperature rise
- Forced air cooling for better heat dissipation

Wide Adaptation

- Wide input voltage: 285VAC~475VAC, three-phase + PE
- Wide output voltage: 200VDC~1000VDC
- Temperature range: -40°C~+75°C

Smart & Convenient

- Digital control solution: Dual DSP design
- Lossless hot-swap: flexible expansion, worry-free maintenance
- Max. Number of parallel modules: 60

SiC Charging Module-GB/T

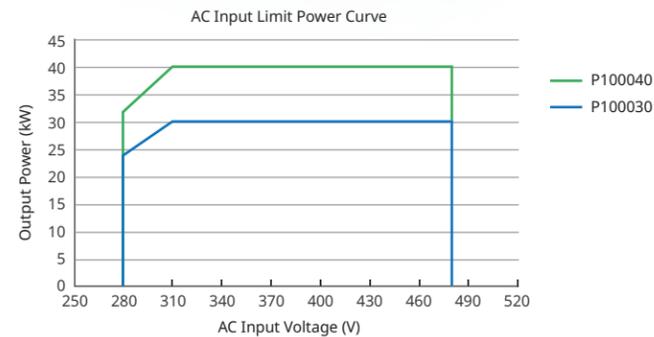
Charge Curve

P100030G1/P100040G1



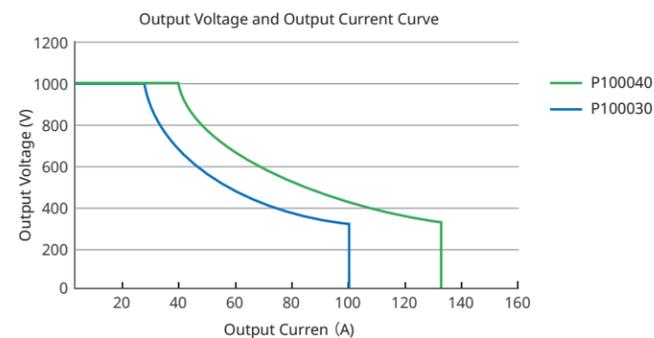
▶▶ Input Power Limit Control

The relationship between the output power of the charging module and the input voltage is shown in the figure. When the input voltage is between 323VAC~475VAC, the module can output the maximum power.



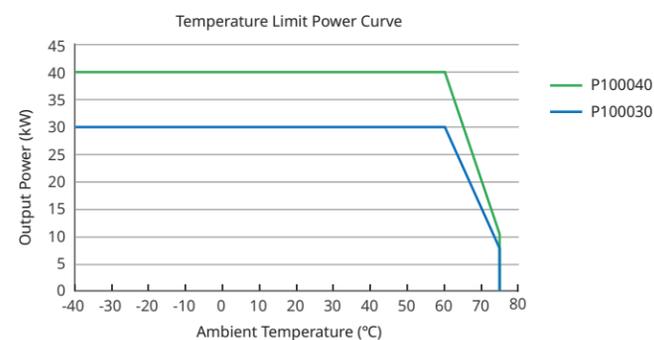
▶▶ Output Constant Power Control

When the rated voltage is input, the P100030 module allows an output power of 30kW, and the P100040 module allows an output power of 40kW. The relationship between the module output voltage and output current is shown in the figure.



▶▶ Temperature-Dependent Power Limitation

Below an ambient temperature of 60°C, the module outputs full power. Above an ambient temperature of 60°C, it is used with derated power, which is segmented linear power limitation. At an ambient temperature of 75°C, the output power of the module drops to 0.



▶▶ Technical Parameters

SiC Charging Module-GB/T

P100030G1/P100040G1

	P100030G1	P100040G1
Basic Specifications		
Dimensions (L×W×H)	459mm×360mm×85mm	
Weight	≈20kg	
Peak Efficiency	>96%	
Standby Power Consumption	<13W	
Cooling Method	Forced Air Cooling	
Communication Method	CAN bus	
Maximum Number of Units in Parallel	≤60	
Indicators	Green: Normal Operation; Yellow: Protection Alarm; Red: Fault Alarm; LED digital display	
Rapid Shutdown Function	Support	
Main Power Devices	SiC MOSFET; SiC SBD	
Input Characteristics		
Input Voltage	285 VAC~475 VAC, 3-phase + PE	
Input Current	<57A	<75A
Grid Frequency	50±5Hz	
Power Factor	≥0.98	
ITHD	≤3%	
Output Characteristics		
Output Voltage	200VDC~1000VDC	
Output Current	0~100A	0~133.3A
Rated Current	30A	40A
Constant Voltage Accuracy	≤±0.5%	
Constant Current Accuracy	≤±1% (for DC output current between 20% and 100% of rated current)	
Current Sharing Imbalance	≤±3%	
Ripple Peak-to-Peak	≤1%	
Environmental Conditions		
Operating Temperature	-40°C~+75°C, derate above 60°C	
Storage Temperature	-40°C~+75°C	
Relative Humidity	≤95% RH, non-condensing	
Altitude	≤2000 m (no derating required), derate above 2000 m	
MTBF	>500,000 hours	

SiC Charging Module-CE

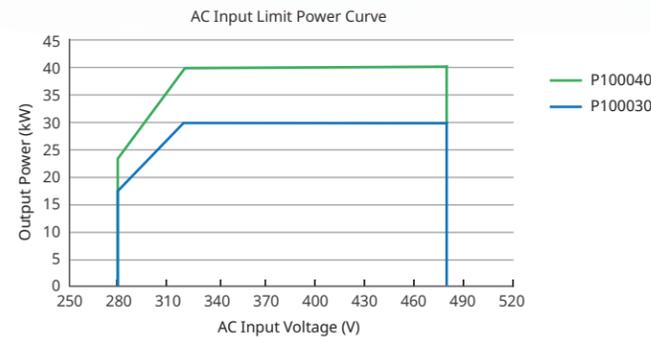
Charge Curve

P100030G2/P100040G2



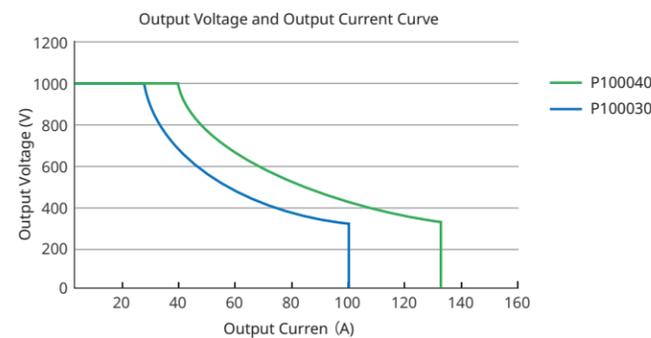
▶▶ Input Power Limit Control

The relationship between the output power of the charging module and the input voltage is shown in the figure. When the input voltage is between 323VAC~475VAC, the module can output the maximum power.



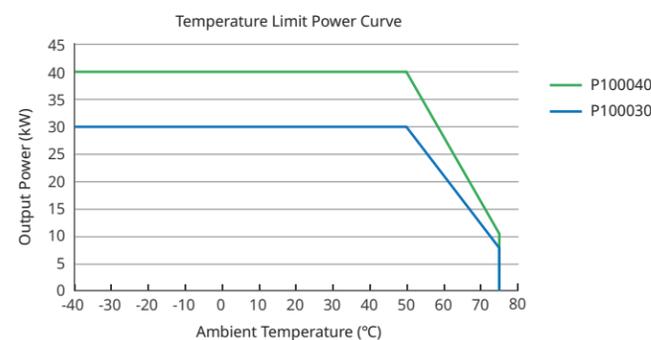
▶▶ Output Constant Power Control

When the rated voltage is input, the P100030 module allows an output power of 30kW, and the P100040 module allows an output power of 40kW. The relationship between the module output voltage and output current is shown in the figure.



▶▶ Temperature-Dependent Power Limitation

Below an ambient temperature of 50°C, the module outputs full power. Above an ambient temperature of 50°C, it is used with derated power, which is segmented linear power limitation. At an ambient temperature of 75°C, the output power of the module drops to 0.



▶▶ Technical Parameters

SiC Charging Module-CE

P100030G2/P100040G2

	P100030G2	P100040G2
Basic Specifications		
Dimensions (L×W×H)	459mm×360mm×85mm	
Weight	≈20kg	
Peak Efficiency	>96%	
Standby Power Consumption	<1W Ultra-Low Standby Power	
Cooling Method	Forced Air Cooling	
Communication Method	CAN bus	
Maximum Number of Units in Parallel	≤60	
Indicators	Green: Normal Operation; Yellow: Protection Alarm; Red: Fault Alarm; LED digital display	
Rapid Shutdown Function	Support	
Main Power Devices	SiC MOSFET; SiC SBD	
Input Characteristics		
Input Voltage	285 VAC~475 VAC, 3-phase + PE	
Input Current	<57A	<75A
Grid Frequency	50±5Hz	
Power Factor	≥0.99	
ITHD	≤3%	
Output Characteristics		
Output Voltage	200VDC~1000VDC	
Output Current	0~100A	0~133.3A
Rated Current	30A	40A
Constant Voltage Accuracy	≤±0.5%	
Constant Current Accuracy	≤±1% (for DC output current between 20% and 100% of rated current)	
Current Sharing Imbalance	≤±3%	
Ripple Peak-to-Peak	≤1%	
Environmental Conditions		
Operating Temperature	-40°C~+75°C, derate above 50°C	
Storage Temperature	-40°C~+75°C	
Relative Humidity	≤95% RH, non-condensing	
Altitude	≤2000 m (no derating required), derate above 2000 m	
MTBF	>500,000 hours	