

UXG1K022

22kW Isolate Bidirectional AC/DC (V2G) Charge-discharge Power Module



UXG1K022 is a bidirectional AC/DC charge-discharge module, featuring a wide constant power voltage range, high efficiency, high power factor, high power density, low electromagnetic radiation and interference, and high reliability. It can be widely used in applications such as Vehicle-to-Grid (V2G), energy storage, retired battery secondary utilization, and production testing equipment.

+ Application scenarios

- V2G charging station
- Residential and commercial distributed energy
- Vehicle-mounted mobile charging and storage
- Smart city energy management

+ Excellent advantages

DC side
operating voltage range of **150-1000_{Vdc}**

Wide constant
power operating range : **300-1000_{Vdc}**

Meet the rapid charge and discharge requirements of various electric vehicles and battery packs.

Suitable for fast charging and discharging in low-voltage scenarios.

High efficiency **97%**

Third-generation semiconductor SiC design, module efficiency up to 97%, can be maintained throughout the operating range of efficient operation, energy saving and environmentally friendly.

Ultra-wide DC voltage range, suitable for various fast charging and discharging scenarios of electric vehicles and battery packs.

EMC **Class B** compliance

Low electromagnetic radiation and strong interference resistance.

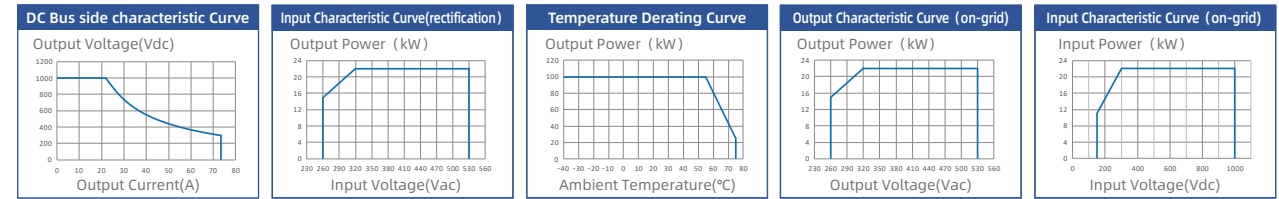
AC side voltage range of **260-530_{Vac}**
with a frequency range of **45-65_{Hz}**

Adaptable to various grid environments.

Ultra-wide AC voltage range, enabling energy interaction between electric vehicles of different voltage levels and the power grid.

+ Key features

- Support bidirectional energy flow between the battery and the grid, facilitating applications such as peak shaving and valley filling for power batteries, as well as grid capacity expansion.;
 - high-frequency transformer inside, ensuring high reliability for bidirectional energy exchange between the battery and the grid;
 - Supports both on/off-grid modes, enabling applications such as V2G and V2L, with quick switching between on&off-grid modes;
 - Support a maximum single-phase output power of 6.6 kVA in off-grid mode;
- Ultra-high full-load operating temperature of 55°C, suitable for applications in various scenarios.;
 - Dual DSP design enables full digital control, with multiple levels of software/hardware protection, ensuring safety and reliability;
 - Fully process, utilized in scenarios with higher pollution levels;
 - High power density of 36W/in³, saving system layout space and reducing costs;



Item		Specifications
Basic Specifaitions	Dimensions	85mm (H) ×300mm (W) ×395mm (D)
	Weight	≤15kg
	Efficiency (full load)	≥96%
	Cooling Mode	Fan cooling
	Communication Bus Protocol	CAN bus
	No. of Parallel Modules	≤60pcs (rectified/on-grid); ≤8pcs (off-grid)
	Indicator	Green: normal operation Yellow: alarm Red: fault
AC Side - Rectified/ on-grid	AC System	3P+PE
	Voltage Range	260Vac ~ 530vac
	Rated Voltage	300Vac/400Vac/480Vac
	Rated Current	33A
	Grid Frequency	45Hz ~ 65Hz, adjustable
	Rated Frequency	50Hz/60Hz
	iTHD	≤5%
AC Side - off-grid	AC System	3P + N + PE
	Voltage Range	323Vac ~ 456Vac
	Rated Voltage	380Vac/400Vac
	Rated Current	33A
	Rated Frequency	50Hz/60Hz
	Output Voltage Phase Angle	<3° at balanced load
	vTHD	<3%
DC Side	Voltage Range	On-grid and Rectification: 150Vdc~1000Vdc; Off-grid: 200Vdc~1000Vdc
	Current Range	Rectification: 0~73.5A; Inversion: 2~78A (adjustable current limit)
	Rated Current	22A @1000V
	Voltage Stabilized Accuracy	<±0.5%
	Current Stabilized Accuracy	≤±1% output load 20% ~ 100% of rated range
	Load Regulation	≤±0.5%
Electrical Isolation Method	Electrical Isolation Method	High Frequency Isolation
Environmental Conditions	Operating Temperature	-40°C ~ +75°C, derating required above 55°C
	Storage Temperature	-40°C ~ +75°C
	Relative Humidity	≤95% RH, non-condensing
	Altitude	No derating@ 2000m. When altitude ≥ 2000m, operating temperature decreases by 1°C for every 100m. The actual altitude value needs to be set @1000m
EMC	MTBF	>500.000 hrs
	Conduction Emission	Class B @ 0.15~30MHZ
	Radiation Emission	Class B @ 30MHZ-1GHZ