

جهاددانشگاهی علم و صنعت، با داشتن بیش از ۳۰ سال فعالیت و تجربه موفق در حوزه الکترونیک قدرت و مرتبط با صنایع حساس و استراتژیک کشور در زمینه طراحی، تولید، ساخت و نصب انواع UPS و باتری شارژرهای صنعتی، رکتیفایرهای جریان بالا یا ولتاژ بالای پر قدرت صنعتی، درایوهای ولتاژ متوسط الکتروموتورهای صنعتی، سیستم‌های رانش قطارهای مترو، همواره استفاده از بهترین تجهیزات و باکیفیت‌ترین قطعات را سرلوحه کار خود قرار داده تا بتواند به بالاترین MTBF دست یابد. این جهاد با در اختیار داشتن نزدیک به ۸۰ نفر متخصص در بخش طراحی و مهندسی، ۱۵۰ نفر تکنسین ماهر و بیش از ۵۰۰۰ متر مربع فضای کارگاهی، افتخار تحویل بیش از ۱۶۰۰ دستگاه در اقصی نقاط کشور را دارد.

یکی دیگر از زمینه‌های جدید فعالیت جهاددانشگاهی، طراحی و تولید انواع اینورترهای خور شیدی مورد نیاز کشور است که با توجه به برنامه‌ریزی‌های دولت برای احداث ۱۱۰۰۰ مگاوات نیروگاه خور شیدی، این جهاد دانشگاهی بومی سازی اینورترهای خور شیدی را که جز مهمترین و استراتژیک ترین تجهیزات یک نیروگاه خور شیدی محسوب می شوند، در دستور کار خود قرار داده است برای این منظور مشخصات فنی این تجهیزات به شرح تجهیزات زیر در این کاتالوگ ارائه می‌شود:

## \* String Inverters:

- 1- JSOL 5K
- 2- JSOL 25K
- 3- JSOL 70K
- 4- JSOL 110K
- 5- JSOL 225K

## \* Central Inverters:

- 6- JSOL 630K
- 7- JSOL 1250K
- 8- JSOL 3150K





<b>Input (PV)</b>		<b>Output (Grid)</b>	
Max PV Input Voltage	550 VDC	Nominal Output Power	5000 W
Nominal PV Input Voltage	380 VDC	Max Output Apparent Power	5500 VA
Startup PV Voltage	80 VDC	Max Output Power	5000 W
MPPT Operation Voltage Range	80 ~ 520 VDC	Nominal Grid Voltage/ Frequency	1/N/PE 230 VAC/50Hz
Max Input Current	13.5/13.5 A	Nominal Output Current	21.7 A
Max Short Circuit Current	20/20 A	Max Output Current	24.3 A
MPPT Number	2	PF at Nominal Power/Range	1 /0.8Lead~0.8Lag
Max Input Strings Number	2	THD	< 3%
<b>General</b>		<b>Protection</b>	
Display	LCD+LED+Bluetooth+APP	Integrated DC Switch	Yes
Communication Port	RS485, Optional: WIFI, 4G	DC Reverse Polarity Protection	Yes
Dimensions (W*H*D)	355*430*152 mm	Anti-Islanding Protection	Yes
Weight	10.8 Kg	Short Circuit Protection	Yes
Self-Consumption (night)	< 1 W	Output Over Current Protection	Yes
Operating Temperature Range	-25 ~ +60°C	DC Surge Protection	Type II
Cooling Method	Natural Cooling	AC Surge Protection	Type II
Max. Operation Altitude	4000 m (Derating above 3000 m)	Insulation Impedance Detection	Yes
Relative Humidity	0 ~ 100%	Residual Leakage Current Detection	Yes
Ingress Protection	IP65	Ground Fault Monitoring	Yes
Topology Structure	Transformer Less	AC Over Voltage Protection	Yes
Type of DC Terminal	MC4 Connector	DC Over Current Protection	Yes
Type of AC Terminal	Quick Connection Plug	Integrated AFCI (DC arc-fault circuit)	Optional
<b>Standard</b>			
Grid Connection Standard	EN 50549-1, IEC 61727, IEC 62116, IEC 61683, UNE 217001, UNE 217002, NTS-631		
Safety/EMC Standard	IEC/EN 62109-1/2, EN IEC61000-6-1/2/3/4, EN/IEC 61000-3-11, EN 61000-3-12		
<b>Efficiency</b>			
Max Efficiency	97.7%		



Input (PV)		Output (Grid)	
Max PV Input Voltage	1100 VDC	Nominal Output Power	25000 W
Nominal PV Input Voltage	620 VDC	Max Output Apparent Power	27500 VA
Startup PV Voltage	200 VDC	Max Output Power	25000 W
MPPT Operation Voltage Range	200 ~ 1000 VDC	Nominal Grid Voltage/ Frequency	3/N/PE 400 VAC/50Hz
Max Input Current	32/32 A	Nominal Output Current	37.8 A
Max Short Circuit Current	40/40 A	Max Output Current	39.8 A
MPPT Number	2	PF at Nominal Power/Range	1 /0.8Lead~0.8Lag
Max Input Strings Number	4	THD	< 3%
General		Protection	
Display	LED+Bluetooth+APP	Integrated DC Switch	Yes
Communication Port	RS485, Optional: WIFI, 4G	DC Reverse Polarity Protection	Yes
Dimensions (W*H*D)	455*462*214 mm	Anti-Islanding Protection	Yes
Weight	25 kg	Short Circuit Protection	Yes
Self-Consumption (night)	< 1 W	Output Over Current Protection	Yes
Operating Temperature Range	-30 ~ +60°C	DC Surge Protection	Type II
Cooling Method	Fan Cooling	AC Surge Protection	Type II
Max. Operation Altitude	4000 m (Derating above 3000 m)	Insulation Impedance Detection	Yes
Relative Humidity	0 ~ 100%	Ground Fault Monitoring	Yes
Ingress Protection	IP66	Residual Leakage Current Detection	Yes
Topology Structure	Transformer Less	Temperature Protection	Yes
Type of DC Terminal	MC4 Connector	Strings Monitoring	Optional
Type of AC Terminal	OT Terminal	Anti-Backflow	Optional
		Integrated AFCI (DC arc-fault circuit)	Optional
		I/V Curve Scanning	Optional
Standard			
Grid Connection Standard	NB/T 32004, EN 50549-1, IEC 61727, IEC 62116, IEC 61683, UNE 217001/2, NTS-631, PSE, PTPIREE, NC RfG		
Safety/EMC Standard	IEC/EN 62109-1/2, EN IEC 61000-6-1/2/3/4, EN IEC 61000-3-11, EN 61000-3-12		
Efficiency			
Max Efficiency	98.5%		



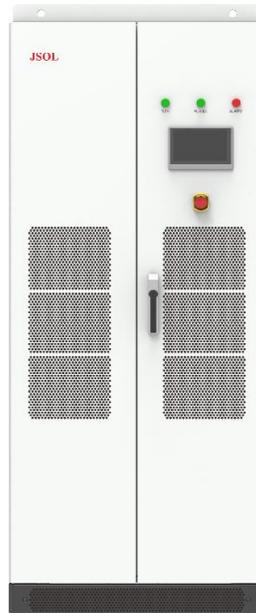
Input (PV)		Output (Grid)	
Max PV Input Voltage	1100 VDC	Nominal Output Power	70000 W
Nominal PV Input Voltage	620 VDC	Max Output Apparent Power	77000 VA
Startup PV Voltage	195 VDC	Max Output Power	70000 W
MPPT Operation Voltage Range	180 ~ 1000 VDC	Nominal Grid Voltage/ Frequency	3/N/PE 400 VAC/50Hz
Max Input Current	5 x 32 A	Nominal Output Current	101 A
Max Short Circuit Current	5 x 50 A	Max Output Current	111.1 A
MPPT Number	5	PF at Nominal Power/Range	>0.99 /0.8Lead~0.8Lag
Max Input Strings Number	10	THD	< 3%
General		Protection	
Display	LED+Bluetooth+APP	Integrated DC Switch	Yes
Communication Port	RS485,Optional:WIFI,4G,PLC	DC Reverse Polarity Protection	Yes
Dimensions (W*H*D)	1007*668*357 mm	Anti-Islanding Protection	Yes
Weight	75 kg	Short Circuit Protection	Yes
Self-Consumption (night)	< 2 W	Output Over Current Protection	Yes
Operating Temperature Range	-30 ~ +60°C	DC Surge Protection	Type II
Cooling Method	Fan Cooling	AC Surge Protection	Type II; Optional:Type I
Max. Operation Altitude	4000 m (Derating above 3000 m)	Insulation Impedance Detection	Yes
Relative Humidity	0 ~ 100%	Ground Fault Monitoring	Yes
Ingress Protection	IP66	Residual Leakage Current Detection	Yes
Topology Structure	Transformer Less	Temperature Protection	Yes
Type of DC Terminal	MC4 Connector	Strings Monitoring	Yes
Type of AC Terminal	OT Terminal	Anti-Backflow	Optional
		Integrated AFCI (DC arc-fault circuit)	Optional
		I/V Curve Scanning	Optional
Standard			
Grid Connection Standard	NB/T 32004, EN50549-1, IEC 61727, IEC 62116		
Safety/EMC Standard	IEC/EN 62109-1/2, EN IEC 61000-6-2/4, EN IEC 61000-3-11, EN 61000-3-12		
Efficiency			
Max Efficiency	98.5%		



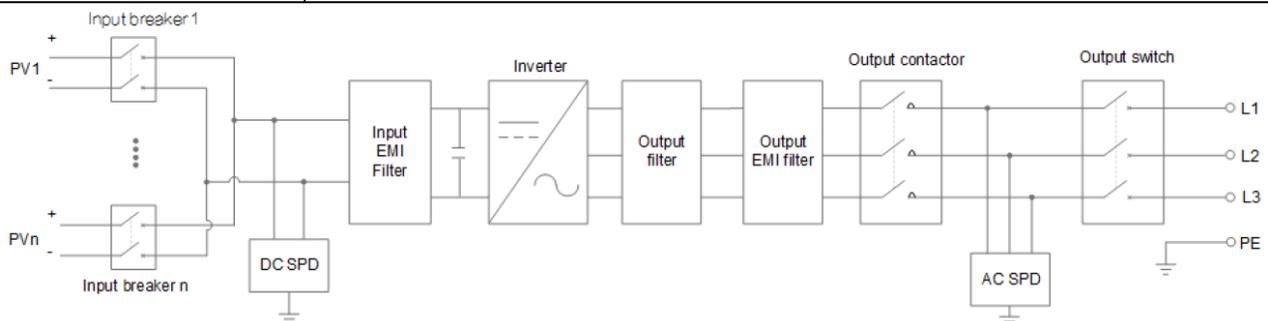
Input (PV)		Output (Grid)	
Max PV Input Voltage	1100 VDC	Nominal Output Power	110000 W
Nominal PV Input Voltage	620 VDC	Max Output Apparent Power	121000 VA
Startup PV Voltage	195 VDC	Max Output Power	110000 W
MPPT Operation Voltage Range	180 ~ 1000 VDC	Nominal Grid Voltage/ Frequency	3/N/PE 400 VAC/50Hz
Max Input Current	10 x 32 A	Nominal Output Current	158.8 A
Max Short Circuit Current	10 x 50 A	Max Output Current	174.6 A
MPPT Number	10	PF at Nominal Power/Range	>0.99 /0.8Lead~0.8Lag
Max Input Strings Number	20	THD	< 3%
General		Protection	
Display	LED+Bluetooth+APP	Integrated DC Switch	Yes
Communication Port	RS485,Optional:WIFI,4G,PLC	DC Reverse Polarity Protection	Yes
Dimensions (W*H*D)	1007*668*357 mm	Anti-Islanding Protection	Yes
Weight	80 kg	Short Circuit Protection	Yes
Self-Consumption (night)	< 2 W	Output Over Current Protection	Yes
Operating Temperature Range	-30 ~ +60°C	DC Surge Protection	Type II
Cooling Method	Fan Cooling	AC Surge Protection	Type II; Optional:Type I
Max. Operation Altitude	4000 m (Derating above 3000 m)	Insulation Impedance Detection	Yes
Relative Humidity	0 ~ 100%	Ground Fault Monitoring	Yes
Ingress Protection	IP66	Residual Leakage Current Detection	Yes
Topology Structure	Transformer Less	Temperature Protection	Yes
Type of DC Terminal	MC4 Connector	Strings Monitoring	Yes
Type of AC Terminal	OT Terminal	Anti-Backflow	Optional
		Integrated AFCI (DC arc-fault circuit)	Optional
		I/V Curve Scanning	Optional
Standard			
Grid Connection Standard	NB/T 32004, EN50549-1, IEC 61727, IEC 62116		
Safety/EMC Standard	IEC/EN 62109-1/2, EN IEC 61000-6-2/4, EN IEC 61000-3-11, EN 61000-3-12		
Efficiency			
Max Efficiency	98.6%		



Input (PV)		Output (Grid)	
Max PV Input Voltage	1500 VDC	Nominal Output Power	225000 W
Nominal PV Input Voltage	1080 VDC	Max Output Apparent Power	247500 VA
Startup PV Voltage	650 VDC	Max Output Power	225000 W
MPPT Operation Voltage Range	500 ~ 1500 VDC	Nominal Grid Voltage/ Frequency	3/N/PE 800 VAC/50Hz
Max Input Current	12 x 30 A	Nominal Output Current	162.4 A
Max Short Circuit Current	12 x 50 A	Max Output Current	178.6 A
MPPT Number	12	PF at Nominal Power/Range	>0.99 /0.8Lead~0.8Lag
Max Input Strings Number	24	THD	< 3%
General		Protection	
Display	LED +APP	Integrated DC Switch	Yes
Communication Port	RS485, Optional: PLC	DC Reverse Polarity Protection	Yes
Dimensions (W*H*D)	1055*700*336 mm	Anti-Islanding Protection	Yes
Weight	110 kg	Short Circuit Protection	Yes
Self-Consumption (night)	< 2 W	Output Over Current Protection	Yes
Operating Temperature Range	-25 ~ +60°C	DC Surge Protection	Type II
Cooling Method	Fan Cooling	AC Surge Protection	Type II
Max. Operation Altitude	4000 m (Derating above 3000 m)	Insulation Impedance Detection	Yes
Relative Humidity	0 ~ 100%	Ground Fault Monitoring	Yes
Ingress Protection	IP66	Residual Leakage Current Detection	Yes
Topology Structure	Transformer Less	Temperature Protection	Yes
Type of DC Terminal	MC4 Connector	Strings Monitoring	Yes
Type of AC Terminal	OT Terminal	Anti-Backflow	Optional
		Integrated AFCI (DC arc-fault circuit)	Optional
		I/V Curve Scanning	Yes
Standard			
Grid Connection Standard	NB/T 32004, EN50549-1, IEC 61727, IEC 62116		
Safety/EMC Standard	IEC/EN 62109-1/2, EN IEC 61000-6-2/4, EN IEC 61000-3-11, EN 61000-3-12		
Efficiency			
Max Efficiency	99.1%		

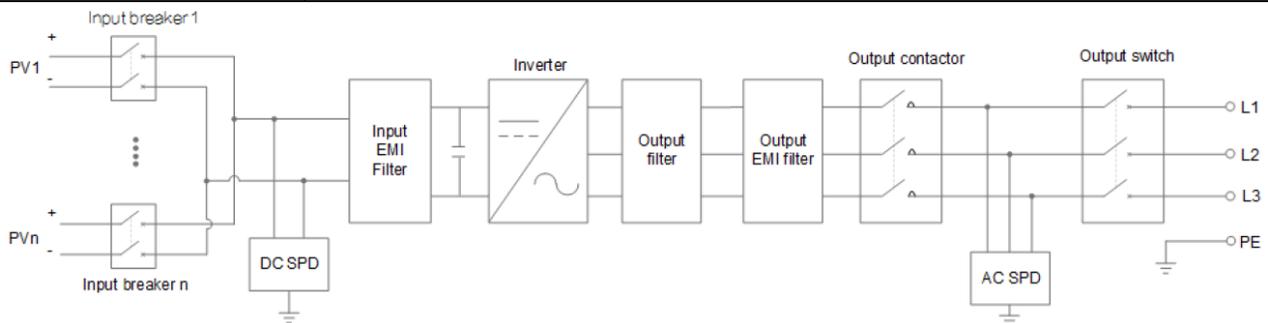


Input (PV)		Output (Grid)	
Max PV Input Voltage	1000 VDC	Nominal Output Power	630000 W
Startup PV Voltage	540 VDC	Max Output Power	693000 W
MPPT Operation Voltage Range	520 ~ 850 VDC	Nominal Grid Voltage/ Frequency	3/N/PE 360 VAC/50Hz
Max Input Current	1350 A	Max Output Current	1111 A
MPPT Number	1	PF at Nominal Power/Range	>0.99 /0.9Lead~0.9Lag
Max Input Strings Number	8	THD	< 3%
General		Protection	
Display	LCD	Input DC Switch	Yes
Communication Port	RS485, Optional: Ethernet	DC Reverse Polarity Protection	Yes
Dimensions (W*H*D)	800*2000*800 mm	Anti-Islanding Protection	Yes
Weight	700 kg	Short Circuit Protection	Yes
Operating Temperature Range	-35 ~ +60°C	Output Over Current Protection	Yes
Cooling Method	Fan Cooling	DC Surge Protection	Type II
Max. Operation Altitude	6000 m (Derating above 3000 m)	AC Surge Protection	Type II
Relative Humidity	0 ~ 95%	Insulation Impedance Detection	Yes
Ingress Protection	IP20	Ground Fault Monitoring	Yes
Topology Structure	Transformer Less	Residual Leakage Current Detection	Yes
Other			
LVRT Function	Yes	Fault Wave Record Diagnosis	Yes
AC Side Parallel Technology	Yes	Online Upgrade	Yes
Anti-PID Function	Optional		
Standard			
Grid Connection Standard	NB/T 32004, EN50549-1, IEC 61727, IEC 62116		
Safety/EMC Standard	IEC/EN 62109-1/2, EN IEC 61000-6-2/4, EN IEC 61000-3-11, EN 61000-3-12		
Efficiency			
Max Efficiency	99 %		





Input (PV)		Output (Grid)	
Max PV Input Voltage	1000 VDC	Nominal Output Power	1250000 W
Startup PV Voltage	540 VDC	Max Output Power	1375000 W
MPPT Operation Voltage Range	520 ~ 850 VDC	Nominal Grid Voltage/ Frequency	3/N/PE 360 VAC/50Hz
Max Input Current	2 x 1350 A	Max Output Current	2222 A
MPPT Number	2	PF at Nominal Power/Range	>0.99 /0.9Lead~0.9Lag
Max Input Strings Number	2 x 8	THD	< 3%
General		Protection	
Display	LCD	Input DC Switch	Yes
Communication Port	RS485, Optional: Ethernet	DC Reverse Polarity Protection	Yes
Dimensions (W*H*D)	2438*2591*1150 mm	Anti-Islanding Protection	Yes
Weight	2800 kg	Short Circuit Protection	Yes
Operating Temperature Range	-35 ~ +60°C	Output Over Current Protection	Yes
Cooling Method	Fan Cooling	DC Surge Protection	Type II
Max. Operation Altitude	6000 m (Derating above 3000 m)	AC Surge Protection	Type II
Relative Humidity	0 ~ 95%	Insulation Impedance Detection	Yes
Ingress Protection	IP54	Ground Fault Monitoring	Yes
Topology Structure	Transformer Less	Residual Leakage Current Detection	Yes
Other			
LVRT Function	Yes	Fault Wave Record Diagnosis	Yes
AC Side Parallel Technology	Yes	Online Upgrade	Yes
Anti-PID Function	Optional		
Standard			
Grid Connection Standard	NB/T 32004, EN50549-1, IEC 61727, IEC 62116		
Safety/EMC Standard	IEC/EN 62109-1/2, EN IEC 61000-6-2/4, EN IEC 61000-3-11, EN 61000-3-12		
Efficiency			
Max Efficiency	99 %		







Input (PV)		Output (Grid)	
Max PV Input Voltage	1500 VDC	Nominal Output Power	3125 KW
Startup PV Voltage	915 VDC	Max Output Power	3438 KW
MPPT Operation Voltage Range	875 ~ 1500 VDC	Nominal Grid Voltage/ Frequency	3/N/PE 600 VAC/50Hz
Max Input Current	2 x 1350 A	Max Output Current	3458 A
MPPT Number	2	PF at Nominal Power/Range	>0.99 /0.8Lead~0.8Lag
Max Input Strings Number	2 x 16	THD	< 3%
General		Protection	
Display	LCD	Input DC Switch	Yes
Communication Port	RS485, Ethernet	DC Reverse Polarity Protection	Yes
Dimensions (W*H*D)	2150*2260*1190 mm	Anti-Islanding Protection	Yes
Weight	2700 kg	Short Circuit Protection	Yes
Operating Temperature Range	-35 ~ +60°C	Output Over Current Protection	Yes
Cooling Method	Fan Cooling	DC Surge Protection	Type II
Max. Operation Altitude	5000 m (Derating above 3000 m)	AC Surge Protection	Type II
Relative Humidity	0 ~ 95%	Insulation Impedance Detection	Yes
Ingress Protection	IP55	Ground Fault Monitoring	Yes
Topology Structure	Transformer Less	Residual Leakage Current Detection	Yes
Other			
LVRT Function	Yes	Fault Wave Record Diagnosis	Yes
AC Side Parallel Technology	Yes	Online Upgrade	Yes
Anti-PID Function	Optional	Night SVG Function	Optional
Standard			
NB/T32004-2018, Q/GDW1617-2015, GB/T37408-2019, CNCA/CTS0002-2014, IEC62109-1, IEC62109-2, EN61000-6-2, EN61000-6-4, IEC61727, IEC62116, IEC60068, IEC60529, IEC61683			
Efficiency			
Max Efficiency	99.02 %		

