

# Certificate of Conformity

Certificate Number: CN-PV-230058

On the basis of the tests undertaken, the sample<s> of the below product have been found to comply with the requirements of the referenced specification<s>/standard<s> at the time the tests were carried out. It does not imply that Intertek has performed any surveillance or control of the manufacture(s). The manufacturer(s) shall ensure that the manufacturing process assures compliance of the production units with the examined products mentioned in this certificate.

<b>Applicant:</b>	Shenzhen SOFARSOLAR Co., Ltd. 11/F., Gaoxinqi Technology Building, No.67 Area, Xingdong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, China
<b>Product:</b>	Hybrid Inverter
<b>Ratings &amp; Principle Characteristics:</b>	See appendix of Certificate of Conformity
<b>Model:</b>	HYD 5KTL-3PH, HYD 6KTL-3PH, HYD 8KTL-3PH, HYD 10KTL-3PH, HYD 10KTL-3PH -A, HYD 15KTL-3PH, HYD 20KTL-3PH
<b>Brand Name&lt;s&gt;:</b>	
<b>Product Complies with:</b>	Ordinul ANRE Nr. 208/14.12.2018 For the approval of the Technical Regulation concerning the technical requirements for connection to electricity networks of public interest for generating modules, power plants consisting of generating modules and power plants consisting of offshore generating modules (offshore) Type approval for type B
<b>Certificate Issuing Office Name &amp; Address:</b>	Intertek Testing Services Ltd. Shanghai West Area, 2 <sup>nd</sup> Floor, No. 707, Zhangyang Road China (Shanghai) Pilot Free Trade Zone, Shanghai, P. R. China
<b>Test Report No.&lt;s&gt;:</b>	221010047GZU-001

Additional information in Appendix.



**Signature**

**Certification Manager: Grady Ye**

**Date: 28 February 2023**

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## APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-230058.

Model	HYD 5KTL-3PH	HYD 6KTL-3PH	HYD 8KTL-3PH
PV Input data			
Max. PV Input Voltage	1000Vdc		
Max. PV current	12.5 A*2		
Max. PV Isc	15.0 A*2		
AC output/Input data			
Rated output power [VA]	5000	6000	8000
Max. Input power for charging battery /Output apparent power[VA]	5500	6600	8800
Nominal voltage	230 Vac		
Max. input/Rated output current [a.c.A]	15.0/7.2	17.0/8.7	24.0/11.6
Nominal Frequency	50/60 Hz		
Power Factor range	0.8 Leading ~ 0.8 Lagging		
EPS output data			
Rated output apparent power	5500VA	6600VA	8800VA
Nominal AC output voltage	230 Vac		
Nominal AC Frequency	50/60 Hz		
Max. output current	8.0A	10.0A	13.0A
Battery data			
Battery voltage range	180 – 800 Vdc		
Max continuous charging current	25A/25A		
Max continuous discharging current	25A/25A		
Type of battery	Lithium-ion & Lead-acid		
Ingress Protection	IP65		
Protective Class	Class I		
Operating temperature range	-30°C - +60°C		
FW Version	V2.00		

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## APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-230058.

Model	HYD 10KTL-3PH HYD 10KTL-3PH-A	HYD 15KTL-3PH	HYD 20KTL-3PH
PV Input data			
Max. PV Input Voltage	1000Vdc		
Max. PV current	2*25.0 A		
Max. PV Isc	2*30.0 A		
AC output/Input data			
Rated output power [VA]	10000	15000	20000
Max. Input power for charging battery /Output apparent power[VA]	11000 for model HYD 10KTL-3PH 10000 for model HYD 10KTL-3PH-A	16500	22000
Nominal voltage	230Vac		
Max. input/Rated output current [a.c.A]	29.0/14.5	44.0/21.7	58.0/29.0
Nominal Frequency	50/60 Hz		
Power Factor range	0.8 Leading ~ 0.8 Lagging		
EPS output data			
Rated. output apparent power	11000 for model HYD 10KTL-3PH 10000 for model HYD 10KTL-3PH-A	16500VA	22000VA
Nominal AC output voltage	230 Vac		
Nominal AC Frequency	50/60Hz		
Max. output current	16.0A	24.0A	32.0A
Battery data			
Battery voltage range	180 – 800 Vdc		
Max continuous charging current	25A/25A		
Max continuous discharging current	25A/25A		
Type of battery	Lithium-ion & Lead-acid		
Ingress Protection	IP65		
Protective Class	Class I		
Operating temperature range	-30°C - +60°C		
FW Version	V2.00		

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# Certificate of Conformity

Certificate Number: CN-PV-230601

On the basis of the tests undertaken, the sample<s> of the below product have been found to comply with the requirements of the referenced specification<s>/standard<s> at the time the tests were carried out. It does not imply that Intertek has performed any surveillance or control of the manufacture(s). The manufacturer(s) shall ensure that the manufacturing process assures compliance of the production units with the examined products mentioned in this certificate.

<b>Applicant:</b>	Shenzhen SOFARSOLAR Co., Ltd. 11/F., Gaoxinqi Technology Building, No.67 Area, Xingdong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, China.
<b>Product:</b>	Hybrid inverter
<b>Ratings &amp; Principle Characteristics:</b>	See appendix of Certificate of Conformity
<b>Model:</b>	HYD 5KTL-3PH, HYD 6KTL-3PH, HYD 8KTL-3PH, HYD 10KTL-3PH, HYD 10KTL-3PH-A, HYD 15KTL-3PH, HYD 20KTL-3PH
<b>Brand Name&lt;s&gt;:</b>	
<b>Product Complies with:</b>	EN 50549-1: 2019, Requirements for generating plants to be connected in parallel with distribution networks Part 1: Connection to a LV distribution network - Generating plants up to and including Type B Compliant with COMMISSION REGULATION (EU) 2016/631 (NC RfG) Type approval for type B and with deviations according to the national network and interface protection for Portugal, Netherlands, Poland, Turkey, and Finland
<b>Certificate Issuing Office Name &amp; Address:</b>	Intertek Testing Services Ltd. Shanghai West Area, 2 <sup>nd</sup> Floor, No. 707, Zhangyang Road China (Shanghai) Pilot Free Trade Zone, Shanghai, P. R. China  Accredited by ACCREDIA in accordance with ISO/IEC 17065:2012
<b>Test Report No.&lt;s&gt;:</b>	231013140GZU-003, 24 Oct 2023

Additional information in Appendix.



Signature

**Certification Manager: Grady Ye**  
**Date: 01 November 2023**



PRD N° 306B

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## APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-230601.

Model	HYD 5KTL-3PH	HYD 6KTL-3PH	HYD 8KTL-3PH	HYD 10KTL-3PH HYD 10KTL-3PH-A	HYD 15KTL-3PH	HYD 20KTL-3PH
PV Input data						
Max. PV Input Voltage	1000Vdc					
Max. PV current	16.0 A*2			32.0 A*2		
Max. PV Isc	22.5 A*2			45.0 A*2		
AC output/Input data						
Rated output power [VA]	5000	6000	8000	10000	15000	20000
Max. Input power for charging battery /Output apparent power[VA]	5500	6600	8800	11000 for model HYD 10KTL-3PH 10000 for model HYD 10KTL-3PH-A	16500	22000
Nominal voltage	3W/N/PE 230/400Vac					
Max. input current [a.c.A]	14.5A	17.4A	23.2A	29.0A	43.5A	58.0A
Rated output current [a.c.A]	7.2A	8.7A	11.6A	14.5A	21.7A	29.0A
Nominal Frequency	50/60 Hz					

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## APPENDIX: Certificate of Conformity

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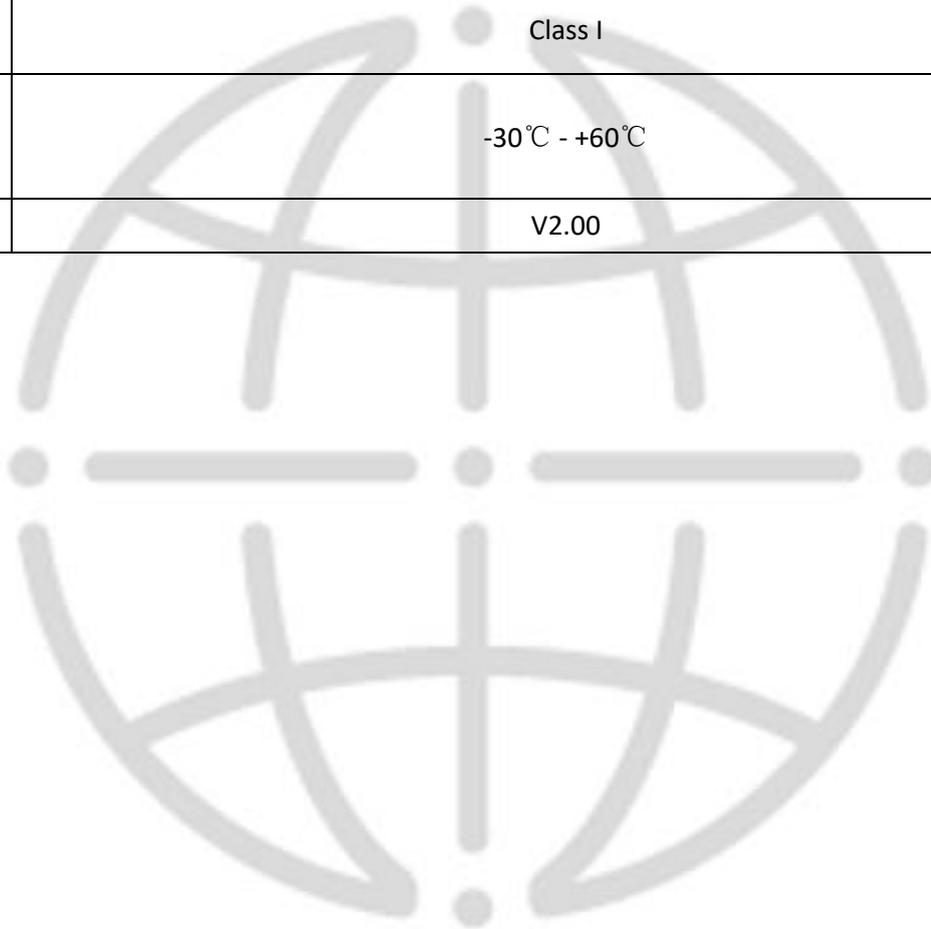
Power Factor range	0.8 Leading ~ 0.8 Lagging					
EPS output data						
Max. output apparent power	5500VA	6600VA	8800VA	11000 for model HYD 10KTL-3PH 10000 for model HYD 10KTL-3PH-A	16500VA	22000VA
Nominal AC output voltage	3W/N/PE 230/400Vac					
Nominal AC Frequency	50/60 Hz					
Max. output current	8.0A	9.6A	12.8A	15.9A for HYD 10KTL-3PH 14.5A for HYD 10KTL-3PH-A	23.9A	31.9A
Battery data						
Battery voltage range	180 – 800 Vdc					
Max continuous charging current	25A			25/25A		
Max continuous discharging current	25A			25/25A		

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## APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-230601

Type of battery	Lithium-ion & Lead-acid
Ingress Protection	IP65
Protective Class	Class I
Operating temperature range	-30°C - +60°C
FW Version	V2.00



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## APPENDIX: Certificate of Conformity

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Interface protection settings according to EN 50549-1:2019			
Parameter	Max. disconnection time	Min. operate time	Trip value
Undervoltage threshold stage 1 [27 < ]	100s	0.1s (0.1 s steps)	Trip value Config. from 0.2 to 1 Un (0.01 Un steps)
Undervoltage threshold stage 2 [27 << ]	5s	0.1s (0.05 s steps)	Trip value Config. from 0.2 to 1 Un (0.01 Un steps)
Overvoltage threshold stage 1 [59 > ]	100s	0.1s (0.1 s steps)	Trip value Config. from 1.0 to 1.2 Un (0.01 Un steps)
Overvoltage threshold stage 2 [59 >> ]	5s	0.1s (0.05 s steps)	Trip value Config. from 1.0 to 1.3 Un (0.01 Un steps)
Overvoltage 10 min mean protection	Trip time Config ≤ 3s not adjustable Time delay setting = 0 ms		Trip value Config. from 1.0 to 1.15Un (0.01 Un steps)
Underfrequency threshold stage 1 [81 < ]	100s	0.1s (0.1s steps)	Trip value Config. from 47.0 to 50.0Hz (0.1Hz steps)
Underfrequency threshold stage 2 [81 << ]	5s	0.1s (0.05 s steps)	Trip value Config. from 47.0 to 50.0Hz (0.1Hz steps)
Overfrequency threshold stage 1 [81 > ]	100s	0.1s (0.1s steps)	Trip value Config. from 50.0 to 52.0Hz (0.1Hz steps)
Overfrequency threshold stage 2 [81 >> ]	5s	0.1s (0.05 s steps)	Trip value Config. from 50.0 to 52.0Hz (0.1Hz steps)
Starting to and reconnection settings for voltage	50%-120% adjustable, 85%Un ≤ U ≤ 1.10Un default		
Starting to generate electrical power	47Hz – 52Hz adjustable, 49.5Hz ≤ U ≤ 50.1Hz default		
Reconnection settings for frequency	47Hz – 52Hz adjustable, 49.5Hz ≤ U ≤ 50.2Hz default		
Observation time	10s-60s adjustable, 60s default		
Active power increase gradient	6%-3000%/min adjustable, 10%/min default		
Permanent DC injection	0.5% of rated inverter output		
Loss of mains according to EN 62116	Within 2s		

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