

Certificate of Conformity

No. ESY 120194 0007 Rev. 01

Holder of Certificate: **Shanghai Sieyuan Watten Technology Co., Ltd.**

Room 306, Building 1, HuaNing Road - No.3399
Minhang District
201108 Shanghai
PEOPLE'S REPUBLIC OF CHINA

Product: **PV inverter**
Hybrid Inverter

This Certificate of Conformity confirms the compliance with the above listed standards on a voluntary basis. It refers only to the sample submitted to TÜV SÜD Product Service GmbH and does not certify the quality or safety of the serial products. It was issued according to TÜV SÜD Product Service certification program Photovoltaics and Grid Integration. For details see: www.tuvsud.com/ps-cert

Test report no.: 5040923019202-01

Date, 2023-08-09



(Zhengdong Ma)

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Model(s): SiH-5kW-TH, SiH-6kW-TH, SiH-8kW-TH, SiH-10kW-TH,
 SeH-5kW-TH, SeH-6kW-TH, SeH-8kW-TH, SeH-10kW-TH,
 StH-5kW-TH, StH-6kW-TH, StH-8kW-TH, StH-10kW-TH.

Technical Certifier (Zhengdong Ma) appointed by Certification Body TÜV SÜD Product Service GmbH performed assessment of the products listed in this certification in the place: Ridlerstraße 65, 80339 Munich, Germany.

<p>Test requirement</p>	<p>The certification complies with the requirements of the following documents for Type A PGM installations:</p> <p>EN 50549-1:2019 Wymagania dla instalacji wytwórczych przeznaczonych do równoległego przyłączenia do publicznych sieci dystrybucyjnych -- Część 1: Przyłączenie do sieci dystrybucyjnej nN -- Instalacje wytwórcze aż do typu B włącznie <i>(EN: 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)</i></p> <p>RfG:2016 Rozporządzenie Komisji (UE) 2016/631 z dnia 14 kwietnia 2016 r. ustanawiające kodeks sieci dotyczący wymogów w zakresie przyłączenia jednostek wytwórczych do sieci (Dz.U. UE L 112/1 z 27.4.2016) <i>(EN: Commission Regulation (EU) 2016/631 of 14 April 2016 establishing a network code on requirements for the connection of generating units to the Network (OJ EU L 112/1 of 27.4.2016))</i></p> <p>NC RfG:2018 Wymogi Ogólnego Stosowania wynikające z rozporządzenia komisji UE 2016/631 z dnia 14 kwietnia 2016 r. ustanawiającego kodeks sieci dotyczący wymogów w zakresie przyłączenia jednostek wytwórczych do sieci (NC RfG, 2018) - zatwierdzone Decyzją Prezesa Urzędu Regulacji Energetyki DRE.WOSE.7128.550.2.2018.ZJ z dnia 2 stycznia 2019 r. <i>(EN: General applicability requirements resulting from EU commission regulation 2016/631 of of 14 April 2016 establishing a network code concerning the requirements for with regard to the connection of generating units to the grid (NC RfG-2018)- approved by the Decision of the President of the Energy Regulatory Office DRE.WOSE.7128.550.2.2018.ZJ dated 2 January 2019.)</i></p> <p>PTPiREE:2021 Warunki i procedury wykorzystania certyfikatów w procesie przyłączenia modułów wytwarzania energii do sieci elektroenergetycznych V1.2 <i>(EN: Conditions and procedures for the use of certificates in the process of connecting modules generation modules to the power grid V1.2)</i></p>
<p>Type of certification programme</p>	<p>1(a) according to EN ISO/IEC 17067</p> <p>Based on Photovoltaics and Grid Integration Certification Program (Revision 6, Dated 5 Dec 2021) for Poland Grid Code</p>
<p>Manufacturer & Address of manufacturing site</p>	<p>Shanghai Sieyuan Watten Technology Co., Ltd. Room 306, Building 1, HuaNing Road - No.3399 Minhang District 201108 Shanghai PEOPLE'S REPUBLIC OF CHINA</p>
<p>Software version</p>	<p>MDSP: 01.003, SDSP: 01.001, ARM: 01.002</p>
<p>Certificate expiry date</p>	<p>2028-08-06</p>

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Parameters:

Models	SiH-5kW-TH	SiH-6kW-TH	SiH-8kW-TH	SiH-10kW-TH
PV Input Parameters				
Absolute Max. Voltage	1000 Vd.c.			
MPPT Voltage Range	150 - 950 Vd.c.	200 - 950 Vd.c.		
Rated Operating Voltage	600 Vd.c.			
Max. Input Current	16 / 16 Ad.c.			16 / 32 Ad.c.
Isc PV	20 / 20 Ad.c.			20 / 40 Ad.c.
AC Output Parameters				
Rated Power	5000 W	6000 W	8000 W	10000 W
Max. Apparent Power	5500 W	6600 W	8800 W	11000 W
Rated Output Current	7.6 Aa.c.	9.1 Aa.c.	12.1 Aa.c.	15.2 Aa.c.
Max. Output Current	8.4 Aa.c.	10 Aa.c.	13.3 Aa.c.	16.7 Aa.c.
Rated Voltage	3/N/PE, 230/400 V			
Rated Frequency	50 Hz			
Power Factor	-0.8 ... +0.8			
Battery Input Port Parameters				
Battery type	Li-ion			
Battery voltage	150...600Vd.c			
Max. continuous current	30Ad.c.(charge/discharge)			
Max charge power	7500 W	9000W	10600 W	10600 W
Max. discharge power	6000 W	7200 W	10600 W	10600 W
AC Input Parameters				
Rated input voltage	3/N/PE, 230/400 V			
Max. AC input current	18.9 Aa.c.	22.7 Aa.c.	28.2 Aa.c.	31.2 Aa.c.
Rated grid frequency	50Hz			

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Models	SeH-5kW-TH	SeH-6kW-TH	SeH-8kW-TH	SeH-10kW-TH
PV Input Parameters				
Absolute Max. Voltage	1000 Vd.c.			
MPPT Voltage Range	150 - 950 Vd.c.	200 - 950 Vd.c.		
Rated Operating Voltage	600 Vd.c.			
Max. Input Current	16 / 16 Ad.c.			16 / 32 Ad.c.
Isc PV	20 / 20 Ad.c.			20 / 40 Ad.c.
AC Output Parameters				
Rated Power	5000 W	6000 W	8000 W	10000 W
Max. Apparent Power	5500 W	6600 W	8800 W	11000 W
Rated Output Current	7.6 Aa.c.	9.1 Aa.c.	12.1 Aa.c.	15.2 Aa.c.
Max. Output Current	8.4 Aa.c.	10 Aa.c.	13.3 Aa.c.	16.7 Aa.c.
Rated Voltage	3/N/PE, 230/400 V			
Rated Frequency	50 Hz			
Power Factor	-0.8 ... +0.8			
Battery Input Port Parameters				
Battery type	Li-ion			
Battery voltage	150...600Vd.c			
Max. continuous current	30Ad.c.(charge/discharge)			
Max charge power	7500 W	9000W	10600 W	10600 W
Max. discharge power	6000 W	7200 W	10600 W	10600 W
AC Input Parameters				
Rated input voltage	3/N/PE, 230/400 V			
Max. AC input current	18.9 Aa.c.	22.7 Aa.c.	28.2 Aa.c.	31.2 Aa.c.
Rated grid frequency	50Hz			

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Models	StH-5kW-TH	StH-6kW-TH	StH-8kW-TH	StH-10kW-TH
PV Input Parameters				
Absolute Max. Voltage	1000 Vd.c.			
MPPT Voltage Range	150 - 950 Vd.c.	200 - 950 Vd.c.		
Rated Operating Voltage	600 Vd.c.			
Max. Input Current	16 / 16 Ad.c.			16 / 32 Ad.c.
Isc PV	20 / 20 Ad.c.			20 / 40 Ad.c.
AC Output Parameters				
Rated Power	5000 W	6000 W	8000 W	10000 W
Max. Apparent Power	5500 W	6600 W	8800 W	11000 W
Rated Output Current	7.6 Aa.c.	9.1 Aa.c.	12.1 Aa.c.	15.2 Aa.c.
Max. Output Current	8.4 Aa.c.	10 Aa.c.	13.3 Aa.c.	16.7 Aa.c.
Rated Voltage	3/N/PE, 230/400 V			
Rated Frequency	50 Hz			
Power Factor	-0.8 ... +0.8			
Battery Input Port Parameters				
Battery type	Li-ion			
Battery voltage	150...600Vd.c			
Max. continuous current	30Ad.c.(charge/discharge)			
Max charge power	7500 W	9000W	10600 W	10600 W
Max. discharge power	6000 W	7200 W	10600 W	10600 W
AC Input Parameters				
Rated input voltage	3/N/PE, 230/400 V			
Max. AC input current	18.9 Aa.c.	22.7 Aa.c.	28.2 Aa.c.	31.2 Aa.c.
Rated grid frequency	50Hz			

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Scope of assessment and results

Clause of RfG	Requirement	Type A	Type B	Type C	Type D	Assessment Result
Article 13.1 (a)	Frequency range	Y	-	-	-	Pass
Article 13.1 (b)	Ability to withstand the rate of change of frequency (RoCoF)	Y	-	-	-	Pass
Article 13.2	Limited frequency sensitive mode — overfrequency (LFSM-O)	Y	-	-	-	Pass
Article 13.4 & 13.5	Maximum power capability reduction with falling frequency	Y	-	-	-	Pass
Article 13.6	Remote ceasing active power	Y	-	-	-	Pass
Article 13.7	Automatic connection to the network	Y	-	-	-	Pass

Applicable standards:

EN 50549-1:2019/AC:2019
RfG:2016
NC RfG:2018
PTPiREE:2021