ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

DAkkS Deutsche Akkreditierungsstelle D-ZE-11321-01-00

TÜV SÜD Product Service

Certificate of Conformity

No. ESY 115067 0037 Rev. 00

Holder of Certificate:

Xiamen Kehua Digital Energy Tech Co., Ltd.
Room 208-38, Hengye Building
No. 100 Xiangxing Road
Torch High-tech Zone
(Xiangan) Industrial Zone
361115 Xiamen
PEOPLE'S REPUBLIC OF CHINA

Product:

Converter (Energy Storage Inverter)

Model(s):

iStoragE3 5K, iStoragE3 6K, iStoragE3 8K, iStoragE3 10K, iStoragE3 12K

Parameters:

See page 3-4

Applicable standards:

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

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.: 64290223111201

Date, 2022-09-28

(Billy Qiu)

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Technical Certifier (Billy Qiu) 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.

Test requirement	The certification complies with the requirements of the following documents for Type A PGM installations: EN 50549-1:2019/AC:2019 Wymagania dla instalacji wytwórczych przeznaczonych do równoległego przyłączania do publicznych sieci dystrybucyjnych -- Część 1: Przyłączanie do sieci dystrybucyjnej nN -- Instalacje wytwórcze aż do typu B włącznie *(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)* 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) *(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))* 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. *(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.)* PTPiREE:2021 Warunki i procedury wykorzystania certyfikatów w procesie przyłączenia modułów wytwarzania energii do sieci elektroenergetycznych V1.2 *(EN: Conditions and procedures for the use of certificates in the process of connecting modules generation modules to the power grid V1.2)*
Type of certification programme	1(a) according to EN ISO/IEC 17067 Based on Photovoltaics and Grid Integration Certification Program (Revision 6,Dated 5 Dec 2021) for Poland Grid Code
Manufacturer & Address of manufacturing site	Xiamen Kehua Digital Energy Tech Co., Ltd. Room 208-38, Hengye Building, No. 100 Xiangxing Road, Torch High-tech Zone, (Xiangan) Industrial Zone 361115 Xiamen, PEOPLE'S REPUBLIC OF CHINA
Software version	The software version: V1 and the hardware version: V1
Certificate expiry date	2027-09-22

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Parameters:

Model	iStoragE3 5K	iStoragE3 6K	iStoragE3 8K	iStoragE3 10K	iStoragE3 12K
PV terminal parameters					
Vmax. PV	1000 Vd.c.	1000 Vd.c.	1000 Vd.c.	1000 Vd.c.	1000 Vd.c.
MPPT Voltage Range	150 Vd.c.~ 900 Vd.c.	150 Vd.c.~ 900 Vd.c.	150 Vd.c.~ 900 Vd.c.	150 Vd.c.~ 900 Vd.c.	150 Vd.c.~ 900 Vd.c.
MPPT Voltage Range (full load)	450 Vd.c.~ 750 Vd.c.	450 Vd.c.~ 750 Vd.c.	450 Vd.c.~ 750 Vd.c.	450 Vd.c.~ 750 Vd.c.	450 Vd.c.~ 750 Vd.c.
Max. continuous PV input current	16 Ad.c./ 16 Ad.c.	16 Ad.c./ 16 Ad.c.	27 Ad.c./ 16 Ad.c.	27 Ad.c./ 16 Ad.c.	27 Ad.c./ 16 Ad.c.
Isc PV	20 Ad.c./ 20 Ad.c.	.20 Ad.c./ 20 Ad.c.	34 Ad.c./ 20 Ad.c.	34 Ad.c./ 20 Ad.c.	34 Ad.c./ 20 Ad.c.
Max. continuous PV input power	23000 W	23000 W	29000 W	29000 W	29000 W
Battery terminal parameter					
Battery type	LFP	LFP	LFP	LFP	LFP
Voltage range	650 Vd.c.~ 900 Vd.c.	650 Vd.c.~ 900 Vd.c.	650 Vd.c.~ 900 Vd.c.	650 Vd.c.~ 900 Vd.c.	650 Vd.c.~ 900 Vd.c.
Rated voltage	720 Vd.c.	720 Vd.c.	720 Vd.c.	720 Vd.c.	720 Vd.c.
Maximum charge/discharge current	24.6 Ad.c.*/ 8.5 Ad.c.	24.6 Ad.c.*/ 10.2Ad.c.	24.6Ad.c.*/ 13.5Ad.c.	24.6Ad.c.*/ 16.9Ad.c.	24.6Ad.c.*/ 18.5Ad.c.
Maximum charge current from grid to battery	8.5 Ad.c.	10.2 Ad.c.	13.5 Ad.c.	16.9 Ad.c.	18.5 Ad.c.
Maximum charge/discharge power	16000 W*/ 5500 W	16000 W*/ 6600 W	16000 W*/ 8800 W	16000 W*/ 11000 W	16000 W*/ 12000W
Maximum charge power from grid to battery	5500 W	6600 W	8800 W	11000 W	12000 W
Grid terminal parameter					
Rated voltage	230/400 Va.c., 3W+N+PE				
Rated frequency	50 Hz				
Rated current output to Grid	7.2 Aa.c.	8.7 Aa.c.	11.6 Aa.c.	14.5 Aa.c.	17.4 Aa.c.
Maximum continuous current output to Grid	7.9 Aa.c.	9.6 Aa.c.	12.8 Aa.c.	16.0 Aa.c.	17.4 Aa.c.
Rated active power output to Grid	5000 W	6000 W	8000 W	10000 W	12000 W
Maximum apparent power output to Grid	5500 VA	6600 VA	8800 VA	11000 VA	12000 VA
Maximum continuous current from Grid	14.4 Aa.c.	17.4 Aa.c.	23.2 Aa.c.	26.0 Aa.c.	26.0 Aa.c.

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Maximum apparent power from Grid	10000 VA	12000 VA	16000 VA	18000 VA	18000 VA
Power factor (Cos phi), adjustable	0.8 leading to 0.8 lagging				
Back up load terminal parameter					
Rated voltage	230/400 Va.c., 3W+N+PE				
Rated frequency	50 Hz				
Rated output Current	7.2 Aa.c.	8.7 Aa.c.	11.6 Aa.c.	14.5 Aa.c.	17.4 Aa.c.
Maximum continuous output current	7.9 Aa.c.	9.6 Aa.c.	12.8 Aa.c.	16.0 Aa.c.	17.4 Aa.c.
Maximum continuous output power	5500 VA	6600 VA	8800 VA	11000 VA	12000 VA
Power factor (Cos phi), adjustable	0.8 leading to 0.8 lagging				
Remark: *: The maximum charge current (24.6 Ad.c.) and power (16000 W) only in PV+Grid supply to battery.					

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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 & 14.4	Automatic connection to the network	Y	-	-	-	Pass

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