

Certificate of Conformity

Certificate Number: CN-PVES-240316

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.

Applicant: REFU Elektronik GmbH

Marktstrasse 185, 72793 Pfullingen, Germany

Product: Solar Grid-tied Inverter

Ratings & Principle See appendix of Certificate of Conformity Characteristics:

Model: REFUsol 25K-3T, REFUsol 30K-3T, REFUsol 33K-3T, REFUsol 36K-3T

REFUSOI 40K-4T, REFUSOI 45K-4T, REFUSOI 50K-4T

Brand Name<s>: REFUsol

Product Complies with: 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

Type approval for type B

Certificate Issuing Office Intertek Testing Services Ltd. Shanghai

Name & Address: West Area, 2nd 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

Test Report No.<s>: 240618134GZU-001, 27 June 2024

According to Annex H of the standard EN 50549-1:2019, generating plants compliant with the clauses of this European Standard are considered to be compliant with the relevant Article of COMMISSION REGULATION (EU) 2016/631, provided that all settings as provided by the DSO and the responsible party are complied with. Additional information in Appendix.

Signature

Certification Manager: Grady Ye

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Date: 08 July 2024

ACCREDIA 5

PRD N° 306B

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APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PVES-240316

Model	REFUsol	REFUsol	REFUsol	REFUsol	REFUsol	REFUsol	REFUsol	
	25K-3T	30K-3T	33K-3T	36K-3T	40K-4T	45K-4T	50K-4T	
DC Input	•							
Max. input		1100) \/	1100 V				
voltage	1100 V				1100 V			
MPPT			777	1200				
operating	180 V~1100 V				180 V~1100 V			
voltage								
range								
Max. input	- 100	3*4(ΩΑ	4*40A				
current								
Max. PV Isc	M	3*50	DA	4*50A				
AC Output	111	- 10			10.			
Nominal grid	3/N/PE,380/400 Vac							
voltage	3/14/FL,380/400 Val							
Nominal grid	50Hz/60Hz							
frequency	30112/00112							
Nominal								
Output	25 kW	30 kW	33 kW	36 kW	40 kW	45 kW	50 kW	
Power	10.							
Max. Output	28 kVA	34 kVA	37 kVA	40 kVA	44 kVA	50 kVA	55 kVA	
Power	20 KV/	34 1071	37 KV/	40 KV/	44 KV/	30 KV/	33 KV/	
Max. Output	42.4 A	51.5 A	56.0 A	60.6A	66.7 A	75.8 A	83.3 A	
Current	72.77	31.37.				, 5.5 / (33.371	
Power factor	1(adjustable +/-0.8)							
General Data		O 1				G		
Safety level	Class I							
Ingress	IP 65							
Protection								
Operation								
Ambient	-30°C - 60°C							
Temperature								
Topology	Transformerless							

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Interface protection settings	according to EN 50549-1:20	19			
Parameter	Max. disconnection time	Min. operate time	Trip value		
Undervoltage threshold	100s	0.1s	Trip value Config. from 0.2		
stage 1 [27 <]		(0.1 s steps)	to 1 Un		
			(0.01 Un steps)		
Undervoltage threshold	5s	0.1s	Trip value Config. from 0.2		
stage 2 [27 <<]		(0.05 s steps)	to 1 Un		
			(0.01 Un steps)		
Overvoltage threshold	100s	0.1s	Trip value Config. from 1.0		
stage 1 [59 >]		(0.1 s steps)	to 1.2 Un		
		\ \\	(0.01 Un steps)		
Overvoltage threshold	5s	0.1s	Trip value Config. from 1.0		
stage 2 [59>>]		(0.05 s steps)	to 1.3 Un		
		- 10	(0.01 Un steps)		
Overvoltage 10 min mean	Trip time Config	≤ 3s not adjustable	Trip value Config. from 1.0		
protection	Time delay	setting = 0 ms	to 1.15Un		
			(0.01 Un steps)		
Underfrequency threshold	100s	0.1s	Trip value Config. from		
stage 1 [81 <]		(0.1s steps)	47.0 to 50.0Hz		
			(0.1Hz steps)		
Underfrequency threshold	5s	0.1s	Trip value Config. from		
stage 2 [81 <<]	10	(0.05 s steps)	47.0 to 50.0Hz		
	W .		(0.1Hz steps)		
Overfrequency threshold	100s	0.1s	Trip value Config. from		
stage 1 [81 >]	The second	(0.1s steps)	50.0 to 52.0Hz		
- 1			(0.1Hz steps)		
Overfrequency threshold	5s	0.1s	Trip value Config. from		
stage 2 [81 >>]	. 1	(0.05 s steps)	50.0 to 52.0Hz		
	b. Vi. I	1 // /	(0.1Hz steps)		
Starting to and reconnection	settings for voltage	50%-120% adjustable, 85%Un≤ U≤1.10Un default			
Starting to generate electric	al power	47Hz – 52Hz adjustable, 49.5Hz≤ U≤50.1Hz default			
Reconnection settings for fre	equency	47Hz – 52Hz adjustable, 49.5Hz≤ U≤50.2Hz default			
Observation time		10s-60s adjustable, 60s default			
Active power increase gradie	ent	6%-3000%/min adjustable, 10%/min default			
Permanent DC injection		0.5% of rated inverter output			
Loss of mains according to E	N 62116	Within 2s			

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