



# Certificate of Conformity

**Certificate No.:** 1988AP1109N001003  
**Equipment:** PV Grid Inverter  
**Brand Name:** **REFU**sol  
**Test Model No.:** REFUsol 20K-2T, REFUsol 25K-2T,  
REFUsol 30K-2T, REFUsol 33K-2T  
**Applicant:** REFU Elektronik GmbH  
Marktstrasse 185, 72793 Pfullingen, Germany  
**Report No.:** 190502828RT-3, PV190308N051, PV190308N051-1, PV190308N051-2

## Use in accordance with regulations:

The inverters are tested for functional safety, grid protection, specified environmental influences and efficiency. For detailed information, please watch the corresponding test reports.

## Applied rules and standards

IEC 60068-2-1:2007	Environmental testing – Part 2-1: Tests – Test A: Cold
IEC 60068-2-2:2007	Environmental testing – Part 2-2: Tests – Test B: Dry heat
IEC 60068-2-14:2009	Environmental testing – Part 2-14: Tests – Test N: Change of temperature
IEC 60068-2-30:2005	Environmental testing – Part 2-30: Tests – Test Db and guidance: Damp heat, cyclic (12 + 12-hour cycle)
IEC 61683:1999	Photovoltaic systems – Power conditioners – Procedure for measuring efficiency
IEC 61727:2004	Characteristics of the utility interface
IEC 62116:2014	Islanding prevention measures for utility-interconnected photovoltaic inverters

**Name: James Huang**  
**Technical Manager/ New Energy Team**  
**Date: 2020-01-17**

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# Certificate of Conformity

**Certificate No.:** 1988AP1109N001001  
**Equipment:** PV Grid Inverter  
**Brand Name:**   
**Test Model No.:** REFUsol 20K-2T, REFUsol 25K-2T,  
REFUsol 30K-2T, REFUsol 33K-2T  
**Applicant:** REFU Elektronik GmbH  
Marktstrasse 185, 72793 Pfullingen, Germany  
**Report No.:** LD190308N051

The submitted sample of the above equipment has been tested for CE marking according to following European Directive and standards:

- Low Voltage Directive 2014/35/EU.

The referred test report(s) show that the product complies with standard(s) recognized as giving presumption of compliance with the essential requirements in the specified European Directive.

This verification does not imply assessment of the production of the product. The CE marking may be affixed if all relevant and effective European Directives with CE are applicable.

## Applied rules and standards

### EN 62109-1:2010

Safety of power converters for use in photovoltaic power systems – Part 1: General requirements

### EN 62109-2:2011

Safety of power converters for use in photovoltaic power systems –  
Part 2: Particular requirements for inverters





**Name: James Huang**  
**Technical Manager/ New Energy Team**  
**Date: 2020-01-17**

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# Manufacturer's Declaration



KoE-R-19016

Manufacturer	REFU Elektronik GmbH Marktstraße 185 72793 Pfullingen Germany		
Inverter Type	REFU <sub>sol</sub> 25K-2T (850P025) REFU <sub>sol</sub> 33K-2T (850P033) REFU <sub>sol</sub> 50K-3T (851P050)		
<p>The products listed above that are manufactured by REFU Elektronik GmbH are in compliance with Brazil's Associação Brasileira de Normas Técnicas</p> <p><b>ABNT NBR 16149:2013</b> Sistemas Fotovoltaicos (FV) - Características da interface de conexão com a rede elétrica de distribuição</p> <p><b>ABNT NBR 16150:2013</b> Sistemas Fotovoltaicos (FV) - Características da interface de conexão com a rede elétrica de distribuição - Procedimentos de ensaios de conformidade</p> <p><b>ABNT NBR IEC 62116:2012</b> Procedimentos de ensaios de anti - ilhamento para inversores de sistemas fotovoltaicos conectados a rede elétrica</p> <p>The requirements of the ABNT NBR norms are fulfilled by setting the following grid codes: 28 – <i>Brasil (380 V)</i> 34 – <i>Brasil (220 V)</i></p>			
Pfullingen	Valid from 2019-12-18	i.A. 	i.A. 
location	date	Christian Buchholz Head of Product Management	Ronald Kiebler Head of Testing Department

We reserve the right to make changes in the conformity declaration. Presently applicable edition can be obtained upon request.



# Conformity Declaration





REFU Elektronik GmbH  
Marktstraße 185, 72793 Pfullingen / Germany

KoE-NE-20002

The following electronic devices comply with the EC-directives and guidelines:

- Directive 2014/35/EU Electrical equipment designed for use within certain voltage limits
- Directive 2014/30/EU Electromagnetic compatibility directive

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Type	Photovoltaic inverter REFUsoI 20K-2T (850P020) REFUsoI 25K-2T (850P025) REFUsoI 33K-2T (850P033)		
Safety			
IEC 62109-1:2010	Safety of power converters for use in photovoltaic power systems - Part 1: General requirements		
IEC 62109-2:2011	Safety of power converters for use in photovoltaic power systems - Part 2: Particular requirements for inverters		
EMC-Compatibility - Immunity			
EN 61000-6-2:2005	Electromagnetic Compatibility (EMC) Part 6-2: Generic Standards - Immunity for industrial environments		
EMC-Compatibility - Emission			
EN 61000-3-12:2011	Electromagnetic Compatibility (EMC) - Part 3-12: Limits - Limits for harmonic currents produced by equipment connected to public low voltage systems with input current between 16A and 75A per phase		
EN 61000-3-11:2001	Electromagnetic Compatibility (EMC) - Part 3-11: Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems; Equipment with rated current <= 75 A and subject to conditional connection		
EN 61000-6-4:2007 + A1:2011	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments		
Pfullingen	Valid from 2020-01-23		
location	date	Christian Buchholz Head of Product Management	Ronald Kiebler Head of Hardware R&D

We reserve the right to make changes in the conformity declaration. Presently applicable edition can be obtained upon request.





## ATTESTATION of conformity with European Directives

Attestation Number: **2088AB0224N005001**  
Product: **PV Grid Inverter**  
Brand Name: **REFU<sup>sol</sup>**  
Model: **REFU<sup>sol</sup> 33K-2T, REFU<sup>sol</sup> 20K-2T**  
Additional Model: **REFU<sup>sol</sup> 30K-2T, REFU<sup>sol</sup> 25K-2T**  
Applicant: **REFU Elektronik GmbH.**  
Address: **Marktstrasse 185, 72793 Pfullingen, Germany**  
Technical Characteristics: **DC input: 230-960V**  
**AC output: 380V / 400V 45-65Hz**

The submitted sample of the above equipment has been tested for **CE** marking according to following European Directive and following standards:

- Electromagnetic Compatibility Directive 2014/30/EU

Standards	Report Number	Report date
EN 61000-6-3:2007 + A1:2011 + AC:2012 EN 61000-3-11:2000 EN 61000-3-12:2011 EN 61000-6-2:2005	CE200224N005	Mar. 05, 2020

The referred test report(s) show that the product complies with standard(s) recognized as giving presumption of compliance with the essential requirements in the specified European Directive.

This verification does not imply assessment of the production of the product. The **CE** marking may be affixed if all relevant and effective European Directives with **CE** are applicable.

Assistant Manager  
EMC Department



Name: **Madison Luo**  
Date: **Mar. 05, 2020**

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