CERTIFICATE

Applicant: **Upower Electric Co, Ltd**
Room 401, A Building Huafeng Intelligence Valley-Yuanshan Hi-tech Park, No.62 Yinhe Road, He'ao Community, Yuanshan Street, Longgang District, Shenzhen, Guangdong China

Product: **Hybrid Inverter with integrated automatic disconnection device between a generator and the public low-voltage grid**

Model: **UHC-4KT, UHC-5KT, UHC-6KT, UHC-8KT, UHC-10KT, UHC-12KT, UHC-10KT-40, UHC-12KT-40, UHC-15KT, UHC-20KT**

Intended use:

Hybrid inverter in accordance with EN 50549-1 with three-phase parallel coupling to the distribution network. The automatic disconnection device is an integral part of the aforementioned inverter.

Applied standards and guidelines:

SOP-9-1_15 GCC Certification Program, 09/21
Based on:
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

The generating plant(s) are also considered to be compliant with the relevant Articles of Commission Regulation (EU) 2016/631 of 14 April 2016 establishing a network code on requirements for grid connection of generators (NC RfG), provided, that all settings as provided by the DSO and the responsible party are complied with.

The safety concept of an aforementioned representative products corresponds at the time of issue of this certificate to the valid safety specifications for the specified use in accordance with regulations.

The models are certified for power plant type A. The Power response to over frequency according to figure 10 is not implemented

Report No: **220422BW002-EG-EU-001-R1**
Test report from Guangdong HuaChuang Technology Service Co., Ltd., A2LA accredited Cert #5200.02

Certificate No: 22-375-00

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Raphael Rader
Certification Engineer

kiwa certified
GRID CODE COMPLIANCE EN 50549-1

Default interface protection settings:

Parameter	Trip value [U_n or Hz]		Trip time [s]	
	Setting	Measured	Time delay Setting	Measured operate + opening time
	L-N	L-N	L-N	L-N
Overvoltage threshold stage 2 [59>>]	264,5	263,5	0,2	0,178
Overvoltage threshold stage 1 [59>]	253,0	252,6	3,0	2,849
Overvoltage 10 min mean protection*	1,10	253	0,0	453
Undervoltage threshold stage 1 [27<]	195,5V	194,6	1,5	1,343
Undervoltage threshold stage 2 [27<<]	-	-	-	-
Overfrequency threshold stage 2 [81>>]	-	-	-	-
Overfrequency threshold stage 1 [81>]	51,00	51,99	0,5	0,438
Underfrequency threshold stage 1 [81<]	47,50	47,49	0,5	0,441
Underfrequency threshold stage 2 [81<<]	-	-	-	-

Note: *tripping time for the voltage step from 1,00 Un to 1,12 Un

The products fulfill the following requirements according to EN 50549-1:2019:

Requirements:EN 50549-1:2019	Assessment / Remark
4.4 Normal operating range	Pass
4.5 Immunity to disturbances	Pass
4.6 Active response to frequency deviation	Pass*
4.7 Power response to voltage variations and voltage changes	Pass
4.8 EMC and power quality	Pass
4.9 Interface protection	Pass
4.10 Connection and starting to generate electrical power	Pass
4.11 Ceasing and reduction of active power on set point	Pass
4.12 Remote information exchange	Pass
4.13 Requirements regarding single fault tolerance of interface protection system and interface switch	Pass
* The Power response to over frequency according to figure 10 is not implemented	