Certificate of compliance

Applicant:	**NingBo Deye Inverter Technology Co., Ltd.** No. 26 South YongJiang Road, Daqi, Beilun, NingBo, **China**
Product:	**Photovoltaic (PV) and battery inverter**
Model:	**SUN-3.6K-SG03LP1-EU** **SUN-5K-SG03LP1-EU**

Use in accordance with regulations:

Automatic disconnection device with single-phase mains surveillance in accordance with EN50549-1:2019 for systems with a single-phase parallel coupling via an inverter in the public mains supply. The automatic disconnection device is an integral part of the aforementioned inverter.

Applied rules and standards:

EN 50549-1:2019, I.S. EN 50549-1:2019
Requirements for parallel connection of installations with distribution networks - Part 1: Connection to an LV distribution network - Production of installations up to and including Type B
4.4 Normal operating range
4.5 Immunity to disturbances
4.6 Active response to frequency deviation
4.7 Power response to voltage variations and voltage changes
4.8 EMC and power quality
4.9 Interface protection
4.10 Connection and starting to generate electrical power
4.11 Ceasing and reduction of active power on set point
4.13 Requirements regarding single fault tolerance of interface protection system and interface switch

EN 50438:2013, I.S. EN 50438:2013
Requirements for micro-generating plants to be connected in parallel with public low-voltage distribution networks

DIN V VDE V 0126-1-1:2006 (4.1 Functional safety)
Automatic disconnection device between a generator and the public low-voltage grid

Commission Regulation (EU) 2016/631 of 14 April 2016
Establishing a network code on requirements for grid connection of generators (NC RFG).
Type approval for generation units to use in Type A plants.

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

Report number:	**ASUE-ESH-P22030298**	**Certification Program:**	**NSOP-0032-DEU-ZE-V01**
Certificate number:	**U22-0179**	**Date of issue:**	**2022-03-31**

Certification body

Thomas Lammel

DAkkS Deutsche Akkreditierungsstelle D-ZE-12024-01-00

Certification body Bureau Veritas Consumer Products Services Germany GmbH accreditation to DIN EN ISO/IEC 17065

Testing laboratory accredited according to DIN EN ISO/IEC 17025

A partial representation of the certificate requires the written approval of Bureau Veritas Consumer Products Services Germany GmbH

Appendix

Extract from test report according to EN 50549-1 **Nr. ASUE-ESH-P22030298**

Type Approval and declaration of compliance with the requirements of EN 50549-1.				
Manufacturer / applicant:	NingBo Deye Inverter Technology Co., Ltd. No. 26 South YongJiang Road, Daqi, Beilun, NingBo, China			
Micro-generator Type	Photovoltaic (PV) and battery inverter			
	SUN-3.6K-SG03LP1-EU	SUN-5K-SG03LP1-EU	--	--
MPP DC voltage range [V]	150-425	150-425	--	--
Input DC voltage range [V]	370 Vdc (125-500)	370 Vdc (125-500)	--	--
Input DC current [A]	13/13	13/13	--	--
Output AC voltage [V]	220/230, 50/60Hz	220/230, 50/60Hz	--	--
Output AC current [A]	15,7	21,7	--	--
Output power [W]	3600	5000	--	--
Battery DC voltage range [V]	48 Vdc (40-60)	48 Vdc (40-60)	--	--
Battery charge current [A]	90	120	--	--
Battery discharge current [A]	90	120	--	--
Firmware version	Beginning with Ver2131			

Description of the structure of the power generation unit:

The power generation unit is equipped with a PV and line-side EMC filter. The power generation unit has no galvanic isolation between DC input and AC output. Output switch-off is performed with single-fault tolerance based on two series-connected relays in each line and neutral. This enables a safe disconnection of the power generation unit from the network in case of error.

Note:

[a] Over voltage – stage1: 10 min-mean-value corresponding to EN 50160.

The settings of the interface protection are password protected adjustable in the stated range above.

In case the above stated generators are used with an external protection device, the protection settings of the inverters are to be adjusted according to the manufacturer's declaration.

The above stated generators are tested according to the requirements in the EN 50549-1:2019. Any modification that affects the stated tests must be named by the manufacturer/supplier of the product to ensure that the product meets all requirements of the EN 50549-1:2019.