Certificate of compliance

Applicant:	**NingBo Deye Inverter Technology Co., Ltd.** No. 26 South YongJiang Road, Daqi, Beilun, NingBo **China**
Product:	**Photovoltaic and battery inverter (Hybrid-Inverter)**
Model:	**SUN-14K-SG05LP3-EU-SM2, SUN-15K-SG05LP3-EU-SM2, SUN-16K-SG05LP3-EU-SM2, SUN-18K-SG05LP3-EU-SM2, SUN-20K-SG05LP3-EU-SM2**

The device is designed to work as a generation unit of the type: A

Inverter for three-phase parallel connection to the public grid. The network monitoring and disconnection device is an integral part of the above-mentioned model.

Applied rules and standards:

EN 50549-1:2019/A1:2023
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 50549-10:2022
Requirements for generating plants to be connected in parallel with distribution networks - Part 10: Tests for conformity assessment of generating units

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-P24100559**
Certificate number: **U24-1188**
Certification Program: **NSOP-0032-DEU-ZE-V10**
Date of issue: **2024-12-06**

Certification body

Domenik Koll
Head of Energy Systems Germany

Accreditation

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

Accredited certification body by Deutsche Akkreditierungsstelle GmbH (DAkkS) according to ISO/IEC 17065. The accreditation is valid only for the scope listed in the annex of the accreditation certificate D-ZE-12024-01-00. The Deutsche Akkreditierungsstelle GmbH (DAkkS) is signatory of the multilateral arrangements of EA, ILAC and IAF for mutual recognition.

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Type Approval and declaration of compliance with the requirements of EN 50549-1 and Commission Regulation (EU) 2016/631 of 14 April 2016				
Manufacturer	**NingBo Deye Inverter Technology Co., Ltd.** No. 26 South YongJiang Road, Daqi, Beilun, NingBo **China**			
Product type	Photovoltaic and battery inverter (Hybrid-Inverter)			
Static converter model	**SUN-14K-SG05LP3-EU-SM2**	**SUN-15K-SG05LP3-EU-SM2**	**SUN-16K-SG05LP3-EU-SM2**	**SUN-18K-SG05LP3-EU-SM2**
Input DC (photovoltaic)				
MPP voltage range [V]	160-650	160-650	160-650	160-650
Max. input voltage [V]	800	800	800	800
Max. input current per MPPT [A]	36+36	36+36	36+36	36+36
Input DC (battery)				
DC voltage range [V]	40-60	40-60	40-60	40-60
Max. DC voltage [V]	60	60	60	60
Max. DC current per DC input [A]	260	280	300	330
Output AC				
Rated AC voltage [V]	3L/N/PE, 230/400V, 50Hz	3L/N/PE, 230/400V, 50Hz	3L/N/PE, 230/400V, 50Hz	3L/N/PE, 230/400V, 50Hz
Rated output current [A]	20,3	21,8	23,2	26,1
Max. output current [A]	22,4	24,0	25,6	28,7
Nom. converter output (P_{NINV}) [W]	14000	15000	16000	18000
Max. apparent power [VA]	15400	16500	17600	19800
Static converter model	**SUN-20K-SG05LP3-EU-SM2**	--	--	--
Input DC (photovoltaic)				
MPP voltage range [V]	160-650	--	--	--
Max. input voltage [V]	800	--	--	--
Max. input current per MPPT [A]	36+36	--	--	--
Input DC (battery)				
DC voltage range [V]	40-60	--	--	--
Max. DC voltage [V]	60	--	--	--
Max. DC current per DC input [A]	350	--	--	--
Output AC				
Rated AC voltage [V]	3L/N/PE, 230/400V, 50Hz	--	--	--
Rated output current [A]	29,0	--	--	--
Max. output current [A]	31,9	--	--	--
Nom. converter output (P_{NINV}) [W]	20000	--	--	--
Max. apparent power [VA]	22000	--	--	--

Interface protection system and interface switch (Network and system protection "NS-protection")	
Type of protection	Integrated NS-protection
Assigned to generation unit type	SUN-14K-SG05LP3-EU-SM2, SUN-15K-SG05LP3-EU-SM2, SUN-16K-SG05LP3-EU-SM2, SUN-18K-SG05LP3-EU-SM2, SUN-20K-SG05LP3-EU-SM2
Integrated interface switch	Type of switching equipment 1: Relay (Model CHAR-112A90EA)
	Note: The output is switched off by the inverter bridge and one relay in series in each line and neutral.
Firmware version	1076

Note

The settings of the interface protection are password protected adjustable.

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 Commission Regulation (EU) 2016/631 of 14 April 2016. 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.