Certificate of compliance

Applicant:	**NingBo Deye Inverter Technology Co., Ltd.** No. 26 South YongJiang Road, Daqi, Beilun, NingBo, **China**
Product:	**Photovoltaic (PV) inverter**
Model:	**SUN-15K-G05, SUN-12K-G05, SUN-10K-G05,** **SUN-9K-G05, SUN-8K-G05, SUN-7K-G05,** **SUN-6K-G05, SUN-5K-G05, SUN-4K-G05,** **SUN-3K-G05, SUN-3K-G05-1,** **SUN-15K-G05-P, SUN-12K-G05-P, SUN-10K-G05-P,** **SUN-9K-G05-P, SUN-8K-G05-P, SUN-7K-G05-P,** **SUN-6K-G05-P, SUN-5K-G05-P, SUN-4K-G05-P,** **SUN-3K-G05-P, SUN-3K-G05-1-P**

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
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

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 and Type B 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-P22010035**	**Certification Program:**	**NSOP-0032-DEU-ZE-V01**
Certificate number:	**U22-0207**	**Date of issue:**	**2022-06-03**

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

Annex to the EN 50549-1 certificate of compliance No. U22-0207

Appendix

Extract from test report according to EN 50549-1 **No. ASUE-ESH-P22010035**

Type Approval and declaration of compliance with the requirements of EN 50549-1 and Commission Regulation (EU) 2016/631 of 14 April 2016				
Manufacturer / applicant	NingBo Deye Inverter Technology Co., Ltd. No. 26 South YongJiang Road, Daqi, Beilun, NingBo, China			
Micro-generator Type	Photovoltaic inverter			
	SUN-15K-G05-P	SUN-12K-G05-P	SUN-10K-G05-P	SUN-9K-G05-P
MPP DC voltage range [V]	200-850	200-850	120-850	120-850
Max. DC voltage [V]	1000	1000	1000	1000
Input DC current [A]	20/26	20/20	20/20	20/20
Output AC voltage [V]	230/400,3L/N/PE, 50/60Hz	230/400,3L/N/PE, 50/60Hz	230/400,3L/N/PE, 50/60Hz	230/400,3L/N/PE, 50/60Hz
Output AC current [A]	23,9	19,1	15,9	14,3
Output power [VA]	15	12	10	9
	SUN-8K-G05-P	SUN-7K-G05-P	SUN-6K-G05-P	SUN-5K-G05-P
MPP DC voltage range [V]	120-850	120-850	120-850	120-850
Max. DC voltage [V]	1000	1000	1000	1000
Input DC current [A]	20/20	20/20	20/20	20/20
Output AC voltage [V]	230/400,3L/N/PE, 50/60Hz	230/400,3L/N/PE, 50/60Hz	230/400,3L/N/PE, 50/60Hz	230/400,3L/N/PE, 50/60Hz
Output AC current [A]	12,8	11,1	9,6	8
Output power [VA]	8	7	6	5
	SUN-4K-G05-P	SUN-3K-G05-P	SUN-3K-G05-1-P	--
MPP DC voltage range [V]	120-850	120-850	120-850	--
Max. DC voltage [V]	1000	1000	1000	--
Input DC current [A]	20/20	20/20	20	--
Output AC voltage [V]	230/400,3L/N/PE, 50/60Hz	230/400,3L/N/PE, 50/60Hz	230/400,3L/N/PE, 50/60Hz	--
Output AC current [A]	6,4	4,8	4,8	--
Output power [VA]	4	3	3	--

Annex to the EN 50549-1 certificate of compliance No. U22-0207

Appendix

Extract from test report according to EN 50549-1 **No. ASUE-ESH-P22010035**

	SUN-15K-G05	SUN-12K-G05	SUN-10K-G05	SUN-9K-G05
MPP DC voltage range [V]	200-850	200-850	120-850	120-850
Max. DC voltage [V]	1000	1000	1000	1000
Input DC current [A]	13/26	13/13	13/13	13/13
Output AC voltage [V]	230/400,3L/N/PE, 50/60Hz	230/400,3L/N/PE, 50/60Hz	230/400,3L/N/PE, 50/60Hz	230/400,3L/N/PE, 50/60Hz
Output AC current [A]	23,9	19,1	15,9	14,3
Output power [VA]	15	12	10	9
	SUN-8K-G05	SUN-7K-G05	SUN-6K-G05	SUN-5K-G05
MPP DC voltage range [V]	120-850	120-850	120-850	120-850
Max. DC voltage [V]	1000	1000	1000	1000
Input DC current [A]	13/13	13/13	13/13	13/13
Output AC voltage [V]	230/400,3L/N/PE, 50/60Hz	230/400,3L/N/PE, 50/60Hz	230/400,3L/N/PE, 50/60Hz	230/400,3L/N/PE, 50/60Hz
Output AC current [A]	12,8	11,1	9,6	8
Output power [VA]	8	7	6	5
	SUN-4K-G05	SUN-3K-G05	SUN-3K-G05-1	--
MPP DC voltage range [V]	120-850	120-850	120-850	--
Max. DC voltage [V]	1000	1000	1000	--
Input DC current [A]	13/13	13/13	13	--
Output AC voltage [V]	230/400,3L/N/PE, 50/60Hz	230/400,3L/N/PE, 50/60Hz	230/400,3L/N/PE, 50/60Hz	--
Output AC current [A]	6,4	4,8	4,8	--
Output power [VA]	4	3	3	--
Firmware version	Beginning with Ver5111			

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 galvanic isolation between DC input and AC output (HF/LF transformer). Output switch-off is performed with single-fault tolerance based on the inverter bridge and one 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:

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.