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Certificate of compliance

Applicant: Apex Solar Energy Technology GmbH
Reisholzer Werftstr. 76, Düsseldorf, 40589
Germany

Product: Photovoltaic (PV) and battery inverter

Model: APEX-E-P3-5KL
APEX-E-P3-6KL
APEX-E-P3-8KL
APEX-E-P3-10KL
APEX-E-P3-12KL

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 VDE V 0124-100:2020 (5.5.2.1 Functional safety of network and system protection)

Grid integration of generator plants - Low-voltage - Test requirements for generator units to be connected to and operated in parallel with low-voltage distribution networks

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: CIXW-ESH-P22120992

Certification Program: NSOP-0032-DEU-ZE-V01

Certificate number: U23-0008

Date of issue: 2023-01-20

Certification body

Alf Assekamp



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. U23-0008

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Appendix
Extract from test report according to EN 50549-1
No. CIXW-ESH-P22120992

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	Apex Solar Energy Technology GmbH Reisholzer Werftstr. 76, Düsseldorf, 40589 Germany
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Micro-generator Type	Photovoltaic and battery inverter			
	APEX-E-P3-5KL	APEX-E-P3-6KL	APEX-E-P3-8KL	APEX-E-P3-10KL
PV Input voltage range	160-800 Vdc			
MPPT Input range	200-650 Vdc			
PV input current	13A+13A			26A+13A
Battery voltage range	40-60Vdc			
Max. charge current	120A	150A	190A	210A
Max. discharge current	120A	150A	190A	210A
Rated grid voltage	3L/N/PE 400V, 50Hz/60Hz			
Max. AC Output current	8,0A	9,6A	12,8A	15,9A
AC Output Rated. current	7,2A	8,7A	11,6A	14,5A
Rated active Power	5kW	6kW	8kW	10kW
Max. apparent Power	5,5kVA	6,6kVA	8,8kVA	11kVA
	APEX-E-P3-12KL	--	--	--
PV Input voltage range	160-800 Vdc	--	--	--
MPPT Input range	200-650 Vdc	--	--	--
PV input current	26A+13A	--	--	--
Battery voltage range	40-60Vdc	--	--	--
Max. charge current	240A	--	--	--
Max. discharge current	240A	--	--	--
Rated grid voltage	3L/N/PE 400V, 50Hz/60Hz	--	--	--
Max. AC Output current	19,1A	--	--	--
AC Output Rated. current	17,4A	--	--	--
Rated active Power	12kW	--	--	--
Max. apparent Power	13,2kVA	--	--	--

Firmware version	V1090
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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 the inverter bridge and 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.



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Extract from test report according to EN 50549-1

No. CIXW-ESH-P22120992

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.