



**BUREAU
VERITAS**

Certificate of compliance

Applicant: SolarEdge Technologies Ltd.
1 HaMada Street
Herzliya 4673335
Israel

Product: Photovoltaic (PV) inverter and battery inverter

Model:

Photovoltaic (PV) inverter	Photovoltaic (PV) and Battery inverter
SE3K	SE5K-RWS
SE4K	SE7K-RWS
SE5K	SE8K-RWS
SE6K	SE10K-RWS
SE7K	
SE8K	
SE9K	
SE10K	
SE12,5K	
SE15K	
SE16K	
SE17K	

Use in accordance with regulations:

Automatic disconnection device with three-phase mains surveillance in accordance with EN50549-1:2019 for systems with a three-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

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

DIN V VDE V 0126-1-1:2006 (4.1 Functional safety)

Automatic disconnection device between a generator and the public low-voltage grid

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: 10TH0222-EN50549-1_0 **Certification Program:** NSOP-0032-DEU-ZE-V01
Certificate number: U19-0683 **Date of issue:** 2019-12-20



Certification body

Holger Schaffer



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

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. 10TH0222-EN50549-1_0

Type Approval and declaration of compliance with the requirements of EN 50549-1.

Manufacturer / applicant:	SolarEdge Technologies Ltd. 1 HaMada Street Herzliya 4673335 Israel
----------------------------------	--

Micro-generator Type	Photovoltaic (PV) inverter
-----------------------------	----------------------------

	SE3K	SE4K	SE5K	SE6K
Input DC voltage range [V]	680 – 950	680 – 950	680 – 950	680 – 950
Input DC current [A]	5	7	8,5	10
Output AC voltage [V]	230 / 400 @ 50Hz / 60Hz (3W,N,PE)	230 / 400 @ 50Hz / 60Hz (3W,N,PE)	230 / 400 @ 50Hz / 60Hz (3W,N,PE)	230 / 400 @ 50Hz / 60Hz (3W,N,PE)
Output AC current [A]	5	6,5	8	10
Output power [VA]	3000	4000	5000	6000

	SE7K	SE8K	SE9K	SE10K
Input DC voltage range [V]	680 – 950	680 – 950	680 – 950	680 – 950
Input DC current [A]	12	13,5	15	16,5
Output AC voltage [V]	230 / 400 @ 50Hz / 60Hz (3W,N,PE)	230 / 400 @ 50Hz / 60Hz (3W,N,PE)	230 / 400 @ 50Hz / 60Hz (3W,N,PE)	230 / 400 @ 50Hz / 60Hz (3W,N,PE)
Output AC current [A]	11,5	13	14,5	16
Output power [VA]	7000	8000	9000	10000

	SE12,5K	SE15K	SE16K	SE17K
Input DC voltage range [V]	680 – 950	680 – 950	680 – 950	680 – 950
Input DC current [A]	21	22	23	23
Output AC voltage [V]	230 / 400 @ 50Hz / 60Hz (3W,N,PE)	230 / 400 @ 50Hz / 60Hz (3W,N,PE)	230 / 400 @ 50Hz / 60Hz (3W,N,PE)	230 / 400 @ 50Hz / 60Hz (3W,N,PE)
Output AC current [A]	20	23	25,5	26
Output power [VA]	12500	15000	16000	17000

Firmware version	Main DSP software version is 1.130 Aux DSP software version is 2.19
-------------------------	--

Appendix

Extract from test report according to EN 50549-1

Nr. 10TH0222-EN50549-1_0

	SE5K-RWS	SE7K-RWS	SE8K-RWS	SE10K-RWS
Micro-generator Type	Photovoltaic (PV) and Battery Inverter			
Input DC voltage range [V]	680 – 950	680 – 950	680 – 950	680 – 950
Input DC current [A]	8,5	12	13,5	16,5
Output AC voltage [V]	230 / 400 @ 50Hz / 60Hz (3W,N,PE)	230 / 400 @ 50Hz / 60Hz (3W,N,PE)	230 / 400 @ 50Hz / 60Hz (3W,N,PE)	230 / 400 @ 50Hz / 60Hz (3W,N,PE)
Output AC current [A]	8	11,5	13,0	16
Output power [VA]	5000	7000	8000	10000
Battery DC voltage range [V]	40 – 62	40 – 62	40 – 62	40 – 62
Battery DC input current [A]	130	130	130	130
Battery DC input power [W]	5000	5000	5000	5000

Firmware version	Main DSP software version is 1.130 Aux DSP software version is 2.19
-------------------------	--

Measurement period:	2015-09-08, 2015-05-30 to 2016-06-03, 2017-01-26, 2017-05-05, 2019-10-13 to 2019-12-10
----------------------------	--

Description of the structure of the power generation unit:

The power generation unit is equipped with a PV/DC 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.

Appendix

Extract from test report according to EN 50549-1

Nr. 10TH0222-EN50549-1_0

Setting of the interface protection:

Parameter	Min. disconnection time	Max. disconnection time	Min. operate value	Max. operate value	Standard set value
Over voltage (stage 1) ^a	0,1s	600s	1,0V _n	1,3V _n	0,2s/1,2V _n
Over voltage (stage 2)	0,1s	600s	1,0V _n	1,3V _n	0,1s/1,25V _n
Under voltage (stage 1)	0,1s	600s	0,1V _n	1,0V _n	10s/0,2V _n
Under voltage (stage 2)	0,1s	600s	0,1V _n	1,0V _n	3s/0,8V _n
Over frequency	0,1s	600s	1,0f _n	1,2f _n	0,1s/1,03f _n
Over frequency (stage 1)	0,1s	600s	1,0f _n	1,2f _n	0,1s/1,03f _n
Under frequency	0,1s	600s	0,9f _n	1,0f _n	0,1s/0,95f _n
Under frequency (stage 2)	0,1s	600s	0,9f _n	1,0f _n	0,1s/0,95f _n
Reconnection settings for voltage	0,85V _n min, 1,1V _n max Adjustement range Min: 0-1V _n , Max: 1-2V _n				0,85V _n (195,5V) ≤ V ≤ 1,10V _n (253V)
Reconnection settings for frequency	49,5Hz min, 50,2Hz max Adjustement range: Min: 44-50 Hz, Max: 50-66 Hz				49,5Hz ≤ f ≤ 50,2Hz
Reconnection time	60s Adjustement range: 0-600s				≥ 60s
Active power gradient after reconnection	10% Adjustement range: 1-10000%				10%PE _{max} / per minute
Permanent DC-injection	0,5% of rated inverter output current				
Loss of mains according EN 62116 (LoM)	2s				

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.