Certificate of compliance

Applicant:	**SolarEdge Technologies Ltd.** 1 HaMada Street Herzliya 4673335 **Israel**				
Product:	**Photovoltaic (PV) inverter**				
Model:	**SE40K**	**SE33.3K**	**SE30K**	**SE27.6K**	**SE25K**

Use in accordance with regulations:

Automatic disconnection device with three-phase mains surveillance in accordance with EN50549-1:2019 for photovoltaic 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, 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
4.12 Remote information exchange
4.13 Requirements regarding single fault tolerance of interface protection system and interface switch

DTIS-230206-BRL:2019-10
Conditions Governing the Connection and Operation of Micro-generation Policy

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: **19TH0534-EN50549-1_3**
19TH0534-Power Quality_1
19TH0534-FRT_2

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

Certificate number: **U20-0650**

Date of issue: **2020-10-08**

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

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. 19TH0534-EN50549-1_3**

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	Grid-tied photovoltaic inverter			
	SE30K	SE33.3K	SE40K	
Input DC voltage range [V]	680 – 1000			
Input DC current [A]	36,25	40,0	48,25	
Output AC voltage [V]	277 Vac, L-N 480 Vac, L-L			
Output AC current [A]	36,25	40,0	48,25	
Output power [VA]	30000	33300	40000	
	SE25K	SE27.6K	SE30K	SE30K
Input DC voltage range [V]	680 – 1000			
Input DC current [A]	36,25	40,0	43,5	43,5
Output AC voltage [V]	220/230 Vac, L-N 380/400 Vac, L-L			
Output AC current [A]	36,25	40	43,5	43,5
Output power [VA]	25000	27600	29990	30000
	SE33.3K			
Input DC voltage range [V]	680 – 1000			
Input DC current [A]	48,25			
Output AC voltage [V]	220/230 Vac, L-N 380/400 Vac, L-L			
Output AC current [A]	48,25			
Output power [VA]	33300			
Firmware version	DSP1:1.20 / DSP2: 2.20			
Measurement period:	2019-11-29 – 2020-05-29, 2020-06-01 – 2020-07-31			
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.				

Appendix

Extract from test report according to EN 50549-1 **Nr. 19TH0534-EN50549-1_3**

Setting of the interface protection according EN50549-1 with deviations Ireland according DTIS-230206-BRL:

Parameter	Min. disconnection time	Max. disconnection time	Min. operate value	Max. operate value	Standard set value
Over voltage (stage 1)	0,04s	20min	1,0V_n	335V	0,5s/1,10V_n
Over voltage (stage 2)	0,04s	10min	1,0Vn	335V	--
Over voltage (stage 3)	0,04s	10min	1,0Vn	335V	--
Under voltage (stage 1)	0,04s	10min	0,1V_n	1,0V_n	0,5s/0,90V_n
Under voltage (stage 2)	0,04s	10min	0,1V_n	1,0V_n	--
Under voltage (stage 3)	0,04s	10min	1,0Vn	335V	--
Over frequency	0,08s	10min	1,0f_n	66Hz	0,5s/1,02f_n
Over frequency (stage 1)	0,08s	10min	1,0f_n	66Hz	--
Under frequency	0,08s	10min	0,88f_n	1,00f_n	20,0s/0,94f_n
Under frequency (stage 2)	0,08s	10min	0,88f_n	1,00f_n	--
Reconnection settings for voltage (normal operational startup)	Adjustment range: min: 0-1V_n, max: V_n -335				0,85V_n ≤ V ≤ 1,10V_n
Reconnection settings for frequency (normal operational startup)	Adjustment range: min: 44-60Hz, max: 50-66Hz				47,5Hz ≤ f ≤ 50,2Hz
Reconnection time (normal operational startup)	Adjustment range: 0-9000s				≥ 60s
Reconnection settings for voltage (automatic reconnection after tripping)	Adjustment range: min: 0-1V_n, max: V_n -335				0,85V_n ≤ V ≤ 1,10V_n
Reconnection settings for frequency (automatic reconnection after tripping)	Adjustment range: min: 44-60Hz, max: 50-66Hz				47,5Hz ≤ f ≤ 50,2Hz
Reconnection time (automatic reconnection after tripping)	Adjustment range: 0-9000s				≥ 60s
Active power gradient after reconnection	Adjustment range: 3-10000%				10% P_{Emax} / per minute
Active power delivery at under frequency	electronic inverter, no active power reduction				
Power response to over frequency (frequency / droop s)	Adjustment range: 44-60Hz / 1-12%				--
Permanent DC-injection	≤ 0,5% of rated inverter output current or ≤ 20mA				
Rate of change of frequency (ROCOF)	Adjustment range: 0,01-100Hz/s				1Hz/s [where used]
Loss of mains according EN 62116 (LoM)	Adjustment range: 0-20s				0,5s

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.