

# **Type Certificate**

Applicant	SolarEdge Technologies Ltd. 1 HaMada Street, Herzeliya 467335, Israel				
Type of product	Grid connected storage system	Jupiter+ Improved (for details see Supplement of certificate on p.2, p.3)			
Technical data	Nominal apparent power	33,3 kVA			
	Nominal output AC voltage	400 V (3~ + N + PE)			
	Nominal frequency	50 Hz			
	Max. active power P <sub>Emax</sub> / Max. active power peak P <sub>600</sub>	(for details see Supplement of Certificate on p.2, p.3)			
Firmware version	DSP1:1.20 (Main DSP) or higher / DSP2:2.20 (Aux DSP) or higher				
Validated model	Model file	SE33_3K - v04.pfd	SE25K_SE30_SE90 - v04.pfd		
	Identification number (MD5)	59263f10279520b79721a8199183 cedd	aa0b3c01e61a01d25e1095fab723 0443		
	Model file	SE33_3K - v05.pfd*	SE25K_SE30_SE90 - v05.pfd*		
	Identification number (MD5)	2D05753E5CD612A061F4D58C7 2E7C9B3	E402F07E4B968416322A3725004 A08F1		

\*The oscillation issues in weak grid with model version 04 and corrected behaviour in version 05, other than that for other grid conditions the model remains valid.

Connection rule

**VDE-AR-N 4110:2023-09** – Technical requirements for the connection and operation of customer installations to the medium voltage network (TCR medium voltage) [1]

**VDE-AR-N 4120:2018-11** – Technical requirements for the connection and operation of customer installations to the high voltage network (TCR high voltage) [2]

Applicable standards / Technical guidelines: FGW TR 3 Rev. 25 [3], FGW TR 4 Rev. 09 [4], FGW TR 8 Rev. 09 [5] directives

The power generating units, stated in the certificate, were tested and certified according to the technical guidelines referenced to the grid connection regulation. The electrical characteristics fulfil the requirements of the grid connection regulation:

- Quasi-steady-state operation
- Dynamic network stability (reactive current characteristic according to TCR medium voltage & TCR high voltage)
- Active power output and network security management
- Active power adjustment as a function of the grid frequency
- Power quality

Restrictions or deviations: see supplement of certificate

The manufacturer has provided proof of certification of the quality management system of his production facility in accordance with ISO 9001

### The certificate contains the following information:

- technical data of the power generating unit, the auxiliary equipment used and the software version used;
- schematic structure of the power generating units.
- summarized information on the properties of the power generating unit.

The certificate is comprised of 119 pages (including Annex of 118 pages).

Project number:	19TH0534		
Certificate number:	U21-0940_4	Certification Program:	NSOP-0032-DEU-ZE-V10
Issued:	2025-02-20	Valid until:	2027-01-25
		<ul> <li>Certification body</li> </ul>	Accreditation
			DAkkS
		Georg LORITZ	Deutsche Akkreditierungsstelle
		Lab Supervisor Energy Systems	D-ZE-12024-01-00

Accredited certification body by Deutsche Akkreditierungsstelle GmbH (DAkk§) 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 (DAkk§) is signatory of the multilateral arrangements of EA, ILAC and IAF for mutual recognition. Without the written consent of Bureau Veritas Consumer Products Services Germany GmbH excerpts of this certificate of conformity shall not be reproduced.

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certification.deu@bureauveritas.com Certificate number U21-0940\_4



## Supplement of certificate (U21-0940\_4)

Type of product	Grid connected storage system	SE25K SE50K * (2 x SE25K)			
Technical data	Nominal active output power	25 kW			
	Rated / Max. apparent power		25 kVA		
	Nominal voltage	400 V (3~ + N + PE)			
	Nominal frequency	50 Hz			
	Max. active power P <sub>Emax</sub> / Max.	0.99 p.u. /			
	active power peak P <sub>600</sub> <sup>1), 2):</sup>	24,96 kW <sup>1)</sup>			
Гуре of product	Grid connected storage system	SE30K SE90K * (3 x SE30K)	SE30K SE90K * (3 x SE30K)	SE30K	
Cechnical data	Nominal active output power	33 3kW		30 kW	
ecimical data	Rated / Max apparent power	33.3kV/A			
	Nominal voltage	33,3KVA 400 V (3	- N + PE)		
	Nominal frequency	400 v (3~	50 Hz		
	Max active power Prace / Max	0.99 p.u. /	0.0112	99 p.u. /	
	active power peak P600 1), 2):	33,12 kW <sup>1)</sup>	29,	70 kW <sup>1)</sup>	
		• • • • • • • • • • • • • • • • • • • •			
Гуре of product	Grid connected storage system	SE33.3K SE66.6K * (2 x SE33.3K SE100K * (3 x SE33.3k	SE33.3K SE66.6K * , (2 x SE33.3K), SE100K * (3 x SE33.3K)		
Technical data	Nominal active output power	33.3 kW		33.3 kW	
	Rated / Max_apparent power	33.3 kVA		33.3 kVA	
	Nominal voltage	$400 \vee (3 \sim + N + PF)$ 4		480 V (3~ + PF)	
	Nominal frequency	50 Hz			
	Max. active power P <sub>Emax</sub> / Max. active power peak P600 1), 2):	0,99 p.u. / 33,12 kW <sup>1)</sup>		0,99 p.u. / 33,12 kW <sup>1)</sup>	
Project number: Certificate number: Issued:	19TH0534 U21-0940_4 2025-02-20	ERUNGS Certi Valid	fication Program:	NSOP-0032-DEU-ZE-\ 2027-01-25 ccreditation	
	Lab Supe	Seorg LORITZ rvisor Energy Systems		IkkS Deutsche Akreditierungsstelle D-ZE-12024-01-00	

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#### Note:

1)

The  $P_{Emax}$  is the highest 10-min mean of the active power of a power generating unit defined according to VDE-AR-N 4110:2023 [1]. The  $P_{600}$  is the maximum active power peak of the overall system (averaging period 10 min) defined according to FGW TR 3 Rev. 25 [3].

The stated values on the front page of this certificate were determined according to test 4.1.1, FGW TR 3 Rev. 25 [3]. The active power results of the SE33.3K can be applied to the SE25K (scaled by  $P_{n, SE33.3K} = 0,751$ ) and to the SE30K (scaled by  $P_{n, SE33.3K} = 0,901$ ).

<sup>2)</sup> The Synergy types of the SE25K, SE30K and SE33.3K consist of 2 or 3 inverters:

The Synergy type SE50K is made up by 2 x SE25K.

The Synergy type SE90K is made up by 3 x SE30K.

The Synergy type SE66.6K is made up by 2 x SE33.3K and the SE100K is comprised of 3 x SE33.3K.

Throughout this document they will be referred to by Synergy. They are treated as two or respectively three separate units during certification.



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#### Restrictions, deviations or notes on usage:

- 1. The PGUs in the series do not provide test terminals for on-site testing. For necessary on-site testing, a separate test terminal must be installed additionally.
- 2. Prioritization of different setpoints is not possible at the inverter level, it can be controlled via the power plant controller.
- 3. The Q(U) control function implemented on the PGU level deviates from requirements according to VDE-AR-N 4110:2023-09: The voltage offset cannot be changed on parameter input while running. Instead, the configured curve must be modified. In cases where this is not sufficient, this function needs to be implemented on the plant control level and controlled in the units via reactive power set-points.
- 4. The PGUs in the series provide only one kind of Q(U) control function. The Q(U) control function implanted on the PGU level can be used as *reactive power with voltage limitation function* by suitable setting of the characteristic curve. But this deviates from requirements according to VDE-AR-N 4110:2023-09.
  - The Q(P) control function is implemented on the unit level based on 6 supporting points per default. If more supporting points are needed (e.g. to meet the requirement of 10) this must be configured in accordance with the manufacturer.

### Evaluation criterion acc. to FGW TR8

A.1.2.8.3 / A.2.2.8.3 Test terminal

A.1.2.5.1 / A.2.2.5.1 General information and grid safety management

A.1.2.4.2 / A.2.2.4.2 Procedure for reactive power provision

A.1.2.4.2 / A.2.2.4.2 Procedure for reactive power provision

A.1.2.4.2 / A.2.2.4.2 Procedure for reactive power provision

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