

# Unit Certificate



FGW TG8 EZE

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**No.: 968/GI 1728.03/23**

**Grid Integration of Distributed Energy Resources**

## Certificate Holder

Ginlong Technologies Co., Ltd.  
No.57 Jintong Road, Binhai,  
(seafront), Industrial Park,  
Xiangshan Ningbo  
315712 Zhejiang  
China

## Subject

Grid-Connected PV-Inverter  
Solis-215K-EHV-5G-PLUS, Solis-250K-EHV-5G-PLUS, Solis-250K-EHV-5G,  
Solis-255K-EHV-5G-PLUS, Solis-255K-EHV-5G

## Codes and Standards

VDE-AR-N 4110:2023	FGW TG 8:2019 Revision 9
VDE-AR-N 4120:2018	FGW TG 4:2019 Revision 9
VDE-AR-N 4130:2018	FGW TG 3:2018 Revision 25

## Scope and result

The power generating units mentioned above meet the requirements of VDE-AR-N 4110:2023, VDE-AR-N 4120:2018, VDE-AR-N 4130:2018. The conformity is declared by following documents:  
Evaluation Report-No.: 968 GI 1728.03/23, dated 2023-12-20  
Validation Report-No.: 968/GI 1728.02/23, dated 2023-12-20  
Test Report-No.: CN22K2MK 002, dated 2023-09-21

The manufacturer has provided proof of certification of the quality management system of his production facility in accordance with ISO 9001 or is subject to production monitoring.

## Specific provisions

The deviations and conditions for conormity according to the evaluation report must be observed. The corresponding conditions and deviations are listed on page 2,3 and 4 of the certificate.

Valid until 2028-06-01

The issue of this certificate is based upon an evaluation in accordance with the Certification Program CERT GI3 V5.0:2021-11 in its actual version, whose results are documented in Report No. 968/GI 1728.03/23 dated 2023-12-20. This certificate is specifically valid for the above mentioned system only. It becomes invalid, if any unapproved changes are implemented without prior assessment/approval by the certification body. Authenticity and validity of this certificate can be verified through the above indicated QR-code or at <http://www.fs-products.com>.

**TÜV Rheinland Industrie Service GmbH**  
Bereich Automation  
Funktionale Sicherheit  
Am Grauen Stein, 51105 Köln

Köln, 2023-12-20

Certification Body Safety & Security for Automation & Grid

Dipl.-Ing. Marco Klose

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## Technical data of the PGU:

Typ:	Solis-215K-EHV-5G-PLUS	Solis-250K-EHV-5G-PLUS	Solis-250K-EHV-5G	Solis-255K-EHV-5G-PLUS	Solis-255K-EHV-5G
Rated apparent power:	215 kVA	250 kVA	250 kVA	255 kVA	255 kVA
Rated active power:	215 kW	250 kW	250 kW	255 kW	255 kW
Max. active power (P <sub>600</sub> )	213,69 kW	248,8 kW	248,8 kW	253,45 kW	253,45 kW
Rated voltage:	800 V <sub>AC</sub>	800 V <sub>AC</sub>	800 V <sub>AC</sub>	800 V <sub>AC</sub>	800 V <sub>AC</sub>
Nominal frequency:	50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz
Minimum required short-circuit power (only for type 1 PGU):	N/A	N/A	N/A	N/A	N/A
Software-Version:	A1 (Firmware)				

## Validated Simulation Model:

**Reference name:** TUVR\_Solis-215\_255K-EHV-5G DE V2\_Encrypted.pfd

**MD5 Checksum:** b68c45cdf855309ad6f3ceaf7ca67deb

**Simulation platform:** DlgSILENT PowerFactory 2021 SP2

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**The following deviations and restrictions apply:**

None

**The following:**

- The results of the test report confirm that the reactive power functions show a PT1 behavior. If a different behavior is required, this has to be implemented on PGS level (e.g. via PGS controller). This must be considered accordingly during system certification.
- The PGU control only supports five reference points for Q(P) control. If more reference points are needed, the Q(P) control must be implemented on PGS level (e.g. by PGS controller). This needs to be considered during system certification accordingly.
- The PGU contains one single interface for active power setpoint by grid operator or any different third party (e.g. direct marketer). Separate implementation of the interfaces for the grid provider specification and other setpoint specifications, including implementation of the lowest value in accordance with VDE-AR-N 4110, VDE-AR-N 4120 or VDE-AR-N 4130, must therefore be implemented at the PGS level (e.g. in the PGS controller). This must be considered accordingly during system certification.
- The functionality and prioritization of primary energy supply needs to be implemented on PGS level (e.g. by PGS-controller), if required.
- According to manufacturer's declaration the reconnection cannot be implemented after external release signal (e.g. by PGS-controller). If this function is required, this has to be implemented on PGS level (e.g. by PGS-controller in connection with intermediate decoupling protection device). This has to be considered accordingly during system certification.
- The certified product does not provide a test terminal. A connecting terminal plate has to be installed separately, if necessary. Alternatively, this requirement can be fulfilled on PGS level through an intermediate decoupling protection device with valid component certificate according to VDE-AR-N 4110, VDE-AR-N 4120 or VDE-AR-N 4130 and separate circuit breaker.
- In some cases the measured tripping time was less than the settling time. This has to be considered for the parameterization of the protection setting within system certification.
- The validated simulation model of the PGUs specified shall be used in the certified version (see table for details on file name and check sum (MD5)).

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## Schematic overview of the PGU:

