

Unit Certificate



FGW TG8 EZE

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ID 1900000000

No.: 968/GI 2245.01/25

Grid Integration of Distributed Energy Resources

Certificate Holder

Sungrow Power Supply Co., Ltd.
No.1699 Xiyou Rd., New & High
Technology Industrial Development
Zone,
Hefei 230088 Anhui P.R.
China

Subject

Grid-Connected Photovoltaic Inverter
SG150CX

Codes and Standards

VDE-AR-N 4110:2023
VDE-AR-N 4120:2018
FGW TG 8:2019 Revision 9

FGW TG 4:2023 Revision 10
FGW TG 3:2023 Revision 26

Scope and result

The power generating units mentioned above meet the requirements of standards listed above.

The conformity is declared by following documents:
Evaluation Report-No.: 968/GI 2245.01/25, 2025-09-24
Validation Report-No.: 968/GI 2245.00/25, 2025-09-24
Test Report No.: CN24Q9KK 001, dated 2025-08-15

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 conformity according to the evaluation report must be observed. The corresponding conditions and deviations are listed on page 2 of the certificate.

Valid until 2030-09-24

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 2245.01/25 dated 2025-09-24. 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, 2025-09-24

Certification Body Safety & Security for Automation & Grid

Dipl.-Ing. Marco Klose

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Technical data of the PGU:

Typ:	SG150CX
Rated apparent power:	165 kVA
Rated active power:	150 kW
Max. active power (P_{600}):	164.44 kW
Rated voltage:	400 V _{AC}
Nominal frequency:	50 Hz / 60 Hz
Minimum required short-circuit power (only for type 1 PGU):	N/A
Firmware-Version:	LCD_MARBLE-S_V11_V01_A; MDSP_MARBLE-S_V11_V01_A

Validated Simulation Model:

Reference name: SG150CX_VDE_V4_Encrypted.pfd

MD5 Checksum: 24EF6B7043CA1504AB71D9CEDA0DBB72

Simulation platform: DIgSILENT PowerFactory 2024 SP4

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The following deviations and restrictions apply:

☐ None

☒ The following:

- To meet the requirements for reactive power control according to VDE-AR-N 4120 an external PGS controller with a valid component certificate is required. This has to be implemented on PGS level and evaluated during system certification.
- **Fixed Q control:** The setting point of reactive power is related to the 66% P_n instead of 100% P_n, which should be converted and considered on PGS level and system certification.
- **Q(U) control:** A voltage deadband cannot be set. If required, this has to be implemented on PGS level (e.g. via PGS controller).
An external interface for specifying the reference voltage U/U_c is not implemented. If required, this has to be implemented on PGS level (e.g. via PGS controller).
- **Q(P) control:** The PGU control only supports three 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).
- 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 and VDE-AR-N 4120, must therefore be implemented at the PGS level (e.g. in the PGS controller).
- The prioritization of primary control energy supply needs to be implemented in PGS controller. This has to be evaluated accordingly during system certification.
- According to the manufacturer declaration, the PGU is able to follow the external “enable” signal to reconnect after prior protection tripping, when applying the grid code VDE-AR-N 4120. This feature is not verified in the laboratory test and therefore must be evaluated accordingly during system certification.
- The certified product does not provide a test terminal. A connecting terminal plate has to be installed separately, if necessary.
- As the unit does not contain a display, this has to be considered on project level. With regard to the requirements of the corresponding grid provider, an appropriate device to check the protection settings has to be provided on demand or should be stored on site.
- The validated simulation model of the PGUs specified shall be used in the certified version (see information above for details on file name and check sum (MD5)).

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Schematic overview of the PGU:

