Unit Certificate

FGW TG8 EZE

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No.: 968/GI 2171.01/24 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 Hybrid Inverter **SH5T, SH6T, SH8T, SH10T** **SH12T, SH15T, SH20T, SH25T**
Codes and Standards	VDE-AR-N 4110:2023 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 2171.01/24, 2024-11-28 Validation Report-No.: 968/GI 2171.00/24, 2024-11-28 Test Report No.: CN24CS2T 001, dated 2024-07-05 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 2029-11-28

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 2171.01/24 dated 2024-11-28. 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.

Köln, 2024-11-28

TÜV Rheinland Industrie Service GmbH
Bereich Automation
Funktionale Sicherheit
Am Grauen Stein, 51105 Köln
Certification Body Safety & Security for Automation & Grid

Dipl.-Ing. Marco Klose

TÜV Rheinland Industrie Service GmbH, Am Grauen Stein, 51105 Köln / Germany
Tel.: +49 221 806-1790, Fax: +49 221 806-1539, E-Mail: industrie-service@de.tuv.com

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Technical data of the PGU:

Typ:	SH5T	SH6T	SH8T	SH10T
Rated apparent power:	5 kVA	6 kVA	8 kVA	10 kVA
Rated active power:	5 kW	6 kW	8 kW	10 kW
Max. active power (P_{600}):	4.99 kW	5.99 kW	7.99 kW	9.99 kW
Rated voltage:	230/400 V			
Nominal frequency:	50 Hz / 60 Hz			
Software-Version:	ARM_PEARL-H_V11_V01_A MDSP_PEARL-H_V11_V01_A			
Typ:	SH12T	SH15T	SH20T	SH25T
Rated apparent power:	12 kVA	15 kVA	20 kVA	25 kVA
Rated active power:	12 kW	15 kW	20 kW	25 kW
Max. active power (P_{600}):	11.99 kW	14.99 kW	19.99 kW	24.98 kW
Rated voltage:	230/400 V			
Nominal frequency:	50 Hz / 60 Hz			
Software-Version:	ARM_PEARL-H_V11_V01_A MDSP_PEARL-H_V11_V01_A			

Validated Simulation Model:

Reference name: VDE_SH15T_PF2022_V20_20241114.pfd

MD5 Checksum: 826723B6561453B8AE68355266840E44

Simulation platform: DIgSILENT PowerFactory 2022

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The following deviations and restrictions apply:

☐ **None**

☒ **The following:**

- Method for reactive power supply:
  - **Q(U)-Control:** An external interface for specifying the reference voltage U/Uc is not implemented (Q(U)-control). 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 interfaces for setpoint specifications regarding active power (e.g. grid operator, direct marketer) must be implemented at PGS level (e.g. by PGS-controller) and be evaluated as part of system certification.
- In some cases, the measured tripping time was less than the tripping time set. 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 VDE-AR-N 4110 and separate circuit breaker.
- 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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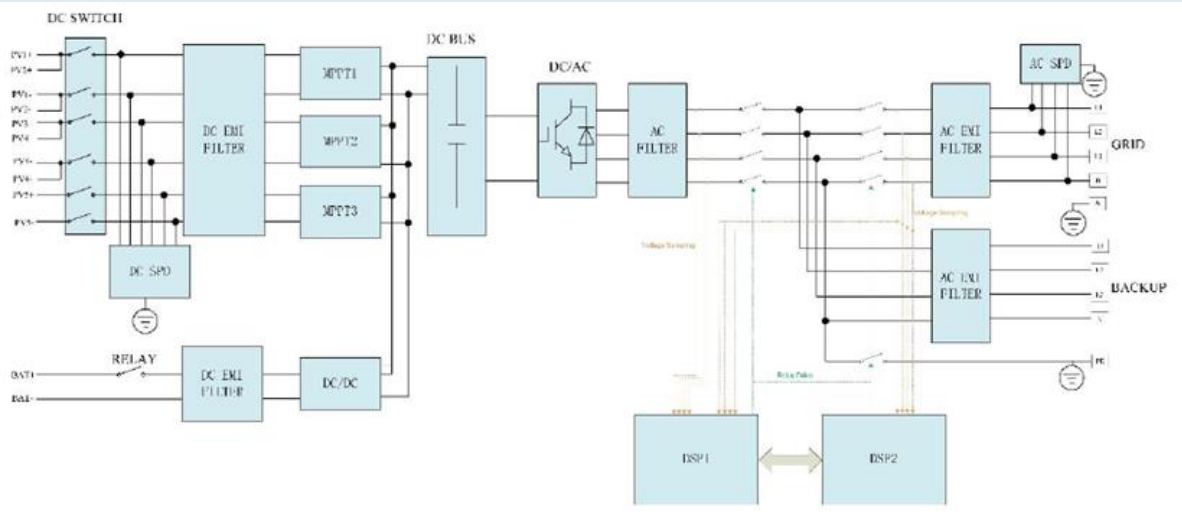
Schematic overview of the PGU:



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