

Unit Certificate



FGW TG8 EZE

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ID 1900000000

No.: 968/GI 2204.01/25

Grid Integration of Distributed Energy Resources

Certificate Holder

Huawei Digital Power Technologies
Co., Ltd.
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Shenzhen 518043
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Subject

Smart Power Converter System
PCS2000-108K-MB1

Codes and Standards

VDE-AR-N 4120:2018
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 2204.01/25, 2025-06-10
Validation Report-No.: 968/GI 2204.00/25, 2025-06-10
Test Report No.: CN23HR1H 001, dated 2024-11-22

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 and 3 of the certificate.

Valid until 2030-06-11

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 2204.01/25 dated 2025-06-10. 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, 2025-06-11

Certification Body Safety & Security for Automation & Grid

Dipl.-Ing. Marco Klose

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Precisely Right.

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Technical data of the PGU:

Typ:	PCS2000-108K-MB1
Rated apparent power:	118.8 kVA
Rated active power:	108 kW
Max. active power (P_{600}):	106.92 kW
Rated voltage:	400 V _{AC}
Nominal frequency:	50 Hz / 60 Hz
Minimum required short-circuit power (only for type 1 PGU):	N/A
Software-Version:	LUNA 2000b V200R024C00

Validated Simulation Model:

Reference name: Huawei VDE4110&4120 PCS2000-108K-MB1 DIgSILENT Model Version 1.5.1
File package.zip

MD5 Checksum: AAC2F4939A8DF9B95C9BD86D7973405C

Simulation platform: DIgSILENT PowerFactory 2022 SP2

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The following deviations and restrictions apply:

None

The following:

- To meet the requirements according to VDE-AR-N 4120, an external PGS controller with valid component certificate is required. This has to be implemented on PGS level and evaluated during system certification.
- **Q(U) control:**
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 four 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).
- **Fixed-Q Control:**
The PGU does not provide a PT1-filter for the fixed Q Control. Instead, the reactive power changes with a defined gradient. Therefore, the PT1-surge specified in VDE-AR-N 4110 cannot be set in the PGU. If required, this has to be implemented on PGS level (e.g. via 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). This must be considered accordingly during system certification.
- The prioritization of primary control energy supply needs to be implemented in PGS controller. This has to be evaluated accordingly during system certification.
- The measured gradient is 0.02 % P_N/s lower than the gradient, which was set at the PGU, gradients lower than 0.35 % should not be set in the PGU to guarantee a gradient within the limits.
- **FRT:** the PGU will shut down when the current supply reaches the maximum time defined in the FRT-Curve and the main voltage remains outside the limits of 90% to 100% U_c . The maximum time in FRT-Curve is configurable and can be set up to 60 seconds. The maximum FRT-capacity was not verified in the Laboratory test according to FGW TG3 test report and has to be considered and evaluated accordingly during system certification.

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- 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 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)).

Schematic overview of the PGU:

