

Unit Certificate



FGW TG8 EZE

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ID 1900000000

No.: 968/GI 2289.00/25

Grid Integration of Distributed Energy Resources

Certificate Holder

FENECON GmbH
Gewerbepark 6
94547 Iggenbach
Deutschland

Subject

Hybrid Inverter
FINV-50-1-DAH

Codes and Standards

VDE-AR-N 4110:2023
FGW TG 4:2023 Revision 10

FGW TG 3:2023 Revision 26
FGW TG 8:2019 Revision 9

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 2289.00/25, 2025-11-13

Validation Report-No.: 968/GI 2226.02/25, 2025-11-07

Test Report No.: CN24035M 001, dated 2024-09-01

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 2030-06-11

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 2289.00/25 dated 2025-11-13. 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, 2025-11-14

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:	FINV-50-1-DAH
Rated apparent power:	50 kVA
Rated active power:	50 kW
Max. active power (P_{600}):	49.768 kW
Rated voltage:	380/400 V _{AC}
Nominal frequency:	50 Hz / 60 Hz
Minimum required short-circuit power (only for type 1 PGU):	N/A
Software-Version:	010109

Validated Simulation Model:

Reference name: GW40-50K-ET-10_VDE_V2_Encrypted.pfd

MD5 Checksum: 9616a79f45c7ae1d5ad00665c40a8606

Simulation platform: DIgSILENT PowerFactory 2023 SP5

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The following deviations and restrictions apply:

☐ None

☒ The following:

- 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).
- The PGU control only supports six reference points for Q(P) control. If more reference points are needed, the Q(P) control must be implemented at 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 as well as the active power prioritization according chapter 8.1 of VDE-AR-N 4110 (e.g. in case of underfrequency), must therefore be implemented at the PGS level (e.g. in the PGS controller). This must be considered accordingly during system certification.
- Permanent reduction of active power has to be implemented on PGS level (e.g. via external PGS controller).
- The threshold of zero current mode is 70.0% U_n by default and cannot be configured through the App. If a specific threshold is needed, it must be set by modifying the underlying code.
- 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 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.
- In some cases of protection technology, the tripping time was less than the set tripping time. This has to be considered accordingly during system certification.
- 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)).
- As part of the certification process, the hybrid inverter type FINV-50-1-DAH was considered **without** the optionally available STS module.

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Schematic overview of the PGU:

As part of the certification process, the hybrid inverter type FINV-50-1-DAH was considered **without** the optionally available STS module.

