

Unit Certificate



FGW TG8 EZE

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No.: 968/GI 2133.01/24

Grid Integration of Distributed Energy Resources

Certificate Holder

CSI Solar Co., Ltd.
199 Lushan Road, SND, Suzhou
215129 Jiangsu
P.R. China

Subject

Grid-Connected PV Inverter
CSI-100K-T4001A-E, CSI-100K-T4001B-E, CSI-110K-T4001A-E,
CSI-110K-T4001B-E, CSI-120K-T4001A-E, CSI-120K-T4001B-E

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 2133.01/24, 2024-11-22
Validation Report-No.: 968/GI 2133.00/24, 2024-11-22
Test Report No.: CN24T6EF 001, dated 2024-09-22

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 the following pages of the certificate.

Valid until 2029-11-22

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 2133.01/24 dated 2024-11-22. 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, 2024-11-22

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:	CSI-100K-T4001A-E / CSI-100K-T4001B-E	CSI-110K-T4001A-E / CSI-110K-T4001B-E	CSI-120K-T4001A-E / CSI-120K-T4001B-E
Rated apparent power:	100 kVA	110 kVA	120 kVA
Rated active power:	100 kW	110 kW	120 kW
Max. active power (P_{600}):	100.84 kW	110.93 kW	121.01 kW
Rated voltage:	230/400 V _{AC}	230/400 V _{AC}	230/400 V _{AC}
Nominal frequency:	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
Software-Version:	V 2.37		

Validated Simulation Model:

Reference name: CSI-(100-120)K-T4001A(B)-E VDE_V2_Encryp.pfd

MD5 Checksum: 8470c3bff42cfb0efaaa940063bbefd0

Simulation platform: DIgSILENT PowerFactory 2023 SP5

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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/U_c for Q(U)-control is not implemented. If required, this has to be implemented on PGS level (e.g. via PGS controller).

The voltage deadband only can be set by modifying the underlying code. Although the tests show compliant behavior, this functionality should be implemented on PGS level by external equipment (e.g. PGS controller). If this function will be implemented on unit level, the voltage deadband needs to be set and confirmed by manufacturer. This has to be evaluated during system certification accordingly.
 - **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).
- 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.
- 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:

