Unit Certificate

FGW TG8 EZE

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No.: 968/GI 2273.01/25 Grid Integration of Distributed Energy Resources

Certificate Holder	Langfang IN-Power Electric Co., Ltd. No. 68 Lotus Rd, Economic & Technical Development Zone 065001 Langfang, Hebei P.R. China
Subject	Energy storage inverter INPPCS-125/0.4-W-14-A2-OS INPPCS-100/0.4-W-14-A2-OS
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 2273.01/25, dated 2025-09-18 Validation Report-No.: 968/GI 2273.00/25, dated 2025-09-18 Test Report No.: CN25G4E6 001, dated 2025-05-30 The manufacturer has provided proof of certification of the quality management system of his production facility in accordance with ISO 9001.
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 2030-09-18

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 2273.01/25 dated 2025-09-18. 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, 2025-09-18

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

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Technical data of the PGU:

Typ:	INPPCS-100/0.4-W-14-A2-OS	INPPCS-125/0.4-W-14-A2-OS
Rated apparent power:	110 kVA	137.5 kVA
Rated active power:	100 kW	125 kW
Max. active power (P_{600}):	110.0 kW	137.53 kW
Rated voltage:	400 V_{AC}	400 V_{AC}
Nominal frequency:	50 Hz / 60 Hz	50 Hz / 60 Hz
Minimum required short-circuit power (only for type 1 PGU):	N/A	N/A
Software-Version:	DSP:1187/ARM: 1852	

Validated Simulation Model:

Reference name: INPPCS-(100-125)_VDE_V2_Encrypted.pfd

MD5 Checksum: fbc93584f11a34583ee7a751a9954b86

Simulation platform: DIgSILENT PowerFactory 2024 SP4

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The following deviations and restrictions apply:

☐ **None**

☒ **The following:**

Proof	Deviation / Restriction
Grid perturbations – switching operations	--
Grid perturbations – asymmetries	--
Grid perturbations – flicker	--
Grid perturbations – Harmonics, interharmonics and supraharmonics	--
Quasi-static operation	--
Pole angle and grid oscillations	--
Reactive power supply	--
Method for reactive power supply	▪ For some functionalites a certified PGS controller is necessary (details s. chapter 4.3.2).
Active power – general and grid security management	▪ 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 active power prioritization in accordance with chapter 8.1 of VDE-AR-N 4110 and VDE-AR-N 4120 must be implemented on PGS level (e.g. by GPS controller)
Active power output dependent on grid frequency	--
Connecting – limit values for connection without prior protection tripping	--
Connecting – limit values for connection with prior protection tripping	▪ The reconnection has to be implemented on PGS level (e.g. PGS controller, intermediate protection device, etc.) to be in compliance with VDE-AR-N 4120.

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Proof	Deviation / Restriction
Connecting – Active power gradient	--
FRT – dynamic grid support	--
FRT – Contribution to short-circuit current	--
Protection technology and settings – readability of the protection settings	▪ 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.
Protection technology and settings – Test terminal block	▪ If required, this has to be installed separately.
Protection technology and settings – Setting range	▪ The setting ranges does not fully comply with VDE-AR-N 4110, VDE-AR-N 4120. A parameterization of a tripping time < 0.1 s is not possible. This needs to be considered on plant level accordingly.
Protection technology and settings – Accuracy	--
Protection technology and settings – Independence of protection functions	--
Protection technology and settings – auxiliary power supply	--
Protection technology and settings – section switch	--
Simulation model (validation)	▪ The validated simulation model of the PGUs specified shall be used in the certified version

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Schematic overview of the PGU: