

CERTIFICATE

of Conformity
Low Voltage Directive 2014/35/EU



Registration No.: AN 50592789 0001

Report No.: CN23SWDU 001

Holder: GoodWe Technologies Co., Ltd.
No.90 Zijin Rd., New District
215011 Suzhou
P.R. China

Product: PV-Inverter
Grid-connected PV Inverter

Identification: Type designation: GW100K-GT GW110K-GT GW125K-GT
GEP100-20 GEP110-20 GEP125-20
GW100K-GT-C10
Serial Number : Engineering Samples
Remark(s) : Issued in conjunction with TÜV Rheinland
license R50592783 pages 0001-0003.

This certificate of conformity is based on an evaluation of a sample of the above mentioned product. Technical Report and documentation are at the Licence Holder's disposal. This is to certify that the tested sample is in conformity with Annex I of Council Directive 2014/35/EU, referred to as the Low Voltage Directive. This certificate does not imply assessment of the series-production of the product and does not permit the use of a TÜV Rheinland mark of conformity. The holder of the certificate is authorized to use this certificate in connection with the EC declaration of conformity according to Annex IV of the Directive.

Certification Body

Date 03.07.2023



Bruce Li
Bruce Li

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

CE The CE marking may be used if all relevant and effective EC Directives are complied with.



GoodWe Technologies Co., Ltd.
Yu Xiao

Date : 03.07.2023
Our ref. : Jiangyi 01
Your ref.: Xiao Yu

No.90 Zijin Rd., New District
215011 Suzhou
P.R. China

Ref : AN Certificate of Conf. Low Voltage D.

Type of Equipment : Grid-connected PV Inverter
Model Designation : See Certificate
Certificate No. : AN 50592789 0001
Report No. : CN23SWDU 001

Dear Yu Xiao,

The above specified equipment has been tested and found to be in accordance with the relevant requirements.

Please find enclosed your certificate as specified above.

If cancellation of the certificate is submitted by 15 November in a given year, no fee will be charged for the following year.

The certificate is issued with the reservation that the license holder applies all information required in § 6 of the ProdSG related to name and address of the manufacturer or his authorized representative / importer, including their respective contact addresses on the product prior to marketing of the product in the European Economic Area. In case you have a change regarding your involved local representative for the certificate, please inform us in due time.

With kind regards,

Certification Body

Bruce Li

Enclosure

证书的详细资料请登陆www.certipedia.com查阅,或拨打我司客服热线800 999 3668 / 400 883 1300咨询

CERTIFICATE

of Conformity

Low Voltage Directive (EU) 2014/35

Registration No.: AN 50633923 0001
Report No.: CN23SWDU 002
Holder: GoodWe Technologies Co., Ltd.
No.90 Zijin Rd., New District
215011 Suzhou
P.R. China
Product: PV-Inverter
(Grid-connected PV Inverter)

Type designation listed on the next page

This certificate of conformity is based on an evaluation of a sample of the above-mentioned product. Technical Report and documentation are at the License Holder's disposal. This is to certify that the tested sample is in conformity with Annex I of Council Directive (EU) 2014/35, referred to as the Low Voltage Directive. This certificate does not imply assessment of the series-production of the product and does not permit the use of a TÜV Rheinland mark of conformity. The holder of the certificate is authorized to use this certificate in connection with the EC declaration of conformity according to Annex IV of the Directive.

Certification Body

Date: 2024-08-30



A. Chen



TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

The CE marking may be used if all relevant and effective EC Directives/Regulations are complied with.

CERTIFICATE

of Conformity
Low Voltage Directive (EU) 2014/35

Registration No.: AN 50633923 0001

Product: PV-Inverter
(Grid-connected PV Inverter)

Identification: Type Designation
GW100K-GT , GW110K-GT , GW125K-GT ,
GEP100-20 , GEP110-20 , GEP125-20 ,
GW110K-GT-KR , GW125K-GT-KR

Serial No.: 9125KGTU243W0001

Remark(s) : Issued in conjunction with TÜV Rheinland
license R 50592783 0001-0005.



TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

The CE marking may be used if all relevant and effective EC Directives/Regulations are complied with.

CERTIFICATE

of Conformity

Registration No.: AK 50633203 0001
Report No.: CN242269 001
Holder: GoodWe Technologies Co., Ltd.
No.90 Zijin Rd., New District
215011 Suzhou
P.R. China
Product: PV-Inverter
(Grid-connected PV Inverter)

Type designation listed on the next page

The certificate of conformity refers to the above-mentioned product. This is to certify that the specimen is in conformity with the assessment requirement mentioned on the next page. This certificate does not imply assessment of the production of the product and does not permit the use of a TÜV Rheinland mark of conformity.

Certification Body

Date: 2024-08-06


A. Chen



TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

CERTIFICATE

of Conformity

Registration No.: AK 50633203 0001

Product: PV-Inverter
(Grid-connected PV Inverter)

Tested according to: IEC TS 62910:2020

Identification: Type Designation
GW100K-GT , GW110K-GT , GW125K-GT
GEP100-20 , GEP110-20 , GEP125-20
GW110K-GT-KR , GW125K-GT-KR

Serial Number : 9125KGTU238W8001

Software Version : V1.02.02

Remark : Refer to report CN242269 001
for details.



TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

CERTIFICATE of Conformity



Registration No.: A3 50619992 0001

Report No.: CN24CZIO 001

Holder: GoodWe Technologies Co., Ltd.
No.90 Zijin Rd., New District
215011 Suzhou
P.R. China

Product: PV-Inverter
(Grid-connected PV Inverter)

Identification: Type Designation : GW100K-GT GW110K-GT GW125K-GT
GEP100-20 GEP110-20 GEP125-20
Software Version : V1.02.02
Serial Number : 9125KGTU238W8001
Remark(s) : Refer to report CN24CZIO 001 for details.

Tested acc. to: EN 50549-2:2019
EN 50549-10:2022

The certificate of conformity refers to the above mentioned product. This is to certify that the specimen is in conformity with the assessment requirement mentioned above. This certificate does not imply assessment of the production of the product and does not permit the use of a TÜV Rheinland mark of conformity.

Durch die DAKKS nach
DIN EN ISO/IEC 17065:2013
akkreditierte Zertifizierungsstelle

Die Akkreditierung gilt nur für den in der
Urkundenanlage D-ZE-14169-01-02
aufgeführten Akkreditierungsumfang.

Certification Body

Date 08.02.2024



A. Chen

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

Certificate No.: A3 50619992 0001

Certificate Of Conformity

License Holder: GoodWe Technologies Co., Ltd.
No.90 Zijin Rd., New District
215011 Suzhou
P.R. China

Type of product: PV-Inverter
(Grid-connected PV Inverter)

Model: GW100K-GT GW110K-GT GW125K-GT
GEP100-20 GEP110-20 GEP125-20

Firmware version: V1.02.02

Standard: EN 50549-2 : 2019
EN 50549-10 : 2022

Report No.: CN24CZIO 001

Date of issue: 08.02.2024

The verification of conformity refers to the above mentioned product. This is to verify that the specimen is in conformity with the assessment requirement mentioned above. This verification does not imply assessment of the production of the product and does not permit the use of a TÜV Rheinland mark of conformity.


A. Chen
Certifier



TÜV Rheinland LGA Products GmbH
Am Grauen Stein 29 · 51105 Köln · Germany

Certificat n°.: A3 50619992 0001

Certificat de conformité

Fabricant:	GoodWe Technologies Co., Ltd. No.90 Zijin Rd., New District 215011 Suzhou P.R. China
Type de produit:	Onduleur photovoltaïque connecté au réseau
Modèle:	GW100K-GT,GW110K-GT,GW125K-GT GEP100-20,GEP110-20,GEP125-20
Version du firmware:	V1.02.02
Standard:	EN 50549-2 : 2019 Exigences relatives aux centrales électriques destinées à être raccordées en parallèle à des réseaux de distribution - Partie 2: Raccordement à un réseau de distribution BT - Centrales électriques jusqu'au Type B inclus EN 50549-10 : 2022 Exigences relatives aux centrales électriques destinées à être raccordées en parallèle à des réseaux de distribution - Partie 10 : Essais pour l'évaluation de la conformité des unités de production
Rapport n°. :	CN24CZIO 001
Date d'émission :	08.02.2024

La vérification de la conformité concerne le produit susmentionné. Elle a pour but de vérifier que le spécimen est conforme à l'exigence d'évaluation mentionnée ci-dessus. Cette vérification n'implique pas l'évaluation de la fabrication du produit et ne permet pas l'utilisation d'une marque de conformité du TÜV Rheinland.

A. Chen
Certifier



TÜV Rheinland LGA Products GmbH
Am Grauen Stein 29 · 51105 Köln · Germany



CERTIFICATE OF CONFORMITY



Issued to: GoodWe Technologies Co., Ltd.
No.90 Zi Jin Road, SND, Suzhou, China

For the product: Gird-Tied PV Inverter

Trade name: **GOODWE**

Type/Model: GW100K-GT, GW100K-GT-C10, GW110K-GT, GW125K-GT,

Ratings: See Annex

Manufactured by: GoodWe Technologies Co., Ltd.
No.90 Zi Jin Road, SND, Suzhou, China

Requirements: IEC 61683:1999
IEC 60068-2-1:2007
IEC 60068-2-2:2007
IEC 60068-2-14:2009
IEC 60068-2-30:2005
IEC 60068-2-64:2019
EN 50530:2010+A1:2013

This Test Certificate is granted on account of an examination by DEKRA, the results of which are laid down in a confidential file no. 6161387.51(A-B), 6161389.50

The examination has been carried out on one single specimen of the product. The certificate does not include an assessment of the manufacturer's production. Conformity of his production with the specimen tested by DEKRA is not the responsibility of DEKRA.

Shanghai, 1 August 2023 Certificate Number: 6161387.01COC
It expires at the latest on: 1 August 2028

DEKRA Testing and Certification (Shanghai) Ltd.

Cliff Lin
Certification Manager

© Integral publication of this certificate and adjoining reports is allowed

Accreditation of the certification body by IAS according to ISO/IEC 17065 for products.

DEKRA Testing and Certification (Shanghai) Ltd.
3F #250 Jiangchangsan Road Building 16 Headquarter Economy Park Shibe Hi-Tech Park, Jing'an District, Shanghai 200436 China
T +86 21 6056 7600 F +86 21 6056 7555 www.dekra-product-safety.com



Annex

Document no. : 6161387.01COC

Ratings of the test product:

Operating temperature range: - 30°C to + 60°C

Protective class: I

Ingress protection rating: IP66

OVC: DC II / AC III

Power factor range (adjustable): 0.8 leading...0.8 lagging

GW100K-GT

PV Input: U_{max}: 1100 Vdc, U_{MPPT}: 180-1000 Vdc, I_{max}: 8*42 A, I_{sc PV}: 8*52.5 A

Output: U_r: 220 / 380, 230 /400 Vac, 3L / N / PE or 3L / PE, fr: 50 / 60 Hz, I_{max}: 167.1 A, Pr: 100 kW (99.99 kW for Australia), S_r: 100 kVA (99.99 kVA for Australia), S_{max}: 110 kVA (99.99 kVA for Australia)

GW100K-GT-C10

PV Input: U_{max}: 1100 Vdc, U_{MPPT}: 180-1000 Vdc, I_{max}: 8*42 A, I_{sc PV}: 8*52.5 A

Output: U_r: 220 / 380, 230 /400 Vac, 3L / N / PE or 3L / PE, fr: 50 / 60 Hz, I_{max}: 167.1 A, Pr: 100 kW (99.99 kW for Australia), S_r: 100 kVA (99.99 kVA for Australia), S_{max}: 110 kVA (99.99 kVA for Australia)

GW110K-GT

PV Input: U_{max}: 1100 Vdc, U_{MPPT}: 180-1000 Vdc, I_{max}: 10*42 A, I_{sc PV}: 10*52.5 A

Output: U_r: 220 / 380, 230 /400 Vac, 3L / N / PE or 3L / PE, fr: 50 / 60 Hz, I_{max}: 183.4 A, Pr: 110 kW, S_r: 110 kVA, S_{max}: 121 kVA

GW125K-GT

PV Input: U_{max}: 1100 Vdc, U_{MPPT}: 180-1000 Vdc, I_{max}: 10*42 A, I_{sc PV}: 10*52.5 A

Output: U_r: 220 / 380, 230 /400 Vac, 3L / N / PE or 3L / PE, fr: 50 / 60 Hz, I_{max}: 199.4 A, Pr: 125 kW, S_r: 125 kVA, S_{max}: 137.5 kVA

-End-

Suzhou Longce Testing Technology Service Co., Ltd.

Test Report

Test Items: IP66 Test
Sample Name: PV Inverter
Consigner: GoodWe Technologies Co.,Ltd.
Test Type: Entrust Test

Prepared By: *Wang fei* Checked By: *chen Dongchun* Approved By: *Lu Jitian*

Authorized signatory

1. GENERAL INFORMATION

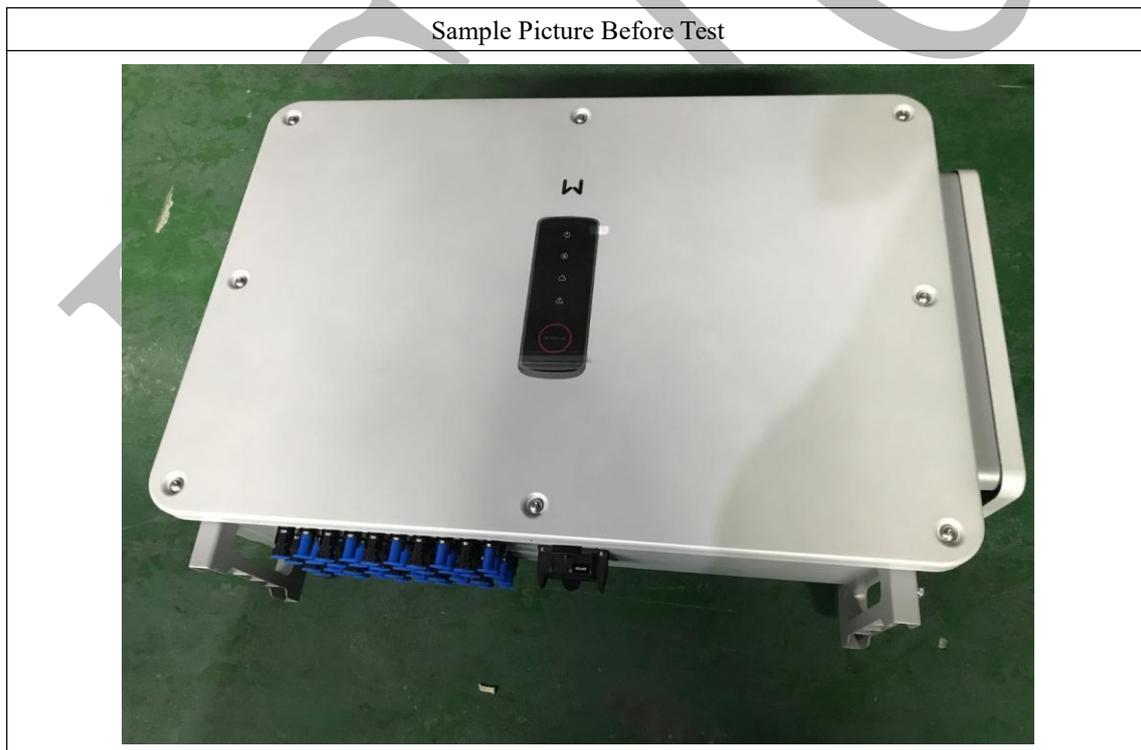
Equipment Under Test	PV Inverter
Test Model	GW125K-GT
Untest Model	GW100K-GT, GW100K-GT-C10, GEP100-20, GW110K-GT, GEP110-20, GEP125-20
Samples Quantity	1 PCS
Samples Code	LCJC2023062100101
Entrust unit name	GoodWe Technologies Co., Ltd.
Entrust unit address	No.90 Zijin Rd., New District, Suzhou, 215011, China
Manufacture unit name	GoodWe Technologies Co., Ltd.
Manufacture unit address	No.90 Zijin Rd., New District, Suzhou, 215011, China
Sample delivery personnel information	/
Sample status	Conform to the requirements of the test
Received date	Jun. 21, 2023
Issued date	Jul. 05, 2023
Test date	Jun. 24, 2023~Jul. 03, 2023
Test standard	1. Commissioned Testing Contract Form 2. IEC 60529-2013 Degrees of protection provided by enclosures (IP Code)
Test engineer	Wang Fei
Laboratory Temperature	25±5°C
Laboratory Humidity	50±5%RH

2. TEST ITEMS AND RESULT

No.	Test Item	Test Information	Test Result	Verdict
1	IP6X Test	1. Dust: Talcum powder; 2. Dust concentration: 2kg/m ³ ; 3. Time: 8h; 4. Pressure state: Vacuum.	After the test, there was no obvious dust enter into the sample.	PASS
2	IPX6 Test	1. Inner diameter of nozzle: 12.5mm; 2. Distance: 2.5mm; 3. Water flow: (100±5)L/min; 4. Time: 3min.	After the test, there was no obvious water enter into the sample.	PASS

Note: In the report, the model GW125K-GT was identical in structure with GW100K-GT, GW100K-GT-C10, GEP100-20, GW110K-GT, GEP110-20, GEP125-20; IP66 test were only conducted on the model GW125K-GT, also applicable to the other models.

3. TEST PICTURES AND DATA

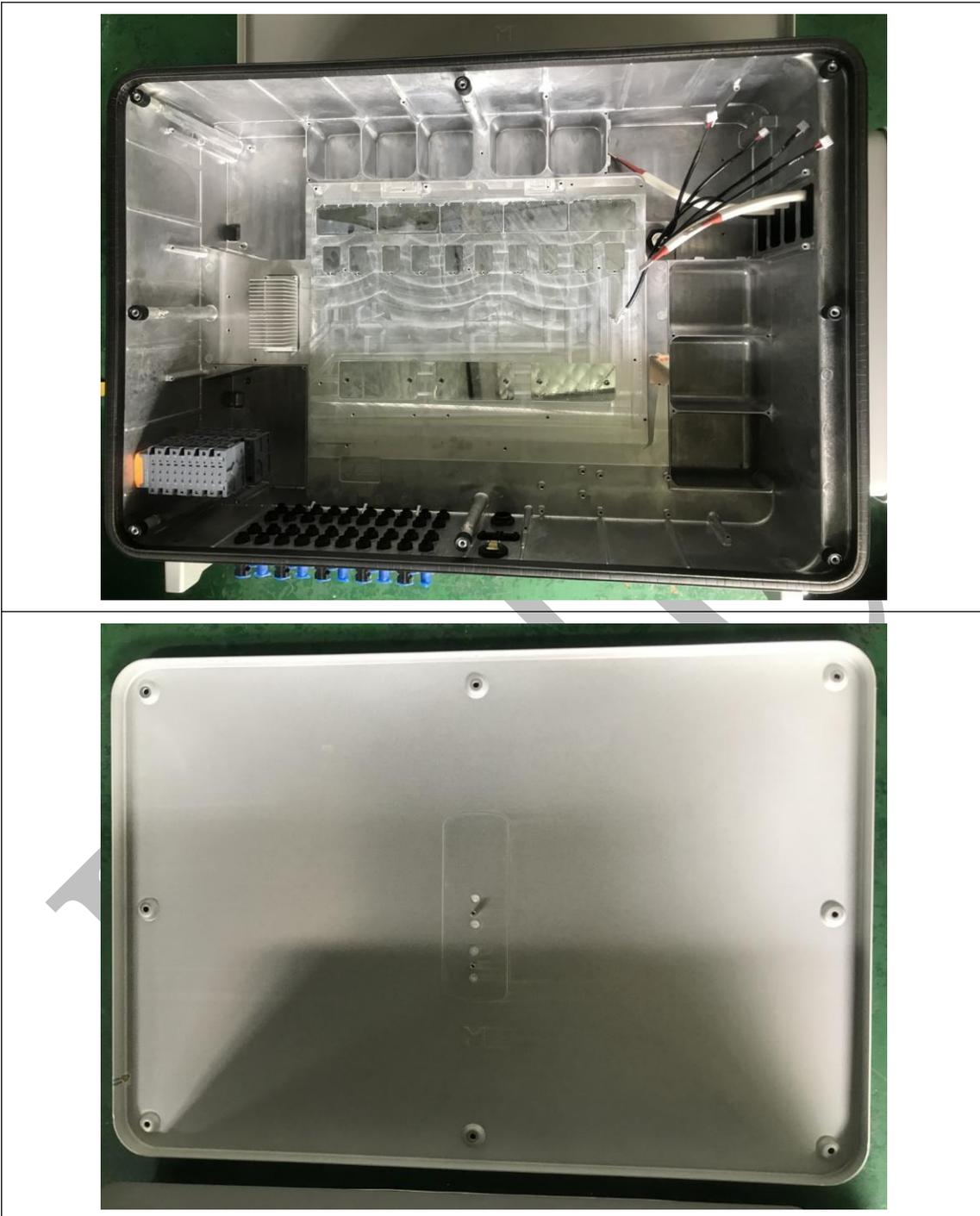


Picture of IP6X Test



Sample Pictures After IP6X Test

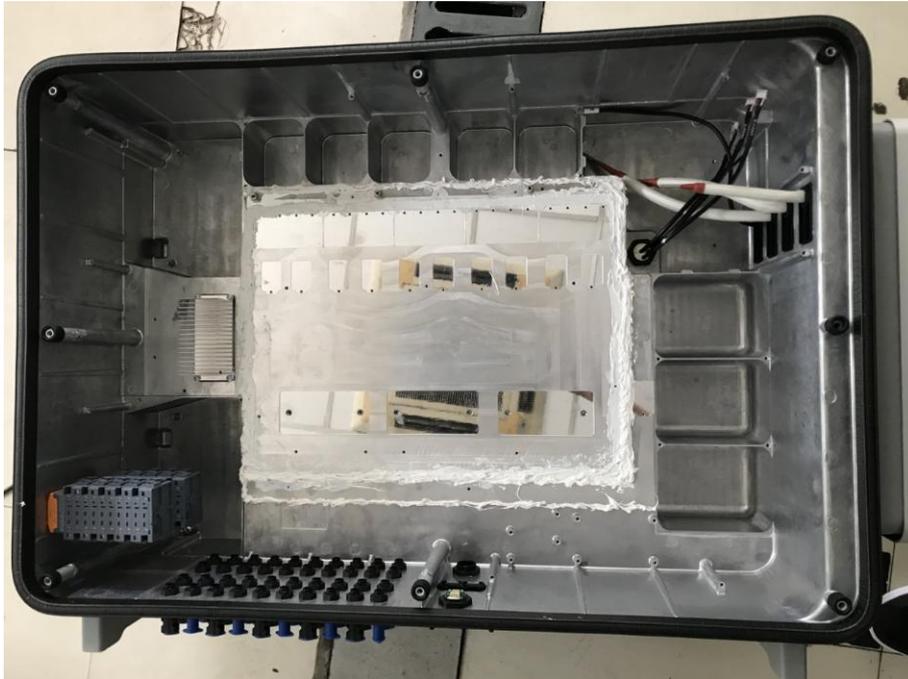




Pictures of IPX6 Test



Sample Pictures After Test



4. TEST EQUIPMENT

No.	Equipment Name	Equipment Model	Equipment Number	Calibration Due Date
1	Dust Test Chamber	TL-SC-15F	201801IP004	Mar. 07, 2023
2	Waterproof Equipment IPX6	TL-LY1-4F	201606IP002	Apr. 20, 2022

Declaration

1. The LAB have meet the required of CNAS-CL01:2018(Same as ISO/IEC 17025:2017), and have get the authorize from CNAS, CNAS Number: CNAS L8212, Also get the authorize from ISTA, ISTA ID: 10764;
2. The LAB is responsible for the impartiality of all test data and the confidentiality of client information except the customer disclosure;
3. The LAB is only responsible for the test items entrusted by the client;
4. This report is valid in the condition of having sign of approver, special seal of laboratory testing and Connective seal, The report shall not be partial duplicated without written approval from the LAB except fully copy;
5. The Samples were provided by the client, and the authenticity also is borne by the client, the LAB is only responsible for the test data of the sample;
6. If have any objection to the report, please submit it to the LAB in writing within 15 days after receiving the report;
7. The samples must be take back within 3 months,and the LAB will dipose it after the deadline.
8. Subcontractor and Details: NA;
9. The visual inspection used in this test is visual observation, except for non-visual observation;
10. Conclusion language description:
 - (1)Pass : the samples conform to the requirements of the standard;
 - (2)Fail: the samples do not conform to the requirements of the standard;
 - (3) / : don't judge or no test standard.
11. If the report is not marked with CMA, the data and results issued by the report are only used for the customer to understand the quality of the sample.
12. The "Commissioned Testing Contract Form" in this report has not been recognized by CNAS;
13. Disclaimer: The test or determination results in this report are only responsible for the determination of the appearance of the sample. If the sample is involved in performance or function and other aspects of the test data, results and determination requirements by the customer (entrusting unit), this laboratory shall not assume any legal responsibility.

LAB: Suzhou Longce Testing Technology Service Co., Ltd.

ADD: (Building 5, National Environmental New & Hi-tech Industrial Park) No.369, Lushan Road,New District, Suzhou, China

TEL: 0512-68326317, 89990816

FAX: 0512-69200365

E-mail: lcjc@szlcjc.com

*****End of the report*****



PROTOTYPE DECLARATION / Prototypenbescheinigung

Product prototype certificate number
For the company: / Für das Unternehmen

No:230027RECO26-PTCER

GoodWe Technologies Co., Ltd.
No.90 ZiJin Rd., New District, Suzhou, 215011, China

GOODWE

Has provided to E&E Product Certification Body of SGS the technical documentation indicated in both articles no. 12 of standards /

Hat der E & E-Produktzertifizierungsstelle von SGS die technischen Dokumente für beide Artikel-Nr. 12 des Standards überliefert:

- **VDE-AR-N 4110: 2018.** Technical requirements for the connection and operation of customer installations to the medium voltage network (TAR medium voltage) /
VDE-AR-N 4110: 2018. Technische Voraussetzungen für den Anschluss und Betrieb von Kundenanlagen an das Mittelspannungsnetz (TAR-Mittelspannung).
- **VDE-AR-N 4120:2018.** Technical requirements for the connection and operation of customer installations to the high voltage network (TAR high voltage).
VDE-AR-N 4120: 2018.. Technische Voraussetzungen für den Anschluss und Betrieb von Kundeninstallationen an das Hochspannungsnetz (TAR-Hochspannung).

For the product / Für das Produkt: **Type 2 PV inverter / PV-Wechselrichter Typ 2**

Models / Modelle:		GW125K-GT / GW110K-GT / GW100K-GT / GEP125-20 / GEP110-20 / GEP100-20
Technical Data / Technische Daten:		
DC	Max. input voltage / Max.-Eingangsspannung:	See Annex 3 / siehe Anhang 3
	MPPT Voltage Range / MPPT-Spannungsbereich:	See Annex 3 / siehe Anhang 3
	No. of MPPT inputs per tracker / Anzahl der MPP-Eingänge pro Tracker	See Annex 3 / siehe Anhang 3
AC	Max. input current / Max.-Eingangsstrom:	See Annex 3 / siehe Anhang 3
	AC output power/ AC-Ausgangsleistung:	See Annex 3 / siehe Anhang 3
	Max. AC output current / Max. AC-Ausgangsstrom:	See Annex 3 / siehe Anhang 3
	Nominal Grid Voltage / Nominale Netzspannung:	See Annex 3 / siehe Anhang 3
	Nominal Grid Frequency / Nominale Netzfrequenz:	See Annex 3 / siehe Anhang 3
	Max. input voltage / Max.-Eingangsspannung:	See Annex 3 / siehe Anhang 3

We confirm that the above mentioned ESS inverters are considered as Prototypes in accordance with the VDE-AR-N 4110, the VDE-AR-N 4120 and the standard FGW TR 8 / *Hiermit bestätigen wir, dass es sich bei der genannten EZE nach VDE-AR-N 4110, VDE-AR-N 4120 und FGW TR 8 um einen Prototyp handelt*

- **FGW TR8. Certification of the Electrical Characteristics of Power Generating Units, Systems and Storage Systems as well as for their Components to the Grid. Revision 9.**
FGW TR8. Zertifizierung der elektrischen Eigenschaften von Erzeugungseinheiten und -anlagen, Speicher sowie für deren Komponenten am Stromnetz. Revision 9.

Test reports and certificates will be issued when the testing process is finished and evaluated with positive result.
Testberichte und Zertifikate werden nach Abschluss des Testprozesses ausgestellt und mit positivem Ergebnis bewertet.

Brussels, 31st of January 2024


Calogero Lana
Certification Manager /
Zertifizierungsmanager

Annex 1 / Anhang 1

This certificate confirms that the mentioned generation unit is a prototype according to FGW TR 8. For this purpose, the PGU is described below and the main technical developments or innovations are presented: /

Diese Bescheinigung bestätigt, dass es sich bei der genannten Erzeugungseinheit nach FGW TR 8 um einen Prototypen handelt. Dazu wird im Folgenden die EZE beschrieben und die wesentlichen technischen Weiterentwicklungen oder Neuerungen dargestellt:

Description of the generating unit / Beschreibung der Erzeugungseinheit:

The photovoltaic generation unit (PV-PGU) enables the supply of direct current generated by means of photovoltaic modules from solar radiation into the public alternating current grid using power electronics. /

Die Photovoltaik-Erzeugungseinheit (PV-PGU) ermöglicht die Einspeisung von mittels Photovoltaik-Modulen aus Sonnenstrahlung erzeugtem Gleichstrom in das öffentliche Wechselstromnetz mittels Leistungselektronik

Treatment according to FGW TR 8, 2.3.2.2 / Behandlung nach FGW TR 8, 2.3.2.2:

The mentioned PGU is a non-wind generation unit. The plant certificate must be issued two years after the commissioning of the first PGU at the latest. /

Bei der genannten EZE handelt es sich um eine Nicht-Wind-Erzeugungseinheit. Spätestens zwei Jahre nach der Inbetriebnahme der ersten EZE muss das Anlagenzertifikat erstellt werden.

The PGU is operated in an PGS (generation plant), which consists of an PGU with PGU certificate and prototypes (case 2). Manufacturer's data must be compiled and provided for certification of the plant. The final plant certificate is issued when the PGU certificate is available for the generation unit in question. /

Die EZE wird in einer EZA (Erzeugungsanlage) betrieben, welche aus EZE mit EZE-Zertifikat und Prototypen besteht (Fall 2). Herstellerangaben müssen erstellt und für die Zertifizierung der Anlage zur Verfügung gestellt werden. Das endgültige Anlagenzertifikat wird erstellt, wenn das EZE-Zertifikat für die genannte Erzeugungseinheit vorliegt.

Annex 2 / Anhang 2

This certificate confirms that the mentioned generation unit is a prototype according to FGW TR 8. For this purpose, the PGU is described below and the main technical developments or innovations are presented: /

Diese Bescheinigung bestätigt, dass die genannte Erzeugungseinheit (EZE) in der Lage ist, die Anforderungen an die elektrischen Eigenschaften der Erzeugungseinheit nach VDE-AR-N 4110 und VDE-AR-N 4120 zu erfüllen. Dazu wird im Folgenden die Übereinstimmung der elektrischen Eigenschaften der EZE mit den Anforderungen nach VDE-ARN 4110 und VDE 4120 nachgewiesen:

VDE-AR-N 4110 & VDE-AR-N 4120	Comment and reference / Kommentar und Bewertung
12 Regulation for prototypes / Prototypen-Regelung	
<p>A prototype is the first power generating unit of a type presenting substantial technological developments or innovations and all other power generating units of this type put into operation within two years after the commissioning of the first power generating unit of this type. / <i>Ein Prototyp ist die erste Erzeugungseinheit eines Typs, der wesentliche technische Weiterentwicklungen oder Neuerungen aufweist, und alle weiteren Erzeugungseinheiten dieses Typs, die innerhalb von zwei Jahren nach der Inbetriebsetzung der ersten Erzeugungseinheit dieses Typs in Betrieb gesetzt werden.</i></p> <p>NOTE 1 This definition corresponds to the term's definition given in SDLWindV. There is no relation to the term "pilot wind turbine" (de: Pilotwindenergieanlage) used in the EEG. / <i>ANMERKUNG 1 Diese Definition entspricht der Begriffsdefinition nach SDLWindV. Es besteht kein Zusammenhang zum Begriff „Pilotwindenergieanlage“ im EEG [6].</i></p> <p>Technological developments and innovations are generally considered to be substantial where components or software versions are changed so that the electrical behaviour of the power generating unit at the network changes significantly and a unit certification of this new type is required. / <i>Wesentliche technische Weiterentwicklungen und Neuerungen liegen in der Regel vor, wenn Komponenten oder Softwareversionen so geändert werden, dass sich das elektrische Verhalten der Erzeugungseinheit am Netz signifikant ändert und eine Einheitenzertifizierung dieses neuen Typs erforderlich wird.</i></p>	<p>Checked / Berücksichtigt:</p> <ul style="list-style-type: none"> - See annex 1 / siehe Anhang 1

VDE-AR-N 4110 & VDE-AR-N 4120	Comment and reference / Kommentar und Bewertung
<p>For the prototype of a power generating unit the requirements of this VDE application guide apply. For these prototypes, a prototype confirmation, in which the certification body confirms a substantial technological development or innovation based on a manufacturer declaration, is sufficient, instead of the unit certificate, for a period of two years after commissioning of the first power generating unit prototype in Germany. The certification body shall also check and set out reproducibly in the prototype confirmation, whether the prototype is generally capable of meeting the requirements of this VDE application guide for the electrical properties of the power generating unit. This is based on an electrical properties data sheet prepared by the manufacturer of the power generating unit. / <i>Für einen Prototypen einer Erzeugungseinheit gelten die Anforderungen dieser VDE-Anwendungsregel. Innerhalb von zwei Jahren nach der Inbetriebsetzung der ersten Prototypen-Erzeugungseinheit in Deutschland ist für diese Prototypen anstelle des Einheitszertifikats eine Prototypenbestätigung ausreichend, in der die Zertifizierungsstelle das Vorhandensein einer wesentlichen technischen Weiterentwicklung oder Neuerung auf Basis einer Herstellererklärung bestätigt. Weiterhin ist durch die Zertifizierungsstelle zu prüfen und in der Prototypenbestätigung nachvollziehbar auszuweisen, ob der Prototyp grundsätzlich in der Lage ist, die Anforderungen dieser VDE-Anwendungsregel an die elektrischen Eigenschaften der Erzeugungseinheit zu erfüllen. Dies erfolgt auf Basis eines vom Hersteller der Erzeugungseinheit erstellten Datenblattes der elektrischen Eigenschaften.</i></p> <p>For prototypes commissioned before 2019-04-27, the above-mentioned period starts 2019-04-27. / <i>Für Prototypen die vor dem 27.04.2019 in Betrieb gesetzt werden, beginnt die oben genannte Frist am 27.04.2019.</i></p>	<p>Checked / Berücksichtigt</p>

VDE-AR-N 4110 & VDE-AR-N 4120	Comment and reference / Kommentar und Bewertung
<p>In order to allow the certification body to carry out the required plausibility test, the data sheet of the power generating unit shall contain at least the following information:/ <i>Damit die geforderte Plausibilitätsprüfung durch die Zertifizierungsstelle erfolgen kann, muss das Datenblatt der Erzeugungseinheit mindestens folgende Angaben enthalten:</i></p>	<p>Checked / Berücksichtigt After documentation provided by the manufacturer (see annex 3 and Annex 4). / <i>Daten vom Hersteller stehen zur Verfügung (siehe Anhang 3 und Anhang 4).</i></p>
<p>1. Electrical data (nominal and rated quantities) / <i>Elektrische Daten (Nenn- und Bemessungsgrößen);</i></p>	<p>Compliant / Erfüllt: - See annex 3 / <i>siehe Anhang 3</i></p>
<p>2. Schematic overview circuit diagram of the power generating unit with all relevant componentsschematisches / <i>Übersichtsbilcl der Erzeugungseinheit mit allen wesentlichen Komponenten.</i></p>	<p>Compliant / Erfüllt: - See annex 4 / <i>siehe Anhang 4</i></p>
<p>3. Operating ranges of the power generating unit / <i>Betriebsbereiche der Erzeugungseinheit:</i></p> <ul style="list-style-type: none"> • Limits in quasi-static operation / <i>Grenzen im quasistationären Betrieb.</i> • Reactive power adjustment range / <i>Blindleistungsstellbereich.</i> • FRT limit curve (U/t diagram) / <i>FRT-Grenzkurve(U/t-Diagramm).</i> 	<p>Compliant / Erfüllt: - See annex 4 / <i>siehe Anhang 4</i></p>
<p>4. Protection functions with setting ranges / <i>Schutzfunktionen mit Einstellberemhen:</i></p> <ul style="list-style-type: none"> • Decoupling protection / <i>Entkupplungsschutz.</i> • Self-protection / <i>Eigenschutz.</i> 	<p>Compliant / Erfüllt: - See annex 4 / <i>siehe Anhang 4</i></p>
<p>5. Active power control / <i>Wirkleistungsregelung:</i></p> <ul style="list-style-type: none"> • Power/frequency behaviour / <i>Leistungs-Freqqbenz-Verhalten.</i> • Active power gradient / <i>Wirkleistungsgradient.</i> 	<p>Compliant / Erfüllt: - See annex 4 / <i>siehe Anhang 4</i></p>

VDE-AR-N 4110 & VDE-AR-N 4120	Comment and reference / Kommentar und Bewertung
6. Reactive power control / Blindleistungsregelung.	Compliant / Erfüllt: - See annex 4 / siehe Anhang 4
7. Dynamic reactive current feed-in / <i>Dynamische Blindstromspeisung</i> : • Basic functionality / <i>Grundsätzliche Funktionsweise</i> .	Compliant / Erfüllt: - See annex 4 / siehe Anhang 4
8. Declaration of the manufacturer stating that the power generating unit has been designed so that the requirements of this application guide for the power generating unit can be complied with / <i>Erklärung des Herstellers, dass die Erzeugungseinheit so konstruiert wurde, dass die Anforderungen dieser Anwendungsregel an die Erzeugungseinheit erfüllt werden können.</i>	Compliant / Erfüllt: - See annex 4 / siehe Anhang 4
<p>At the latest after expiry of the above-mentioned period, a unit certificate is required. / <i>Spätestens nach Ablauf der oben genannten Frist ist ein Einheitenzertifikat erforderlich.</i></p> <p><i>NOTE 2 If the unit certificate is available prior to expiry of the two-year term after commissioning the first power generating unit of this type, it can still be a prototype. /</i> <i>ANMERKUNG 2 Sofern das Einheitenzertifikat vor Ablauf der Frist von zwei Jahren nach der Inbetriebnahme der ersten Erzeugungseinheit.</i></p>	Compliant / Erfüllt

Annex 3 / Anhang 3

Datasheet of the generating unit / *Datenblatt der Erzeugungseinheit:*

Models	GW100K-GT	GW110K-GT	GW125K-GT
PV Input (DC)			
Recommended Max. PV input power(kW)	150	165	187.5
Number of MPP trackers	8	10	10
Number of DC inputs	2 for each MPPT		
Max. PV input voltage (V)	1100		
Min. PV input voltage / Startup input voltage (V)	200		
Rated input voltage (V)	600		
MPPT operating voltage	180~1000		
Full power MPPT voltage range(V)	500~850		
Max. input MPPT current(A)	8*42	10*42	10*42
Max. DC short-circuit current (A)	8*52.5	10*52.5	10*52.5
Output (AC)			
Rated power(kW)	100	110	125

Max. AC Apparent power(kVA)	110	121	137.5
Rated output current(A)	145.0	159.5	181.2
Max. output current(A)	167.1	183.4	199.4
Rated AC voltage (V)	230/400V,3L/N/PE or 3L/PE		
AC voltage range	304Vac-460Vac (According to local standard)		
Rated frequency	50/60Hz		
Grid frequency range	45Hz-55Hz/55Hz-65Hz (According to local standard)		
Active power adjustable range	0~100%		
THDi	< 5%		
DC current injection	< 0.5% In		
Power factor	1 (adjustable+/-0.8)		
Efficiency			
Max. efficiency / European efficiency	98.8%/ 98.4%	98.8%/ 98.4%	99.0%/ 98.5%
Protection			
DC reverse polarity protection	Yes		
Anti-islanding protection	Yes		
Leakage current protection	Yes		
Anti reverse power function	Yes		
Ground fault monitoring	Yes		
PV-array string fault monitoring	Yes		
DC switch	Yes		
Anti-PID function	Optional		
DC arc detection	Optional		
Input/ output SPD	PV:Type II(Type I+ II optional); AC:Type II		
General Data			
Dimensions (W*H*D, mm)	930*650*300		
Weight (kg)	85	88	88
Isolation method	Non-isolated		
Night power consumption	< 2W		

Operating ambient temperature range (°C)	-30~60°C (up 45°C derating)
Allowable relative humidity range (non-condensing)	0~100%
Cooling method	Smart Fan Cooling
Max. operating altitude (m)	4000
Display	LED, LCD (Optional) ,WLAN+APP
Communication	RS485, WiFi or 4G or PLC(Optional)
EMC	EN 61000-6-1,EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 61000-2-2,EN 62920;EN 55011
Safety standards	IEC 62109-1/2
Grid standards	DEWA,IEC61727,IEC62116,NRS 097,RPPS,AS/NZS 4777.2, VDE 0126-1-1, VDE-AR-N 4105, VDE 0124-100,CEI 0-21,CEI 0-16, EN50549-1, EN50549-2,EN50549-10,G99, PSE 2018

Models	GEP100-20	GEP110-20	GEP125-20
PV Input (DC)			
Recommended Max. PV input power(kW)	150	165	187.5
Number of MPP trackers	8	10	10
Number of DC inputs	2 for each MPPT		
Max. PV input voltage (V)	1100		
Min. PV input voltage / Startup input voltage (V)	200		
Rated input voltage (V)	600		
MPPT operating voltage	180~1000		
Full power MPPT voltage range(V)	500~850		
Max. input MPPT current(A)	8*42	10*42	10*42

Max. DC short-circuit current (A)	8*52.5	10*52.5	10*52.5
Output (AC)			
Rated power(kW)	100	110	125
Max. AC Apparent power(kVA)	110	121	137.5
Rated output current(A)	145.0	159.5	181.2
Max. output current(A)	167.1	183.4	199.4
Rated AC voltage (V)	230/400V,3L/N/PE or 3L/PE		
AC voltage range	304Vac-460Vac (According to local standard)		
Rated frequency	50/60Hz		
Grid frequency range	45Hz-55Hz/55Hz-65Hz (According to local standard)		
Active power adjustable range	0~100%		
THDI	< 5%		
DC current injection	< 0.5% In		
Power factor	1 (adjustable+/-0.8)		
Efficiency			
Max. efficiency / European efficiency	98.8%/ 98.4%	98.8%/ 98.4%	99.0%/ 98.5%
Protection			
DC reverse polarity protection	Yes		
Anti-islanding protection	Yes		
Leakage current protection	Yes		
Anti reverse power function	Yes		
Ground fault monitoring	Yes		
PV-array string fault monitoring	Yes		
DC switch	Yes		
Anti-PID function	Optional		
DC arc detection	Optional		
Input/ output SPD	PV:Type II(Type I+ II optional); AC:Type II		
General Data			
Dimensions (W*H*D, mm)	930*650*300		

Weight (kg)	85	88	88
Isolation method	Non-isolated		
Night power consumption	< 2W		
Operating ambient temperature range (°C)	-30~60°C (up 45°C derating)		
Allowable relative humidity range (non-condensing)	0~100%		
Cooling method	Smart Fan Cooling		
Max. operating altitude (m)	4000		
Display	LED, LCD (Optional) ,WLAN+APP		
Communication	RS485, WiFi or 4G or PLC(Optional)		
EMC	EN 61000-6-1,EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 61000-2-2,EN 62920;EN 55011		
Safety standards	IEC 62109-1/2		
Grid standards	DEWA,IEC61727,IEC62116,NRS 097,RPPS,AS/NZS 4777.2, VDE 0126-1-1, VDE-AR-N 4105, VDE 0124-100,CEI 0-21,CEI 0-16, EN50549-1, EN50549-2,EN50549-10,G99,PSE 2018		

Annex 4 / Anhang 4

Technical data of the generating unit / *Technische Daten der Erzeugungseinheit:*

Schematic overview of GW125K-GT

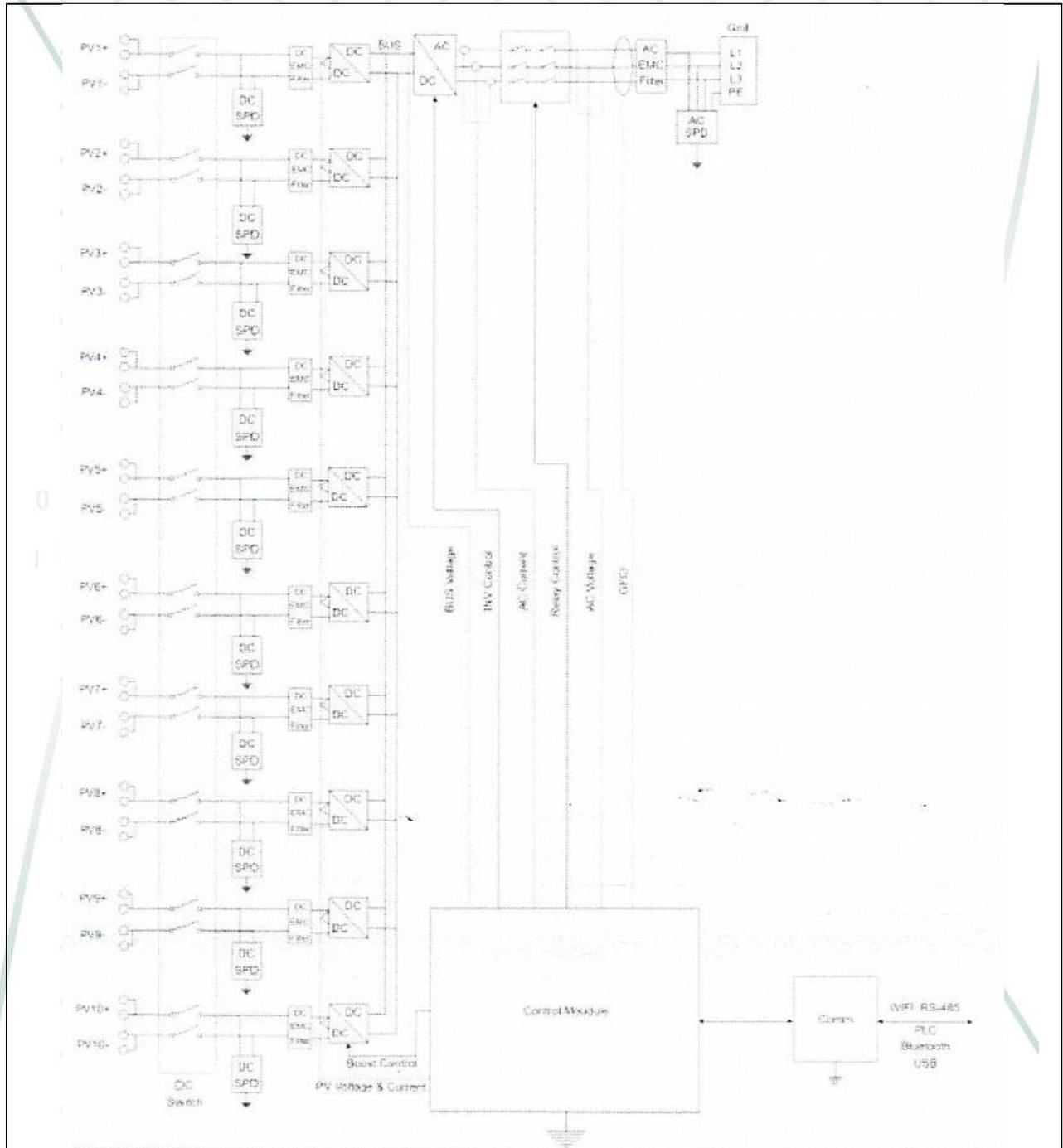


Figure 1

Selection for VDE-AR-N 4110 and VDE-AR-N 4120

First downloading the APP "Solargo" from the APP Store.

Then connecting PV inverter GW125K-GT to Solargo and setting safety code according to Figure 2 below

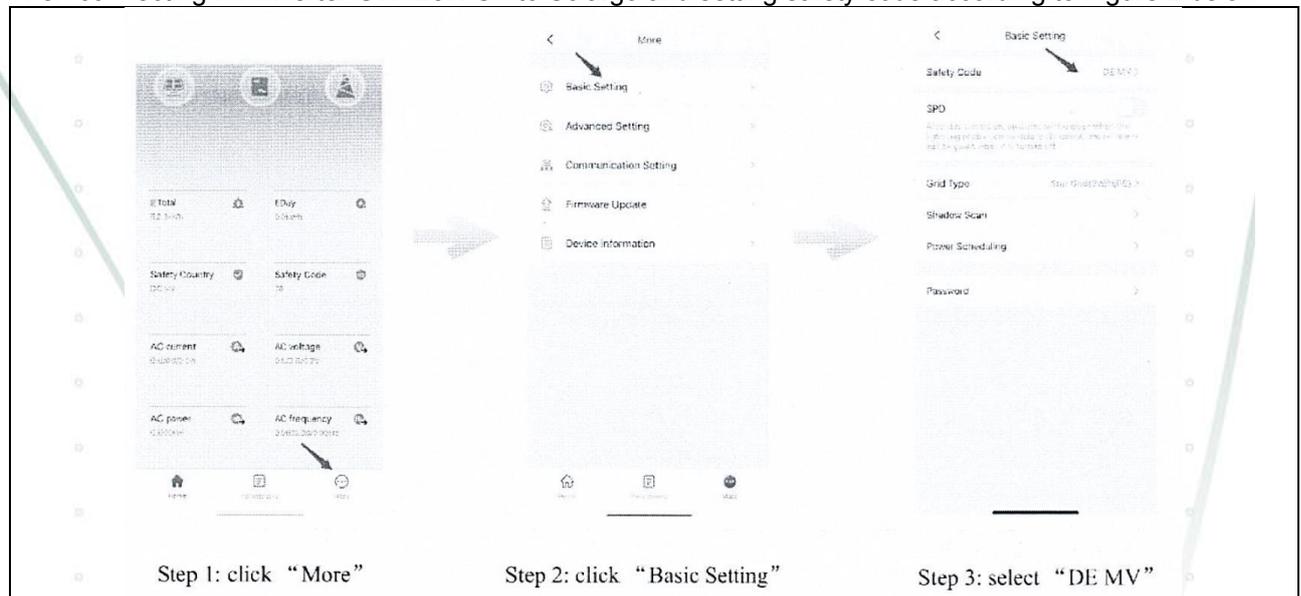


Figure 2

Operational areas of MODEL GW125K-GT

Limits during quasi-stationary operation

For VDE-AR-N 4110:2018-11 & VDE-AR-N 4120: 2018-11, in the entire frequency range from 47.5 Hz to 51.5 Hz and voltages in the range of 85% U_n to 115% U_n at the MODEL GW125K-GT PV inverter AC connection terminal, while voltage gradient $<5\% U_c / \text{min}$ and a frequency gradient of $<0.5\% f_n / \text{min}$, for quasi-stationary operation, MODEL GW125K-GT PV inverter is able in parallel operation with grid according to the minimum duration time Figure 3 below.

When voltage changes at the inverter AC terminal in the amount of $\Delta U \leq 10\% U_c$ with voltage gradients of $\geq 5\% U_c / \text{min}$ within the voltage band from 90% U_c to 110% U_c occur, inverter has no reduction for active and reactive power and keep connected to the grid.

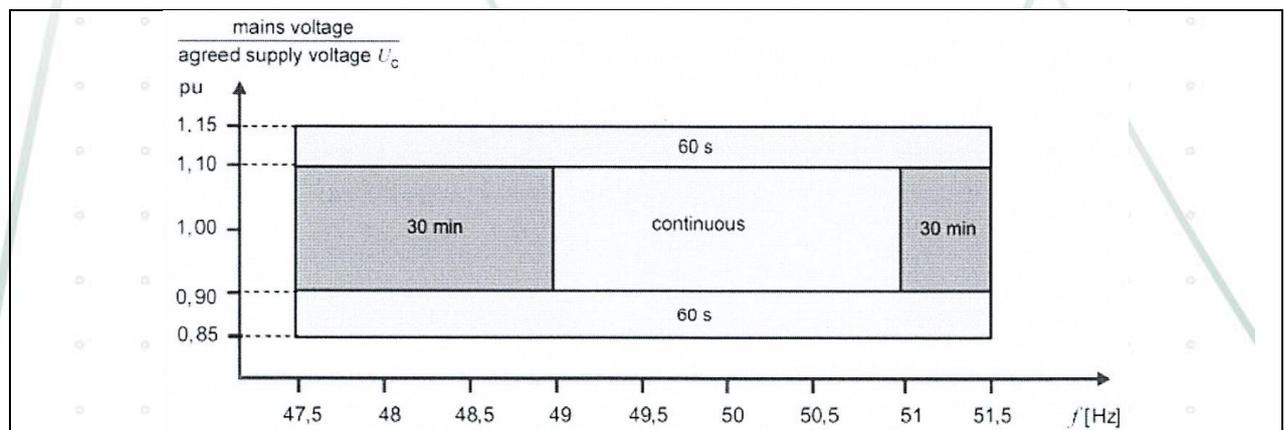


Figure 3. Quasi-stationary operation range for MODEL GW125K-GT

Reactive power capability

For VDE-AR-N 4110:2018-11 & VDE-AR-N 4120: 2018-11, the reactive power capability of MODEL GW125K-GT PV inverter is according to Figure 4 below.

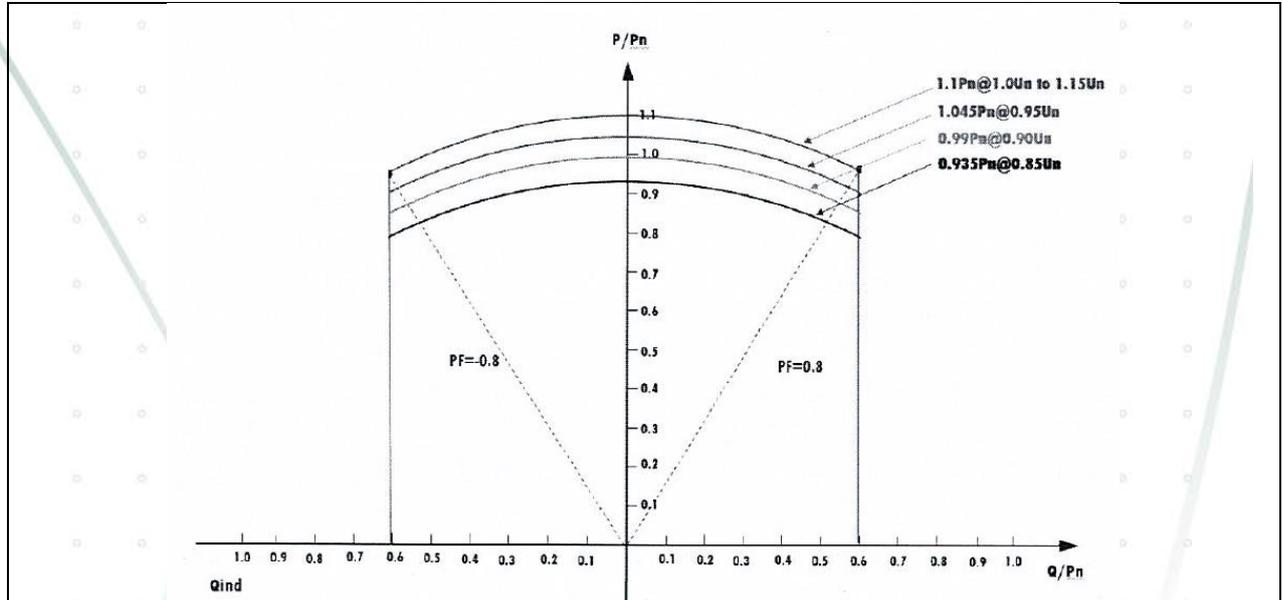


Figure 4. Voltage-dependent PQ diagram for MODEL GW125K-GT

FRT-limit curve (U(t)-diagram)

For VDE-AR-N 4110:2018-11 & VDE-AR-N 4120: 2018-11, the FRT limit curve of MODEL GW125K-GT PV inverter is according to Figure 5 below.

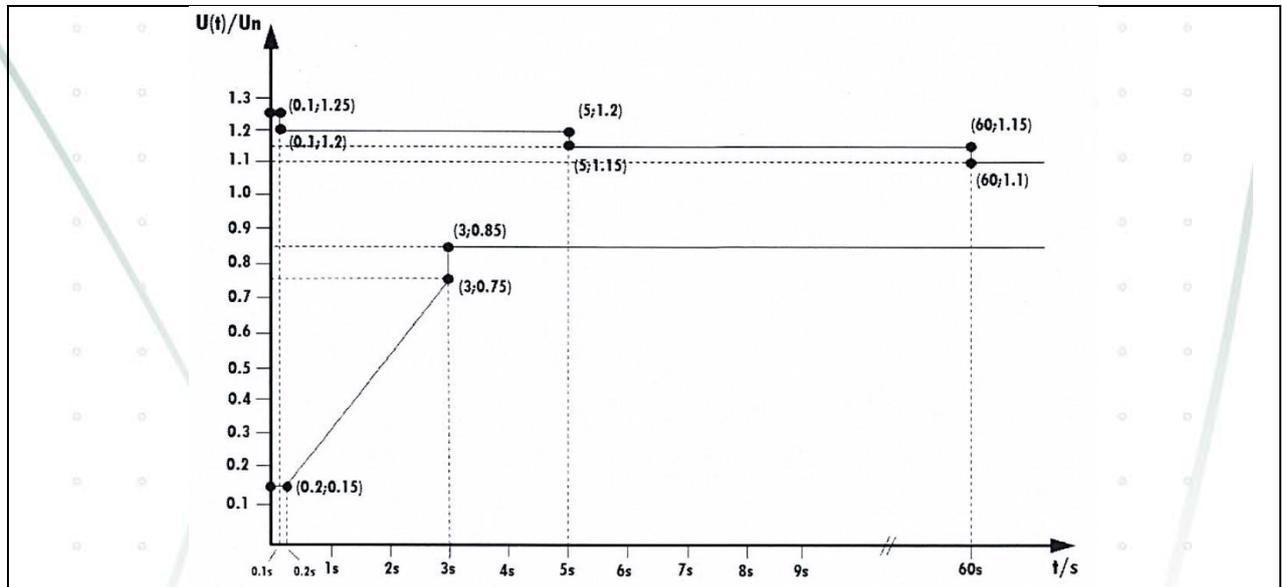


Figure 5 FRT limit curve for MODEL GW125K-GT

Note: For the reason of limited dynamic grid support requirement, MODEL GW125K-GT provide ZP(Zero Power) mode as well, when select this mode, MODEL GW125K-GT will supply no active and reactive power during LVRT for the voltage drop $\leq 70\%U_n$, but for voltage range from $70\% \sim 90\%U_n$, even choose ZP mode, inverter will enter into normal LVRT period with reactive power supplied by K factor.

Protection functions:

Grid protection

The default grid protection of MODEL GW125K-GT for VDE-AR-N 4110:2018-11 & VDE-AR-N 4120: 2018-11 is according to Table 1 below:

Function	Protection value	Trip time
U>	Default: 1.25 Un Range: 1.0-1.35Un	Default: 0.08s Range: 0-600s
U>>	Default: 1.25 Un Range: 1.0-1.35Un	Default: 0.08s Range: 0-600s
U<	Default: 0.80 Un Range: 0.0-1.0Un	Default: 2.00 s Range: 0-600s
U<<	Default: 0.3 Un Range: 0.0-1.0Un	Default: 0.70s Range: 0-600s
f>>	Default: 52.5 Hz Range: 50.0-55.0Hz	Default: 0.08s Range: 0-600s
f>	Default: 51.5 Hz Range: 50.0-55.0Hz	Default: 4.8 s Range: 0-600s
f<	Default: 47.5 Hz Range: 45.0-50.0Hz	Default: 0.08s Range: 0-600s

Table 1 MODEL GW125K-GT default protection setting for VDE-AR-N 4110:2018-11 & VDE-AR-N 4120: 2018-11

Function	Protection value	Trip time
Step for Voltage protection	0.1V	0.02s
Step for Frequency protection	0.1Hz	0.02s

Table 2 MODEL GW125K-GT setting step for voltage/frequency protection

The protection functions are independence from other set point.

After the inverter trip for protection, when the voltage recovers to at least 82%Un and frequency is between 49.9~50.1Hz, MODEL GW125K-GT has the setting of the delay time of recovery for both VDE-AR-N 4110:2018-11 & VDE-AR-N 4120: 2018-11, the setting range is from 0 to 30 mins, default setting is 300s.

Notes: MODEL GW125K-GT didn't provide testing terminal for protection test without disconnect the wires, such test terminal would be supplied at the system level on the LV side of MV transformer.

Intrinsic ("self") protection

For both VDE-AR-N 4110:2018-11 & VDE-AR-N 4120: 2018-11, MODEL GW125K-GT is integrated with intrinsic hardware protection only for over voltage, the protection is for hardware protection and is not settable. The protection default setting is 1.365Un for 1ms.

Active power control

Frequency control (P(f)-diagram):

For both VDE-AR-N 4110:2018-11 & VDE-AR-N 4120: 2018-11, P(f)-diagram is default according to the Figure 6 below.

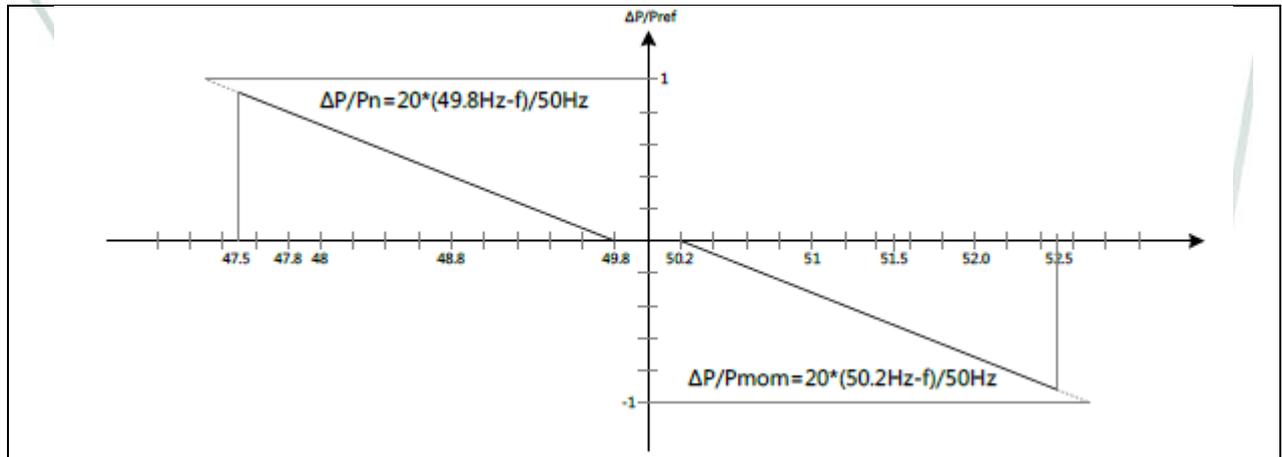


Figure 6 MODEL GW125K-GT P(f)-diagram

Note: Here Pmom is the active power freeze at that moment when the frequency to 50.2Hz. Pn is nominal active power. The default gradient for over-frequency and under-frequency is 40%Pref/Hz (slope=5%), while it can be adjustable from 16.67%Pref/Hz(s=12%) to 100%Pref/Hz(s=2%).

When doing for TR3 test, due to the requirement by FGW TR3, inverter take higher priority for active power rising during frequency drop from 49.8Hz to 47.5Hz temporary than dispatching command by grid operator set point only for test purpose, but the final inverter will take higher priority for dispatching command set point.

Related gradients, dynamics and functions:

For VDE-AR-N 4110:2018-11 & VDE-AR-N 4120: 2018-11, the following active power control applied to MODEL GW125K-GT.

Normal active power gradients: 0.33%Pn/s~0.66%Pn/s (default is 0.5%Pn/s) for stationary connection and reconnection after grid fault trip.

P(f)-diagram: When frequency returned to rated value (50Hz±0.2Hz) , for the first 10mins, the active power gradients is less than 10%Pn/min, after 10mins quit from abnormal frequency, the active power gradients will back to normal active power gradients: 0.33%Pn/s~0.66%Pn/s.

Dynamic functions: When MODEL GW125K-GT enter into FTR, the reactive current is given priority according to the K value, and additional active current is provided when the reactive current does not reach I_{max}., after the FTR end the active power will recover by max ramp rate within 1s..

Set point

For both VDE-AR-N 4110:2018-11 & VDE-AR-N 4120: 2018-11, the active power control set point applied to MODEL GW125K-GT is according to Table 4 Underfrequency increment and Overfrequency derating.

Overfrequency derating		
Function	Default Set point	Set range
Frequency-power response(Overfrequency derating)	ON	ON/OFF
Overfrequency Start	50.20Hz	50.00-55.00Hz
Overfrequency Slope	40%Pm/Hz	16.67-100.0%Pm/Hz
Overfrequency Stop	50.20Hz	50.00-55.00Hz
Intentional delay Time	0.00s	0-1200s
Recover power slope after overfrequency Stop	9%Pmax/min	1-3000%Pmax/min
Underfrequency increment		
Function	Default Set point	Set range
Frequency-power response(Underfrequency derating)	ON	ON/OFF
Underfrequency Start	49.80Hz	45.00-50.00Hz
Underfrequency Slope	40%Pn/Hz	16.67-100.0%Pn/Hz
Underfrequency Stop	49.80Hz	45.00-50.00Hz
Intentional delay Time	0.00s	0-1200s
Recover power slope after overfrequency Stop	9%Pmax/min	1-3000%Pmax/min

Table 4 Active power set point for MODEL GW125K-GT

Reactive power control

Related gradients, dynamics and functions

For VDE-AR-N 4110:2018-11 & VDE-AR-N 4120: 2018-11, MODEL GW125K-GT reactive power control is following according to Figure 7 below.

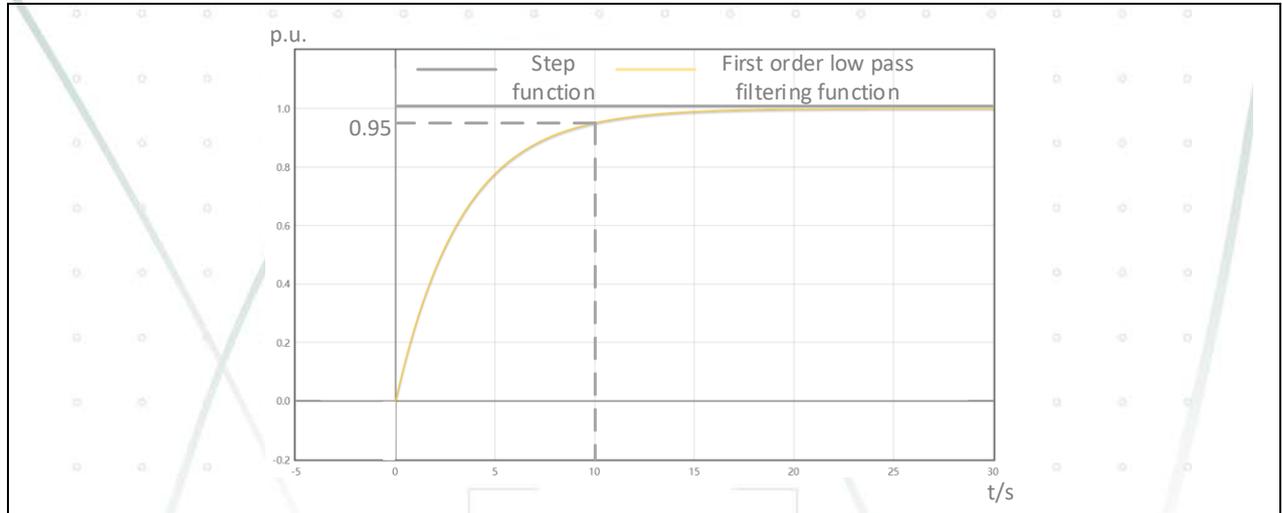


Figure 7 MODEL GW125K-GT reactive power control feature

The reactive power is supplied by equation (1):

$$Q = Q_{set} * [1 - e^{-(t/3\tau)}] \quad (1)$$

Here the time constant 3τ is settable as the time for 95% target value.

For VDE-AR-N 4110:2018-11 & VDE-AR-N 4120: 2018-11, the 3τ setting range is from 1~60s, the default setting is 10s.

Set point

For VDE-AR-N 4110:2018-11 & VDE-AR-N 4120: 2018-11, the reactive power control set point applied to MODEL GW125K-GT is according to Table 6:

Function	Default Set point	Set range
Reactive mode	OFF	Off/Mode1/2/3/4 ⁽¹⁾
Mode 1		
Power factor (0.0001)	1.00	-1 ~ -0.8, +0.8 ~ +1
Mode 2		
Fixed Reactive Percentage (0.01%)	0%	0~60%Sn
Mode 3		
Reactive response period	10	1~600s
Point A power	50%Pn	0~100%Pn
Point A reactive power	0	-60%Pn~+60%Pn
Point B power	60%Pn	0~100%Pn
Point B reactive power	-5%Pn	-60%Pn~+60%Pn
Point C power	90%Pn	0~100%Pn
Point C reactive power	-33%Pn	-60%Pn~+60%Pn
Mode 4		
Reactive response period	10	1~600s
U1	96%Un	80~100%Un
Q1	60%Sn	-100~100%Qmax
U2	100%Un	80~100%Un
Q2	0	-100~100%Qmax
U3	100%Un	100~120%
Q3	0	-100~100%Qmax
U4	104%Un	100~120%
Q4	-0.6Sn	-100~100%Qmax

Table 6 Reactive power set point for MODEL GW125K-GT

(1) Off The PF is limited to +1.000s and the "Q-Var limits" is limited to 0.0%.

Mode1: The reactive power can be regulated by the parameter PF (Power Factor).

Mode2: The reactive power can be regulated by the parameter Reactive power limit (in %).

Mode3: Q(P) The PF changes with the output power of the inverter.

Mode4: Q(U) The reactive power changes with the grid voltage.

Dynamic reactive current control

Basic functions

The reactive current supply during FRT is calculated by both positive sequence and negative sequence component. The additional reactive current Δi_B of MODEL GW125K-GT is proportional to the voltage deviation Δu ($\Delta i_B = k \cdot \Delta u$), where k is the amplification factor. It is defined by the straight line below in Figure 8.

The k factor is settable between 0 to 10 with the step of 0.1, the default MODEL GW125K-GT k factor for VDE-AR-N 4110:2018-11 & VDE-AR-N 4120: 2018-11 is 2.

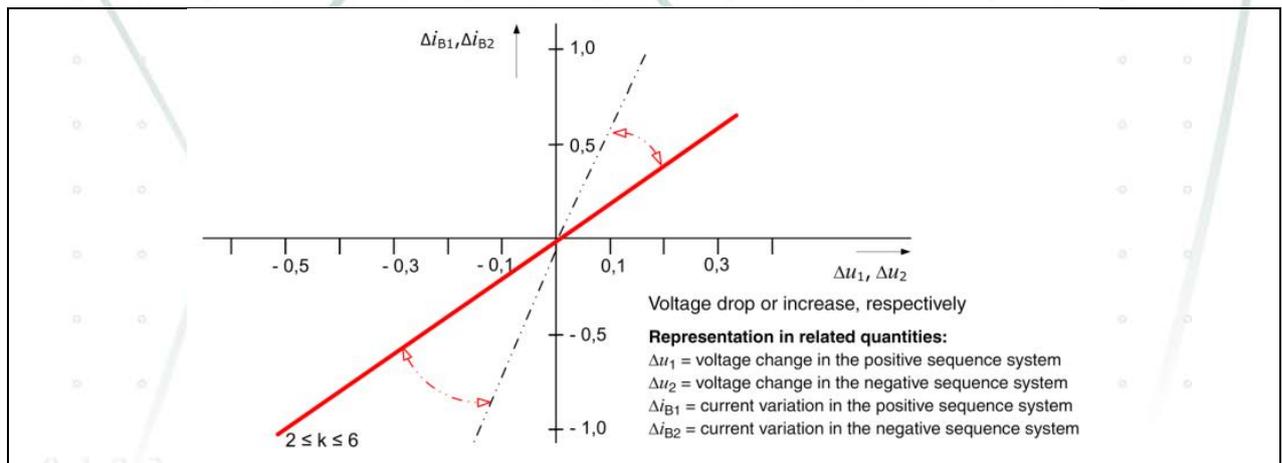


Figure 8 k factor of voltage support in the event of a network fault

-----END OF THE PROTOTYPE DECLARATION-----



**BUREAU
VERITAS**

Certificate of compliance

with the requirements of the standard Dubai Electricity & Water Authority

CERTIFICATION ORGANIZATION: Bureau Veritas Consumer Products Services Germany GmbH
Accreditation to DAKKS, D-ZE-12024-01-00, ref. to DIN EN ISO/IEC 17065

STANDARD / GUIDE: Dubai Electricity & Water Authority
Standards for distributed renewable resources generators connected to the distribution network
Version 2.0 March 2016
Appendix D.3 Inverters for Low voltage connected RRGUs

TYPE OF SYSTEM DECLARED:

INTERFACE DEVICE	PROTECTION INTERFACE	STATIC ELECTRONIC INVERTER	ROTATING GENERATION MACHINE
		X	

MANUFACTURER: GoodWe Technologies Co., Ltd.
No.90 Zijin Rd., New District, Suzhou, 215011,
China

PRODUCT TYPE:	Photovoltaic Inverter
MODEL:	GW100K-GT, GW100K-GT-C10, GW110K-GT, GW125K-GT, GEP100-20, GEP110-20, GEP125-20
NOMINAL POWER:	100kW, 110kW, 125kW

FIRMWARE VERSION: V1.00.00

PHASE NUMBER: Three-phase

NOTE:

The device is able to limit the I_{dc} to 0.5% of the nominal current.
The device is for systems up 400kW.

The inverters of GoodWe Technologies Co., Ltd. have a maximum apparent power limit. In the case where a system should be able to reach in every working condition a determined power factor, it is necessary to set the maximum active power in such a way, that you can reach at any time the $\cos \varphi$ wanted.

LABORATORY THAT HAS DONE THE TESTING:

Bureau Veritas Shenzhen Co., Ltd Donggona Branch
Accreditation to A2LA, accreditation No. 2951.01, ref. to DIN EN ISO/IEC 17025

After reviewing the Manufacturer's ISO 9001 No. CN12/20507, issued by SGS United Kingdom and after reviewing the Test-reports with No. PVDU2308WDG0100-1 issued by the laboratory Bureau Veritas Shenzhen Co., Ltd., Dongguan Branch accredited by A2LA with accreditation No. 2951.01, the listed product(s) is/are conform with the requirements according to Dubai Electricity & Water Authority "Standards for distributed renewable resources generators connected to the distribution network" Version 2.0 March 2016, Appendix D.3 Inverters for Low voltage connected RRGUs.

Certificate number: U23-0854

Certification Program: NSOP-0032-DEU-ZE-V01

Data of issue: 2023-09-29



Certification body Bureau Veritas Consumer Products Services Germany GmbH accreditation to DIN EN ISO/IEC 17065

Testing laboratory accredited according to DIN EN ISO/IEC 17025

A partial representation of the certificate requires the written approval of Bureau Veritas Consumer Products Services Germany GmbH

CERTIFICATE of Conformity



Registration No.: A3 50617007 0001

Report No.: CN23067S 001

Holder: **GoodWe Technologies Co., Ltd.**
No.90 Zijin Rd., New District
215011 Suzhou
P.R. China

Product: **PV-Inverter**
(Grid-connected PV Inverter)

Identification: Type Designation : GW100K-GT GW110K-GT GW125K-GT
GEP100-20 GEP110-20 GEP125-20
Software Version : V1.02.02
Serial Number : 9125KGTU238W8001
Remark(s) : Refer to report CN23067S 001 for details.

Tested acc. to: EN 50549-1:2019
EN 50549-10:2022

The certificate of conformity refers to the above mentioned product. This is to certify that the specimen is in conformity with the assessment requirement mentioned above. This certificate does not imply assessment of the production of the product and does not permit the use of a TÜV Rheinland mark of conformity.

Durch die DAKKS nach
DIN EN ISO/IEC 17065:2013
akkreditierte Zertifizierungsstelle

Die Akkreditierung gilt nur für den in der
Urkundenanlage D-ZE-14169-01-02
aufgeführten Akkreditierungsumfang.

Certification Body

Date 22.01.2024



A. Chen

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

Certificate No.: A3 50617007 0001

Certificate Of Conformity

License Holder: GoodWe Technologies Co., Ltd.
No.90 Zijin Rd., New District
215011 Suzhou
P.R. China

Type of product: PV-Inverter
(Grid-connected PV Inverter)

Model: GW100K-GT,GW110K-GT,GW125K-GT
GEP100-20,GEP110-20,GEP125-20

Firmware version: V1.02.02

Standard: EN 50549-1 : 2019
EN 50549-10 : 2022

Report No.: CN23067S 001

Date of issue: 22.01.2024

The verification of conformity refers to the above mentioned product. This is to verify that the specimen is in conformity with the assessment requirement mentioned above. This verification does not imply assessment of the production of the product and does not permit the use of a TÜV Rheinland mark of conformity.



A. Chen
Certifier



TÜV Rheinland LGA Products GmbH
Am Grauen Stein 29 · 51105 Köln · Germany



Certificat n°.: A3 50617007 0001

Certificat de conformité

Fabricant: GoodWe Technologies Co., Ltd.
No.90 Zijin Rd., New District
215011 Suzhou
P.R. China

Type de produit: Onduleur photovoltaïque connecté au réseau

Modèle: GW100K-GT,GW110K-GT,GW125K-GT
GEP100-20,GEP110-20,GEP125-20

Version du firmware: V1.02.02

Standard: EN 50549-1 : 2019
Exigences relatives aux centrales électriques destinées à être raccordées en parallèle à des réseaux de distribution - Partie 1: Raccordement à un réseau de distribution BT - Centrales électriques jusqu'au Type B inclus

EN 50549-10 : 2022
Exigences relatives aux centrales électriques destinées à être raccordées en parallèle à des réseaux de distribution - Partie 10 : Essais pour l'évaluation de la conformité des unités de production

Rapport n°. : CN23067S 001

Date d'émission : 22.01.2024

La vérification de la conformité concerne le produit susmentionné. Elle a pour but de vérifier que le spécimen est conforme à l'exigence d'évaluation mentionnée ci-dessus. Cette vérification n'implique pas l'évaluation de la fabrication du produit et ne permet pas l'utilisation d'une marque de conformité du TÜV Rheinland.



A. Chen
Certifier



TÜV Rheinland LGA Products GmbH
Am Grauen Stein 29 · 51105 Köln · Germany



CERTIFICATE of Conformity



Registration No.: AK 50598636 0001

Report No.: CN233LYY 001

Holder: GoodWe Technologies Co., Ltd.
No.90 Zijin Rd., New District
215011 Suzhou
P.R. China

Product: PV-Inverter
(Grid-connected PV Inverter)

Identification: Type Designation: GW100K-GT GW100K-GT-C10
GW110K-GT GW125K-GT
GEP100-20 GEP110-20 GEP125-20
Serial Number : Engnieer Sample
Firmware Version: V1.00.00
Remark : Refer to report CN233LYY 001 for details.

Tested acc. to: NRS-097-2-1:2017 Ed.2.1

The certificate of conformity refers to the above mentioned product. This is to certify that the specimen is in conformity with the assessment requirement mentioned above. This certificate does not imply assessment of the production of the product and does not permit the use of a TÜV Rheinland mark of conformity.

Certification Body

Date 12.09.2023



A. Chen

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

CERTIFICATE

of Conformity

Registration No.: AK 50608329 0001
Report No.: CN23PRXI 001
Holder: GoodWe Technologies Co., Ltd.
No.90 Zijin Rd., New District
215011 Suzhou
P.R. China
Product: PV-Inverter
Grid-connected PV Inverter

Type designation listed on the next page

The certificate of conformity refers to the above-mentioned product. This is to certify that the specimen is in conformity with the assessment requirement mentioned on the next page. This certificate does not imply assessment of the production of the product and does not permit the use of a TÜV Rheinland mark of conformity.

Certification Body

Date: 2023-11-15



A. Chen



TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

CERTIFICATE

of Conformity

Registration No.: AK 50608329 0001

Product: PV-Inverter
Grid-connected PV Inverter

Tested according to: Grid Connection Code for RPPs in South Africa-Version 3.1

Identification: Type Designation
GW100K-GT, GW110K-GT, GW125K-GT, GEP100-20,
GEP110-20, GEP125-20

Serial No. : 9125KGTU238W8001
Firmware version : 290-10584
Remark(s) : Refer to test report CN23PRXI 001
for details.



TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

CERTIFICATE

of Conformity

Registration No.: AK 50604667 0001
Report No.: CN23XMMU 001
Holder: GoodWe Technologies Co., Ltd.
No.90 Zijin Rd., New District
215011 Suzhou
P.R. China
Product: PV-Inverter
(Grid-connected PV Inverter)

Type designation listed on the next page

The certificate of conformity refers to the above-mentioned product. This is to certify that the specimen is in conformity with the assessment requirement mentioned on the next page. This certificate does not imply assessment of the production of the product and does not permit the use of a TÜV Rheinland mark of conformity.

Date: 2023-10-27

Certification Body



Dipl.-Ing. (FH) Fan He



TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

CERTIFICATE

of Conformity

Registration No.: AK 50604667 0001

Product: PV-Inverter
(Grid-connected PV Inverter)

Tested according to: DIN VDE V 0126-1-1/08.13

Identification: Type Designation
GW100K-GT, GW110K-GT, GW125K-GT
GEP100-20, GEP110-20, GEP125-20
Serial Number : 9125KGTU238W8001
Software Version : V1.00.00
Firmware Version : 290-10584
Remark : Refer to report CN23XMMU 001 for details.



TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

Zertifikatsnummer: A3 50606928 0001

Certificate No.:

Konformitätsnachweis

Hersteller: GoodWe Technologies Co., Ltd.
Manufacturer No. 90 Zijin Road, New District, Suzhou, 215011, P.R. China

Produkttyp: Wechselrichter
Type of product

Modell: GW100K-GT, GW110K-GT, GW125K-GT,
Model GEP100-20, GEP110-20, GEP125-20

Firmwareversion: 290-10584
Firmware version

Standard: VDE-AR-N 4105:2018-11
Standard DIN VDE V 0124-100 (VDE V 0124-100):2020-06

Prüfberichtsnummer: CN233045 001
Report No.

Ausstellungsdatum: 20.11.2023
Date of issue

Die Konformitätsprüfung bezieht sich auf das oben genannte Produkt, Hiermit wird überprüft, ob die Probe den oben genannten Bewertungsanforderungen entspricht, Diese Überprüfung impliziert keine Beurteilung der Herstellung des Produkts und erlaubt nicht die Verwendung eines TÜV-Rheinland-Konformitätszeichens, *The verification of conformity refers to the above mentioned product, This is to verify that the specimen is in conformity with the assessment requirement mentioned above, This verification does not imply assessment of the production of the product and does not permit the use of a TÜV Rheinland mark of conformity,*




Dipl.-Ing. (FH) F. He
Zertifizierungsstelle

Seite 1 von 6

Zertifikatsnummer: A3 50606928 0001

Certificate No.:

E.4 Einheitenzertifikat <i>E.4 Unit certificate</i>	
Hersteller: <i>Manufacturer</i>	GoodWe Technologies Co., Ltd. No. 90 Zijin Road, New District, Suzhou, 215011, P.R. China
Typ Erzeugungseinheit: <i>Power generation unit type</i>	GW100K-GT, GW110K-GT, GW125K-GT, GEP100-20, GEP110-20, GEP125-20
<input checked="" type="checkbox"/> Umrichter <i>Inverter</i>	<input type="checkbox"/> Asynchrongenerator <i>Asynchronous generator</i> <input type="checkbox"/> Synchrongenerator <i>Synchronos generator</i>
<input type="checkbox"/> Stirlinggenerator <i>Stirling generator</i>	<input type="checkbox"/> Brennstoffzelle <i>Fuel cell</i> <input type="checkbox"/> Andere <i>Other</i>
Bemessungswerte: <i>Rated values</i>	Max, Wirkleistung P_{E_{max}}: <i>max, Active power P_{E_{max}}</i> 110 / 121 / 134.9 kW
	Max, Scheinleistung S_{E_{max}}: <i>max, Apparent power S_{E_{max}}</i> 110 / 121 / 134.9 kVA
	Bemessungsspannung: <i>Rated voltage</i> 3/N/PE 400 V
	Bemessungsstrom (AC) I_r <i>Rated current (AC) I_r</i> 145,0 / 159,5 / 181,2 A
	Anfangs-Kurzschlusswechselstrom I_k <i>Initial short-circuit AC current</i> 167,1 / 183,4 / 195,5 A
Netzanschlussregel: <i>Network connection rule</i>	VDE-AR-N 4105: 2018-11 „Erzeugungsanlagen am Niederspannungsnetz“ Technische Mindestanforderungen für Anschluss und Parallelbetrieb von Erzeugungsanlagen am Niederspannungsnetz
Prüfanforderung: <i>Test requirement</i>	DIN VDE V 0124-100 (VDE V 0124-100): 2020-06 „Netzintegration von Erzeugungsanlagen – Niederspannung“ Prüfanforderungen an Erzeugungseinheiten vorgesehen zum Anschluss und Parallelbetrieb am Niederspannungsnetz
Prüfbericht: <i>Test report</i>	CN233045 001

Ort, Datum (TT,MM,JJJJ)

Place, date

20.11.2023

Zertifizierungsstelle

Certification body

Seite 2 von 6



Deutsche
Akkreditierungsstelle
D-ZE-14169-01-02

TÜV Rheinland LGA Products GmbH
Tillystraße 2 · 90431 Nürnberg · Germany



TÜVRheinland[®]
Precisely Right.

E.5 Prüfbericht „Netzurückwirkungen“ für Erzeugungseinheiten mit einem Eingangsstrom
E.5 Test report “System reactions” for power generation units with feeding current

Auszug aus dem Prüfbericht für Erzeugungseinheiten <i>Extract from the test report for power generation units</i> “Bestimmung der elektrischen Eigenschaften” <i>“Determination of electrical properties”</i>	CN233045 001
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Anlagenhersteller: <i>Manufacturer:</i>	GoodWe Technologies Co., Ltd.		
Herstellerangaben: <i>Manufacturer's data:</i>	Anlagenart (BHKW, PV-WR) <i>Type(CHP, PV-Inverter)</i>	GW100K-GT, GW110K-GT, GW125K-GT, GEP100-20, GEP110-20, GEP125-20	
	Maximale Wirkleistung P_Emax <i>Max. Active Power P_Emax</i>	110 / 121 / 134.9 [kW]	
	Bemessungsspannung <i>Rating voltage</i>	3/N/PE 400 [Vac]	
Messzeitraum: <i>Measuring period:</i>	vom JJJJ-MM-TT bis JJJJ-MM-TT <i>From yyyy-mm-dd to yyyy-mm-dd</i>	vom 2023-09-03 bis 2023-10-24	

Schnelle Spannungsänderungen <i>Rapid voltage changes</i>			
Einschalten ohne Vorgabe (zum Primärenergieträger) <i>Marking operation without default (to primary energy carrier)</i>	ki=	0,50	
Ungünstigster Fall bei Umschalten der Generatorstufen <i>Worst case at switch over of generator sections</i>	ki=	N/A	
Einschalten bei Nennbedingungen (des primärenergieträger) <i>Marking operation at reference conditions(of primary energy carrier)</i>	ki=	0,99	
Ausschalten bei Nennleistung <i>Breaking operation at nominal power</i>	ki=	0,99	
Schlechtester Wert aller Schaltvorgänge <i>Worst case value of all switching operations</i>	kimax=	0,99	

Flicker	Netzimpedanzwinkel Ψ_k: <i>Angle of network impedance Ψ_k:</i>	30°	50°	70°	85°
	Anlagenflickerbeiwert CΨ: <i>Flicker coefficient of system flicker CΨ:</i>	0,18	N/A	N/A	N/A

Beachtung: Die Prüfungen wurden auf dem Modell GW125K-GT durchgeführt und stellen die andere Serienmodelle dar,
Remark: Tests were conducted on basic model of GW125K-GT to represent other family models,
Beachtung: Diese Prüfungen beziehen sich lediglich auf 30°-Netzimpedanzwinkel und stellen den “Worst case” dar,
Remark: The tests apply to the network impedance approximately 30° to represent the “Worst case”,

Oberschwingungen <i>Harmonics</i>												
Wirkleistung P/Pn [%] <i>Active power P/Pn [%]</i>	0	10	20	30	40	50	60	70	80	90	100	
Ordnungszahl <i>Harmonic number</i>	Iv/In [%]											
2	0,001	0,012	0,014	0,012	0,012	0,013	0,015	0,015	0,014	0,014	0,014	
3	0,002	0,053	0,045	0,045	0,046	0,054	0,060	0,063	0,060	0,053	0,048	
4	0,001	0,017	0,021	0,025	0,026	0,027	0,031	0,033	0,034	0,035	0,038	
5	0,005	0,064	0,067	0,114	0,146	0,162	0,172	0,177	0,176	0,176	0,176	
6	0,001	0,018	0,026	0,027	0,025	0,026	0,027	0,024	0,023	0,021	0,023	
7	0,005	0,021	0,018	0,049	0,067	0,079	0,084	0,089	0,093	0,093	0,091	
8	0,001	0,005	0,005	0,005	0,005	0,005	0,005	0,005	0,005	0,004	0,005	
9	0,001	0,012	0,011	0,011	0,017	0,016	0,015	0,012	0,013	0,019	0,025	
10	0,001	0,009	0,007	0,007	0,007	0,007	0,007	0,007	0,007	0,007	0,007	
11	0,008	0,144	0,067	0,051	0,089	0,104	0,115	0,123	0,125	0,128	0,130	

12	0,001	0,029	0,025	0,028	0,025	0,025	0,026	0,024	0,024	0,022	0,024
13	0,003	0,039	0,080	0,031	0,072	0,086	0,092	0,098	0,101	0,102	0,104
14	0,001	0,017	0,018	0,018	0,017	0,017	0,018	0,016	0,016	0,016	0,018
15	0,001	0,010	0,009	0,010	0,013	0,013	0,016	0,018	0,019	0,021	0,022
16	0,001	0,018	0,017	0,021	0,019	0,017	0,018	0,018	0,016	0,018	0,019
17	0,001	0,046	0,063	0,034	0,040	0,061	0,069	0,073	0,074	0,075	0,074
18	0,001	0,028	0,027	0,026	0,024	0,023	0,024	0,023	0,022	0,021	0,023
19	0,005	0,389	0,215	0,205	0,167	0,276	0,299	0,318	0,335	0,351	0,363
20	0,000	0,020	0,021	0,017	0,016	0,017	0,017	0,015	0,016	0,015	0,017
21	0,001	0,012	0,013	0,012	0,010	0,016	0,018	0,018	0,016	0,014	0,015
22	0,001	0,025	0,018	0,016	0,018	0,016	0,017	0,017	0,015	0,017	0,018
23	0,002	0,102	0,030	0,184	0,081	0,189	0,228	0,246	0,255	0,266	0,273
24	0,001	0,032	0,028	0,021	0,022	0,021	0,022	0,021	0,021	0,020	0,022
25	0,003	0,118	0,059	0,160	0,065	0,136	0,184	0,203	0,212	0,221	0,225
26	0,001	0,019	0,018	0,015	0,014	0,015	0,015	0,013	0,014	0,013	0,015
27	0,001	0,012	0,011	0,016	0,008	0,012	0,017	0,017	0,015	0,015	0,016
28	0,001	0,021	0,023	0,014	0,015	0,015	0,015	0,015	0,014	0,015	0,016
29	0,003	0,123	0,107	0,104	0,062	0,072	0,134	0,162	0,172	0,183	0,189
30	0,001	0,030	0,027	0,019	0,018	0,018	0,019	0,019	0,018	0,018	0,019
31	0,002	0,055	0,091	0,068	0,057	0,041	0,098	0,129	0,143	0,152	0,154
32	0,001	0,020	0,017	0,011	0,012	0,012	0,012	0,011	0,012	0,012	0,013
33	0,001	0,012	0,012	0,009	0,010	0,006	0,011	0,013	0,012	0,013	0,013
34	0,001	0,020	0,016	0,014	0,011	0,012	0,013	0,013	0,012	0,013	0,014
35	0,001	0,047	0,041	0,033	0,057	0,015	0,063	0,100	0,118	0,132	0,137
36	0,001	0,024	0,019	0,017	0,015	0,015	0,017	0,017	0,016	0,016	0,017
37	0,002	0,046	0,019	0,021	0,055	0,011	0,039	0,076	0,095	0,107	0,112
38	0,001	0,012	0,011	0,009	0,010	0,010	0,011	0,010	0,011	0,010	0,012
39	0,001	0,009	0,006	0,005	0,010	0,006	0,006	0,008	0,008	0,009	0,010
40	0,001	0,012	0,014	0,012	0,009	0,011	0,012	0,011	0,011	0,011	0,012

Beachtung: Die Maximalwerte der drei Phasen werden gewählt.

Remark: The maximal value of three phases is selected.

Zwischenharmonische <i>Interim-harmonics</i>											
Wirkleistung P/Pn [%] <i>Active power P/Pn [%]</i>	0	10	20	30	40	50	60	70	80	90	100
Frequenz [Hz] <i>Frequency [Hz]</i>	Iv/In [%]										
75	0,000	0,008	0,010	0,012	0,013	0,015	0,017	0,019	0,020	0,025	0,030
125	0,000	0,006	0,008	0,009	0,009	0,010	0,010	0,009	0,011	0,009	0,010
175	0,001	0,007	0,009	0,010	0,011	0,012	0,012	0,013	0,012	0,014	0,013
225	0,004	0,008	0,007	0,008	0,008	0,009	0,009	0,009	0,011	0,010	0,011
275	0,001	0,006	0,008	0,010	0,009	0,010	0,010	0,010	0,010	0,012	0,010
325	0,001	0,006	0,007	0,008	0,008	0,009	0,009	0,009	0,009	0,008	0,011
375	0,001	0,008	0,008	0,008	0,008	0,009	0,009	0,009	0,009	0,009	0,009
425	0,001	0,007	0,007	0,009	0,009	0,009	0,010	0,010	0,009	0,009	0,010
475	0,003	0,007	0,007	0,008	0,009	0,009	0,010	0,010	0,010	0,010	0,010
525	0,002	0,008	0,008	0,009	0,009	0,010	0,010	0,011	0,010	0,009	0,009
575	0,001	0,008	0,008	0,009	0,010	0,010	0,010	0,010	0,012	0,010	0,011
625	0,001	0,007	0,007	0,009	0,008	0,009	0,010	0,009	0,009	0,009	0,009
675	0,001	0,007	0,008	0,009	0,009	0,010	0,010	0,009	0,012	0,009	0,010
725	0,002	0,007	0,008	0,009	0,009	0,009	0,010	0,009	0,009	0,010	0,009
775	0,002	0,007	0,007	0,008	0,009	0,009	0,009	0,010	0,009	0,011	0,010
825	0,002	0,008	0,008	0,009	0,009	0,010	0,013	0,010	0,010	0,010	0,010
875	0,001	0,008	0,009	0,010	0,011	0,012	0,010	0,014	0,015	0,018	0,019
925	0,001	0,009	0,008	0,008	0,008	0,009	0,010	0,009	0,009	0,009	0,011
975	0,002	0,008	0,008	0,008	0,008	0,009	0,009	0,009	0,009	0,010	0,013
1025	0,001	0,009	0,008	0,008	0,008	0,009	0,009	0,009	0,009	0,009	0,010
1075	0,002	0,009	0,008	0,008	0,008	0,009	0,009	0,009	0,009	0,009	0,010
1125	0,001	0,009	0,008	0,008	0,008	0,009	0,009	0,009	0,010	0,009	0,009
1175	0,001	0,009	0,008	0,008	0,008	0,009	0,009	0,009	0,009	0,009	0,009
1225	0,002	0,008	0,007	0,008	0,007	0,008	0,009	0,008	0,009	0,009	0,009
1275	0,002	0,008	0,007	0,007	0,007	0,008	0,008	0,008	0,008	0,009	0,009
1325	0,001	0,008	0,007	0,007	0,007	0,008	0,008	0,008	0,008	0,009	0,009
1375	0,001	0,008	0,008	0,007	0,007	0,008	0,008	0,008	0,008	0,008	0,009
1425	0,001	0,008	0,008	0,007	0,007	0,007	0,008	0,008	0,008	0,009	0,008
1475	0,001	0,008	0,007	0,006	0,007	0,007	0,008	0,008	0,008	0,008	0,009
1525	0,002	0,008	0,007	0,006	0,006	0,007	0,007	0,007	0,007	0,008	0,008
1575	0,001	0,008	0,007	0,006	0,006	0,007	0,007	0,007	0,007	0,007	0,008
1625	0,001	0,008	0,006	0,006	0,006	0,007	0,007	0,007	0,007	0,007	0,008
1675	0,001	0,007	0,006	0,006	0,006	0,006	0,007	0,007	0,007	0,007	0,008
1725	0,001	0,007	0,006	0,006	0,006	0,006	0,007	0,007	0,007	0,007	0,008
1775	0,002	0,007	0,006	0,006	0,006	0,006	0,006	0,007	0,007	0,007	0,007
1825	0,001	0,006	0,005	0,005	0,006	0,006	0,006	0,006	0,006	0,007	0,007
1875	0,001	0,006	0,005	0,005	0,006	0,006	0,006	0,006	0,006	0,006	0,007
1925	0,001	0,005	0,005	0,005	0,005	0,006	0,006	0,006	0,006	0,006	0,006
1975	0,001	0,005	0,005	0,005	0,005	0,006	0,006	0,006	0,006	0,006	0,006

Beachtung: Die Maximalwerte der drei Phasen werden gewählt.

Remark: The maximal value of three phases is selected.

Höhere Frequenzen <i>Higher frequencies</i>											
Wirkleistung P/Pn [%] <i>Active power P/Pn [%]</i>	0	10	20	30	40	50	60	70	80	90	100
Frequenz [kHz] <i>Frequency [kHz]</i>	Iv/In [%]										
2,1	0,004	0,035	0,040	0,027	0,064	0,028	0,032	0,072	0,100	0,119	0,128
2,3	0,003	0,023	0,033	0,024	0,034	0,028	0,024	0,034	0,050	0,062	0,069
2,5	0,003	0,014	0,027	0,021	0,025	0,026	0,018	0,027	0,043	0,054	0,060
2,7	0,003	0,022	0,013	0,022	0,017	0,024	0,015	0,019	0,034	0,057	0,070
2,9	0,003	0,019	0,022	0,017	0,013	0,015	0,012	0,010	0,012	0,033	0,050
3,1	0,003	0,020	0,025	0,014	0,011	0,013	0,011	0,010	0,011	0,011	0,014
3,3	0,003	0,033	0,026	0,017	0,012	0,015	0,014	0,011	0,012	0,012	0,012
3,5	0,003	0,028	0,019	0,017	0,012	0,015	0,015	0,012	0,013	0,013	0,013
3,7	0,003	0,027	0,019	0,016	0,009	0,012	0,011	0,009	0,010	0,010	0,010
3,9	0,003	0,031	0,025	0,021	0,011	0,014	0,012	0,011	0,012	0,013	0,014
4,1	0,003	0,022	0,013	0,015	0,011	0,014	0,012	0,011	0,013	0,013	0,013
4,3	0,003	0,020	0,013	0,013	0,012	0,013	0,014	0,011	0,011	0,011	0,011
4,5	0,004	0,025	0,025	0,019	0,018	0,019	0,011	0,015	0,016	0,015	0,012
4,7	0,008	0,016	0,014	0,015	0,013	0,013	0,011	0,009	0,011	0,012	0,016
4,9	0,022	0,020	0,019	0,021	0,020	0,020	0,018	0,018	0,018	0,018	0,017
5,1	0,024	0,019	0,023	0,021	0,018	0,016	0,015	0,013	0,014	0,013	0,013
5,3	0,003	0,010	0,015	0,013	0,011	0,012	0,012	0,008	0,011	0,009	0,010
5,5	0,004	0,009	0,012	0,010	0,009	0,009	0,010	0,007	0,009	0,009	0,009
5,7	0,002	0,009	0,016	0,016	0,011	0,011	0,012	0,007	0,010	0,010	0,011
5,9	0,002	0,009	0,016	0,014	0,011	0,011	0,012	0,009	0,009	0,009	0,009
6,1	0,002	0,008	0,014	0,013	0,010	0,009	0,010	0,008	0,008	0,008	0,008
6,3	0,002	0,009	0,014	0,017	0,016	0,012	0,014	0,008	0,009	0,010	0,011
6,5	0,002	0,012	0,016	0,012	0,015	0,013	0,013	0,010	0,009	0,008	0,009
6,7	0,002	0,010	0,014	0,011	0,014	0,011	0,011	0,008	0,008	0,008	0,009
6,9	0,002	0,014	0,014	0,018	0,019	0,016	0,015	0,011	0,009	0,010	0,012
7,1	0,002	0,013	0,015	0,016	0,016	0,017	0,014	0,013	0,010	0,010	0,011
7,3	0,002	0,013	0,015	0,016	0,015	0,016	0,013	0,012	0,009	0,010	0,011
7,5	0,002	0,021	0,019	0,020	0,020	0,023	0,016	0,016	0,011	0,012	0,014
7,7	0,003	0,022	0,018	0,018	0,021	0,025	0,017	0,020	0,013	0,013	0,015
7,9	0,002	0,023	0,020	0,018	0,020	0,024	0,017	0,018	0,013	0,013	0,014
8,1	0,002	0,035	0,028	0,026	0,029	0,031	0,022	0,024	0,016	0,016	0,018
8,3	0,002	0,029	0,020	0,022	0,024	0,034	0,025	0,028	0,018	0,019	0,022
8,5	0,002	0,027	0,020	0,020	0,023	0,026	0,026	0,028	0,018	0,018	0,020
8,7	0,002	0,031	0,025	0,022	0,027	0,033	0,028	0,030	0,022	0,023	0,027
8,9	0,002	0,024	0,015	0,018	0,021	0,028	0,033	0,036	0,031	0,037	0,043

Beachtung: Die Maximalwerte der drei Phasen werden gewählt.
Remark: The maximal value of three phases is selected.

ATTESTATION OF CONFORMITY



Issued to: GoodWe Technologies Co., Ltd.
No.90 Zi Jin Road, SND, Suzhou, China

For the product: Gird-Tied PV Inverter

Trade name: **GOODWE** for GT series



for GE series

Type/Model: GW100K-GT, GW100K-GT-C10, GW110K-GT, GW125K-GT,
GEP100-20, GEP110-20, GEP125-20

Ratings: See Annex

Manufactured by: GoodWe Technologies Co., Ltd.
No.90 Zi Jin Road, SND, Suzhou, China

Requirements: IEC 61727:2004
IEC 62116:2014

This Attestation is granted on account of an examination by DEKRA, the results of which are laid down in a confidential file no. 6161386.50(A-B)

The examination has been carried out on one single specimen or several specimens of the product, submitted by the manufacturer. The Attestation does not include an assessment of the manufacturer's production. Conformity of his production with the specimen tested by DEKRA is not the responsibility of DEKRA.

Arnhem, 30 June 2023

Number: 6161386.01AOC

DEKRA Testing and Certification (Shanghai) Ltd.

Kreny Lin
Certification Manager

© Integral publication of this attestation and adjoining reports is allowed

Page 1 of 2

Annex

Document no. : 6161386.01AOC

Ratings of the test product:

Operating temperature range: - 30°C to + 60°C

Protective class: I

Ingress protection rating: IP66

OVC: DC II / AC III

Power factor range (adjustable): 0.8 leading...0.8 lagging

GW100K-GT

PV Input: U_{max}: 1100 Vdc, U_{MPPT}: 180-1000 Vdc, I_{max}: 8*42 A, I_{sc} PV: 8*52.5 A

Output: Ur: 220 / 380, 230 /400 Vac, 3L / N / PE or 3L / PE, fr: 50 / 60 Hz, I_{max}: 167.1 A, Pr: 100 kW (99.99 kW for Australia), Sr: 100 kVA (99.99 kVA for Australia), S_{max}: 110 kVA (99.99 kVA for Australia)

GW100K-GT-C10

PV Input: U_{max}: 1100 Vdc, U_{MPPT}: 180-1000 Vdc, I_{max}: 8*42 A, I_{sc} PV: 8*52.5 A

Output: Ur: 220 / 380, 230 /400 Vac, 3L / N / PE or 3L / PE, fr: 50 / 60 Hz, I_{max}: 167.1 A, Pr: 100 kW (99.99 kW for Australia), Sr: 100 kVA (99.99 kVA for Australia), S_{max}: 110 kVA (99.99 kVA for Australia)

GW110K-GT

PV Input: U_{max}: 1100 Vdc, U_{MPPT}: 180-1000 Vdc, I_{max}: 10*42 A, I_{sc} PV: 10*52.5 A

Output: Ur: 220 / 380, 230 /400 Vac, 3L / N / PE or 3L / PE, fr: 50 / 60 Hz, I_{max}: 183.4 A, Pr: 110 kW, Sr: 110 kVA, S_{max}: 121 kVA

GW125K-GT

PV Input: U_{max}: 1100 Vdc, U_{MPPT}: 180-1000 Vdc, I_{max}: 10*42 A, I_{sc} PV: 10*52.5 A

Output: Ur: 220 / 380, 230 /400 Vac, 3L / N / PE or 3L / PE, fr: 50 / 60 Hz, I_{max}: 199.4 A, Pr: 125 kW, Sr: 125 kVA, S_{max}: 137.5 kVA

GEP100K-20

PV Input: U_{max}: 1100 Vdc, U_{MPPT}: 180-1000 Vdc, I_{max}: 8*42 A, I_{sc} PV: 8*52.5 A

Output: Ur: 220 / 380, 230 /400 Vac, 3L / N / PE or 3L / PE, fr: 50 / 60 Hz, I_{max}: 167.1 A, Pr: 100 kW (99.99 kW for Australia), Sr: 100 kVA (99.99 kVA for Australia), S_{max}: 110 kVA (99.99 kVA for Australia)

GEP110K-20

PV Input: U_{max}: 1100 Vdc, U_{MPPT}: 180-1000 Vdc, I_{max}: 10*42 A, I_{sc} PV: 10*52.5 A

Output: Ur: 220 / 380, 230 /400 Vac, 3L / N / PE or 3L / PE, fr: 50 / 60 Hz, I_{max}: 183.4 A, Pr: 110 kW, Sr: 110 kVA, S_{max}: 121 kVA

GEP125K-20

PV Input: U_{max}: 1100 Vdc, U_{MPPT}: 180-1000 Vdc, I_{max}: 10*42 A, I_{sc} PV: 10*52.5 A

Output: Ur: 220 / 380, 230 /400 Vac, 3L / N / PE or 3L / PE, fr: 50 / 60 Hz, I_{max}: 199.4 A, Pr: 125 kW, Sr: 125 kVA, S_{max}: 137.5 kVA

-End-

Zertifikat

Certificate



Zertifikat Nr. *Certificate No.*
R 50592783

Blatt *Sheet*
0004

Ihr Zeichen *Client Reference*
Yu Xiao

Unser Zeichen *Our Reference*
01-EQ-CN23SWDU 002

Ausstellungsdatum *Date of Issue*
23.08.2024 (day/mo/yr)

Genehmigungsinhaber *License Holder*
GoodWe Technologies Co., Ltd.
No.90 Zijin Rd., New District
215011 Suzhou
P.R. China

Fertigungsstätte *Manufacturing Plant*
Refer to latest revision
of the annex list of factories

Prüfzeichen *Test Mark*



Bauart geprüft
Sicherheit
Regelmäßige
Produktions-
überwachung

www.tuv.com
ID 1111271511

Geprüft nach *Tested acc. to*

IEC 62109-1:2010
IEC 62109-2:2011
EN 62109-1:2010
EN 62109-2:2011

**Zertifiziertes Produkt (Geräteidentifikation)
*Certified Product (Product Identification)***

**Lizenzentgelte - Einheit
*License Fee - Unit***

PV-Wechselrichter (Grid-connected PV Inverter) [®]

As pages 0001-0003

Addition

Type Designation : 8) GW110K-GT-KR ,
9) GW125K-GT-KR
Vmax PV [Vd.c.] : 1100
Isc PV [Ad.c.] : 52.5*10
MPP Voltage Range [Vd.c.] : 180-1000
Max. Input Current [Ad.c.] : 42*10
Overvoltage Category (OVC) : II for PV
Rated Output Voltage [Va.c.] : 3L/N/PE, 230/400
Rated Output Frequency [Hz] : 50/60
Rated Output Power [kW] : 8) 110 9) 125
Max. Output Current. [Aa.c.] : 8) 183.4 9) 199.4
Overvoltage Category (OVC) : III for AC mains

Continued on page 0005

ANLAGE (Appendix) : 1.1

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.
This certificate is based on our Testing and Certification Regulation and states the conformity of the product with the standards and testing requirements as indicated above. Any additional requirements in countries where the product is going to be marketed have to be considered additionally. The manufacturing of the certified product is subject to surveillance.



Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg
http://www.tuv.com/safety E-mail: markcheck@tuv.com
Fax: +49 221 806-3935

A. Chen

Zertifikat

Certificate



Zertifikat Nr. *Certificate No.*
R 50592783

Blatt *Sheet*
0005

Ihr Zeichen *Client Reference*
Yu Xiao

Unser Zeichen *Our Reference*
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*Certified Product (Product Identification)***

**Lizenzentgelte - Einheit
*License Fee - Unit***

PV-Wechselrichter (Grid-connected PV Inverter) [®]

as page 0004 continuation

Protective Class : Class I
Ingress Protection (IP) : IP66
Pollution Degree (PD) : PD3
Altitude [m] : ≤4000
Operating Temperature [°C] : -30 to 60 (> 45 derating)
Type of Inverter : Non-isolated

Remark(s) :

The installation has to be carried out according to the attached installation instruction.
Any additional requirements in countries where the product is going to be marketed have to be considered additionally.

ANLAGE (Appendix) : 1.1

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.
This certificate is based on our Testing and Certification Regulation and states the conformity of the product with the standards and testing requirements as indicated above. Any additional requirements in countries where the product is going to be marketed have to be considered additionally. The manufacturing of the certified product is subject to surveillance.



Zertifizierungsstelle

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