C E R T I F I C A T E
of Conformity

TÜVRheinland®

Registration No.: A3 50714939 0001

Report No.: CN25QGUM 002

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

Product:
Energy Storage System
(Energy Storage System)

Identification:
Type Designation : GW125/261-ESA-LCN-G10 , GW125/261-ESA-LCN-G11
Firmware Version : 010101
Remark(s) : Refer to test report CN25QGUM 002 for details.

Tested acc. to:
EN 50549-1:2019+A1
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 06.02.2026

Dipl.-Ing. (FH) F. He

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

Certificate No.: A3 50714939 0001

Certificate Of Conformity

License holder:	**GoodWe Technologies Co., Ltd.** No.90 Zijin Rd., New District 215011 Suzhou P.R. China
Type of product:	Energy Storage System (Energy Storage System)
Model:	GW125/261-ESA-LCN-G10 , GW125/261-ESA-LCN-G11
Firmware version:	010101
Standard:	**EN 50549-1:2019+A1** Requirements for generating plants to be connected in parallel with distribution networks - Part 1: Connection to a LV distribution network -Generating plants up to and including Type B **EN 50549-10:2022** Requirements for generating plants to be connected in parallel with distribution networks - Part 10: Tests for conformity assessment of generating units
Report No.:	**CN25QGUM 002**
Date of issue:	06.02.2026

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.

TÜV Rheinland LGA Products GmbH TÜVRheinland Zertifizierungsstelle

Dipl.-Ing. (FH) F. He

Certifier

TÜV Rheinland LGA Products GmbH
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EN 50549-1:2019+A1 Annex C Parameter Table

Clause(s) / sub-clause(s) of EN 50549-1:2019+A1	Parameter [a]	Remarks / additional information [b]	Typical value range	Value default	
4.4.2 Operating frequency range	47,0 – 47,5 Hz Duration	Unlimited	0 – 20 s	0 s	
	47,5 – 48,5 Hz Duration	Unlimited	30 – 90 min	30 min	
	48,5 – 49,0 Hz Duration	Unlimited	30 – 90 min	30 min	
	49,0 -51,0 Hz Duration	Unlimited	not configurable	unlimited	
	51,0 – 51,5 Hz Duration	Unlimited	30 – 90 min	30 min	
	51, 5 – 52 Hz Duration	Unlimited	0 – 15 min	0 s	
4.4.3 Minimal requirement for active power delivery at underfrequency	Reduction threshold	Not configurable	49 Hz – 49,5 Hz	49,5 Hz	
	Maximum reduction rate	No reduction (≤ 2% P_M / Hz)	2 – 10 % P_M/Hz	≤ 2% P_M/Hz	
4.4.4 Continuous operating voltage range	Upper limit	110% U_n	not configurable	110% U_n	
	Lower limit	85% U_n	not configurable	85% U_n	
4.5.2 Rate of change of frequency (ROCOF) immunity	ROCOF withstand capability (defined with a sliding measurement window of 500 ms)	Up to ± 3.5 Hz/s	not defined	±2 Hz/s	
4.5.3.2 Generating plant with non-synchronous generating technology	Maximum power resumption time	Not configurable	not defined	1 s	
	Voltage-Time-Diagram	Configurable (Default / Most stringent requirement)	see Figure 6	Time [s]	U [p.u.]
				0,0	0,2
				0,15	0,2
				1,5	0,85
4.5.4 Over-voltage ride through (OVRT)	Maximum power resumption time	Not configurable	Not configurable	1 s	
	Voltage-Time-Diagram	Configurable (Default requirement/most stringent requirement)	not configurable	Time [s]	U [p.u.]
				0,0	1,25
				0,1	1,25
				0,1	1,20
				5,0	1,20
				5,0	1,15
				60	1,15
				60	1,10
4.5.5 – Phase jump immunity	Phase jump immunity	Not configurable (Up to ± 180°)	Not configurable	± 180°	
4.6.1 Power response to over frequency	Threshold frequency f1	Configurable	50,2 Hz – 52 Hz	50,2 Hz	

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	Droop	Configurable	2 % – 12 %	5 %
	Power reference	Not configurable /Configurable	P_M | P_{max}	P_{max}
	Intentional delay	Configurable	0 – 2 s	0 s
	Deactivation threshold fstop	Configurable	50,0 Hz – f1	deactivated
	Deactivation time tstop	Configurable	0 – 600 s	--
	Acceptance of staged disconnection	Not configurable	yes | no	yes
4.6.2 Power response to underfrequency	Threshold frequency f1	Configurable	49,8 Hz – 46 Hz	49,8 Hz
	Droop	Configurable	2 – 12 %	5 %
	Power reference	Not configurable (P_{max})	P_M | P_{max}	P_{max}
	Intentional delay	Configurable	0 – 2 s	0 s
4.7.2.2 Capabilities	Active factor / Reactive power (%Pd) range overexcited	0,8 – 1 / 60% P_n – 0	0,9 – 1 / 48 %Pd - 0 0,95 – 1 / 33 %Pd - 0	0,8 – 1 / 60% P_n – 0
	Active factor / Reactive power (%Pd) range underexcited	0,8 – 1 / -60% P_n – 0	0,9 – 1 / 48 %Pd - 0 0,95 – 1 / 33 %Pd - 0	0,8 – 1 / -60% P_n – 0
4.7.2.3 Control modes	Enabled control mode	Configurable	Q setp. Q(U) Q(P) cos φ setp. cos φ (P)	Q setpoint
4.7.2.3.2 Setpoint control modes	Q setpoint and excitation	Configurable	0 – 48 % P_D, 0 – 33 %P_D	0
	Cos φ set point and excitation (ov and uv)	Configurable	1 – 0,9	1
	Time constant (τ)	Configurable (3 – 60 s)	3s-60s	3,33s
4.7.2.3.3 Voltage related control modes	Characteristic curve	Configurable Q(U)	D_{bchar}: -6% to + 6% U_n $Q_{max\ char}$: 10% – 100% of $Q_{max\ over}$ and $Q_{max\ under}$ Slope of the steepest: 1% – 100% Q_{max} / 1% U_n	indicate default characteristic (Figure 33 of EN 50549-10)
	Time constant (τ)	Configurable (3 s– 60 s)	3 s – 60 s	3,33 s
	Min cos φ	Configurable	0,0 – 1	0,4

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	Lock in power(P/P_n)	Configurable	0 % – 20 %	deactivated
	Lock out power(P/P_n)	Configurable	0 % – 20 %	deactivated
4.7.2.3.4 Power related control mode	Characteristic curve	Configurable Cos φ (P) Q(P)	$Q_{max\ char}$: 10% – 100% of $Q_{max\ over}$ and $Q_{max\ under}$ Slope of the steepest: 2% – 200% Q_{max} / 10% P_n	indicate default characteristic (Figure 36 of EN 50549-10)
	Time constant (τ)	Configurable	3 s – 60 s	3,33 s
	Lock-in voltage (U/U_n)	Configurable	100% – 110%	deactivated
	Lock-out voltage (U/U_n)	Configurable	90% – 100%	deactivated
4.7.4.2.2 Zero current mode for converter connected generating technology	Enabling	Configurable	enable | disable	disabled
	Static voltage range overvoltage	Configurable	100 % Un – 120 % Un	120 % Un
	Static voltage range undervoltage	Configurable	20 % Un – 100 % Un	50 % Un
4.9.2 Requirements on voltage and frequency protection	Threshold for protection as dedicated device [in A or kW, kVA]	Configurable	16 A – 250 kVA	--
	Undervoltage threshold stage 1	Configurable	0,2 Un – 1 Un	--
	Undervoltage operate time stage 1	Configurable	0,1 s – 100 s	--
	Undervoltage threshold stage 2	Configurable	0,2 Un – 1 Un	--
	Undervoltage operate time stage 2	Configurable	0,1 s – 5 s	--
	Overvoltage threshold stage 1	Configurable	1,0 Un – 1,2 Un	--
	Overvoltage operate time stage 1	Configurable	0,1 s – 100 s	--
	Overvoltage threshold stage 2	Configurable	1,0 Un – 1,3 Un	--
	Overvoltage operate time stage 2	Configurable	0,1 s – 5 s	--
	Overvoltage threshold 10 min mean protection	Configurable	1,0 Un – 1,15 Un	--
	Underfrequency threshold stage 1	Configurable	47,0 Hz– 50,0 Hz	--
	Underfrequency operate time stage 1	Configurable	0,1 s – 100 s	--
	Underfrequency threshold stage 2	Configurable	47,0 Hz – 50,0 Hz	--

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	Underfrequency operate time stage 2	Configurable	0,1 s – 5 s	--
	Overfrequency threshold stage 1	Configurable	50,0 Hz – 52,0 Hz	--
	Overfrequency operate time stage 1	Configurable	0,1 s – 100 s	--
	Overfrequency threshold stage 2	Configurable	50,0 Hz – 52,0 Hz	--
	Overfrequency operate time stage 2	Configurable	0,1 s – 5 s	--
4.10.2 Automatic reconnection after tripping	Lower frequency	Configurable	47,0 Hz – 50,0 Hz	49,5 Hz
	Upper frequency	Configurable	50,0 Hz – 52,0 Hz	50,2 Hz
	Lower voltage	Configurable	50 % Un – 100 % Un	85 % Un
	Upper voltage	Configurable	100 % Un – 120 % Un	110 % Un
	Observation time	Configurable	10 s – 600 s	60 s
	Active power increase gradient	Configurable	6 % – 3000 %/min	10 % /min
4.10.3 Starting to generate electrical power	Lower frequency	Configurable	47,0 Hz – 50,0 Hz	49,5 Hz
	Upper frequency	Configurable	50,0 Hz – 52,0 Hz	50,1 Hz
	Lower voltage	Configurable	50 % – 100 % Un	85 % Un
	Upper voltage	Configurable	100 % – 120 % Un	110 % Un
	Observation time	Configurable	10 s – 600 s	60 s
	Active power increase gradient	Configurable	6 % – 3000 %/min	disabled
4.11.1 Ceasing active power	Remote operation of the logic interface	Configurable (Digital input by RS485/Wi-Fi port)	yes | no	No
4.11.2 Reduction of active power on set point	Remote operation NOTE: If yes further definition is provided by the DSO	Configurable (Digital input by RS485/Wi-Fi port)	yes | no	No
4.12 Remote information exchange	Remote information exchange required NOTE: If yes further definition is provided by the DSO	Configurable (The protocols will be agreed between the local DSO and PGUs at final installation.	yes | no	No

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Supplementary:
ov: Over-excited; uv: Under-excited
[a] If additional parameters have been evaluated during the test, these shall be added as additional lines in the table.
[b] This column should be used for manufacturer specific parameter descriptions.

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