CERTIFICATE

Issued to:
Applicant:
Guangzhou Felicity Solar Technology Co., Ltd.
(Airport Baiyun)No.2, 4, 6, 8, 10 and 12 Donghua
Huaye Road, Renhe Town, Baiyun District
Guangzhou Guangdong, China

Licensee:
Guangzhou Felicity Solar Technology Co., Ltd.
(Airport Baiyun)No.2, 4, 6, 8, 10 and 12 Donghua
Huaye Road, Renhe Town, Baiyun District
Guangzhou Guangdong, China

Product	:	Hybrid Inverter
Trade name(s)	:	felicitysolar
Type(s)/model(s)	:	IVGM10KLP3G2, IVGM12KLP3G2, IVGM3KLP3G2, IVGM4KLP3G2, IVGM5KLP3G2, IVGM6KLP3G2 and IVGM8KLP3G2

The product and any acceptable variation thereof as specified in the Annex to this certificate and the documents referred to therein.

DEKRA hereby declares that the above-mentioned product has been certified based on:
- a type test according to VDE-AR-N 4105:2018 and DIN VDE V 0124-100:2020
- an inspection of the factory location according to CENELEC Operational Document CIG 421
- a DEKRA certification agreement with the number 6073845

DEKRA hereby grants the right to use the DEKRA Mark.

The DEKRA Mark may be applied to the product as specified in this certificate for the duration and under the conditions of the DEKRA Mark certification agreement.

This certificate is issued on 21 April 2026 and expires upon withdrawal of one of the above mentioned standards.

Certificate number: 35-174690

DEKRA Certification B.V.

B.T.M. Holtus
Managing Director

Miranda Zhou
Certification Manager

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COUNCIL

PRODUCTS
RvA C 001

35-174690

DEKRA Mark is the new KEMA-KEUR
The DEKRA Mark certificate for this product is to all intents and purposes equivalent to a KEMA-KEUR certificate, the other certification mark used by DEKRA and should be valued and used as such. DEKRA Mark is gradually replacing KEMA-KEUR.
For more information please check: Introducing DEKRA Mark

SPECIFICATION OF THE CERTIFIED PRODUCT

Product data

Product	:	Hybrid Inverter
Trade name(s)	:	felicitysolar
Type(s)/model(s)	:	IVGM10KLP3G2, IVGM12KLP3G2, IVGM3KLP3G2, IVGM4KLP3G2, IVGM5KLP3G2, IVGM6KLP3G2 and IVGM8KLP3G2
Battery Voltage Range	:	40 - 60 Vdc
Rated Battery Voltage	:	50 Vdc
Max. PV input Voltage	:	800 Vdc
Rated PV input Voltage	:	550 Vdc
MPPT Voltage Range	:	200 - 650 Vdc
Rated AC Voltage	:	230/400Vac, 3W+N+PE
Rated Frequency	:	50/60 Hz
Initial short-circuit AC current	:	48.0 Aac

Product data – type IVGM10KLP3G2

Max. charge/discharge current	:	210 Adc
Max. charge/discharge Power	:	10.0 kW
Max. PV input power	:	15.0 kW
Max. AC input current	:	16.7 Aac
Max. AC input tpower	:	11.0 kW
Rated AC output current	:	14.5 Aac
Max. AC output current	:	15.9 Aac
Rated AC output Power	:	10.0 kW
Max. AC output Apparent power	:	11.0 kVA
Max. PV input current	:	26*2 Adc
Isc current	:	39*2 Adc

Product data – type IVGM12KLP3G2

Max. charge/discharge current	:	240 Adc
Max. charge/discharge Power	:	12.0 kW
Max. PV input power	:	18.0 kW
Max. AC input current	:	20.0 Aac
Max. AC input tpower	:	13.2 kW
Rated AC output current	:	17.4 Aac
Max. AC output current	:	19.1 Aac
Rated AC output Power	:	12.0 kW
Max. AC output Apparent power	:	13.2 kVA
Max. PV input current	:	26*2 Adc
Isc current	:	39*2 Adc

Product data – type IVGM3KLP3G2

Max. charge/discharge current	:	70 Adc
Max. charge/discharge Power	:	3.0 kW
Max. PV input power	:	4.5 kW
Max. AC input current	:	5.0 Aac
Max. AC input tpower	:	3.3 kW

Rated AC output current	:	4.3 Aac
Max. AC output current	:	4.8 Aac
Rated AC output Power	:	3.0 kW
Max. AC output Apparent power	:	3.3 kVA
Max. PV input current	:	20*2 Adc
Isc current	:	30*2 Adc

Product data – type IVGM4KLP3G2

Max. charge/discharge current	:	95 Adc
Max. charge/discharge Power	:	4.0 kW
Max. PV input power	:	6.0 kW
Max. AC input current	:	6.7 Aac
Max. AC input tpower	:	4.4 kW
Rated AC output current	:	5.8 Aac
Max. AC output current	:	6.4 Aac
Rated AC output Power	:	4.0 kW
Max. AC output Apparent power	:	4.4 kVA
Max. PV input current	:	20*2 Adc
Isc current	:	30*2 Adc

Product data – type IVGM5KLP3G2

Max. charge/discharge current	:	120 Adc
Max. charge/discharge Power	:	5.0 kW
Max. PV input power	:	7.5 kW
Max. AC input current	:	8.3 Aac
Max. AC input tpower	:	5.5 kW
Rated AC output current	:	7.2 Aac
Max. AC output current	:	7.9 Aac
Rated AC output Power	:	5.0 kW
Max. AC output Apparent power	:	5.5 kVA
Max. PV input current	:	20*2 Adc
Isc current	:	30*2 Adc

Product data – type IVGM6KLP3G2

Max. charge/discharge current	:	135 Adc
Max. charge/discharge Power	:	6.0 kW
Max. PV input power	:	9.0 kW
Max. AC input current	:	10.0 Aac
Max. AC input tpower	:	6.6 kW
Rated AC output current	:	8.7 Aac
Max. AC output current	:	9.6 Aac
Rated AC output Power	:	6.0 kW
Max. AC output Apparent power	:	6.6 kVA
Max. PV input current	:	20*2 Adc
Isc current	:	30*2 Adc

Product data – type IVGM8KLP3G2

Max. charge/discharge current	:	190 Adc
Max. charge/discharge Power	:	8.0 kW
Max. PV input power	:	12.0 kW
Max. AC input current	:	13.3 Aac
Max. AC input tpower	:	8.8 kW
Rated AC output current	:	11.6 Aac
Max. AC output current	:	12.8 Aac

Rated AC output Power	:	8.0 kW
Max. AC output Apparent power	:	8.8 kVA
Max. PV input current	:	20*2 Adc
Isc current	:	30*2 Adc

TESTS

Test requirements
VDE-AR-N 4105:2018
DIN VDE V 0124-100:2020

Test result
The test results are documented in DEKRA test file 4951350.50.

Conclusion
The examination has confirmed that all requirements were met.

Factory location
Guangzhou Felicity Solar Technology Co., Ltd.
(Airport Baiyun)No.2, 4, 6, 8, 10 and 12 Donghua Huaye Road, Renhe Town, Baiyun District
Guangzhou Guangdong, China

Trade name : felicitysolar stands for

E.4 Unit certificate

Unit certificate		
Manufacturer / Address:	Guangzhou Felicity Solar Technology Co., Ltd. (Airport Baiyun)No. 2, 4, 6, 8, 10 and 12 Donghua Huaye Road, Renhe Town, Baiyun District, Guangzhou, Guangdong, China	
Type of power generation unit:	Hybrid Inverter IVGM3KLP3G2, IVGM4KLP3G2, IVGM5KLP3G2, IVGM6KLP3G2, IVGM8KLP3G2, IVGM10KLP3G2, IVGM12KLP3G2	
☒ Inverter	☐ Asynchronous generator	☐ Synchronous generator
☐ Stirling generator	☐ Fuel cell	☐ Others
Assessment values	Max. active power P_{Emax}	12.0 kW (IVGM12KLP3G2)
	Max. apparent power S_{Emax}	13.2 kVA (IVGM12KLP3G2)
	Rated voltage	230/400 V (3W+N+PE)
	Rated current (AC) I_r	17.4 A (IVGM12KLP3G2)
	Initial short-circuit AC current	48.0 A
Network connection rule	**VDE-AR-N 4105 "Generators connected to the low-voltage distribution network"** Technical minimum requirements for connection and parallel operation of power generation systems connected to the low-voltage network	
Test requirement	**DIN VDE V 0124-100 (VDE V 0124-100) "Network integration of power generation systems – Low voltage"** Test requirements for power generation units intended for connection to and parallel operation on the low-voltage network	
Test report	4951350.50 from (2026-04-15)	
The above designated power generation unit meets the requirements of VDE-AR-N 4105.		

E.6 Certificate of the network and system protection

Certificate of NS protection		
Manufacturer	Guangzhou Felicity Solar Technology Co., Ltd. (Airport Baiyun)No. 2, 4, 6, 8, 10 and 12 Donghua Huaye Road, Renhe Town, Baiyun District, Guangzhou, Guangdong, China	
Type of NS protection	Integrated NS protection	
Central NS protection	☐	
Integrated NS protection	☒	Assigned to power generation unit of type: IVGM3KLP3G2, IVGM4KLP3G2, IVGM5KLP3G2, IVGM6KLP3G2, IVGM8KLP3G2, IVGM10KLP3G2, IVGM12KLP3G2
Network connection rule	**VDE-AR-N 4105 "Generators connected to the low-voltage distribution network"** Technical minimum requirements for connection and parallel operation of power generation systems connected to the low-voltage network	
Test requirement	**DIN VDE V 0124-100 (VDE V 0124-100) "Network integration of power generation systems – Low voltage"** Test requirements for power generation units intended for connection to and parallel operation on the low-voltage network	
Test report	4951350.50 from (2026-04-15)	
The network and system protection designated above meets the requirements of VDE-AR-N 4105.		

E.7 Requirements for the test report for the NS protection

Extract from test report for NS protection "Determination of electrical properties"		Report No.: 4951350.50
Test report NS protection		
Type of NS protection:	Integrated NS protection	**Other Manufacturer indications**
Software version:	100	N/A
Manufacturer:	Guangzhou Felicity Solar Technology Co., Ltd. (Airport Baiyun)No. 2, 4, 6, 8, 10 and 12 Donghua Huaye Road, Renhe Town, Baiyun District, Guangzhou, Guangdong, China	
Measuring period:	From 2026-02-04 to 2026-04-15	

	Inverter		
Protection function	**Setting value**	**Tripping value**	**Tripping time NS protection***
Rise-in-voltage protection *U* >>	1.25 * U_n	L1-N&L2-N&L3-N: 288.0 V L1-N: 288.0 V L2-N: 287.9 V L3-N: 287.9 V	L1-N&L2-N&L3-N: 142 ms L1-N: 154 ms L2-N: 151 ms L3-N: 147 ms
Rise-in-voltage protection *U* >	1.10 * U_n	1.10 * U_n, ≤ 100 ms**	
Voltage drop protection *U* <	0.8 * U_n	L1-N&L2-N&L3-N: 184.0 V L1-N: 184.3 V L2-N: 184.6 V L3-N: 184.2 V	L1-N&L2-N&L3-N: 3.018 s L1-N: 3.022 s L2-N: 3.018 s L3-N: 3.016 s
Voltage drop protection *U* <<	0.45 * U_n	L1-N&L2-N&L3-N: 103.5 V L1-N: 103.4 V L2-N: 103.4 V L3-N: 103.9 V	L1-N&L2-N&L3-N: 312 ms L1-N: 315 ms L2-N: 321 ms L3-N: 313 ms
Frequency decrease protection *f* <	47.5 Hz	47.50 Hz	131 ms
Frequency increase protection *f* >	51.5 Hz	51.50 Hz	128 ms

*: The tripping time includes the period from the limit value violation U/f until the tripping signal to the interface switch.
When planning the power generation system, the response time of the interface switch shall be added to the maximum time value obtained as indicated above.
The disconnection time (sum of tripping time of the NS protection plus response time of the interface switch) shall not exceed 200 ms.
**: Verification disconnection time of moving 10-min-average value. Disconnecting time as below:
(500.0/504.0/491.0) s (L1-N/L2-N/L3-N from 600 s @ 100% Un to 112% Un)
Continuous operation (L1-N/L2-N/L3-N from 600 s @ 100% Un to 108% Un)
(302.0/321.0/305.0) s (L1-N/L2-N/L3-N from 600 s @ 106% Un to 114% Un)

☒ **For integrated NS protection**

Assigned to power generation unit type	IVGM3KLP3G2, IVGM4KLP3G2, IVGM5KLP3G2, IVGM6KLP3G2, IVGM8KLP3G2, IVGM10KLP3G2, IVGM12KLP3G2
Integrated interface switch type	Series-connected relays for all phase conductors each Relay type: CHFN-V-112H1A2F(50A)

Response time of interface switch for integrated NS protection	Release time: max. 10 ms	
Verification of the entire functional chain “integrated NS protection – interface switch” has resulted in successful disconnection.		☒