CERTIFICATE

Issued to:
Applicant:
Solenso electronic materials Co., LTD.
4F., No.56, Zili 5th St., Zhonglil Dist.
Taoyuan 320, Taiwan

Licensee:
Solenso electronic materials Co., LTD.
4F., No.56, Zili 5th St., Zhonglil Dist.
Taoyuan 320, Taiwan

Product	:	PV Microinverter
Trade name(s)	:	Solenso
Type(s)/model(s)	:	SG400, SG450 and SG500

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 021
- a DEKRA certification agreement with the number 6069947

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 8 April 2025 and expires upon withdrawal of one of the above mentioned standards.

Certificate number: 31-156339

DEKRA Certification B.V.

B.T.M. Holtus
Managing Director

Miranda Zhou
Certification Manager

ACCREDITED BY THE
DUTCH ACCREDITATION
COUNCIL

PRODUCTS
RvA C 001

DEKRA

31-156339

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	:	PV Microinverter
Trade name(s)	:	Solenso
Type(s)/model(s)	:	SG400, SG450 and SG500
Rated voltage	:	230Vac
Rated frequency	:	50 Hz
Class	:	I
Degree of protection	:	IP 67
Software version	:	V2.00-2025.01.02

Product data – type SG400

Max. active power $P_{E_{max}}$	:	400 W
Max. apparent power $S_{E_{max}}$	:	400 VA
Rated current	:	1.74 A

Product data – type SG450

Max. active power $P_{E_{max}}$	:	450 W
Max. apparent power $S_{E_{max}}$	:	450 VA
Rated current	:	1.96 A

Product data – type SG500

Max. active power $P_{E_{max}}$	:	500 W
Max. apparent power $S_{E_{max}}$	:	500 VA
Rated current	:	2.17 A

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 621753600.

Additional information
The list of components is laid down in test report 6217536.50.

Conclusion
The examination has confirmed that all requirements were met.

Factory location
Zhejiang Wellsun Intelligent Technology Co., Ltd.
109 Yongchang Road, Shifeng Street, Tiantai County
317200 Taizhou City Zhejiang, China

Trade name(s): Solenso stands for:

E.5 Test report "Utility interactive" for power generation units (VDE-AR-N 4105:2018-11) ***E.5 Prüfbericht „Netzrückwirkungen" für Erzeugungseinheiten***				
Extract from test report for unit certificate "Determination of electrical properties" *Auszug aus dem Prüfbericht für Gerätezertifikat "Bestimmung elektrischer Eigenschaften"*			Report No.: 6217536.50 *Bericht Nr.:*	
Manufacturer: *Anlagenhersteller*	Solenso electronic materials Co., LTD.			
Manufacturer specifications: *Herstellerangaben*	**Typ:** *Anlagenart:*	PV Microinverter		
	maximum active power P_{Emax}: *maximale Wirkleistung P_{Emax}:*	SG400 400 W	SG450 450 W	SG500 500 W
	Rated voltage: *Bemesssungsspannung:*	230Vac		
Measuring period: *Messzeitraum:*	**From 2025-02-12 to 2025-03-12** *Vom 2025-02-12 bis 2025-03-12*			
Model / *Modell*: SG500				
Flicker	*Angle of network impedance ψ_k* *Netzimpedanzwinkel ψ_k*	*32°*		
	Coefficient of system flicker c_ψ: *Anlagenflickerbeiwert c_ψ*	*1.51*		

Harmonics / *Oberschwingungen:*
Model / *Modell*: SG500

Active power *Wirkleistung* P/P_n [%]	0	10	20	30	40	50	60	70	80	90	100
Harmonic order *Ordunugszah*	I [%]	I [%]	I [%]	I [%]	I [%]	I [%]	I [%]	I [%]	I [%]	I [%]	I [%]
2	0.023	0.023	0.046	0.023	0.023	0.023	0.023	0.023	0.023	0.046	0.023
3	0.853	3.157	3.157	3.364	2.880	3.341	3.364	3.134	3.295	3.802	0.853
4	0.023	0.023	0.069	0.023	0.000	0.000	0.000	0.000	0.000	0.023	0.023
5	0.668	0.922	0.829	1.359	0.991	1.313	1.336	1.106	0.922	0.714	0.668
6	0.023	0.023	0.046	0.023	0.000	0.000	0.000	0.000	0.000	0.023	0.023
7	0.945	0.184	0.115	1.014	0.507	0.392	0.461	0.714	0.783	0.530	0.945
8	0.023	0.023	0.046	0.023	0.000	0.000	0.000	0.000	0.000	0.023	0.023
9	0.922	0.323	0.369	1.014	0.945	0.899	0.991	1.313	1.498	1.705	0.922
10	0.023	0.023	0.046	0.023	0.000	0.000	0.000	0.000	0.000	0.023	0.023
11	0.783	0.461	0.553	0.829	0.991	1.06	1.175	1.382	1.544	1.659	0.783
12	0.023	0.023	0.069	0.023	0.000	0.000	0.000	0.000	0.000	0.023	0.023
13	0.438	0.392	0.691	0.76	0.968	1.198	1.244	1.313	1.359	1.475	0.438
14	0.023	0.023	0.046	0.023	0.000	0.000	0.000	0.000	0.000	0.023	0.023
15	0.276	0.346	0.438	0.599	0.806	1.198	1.290	1.152	1.083	1.359	0.276
16	0.090	0.111	0.111	0.023	0.126	0.145	0.186	0.237	0.313	0.356	0.457
17	0.037	0.013	0.013	0.016	0.016	0.021	0.025	0.024	0.030	0.046	0.061
18	0.088	0.046	0.046	0.069	0.177	0.187	0.240	0.297	0.377	0.436	0.469
19	0.042	0.011	0.011	0.014	0.018	0.022	0.027	0.023	0.028	0.047	0.060
20	0.036	0.017	0.017	0.099	0.169	0.240	0.310	0.374	0.436	0.534	0.534
21	0.038	0.011	0.011	0.020	0.020	0.025	0.029	0.023	0.029	0.044	0.052
22	0.059	0.056	0.056	0.217	0.214	0.307	0.371	0.429	0.525	0.589	0.638
23	0.029	0.011	0.011	0.016	0.020	0.027	0.029	0.024	0.028	0.039	0.042
24	0.063	0.092	0.092	0.234	0.296	0.353	0.405	0.460	0.500	0.589	0.647
25	0.037	0.009	0.009	0.015	0.020	0.026	0.028	0.024	0.027	0.033	0.033
26	0.075	0.124	0.124	0.232	0.319	0.347	0.399	0.466	0.509	0.583	0.629
27	0.032	0.008	0.008	0.014	0.018	0.020	0.023	0.025	0.027	0.026	0.028
28	0.112	0.149	0.149	0.250	0.296	0.334	0.387	0.451	0.512	0.531	0.604
29	0.026	0.012	0.012	0.016	0.017	0.019	0.023	0.026	0.027	0.026	0.032
30	0.099	0.163	0.163	0.246	0.287	0.334	0.383	0.439	0.491	0.509	0.571
31	0.030	0.011	0.011	0.012	0.012	0.014	0.016	0.023	0.023	0.022	0.031
32	0.106	0.168	0.168	0.266	0.313	0.350	0.383	0.423	0.457	0.512	0.512
33	0.027	0.012	0.012	0.012	0.012	0.014	0.015	0.022	0.023	0.022	0.031
34	0.117	0.167	0.167	0.262	0.301	0.328	0.356	0.383	0.396	0.454	0.451
35	0.025	0.015	0.015	0.014	0.012	0.014	0.015	0.021	0.021	0.023	0.029
36	0.088	0.157	0.157	0.234	0.249	0.275	0.298	0.337	0.325	0.362	0.402
37	0.029	0.015	0.015	0.015	0.014	0.016	0.017	0.019	0.019	0.025	0.028
38	0.083	0.138	0.138	0.188	0.203	0.224	0.230	0.267	0.269	0.279	0.313
39	0.023	0.016	0.016	0.019	0.020	0.022	0.021	0.019	0.021	0.029	0.032
40	0.078	0.125	0.125	0.140	0.167	0.190	0.193	0.194	0.196	0.178	0.212

Remark / *Bemerkung*:
Tested according to DIN VDE V 0124-100 clause 5.2.4 / *geprüft nach DIN VDE V 0124-100 Punkt 5.2.4*
The inverter outputs a curent <75 A, thus Inter-harmonics and High Frequencies are not evaluated in accordance with the standard / *Der Wechselrichter gibt einen Strom <75 A aus, daher werden Zwischenharmonische und Höhere Frequenzen nicht normgerecht ausgewertet.*

The maximal value of three phases is selected. */ Die maximalwerte der drei Phasen werden gewählt.*