

# Unit Certificate Einheitenzertifikat

By the product certificate number / Durch die Produktzertifikatsnummer

No. 250083RECO01-A-CER

Issued to / Lautend auf

License holder / Lizenzinhaber:

Shenzhen Aohai Digital Power Co., Ltd.

2501, Building 1, Huide Building, North Station Community, Minzhi Street, Longhua District, Shenzhen

Trademark / Warenzeichen:

**AOHAI**

Manufacturer / Hersteller:

Dongguan Aohai Technology Co., Ltd. Third Branch

No.27, Shaxin Road, Tangxia Town, Dongguan, Guangdong, P.R.China, 523723

It is certified that the product / Es ist zertifiziert, dass das Produkt

Type of generator / Generatortyp: **Three-phase Hybrid Inverter / Dreiphasig-Hybrid-Wechselrichter**

Models / Modelle:

**AH-4KTH-G1 / AH-5KTH-G1 / AH-6KTH-G1 / AH-7KTH-G1 / AH-8KTH-G1 / AH-10KTH-G1**

Technical Data /  
Technische Daten:

**Rated AC Power / AC-Nennleistung**

**See page 3 / Siehe Seite 3**

**Rated AC Voltage / Nennwechselspannung**

**230 / 400 V<sub>AC</sub>**

**Rated Frequency / Nennfrequenz**

**50 Hz**

**DC Current (IN / OUT) / DC Strom (IN / OUT)**

**See page 3 / Siehe Seite 3**

**Firmware version / Firmware Version**

**CA1.0**

**Number of phases / Anzahl der Phasen**

**Three Phase / Dreiphasig  
(3L/N/PE)**

**Isolation transformer / Isolationstransformator**

**No / Nein**

Is in compliance with the Network connection rule / In Übereinstimmung mit der Anwendungsregel:

- **VDE-AR-N 4105: 2018-11 + Correction 1: 2020-10**

**"Generators connected to the low-voltage distribution network / Erzeugungsanlagen am Niederspannungsnetz"**

Technical minimum requirements for connection and parallel operation of power generation systems connected to the low-voltage network /  
Technische Mindestanforderungen für Anschluss und Parallelbetrieb von Erzeugungsanlagen am Niederspannungsnetz

Based on tests requirements defined in / Basierend auf Tests Anforderungen definiert in:

- **DIN VDE V 0124-100 (VDE V 0124-100): 2020-06.**

**"Network integration of power generation systems – Low voltage / Netzintegration von Erzeugungsanlagen"**

Test requirements for power generation units intended for connection to and parallel operation on the low-voltage network /  
Niederspannung – Prüfanforderungen an Erzeugungseinheiten, vorgesehen zum Anschluss und Parallelbetrieb am  
Niederspannungsnetz

This certificate is based upon test results offered in the test report No. SUEE240300003151 issued on 07<sup>th</sup> November 2024. / Dieses Zertifikat basiert auf den Testergebnissen, des Prüfberichts Nr. SUEE240300003151, herausgegeben am 07. November 2024.

The above-mentioned generating unit is certified according to the SGS internal procedure PE.T-ECPE-13 based on the requirements of the UNE-EN ISO / IEC 17065 / Die oben genannte Erzeugungseinheit ist gemäß dem internen SGS-Verfahren PE.T-ECPE-13 basierend auf den Anforderungen der UNE-EN ISO / IEC 17065 zertifiziert.

First issued on 27<sup>th</sup> March 2025 / Zuerst veröffentlicht am: 27. März 2025.

This certificate is valid until 27<sup>th</sup> March 2030. / Dieses Zertifikat ist gültig bis: 27. März 2030.

Madrid, 27<sup>th</sup> March 2025 / Madrid, 27. März 2025

Daniel Arranz Muñiz  
Certification Manager



SGS Tecnos, S.A.U. C/ Trespaderna, 29 - 28042 Madrid  
This certificate is issued by SGS under its General Conditions for Product Certification at [www.sgs.com/terms\\_and\\_conditions](http://www.sgs.com/terms_and_conditions).  
The status and validity of the certificate can be checked scanning the QR code above included or through the following web [link](#).  
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## APPENDIX (ANHANG)

Annex to Certificate N° 250083RECO01-A-CER

## E.5 Requirements for the test report for power generation units

E.5 Prüfbericht „Netrückwirkungen“ für Erzeugungseinheiten mit einem Eingangsstrom &gt; 75 A (\*)

## Extract from test report for unit certificate

No. SUEE240300003151

"Determination of electrical properties"

Auszug aus dem Prüfbericht für Erzeugungseinheiten

Bestimmung der elektrischen Eigenschaften"

## System Manufacturer

Anlagenhersteller:

Dongguan Aohai Technology Co.,Ltd. Third Branch

## Manufacturer indications:

Herstellerangaben:

## Type of system:

Anlagenart:

Three-phase Hybrid Inverter

Max. active power P<sub>E</sub>maxmax. Wirkleistung P<sub>E</sub>max

AH-10KTH-G1

10000 W

## Rated voltage:

Bemessungsspannung

3L/N/PE, 230/400 V<sub>AC</sub>

Measuring period: 2024 Jan 12 to 2024 Mar 20

| Flicker | Network impedance angle $\psi_k$       |                                       | 32°               |                   |                    |
|---------|----------------------------------------|---------------------------------------|-------------------|-------------------|--------------------|
|         | Netzimpedanzwinkel $\psi_k$            |                                       |                   |                   |                    |
|         | Initial flicker factor C <sub>ij</sub> | Anlagenflickerbeiwert C <sub>ij</sub> | 33%P <sub>n</sub> | 66%P <sub>n</sub> | 100%P <sub>n</sub> |
|         |                                        |                                       | Phase A           | Phase B           | Phase C            |
|         |                                        |                                       | 2.85              | 3.75              | 3.83               |
|         |                                        |                                       | 2.82              | 3.77              | 4.04               |
|         |                                        |                                       | 2.82              | 3.71              | 4.02               |

Model: AH-10KTH-G1

## Harmonics Phase A

Oberschwingungen

| Active power<br>P/P <sub>n</sub> [%]<br>Wirkleistung<br>P/P <sub>n</sub> [%] | 0     | 10    | 20    | 30    | 40    | 50    | 60    | 70    | 80    | 90    | 100   |
|------------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Ordinal number<br>Ordnungszahl                                               | I(A)  | I(A)  | I(A)  | I(A)  | I(A)  | I(A)  | I(A)  | I(A)  | I(A)  | I(A)  | I(A)  |
| 2                                                                            | 0.076 | 0.096 | 0.110 | 0.111 | 0.098 | 0.109 | 0.116 | 0.116 | 0.125 | 0.119 | 0.125 |
| 3                                                                            | 0.726 | 0.899 | 0.678 | 0.582 | 0.585 | 0.629 | 0.694 | 0.795 | 0.911 | 1.042 | 1.170 |
| 4                                                                            | 0.017 | 0.022 | 0.025 | 0.030 | 0.027 | 0.011 | 0.009 | 0.013 | 0.010 | 0.010 | 0.012 |
| ...                                                                          |       |       |       |       |       |       |       |       |       |       |       |
| 40                                                                           | 0.007 | 0.006 | 0.005 | 0.004 | 0.004 | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.007 |

Model: AH-10KTH-G1

## Harmonics Phase B

Oberschwingungen

| Active power<br>P/P <sub>n</sub> [%]<br>Wirkleistung<br>P/P <sub>n</sub> [%] | 0     | 10    | 20    | 30    | 40    | 50    | 60    | 70    | 80    | 90    | 100   |
|------------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Ordinal number<br>Ordnungszahl                                               | I(A)  | I(A)  | I(A)  | I(A)  | I(A)  | I(A)  | I(A)  | I(A)  | I(A)  | I(A)  | I(A)  |
| 2                                                                            | 0.040 | 0.055 | 0.041 | 0.049 | 0.068 | 0.070 | 0.067 | 0.070 | 0.062 | 0.077 | 0.069 |
| 3                                                                            | 0.649 | 0.844 | 0.662 | 0.584 | 0.590 | 0.641 | 0.708 | 0.816 | 0.937 | 1.074 | 1.207 |
| 4                                                                            | 0.020 | 0.030 | 0.026 | 0.020 | 0.020 | 0.015 | 0.020 | 0.022 | 0.026 | 0.022 | 0.026 |
| ...                                                                          |       |       |       |       |       |       |       |       |       |       |       |
| 40                                                                           | 0.008 | 0.010 | 0.009 | 0.008 | 0.012 | 0.014 | 0.015 | 0.016 | 0.015 | 0.015 | 0.016 |



|                                                      |       |       |       |       |       |       |       |       |       |       |       |
|------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Model: AH-10KTH-G1                                   |       |       |       |       |       |       |       |       |       |       |       |
| <b>Harmonics Phase C</b>                             |       |       |       |       |       |       |       |       |       |       |       |
| Oberschwingungen                                     |       |       |       |       |       |       |       |       |       |       |       |
| Active power<br>P/Pn [%]<br>Wirkleistung<br>P/Pn [%] | 0     | 10    | 20    | 30    | 40    | 50    | 60    | 70    | 80    | 90    | 100   |
| Ordinal number<br>Ordnungszahl                       | I(A)  | I(A)  | I(A)  | I(A)  | I(A)  | I(A)  | I(A)  | I(A)  | I(A)  | I(A)  | I(A)  |
| 2                                                    | 0.068 | 0.063 | 0.048 | 0.056 | 0.074 | 0.076 | 0.081 | 0.085 | 0.088 | 0.096 | 0.104 |
| 3                                                    | 0.621 | 0.853 | 0.690 | 0.622 | 0.624 | 0.677 | 0.740 | 0.837 | 0.948 | 1.076 | 1.203 |
| 4                                                    | 0.027 | 0.046 | 0.038 | 0.024 | 0.028 | 0.019 | 0.021 | 0.021 | 0.017 | 0.020 | 0.022 |
| ...                                                  |       |       |       |       |       |       |       |       |       |       |       |
| 40                                                   | 0.004 | 0.004 | 0.003 | 0.004 | 0.005 | 0.005 | 0.003 | 0.003 | 0.005 | 0.005 | 0.007 |

(\*) the inverter outputs a current <75 A, thus Inter-harmonics and High Frequencies are not evaluated in accordance with the standard.

**Full list of product references and nominal characteristics / Vollständige Liste der Produktreferenzen und nominalen Merkmale:**

| Model                                    | AH-4KTH-G1            | AH-5KTH-G1 | AH-6KTH-G1 | AH-7KTH-G1 | AH-8KTH-G1 | AH-10KTH-G1 |
|------------------------------------------|-----------------------|------------|------------|------------|------------|-------------|
| DC Input (PV)                            |                       |            |            |            |            |             |
| Max. DC Voltage                          | 1000 V                |            |            |            |            |             |
| Rated input voltage                      | 600 V                 |            |            |            |            |             |
| Voltage Range                            | 120 V ~ 1000 V        |            |            |            |            |             |
| Max. Input Current                       | 16.0 A * 2            |            |            |            |            |             |
| DC Input (Battery)                       |                       |            |            |            |            |             |
| Voltage range                            | 100 V ~ 550 V         |            |            |            |            |             |
| Max. charging / discharging current      | 25 A / 25 A           |            |            |            |            |             |
| Continuous. Charging / discharging power | 4000 W                | 5000 W     | 6000 W     | 7000 W     | 8000 W     | 10000 W     |
| AC Input / Output (On-grid)              |                       |            |            |            |            |             |
| Rated AC Output power                    | 4000 W                | 5000 W     | 6000 W     | 7000 W     | 8000 W     | 10000 W     |
| Max. AC Output power                     | 4000 VA               | 5000 VA    | 6000 VA    | 7000 VA    | 8000 VA    | 10000 VA    |
| Max. output current                      | 6.1 A                 | 7.6 A      | 9.1 A      | 10.6 A     | 12.2 A     | 15.2 A      |
| Nominal grid voltage                     | 230/400 V, 3L/N/PE    |            |            |            |            |             |
| Nominal output frequency                 | 50 Hz / 60 Hz, ± 5 Hz |            |            |            |            |             |

