

ist Hersteller und verantwortlich für:

## Konformitätserklärung / Declaration of Conformity

<b>Produkt-Typ:</b>	Plug & Play Photovoltaik-Set für Netzparallelbetrieb steckbar mittels Haushaltsstecker in Endstromkreis. Batteriesystem zw. Panels und Wechselrichter gesteckt.
<b>Modell:</b>	840 Wp Plug & Play (CN), 2 Panels / Hoymiles / Zendure, 1kWh
<b>Komponenten:</b>	<ul style="list-style-type: none"> <li>• 2x JA Solar JAM54S30-420/GR / 420 Wp / IP-67 / Schutzklasse II</li> <li>• 1x Hoymiles HMS-600W-2T mit N/A Schutz und eingebauter RCMU / IP67 Schutzart / Schutzklasse II / Input max. 60VDC, Output max. 230VAC, 50-60Hz, 600VA, 2,61A</li> <li>• 1x Anschlusskabel vorkonfektioniert mit Betteri Buchse IP67, 5m, 10m, 15m oder 20m / 3x1,5mm<sup>2</sup> Leitung / AC Seitig CH-Typ 13 Stecker IP 55</li> <li>• 1x Zendure PV Hub 2000, max 500W pro MPPT, Max DC 16-60V</li> <li>• 1x Zendure Erweiterungsbatterie AB1000(S), 960 Wh</li> </ul>

**Konform nach ESTI-Mitteilung 07/2014 und in Übereinstimmung mit der Verordnung über elektrische Niederspannungserzeugnisse (NEV; SR 734.26) (Stand 08.11.2024).**

### Dazu angewandte Normen:

JA Solar JAM54S30-420/GR	N 61215-1:2016, EN 61215-1-1:2016, IEC 61215-2:2016, EN 61215-2:2017, IEC 61730-1:2016, EN IEC 61730-1:2018, EN IEC 61730-1:2018/AC:2018-06, IEC 61730-2:2016, EN IEC 61730-2:2018, EN IEC 61730-2:2018/AC:2018-06
Hoymiles HMS-600W-2T	VDE-ARN-N 4105: 2018-11, VDE V 0124-100:2020-06 & EN50549-1:2019, VFR 2019 IEC/EN 62109-1:2010/-2:2011, IEC/EN 61000-6-1:2019;EN 61000-6-2:200; EN 61000-6-3:2007+A1:2011; EN 61000-6-4:2019; EN 61000-3-2:2019; EN 61000-3-3:2013+A1:2019, IEC/EN 62311:2008 NEMA (IP67) Gehäuse; 6000 V Stromstossschutz
Hoymiles Anschlusskabel vorkonfektioniert in 5m, 10m, 15m oder 20m	Betteri Buchse Wechselrichterseite, Schutzart IEC EN 60529 IP67, Anschlusskabel 5m oder 10m H07RN-F, EN 50525-2-21: 2011, Stecker CH Typ 13: IEC 60884-1 (Ed 4.0): 2022 / SN 441011-1: 2019 +Corr2019 / SN 441011-2-1:2021, IP55
Zendure PV Hub 1200	EN 62109-1:2010 EN 62093:2005 EN 62509:2011 EN IEC 62311:2020 EN 50665:2017 ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-3 V2.1.1 (2019-03) ETSI EN 301 489-17 V3.2.4 (2020-09) ETSI EN 300 328 V2.2.2 (2019-07) ETSI EN 300 440 V2.2.1 (2018-07) IEC 62321-3-1:2013 IEC 62321-4:2013+AMD1:2017 IEC 62321-5:2013 IEC 62321-6:2015 IEC 62321-7-1:2015 IEC 62321-7-2:2017 IEC 62321-8:2017
Erweiterungsbatterie AB1000(S)	EN IEC 62368-1:2020+A11:2020 EN 55032:2015+A11:2020 EN 55035: 2017+A11: 2020 EN IEC 61000-3-2: 2019 EN 61000-3-3: 2013 +A1:2019 IEC 62321-3-1:2013 IEC 62321-4:2013+AMD1:2017 IEC 62321-5:2013 IEC 62321-6:2015 IEC 62321-7-1:2015 IEC 62321-7-2:2017 IEC 62321-8:2017
ROHS Konformität	Gesamtes Set konform gemäss IEC EN 63000: 2018

Michael Sebel, Geschäftsführung  
 erneuer.bar services GmbH



840 Wp Plug & Play (CN), 2 Panels / Hoymiles / Zendure, 1kWh / Version 1.6 / Datum: 08.11.2024



Product Service

# CERTIFICATE

No. Z2 072092 0295 Rev. 63

**Holder of Certificate:** **Shanghai JA Solar Technology Co., Ltd.**  
No. 118, Lane 3111  
West Huancheng Road  
Fengxian District  
201401 Shanghai  
PEOPLE'S REPUBLIC OF CHINA

**Certification Mark:**



**Product:** **Crystalline Silicon Terrestrial Photovoltaic (PV) Modules**  
**Mono-Crystalline Silicon Photovoltaic Module**

The product was tested on a voluntary basis and complies with the essential requirements. The certification mark shown above can be affixed on the product. It is not permitted to alter the certification mark in any way. In addition, the certification holder must not transfer the certificate to third parties. This certificate is valid until the listed date, unless it is cancelled earlier. All applicable requirements of the testing and certification regulations of TÜV SÜD Group have to be complied. For details see: [www.tuvsud.com/ps-cert](http://www.tuvsud.com/ps-cert)

**Test report no.:** 704061604115-78

**Valid until:** 2028-07-30

**Date,** 2023-08-01

( Zhulin Zhang )

# CERTIFICATE

No. Z2 072092 0295 Rev. 63

## Model(s):

1500 V DC Maximum System Voltage, Double Glass Modules:

JAM72D00-xxx/BP/1500V, JAM72D00-xxx/BP, xxx= 330 to 385 in steps of 5;  
 JAM60D00-xxx/BP/1500V, JAM60D00-xxx/BP, xxx= 275 to 320 in steps of 5;  
 JAM60D00-xxx/PR/1500V, JAM60D00-xxx/PR, xxx= 285 to 320 in steps of 5;  
 JAM72D00-xxx/PR/1500V, JAM72D00-xxx/PR, xxx= 340 to 385 in steps of 5;  
 JAM60D00-xxx/MB/1500V, JAM60D00-xxx/MB, xxx= 310 to 315 in steps of 5;  
 JAM72D00-xxx/MB/1500V, JAM72D00-xxx/MB, xxx= 370 to 380 in steps of 5;  
 JAM72D09-xxx/BP/1500V, JAM72D09-xxx/BP, xxx= 360 to 400 in steps of 5;  
 JAM60D09-xxx/BP/1500V, JAM60D09-xxx/BP, xxx= 300 to 345 in steps of 5;  
 JAM72D10-xxx/MB/1500V, JAM72D10-xxx/MB, xxx= 385 to 430 in steps of 5;  
 JAM60D10-xxx/MB/1500V, JAM60D10-xxx/MB, xxx= 320 to 355 in steps of 5;  
 JAM72D10-xxx/BP/1500V, JAM72D10-xxx/BP, xxx= 385 to 415 in steps of 5;  
 JAM60D10-xxx/BP/1500V, JAM60D10-xxx/BP, xxx= 320 to 345 in steps of 5;  
 JAM66D10-xxx/MB/1500V, JAM66D10-xxx/MB, xxx= 360 to 380 in steps of 5;  
 JAM78D10-xxx/MB/1500V, JAM78D10-xxx/MB, xxx= 435 to 455 in steps of 5;  
 JAM72D20-xxx/MB/1500V, JAM72D20-xxx/MB, xxx= 430 to 465 in steps of 5;  
 JAM60D20-xxx/MB/1500V, JAM60D20-xxx/MB, xxx= 355 to 385 in steps of 5;  
 JAM72D10-xxx/TB/1500V, JAM72D10-xxx/TB, xxx= 400 to 420 in steps of 5;  
 JAM60D10-xxx/TB/1500V, JAM60D10-xxx/TB, xxx= 335 to 350 in steps of 5;  
 JAM78D30-xxx/MB/1500V, JAM78D30-xxx/MB, xxx= 580 to 605 in steps of 5;  
 JAM72D30-xxx/MB/1500V, JAM72D30-xxx/MB, xxx=505 to 555 in steps of 5;  
 JAM72D30-xxx/MB/F/1500V, JAM72D30-xxx/MB/F,  
 xxx=505 to 555 in steps of 5;  
 JAM66D30-xxx/MB/1500V, JAM66D30-xxx/MB, xxx=465 to 505 in steps of 5;  
 JAM66D30-xxx/MB/F/1500V, JAM66D30-xxx/MB/F,  
 xxx=465 to 505 in steps of 5;  
 JAM60D30-xxx/MB/1500V, JAM60D30-xxx/MB, xxx=435 to 460 in steps of 5;  
 JAM54D30-xxx/MB/1500V, JAM54D30-xxx/MB, xxx= 390 to 415 in steps of 5;  
 JAM54D31-xxx/MB/1500V, JAM54D31-xxx/MB, xxx= 395 to 400 in steps of 5;  
 JAM50D40-xxx/MB/1500V, JAM50D40-xxx/MB, xxx= 485 to 500 in steps of 5;  
 JAM78D30-xxx/GB/1500V, JAM78D30-xxx/GB, xxx= 585 to 610 in steps of 5;  
 JAM72D30-xxx/GB/1500V, JAM72D30-xxx/GB, xxx= 540 to 560 in steps of 5;  
 JAM66D30-xxx/GB/1500V, JAM66D30-xxx/GB, xxx= 495 to 510 in steps of 5;  
 JAM60D30-xxx/GB/1500V, JAM60D30-xxx/GB, xxx= 450 to 470 in steps of 5;  
 JAM54D30-xxx/GB/1500V, JAM54D30-xxx/GB, xxx= 405 to 420 in steps of 5;  
 JAM54D31-xxx/GB/1500V, JAM54D31-xxx/GB, xxx= 410 to 420 in steps of 5;  
 JAM72D30-xxx/HB/1500V, JAM72D30-xxx/HB, xxx= 530 to 560 in steps of 5;  
 JAM78D40-xxx/MB/1500V, JAM78D40-xxx/MB, xxx= 580 to 630 in steps of 5;  
 JAM72D40-xxx/MB/1500V, JAM72D40-xxx/MB, xxx= 540 to 585 in steps of 5;  
 JAM66D40-xxx/MB/1500V, JAM66D40-xxx/MB, xxx= 500 to 535 in steps of 5;  
 JAM60D40-xxx/MB/1500V, JAM60D40-xxx/MB, xxx= 455 to 485 in steps of 5;  
 JAM54D40-xxx/MB/1500V, JAM54D40-xxx/MB, xxx= 405 to 440 in steps of 5;  
 JAM78D40-xxx/GB/1500V, JAM78D40-xxx/GB, xxx= 580 to 635 in steps of 5;  
 JAM72D40-xxx/GB/1500V, JAM72D40-xxx/GB, xxx= 540 to 585 in steps of 5;  
 JAM66D40-xxx/GB/1500V, JAM66D40-xxx/GB, xxx= 500 to 535 in steps of 5;  
 JAM60D40-xxx/GB/1500V, JAM60D40-xxx/GB, xxx= 455 to 485 in steps of 5;  
 JAM54D40-xxx/GB/1500V, JAM54D40-xxx/GB, xxx= 405 to 440 in steps of 5;  
 JAM54D41-xxx/GB/1500V, JAM54D41-xxx/GB, xxx= 415 to 435 in steps of 5;  
 JAM66D35-xxx/MB/1500V, JAM66D35-xxx/MB, xxx= 650 to 665 in steps of 5;  
 JAM60D35-xxx/MB/1500V, JAM60D35-xxx/MB, xxx= 590 to 605 in steps of 5;  
 JAM72D30-xxx /TB/1500V, JAM72D30-xxx /TB, xxx= 540 to 580 in steps of 5;  
 JAM72D40-xxx/LB/1500V, JAM72D40-xxx/LB, xxx= 575 to 600 in steps of 5;  
 JAM54D40-xxx/LB/1500V, JAM54D40-xxx/LB, xxx= 420 to 450 in steps of 5;  
 JAM54D41-xxx/LB/1500V, JAM54D41-xxx/LB, xxx= 420 to 440 in steps of 5;  
 JAM72D42-xxx/LB/1500V, JAM72D42-xxx/LB, xxx= 605 to 630 in steps of 5;  
 JAM54D42-xxx/LB/1500V, JAM54D42-xxx/LB, xxx= 455 to 470 in steps of 5;  
 JAM72D30-xxx/LB/1500V, JAM72D30-xxx/LB, xxx= 555 to 575 in steps of 5;  
 JAM54D30-xxx/LB/1500V, JAM54D30-xxx/LB, xxx= 420 to 430 in steps of 5;  
 JAM66D45-xxx/LB/1500V, JAM66D45-xxx/LB, xxx= 585 to 605 in steps of 5;

1000 V DC Maximum System Voltage, Single Glass Modules:

JAM6(K)-72-xxx/PR, xxx= 345 to 370 in steps of 5;  
 JAM6(K)-60-xxx/PR, xxx= 285 to 310 in steps of 5;  
 JAM6(K)-72-xxx/4BB, xxx= 320 to 345 in steps of 5;  
 JAM6(K)-60-xxx/4BB, xxx= 265 to 285 in steps of 5;  
 JAM72S01-xxx/SC/1000V, xxx= 320 to 365 in steps of 5;  
 JAM60S01-xxx/SC/1000V, xxx= 265 to 305 in steps of 5;  
 JAM72S01-xxx/PR/1000V, xxx= 345 to 390 in steps of 5;  
 JAM60S01-xxx/PR/1000V, xxx= 285 to 325 in steps of 5;  
 JAM72S01-xxx/MR/1000V, xxx= 365 to 385 in steps of 5;

# CERTIFICATE

No. Z2 072092 0295 Rev. 63

JAM60S01-xxx/MR/1000V, xxx= 305 to 320 in steps of 5;  
JAM72S03-xxx/PR/1000V, xxx= 360 to 395 in steps of 5;  
JAM60S03-xxx/PR/1000V, xxx= 300 to 330 in steps of 5;  
JAM72S09-xxx/PR/1000V, xxx= 370 to 405 in steps of 5;  
JAM60S09-xxx/PR/1000V, xxx= 310 to 335 in steps of 5;  
JAM72S10-xxx/PR/1000V, xxx= 380 to 410 in steps of 5;  
JAM60S10-xxx/PR/1000V, xxx= 315 to 345 in steps of 5;  
JAM72S10-xxx/MR/1000V, xxx= 390 to 430 in steps of 5;  
JAM60S10-xxx/MR/1000V, xxx= 325 to 355 in steps of 5;  
JAM60S10-xxx/MR-L/1000V, xxx= 325 to 355 in steps of 5;  
JAM78S10-xxx/MR/1000V, xxx= 435 to 465 in steps of 5;  
JAM66S10-xxx/MR/1000V, xxx= 345 to 390 in steps of 5;  
JAM72S09-xxx/BP/1000V, xxx= 375 to 385 in steps of 5;  
JAM60S09-xxx/BP/1000V, xxx= 315 to 320 in steps of 5;  
JAM72S10-xxx/BP/1000V, xxx= 385 to 400 in steps of 5;  
JAM60S10-xxx/BP/1000V, xxx= 320 to 330 in steps of 5;  
JAM72S02-xxx/PR/1000V, xxx= 345 to 390 in steps of 5;  
JAM60S02-xxx/PR/1000V, xxx= 285 to 325 in steps of 5;  
JAM72S02-xxx/SC/1000V, xxx= 320 to 365 in steps of 5;  
JAM60S02-xxx/SC/1000V, xxx= 265 to 305 in steps of 5;  
JAM72S02-xxx/MR/1000V, xxx= 365 to 385 in steps of 5;  
JAM60S02-xxx/MR/1000V, xxx= 305 to 320 in steps of 5;  
JAM72S08-xxx/PR/1000V, xxx= 360 to 395 in steps of 5;  
JAM60S08-xxx/PR/1000V, xxx= 300 to 330 in steps of 5;  
JAM72S12-xxx/PR/1000V, xxx= 365 to 385 in steps of 5;  
JAM60S12-xxx/PR/1000V, xxx= 305 to 330 in steps of 5;  
JAM72S17-xxx/PR/1000V, xxx= 380 to 390 in steps of 5;  
JAM60S17-xxx/PR/1000V, xxx= 315 to 325 in steps of 5;  
JAM72S17-xxx/MR/1000V, xxx= 390 to 430 in steps of 5;  
JAM60S17-xxx/MR/1000V, xxx= 315 to 355 in steps of 5;  
JAM72S10-xxx/MB/1000V, xxx= 395 to 415 in steps of 5;  
JAM60S10-xxx/MB/1000V, xxx= 330 to 345 in steps of 5;  
JAM72S20-xxx/MR/1000V, xxx= 430 to 470 in steps of 5;  
JAM60S20-xxx/MR/1000V, xxx= 355 to 390 in steps of 5;  
JAM78S30-xxx/MR/1000V, xxx= 580 to 605 in steps of 5;  
JAM72S30-xxx/MR/1000V, xxx=510 to 555 in steps of 5;  
JAM66S30-xxx/MR/1000V, xxx=470 to 505 in steps of 5;  
JAM60S30-xxx/MR/1000V, xxx=435 to 460 in steps of 5;  
JAM54S30-xxx/MR/1000V, xxx= 390 to 425 in steps of 5;  
JAM60S21-xxx/MR/1000V, xxx= 355 to 390 in steps of 5;  
JAM50S40-xxx/MR/1000V, xxx= 490 to 500 in steps of 5;  
JAM72S20-xxx/MB/1000V, xxx= 450 to 465 in steps of 5;  
JAM60S20-xxx/MB/1000V, xxx= 375 to 390 in steps of 5;  
JAM72S31-xxx/MR/1000V, xxx= 510 to 545 in steps of 5;  
JAM66S31-xxx/MR/1000V, xxx= 470 to 500 in steps of 5;  
JAM60S31-xxx/MR/1000V, xxx= 425 to 450 in steps of 5;  
JAM54S31-xxx/MR/1000V, xxx= 385 to 405 in steps of 5;  
JAM76S11-xxx/PR(B)/1000V, xxx= 395 to 415 in steps of 5;  
JAM78S30-xxx/GR/1000V, xxx= 575 to 610 in steps of 5;  
JAM72S30-xxx/GR/1000V, xxx= 535 to 560 in steps of 5;  
JAM66S30-xxx/GR/1000V, xxx= 500 to 510 in steps of 5;  
JAM60S30-xxx/GR/1000V, xxx= 445 to 470 in steps of 5;  
JAM54S30-xxx/GR/1000V, xxx= 400 to 420 in steps of 5;  
JAM78S31-xxx/GR/1000V, xxx= 570 to 590 in steps of 5;  
JAM72S31-xxx/GR/1000V, xxx= 525 to 545 in steps of 5;  
JAM66S31-xxx/GR/1000V, xxx= 480 to 500 in steps of 5;  
JAM60S31-xxx/GR/1000V, xxx= 430 to 450 in steps of 5;  
JAM54S31-xxx/GR/1000V, xxx= 395 to 415 in steps of 5;  
JAM72S17-xxx/GR/1000V, xxx= 385 to 400 in steps of 5;  
JAM72S40-xxx/GR/1000V, xxx= 540 to 575 in steps of 5;  
JAM66S40-xxx/GR/1000V, xxx= 495 to 525 in steps of 5;  
JAM60S40-xxx/GR/1000V, xxx= 450 to 480 in steps of 5;  
JAM54S40-xxx/GR/1000V, xxx= 405 to 430 in steps of 5;  
JAM72S41-xxx/GR/1000V, xxx= 540 to 570 in steps of 5;  
JAM66S41-xxx/GR/1000V, xxx= 495 to 525 in steps of 5;  
JAM60S41-xxx/GR/1000V, xxx= 450 to 475 in steps of 5;  
JAM54S41-xxx/GR/1000V, xxx= 405 to 430 in steps of 5;  
JAM66S35-xxx/MR/1000V, xxx= 650 to 670 in steps of 5;  
JAM60S35-xxx/MR/1000V, xxx= 590 to 610 in steps of 5;  
JAM72S30-xxx/LR/1000V, xxx= 555 to 580 in steps of 5;

# CERTIFICATE

No. Z2 072092 0295 Rev. 63

JAM54S30-xxx/LR/1000V, xxx= 415 to 435 in steps of 5;  
JAM54S31-xxx/LR/1000V, xxx= 415 to 420 in steps of 5;

1000 V DC or 1500 V DC Maximum System Voltage,  
Single Glass Modules:

JAM72S01-xxx/SC, xxx= 320 to 365 in steps of 5;  
JAM60S01-xxx/SC, xxx= 265 to 305 in steps of 5;  
JAM60S01-xxx/PR, xxx= 285 to 325 in steps of 5;  
JAM72S01-xxx/MR, xxx= 365 to 385 in steps of 5;  
JAM60S01-xxx/MR, xxx= 305 to 320 in steps of 5;  
JAM72S03-xxx/PR, xxx= 360 to 395 in steps of 5;  
JAM60S03-xxx/PR, xxx= 300 to 330 in steps of 5;  
JAM72S09-xxx/PR, xxx= 370 to 405 in steps of 5;  
JAM60S09-xxx/PR, xxx= 310 to 335 in steps of 5;  
JAM72S10-xxx/PR, xxx= 380 to 410 in steps of 5;  
JAM60S10-xxx/PR, xxx= 315 to 345 in steps of 5;  
JAM72S10-xxx/MR, xxx= 390 to 430 in steps of 5;  
JAM60S10-xxx/MR, xxx= 325 to 355 in steps of 5;  
JAM60S10-xxx/MR-L, xxx= 325 to 355 in steps of 5;  
JAM78S10-xxx/MR, xxx= 435 to 465 in steps of 5;  
JAM66S10-xxx/MR, xxx= 345 to 390 in steps of 5;  
JAM72S09-xxx/BP, xxx= 375 to 385 in steps of 5;  
JAM60S09-xxx/BP, xxx= 315 to 320 in steps of 5;  
JAM72S10-xxx/BP, xxx= 385 to 400 in steps of 5;  
JAM60S10-xxx/BP, xxx= 320 to 330 in steps of 5;  
JAM72S02-xxx/PR, xxx= 345 to 390 in steps of 5;  
JAM60S02-xxx/PR, xxx= 285 to 325 in steps of 5;  
JAM72S02-xxx/SC, xxx= 320 to 365 in steps of 5;  
JAM60S02-xxx/SC, xxx= 265 to 305 in steps of 5;  
JAM72S02-xxx/MR, xxx= 365 to 385 in steps of 5;  
JAM60S02-xxx/MR, xxx= 305 to 320 in steps of 5;  
JAM72S08-xxx/PR, xxx= 360 to 395 in steps of 5;  
JAM60S08-xxx/PR, xxx= 300 to 330 in steps of 5;  
JAM72S12-xxx/PR, xxx= 365 to 385 in steps of 5;  
JAM60S12-xxx/PR, xxx= 305 to 330 in steps of 5;  
JAM72S17-xxx/PR, xxx= 380 to 390 in steps of 5;  
JAM60S17-xxx/PR, xxx= 315 to 325 in steps of 5;  
JAM72S17-xxx/MR, xxx= 390 to 430 in steps of 5;  
JAM60S17-xxx/MR, xxx= 315 to 355 in steps of 5;  
JAM72S10-xxx/MB, xxx= 395 to 415 in steps of 5;  
JAM60S10-xxx/MB, xxx= 330 to 345 in steps of 5;  
JAM72S20-xxx/MR, xxx= 430 to 470 in steps of 5;  
JAM60S20-xxx/MR, xxx= 355 to 390 in steps of 5;  
JAM78S10-xxx/MR-J, xxx= 435 to 465 in steps of 5;  
JAM78S30-xxx/MR, xxx= 580 to 605 in steps of 5;  
JAM72S30-xxx/MR, xxx= 510 to 555 in steps of 5;  
JAM66S30-xxx/MR, xxx= 470 to 505 in steps of 5;  
JAM60S30-xxx/MR, xxx= 435 to 460 in steps of 5;  
JAM54S30-xxx/MR, xxx= 390 to 425 in steps of 5;  
JAM60S21-xxx/MR, xxx= 355 to 390 in steps of 5;  
JAM50S40-xxx/MR, xxx= 490 to 500 in steps of 5;  
JAM72S20-xxx/MB, xxx= 450 to 465 in steps of 5;  
JAM60S20-xxx/MB, xxx= 375 to 390 in steps of 5;  
JAM68S11-xxx/PR, xxx= 355 to 365 in steps of 5;  
JAM68S11-xxx/PR(B), xxx= 345 to 365 in steps of 5;  
JAM72S31-xxx/MR, xxx= 510 to 545 in steps of 5;  
JAM66S31-xxx/MR, xxx= 470 to 500 in steps of 5;  
JAM60S31-xxx/MR, xxx= 425 to 450 in steps of 5;  
JAM54S31-xxx/MR, xxx= 385 to 405 in steps of 5;  
JAM76S11-xxx/PR(B), xxx= 395 to 415 in steps of 5;  
JAM78S30-xxx/GR, xxx= 575 to 610 in steps of 5;  
JAM72S30-xxx/GR, xxx= 535 to 560 in steps of 5;  
JAM66S30-xxx/GR, xxx= 500 to 510 in steps of 5;  
JAM60S30-xxx/GR, xxx= 445 to 470 in steps of 5;  
JAM54S30-xxx/GR, xxx= 400 to 420 in steps of 5;  
JAM78S31-xxx/GR, xxx= 570 to 590 in steps of 5;  
JAM72S31-xxx/GR, xxx= 525 to 545 in steps of 5;  
JAM66S31-xxx/GR, xxx= 480 to 500 in steps of 5;  
JAM60S31-xxx/GR, xxx= 435 to 450 in steps of 5;  
JAM54S31-xxx/GR, xxx= 395 to 415 in steps of 5;

# CERTIFICATE

No. Z2 072092 0295 Rev. 63

JAM72S17-xxx/GR, xxx= 385 to 400 in steps of 5;  
JAM72S40-xxx/GR, xxx= 540 to 575 in steps of 5;  
JAM66S40-xxx/GR, xxx= 495 to 525 in steps of 5;  
JAM60S40-xxx/GR, xxx= 450 to 480 in steps of 5;  
JAM54S40-xxx/GR, xxx= 405 to 430 in steps of 5;  
JAM72S41-xxx/GR, xxx= 540 to 570 in steps of 5;  
JAM66S41-xxx/GR, xxx= 495 to 525 in steps of 5;  
JAM60S41-xxx/GR, xxx= 450 to 475 in steps of 5;  
JAM54S41-xxx/GR, xxx= 405 to 430 in steps of 5;  
JAM66S35-xxx/MR, xxx= 650 to 670 in steps of 5;  
JAM60S35-xxx/MR, xxx= 590 to 610 in steps of 5;  
JAM72S30-xxx/LR, xxx= 555 to 580 in steps of 5;  
JAM54S30-xxx/LR, xxx= 415 to 435 in steps of 5;  
JAM54S31-xxx/LR, xxx= 415 to 420 in steps of 5;

1500 V DC Maximum System Voltage, Single Glass Modules:

JAM6(K)-72-xxx/PR/1500V, xxx= 345 to 370 in steps of 5;  
JAM6(K)-60-xxx/PR/1500V, xxx= 285 to 310 in steps of 5;  
JAM6(K)-72-xxx/4BB/1500V, xxx= 320 to 345 in steps of 5;  
JAM6(K)-60-xxx/4BB/1500V, xxx= 265 to 285 in steps of 5;  
JAM72S01-xxx/SC/1500V, xxx= 320 to 365 in steps of 5;  
JAM60S01-xxx/SC/1500V, xxx= 265 to 305 in steps of 5;  
JAM72S01-xxx/PR, xxx= 345 to 390 in steps of 5;  
JAM60S01-xxx/PR/1500V, xxx= 285 to 325 in steps of 5;  
JAM72S01-xxx/MR/1500V, xxx= 365 to 385 in steps of 5;  
JAM60S01-xxx/MR/1500V, xxx= 305 to 320 in steps of 5;  
JAM72S03-xxx/PR/1500V, xxx= 360 to 395 in steps of 5;  
JAM60S03-xxx/PR/1500V, xxx= 300 to 330 in steps of 5;  
JAM72S09-xxx/PR/1500V, xxx= 370 to 405 in steps of 5;  
JAM60S09-xxx/PR/1500V, xxx= 310 to 335 in steps of 5;  
JAM72S10-xxx/PR/1500V, xxx= 380 to 410 in steps of 5;  
JAM60S10-xxx/PR/1500V, xxx= 315 to 345 in steps of 5;  
JAM72S10-xxx/MR/1500V, xxx= 390 to 430 in steps of 5;  
JAM60S10-xxx/MR/1500V, xxx= 325 to 355 in steps of 5;  
JAM60S10-xxx/MR-L/1500V, xxx= 325 to 355 in steps of 5;  
JAM78S10-xxx/MR/1500V, xxx= 435 to 465 in steps of 5;  
JAM66S10-xxx/MR/1500V, xxx= 345 to 390 in steps of 5;  
JAM72S09-xxx/BP/1500V, xxx= 375 to 385 in steps of 5;  
JAM60S09-xxx/BP/1500V, xxx= 315 to 320 in steps of 5;  
JAM72S10-xxx/BP/1500V, xxx= 385 to 400 in steps of 5;  
JAM60S10-xxx/BP/1500V, xxx= 320 to 330 in steps of 5;  
JAM72S02-xxx/PR/1500V, xxx= 345 to 390 in steps of 5;  
JAM60S02-xxx/PR/1500V, xxx= 285 to 325 in steps of 5;  
JAM72S02-xxx/SC/1500V, xxx= 320 to 365 in steps of 5;  
JAM60S02-xxx/SC/1500V, xxx= 265 to 305 in steps of 5;  
JAM72S02-xxx/MR/1500V, xxx= 365 to 385 in steps of 5;  
JAM60S02-xxx/MR/1500V, xxx= 305 to 320 in steps of 5;  
JAM72S08-xxx/PR/1500V, xxx= 360 to 395 in steps of 5;  
JAM60S08-xxx/PR/1500V, xxx= 300 to 330 in steps of 5;  
JAM72S12-xxx/PR/1500V, xxx= 365 to 385 in steps of 5;  
JAM60S12-xxx/PR/1500V, xxx= 305 to 330 in steps of 5;  
JAM72S17-xxx/PR/1500V, xxx= 380 to 390 in steps of 5;  
JAM60S17-xxx/PR/1500V, xxx= 315 to 325 in steps of 5;  
JAM72S17-xxx/MR/1500V, xxx= 390 to 430 in steps of 5;  
JAM60S17-xxx/MR/1500V, xxx= 315 to 355 in steps of 5;  
JAM72S10-xxx/MB/1500V, xxx= 395 to 415 in steps of 5;  
JAM60S10-xxx/MB/1500V, xxx= 330 to 345 in steps of 5;  
JAM72S20-xxx/MR/1500V, xxx= 430 to 470 in steps of 5;  
JAM60S20-xxx/MR/1500V, xxx= 355 to 390 in steps of 5;  
JAM78S30-xxx/MR/1500V, xxx= 580 to 605 in steps of 5;  
JAM72S30-xxx/MR/1500V, xxx=510 to 555 in steps of 5;  
JAM66S30-xxx/MR/1500V, xxx=470 to 505 in steps of 5;  
JAM60S30-xxx/MR/1500V, xxx=435 to 460 in steps of 5;  
JAM54S30-xxx/MR/1500V, xxx= 390 to 425 in steps of 5;  
JAM60S21-xxx/MR/1500V, xxx= 355 to 390 in steps of 5;  
JAM50S40-xxx/MR/1500V, xxx= 490 to 500 in steps of 5;  
JAM72S20-xxx/MB/1500V, xxx= 450 to 465 in steps of 5;  
JAM60S20-xxx/MB/1500V, xxx= 375 to 390 in steps of 5;  
JAM72S31-xxx/MR/1500V, xxx= 510 to 545 in steps of 5;  
JAM66S31-xxx/MR/1500V, xxx= 470 to 500 in steps of 5;

# CERTIFICATE

No. Z2 072092 0295 Rev. 63

JAM60S31-xxx/MR/1500V, xxx= 425 to 450 in steps of 5;  
 JAM54S31-xxx/MR/1500V, xxx= 385 to 405 in steps of 5;  
 JAM76S11-xxx/PR(B)/1500V, xxx= 395 to 415 in steps of 5;  
 JAM78S30-xxx/GR/1500V, xxx= 575 to 610 in steps of 5;  
 JAM72S30-xxx/GR/1500V, xxx= 535 to 560 in steps of 5;  
 JAM66S30-xxx/GR/1500V, xxx= 500 to 510 in steps of 5;  
 JAM60S30-xxx/GR/1500V, xxx= 445 to 470 in steps of 5;  
 JAM54S30-xxx/GR/1500V, xxx= 400 to 420 in steps of 5;  
 JAM78S31-xxx/GR/1500V, xxx= 570 to 590 in steps of 5;  
 JAM72S31-xxx/GR/1500V, xxx= 525 to 545 in steps of 5;  
 JAM66S31-xxx/GR/1500V, xxx= 480 to 500 in steps of 5;  
 JAM60S31-xxx/GR/1500V, xxx= 435 to 450 in steps of 5;  
 JAM54S31-xxx/GR/1500V, xxx= 395 to 415 in steps of 5;  
 JAM72S17-xxx/GR/1500V, xxx= 385 to 400 in steps of 5;  
 JAM72S40-xxx/GR/1500V, xxx= 540 to 575 in steps of 5;  
 JAM66S40-xxx/GR/1500V, xxx= 495 to 525 in steps of 5;  
 JAM60S40-xxx/GR/1500V, xxx= 450 to 480 in steps of 5;  
 JAM54S40-xxx/GR/1500V, xxx= 405 to 430 in steps of 5;  
 JAM72S41-xxx/GR/1500V, xxx= 540 to 570 in steps of 5;  
 JAM66S41-xxx/GR/1500V, xxx= 495 to 525 in steps of 5;  
 JAM60S41-xxx/GR/1500V, xxx= 450 to 475 in steps of 5;  
 JAM54S41-xxx/GR/1500V, xxx= 405 to 430 in steps of 5;  
 JAM66S35-xxx/MR/1500V, xxx= 650 to 670 in steps of 5;  
 JAM60S35-xxx/MR/1500V, xxx= 590 to 610 in steps of 5;  
 JAM72S30-xxx/LR/1500V, xxx= 555 to 580 in steps of 5;  
 JAM54S30-xxx/LR/1500V, xxx= 415 to 435 in steps of 5;  
 JAM54S31-xxx/LR/1500V, xxx= 415 to 420 in steps of 5;  
 xxx is standing for rated output power at STC

## Parameters:

Construction:	Framed or Frameless, with Junction box, Cable and Connectors.
Test Laboratory:	Yangzhou Opto-Electrical Products Testing Institute No. 10 West Kaifa Road, Yangzhou 225009 Jiangsu, P. R. China
Safety Class:	Class II
Maximum System Voltage:	1500 V DC or 1000 V DC
Fire Safety Class:	Class C according to UL790.
Production Facility(ies):	079395, 095903, 090968, 108746, 072092, 109998, 112017, 113943, 114922, 001783, 004170, 113691, 117043, 119123, 120210, 117684, 114994, 120736, 115500, 120016, 108093, 121678.

## Tested according to:

IEC 61215-1:2016  
 IEC 61215-1-1:2016  
 IEC 61215-2:2016  
 IEC 61730-1:2016  
 IEC 61730-2:2016  
 EN IEC 61730-1:2018  
 EN IEC 61730-1:2018/AC:2018-06  
 EN IEC 61730-2:2018  
 EN IEC 61730-2:2018/AC:2018-06



# 440W MBB **LR** Series



Higher output power



Lower LCOE



Better mechanical loading tolerance



Less shading and lower resistive loss



12-year product warranty



25-year linear power output warranty

## Half-cell Module JAM54S31 LR 415-440

### Comprehensive Certificates

- IEC 61215, IEC 61730, UL 61215, UL 61730
- ISO 9001: 2015 Quality management systems
- ISO 14001: 2015 Environmental management systems
- ISO 45001: 2018 Occupational health and safety management systems
- IEC 62941: 2019 Terrestrial photovoltaic (PV) modules - Quality system for PV module manufacturing



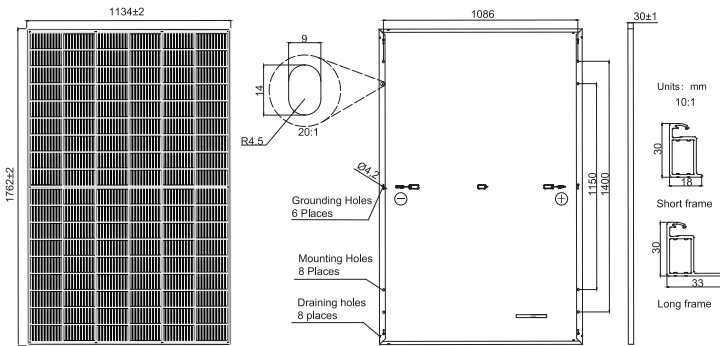


440W

415-440

JAM54S31

LR Series



Remark: customized frame color and cable length available upon request

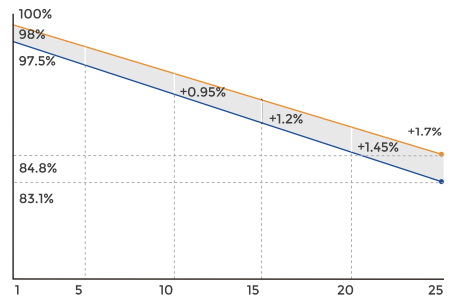
Cell	Mono
Weight	20kg
Dimensions	1762±2mm×1134±2mm×30±1mm
Cable Cross Section Size	4mm <sup>2</sup> (IEC), 12 AWG(UL)
No. of cells	108(6x18)
Junction Box	IP68, 3 diodes
Connector	QC 4.10-351/ MC4-EVO2A
Cable Length (Including Connector)	Portrait: 300mm(+)/400mm(-); 800mm(+)/800mm(-)(Leapfrog) Landscape: 1200mm(+)/1200mm(-)
Front Glass	2.8mm
Packaging Configuration	36pcs/Pallet, 936pcs/40ft Container

**ELECTRICAL PARAMETERS AT STC**

TYPE	JAM54S31 -415/LR	JAM54S31 -420/LR	JAM54S31 -425/LR	JAM54S31 -430/LR	JAM54S31 -435/LR	JAM54S31 -440/LR
Rated Maximum Power(Pmax) [W]	415	420	425	430	435	440
Open Circuit Voltage(Voc) [V]	37.01	37.19	37.37	37.55	37.73	37.91
Maximum Power Voltage(Vmp) [V]	30.92	31.11	31.30	31.49	31.68	31.86
Short Circuit Current(Isc) [A]	14.17	14.25	14.33	14.42	14.50	14.58
Maximum Power Current(Imp) [A]	13.42	13.50	13.58	13.65	13.73	13.81
Module Efficiency [%]	20.8	21.0	21.3	21.5	21.8	22.0
Power Tolerance	0~+5W					
Temperature Coefficient of Isc(α <sub>Isc</sub> )	+0.045% / C					
Temperature Coefficient of Voc(β <sub>Voc</sub> )	-0.275% / C					
Temperature Coefficient of Pmax(γ <sub>Pmp</sub> )	-0.350% / C					
STC	Irradiance 1000W/m <sup>2</sup> , cell temperature 25 °C, AM1.5G					

**Superior Warranty**

0.55% Annual Degradation Over 25 years



- New linear power warranty
- Standard module linear power warranty

**ELECTRICAL PARAMETERS AT NOCT**

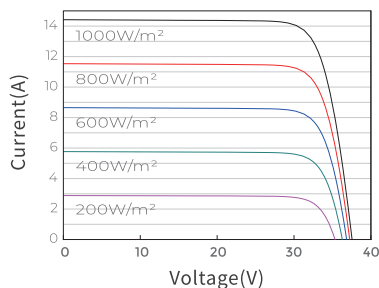
TYPE	JAM54S31 -415/LR	JAM54S31 -420/LR	JAM54S31 -425/LR	JAM54S31 -430/LR	JAM54S31 -435/LR	JAM54S31 -440/LR
Rated Max Power(Pmax) [W]	314	318	322	326	329	333
Open Circuit Voltage(Voc) [V]	35.02	35.19	35.36	35.53	35.70	35.87
Max Power Voltage(Vmp) [V]	29.26	29.44	29.62	29.80	29.98	30.15
Short Circuit Current(Isc) [A]	11.33	11.40	11.47	11.53	11.60	11.67
Max Power Current(Imp) [A]	10.74	10.80	10.86	10.92	10.99	11.05
NOCT	Irradiance 800W/m <sup>2</sup> , ambient temperature 20 °C, wind speed 1m/s, AM1.5G					

**OPERATING CONDITIONS**

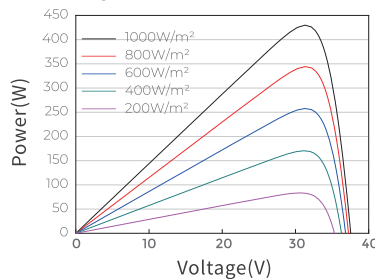
Maximum System Voltage	1000V/1500V DC
Operating Temperature	-40 °C ~+85 °C
Maximum Series Fuse Rating	25A
Maximum Static Load,Front*	5400Pa(112lb/ft <sup>2</sup> )
Maximum Static Load,Back*	2400Pa(50lb/ft <sup>2</sup> )
NOCT	45±2 °C
Safety Class	Class II
Fire Performance	UL Type 1

**CHARACTERISTICS**

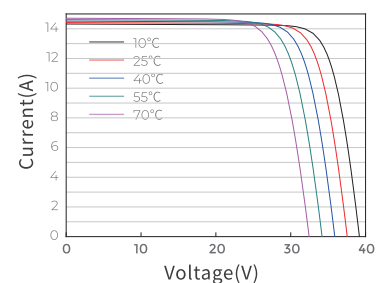
Current-Voltage Curve JAM54S31-430/LR



Power-Voltage Curve JAM54S31-430/LR



Current-Voltage Curve JAM54S31-430/LR





## VKF Hagelschutz Nr. 32551

**Inhaber /-in**  
Solarmarkt GmbH  
Neumattstrasse 2  
5000 Aarau  
Schweiz

**Hersteller /-in**  
JA SOLAR  
100160 Beijing  
China

**Gruppe** 121 - Dach - Photovoltaik Module  
**Produkt** JAM54S30-Serie, JAM54S31-Serie

**Beschreibung** Mono-kristallines Halbzellen-PV-Modul (Glas/Folie).  
Frontglas t = 2.8 mm aus gehärtetem Glas.  
Alu-Rahmen t = 30 mm.

**Unterlagen** SUPSI PVLab: Prüfbericht '22-089/A-REP1-rev0' (1. Dezember 2022); Institut für Solartechnik SPF: Prüfbericht 'H415' (6. November 2023)

**VKF Prüfbestimmungen** 25 Photovoltaik Module, Version 1.03 vom 01.11.2016

**Klassifikation** Hagelwiderstand Funktionalität HW 4  
**Beurteilung** Hagelwiderstand Aussehen HW 4

### Bemerkungen

**Gültigkeitsdauer** 31.12.2028  
**Ausstellungsdatum** 27.11.2023  
**Ersetzt Dokument vom** 09.03.2023

Vereinigung Kantonalen Feuerversicherungen

Martin Jordi

Cornelia Humm

Die Funktionalität ist der minimale Hagelwiderstand von den Bauteilfunktionen:

Lichtdurchlässigkeit	HW --	Mechanik	HW 4
Lichtabschirmung	HW --	Wasserdichtheit	HW --

**Vereinigung Kantonalen Feuerversicherungen VKF**

Bundesgasse 20 Postfach 3001 Bern T +41 31 320 22 22 mail@vkg.ch www.vkg.ch



Shanghai JA Solar PV Technology Co., Ltd.  
No. 36, Jiang Chang San Rd  
Zhabei, Shanghai 200436  
P. R. China  
Tel: +86 (21) 6095 5531  
Fax: +86 (21) 6095 5959

## Declaration of antireflection glass

JA Solar as the PV module manufacturer hereby declares that all the JA Solar modules recently manufactured (starting from 2014) have on the front side a tempered and high-transmission glass covered by anti-reflection coating to reduce light reflection and hence absorb more solar energy and generate more electric current.

All JA Solar customers are encouraged to consult with JA Solar technical support staff with any further question they may have.

Yours faithfully,

Shanghai JA Solar PV Technology Co., Ltd.  
Global Customer Service Department  
March 18<sup>th</sup>, 2020



## EU DECLARATION OF CONFORMITY

(DoC No. 23013002)

We **Hoymiles Power Electronics Inc.**  
**No.18 Kangjing Road, Hangzhou 310015, Zhejiang Province, P.R. China**

as the manufacturer, declare under our sole responsibility that the following products

PRODUCT: **PV Microinverter**  
MODELS: **HMS-2000-4T, HMS-1800-4T, HMS-1600-4T**  
**HMS-2000C-4T, HMS-1800C-4T, HMS-1600C-4T, HMS-1400C-4T**  
**HMS-1000-2T, HMS-900-2T, HMS-800-2T, HMS-700-2T, HMS-600-2T**  
**HMS-500-1T, HMS-450-1T, HMS-400-1T, HMS-350-1T, HMS-300-1T**

to which this declaration relates, are in conformity with the following directive and standards:

Directives	2014/53/EU (RE Directive)
Article 3.1(b) EMC	EN 301 489-1 V2.2.3 (2019-11) EN 301 489-3 V2.1.1 (2019-03) EN 61000-6-1:2019 EN 61000-6-2:2019 EN 61000-6-3:2021 EN 61000-6-4:2019 EN 61000-3-2:2019+A1:2021 EN 61000-3-3:2013+A1:2019+A2:2021
Article 3.1(a) Safety	EN 62109-1:2010 EN 62109-2:2011
Article 3.1(a) Health	EN 62479:2010 EN 50663:2017
Article 3.2 Radio	EN 300 220-1 V3.1.1 (2017-02) EN 300 220-2 V3.1.1 (2017-02)

Manufacturer: Hoymiles Power Electronics Inc.

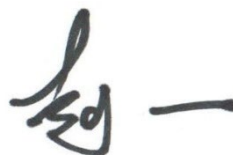
Address: No.18 Kangjing Road, Hangzhou 310015, Zhejiang Province, P.R. China

EU Importer: Hoymiles Power Electronics B.V.

Address: High Tech Campus 9, Unit BK 3.28, 5656 AE Eindhoven, Netherlands

This Declaration of Conformity is not valid any longer, in case, without any written authorization by Hoymiles Power Electronics Inc.:

- The product is modified, supplemented or changed in any other way
- The product is used or installed improperly.

A handwritten signature in black ink, consisting of stylized Chinese characters, positioned above a horizontal line.

Yi Zhao, Vice President.  
2023-01-30  
Hangzhou, China

Hoymiles Power Electronics Inc.  
No.18 Kangjing Road, Hangzhou 310015, China  
Tel: +86 571 28056101  
Fax: +86 571 28056137  
<http://www.hoymiles.com/>

**Appendix:**

Product Specifications	
Frequency Range	863.25 MHz to 869.75 MHz
RF Output Power (EIRP)	11.69 dBm
Modulation Type	GFSK
Type of Antenna	External Omni Antenna
Antenna Gain	2.0 dBi

# Certificate of Conformity

Reingetragene Nr.:  
Registered No.:

**COCPVP02105/23B-03\_R1**

Aktenzeichen  
File reference

PVP02105/23B-03

Testbericht Nr.  
Test report No.

TRPVP02105/23B/03

Ausstellungsdatum  
Date of issue

2023-08-03

Auf der Grundlage der durchgeführten Prüfungen wurde festgestellt, dass die Muster des/der folgenden Produkte(s) zum Zeitpunkt der Durchführung der Prüfungen die wesentlichen Anforderungen der genannten Spezifikationen erfüllen:

*On the basis of the tests undertaken, the samples of the below product(s) have been found to comply with the essential requirements of the referenced specifications at the time the tests were carried out:*

**Antragsteller:** **Hoymiles Power Electronics Inc.**  
**Applicant:** No. 18 Kangjing Road, Hangzhou, Zhejiang Province, P.R. China

**Hersteller:** **Hoymiles Power Electronics Inc.**  
**Manufacturer:** No. 18 Kangjing Road, Hangzhou, Zhejiang Province, P.R. China

**Fertigungsstätte:** **Hoymiles Power Electronics Inc.**  
**Factory:** No. 18 Kangjing Road, Hangzhou, Zhejiang Province, P.R. China

**Produkt:** PV-Mikrowechselrichter  
**Product:** PV Microinverter

**Typenbezeichnung:** HMS-600-2T, HMS-700-2T, HMS-800-2T, HMS-900-2T, HMS-1000-2T,  
**Type designation:** HMS-600W-2T, HMS-700W-2T, HMS-800W-2T, HMS-900W-2T, HMS-1000W-2T

**Zertifizierungsprogramm:** BOS-P-01 Rev. 00  
**Certification program:**

**Zertifizierungsgrundlage(n):** DIN VDE V 0124-100:2020-06  
**Certification fundamental(s):** VDE-AR-N 4105:2018

Detaillierte Informationen finden Sie im Testbericht.  
*See test report for detailed information.*

Dieses Dokument basiert auf der Auswertung der Proben der oben genannten Produkte. Sie stellt keine Bewertung der Massenproduktion des/der Produkte(s) dar und erlaubt nicht die Verwendung eines TÜV NORD-Zeichens. Der Inhaber dieses Dokuments darf es in Verbindung mit dem/den zugehörigen Prüfbericht(en) verwenden.

*This document is based on the evaluation of the samples of the above mentioned product(s). It does not imply an assessment of the mass-production of the product(s), and it does not permit the use of a TÜV NORD mark. The holder of this document may use it in connection with the related test report(s).*



Renewable Energy

BOS&ESS-T-009 COC



中国认可  
产品  
**PRODUCT**  
**CNAS C183-P**

TÜV NORD (HANGZHOU) CO., LTD.  
Member of TÜV NORD Group  
Tel: +86-571-85386989  
Fax: +86-571-85386986  
www.tuv-nord.com/cn  
P.R. China



<b>E.6 Zertifikat für den NA-Schutz</b> <b>E.6 Certificate of the network and system protection</b>	
<b>Hersteller:</b> <b>Manufacturer:</b>	<b>Hoymiles Power Electronics Inc.</b> No. 18 Kangjing Road, Hangzhou, Zhejiang Province, P.R. China
<b>Typ NA-Schutz:</b> <b>Type of NS protection:</b>	<input type="checkbox"/> Zentraler NA-Schutz: <i>Central NS protection</i>  <input checked="" type="checkbox"/> Integrierter NA-Schutz: Zugewiesen an Stromerzeugungseinheit vom Typ: HMS-600-2T, HMS-700-2T, HMS-800-2T, HMS-900-2T, HMS-1000-2T, HMS-600W-2T, HMS-700W-2T, HMS-800W-2T, HMS-900W-2T, HMS-1000W-2T <i>Integrated NS protection: Assigned to power generation unit of type: HMS-600-2T, HMS-700-2T, HMS-800-2T, HMS-900-2T, HMS-1000-2T, HMS-600W-2T, HMS-700W-2T, HMS-800W-2T, HMS-900W-2T, HMS-1000W-2T</i>
<b>Netzanschlussregel:</b> <b>Network connection rule:</b>	VDE-AR-N 4105:2018 "Erzeugungsanlagen am Niederspannungsnetz" <i>VDE-AR-N 4105:2018 "Generators connected to the low-voltage distribution network"</i>  Technische Mindestanforderungen für Anschluss und Parallelbetrieb von Erzeugungsanlagen mit Anschluss an das Niederspannungsnetz <i>Technical minimum requirements for connection and parallel operation of power generation systems connected to the low-voltage network</i>
<b>Prüfanforderung:</b> <b>Test requirement:</b>	DIN VDE V 0124-100 (VDE V 0124-100):2020-06 "Netzintegration von Erzeugungsanlagen - Niederspannung" <i>DIN VDE V 0124-100 (VDE V 0124-100):2020-06 "Network integration of power generation systems - Low voltage"</i>  Prüfanforderungen für Erzeugungseinheiten zum Anschluss und Parallelbetrieb am Niederspannungsnetz <i>Test requirements for power generation units intended for connection to and parallel operation on the low-voltage network</i>
<b>Prüfbericht:</b> <b>Test report:</b>	TRPVP02105/23B/03 ausgestellt am 2023-06-08 <i>TRPVP02105/23B/03 issued on 2023-06-08</i>
<p>Der oben bezeichnete Netz- und Anlagenschutz entspricht den Anforderungen der VDE-AR-N 4105. <i>The network and system protection designated above meets the requirements of VDE-AR-N 4105.</i></p> <p>Dieses NA-Schutzzertifikat darf nicht auszugsweise verwendet werden. <i>This NS protection certificate shall not be used in extracts.</i></p>	



Renewable Energy

BOS&amp;ESS-T-009 COC



中国认可  
产品  
**PRODUCT**  
**CNAS C183-P**

TÜV NORD (HANGZHOU) CO., LTD.  
Member of TÜV NORD Group  
Tel: +86-571-85386989  
Fax: +86-571-85386986  
www.tuv-nord.com/cn  
P.R. China

<b>E.7 Anforderungen an den Prüfbericht zum NA-Schutz</b> <i>E.7 Requirements for the test report for the NS protection</i>						
<b>Typ NA-Schutz:</b> <i>Type of NS protection:</i>	<input type="checkbox"/> Zentraler NA-Schutz <i>Central NS protection</i>  <input checked="" type="checkbox"/> Integrierter NA-Schutz: Zugewiesen an Stromerzeugungseinheit vom Typ: HMS-600-2T, HMS-700-2T, HMS-800-2T, HMS-900-2T, HMS-1000-2T, HMS-600W-2T, HMS- 700W-2T, HMS-800W-2T, HMS-900W-2T, HMS-1000W-2T <i>Integrated NS protection: Assigned to power generation unit of type:                      HMS-600-2T, HMS-700-2T, HMS-800-2T, HMS-900-2T, HMS-1000-                      2T, HMS-600W-2T, HMS-700W-2T, HMS-800W-2T, HMS-900W-                      2T, HMS-1000W-2T</i>					
<b>Software-Version:</b> <i>Software version:</i>	V01.00.02					
<b>Hersteller:</b> <i>Manufacturer:</i>	<b>Hoymiles Power Electronics Inc.</b> No. 18 Kangjing Road, Hangzhou, Zhejiang Province, P.R. China					
<b>Messzeitraum:</b> <i>Measurement period:</i>	Von 2022-03-10 bis 2022-08-28 <i>From 2022-03-10 to 2022-08-28</i>					
-	Stirlinggeneratoren, Brennstoffzellen <i>Stirling generators, fuel cells</i>		Umrichter <i>Inverter(s)</i>			
	direkt oder über Umrichter gekoppelte Synchron- und Asynchrongeneratoren mit $P_n \leq 50$ <i>Synchronous and asynchronous generators with <math>P_n \leq 50</math> coupled directly or via inverters</i>		direkt gekoppelte Synchron- und Asynchrongeneratoren mit $P_n > 50$ kW <i>Directly coupled synchronous and asynchronous generators with <math>P_n &gt;</math> 50 kW</i>			
<b>Schutzfunktion</b> <i>Protective function</i>	Einstellwert <i>Set value</i>	Auslösewert <i>Tripping value</i>	*Auslösezeit NA-Schutz <i>*Tripping time NS protection</i>	Einstellwert <i>Set value</i>	Auslösewert <i>Tripping value</i>	*Auslösezeit NA-Schutz <i>*Tripping time NS protection</i>
<b>Spannungssteigerungsschutz</b> <b>U &gt;&gt; Rise-in-voltage protection</b> <b>U &gt;&gt;</b>	1.15 * Un	N/A	N/A	1.25 * Un	288.2V	108.4ms

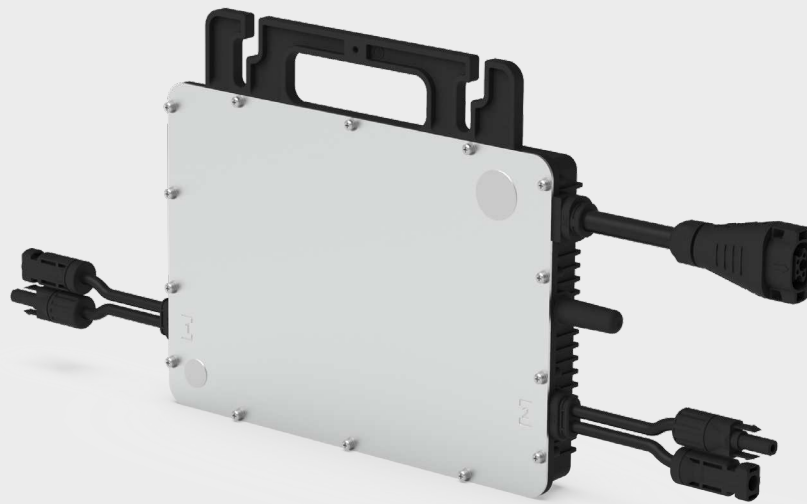



<b>Spannungssteigerungsschutz</b> <b>U &gt; *Rise-in-voltage protection</b> <b>U &gt; *</b>	1.10 * Un	N/A	N/A	1.10 * Un	-	s
<b>Spannungsrückgangsschutz U</b> <b>&lt; Voltage drop protection U &lt;</b>	0.8 * Un	N/A	N/A	0.8 * Un	183.83V	3068ms
<b>Spannungsrückgangsschutz U</b> <b>&lt;&lt; Voltage drop protection U &lt;&lt;</b>	Entfällt N/A			0.45 * Un	103.01V	336.0ms
<b>Frequenzrückgangsschutz f &lt;</b> <b>Frequency decrease protection</b> <b>f &lt;</b>	47.5Hz	N/A	N/A	47.5Hz	47.50Hz	149.0ms
<b>Frequenzsteigerungsschutz f &gt;</b> <b>Frequency increase protection</b> <b>f &gt;</b>	51.5Hz	N/A	N/A	51.5Hz	51.49Hz	154.0ms
<p>* Die Auslösezeit beinhaltet den Zeitraum von der Grenzwertverletzung U/f bis zum Auslösesignal an den Kuppelschalter.                  * The tripping time includes the period from the limit value violation U/f until the tripping signal to the interface switch.</p> <p>Bei der Planung der Erzeugungsanlage ist die Eigenzeit des Kuppelschalters zum höchsten oben ermittelten Zeitwert zu addieren.                  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.</p> <p>Die Abschaltzeit (Summe der Auslösezeit NA-Schutz zzgl. Eigenzeit des Kuppelschalters) darf 200ms nicht überschreiten.                  The disconnection time (sum of tripping time of the NS protection plus response time of the interface switch) shall not exceed 200ms.</p>						
<input checked="" type="checkbox"/> <b>Bei integriertem NA-Schutz</b> <b>For integrated NS protection</b>						
<b>Zugeordnet zur Erzeugungseinheit des Typ:</b> <b>Assigned to power generation unit of type:</b>				HMS-600-2T, HMS-700-2T, HMS-800-2T, HMS-900-2T, HMS-1000-2T, HMS-600W-2T, HMS-700W-2T, HMS-800W-2T, HMS-900W-2T, HMS-1000W-2T		
<b>Typ integrierter Kuppelschalter:</b> <b>Type integrated interface switch:</b>				Typ Schalteinrichtung 1: Galvanische Trennung Hochfrequenz transformator Type of switch 1: Galvanic isolation high frequency transformer		



	Typ Schalteinrichtung 2: Relais Type of switch 2: <i>Relay</i>
<b>Eigenzeit des Kuppelschalters bei integriertem NA-Schutz:</b> <b><i>Response time of interface switch for integrated NS protection:</i></b>	8ms

Die Überprüfung der Gesamtwirkungskette "integrierter NA-Schutz - Kuppelschalter" führte zu einer erfolgreichen Abschaltung.  
*Verification of the entire functional chain "integrated NS protection – interface switch" has resulted in successful disconnection.*



## Datenblatt Mikro-Wechselrichter

**HMS-600**  
**HMS-700**  
**HMS-800**  
**HMS-900**  
**HMS-1000**

### Beschreibung

Mit einer Ausgangsleistung von bis zu 1000 VA gehört Hoymiles neue Mikrowechselrichter-Serie HMS-1000 zu den leistungsstärksten 2-in-1-Mikro-Wechselrichtern.

Jeder Mikro-Wechselrichter kann an bis zu 2 Modulen angeschlossen werden, wobei unabhängige MPPT- und Überwachungsfunktionen die Stromerzeugung Ihrer Anlage maximieren.

Die neue Sub-1G-Funklösung ermöglicht eine stabilere Kommunikation mit dem Hoymiles-Gateway DTU.

### Merkmale

01

Hochleistungs-2-in-1-Mikro-Wechselrichter mit einer Ausgangsleistung von bis zu 1000 VA

02

Mit Blindleistungssteuerung, konform mit EN 50549-1:2019, VDE-AR-N 4105:2018, VFR2019 usw.

03

Sicherer für Aufdach-Solarstationen mit Schnellabschaltung und isoliertem Transformator

04

Unabhängige MPPT und Überwachung sorgen für eine höhere Energieausbeute und einfachere Wartung

05

2-in-1-Design ermöglicht schnellere Installation

06

Die Sub-1G-Funklösung ermöglicht eine stabile Kommunikation in gewerblichen und industriellen Umgebungen

## Technische Daten

Modell	HMS-600-2T	HMS-700-2T	HMS-800-2T	HMS-900-2T	HMS-1000-2T
<b>Angaben zum Eingangstrom (DC)</b>					
Üblicherweise verwendete Modulleistung (W)	240 bis 405+	280 bis 470+	320 bis 540+	360 bis 600+	400 bis 670+
Maximale Eingangsspannung (V)	60	60	65	65	65
MPPT-Spannungsbereich (V)	16 - 60				
Einschaltspannung (V)	22				
Maximaler Eingangsstrom (A)	2 x 12	2 x 13	2 x 14	2 x 15	2 x 16
Maximaler Eingangskurzschlussstrom (A)	2 x 20	2 x 20	2 x 25	2 x 25	2 x 25
Anzahl MPPTs	2				
Anzahl Eingänge je MPPT	1				
<b>Angaben zum Ausgangstrom (AC)</b>					
Nennausgangsleistung (VA)	600	700	800	900	1000
Nennausgangsstrom (A)	2,61	3,04	3,48	3,91	4,35
Nennausgangsspannung/-bereich (V) <sup>1</sup>	230/180 - 275				
Nennfrequenz/-bereich (Hz) <sup>1</sup>	50/45 - 55				
Leistungsfaktor (einstellbar)	> 0,99 standardmäßig 0,8 voreilend ... 0,8 nacheilend				
Klirrfaktor	< 3 %				
Maximale Einheiten pro 10-AWG-Strang <sup>2</sup>	12	10	9	8	7
Maximale Einheiten pro 12-AWG-Strang <sup>2</sup>	7	6	5	5	4
<b>Wirkungsgrad</b>					
CEC-Spitzenwirkungsgrad	96,7 %	96,7 %	96,7 %	96,5 %	96,5 %
MPPT-Nennwirkungsgrad	99,8 %				
Leistungsaufnahme bei Nacht (mW)	< 50				
<b>Mechanische Daten</b>					
Umgebungstemperaturbereich (°C)	-40 bis +65				
Abmessungen (B x H x T mm)	261 x 180 x 31				
Gewicht (kg)	3,1				
Schutzart	Außenbereich IP67 (NEMA 6)				
Kühlung	Natürliche Konvektion - Keine Lüfter				
<b>Merkmale</b>					
Kommunikation	Sub-1G				
Art der Isolierung	Galvanisch isolierter HF-Transformator				
Überwachung	Hoymiles S-Miles Cloud <sup>3</sup>				
Konformität	EN 50549-1: 2019, VDE-AR-N 4105: 2018, VFR2019, IEC/EN 62109-1/-2, IEC/EN 61000-6-1/-2/-3/-4, IEC/EN 61000-3-2/-3				

\*1 Nennspannung/-frequenzbereich können je nach örtlichen Anforderungen variieren.

\*2 Die genaue Anzahl der Mikro-Wechselrichter pro Strang entnehmen Sie bitte den örtlichen Anforderungen.

\*3 Hoymiles-Überwachungssystem

## EU Declaration of Conformity

Product : Smart PVHub 1200  
Model : ZDSPVH1200

Product photo :



We, ZENDURE TECHNOLOGY CO., LIMITED herewith declare under our sole responsibility that the above-mentioned product meets the provisions of the following EC Council Directives and Standards. All supporting documentation is retained under the premises of the manufacturer.

**Directives:**

2014/53/EU (RED)  
2011/65/EU (RoHS)  
2015/863/EU (RoHS)

**Product Safety and Performance Standard(s):**

EN 62109-1:2010  
EN 62093:2005  
EN 62509:2011

**Health Standards:** EN IEC 62311:2020  
EN 50665:2017

**EMC Standards:** ETSI EN 301 489-1 V2.2.3 (2019-11)  
ETSI EN 301 489-3 V2.1.1 (2019-03)  
ETSI EN 301 489-17 V3.2.4 (2020-09)

**Radio Standards:** ETSI EN 300 328 V2.2.2 (2019-07)  
ETSI EN 300 440 V2.2.1 (2018-07)

**RoHS Standards:** IEC 62321-3-1:2013  
IEC 62321-4:2013+AMD1:2017  
IEC 62321-5:2013  
IEC 62321-6:2015  
IEC 62321-7-1:2015  
IEC 62321-7-2:2017  
IEC 62321-8:2017

**Signed for and on behalf of:**

*Augus xiong*  
\_\_\_\_\_  
Sign and steel

Certification Engineer  
\_\_\_\_\_  
Position

2023.4.30  
\_\_\_\_\_  
Date of issue



## EU Declaration of Conformity

Product : Add-on Battery AB2000

Model : ZDAB2000

Product photo :



We, ZENDURE TECHNOLOGY CO., LIMITED herewith declare under our sole responsibility that the above-mentioned product meets the provisions of the following EC Council Directives and Standards. All supporting documentation is retained under the premises of the manufacturer.

**Directives:**

2014/30/EU (EMC)  
2014/35/EU (LVD)  
2011/65/EU (RoHS)  
2015/863/EU (RoHS)

**Product Safety and Performance Standard(s):**

EN IEC 62368-1:2020+A11:2020

**EMC Standards:**

EN 55032:2015+A11:2020  
EN 55035: 2017+A11: 2020  
EN IEC 61000-3-2: 2019  
EN 61000-3-3: 2013 +A1:2019

**RoHS Standards:**

IEC 62321-3-1:2013  
IEC 62321-4:2013+AMD1:2017

IEC 62321-5:2013  
IEC 62321-6:2015  
IEC 62321-7-1:2015  
IEC 62321-7-2:2017  
IEC 62321-8:2017

**European Authorized Representative:**

Zendure DE GmbH  
Hoferstraße 9B, 71636 Ludwigsburg

**Signed for and on behalf of:**

<u>        <i>Augus xiong</i>        </u>	<u>        Certification Engineer        </u>	<u>        2023.12.13        </u>
Sign and steel	Position	Date of issue