

Technical Report No.: 64.290.23.30893.01

Date: 2023-06-09

Client: Huawei Digital Power Technologies Co.,Ltd.
Office 01, 39th Floor, Block A Antuoshan Headquarters Towers
33 Antuoshan 6th Road, Futian District 518043 Shenzhen
PEOPLE'S REPUBLIC OF CHINA

Manufacturer: Huawei Digital Power Technologies Co.,Ltd.
Office 01, 39th Floor, Block A Antuoshan Headquarters Towers
33 Antuoshan 6th Road, Futian District 518043 Shenzhen
PEOPLE'S REPUBLIC OF CHINA

Factory: Factory 1: Liding Electronic Technology (Dongguan) Co., LTD.
Address 1: Building 2, No.313, Qingxi North Ring Road, Qingxi
Town, Dongguan City, Guangdong Province, P.R.China

Factory 2: Huizhou Huazhi New Energy Technology Co.,Ltd.
Address 2: No.8 Factory, Xinhua Avenue, Chenjiang Street,
Zhongkai High-tech Zone, Huizhou, Guangdong Province,
P.R.China

Factory 3: Astec Electronics(Luoding) Co.,Ltd.
Address 3: No.68 Baocheng Road East, Fucheng, Luoding,
Guangdong, P.R.China

Test object: Product: Hybrid inverter
Model: SUN2000-12K-MB0, SUN2000-15K-MB0, SUN2000-17K-MB0, SUN2000-20K-MB0, SUN2000-25K-MB0

Test specification: UNE 217002:2020

Purpose of examination: • Testing and evaluation visual according to the test specification

Test result: The test results show that the presented product is in compliance with the above listed test specifications.

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1. Description of the test object

1.1 Picture(s)



Overall view



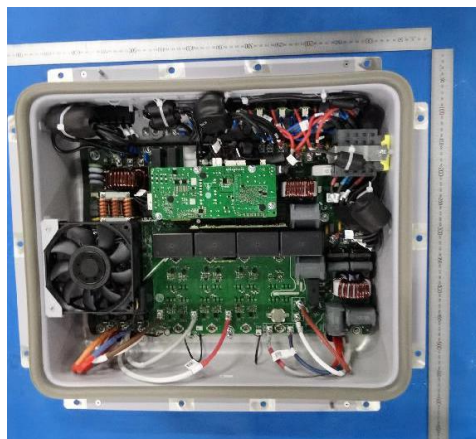
Bottom view



Left side DC switch view



Terminal view



Internal view

1.2 Function

Manufacturer's specification for intended use:

- This unit is non-isolated (transformerless) Hybrid inverter for connection with public grid and load.
- Low voltage electrical installations shall comply with national and local regulation. Only qualified electricians are allowed to install and maintain the converter.
- In order to protect the inverter, user and installer, external DC and AC circuit breaker shall be equipped for all source port (battery, AC grid) at the end-use application.
- Software version: V200R023, Firmware version: V200R023.
- All the models have same electric circuits topology design, same enclosure structure design, same main control circuits and firmware. The output power and current are limited by software.

1.3 Consideration of the foreseeable use

- Not applicable
- Covered through the applied standard
- Covered by the following comment
- Covered by attached risk analysis

1.4 Technical Data

Model	SUN2000-12K-MB0	SUN2000-15K-MB0	SUN2000-17K-MB0	SUN2000-20K-MB0	SUN2000-25K-MB0
Battery input/output parameters					
Battery type	Li-ion				
Rated voltage	600 Vd.c.				
Battery voltage range	600-980 Vd.c.				
Maximum charge/discharge current	26.25 Ad.c./26.25 Ad.c.				
Maximum charge power	25000 W	25000 W	25000 W	25000 W	25000 W
Maximum discharge power	13200 W	16500 W	18700 W	22000 W	25000 W
Maximum charge power from grid to battery	13200 W	15000 W	15000 W	15000 W	15000 W
PV terminal parameters					
Maximum DC input voltage	1100 Vd.c.				
Rated input voltage	600 Vd.c.				



MPPT Range	200~1000 Vd.c.				
MPPT Range (full load)	370~800 Vd.c.	410~800 Vd.c.	440~800 Vd.c.	480~800 Vd.c.	530~800 Vd.c.
Maximum Input Current	2*30 Ad.c.				
Isc PV	2*40 Ad.c.				
Maximum Input Power	18000 W	22500 W	25500 W	30000 W	37500 W
Grid terminal parameters					
Rated AC voltage	230/400 Va.c., 3W+N+PE				
Maximum continuous input current	19.1 Aa.c.	21.7 Aa.c.			
Maximum continuous input power	13200 W	15000 W	15000 W	15000 W	15000 W
Rated AC output current	17.3 Aa.c.	21.7 Aa.c.	24.5 Aa.c.	28.9 Aa.c.	36.1 Aa.c.
Maximum AC output current	20.2 Aa.c.	25.2 Aa.c.	28.6 Aa.c.	33.6 Aa.c.	42.0 Aa.c.
Rated AC output active power	12000 W	15000 W	17000 W	20000 W	25000 W
Maximum continuous output apparent power	13200 VA	16500 VA	18700 VA	22000 VA	27500 VA
Rated AC frequency	50 Hz				
Power factor	0.8 under-excited to 0.8 over-excited				

1.5 Label

型号 Model: SUN2000-12K-MB0
名称 Name: 太阳能光伏逆变器
SOLAR INVERTER

扫码获取支持
Scan for support

最大输入电压 d.c. Max. Input Voltage: 1100 Vd.c.
最大输入电流 d.c. Max. Input Current: 30 A/30 A
输入短路电流 Isc: 40 A/40 A
MPPT电压范围 d.c. MPPT Range: 200 - 1000 Vd.c.
输出电压 a.c. Output Nominal Voltage:
220/380 Va.c., 230/400 Va.c., 240/415 Va.c.; 3(N)~+~
输出频率 a.c. Nominal Operating Frequency: 50/60 Hz
额定输出功率 a.c. Output Rated Power: 12 kW
额定视在功率 a.c. Output Rated Apparent Power: 12 kVA
最大视在功率 a.c. Max. Output Apparent Power: 13.2 kVA
额定输出电流 a.c. Output Rated Current:
18.2 A(380 Va.c.)/17.3 A(400 Va.c.)/16.7 A(415 Va.c.)
最大输出电流 a.c. Max. Output Current:
20.2 A(380 Va.c.)/19.1 A(400 Va.c.)/18.5 A(415 Va.c.)
功率因数 Power Factor: 0.8(lagging) - 0.8(leading)
温度范围 Operating Temperature Range: - 25 - + 60 °C
海拔Altitude: 4000 m(>2000 m refer to usermanual)
过电压类别 Overvoltage Category: II(DC)/III(AC)
逆变器拓扑 Inverter Topology: Non - Isolation
电池额定电压 Battery normal voltage: 600 Vd.c.
电池电压范围 Battery voltage range: 600 - 980 Vd.c.
电池最大电流 Battery maximum current: 26.25 Ad.c./26.25 Ad.c.
电池类型 Battery type: Li-ion
防护等级 Enclosure: IP66
保护等级Protection Class: I
电弧故障保护 AFCI: TYPE I

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华为数字能源技术有限公司
Huawei Digital Power Technologies Co., Ltd.
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型号 Model: SUN2000-15K-MB0
名称 Name: 太阳能光伏逆变器
SOLAR INVERTER

扫码获取支持
Scan for support

最大输入电压 d.c. Max. Input Voltage: 1100 Vd.c.
最大输入电流 d.c. Max. Input Current: 30 A/30 A
输入短路电流 Isc: 40 A/40 A
MPPT电压范围 d.c. MPPT Range: 200 - 1000 Vd.c.
输出电压 a.c. Output Nominal Voltage:
220/380 Va.c., 230/400 Va.c., 240 V/415 Va.c.; 3(N)~+~
输出频率 a.c. Nominal Operating Frequency: 50/60 Hz
额定输出功率 a.c. Output Rated Power: 15 kW
额定视在功率 a.c. Output Rated Apparent Power: 15 kVA
最大视在功率 a.c. Max. Output Apparent Power: 16.5 kVA
额定输出电流 a.c. Output Rated Current:
22.8 A(380 Va.c.)/21.7 A(400 Va.c.)/20.9 A(415 Va.c.)
最大输出电流 a.c. Max. Output Current:
25.2 A(380 Va.c.)/23.9 A(400 Va.c.)/23.1 A(415 Va.c.)
功率因数 Power Factor: 0.8(lagging) - 0.8(leading)
温度范围 Operating Temperature Range: - 25 - + 60 °C
海拔Altitude: 4000 m(>2000 m refer to usermanual)
过电压类别 Overvoltage Category: II(DC)/III(AC)
逆变器拓扑 Inverter Topology: Non - Isolation
电池额定电压 Battery normal voltage: 600 Vd.c.
电池电压范围 Battery voltage range: 600 - 980 Vd.c.
电池最大电流 Battery maximum current: 26.25 Ad.c./26.25 Ad.c.
电池类型 Battery type: Li-ion
防护等级 Enclosure: IP66
保护等级Protection Class: I
电弧故障保护 AFCI: TYPE I

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型号 Model: SUN2000-17K-MB0
名称 Name: 太阳能光伏逆变器
SOLAR INVERTER

扫码获取支持
Scan for support

最大输入电压 d.c. Max. Input Voltage: 1100 Vd.c.
最大输入电流 d.c. Max. Input Current: 30 A/30 A
输入短路电流 Isc: 40 A/40 A
MPPT电压范围 d.c. MPPT Range: 200 - 1000 Vd.c.
输出电压 a.c. Output Nominal Voltage:
220/380 Va.c., 230/400 Va.c., 240/415 Va.c.; 3(N)~+~
输出频率 a.c. Nominal Operating Frequency: 50/60 Hz
额定输出功率 a.c. Output Rated Power: 17 kW
额定视在功率 a.c. Output Rated Apparent Power: 17 kVA
最大视在功率 a.c. Max. Output Apparent Power: 18.7 kVA
额定输出电流 a.c. Output Rated Current:
25.8 A(380 Va.c.)/24.5 A(400 Va.c.)/23.7 A(415 Va.c.)
最大输出电流 a.c. Max. Output Current:
28.6 A(380 Va.c.)/27.1 A(400 Va.c.)/26.1 A(415 Va.c.)
功率因数 Power Factor: 0.8(lagging) - 0.8(leading)
温度范围 Operating Temperature Range: - 25 - + 60 °C
海拔Altitude: 4000 m(>2000 m refer to usermanual)
过电压类别 Overvoltage Category: II(DC)/III(AC)
逆变器拓扑 Inverter Topology: Non - Isolation
电池额定电压 Battery normal voltage: 600 Vd.c.
电池电压范围 Battery voltage range: 600 - 980 Vd.c.
电池最大电流 Battery maximum current: 26.25 Ad.c./26.25 Ad.c.
电池类型 Battery type: Li-ion
防护等级 Enclosure: IP66
保护等级Protection Class: I
电弧故障保护 AFCI: TYPE I

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型号 Model: SUN2000-20K-MB0
名称 Name: 太阳能光伏逆变器
SOLAR INVERTER

扫码获取支持
Scan for support

最大输入电压 d.c. Max. Input Voltage: 1100 Vd.c.
最大输入电流 d.c. Max. Input Current: 30 A/30 A
输入短路电流 Isc: 40 A/40 A
MPPT电压范围 d.c. MPPT Range: 200 - 1000 Vd.c.
输出电压 a.c. Output Nominal Voltage:
220/380 Va.c., 230/400 Va.c., 240/415 Va.c.; 3(N)~+~
输出频率 a.c. Nominal Operating Frequency: 50/60 Hz
额定输出功率 a.c. Output Rated Power: 20 kW
额定视在功率 a.c. Output Rated Apparent Power: 20 kVA
最大视在功率 a.c. Max. Output Apparent Power: 22 kVA
额定输出电流 a.c. Output Rated Current:
30.4 A(380 Va.c.)/28.9 A(400 Va.c.)/27.8 A(415 Va.c.)
最大输出电流 a.c. Max. Output Current:
33.8 A(380 Va.c.)/31.9 A(400 Va.c.)/30.8 A(415 Va.c.)
功率因数 Power Factor: 0.8(lagging) - 0.8(leading)
温度范围 Operating Temperature Range: - 25 - + 60 °C
海拔Altitude: 4000 m(>2000 m refer to usermanual)
过电压类别 Overvoltage Category: II(DC)/III(AC)
逆变器拓扑 Inverter Topology: Non - Isolation
电池额定电压 Battery normal voltage: 600 Vd.c.
电池电压范围 Battery voltage range: 600 - 980 Vd.c.
电池最大电流 Battery maximum current: 26.25 Ad.c./26.25 Ad.c.
电池类型 Battery type: Li-ion
防护等级 Enclosure: IP66
保护等级Protection Class: I
电弧故障保护 AFCI: TYPE I

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型号 Model: SUN2000-25K-MB0
名称 Name: 太阳能光伏逆变器
SOLAR INVERTER

合格证
QC PASS



扫码获取支持
Scan for support

最大输入电压 d.c. Max. Input Voltage: 1100 Vd.c.
 最大输入电流 d.c. Max. Input Current: 30 A/30 A
 输入短路电流 Isc: 40 A/40 A
 MPPT电压范围 d.c. MPPT Range: 200 - 1000 Vd.c.
 输出电压 a.c. Output Nominal Voltage:
 220/380 Va.c., 230/400 Va.c., 240/415 Va.c.; 3(N)~+~
 输出频率 a.c. Nominal Operating Frequency: 50/60 Hz
 额定输出功率 a.c. Output Rated Power: 25 kW
 额定视在功率 a.c. Output Rated Apparent Power: 25 kVA
 最大视在功率 a.c. Max. Output Apparent Power: 27.5 kVA
 额定输出电流 a.c. Output Rated Current:
 38.0 A(380 Va.c.)/36.1 A(400 Va.c.)/34.8 A(415 Va.c.)
 最大输出电流 a.c. Max. Output Current:
 42.0 A(380 Va.c.)/39.9 A(400 Va.c.)/38.5 A(415 Va.c.)
 功率因数 Power Factor: 0.8(lagging) - 0.8(leading)
 温度范围 Operating Temperature Range: - 25 - + 60 °C
 海拔Altitude: 4000 m(>2000 m refer to usermanual)
 过电压类别 Overvoltage Category: II(DC)/III(AC)
 逆变器拓扑 Inverter Topology: Non - Isolation
 电池额定电压 Battery normal voltage: 600 Vd.c.
 电池电压范围 Battery voltage range: 600 - 980 Vd.c.
 电池最大电流 Battery maximum current: 26.25 Ad.c./26.25 Ad.c.
 电池类型 Battery type: LI-ion
 防护等级 Enclosure: IP66
 保护等级Protection Class: I
 电弧故障保护 AFCI: TYPE I



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2. Order

2.1 Date of Purchase Order, Customer's Reference

2023-05-12

2.2 Test Sample(s)

- Reception date(s): 2023-05-13
- Location(s) of reception: TÜV SÜD Testing Center, D1 building, No. 63 Chuangqi Road, Shilou Town, Panyu District, Guangzhou 511447, P.R. China
- Condition of test sample(s): Intact

2.3 Testing

- Testing date(s): 2023-05-13 to 2023-06-09
- Location(s) of testing: TÜV SÜD Testing Center, D1 building, No. 63 Chuangqi Road, Shilou Town, Panyu District, Guangzhou 511447, P.R. China

Report No.: 64.290.23.30893.01
Rev.: 00
Date: 2023-06-09

www.tuvsud.com



TÜV SÜD Certification and Testing (China) Co., Ltd.
Guangzhou Branch, TÜV SÜD Group
5F, Communication Building, 163 Pingyun Rd, Huangpu Ave. West, Guangzhou, 510656, P.R.China
Telephone: +86 20 38320668

2.4 Points of Non-Compliance or Exceptions of the Test Procedure

- None

3. Test Results

- “Decision rule according to IEC Guide 115:2021, clause 4.4.3, 4.5.1 was applied.”

3.1 Positive Test Results

Test specification(s)	Report no. / Rev. No.	Date	Remark
Grid Code compliance	64.290.23.30893.01	2023-06-09	--

3.2 Points of Non-Compliance according to the test specification

- None

4. Test History

- None

5. Remarks

5.1 General

The user manual has been examined according to the minimum requirements described in the product standard. The manufacturer is responsible for the accuracy of further particulars as well as of the composition and layout.

5.2 Factory surveillance cycle

Your production facility is currently on the following surveillance cycle.

- Annual (12 month)
- Bi-Annual (6 month)
- Quarterly (3 month)
- None

6. Documentation

- None

7. Summary

The test specifications are met.

TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
TÜV SÜD Group

Tested by: Vanessa Gan, Giesen Wan *Vanessa Gan Giesen Wan*
printed name, function & signature

Approved by: Yuneng Chen *Yuneng Chen*
printed name, function & signature

