

Technical Report No.: 64.290.22.30180.01

Date: 2022-10-14

Client: Name: JMHing Power Ltd
Address: Unit 5 Tower House Lane Industrial Estate, Tower House Lane, Hedon Road, Hull, HU12 8EE, UNITED KINGDOM

Factory: Name: Shenzhen Givenergy Technology Co., Ltd
Address: 4th Floor Building, No. 225 Xiangshan Avenue, Luotian Community, Yanluo Street, Bao'an District, Shenzhen

Test object: Product: PV Hybrid Inverter
Model: HY2.5, HY3.6
Trademark (if any): 

Test specification: G98/NI:2019

Purpose of examination: • Testing and evaluation 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

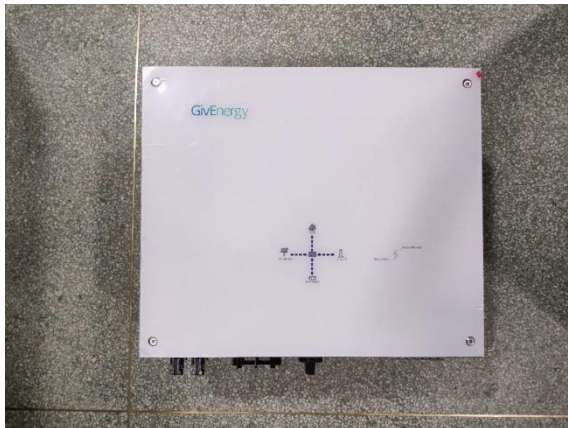
1.1. Picture(s)



Overall view of the unit



Overall view of the unit



Front view of the unit



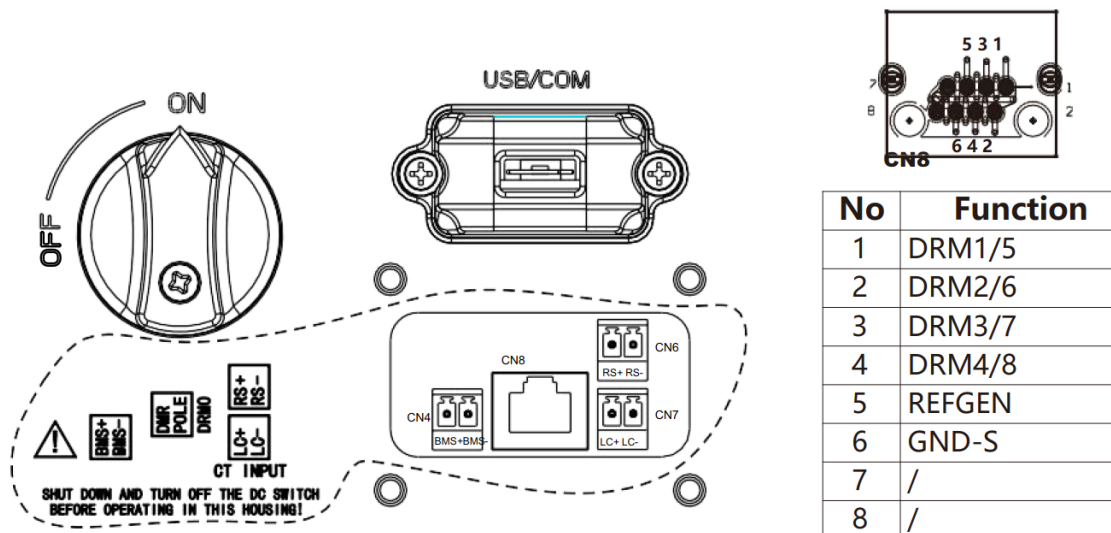
Bottom view of the unit

1.2. Function

- (1) The unit intends to be connected into household generation systems, with below operating modes: grid-interactive mode, stand-alone mode and bypass mode.
- (2) If certain functions are not permitted by local regulation, the function shall be disabled by hardware or software setting (if applicable) by the manufacturer before putting into the market. For example, it's not permissible to draw electricity from the grid and then feed it back in order to claim statutory reimbursement in some nations.
- (3) Low voltage electrical installations shall comply with national and local regulation. Only qualified electricians are allowed to install and maintain the converter.
- (4) In order to protect the PCE, user and installer, external DC and AC circuit breaker shall be equipped at the end-use application.
- (5) RJ45 terminal (pin 5 and pin 6) is the logic interface of the unit to control active power as required by G98. The default setting is that the logic interface close when in normal operation; the logic interface open when received the signal from DNO, and cease the active power output within 5s.

(6) Software version: D426-A420

Block diagram:



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:	HY2.5	HY3.6
PV parameter		
Maximum PV array open-circuit voltage	600 Vd.c.	600 Vd.c.
Maximum total PV array short-circuit current	2×20 Ad.c.	2×20 Ad.c.
Maximum operating PV input current	2×11 Ad.c.	2×11 Ad.c.
PV input operating voltage range	100-600 Vd.c.	100-600 Vd.c.
MPPT input operating voltage range	120-550 Vd.c.	120-550 Vd.c.
MPPT trackers / strings	2	2
Grid output parameter		
Max AC output power	2500 W	3600W
AC nominal voltage	230 Va.c.	230 Va.c.
AC grid frequency	50 Hz	50 Hz
Max. output current	11.4 Aa.c.	16 Aa.c.
Power factor	0.8 leading ... 0.8 lagging	0.8 leading ... 0.8 lagging
Backup output parameter		
Nominal AC output power	2500 W	2500 W



AC nominal voltage	230 Va.c.	230 Va.c.
AC grid frequency	50 Hz	50 Hz
Max. output current	11.4 Aa.c.	11.4 Aa.c.
Battery parameter		
Battery type	Lead-acid or Li-ion	Lead-acid or Li-ion
Nominal voltage	48 Vd.c.	48 Vd.c.
Operating voltage range	46-58 Vd.c.	46-58 Vd.c.
Max. charging current	50 Ad.c.	50 Ad.c.
Max. discharging current	50 Ad.c.	50 A d.c.
Max. charging power	2500 W	2500 W
Max. discharging power	2500 W	2500 W

1.5. Rating Label

GivEnergy® PV Hybrid Inverter	
Model	HY2.5
Input Data (PV)	
Maximum PV array open-circuit voltage	600Vd.c
Maximum total PV array short-circuit current	2 X 20Ad.c.
Maximum operating PV input current	2 X 11Ad.c.
PV input operating voltage range	100 ~ 600Vd.c
MPPT input operating voltage range	120 ~ 550Vd.c.
Number of independent MPP input	2
Output Data(AC)	
Nominal AC output power	2500W
AC nominal voltage	230Va.c.
AC grid frequency	50Hz
Max.output current	11.4Aa.c.
Power factor (Full load)	>0.99
Protect class	I
Backup terminal parameter (AC)	
Nominal AC output power	2500W
AC nominal voltage	230Va.c.
AC grid frequency	50Hz
Max.output current	11.4Aa.c.
Protect class	I
Battery	
Battery Type	Lead-acid or Li-ion
Nominal voltage	48V
Operating voltage range	46 ~ 58V
Max.charging current	50Ad.c.
Max.discharging current	50Ad.c.
Max.charging power	2500W
Max.discharging power	2500W
     	

GivEnergy® PV Hybrid Inverter	
Model	HY3.6
Input Data (PV)	
Maximum PV array open-circuit voltage	600Vd.c
Maximum total PV array short-circuit current	2 X 20Ad.c.
Maximum operating PV input current	2 X 11Ad.c.
PV input operating voltage range	100 ~ 600Vd.c
MPPT input operating voltage range	120 ~ 550Vd.c.
Number of independent MPP input	2
Output Data(AC)	
Nominal AC output power	3600W
AC nominal voltage	230Va.c.
AC grid frequency	50Hz
Max.output current	16Aa.c.
Power factor (Full load)	>0.99
Protect class	I
Backup terminal parameter (AC)	
Nominal AC output power	2500W
AC nominal voltage	230Va.c.
AC grid frequency	50Hz
Max.output current	11.4Aa.c.
Protect class	I
Battery	
Battery Type	Lead-acid or Li-ion
Nominal voltage	48V
Operating voltage range	46 ~ 58V
Max.charging current	50Ad.c.
Max.discharging current	50Ad.c.
Max.charging power	2500W
Max.discharging power	2500W
     	

2. Order

2.1. Date of Purchase Order, Customer's Reference

2022-03-01, 2022-08-01, 2022-10-10

2.2. Test Sample(s)

- Reception date(s): 2022-03-07, 2022-08-01, 2022-10-10
- 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. Date(s) of Testing

2022-03-07 to 2022-04-21, 2022-08-01 2022-08-08, 2022-10-10 to 2022-10-14

2.4. Location(s) of Testing

TÜV SÜD Testing Center, D1 building, No. 63 Chuangqi Road, Shilou Town, Panyu District, Guangzhou 511447, P.R. China

2.5. 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	64.290.22.30180.01	2022-10-14	-

4. Remarks

4.1. 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. Documentation

- None

6. Summary

The test specifications are met.

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

Tested by:

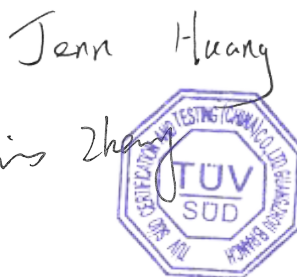
Jenn Huang

printed name, function & signature

Approved by:

Iris Zheng

printed name, function & signature



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