

Unit Certificate

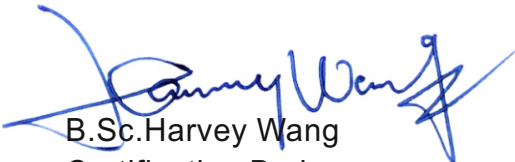
Shenzhen Enjoy Technology Co., Ltd.
(Settle-in Shenzhen Qianhai Commerce Secretariat Co.,Ltd.) 201Room, Buiding A,
Qianwan Road 1, Qianhai Shenzhen Hong Kong Cooperation Zone,
Shenzhen
P.R.China

Type of unit	Power Conversion System (Type-2)	
Description of unit	EPCS50-AM, EPCS63-AM, EPCS80-AM, EPCS105-AM, EPCS105-AM-F	
Technical data	Rated active power: P_{rE} = 50-105 kW Max. active power: $P_{E\max}$ = 55 – 115.50 kW Max. apparent power: $S_{E\max}$ = 55 – 115.50 kVA Rated voltage: U_r = 230/400 V Nominal frequency: f_n = 50/60Hz Rated current I_r = Detial see below on page 2 Initial short-circuit I_k = Detial see below on page 2 alternating current	
Certification scheme	P30VA01 Rev. 08/10.22	TÜV NORD: Procedural instruction for grid connection certification
Standards	VDE-AR-N 4105 2018-11	Generators connected to the low-voltage distribution network- Technical requirements for the connection to and parallel operation with low-voltage distribution networks
Additional standards	DIN VDE V 0124-100 2020-06	Grid integration of generator plants - Low-voltage - Test requirements for generator units to be connected to and operated in parallel with low-voltage distribution networks

$P_{AV,E}$ monitoring function is not integrated in the unit. The function can be implemented according to the specifications of the VDE-AR-N 4105 Chapter 5.5.2 in a stand-alone equipment.
The generating unit complies with the requirements contained in the certification programmes and standards and directives listed above, with restrictions. Further details and technical data can be found in the annex 1, consisting of 6 pages.

Registered No. 44 798 23053414
Assessment report no. 3537 9038

Validity
Notes: TYPE 1a CERTIFICATE


B.Sc.Harvey Wang
Certification Body
at TÜV NORD CERT GmbH

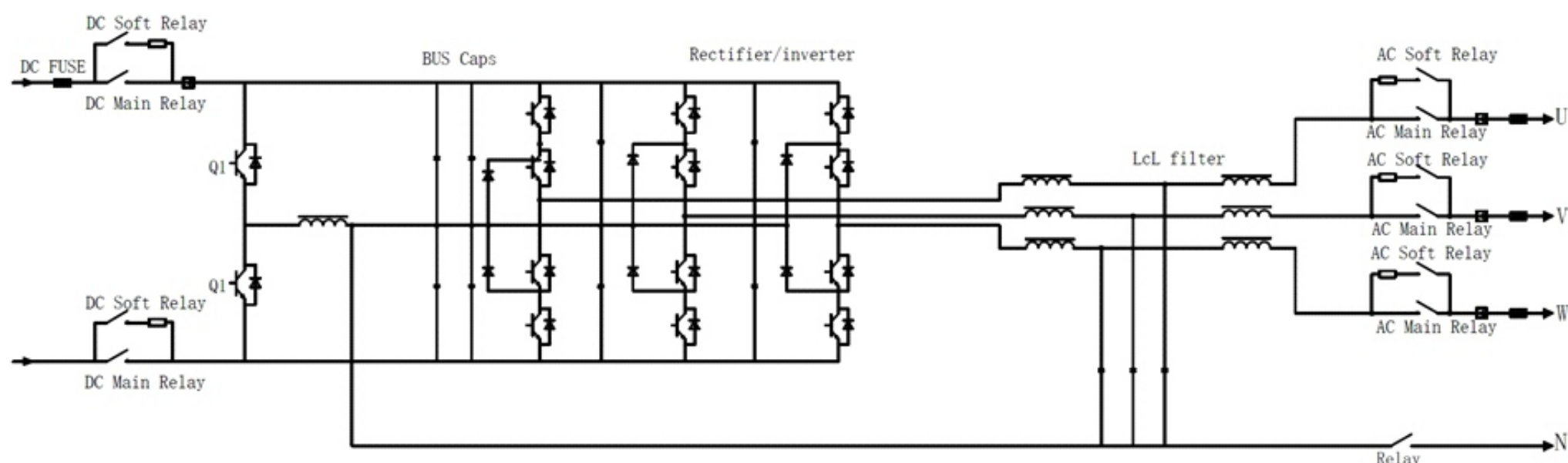
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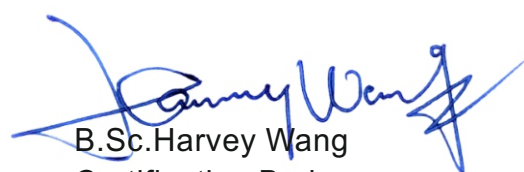
ANNEX

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Technical Data




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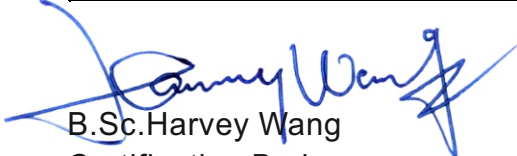
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Technical Data

General				
Type of power unit	Type 2 / Power Conversion System			
Designation	EPCS50-AM	EPCS63-AM	EPCS80-AM	EPCS105-AM, EPCS105-AM-F
On-grid variables				
Rated apparent power S_{rE} (base on the manufacture declaration /U4/)	50000 VA, 55000 VA (max)	63000 VA, 69300 VA (max)	80000 VA, 88000 VA (max)	105000 VA, 115500 VA (max)
Rated effective power P_{rE} (base on the manufacture declaration /U4/)	50000 W, 55000 W (max)	63000 W, 69300 W (max)	80000 W, 88000 W (max)	105000 W, 115500 W (max)
Max. effective power $P_{E_{max}}$ ((base on test report /U1/)	55010 W	69156 W	88024 W	115399 W
Max. apparent power $S_{E_{max}}$ ((base on test report /U1/)	55050 VA	69189 VA	88046 VA	115422 VA
Rated voltage U_r	230/400Va.c. (3P+PE+N)			
Rated current I_r	73 A	91 A	116 A	152 A
Initial short-circuit alternating current I''_k	87 A	108 A	137 A	180 A
Reactive power setting range $\cos \varphi$	1.0 lagging to 1.0 leading			
Nominal frequency	50/60 Hz			
DC – Input variables				
Voltage Range	680-950V			
Max. Current	82 A	103 A	130 A	171 A
Rated Current	82 A	103 A	130 A	171 A
Rated Power	50000 W	63000 W	80000 W	105000 W
DC (IGBT) – Input variables				



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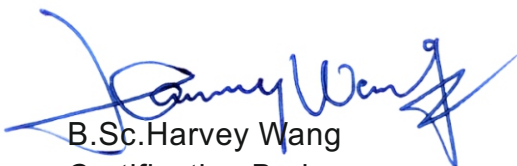
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Type /IGBT module	F3L100R07W2E3_B11	F3L150R07W2E3_B11
Quantity DC Link Capacitor	20	30
Clock frequency	12.8kHz	
Type of power control	SPWM inverter	
Max. Output current (only for IGBT)	100 A	150 A
Software versions	V200B000D000	
Generation unit Control		
Manufacturer	Shenzhen Enjoy Technology Co., Ltd.	
Software version	V200B000D000	
Hardware version	V00	
Protection device		
Manufacturer	Dongguang Zhonghui Ruide Electronics Co., Ltd	Xiamen Hongfa Electroacuoustic Co., Ltd
Type	Integrated guard	
Switch-off unit (AC)	CHAR-124A130	HF172F-200
Software versions	V200B000D000	



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Notes

The manufacturer has proven for the manufacturing facility of the Unit a certification of its quality management system according to ISO 9001. The manufacturer confirmed in a manufacturer declaration that the certification of the management system will be valid parallel to the period of this unit certification.

Additional technical data, according to VDE-ARN 4105, are given in the assessment report (appendix A1).

The use of other firmware and software version numbers is allowed if the differences are proved and confirmed by TÜV NORD CERT GmbH beforehand. Validity of a new software version is attested by written confirmation and becomes part of the certificate.

The inverter have an integrated tie breaker and no central tie breaker. The specifications of VDE-AR-N 4105 for central NA protection in combinations with central or integrated tie switches must be observed and implemented at the level of the generating plant.

Restrictions

In final installation, the central interface shall be installed between PCE and POC, the central interface switch shall also be controlled by PCS and can automatically reclosing in the upstream network or other processes in the network of the network operator. And the central NS protection shall fulfill the relative requirement of VDE-AR-N 4105:2018 Clause 6.4

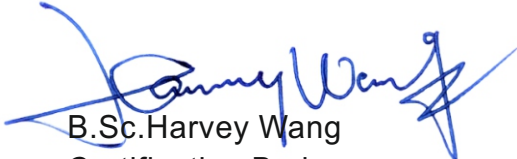
Appendix to the certificate

A1 Assessment report no. 35379038 version 1.0

A2 Extract from the test report(according to VDE AR-N 4105 annex E.5) Dongguan BALUN Testing Technology Co., Ltd., extract BL-DG24A0050-201 A2 from 22.10.2024

A3 Extract from the test report(according to VDE AR-N 4105 annex E.7) Dongguan BALUN Testing Technology Co., Ltd., extract No. BL-DG24A0050-201 A1 from 22.10.2024

A4 Manufacturer declaration for EPCS105-AM series PCS from 23.10.2024


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