

G100 declaration of conformance

Type test detail

Manufacturer: Shen zhen Growatt New Energy CO.,LTD.

4-13th Floor, Building A, Sino-German Europe Industrial Demonstration Park, No. 1, Hangcheng Avenue, Bao'an District, Shenzhen, Guangdong, China.

Product: Hybrid inverter.

Model: MID 17000TL3-X, MID 20000TL3-X, MID 25000TL3-X, MID 30000TL3-X, MID 33000TL3-X, MID 40000TL3-X.

Use in accordance with regulations:

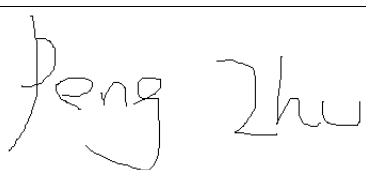
Technical Guidance for Customer Export Limiting Schemes G100 for photovoltaic systems with a three-phase parallel coupling via an inverter in the public mains supply.

Applied rules and standards :

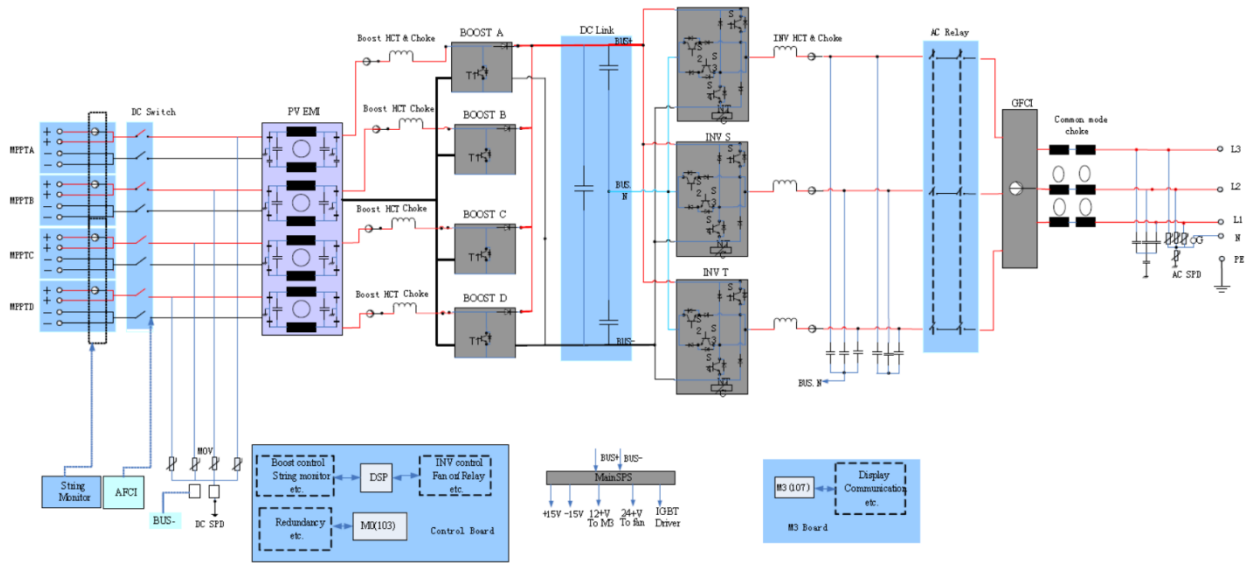
The result according to G100 engineering recommendation.

The safety concept of an aforementioned representative product complies at the time of issue of this certificate of valid safety specifications for the specified use in accordance with G100 recommendations.

Compliant with BSEN 61000-3-2

Signature	Approved by	Place and Date
		Shenzhen. PRC 2022-07-21

System Connecton Diagram



1. Setting Protection Test

Requirement	Result	Note
The settings is password protected, and cannot be changed by anyone other than got written agreement of the DNO;	Pass	

2. CT Fail Safe Test

Method: Set 50% export limit, implement the test before start or in running

Criteria: Fall time is less than 5s, the inverter's output active power is less than set limit. After fail safe test, disconnect AC, the reconnect time delay is fault reconnect time.

No	Component	test	Active	Response	Fall	Reconnect	Pass/
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			Power	Time	Time	time	Fail
1	Power Monitoring Unit(PMU)	Remove power supply to PMU	20108W	2S	2S	45S	Pass
		Remove CT	20097W	2S	2S	45S	Pass
2	Control Unit (CU)	Remove power supply to any CU	NA	NA	NA	NA	NA
3	Generator Interface units (GIU)	Remove power supply to all GIUs	NA	NA	NA	NA	NA
4	Demand Control Unit (DCU)	Remove power supply to all DCUs	NA	NA	NA	NA	NA
5	Network hub / switches	Remove power supply	NA	NA	NA	NA	NA
6	PMU → CU communication	Unplug cable	20112W	2S	2S	45S	Pass

	cable						
7	CU → GIU communication cable	Unplug cable (repeat where additional GIU units)	NA	NA	NA	NA	NA
8	GIU → Generator communication cable	Unplug cable (repeat where additional GIU units)	NA	NA	NA	NA	NA
9	CU → DCU communication cable	Unplug cable (repeat where additional DCU units)	NA	NA	NA	NA	NA
10	DCU → load communication	Unplug cable (repeat	NA	NA	NA	NA	NA

	cable	where additional DCU units)					
11	Controlled Load(s)	Turn off load (e.g. activate thermostat)	NA	NA	NA	NA	NA

3. Power Limit Test

Method: Set export limit, implement the test before start, then start the inverter.

Criteria: fall time is less than 5s, the inverter's export active power is less than limit power.

0%export limit [% Inverter Rating]					
Load	Export/Time	Input supply [% Inverter Rating]			
		25%	50%	75%	100%
Load	0%	-82W/0.73S/1.69S	-93W/0.76S/1.68S	-106W/0.58S/1.77S	-98W/0.73S/1.84S
[%	25%	NA	-102W/0.68S/1.65S	-104W/0.74S/1.82S	-106W/0.84S/1.92S
Inverter	50%	NA	NA	-112W/0.67S/1.84S	-109W/0.68S/1.95S
Rating]	75%	NA	NA	NA	-111W/0.88S/1.91S

25%export limit [% Inverter Rating]					
Load Export/Time		Input supply [% Inverter Rating]			
		25%	50%	75%	100%
Load	0%	NA	-10103W/0.63S/2.12S	-10100W/0.64S/2.08S	-10095W/0.75S/2.04S
[%	25%	NA	NA	-10098W/0.62S/2.14S	-10099W/0.65S/2.09S
Inverter	50%	NA	NA	NA	-10113W/0.87S/2.18S
Rating]	75%	NA	NA	NA	NA

50%export limit [% Inverter Rating]					
Load Export/Time		Input supply [% Inverter Rating]			
		25%	50%	75%	100%
Load	0%	NA	NA	-20113W/0.67S/2.27S	-20110W/0.84S/2.24S
[%	25%	NA	NA	NA	-20108W/0.71S/2.28S
Inverter	50%	NA	NA	NA	NA
Rating]	75%	NA	NA	NA	NA

75%export limit [% Inverter Rating]					
Load Export/Time		Input supply [% Inverter Rating]			
		25%	50%	75%	100%
Load	0%	NA	NA	NA	NA
[%	25%	NA	NA	NA	NA
Inverter	50%	NA	NA	NA	NA
Rating]	75%	NA	NA	NA	NA

Load	0%	NA	NA	NA	-30116W/0.84S/2.27S
[%	25%	NA	NA	NA	NA
Inverter	50%	NA	NA	NA	NA
Rating]	75%	NA	NA	NA	NA

4. decreasing Load test

Method: Set export limit, the load be decreased from 100% of the inverter rating.

Criteria: response time is less than 1s, fall time is less than 5s, the inverter's export active power is less than Agreed limit.

0%export limit [% Inverter Rating]					
Load	Export/Time	Input supply [% Inverter Rating]			
		100%	75%	50%	25%
Load	75%	-106W/0.72S/2.02	NA	NA	NA
[%		S			
Inverter	50%	-100W/0.65S/2.11	-101W/0.74S/2.13	NA	NA
Rating]		S	S		
	25%	-98W/0.68S/2.04S	-92W/0.71S/2.02S	-98W/0.54S/2.14	NA
				S	
	0%	-99W/0.76S/2.08S	-95W/0.75S/2.12S	-96W/0.78S/2.08	-101W/0.78S/2.06

				S	S
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25%export limit [% Inverter Rating]					
Load Export/Time		Input supply [% Inverter Rating]			
		100%	75%	50%	25%
Load [% Inverter Rating]	75%	NA	NA	NA	NA
	50%	-10102W/0.66S/2.21S	NA	NA	NA
	25%	-10096W/0.85S/2.23S	-10103W/0.68S/2.14S	NA	NA
	0%	-10100W/0.72S/2.16S	-10098W/0.76S/2.18S	-10104W/0.84S/2.09S	NA

50%export limit [% Inverter Rating]					
Load Export/Time		Input supply [% Inverter Rating]			
		100%	75%	50%	25%
Load [% Inverter Rating]	75%	NA	NA	NA	NA
	50%	NA	NA	NA	NA
	25%	-20094W/0.66S/2.22S	NA	NA	NA
	0%	-20101W/0.83S/2.26S	-20098W/0.76S/2.12S	NA	NA

75%export limit [% Inverter Rating]					
Load	Input	Input supply [% Inverter Rating]			
	Export/Time	100%	75%	50%	25%
Load [% Inverter Rating]	75%	NA	NA	NA	NA
	50%	NA	NA	NA	NA
	25%	NA	NA	NA	NA
	0%	-30116W/0.87S/2.26S	NA	NA	NA

Comments

The test result is based on MID 40000TL3-X. All the series of inverters electrical character are the same. So the test result can cover all series.