



**BUREAU  
VERITAS**

# Certificate of compliance

**Applicant:** **JIANGSU GOODWE POWER SUPPLY TECHNOLOGY CO., LTD**  
No.90 ZiJin Rd., New District,  
Suzhou,215011  
China

**Product:** **Grid-tied photovoltaic (PV) inverter**

**Model:**  
**GW700-XS**  
**GW1000-XS**  
**GW1500-XS**  
**GW2000-XS**  
**GW2500-XS**  
**GW3000-XS**

**Use in accordance with regulations:**

Automatic disconnection device with single-phase mains surveillance in accordance with EN50549-1:2019 for photovoltaic systems with a single-phase parallel coupling via an inverter in the public mains supply. The automatic disconnection device is an integral part of the aforementioned inverter.

**Applied rules and standards:**

**EN 50549-1:2019**

Requirements for parallel connection of installations with distribution networks - Part 1: Connection to an LV distribution network - Production of installations up to and including Type B

**EN 50438:2013**

Requirements for micro-generating plants to be connected in parallel with public low-voltage distribution networks

**DIN V VDE V 0126-1-1:2006 (4.1 Functional safety)**

Automatic disconnection device between a generator and the public low-voltage grid

At the time of issue of this certificate the safety concept of an aforementioned representative product corresponds to the valid safety specifications for the specified use in accordance with regulations.

**Report number:** **ZEM-19JY3071FTSHP**

**Certification Program:** **NSOP-0032-DEU-ZE-V01**

**Certificate number:** **U20-0204**

**Date of issue:** **2020-03-31**

**Certification body**



Holger Schaffer



Certification body Bureau Veritas Consumer Products Services Germany GmbH accreditation to DIN EN ISO/IEC 17065

A partial representation of the certificate requires the written approval of Bureau Veritas Consumer Products Services Germany GmbH

**Appendix**

Extract from test report according to EN 50549-1

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**Type Approval and declaration of compliance with the requirements of EN 50549-1.**

<b>Manufacturer / applicant:</b>	JIANGSU GOODWE POWER SUPPLY TECHNOLOGY CO., LTD No.90 ZiJin Rd., New District, Suzhou,215011 China
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<b>Micro-generator Type</b>	Grid-tied photovoltaic inverter			
	GW700-XS	GW1000-XS	GW1500-XS	GW2000-XS
<b>MPP DC voltage range [V]</b>	50 – 450			
<b>Input DC voltage range [V]</b>	max. 500	max. 500	max. 500	max. 500
<b>Input DC current [A]</b>	12,5	12,5	12,5	12,5
<b>Output AC voltage [V]</b>	220/230	220/230	220/230	220/230
<b>Output AC current [A]</b>	3,5	4,8	7,2	9,6
<b>Output power [W]</b>	700	1000	1500	2000
<b>Output power [VA]</b>	800	1100	1650	2200

	GW2500-XS	GW3000-XS		
<b>MPP DC voltage range [V]</b>	50 - 450			
<b>Input DC voltage range [V]</b>	max. 500	max. 500		
<b>Input DC current [A]</b>	12,5	12,5		
<b>Output AC voltage [V]</b>	220/230	220/230		
<b>Output AC current [A]</b>	12,0	14,3		
<b>Output power [W]</b>	2500	3000		
<b>Output power [VA]</b>	2750	3300		

<b>Firmware version</b>	V1.00.08
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<b>Measurement period:</b>	2019-12-23 to 2020-03-02
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**Description of the structure of the power generation unit:**

The power generation unit is equipped with a PV and line-side EMC filter. The power generation unit has no galvanic isolation between DC input and AC output. Output switch-off is performed with single-fault tolerance based on two series-connected relays in each line and neutral. This enables a safe disconnection of the power generation unit from the network in case of error.

**Appendix**

Extract from test report according to EN 50549-1

Nr. ZEM-19JY3071FTSHP

**Setting of the interface protection:**

Parameter	Max. disconnection time	Min. operate time	Trip value
Over voltage (stage 1) <sup>a</sup>	3s	-	230V +10% (253V)
Over voltage (stage 2)	0,2s	0,1s	230V +15% (264,5V)
Under voltage	1,5s	1,2s	230V -15% (195,5V)
Over frequency	0,5s	0,3s	50Hz +4% (52Hz)
Under frequency	0,5s	0,3s	50Hz -5% (47,5Hz)
Reconnection settings for voltage (normal operational startup)	$0,85V_n (195,5V) \leq V \leq 1,10V_n (253V)$		
Reconnection settings for frequency (normal operational startup)	$49,5Hz \leq f \leq 50,1Hz$		
Reconnection time (normal operational startup)	$\geq 60$ s		
Reconnection settings for voltage (automatic reconnection after tripping)	$0,85V_n (195,5V) \leq V \leq 1,10V_n (253V)$		
Reconnection settings for frequency (automatic reconnection after tripping)	$49,5Hz \leq f \leq 50,1Hz$		
Reconnection time (automatic reconnection after tripping)	$\geq 60$ s		
Active power gradient after reconnection	10% $P_{E_{max}}$ / per minute		
Active power delivery at under frequency	electronic inverter, no active power reduction		
Power response to over frequency (frequency / droop s)	50,2Hz / 5%		
Permanent DC-injection	0,5% of rated inverter output current or 20mA		
Rate of change of frequency (ROCOF)	2Hz/s		
Loss of mains according EN 62116 (LoM)	2,0s		

**Note:**

<sup>a</sup> Over voltage – stage1: 10 min-mean-value corresponding to EN 50160.

Default interface setting according to EN 50438:2013 are used.

The settings of the interface protection are password protected adjustable.

In case the above stated generators are used with an external protection device, the protection settings of the inverters are to be adjusted according to the manufacturer's declaration.

The above stated generators are tested according to the requirements in the EN 50549-1:2019. Any modification that affects the stated tests must be named by the manufacturer/supplier of the product to ensure that the product meets all requirements of the EN 50549-1:2019.