



Certificate of compliance

Applicant: INVT Solar Technology (Shenzhen) Co., Ltd.
6th Floor, Block A, INVT Guangming Technology Building, Kejie Fourth Road, Shutianpu
Community, Matian, Guangming District, 518000 Shenzhen
PEOPLE'S REPUBLIC OF CHINA

Product: Photovoltaic (PV) inverter

Model: iMars XG50KTR, iMars XG50KTRL, iMars XG50KTR-S,
iMars XG50KTRL-S, iMars XG60KTR, iMars XG60KTRL,
iMars XG60KTR-S, iMars XG60KTRL-S, iMars XG66KTRL,
iMars XG66KTRL-S, iMars XG70KTRL, iMars XG70KTRL-S

Inverter for three-phase parallel connection to the public grid. The network monitoring and disconnection device is an integral part of the above-mentioned model.

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

- 4.4 Normal operating range
- 4.5 Immunity to disturbances
- 4.6 Active response to frequency deviation
- 4.7 Power response to voltage variations and voltage changes
- 4.8 EMC and power quality
- 4.9 Interface protection
- 4.10 Connection and starting to generate electrical power
- 4.11 Ceasing and reduction of active power on set point
- 4.13 Requirements regarding single fault tolerance of interface protection system and interface switch

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

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

Commission Regulation (EU) 2016/631 of 14 April 2016

Establishing a network code on requirements for grid connection of generators (NC RFG).
Type approval for generation units to use in Type A and Type B plants.

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-ESH-P21123581

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

Certificate number: U22-0047

Date of issue: 2022-05-20

Certification body



Thomas Lammel



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

Testing laboratory accredited according to DIN EN ISO/IEC 17025

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



BUREAU
VERITAS

Annex to the EN 50549-1 certificate of compliance No. U22-0047

Appendix

Extract from test report according to EN 50549-1

No. ZEM-ESH-P21123581

Type Approval and declaration of compliance with the requirements of EN 50549-1 and Commission Regulation (EU) 2016/631 of 14 April 2016

Manufacturer / applicant	INVT Solar Technology (Shenzhen) Co., Ltd. 6th Floor, Block A, INVT Guangming Technology Building, Kejie Fourth Road, Shutianpu Community, Matian, Guangming District, 518000 Shenzhen PEOPLE'S REPUBLIC OF CHINA			
Micro-generator Type	Photovoltaic inverter			
	iMars XG50KTR	iMars XG50KTR-S	iMars XG50KTRL	iMars XG50KTRL-S
MPP DC voltage range [V]	200-1000	200-1000	200-1000	200-1000
Max. input DC voltage [V]	1100	1100	1100	1100
Input DC current [A]	39/26/39/26	32/32/32	39/26/39/26	32/32/32
Output AC voltage [V]	3/N/PE 230/400V, 50Hz/60Hz		3/N/PE 277/480V, 50Hz/60Hz	
Output AC current [A]	79,7	79,7	66,2	66,2
Output power [kW]	50,0	50,0	50,0	50,0
	iMars XG60KTR	iMars XG60KTR-S	iMars XG60KTRL	iMars XG60KTRL-S
MPP DC voltage range [V]	200-1000	200-1000	200-1000	200-1000
Max. input DC voltage [V]	1100	1100	1100	1100
Input DC current [A]	39/39/39/39	32/32/32	39/39/39/39	32/32/32
Output AC voltage [V]	3/N/PE 230/400V, 50Hz/60Hz		3/N/PE 277/480V, 50Hz/60Hz	
Output AC current [A]	95,6	95,6	79,4	79,4
Output power [kW]	60,0	60,0	60,0	60,0
	iMars XG66KTRL	iMars XG66KTRL-S	iMars XG70KTRL	iMars XG70KTRL-S
MPP DC voltage range [V]	200-1000	200-1000	200-1000	200-1000
Max. input DC voltage [V]	1100	1100	1100	1100
Input DC current [A]	39/39/39/39	32/32/32	39/39/39/39	32/32/32
Output AC voltage [V]	3/N/PE 277/480V, 50Hz/60Hz		3/N/PE 277/480V, 50Hz/60Hz	
Output AC current [A]	87,4	87,4	92,6	92,6
Output power [kW]	66,0	66,0	70,0	70,0
Firmware version	Beginning with V1.0			

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 the inverter bridge and 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.

Note:

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 Commission Regulation (EU) 2016/631 of 14 April 2016. 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.

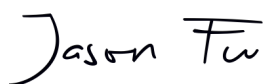
Test Verification of Conformity

Verification Number: 210623186GZU -VOC001

On the basis of the referenced test report(s), sample(s) tested of the below product have been found to comply with the standards harmonized with the directives listed on this verification at the time the tests were carried out. Other standards and Directives may be relevant to the product. This verification is part of the full test report(s) and should be read in conjunction with it <them>.

Once compliance with all product relevant  mark directives are verified, including any relevant e.g. risk assessment and production control, the manufacturer may indicate compliance by signing a Declaration of Conformity themselves and applying the mark to products identical to the tested sample(s).

Applicant Name & Address:	INVT Solar Technology (Shenzhen) Co., Ltd. 6 th Floor, Block A, INVT Guangming Technology Building, Kejie Fourth Road, Shutianpu Community, Matian Guangming District, 518000 Shenzhen, PEOPLE'S REPUBLIC OF CHINA
Product Description:	Grid-tied Solar inverter
Ratings & Principle Characteristics:	See Appendix: Test Verification of Conformity
Models/Type References:	iMars XG50KTR, iMars XG50KTRL, iMars XG50KTRL-S, iMars XG50KTR-S, iMars XG60KTR, iMars XG60KTRL, iMars XG60KTRL-S, iMars XG60KTR-S, iMars XG66KTRL, iMars XG66KTRL-S, iMars XG70KTRL, iMars XG70KTRL-S
Brand Name:	inv
Relevant Standards/Directives:	IEC/EN 62109-1: 2010 Safety of power converters for use in photovoltaic power systems – Part 1: General requirements IEC/EN 62109-2: 2011 Safety of power converters for use in photovoltaic power systems – Part 2: Particular requirements for inverters Low Voltage Directive 2014/35/EU
Verification Issuing Office Name & Address:	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch. Room 02, & 101/E201/E301/E401/E501/E601/E701/E801 of Room 01 1-8/F., No. 7-2. Caipin Road, Science City, GETDD, Guangzhou, Guangdong, China
Date of Tests:	08 Oct 2021 to 09 Nov 2021
Test Report Number(s):	210623186GZU-001, 210623186GZU-002
Additional information in Appendix.	



Signature

Name: Jason Fu

Position: Supervisor

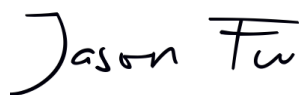
Date: 11 Nov 2021

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APPENDIX: Test Verification of Conformity

This is an Appendix to Test Verification of Conformity Number: 210623186GZU -VOC001.

Model	iMars XG50KTR	iMars XG50KTRL	iMars XG50KTRL-S	iMars XG50KTR-S
Max.PV voltage	1100Vdc			
MPPT voltage range	200V – 1000Vdc			
Max.input current	26A*2, 39A*2		32A*4	
PV Isc	32A*2, 48A*2		40A*4	
Nominal output voltage	3/N/PE, 230/400Vac	3/N/PE, 277/480Vac	3/N/PE, 277/480Vac	3/N/PE, 230/400Vac
Nominal output Frequency	50/60Hz			
Max.output current	79.7A	66.2A	66.2A	79.7A
Rated output power	50KW			
Max.apparent power	55KVA			
Power factor range	0.8Leading – 0.8 lagging			
Safety level	Class I			
Ingress Protection	IP 66			
Operation Ambient Temperature	-30°C - +60°C			
Software version	V1.0			



Signature

Name: Jason Fu

Position: Supervisor

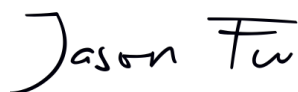
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APPENDIX: Test Verification of Conformity

This is an Appendix to Test Verification of Conformity Number: 210623186GZU -VOC001.

Model	iMars XG60KTR	iMars XG60KTRL	iMars XG60KTRL-S	iMars XG60KTR-S
Max.PV voltage	1100Vdc			
MPPT voltage range	200V – 1000Vdc			
Max.input current	39A*4		32A*4	
PV Isc	48A*4		40A*4	
Nominal output voltage	3/N/PE, 230/400Vac	3/N/PE, 277/480Vac	3/N/PE, 277/480Vac	3/N/PE, 230/400Vac
Nominal output Frequency	50/60Hz			
Max.output current	95.6A	79.4A	79.4A	95.6A
Rated output power	60KW			
Max.apparent power	66KVA			
Power factor range	0.8Leading – 0.8 lagging			
Safety level	Class I			
Ingress Protection	IP 66			
Operation Ambient Temperature	-30°C - +60°C			
Software version	V1.0			



Signature

Name: Jason Fu

Position: Supervisor

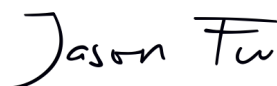
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Model	iMars XG66KTRL	iMars XG66KTRL-S	iMars XG70KTRL	iMars XG70KTRL-S
Max.PV voltage	1100Vdc			
MPPT voltage range	200V – 1000Vdc			
Max.input current	39A*4	32A*4	39A*4	32A*4
PV Isc	48A*4	40A*4	48A*4	40A*4
Nominal output voltage	3/N/PE, 277/480Vac			
Nominal output Frequency	50/60Hz			
Max.output current	87.4A		92.6A	
Rated output power	66KW		70KW	
Max.apparent power	72.6KVA		77KVA	
Power factor range	0.8Leading – 0.8 lagging			
Safety level	Class I			
Ingress Protection	IP 66			
Operation Ambient Temperature	-30℃ - +60℃			
Software version	V1.0			



Signature

Name: Jason Fu

Position: Supervisor

Date: 11 Nov 2021

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Product Description:	Grid-tied Solar inverter
Models/Type References:	iMars XG50KTR, iMars XG50KTRL, iMars XG50KTRL-S, iMars XG50KTR-S, iMars XG60KTR, iMars XG60KTRL, iMars XG60KTRL-S, iMars XG60KTR-S, iMars XG66KTRL, iMars XG66KTRL-S, iMars XG70KTRL, iMars XG70KTRL-S
Ratings & Principle Characteristics:	See Appendix
Brand Name:	invt
Relevant Standards/Directives:	EN IEC 61000-6-3:2021 EN IEC 61000-6-1:2019 EMC Directive 2014/30/EU
Verification Issuing Office Name & Address:	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch Room 02, & 101/E201/E301/E401/E501/E601/E701/E801 of Room 01 1-8/F., No. 7-2. Caipin Road, Science City, GETDD, Guangzhou, Guangdong, China
Date of Tests:	25 June 2021- 29 December 2021
Test Report Number(s):	210623188GZU-001
Additional information in Appendix.	



Signature

Name: Sky Zhu

Position: Team Leader

Date: 30 December 2021

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APPENDIX: Test Verification of Conformity

This is an Appendix to Test Verification of Conformity Number: 210623188GZU-VOC001

Ratings & Principle
Characteristics:

Model	iMars XG50KTR	iMars XG50KTRL
Max.PV voltage	1100Vdc	
MPPT voltage range	200V – 1000Vdc	
Max.input current	26A*2, 39A*2	
PV Isc	32A*2, 48A*2	
Nominal output voltage	3/N/PE, 230/400Vac	3/N/PE, 277/480Vac
Nominal output Frequency	50/60Hz	
Max.output current	79.7A	66.2A
Rated output power	50KW	
Max.apparent power	55KVA	
Power factor range	0.8Leading – 0.8 lagging	
Safety level	Class I	
Ingress Protection	IP 66	
Operation Ambient Temperature	-30°C - +60°C	
Software version	V1.0	
Model	iMars XG50KTRL-S	iMars XG50KTR-S
Max.PV voltage	1100Vdc	
MPPT voltage range	200V – 1000Vdc	
Max.input current	32A*4	
PV Isc	40A*4	
Nominal output voltage	3/N/PE, 277/480Vac	3/N/PE, 230/400Vac
Nominal output Frequency	50/60Hz	
Max.output current	66.2A	79.7A
Rated output power	50KW	
Max.apparent power	55KVA	
Power factor range	0.8Leading – 0.8 lagging	
Safety level	Class I	
Ingress Protection	IP 66	
Operation Ambient Temperature	-30°C - +60°C	
Software version	V1.0	
Model	iMars XG60KTR	iMars XG60KTRL
Max.PV voltage	1100Vdc	
MPPT voltage range	200V – 1000Vdc	
Max.input current	39A*4	
PV Isc	48A*4	
Nominal output voltage	3/N/PE, 230/400Vac	3/N/PE, 277/480Vac
Nominal output Frequency	50/60Hz	
Max.output current	95.6A	79.4A
Rated output power	60KW	
Max.apparent power	66KVA	
Power factor range	0.8Leading – 0.8 lagging	
Safety level	Class I	
Ingress Protection	IP 66	
Operation Ambient Temperature	-30°C - +60°C	
Software version	V1.0	

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Ratings & Principle
Characteristics:

Model	iMars XG60KTRL-S	iMars XG60KTR-S
Max.PV voltage	1100Vdc	
MPPT voltage range	200V – 1000Vdc	
Max.input current	32A*4	
PV Isc	40A*4	
Nominal output voltage	3/N/PE, 277/480Vac	3/N/PE, 230/400Vac
Nominal output Frequency	50/60Hz	
Max.output current	79.4A	95.6A
Rated output power	60KW	
Max.apparent power	66KVA	
Power factor range	0.8Leading – 0.8 lagging	
Safety level	Class I	
Ingress Protection	IP 66	
Operation Ambient Temperature	-30°C - +60°C	
Software version	V1.0	
Model	iMars XG66KTRL	iMars XG66KTRL-S
Max.PV voltage	1100Vdc	
MPPT voltage range	200V – 1000Vdc	
Max.input current	39A*4	32A*4
PV Isc	48A*4	40A*4
Nominal output voltage	3/N/PE, 277/480Vac	
Nominal output Frequency	50/60Hz	
Max.output current	87.4A	
Rated output power	66KW	
Max.apparent power	72.6KVA	
Power factor range	0.8Leading – 0.8 lagging	
Safety level	Class I	
Ingress Protection	IP 66	
Operation Ambient Temperature	-30°C - +60°C	
Software version	V1.0	
Model	iMars XG70KTRL	iMars XG70KTRL-S
Max.PV voltage	1100Vdc	
MPPT voltage range	200V – 1000Vdc	
Max.input current	39A*4	32A*4
PV Isc	48A*4	40A*4
Nominal output voltage	3/N/PE, 277/480Vac	
Nominal output Frequency	50/60Hz	
Max.output current	92.6A	
Rated output power	70KW	
Max.apparent power	77KVA	
Power factor range	0.8Leading – 0.8 lagging	
Safety level	Class I	
Ingress Protection	IP 66	
Operation Ambient Temperature	-30°C - +60°C	
Software version	V1.0	

Signature



Name: Sky Zhu

Position: Team Leader

Date: 30 December 2021

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