

C E R T I F I C A T E
of Conformity
EC Council Directive 2014/30/EU
Electromagnetic Compatibility

Registration No.: AE 50479430 0001

Report No.: 50254514 001

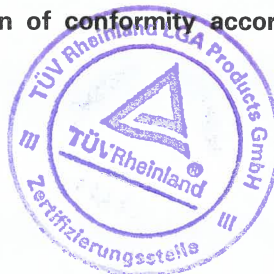
Holder: Guangzhou Sanjing Electric Co., Ltd.
No.9, Lizhishan Road, Science City,
Guangzhou High-tech Zone,
Guangdong
P.R. China

Product: PV-Inverter
(PV Grid-connected Inverter)

Identification: Type Designation: R5-13K-T2 R5-15K-T2 R5-17K-T2
R5-20K-T2
Serial No. : n.a.
Remark: Refer to above-listed test report for details.

Tested acc. to: EN 61000-6-1:2007
EN 61000-6-2:2005
EN 61000-6-3:2007+A1
EN 61000-6-4:2007+A1

This certificate of conformity is based on an evaluation of a sample of the above mentioned product. Technical Report and documentation are at the Licence Holder's disposal. This is to certify that the tested sample is in conformity with all provisions of Annex I of Council Directive 2014/30/EU. This certificate does not imply assessment of the production of the product and does not permit the use of a TÜV Rheinland mark of conformity. The holder of the certificate is authorized to use this certificate in connection with the EC declaration of conformity according to the a.m. Directive.



Certification Body



Tongle Lee

Date 31.08.2020

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

CE The CE marking may only be used if all relevant and effective EC Directives are complied with. **CE**

Guangzhou Sanjing Electric Co.,
Ltd.

Date : 31.08.2020
Our ref. : AOFEL 02
Your ref.:

No.9, Lizhishan Road, Science City,
Guangzhou High-tech Zone,
Guangdong
P.R. China

Ref : AE Certificate of Conformity EMC

Type of Equipment : PV Grid-connected Inverter
Model Designation : See Certificate
Certificate No. : AE 50479430 0001
Report No. : 50254514 001

Dear Ladies and Gentlemen,

We herewith confirm that a sample of the above mentioned technical equipment has been tested and was found to be in accordance with the relevant requirements.

Enclosed please find your Certificate of Conformity.

We appreciate your kind support and would like to offer our assistance and continuous services in the future.

With kind regards,

Certification Body

Tongle Lee

Enclosure

证书的详细资料请登陆www.tuvdotcom.com查阅,或拨打我司客服热线800 999 3668 / 400 883 1300咨询

C E R T I F I C A T E



of Conformity Low Voltage Directive 2014/35/EU

Registration No.: AN 50453584 0001

Report No.: 50270886 001

Holder: Guangzhou Sanjing Electric
Co., Ltd.
No.9, Lizhishan Road, Science City,
Guangzhou High-tech Zone,
Guangdong
P. R. China

Product: PV-Inverter
(Grid-connected PV inverter)

Identification: Type Designation: R5-13K-T2 R5-15K-T2 R5-17K-T2
R5-20K-T2 R5-15K-T2-AUS R5-17K-T2-AUS
R5-20K-T2-AUS
Serial Number : R5T2203G1847C00542
Remark : Refer to report 50270886 001 for details.

This certificate of conformity is based on an evaluation of a sample of the above mentioned product. Technical Report and documentation are at the Licence Holder's disposal. This is to certify that the tested sample is in conformity with Annex I of Council Directive 2014/35/EU, referred to as the Low Voltage Directive. This certificate does not imply assessment of the series-production of the product and does not permit the use of a TÜV Rheinland mark of conformity. The holder of the certificate is authorized to use this certificate in connection with the EC declaration of conformity according to Annex IV of the Directive.



Date 28.11.2019

A handwritten signature in black ink, appearing to read "A. Chen".
A. Chen

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

CE The CE marking may be used if all relevant and effective EC Directives are complied with. **CE**

Guangzhou Sanjing Electric Co.,
Ltd.

Mr. Li Yun

-

No.9, Lizhishan Road, Science City,
Guangzhou High-tech Zone,
Guangdong
P. R. China

Date : 02.12.2019

Our ref. : YY 02

Your ref.: L.Y

Ref : AN Certificate of Conf. Low Voltage D.

Type of Equipment : Grid-connected PV inverter

Model Designation : See Certificate

Certificate No. : AN 50453584 0001

Report No. : 50270886 001

Dear Mr. Li Yun,

We herewith confirm that a sample of the above mentioned technical equipment has been tested and was found to be in accordance with the relevant requirements.

Enclosed please find your Certificate of Conformity.

We appreciate your kind support and would like to offer our assistance and continuous services in the future.

With kind regards,

Certification Body


A. Chen

Enclosure

证书的详细信息请登陆www.tuvdotcom.com查阅,或拨打我司客服热线800 999 3668 / 400 883 1300咨询

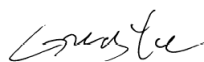
Certificate of Conformity

Certificate Number: CN-PV-220227

On the basis of the tests undertaken, the sample<s> of the below product have been found to comply with the requirements of the referenced specification<s>/standard<s> at the time the tests were carried out. It does not imply that Intertek has performed any surveillance or control of the manufacture(s). The manufacturer(s) shall ensure that the manufacturing process assures compliance of the production units with the examined products mentioned in this certificate.

Applicant:	Guangzhou Sanjing Electric Co., Ltd. No.9, Lizhishan Road, Science City, Guangzhou High-tech Zone, Guangdong, P.R.China
Product:	PV Grid-connected Inverter
Ratings & Principle Characteristics:	See appendix of Certificate of Conformity
Model:	R5-13K-T2, R5-15K-T2, R5-17K-T2, R5-20K-T2
Brand Name<s>:	
Product Complies with:	NTS 631 version 2.1, 9 July 2021 Technical standard for monitoring the compliance of power generating modules according to EU Regulation 2016/631
Certificate Issuing Office Name & Address:	Intertek Testing Services Ltd. Shanghai West Area, 2 nd Floor, No. 707, Zhangyang Road China (Shanghai) Pilot Free Trade Zone, Shanghai, P. R. China Accredited by ACCREDIA in accordance with ISO/IEC 17065:2012
Test Report No.<s>:	221012089GZU-001

Additional information in Appendix.



Signature

Certification Manager: Grady Ye
Date: 24 October 2022



PRD N° 306B

This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-220227.

Unit / Type :	R5-13K-T2	R5-15K-T2	R5-17K-T2	R5-20K-T2
Hardware version / Serial No. (tested) :	V1.21		V1.3	
Firmware version / Software version (tested) :	V3.115			
MPP DC voltage range [V] :	160-950		180-950	
Max. Input DC voltage [V] :	1100			
Max. Input DC current [A] :	25/12.5		25/25	
Max. Short circuit[A] :	30/15		30/30	
Nominal output AC voltage [V] :	3/N/PE, 230/400			
Max. Output AC current [A] :	21.7	25.0	28.4	33.4
Nominal active output power [kW] :	13.0	15.0	17.0	20.0
Max, apparent / active output power [kVA / kW] :	14.3	16.5	18.7	22.0

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APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-220227.

Requisito / Requirement	NTS	Tipo / Type	Cumplimiento / Complicant	Nombre Entidad Emisora / Name of issuing Entity	Ev. (*)
Modo regulación potencia-frecuencia limitado sobrefrecuencia (MRPFL-O) / Power-frequency regulation mode limited to overfrequency (MRPFL-O)	5.1	≥A	YES (TRF No. 221012089GZU-001)	Intertek	P
Modo regulación potencia-frecuencia limitado-subfrecuencia (MRPFL-U) / Power-frequency regulation mode limited to underfrequency (MRPFL-U)	5.2	≥C	NO APPLICABLE	--	--
Modo regulación potencia-frecuencia (MRPF) / Power-frequency regulation mode (MRPF)	5.3	≥C	NO APPLICABLE	--	--
Control de potencia-frecuencia / Frequency Control	5.4	≥C	NO APPLICABLE	--	--
Capacidad de control y el rango de control de la potencia activa en remote / Active Power Requirements	5.5	≥C	NO APPLICABLE	--	--
Emulación de inercia durante variaciones de frecuencia muy rápidas / Intertia Emulations	5.6	≥C	NO APPLICABLE	--	--
Capacidad de potencia reactiva a la capacidad máxima y por debajo / Reactive power capabilities at the EUT rated power and below	5.7	≥B	NO APPLICABLE	--	--
Modos de control de la potencia reactiva / Reactive power control modes	5.8	≥B	NO APPLICABLE	--	--
Control de amortiguamiento de oscilaciones / Control of oscillation damping	5.10	≥C	NO APPLICABLE	--	--
Capacidad para soportar huecos de tensión de los MPE conectados por debajo de 110 kV / Capability to withstand voltage grid faults for POC below 110 kV	5.11	≥B	NO APPLICABLE	--	--
Capacidad para soportar huecos de tensión de los MPE conectados por encima de 110 kV / Capability to withstand voltage grid faults for POC above 110 kV	5.11	D	NO APPLICABLE	--	--
Recuperación de la potencia activa después de una falta / Active power recovery after a grid fault	5.11	≥B	NO APPLICABLE	--	--
Inyección rápida de corriente de falta en el punto de conexión en caso de faltas trifásicas) simétricas / Rapid current injection control	5.11	≥B	NO APPLICABLE	--	--
Capacidad de participar en el funcionamiento en isla / Islanding requirements	5.13	≥C	NO APPLICABLE	--	--
(*) Evaluado por / Evaluated by: P: Prueba de conformidad / Test of compliance S: Simulación de conformidad / Simulation of compliance					

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Certificate of Conformity

Certificate Number: CN-PV-190098

On the basis of the tests undertaken, the samples of the below product have been found to comply with the requirements of the referenced specification/standard at the time the tests were carried out. It does not imply that Intertek has performed any surveillance or control of the manufacture. The manufacturer shall ensure that the manufacturing process assures compliance of the production units with the examined products mentioned in this certificate.

Applicant:	Guangzhou Sanjing Electric Co., Ltd. No.9, Lizhishan Road, Science City, Guangzhou High-tech Zone, Guangdong, P.R.China
Product:	Anti-backflow system
Ratings & Principle Characteristics:	See Annex to Certificate of Conformity
Model:	PV Grid-connected Inverter: R5-3K-T2, R5-4K-T2, R5-5K-T2, R5-6K-T2, R5-8K-T2, R5-9K-T2, R5-10K-T2, R5-12K-T2, R5-13K-T2, R5-15K-T2, R5-17K-T2, R5-20K-T2 Three phase smart meter: DTSU666
Brand Name:	
Tested according to:	UNE 217001 IN: October 2015 Requirements and tests for systems intended to avoid the energy transmission to the distribution network
Certificate Issuing Office Name & Address:	Intertek Testing Services Ltd. Shanghai 2/F (West Side), No. 707, Zhangyang Road, Free Trade Experimental Area, Shanghai, P. R. China
Test Report No.:	191115099GZU-001

Additional information in Appendix.

Signature

Certification Manager: Grady Ye

Date: 07 January 2020

This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-190098

Ratings & Principle
Characteristics:

PV Grid-connected Inverter:

Model	R5-3K-T2	R5-4K-T2	R5-5K-T2	R5-6K-T2	R5-8K-T2	R5-9K-T2
Max Voltage	1100 Vdc					
MPPT voltage range	160-950 Vdc					
Max DC input Current [PV1/PV2]	12.5/12.5 Adc					
Max. Short circuit Current [PV1/PV2]	15/15Adc					
Nominal AC voltage	3W/N/PE, 230/400Vac					
Rated AC current [A]	4.4	5.8	7.3	8.7	11.6	13.1
Max.AC Current [A]	5.0	6.7	8.4	10.0	13.4	15.0
Grid Frequency	50Hz					
Rated Power [W]	3000	4000	5000	6000	8000	9000
Max. AC power [VA]	3300	4400	5500	6600	8800	9900
Power factor	0.8 Leading to 0.8 Lagging					
Temperature	-40°C - +60°C					
Protective Class	Class I					
Ingress protection	IP 65					
Software Version	V3.025					

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APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-190098

Ratings & Principle Characteristics:

Model	R5-10K-T2	R5-12K-T2	R5-13K-T2	R5-15K-T2	R5-17K-T2	R5-20K-T2
Max Voltage	1100 Vdc					
MPPT voltage range	160-950 Vdc				180-950 Vdc	
Max DC input Current	12.5/12.5 Adc		25/12.5 Adc		25/25 Adc	
Max. Short circuit Current	15/15 Adc		30/15 Adc		30/30 Adc	
Nominal AC voltage	3W/N/PE, 230/400Vac					
Rated AC current [A]	14.5	17.4	18.9	21.8	24.7	29.0
Max.AC Current [A]	16.7	18.2	21.7	25.0	28.4	33.4
Grid Frequency	50Hz					
Rated Power [W]	1000	12000	13000	15000	17000	20000
Max. AC power [VA]	11000	12000	14300	16500	18700	22000
Power factor	0.8 Leading to 0.8 Lagging					
Temperature	-40°C - +60°C					
Protective Class	Class I					
Ingress protection	IP 65					
Software Version	V3.025					

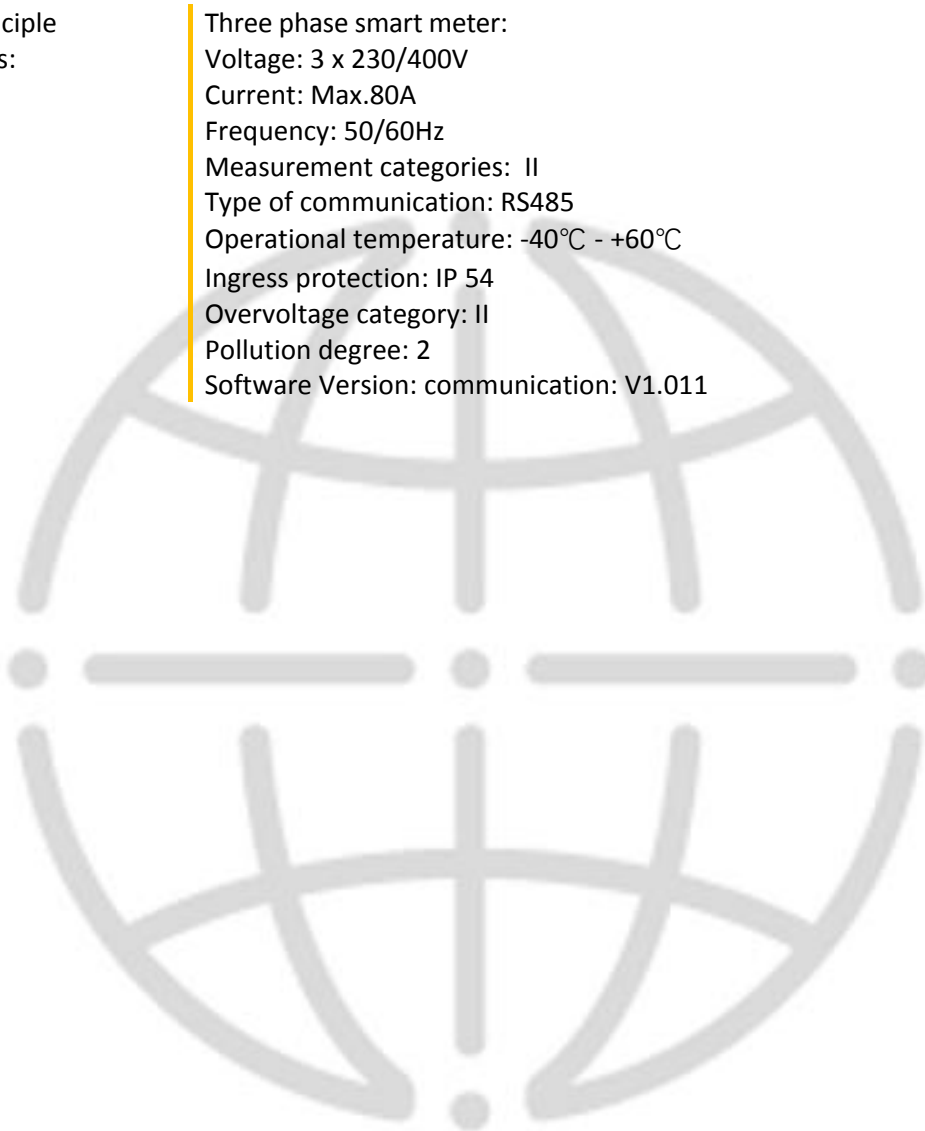
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APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-190098

Ratings & Principle
Characteristics:

Three phase smart meter:
Voltage: 3 x 230/400V
Current: Max.80A
Frequency: 50/60Hz
Measurement categories: II
Type of communication: RS485
Operational temperature: -40°C - +60°C
Ingress protection: IP 54
Overvoltage category: II
Pollution degree: 2
Software Version: communication: V1.011



This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

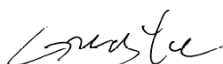
Certificado de Conformidad

Número de Certificado: CN-PV-220130

Conforme a los ensayos realizados, la muestra<s> del producto que se detalla a continuación se ajusta a los requisitos de la especificación<s>/norma<s> de referencia en el momento en que se realizaron los ensayos. Esto no implica que Intertek haya realizado ningún tipo de vigilancia o control de la(s) fabricación(es). El o los fabricantes se asegurarán de que el proceso de fabricación cumpla con los productos examinados mencionados en este certificado.

Solicitante:	Guangzhou Sanjing Electric Co., Ltd. No.9, Lizhishan Road, Science City, Guangzhou High-tech Zone, Guangdong, P.R.China
Producto:	Inversor Fotovoltaico Conectado a la Red
Calificaciones y Características Principales:	Véase el apéndice del Certificado de Conformidad
Modelo:	R5-0.7K-S1, R5-1K-S1, R5-1.5K-S1, R5-2K-S1, R5-2.5K-S1, R5-3K-S1, R5-0.7K-S1-15, R5-1K-S1-15, R5-1.5K-S1-15, R5-2K-S1-15, R5-2.5K-S1-15, R5-3K-S1-15
Nombre de la Marca<s>:	
Producto Conforme con:	NTS-631:2020 Norma técnica para el control de conformidad de los módulos de generación de energía según el Reglamento UE 2016/631
Nombre y Dirección de la Oficina Emisora del Certificado:	Intertek Testing Services Ltd.Shanghai West Area, 2 nd Floor, No.707, Zhangyang Road China (Shanghai) Pilot Free Trade Zone, Shanghai, P.R.China Acreditado por ACCREDIA de conformidad con la norma ISO/IEC 17065:2012
Informe de la Prueba<s> N°:	220614049GZU-001

Información Complementaria en el Apéndice.



Firma

Responsable de la Certificación: Grady
Fecha: 06 de julio de 2022



PRD N° 306B

El presente Certificado está destinado al uso exclusivo del cliente de Intertek y se entrega en virtud del acuerdo entre Intertek y su Cliente. La responsabilidad y la obligación de Intertek se limita a los términos y condiciones del acuerdo. Intertek no asume ninguna responsabilidad ante ninguna parte, salvo ante el Cliente según el acuerdo, por cualquier pérdida, gasto, o daño ocasionado por el uso de este Certificado. Únicamente el Cliente está autorizado a conceder la copia o distribución de este Certificado. El uso del nombre de Intertek o de una de sus marcas para la venta o publicidad del material, producto, o servicio examinado debe ser aprobado previamente por escrito por Intertek.

APÉNDICE: Certificado de Conformidad

Este es un Apéndice del Certificado de Conformidad Número: CN-PV-220130.

Unidad / Tipo.....:	R5-0.7K-S1, R5-0.7K-S1-15	R5-1K-S1, R5-1K-S1-15	R5-1.5K-S1, R5-1.5K-S1-15	R5-2K-S1, R5-2K-S1-15	R5-2.5K-S1, R5-2.5K-S1-15	R5-3K-S1, R5-3K-S1-15
Versión de hardware / Número de serie (examinado)..... :	V1.3					
Versión del firmware / Versión del software (examinado) :	V1.201					
Rango de Corriente Continua MPP [V] .. :	40-425			50-450		
Rango de entrada de Corriente Continua [V]..... :	40-450			40-500		
Entrada máxima de Corriente Continua [A] :	12.5 ¹⁾ or 15 ²⁾					
Máximo de Cortocircuito [A] :	15 ¹⁾ or 18 ²⁾					
Tensión nominal de salida de CA [V] :	230V (L+ N + PE, 50/60Hz)					
Salida máxima de Corriente Alterna [A] :	3,5	5,0	7,5	10,0	12,5	15,0
Potencia activa nominal de salida [kW] :	0,7	1,0	1,5	2,0	2,5	3,0
Potencia de salida máxima, aparente / activa [kVA / kW] :	0,77	1,1	1,65	2,2	2,75	3,3

1) ISC PV [A]=15 y Corriente de Entrada PV máx. PV [A]=12,5 para R5-0,7K-S1, R5-1K-S1, R5-1,5K-S1, R5-2K-S1, R5-2,5K-S1, R5-3K-S1.

2) ISC PV [A]=18 y Corriente de Entrada máx. PV [A]=15 para R5-0,7K-S1-15, R5-1K-S1-15, R5-1,5K-S1-15, R5-2K-S1-15, R5-2,5K-S1-15 y R5-3K-S1-15.

APÉNDICE: Certificado de Conformidad

Este es un Apéndice del Certificado de Conformidad Número: CN-PV-220130.

Requisito / Requirement	NTS	Tipo / Type	Cumplimiento / Complicant	Nombre Entidad Emisora / Name of issuing Entity	Ev.(*)
Modo regulación potencia-frecuencia limitado sobrefrecuencia (MRPFL-O) / Power-frequency regulation mode limited to overfrequency (MRPFL-O)	5.1	≥A	YES (TRF No.220614049GZ U-001)	Intertek	P
Modo regulación potencia-frecuencia limitado-subfrecuencia (MRPFL-U) / Power-frequency regulation mode limited to underfrequency (MRPFL-U)	5.2	≥C	NO APPLICABLE	--	--
Modo regulación potencia-frecuencia (MRPF) / Power-frequency regulation mode (MRPF)	5.3	≥C	NO APPLICABLE	--	--
Control de potencia-frecuencia / Frequency Control	5.4	≥C	NO APPLICABLE	--	--
Capacidad de control y el rango de control de la potencia activa en remote / Active Power Requirements	5.5	≥C	NO APPLICABLE	--	--
Emulación de inercia durante variaciones de frecuencia muy rápidas / Inertia Emulations	5.6	≥C	NO APPLICABLE	--	--
Capacidad de potencia reactiva a la capacidad máxima y por debajo / Reactive power capabilities at the EUT rated power and below	5.7	≥B	NO APPLICABLE	--	--
Modos de control de la potencia reactiva / Reactive power control modes	5.8	≥B	NO APPLICABLE	--	--
Control de amortiguamiento de oscilaciones / Control of oscillation damping	5.10	≥C	NO APPLICABLE	--	--
Capacidad para soportar huecos de tensión de los MPE conectados por debajo de 110 kV / Capability to withstand voltage grid faults for POC below 110 kV	5.11	≥B	NO APPLICABLE	--	--
Capacidad para soportar huecos de tensión de los MPE conectados por encima de 110 kV / Capability to withstand voltage grid faults for POC above 110 kV	5.11	D	NO APPLICABLE	--	--
Recuperación de la potencia activa después de una falta / Active power recovery after a grid fault	5.11	≥B	NO APPLICABLE	--	--
Inyección rápida de corriente de falta en el punto de conexión en caso de faltas trifásicas / Rapid current injection control	5.11	≥B	NO APPLICABLE	--	--
Capacidad de participar en el funcionamiento en isla / Islanding requirements	5.13	≥C	NO APPLICABLE	--	--
(*) Evaluado por / Evaluated by: P: Prueba de conformidad / Test of compliance S: Simulación de conformidad / Simulation of compliance					

Declaration: It is an accurate translation of the original document.

El presente Certificado está destinado al uso exclusivo del cliente de Intertek y se entrega en virtud del acuerdo entre Intertek y su Cliente. La responsabilidad y la obligación de Intertek se limita a los términos y condiciones del acuerdo. Intertek no asume ninguna responsabilidad ante ninguna parte, salvo ante el Cliente según el acuerdo, por cualquier pérdida, gasto, o daño ocasionado por el uso de este Certificado. Únicamente el Cliente está autorizado a conceder la copia o distribución de este Certificado. El uso del nombre de Intertek o de una de sus marcas para la venta o publicidad del material, producto, o servicio examinado debe ser aprobado previamente por escrito por Intertek.

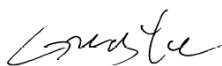
Certificado de Conformidad

Número de Certificado: CN-PV-220131

Conforme a los ensayos realizados, la muestra<s> del producto que se detalla a continuación se ajusta a los requisitos de la especificación<s>/norma<s> de referencia en el momento en que se realizaron los ensayos. Esto no implica que Intertek haya realizado ningún tipo de vigilancia o control de la(s) fabricación(es). El o los fabricantes se asegurarán de que el proceso de fabricación cumpla con los productos examinados mencionados en este certificado.

Solicitante:	Guangzhou Sanjing Electric Co., Ltd. No.9, Lizhishan Road, Science City, Guangzhou High-tech Zone, Guangdong, P.R.China
Producto:	Inversor Fotovoltaico Conectado a la Red
Calificaciones y Características Principales:	Véase el apéndice del Certificado de Conformidad
Modelo:	R5-3K-S2, R5-3.6K-S2, R5-4K-S2, R5-5K-S2, R5-6K-S2, R5-7K-S2, R5-8K-S2, R5-3K-S2-15, R5-3.6K-S2-15, R5-4K-S2-15, R5-5K-S2-15, R5-6K-S2-15, R5-7K-S2-15, R5-8K-S2-15
Nombre de la Marca<s>:	
Producto Conforme con:	NTS-631:2020 Norma técnica para el control de conformidad de los módulos de generación de energía según el Reglamento UE 2016/631
Nombre y Dirección de la Oficina Emisora del Certificado:	Intertek Testing Services Ltd.Shanghai West Area, 2 nd Floor, No.707, Zhangyang Road China (Shanghai) Pilot Free Trade Zone, Shanghai, P.R.China Acreditado por ACCREDIA de conformidad con la norma ISO/IEC 17065:2012
Informe de la Prueba<s> N°:	220614050GZU-001

Información Complementaria en el Apéndice.



Firma

Responsable de la Certificación: Grady
Fecha: 06 de julio de 2022



PRD N° 306B

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APÉNDICE: Certificado de Conformidad

Este es un Apéndice del Certificado de Conformidad Número: CN-PV-220131.

Unidad / Tipo.....:	R5-3K-S2, R5-3K-S2-15	R5-3.6K-S2, R5-3.6K-S2-15	R5-4K-S2, R5-4K-S2-15	R5-5K-S2, R5-5K-S2-15	R5-6K-S2, R5-6K-S2-15	R5-7K-S2, R5-7K-S2-15	R5-8K-S2, R5-8K-S2-15
Versión de hardware / Número de serie (examinado).....:	R5-3K-S2, R5-4K-S2, R5-5K-S2, R5-6K-S2, R5-3K-S2-15, R5-4K-S2-15, R5-5K-S2-15, R5-6K-S2-15: Main power board: V1.11, Control board: V1.1 R5-7K-S2, R5-8K-S2, R5-7K-S2-15, R5-8K-S2-15: Main power board: V1.32, Control board: V1.3						
Versión del firmware / Versión del software (examinado)	V1.188						
Rango de Corriente Continua MPP [V] ..:	90-550						
Rango de entrada de Corriente Continua [V].....:	80-600						
Entrada máxima de Corriente Continua [A]	12.5/12.5 ¹⁾ or 15/15 ²⁾						
Máximo de Cortocircuito [A]	15/15 ¹⁾ or 18/18 ²⁾						
Tensión nominal de salida de CA [V]	230V (L+ N + PE, 50/60Hz)						
Salida máxima de Corriente Alterna [A] :	15,0	16,7	20,0	22,7	27,3	35,0	36,4
Potencia activa nominal de salida [kW] :	3,0	3,68	4,0	5,0	6,0	7,0	8,0
Potencia de salida máxima, aparente / activa [kVA / kW]	3,3	3,68	4,4	5,0	6,0	7,7	8,0

1) Corriente de entrada máxima (A) = 12,5 y máximo de cortocircuito (A) =15A para R5-3K-S2, R5-3,6K-S2, R5-4K-S2, R5-5K-S2, R5-6K-S2, R5-7K-S2, R5-8K-S2.

2) Corriente de entrada máxima (A) = 15 y máximo de cortocircuito (A) =18A para R5-3K-S2-15, R5-3,6K-S2-15, R5-4K-S2-15, R5-5K-S2-15, R5-6K-S2-15, R5-7K-S2-15, R5-8K-S2-15

APÉNDICE: Certificado de Conformidad

Este es un Apéndice del Certificado de Conformidad Número: CN-PV-220131.

Requisito / Requirement	NTS	Tipo / Type	Cumplimiento / Complicant	Nombre Entidad Emisora / Name of issuing Entity	Ev.(*)
Modo regulación potencia-frecuencia limitado sobrefrecuencia (MRPFL-O) / Power-frequency regulation mode limited to overfrequency (MRPFL-O)	5.1	≥A	YES (TRF No.220614050GZ U-001)	Intertek	P
Modo regulación potencia-frecuencia limitado-subfrecuencia (MRPFL-U) / Power-frequency regulation mode limited to underfrequency (MRPFL-U)	5.2	≥C	NO APPLICABLE	--	--
Modo regulación potencia-frecuencia (MRPF) / Power-frequency regulation mode (MRPF)	5.3	≥C	NO APPLICABLE	--	--
Control de potencia-frecuencia / Frequency Control	5.4	≥C	NO APPLICABLE	--	--
Capacidad de control y el rango de control de la potencia activa en remote / Active Power Requirements	5.5	≥C	NO APPLICABLE	--	--
Emulación de inercia durante variaciones de frecuencia muy rápidas / Inertia Emulations	5.6	≥C	NO APPLICABLE	--	--
Capacidad de potencia reactiva a la capacidad máxima y por debajo / Reactive power capabilities at the EUT rated power and below	5.7	≥B	NO APPLICABLE	--	--
Modos de control de la potencia reactiva / Reactive power control modes	5.8	≥B	NO APPLICABLE	--	--
Control de amortiguamiento de oscilaciones / Control of oscillation damping	5.10	≥C	NO APPLICABLE	--	--
Capacidad para soportar huecos de tensión de los MPE conectados por debajo de 110 kV / Capability to withstand voltage grid faults for POC below 110 kV	5.11	≥B	NO APPLICABLE	--	--
Capacidad para soportar huecos de tensión de los MPE conectados por encima de 110 kV / Capability to withstand voltage grid faults for POC above 110 kV	5.11	D	NO APPLICABLE	--	--
Recuperación de la potencia activa después de una falta / Active power recovery after a grid fault	5.11	≥B	NO APPLICABLE	--	--
Inyección rápida de corriente de falta en el punto de conexión en caso de faltas trifásicas / Rapid current injection control	5.11	≥B	NO APPLICABLE	--	--
Capacidad de participar en el funcionamiento en isla / Islanding requirements	5.13	≥C	NO APPLICABLE	--	--
(*) Evaluado por / Evaluated by: P: Prueba de conformidad / Test of compliance S: Simulación de conformidad / Simulation of compliance					

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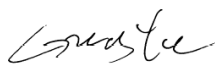
Certificado de Conformidad

Número de certificado: CN-PV-220132

Conforme a los ensayos realizados, la muestra<s> del producto que se detalla a continuación se ajusta a los requisitos de la especificación<s>/norma<s> de referencia en el momento en que se realizaron los ensayos. Esto no implica que Intertek haya realizado ningún tipo de vigilancia o control de la(s) fabricación(es). El o los fabricantes se asegurarán de que el proceso de fabricación cumpla con los productos examinados mencionados en este certificado.

Solicitante:	Guangzhou Sanjing Electric Co., Ltd. No.9, Lizhishan Road, Science City, Guangzhou High-tech Zone, Guangdong, P.R.China
Producto:	Inversor Fotovoltaico Conectado a la Red
Calificaciones y Características Principales:	Véase el apéndice del Certificado de Conformidad
Modelo:	R5-3K-T2, R5-4K-T2, R5-5K-T2, R5-6K-T2, R5-8K-T2, R5-9K-T2, R5-10K-T2, R5-12K-T2, R5-3K-T2-15, R5-4K-T2-15, R5-5K-T2-15, R5-6K-T2-15, R5-8K-T2-15, R5-9K-T2-15, R5-10K-T2-15, R5-12K-T2-15
Nombre de la Marca<s>:	
Producto Conforme con:	NTS-631:2020 Norma técnica para el control de conformidad de los módulos de generación de energía según el Reglamento UE 2016/631
Nombre y Dirección de la Oficina Emisora del Certificado:	Intertek Testing Services Ltd.Shanghai West Area, 2 nd Floor, No.707, Zhangyang Road China (Shanghai) Pilot Free Trade Zone, Shanghai,P.R.China Acreditado por ACCREDIA de conformidad con la norma ISO/IEC 17065:2012
Informe de la Prueba<s> N°.:	220614051GZU-001

Información Complementaria en el Apéndice.



Firma

Responsable de la Certificación: Grady
Fecha: 06 de julio de 2022



PRD N° 306B

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APÉNDICE: Certificado de Conformidad

Este es un Apéndice del Certificado de Conformidad Número: CN-PV-220132.

Unidad / Tipo.....:	R5-3K-T2, R5-3K-T2-15	R5-4K-T2, R5-4K-T2-15	R5-5K-T2, R5-5K-T2-15	R5-6K-T2, R5-6K-T2-15	R5-8K-T2, R5-8K-T2-15	R5-9K-T2, R5-9K-T2-15	R5-10K-T2, R5-10K-T2-15	R5-12K-T2, R5-12K-T2-15
Versión de hardware / Número de serie (examinado)..... :	V1.3							
Versión del firmware / Versión del software (examinado)..... :	V3.055							
Rango de Corriente Continua MPP a plena carga [V]..... :	520-880							
Rango de entrada de Corriente Continua [V]..... :	160-950							
Entrada máxima de Corriente Continua [A]..... :	12.5/12.5 ¹⁾ or 15/15 ²⁾							
Máximo de Cortocircuito [A]..... :	15/15 ¹⁾ or 18/18 ²⁾							
Tensión nominal de salida de CA [V]..... :	230/400V (3~ + N + PE, 50/60Hz)							
Salida máxima de Corriente Alterna [A] :	5,0	6,7	8,4	10,0	13,4	15,0	16,7	18,2
Potencia activa nominal de salida [kW] :	3,0	4,0	5,0	6,0	8,0	9,0	10,0	12,0
Potencia de salida máxima, aparente / activa [kVA / kW]..... :	3,3	4,4	5,5	6,6	8,8	9,9	11,0	12,0

1) Corriente de entrada máxima (A) = 12,5 y máximo de cortocircuito (A) = 15A para R5-3K-T2, R5-4K-T2, R5-5K-T2, R5-6K-T2, R5-8K-T2, R5-9K-T2, R5-10K-T2, R5-12K-T2.

2) Corriente de entrada máxima (A) = 15 y máximo de cortocircuito (A) = 18A para R5-3K-T2-15, R5-4K-T2-15, R5-5K-T2-15, R5-6K-T2-15, R5-8K-T2-15, R5-9K-T2-15, R5-10K-T2-15, R5-12K-T2-15.

APÉNDICE: Certificado de Conformidad

Este es un Apéndice del Certificado de Conformidad Número: CN-PV-220132.

Requisito / Requirement	NTS	Tipo / Type	Cumplimiento / Complicant	Nombre Entidad Emisora / Name of issuing Entity	Ev.(*)
Modo regulación potencia-frecuencia limitado sobrefrecuencia (MRPFL-O) / Power-frequency regulation mode limited to overfrequency (MRPFL-O)	5.1	≥A	YES (TRF No.220614051GZ U-001)	Intertek	P
Modo regulación potencia-frecuencia limitado-subfrecuencia (MRPFL-U) / Power-frequency regulation mode limited to underfrequency (MRPFL-U)	5.2	≥C	NOT APPLICABLE	--	--
Modo regulación potencia-frecuencia (MRPF) / Power-frequency regulation mode (MRPF)	5.3	≥C	NOT APPLICABLE	--	--
Control de potencia-frecuencia / Frequency Control	5.4	≥C	NOT APPLICABLE	--	--
Capacidad de control y el rango de control de la potencia activa en remote / Active Power Requirements	5.5	≥C	NOT APPLICABLE	--	--
Emulación de inercia durante variaciones de frecuencia muy rápidas / Inertia Emulations	5.6	≥C	NOT APPLICABLE	--	--
Capacidad de potencia reactiva a la capacidad máxima y por debajo / Reactive power capabilities at the EUT rated power and below	5.7	≥B	NOT APPLICABLE	--	--
Modos de control de la potencia reactiva / Reactive power control modes	5.8	≥B	NOT APPLICABLE	--	--
Control de amortiguamiento de oscilaciones / Control of oscillation damping	5.10	≥C	NOT APPLICABLE	--	--
Capacidad para soportar huecos de tensión de los MPE conectados por debajo de 110 kV / Capability to withstand voltage grid faults for POC below 110 kV	5.11	≥B	NOT APPLICABLE	--	--
Capacidad para soportar huecos de tensión de los MPE conectados por encima de 110 kV / Capability to withstand voltage grid faults for POC above 110 kV	5.11	D	NOT APPLICABLE	--	--
Recuperación de la potencia activa después de una falta / Active power recovery after a grid fault	5.11	≥B	NOT APPLICABLE	--	--
Inyección rápida de corriente de falta en el punto de conexión en caso de faltas trifásicas / Rapid current injection control	5.11	≥B	NOT APPLICABLE	--	--
Capacidad de participar en el funcionamiento en isla / Islanding requirements	5.13	≥C	NOT APPLICABLE	--	--
(*) Evaluado por / Evaluated by: P: Prueba de conformidad / Test of compliance S: Simulación de conformidad / Simulation of compliance					

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Test Report issued under the responsibility of:

intertek
Total Quality. Assured.

Page 1 of 30

TEST REPORT
UNE 217001 IN: October 2015
Requirements and tests for systems intended to avoid the energy transmission to the distribution network

Total number of pages.....: 30 pages

Jason Tu

Yarny

Address..... No.9, Lizhishan Road, Science City, Guangzhou High-tech Zone,
Guangdong, P.R.China

Non-standard test method.....:	N/A
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Trade Mark



Model/Type reference	PV Grid-connected Inverter: R5-3K-T2 , R5-4K-T2 , R5-5K-T2 , R5-6K-T2 , R5-8K-T2 , R5-9K-T2 , R5-10K-T2 , R5-12K-T2, R5-13K-T2,R5-15K-T2,R5-17K-T2,R5-20K-T2 Three phase smart meter: DTSU666
----------------------------	---

Ratings	PV Grid-connected Inverter:						
	Model	R5-3K-T2	R5-4K-T2	R5-5K-T2	R5-6K-T2	R5-8K-T2	R5-9K-T2
	Max Voltage	1100 Vdc					
	MPPT voltage range	160-950 Vdc					
	Max DC input Current [PV1/PV2]	12.5/12.5 Adc					
	Max. Short circuit Current [PV1/PV2]	15/15Adc					
	Nominal AC voltage	3W/N/PE, 230/400Vac					
	Rated AC current [A]	4.4	5.8	7.3	8.7	11.6	13.1
	Max.AC Current [A]	5.0	6.7	8.4	10.0	13.4	15.0
	Grid Frequency	50Hz					
	Rated Power [W]	3000	4000	5000	6000	8000	9000
	Max. AC power [VA]	3300	4400	5500	6600	8800	9900
	Power factor	0.8 Leading to 0.8 Lagging					
	Temperature	-40°C - +60°C					
	Protective Class	Class I					
	Ingress protection	IP 65					
	Software Version	V3.025					
	Model	R5-10K-T2	R5-12K-T2	R5-13K-T2	R5-15K-T2	R5-17K-T2	R5-20K-T2
	Max Voltage	1100 Vdc					
	MPPT voltage range	160-950 Vdc				180-950 Vdc	

Max DC input Current	12.5/12.5 Adc		25/12.5 Adc		25/25 Adc	
Max. Short circuit Current	15/15 Adc		30/15 Adc		30/30 Adc	
Nominal AC voltage	3W/N/PE, 230/400Vac					
Rated AC current [A]	14.5	17.4	18.9	21.8	24.7	29.0
Max.AC Current [A]	16.7	18.2	21.7	25.0	28.4	33.4
Grid Frequency	50Hz					
Rated Power [W]	1000	12000	13000	15000	17000	20000
Max. AC power [VA]	11000	12000	14300	16500	18700	22000
Power factor	0.8 Leading to 0.8 Lagging					
Temperature	-40°C - +60°C					
Protective Class	Class I					
Ingress protection	IP 65					
Software Version	V3.025					

Three phase smart meter:

Voltage: 3 x 230/400V

Current: Max.80A

Frequency: 50/60Hz

Measurement categories: II

Type of communication: RS485

Operational temperature: -40°C - +60°C

Ingress protection: IP 54

Overvoltage category: II

Pollution degree: 2

Software Version: communication: V1.011

Summary of testing:**Tests performed (name of test and test clause):**

All applicable tests

The model R5-20K-T2 is type tested.

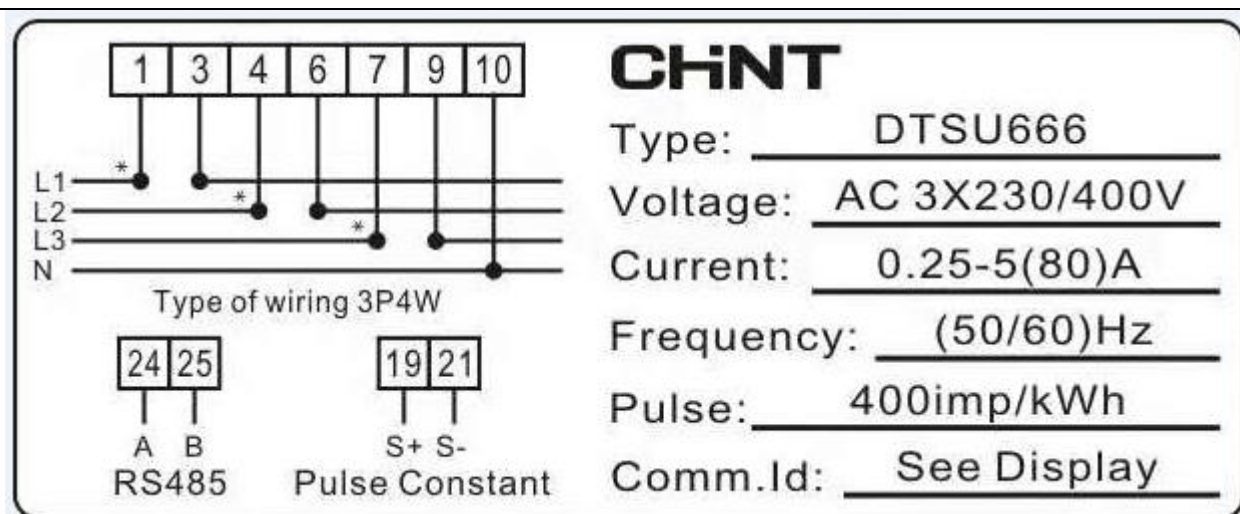
Testing location:

Intertek Testing Services Shenzhen Ltd. Guangzhou Branch

Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, China

Copy of marking plate

 Guangzhou Sanjing Electric Co., Ltd. Tel: +86(20) 66608588 Fax: +86(20) 66608589 Web: www.saj-electric.com E-mail: service@saj-electric.com														
PV Grid-connected Inverter Type: R5-20K-T2														
	<table border="1"> <tr> <th colspan="2">PV Input</th> </tr> <tr> <td>Voltage Range</td> <td>180V-1100Vdc</td> </tr> <tr> <td>MPPT Voltage Range</td> <td>180V-950Vdc</td> </tr> <tr> <td>Max. Input Current (PV1/PV2)</td> <td>25/25Adc</td> </tr> <tr> <td>Max. Short Circuit Current (PV1/PV2)</td> <td>30/30Adc</td> </tr> <tr> <td>Max. Number of Parallel Strings (PV1/PV2)</td> <td>2/2</td> </tr> </table>	PV Input		Voltage Range	180V-1100Vdc	MPPT Voltage Range	180V-950Vdc	Max. Input Current (PV1/PV2)	25/25Adc	Max. Short Circuit Current (PV1/PV2)	30/30Adc	Max. Number of Parallel Strings (PV1/PV2)	2/2	
	PV Input													
	Voltage Range	180V-1100Vdc												
	MPPT Voltage Range	180V-950Vdc												
	Max. Input Current (PV1/PV2)	25/25Adc												
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Max. Number of Parallel Strings (PV1/PV2)	2/2													
<table border="1"> <tr> <th colspan="2">AC Output</th> </tr> <tr> <td>Rated Voltage</td> <td>3/N/PE 380/400V</td> </tr> <tr> <td>Rated Current</td> <td>3*29.0A</td> </tr> <tr> <td>Max. Continuous Current</td> <td>3*33.4A</td> </tr> <tr> <td>Rated Frequency</td> <td>50/60Hz</td> </tr> <tr> <td>Rated Power</td> <td>20000W</td> </tr> <tr> <td>Power Factor</td> <td>0.8i...1...0.8c</td> </tr> </table>	AC Output		Rated Voltage	3/N/PE 380/400V	Rated Current	3*29.0A	Max. Continuous Current	3*33.4A	Rated Frequency	50/60Hz	Rated Power	20000W	Power Factor	0.8i...1...0.8c
AC Output														
Rated Voltage	3/N/PE 380/400V													
Rated Current	3*29.0A													
Max. Continuous Current	3*33.4A													
Rated Frequency	50/60Hz													
Rated Power	20000W													
Power Factor	0.8i...1...0.8c													
Temperature: -40℃~60℃ Protective Class: II Overvoltage Category: II (DC), III (AC) Ingress protection: IP65														
EN 50438 EN 50549 VDE-AR-N4105 AS/NZS 4777.2 CEI 0-21														
														
														
S/N														
P/C														
MADE IN CHINA														

**Note:**

1. The above markings are the minimum requirements required by the safety standard. For the final production samples, the additional markings which do not give rise to misunderstanding may be added.
2. Label is attached on the side surface of enclosure and visible after installation
3. The other model labels are identical with label above, except the model name and rating.

Test item particulars			
Temperature range	-25°C - 60°C		
AC Overvoltage category	☐ OVC I	☐ OVC II	☒ OVC III ☐ OVC IV
DC Overvoltage category	☐ OVC I	☒ OVC II	☐ OVC III ☐ OVC IV
IP protection class	IP 65		
Possible test case verdicts:			
- test case does not apply to the test object : N/A (Not applicable)			
- test object does meet the requirement..... : P (Pass)			
- test object does not meet the requirement..... : F (Fail)			
Testing			
Date of receipt of test item	15 Nov 2019		
Date (s) of performance of tests	15 Nov 2019 – 30 Dec 2019		
General remarks:			
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(see Enclosure #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report. When determining for test conclusion, measurement uncertainty of tests has been considered. This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program. The test report only allows to be revised only within the report defined retention period unless standard or regulation was withdrawn or invalid. Throughout this report a point is used as the decimal separator.			

General product information:**Description of tested item:**

The equipment is three phase transformerless utility-interactive type PV inverter which will be installed and directly connected to the grid network after installation.

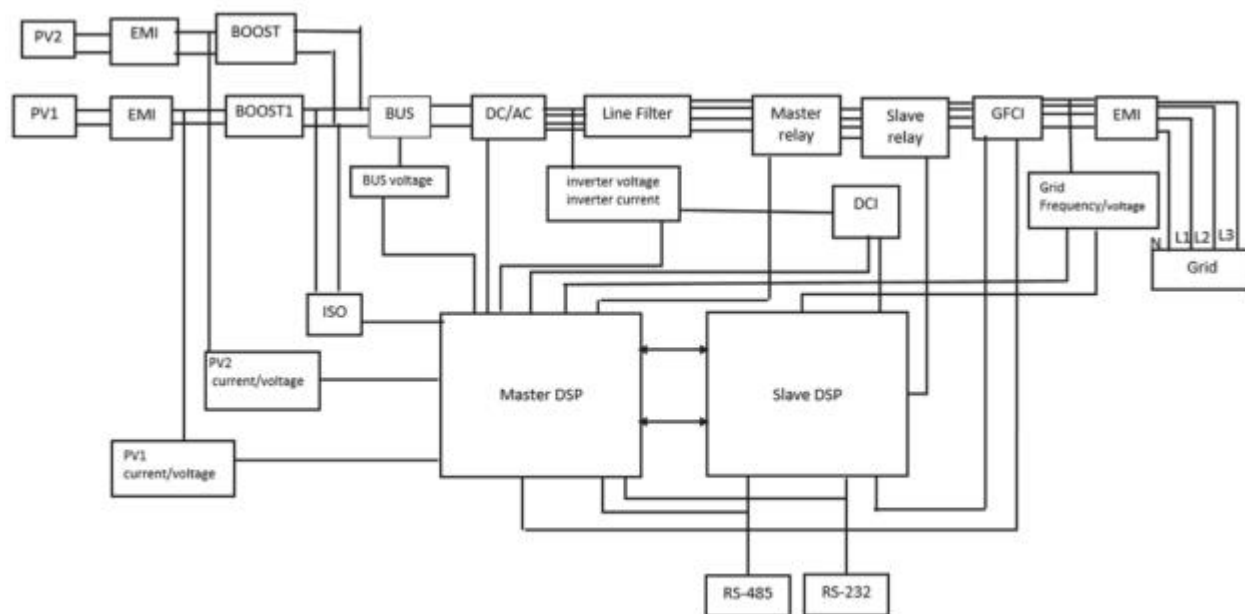
It contains filters for smoothing the output voltage and for EMC, switching and control circuits. Electronic circuits are mounted on a number of PCBs interconnected by appropriate connectors and wires. Power board including electronics components is mounted on the heat sink to earthing by metal screw and spring washer.

There are included a RS485 communication ports which are connected to the wattmeter to monitor the status of the inverter by proprietary software.

The PV input combiner with 2 string MPPT tracers and each MPPT tracer including one PV input terminals. AC output direct connected to grid and Protective Earthing are provided by dedicated earthing terminals. Grid is protected combination with a two series of relays as redundant build for ensure the inverter can independent disconnected from grid while a relay was fault.

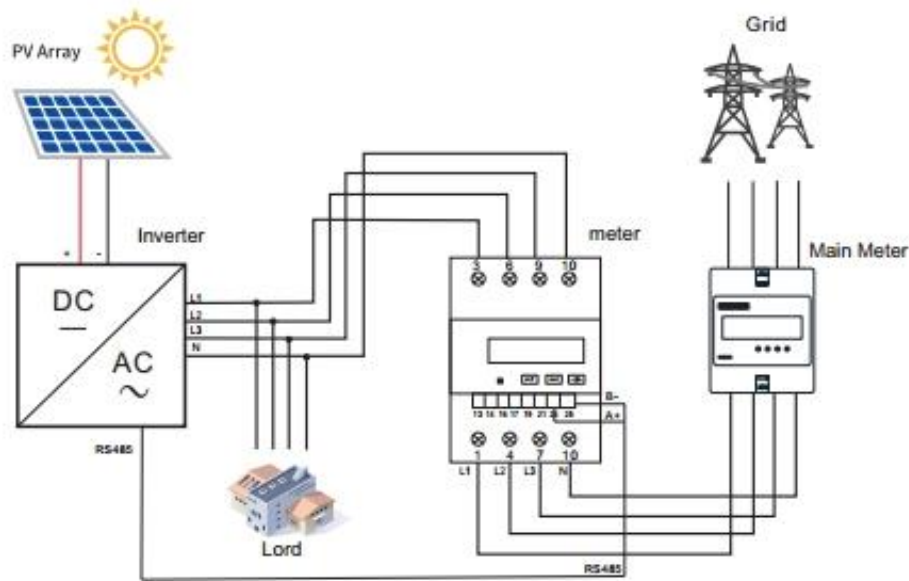
During fault condition defined in this standard, after the DSP receives the abnormal signal from the relevant protective detection circuit, the relays will operate to disconnect the PV inverter active lines from grid automatically.

The master DSP and slaver DSP has capacity independent disconnected from grid, when any grid fault had happened.

Block diagram:

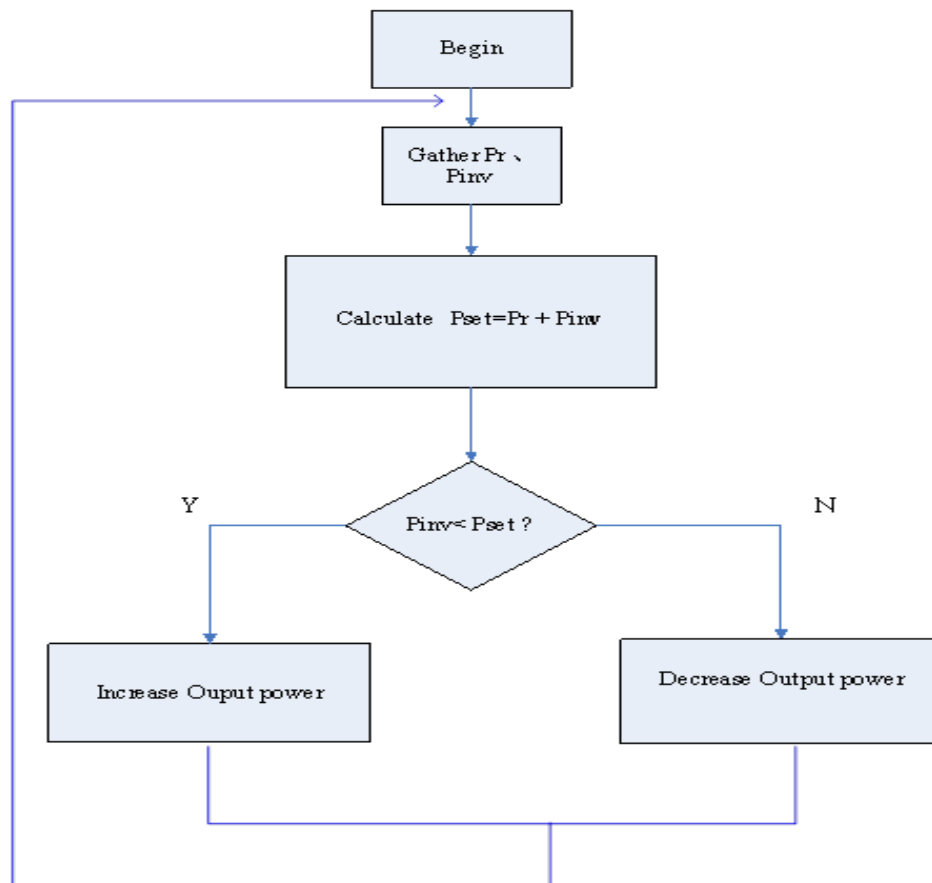
Block diagram

Basic outline of the system.



In the grid-connected power generation system, because the user load and light are constantly changing, in order to prevent the grid-connected system from generating electricity in the reverse direction to the power grid, the monitoring meter is added. The inverter communicates with the meter through the RS485 interface to collect the grid-connected port current in real time. And power signals, and calculate the maximum output power limit value of the inverter according to the meter's feedback power and current data, adjust the inverter output power to achieve the anti-backflow function, and maximize the use of photovoltaic modules to generate power;

Control algorithm:



Variable	Statement
Pr	The power detected by the meter. Negative values represent reverse current, while positive values represent absorbed power from the grid.
Pset	Inverter power limit setting
Pinv	Inverter operating output power

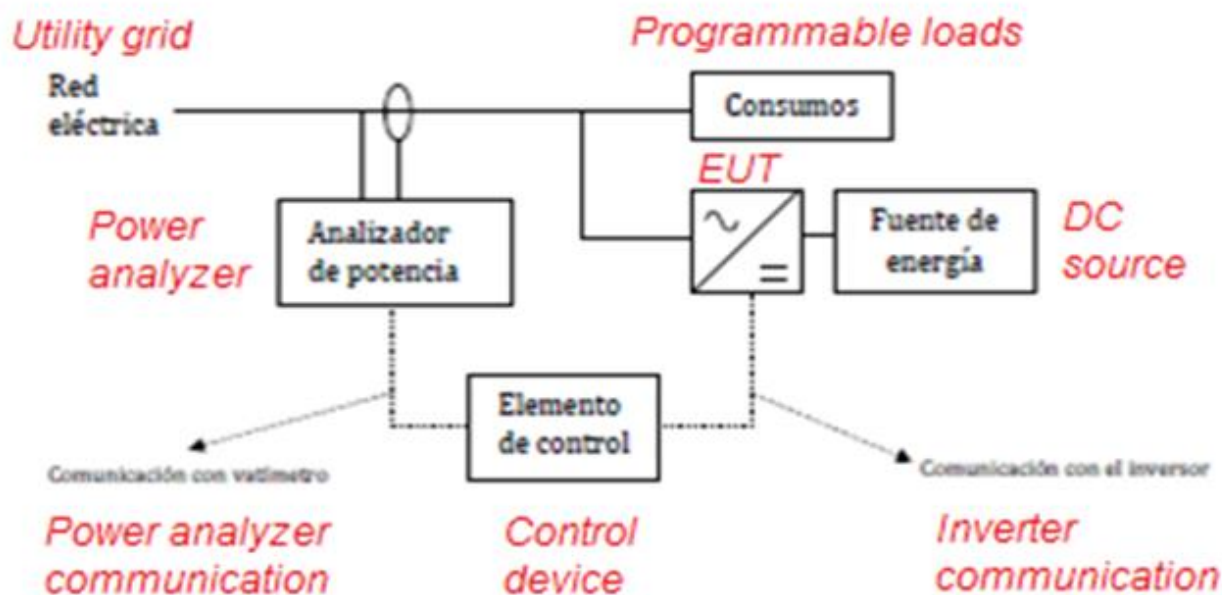
$P_{set} = P_{inv} + P_r$; When the current output power of the inverter is greater than the load power, the inverter supplies power to the load and reverses the current to the grid. At this time, it is detected that P_r is negative, and the inverter limit power setting value is reduced;

When the current output power of the inverter is less than the load power, the load must also absorb power from the grid at this time. At this time, it is detected that P_r is a positive value, and the inverter limit power setting value is increased;

Model difference:

The models R5-3K-T2, R5-4K-T2, R5-5K-T2, R5-6K-T2, R5-8K-T2, R5-9K-T2, R5-10K-T2, R5-12K-T2, R5-13K-T2, R5-15K-T2, R5-17K-T2, R5-20K-T2 are identical, which have same control algorithm, same topology diagram and hardware, only the power derating in software.

Test of setup:



UNE 217001:2015 IN			
Clause	Requirement – Test	Result – Remark	Verdict
4	Requirements		P
4.1	Measurement of energy exchange with the network		P
4.2	Measure of consumption		P
5	Essays		P
5.1	Tolerance in permanent regimes		P
5.2	Response to load disconnections		P
5.3	Response to power increases in the primary energy source		P
5.4	Action in case of loss of communications		P
5.5	Determination of the maximum number of generators	The inverter does not support interconnection. Only an inverter and wattmeter are connected directly to Grid	N/A

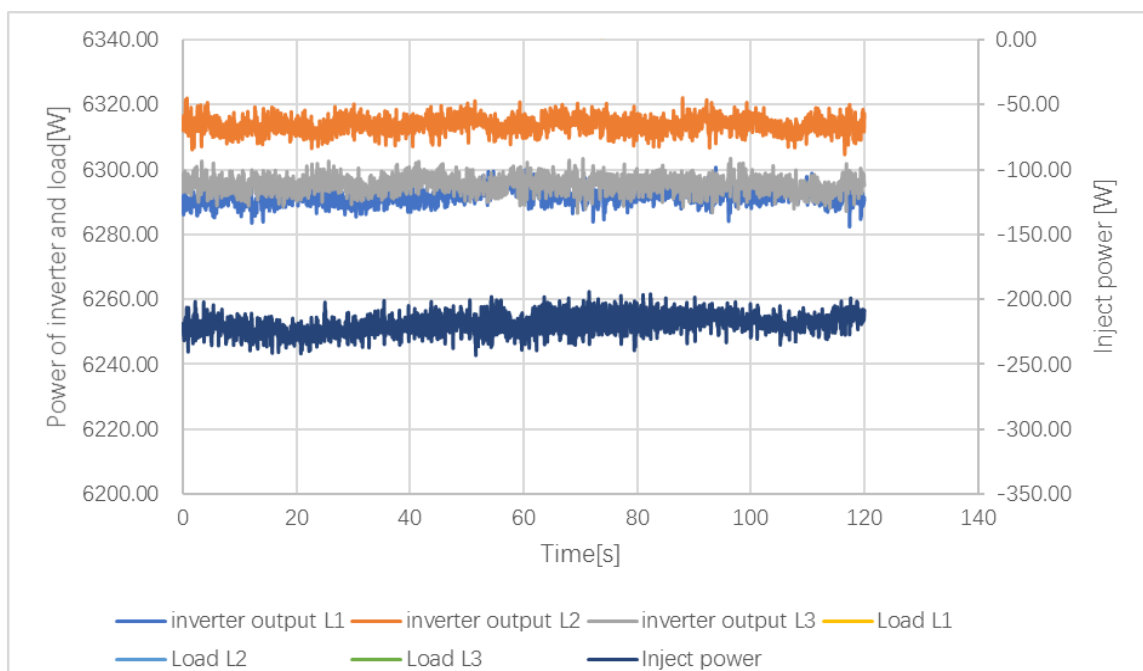
UNE 217001:2015 IN			
Clause	Requirement – Test	Result – Remark	Verdict

5.1	Tolerance in permanent regimes					P
	Load			Power injection to the grid (W)	Tolerance (%)	Limit
	L1	L2	L3			
Single phase	95%	--	--	--	--	<4%
	15%	--	--	--	--	<4%
	0	--	--	--	--	<4%
Three-phase	95%	95%	95%	-219.02	-1.10	<4%
	15%	15%	15%	-66.59	-0.33	<4%
	0	0	0	-72.90	-0.36	<4%
	95%	65%	65%	-2016.70	-10.08	<4%
	65%	65%	65%	-122.11	-0.61	<4%
	35%	65%	65%	-4035.78	-20.18	<4%
	0	65%	65%	-8788.88	-43.94	<4%

Remark:

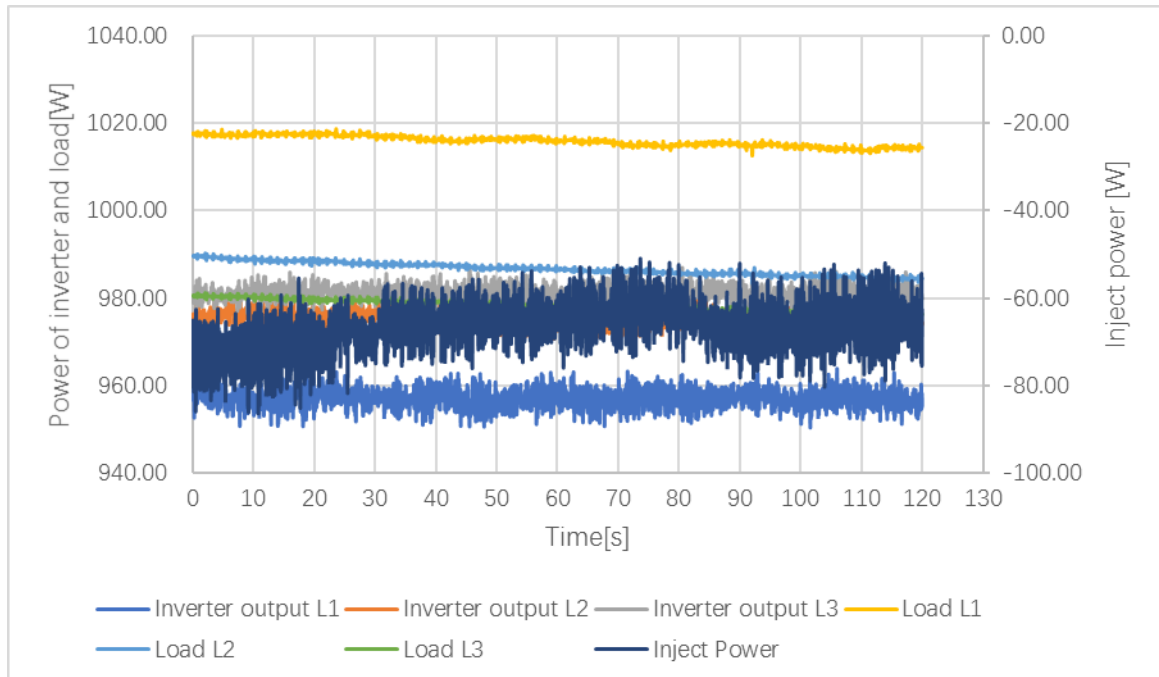
The sum of the tolerance of the power analyzer and current measured are 4%

Graph_ (95%, 95%, 95%) load

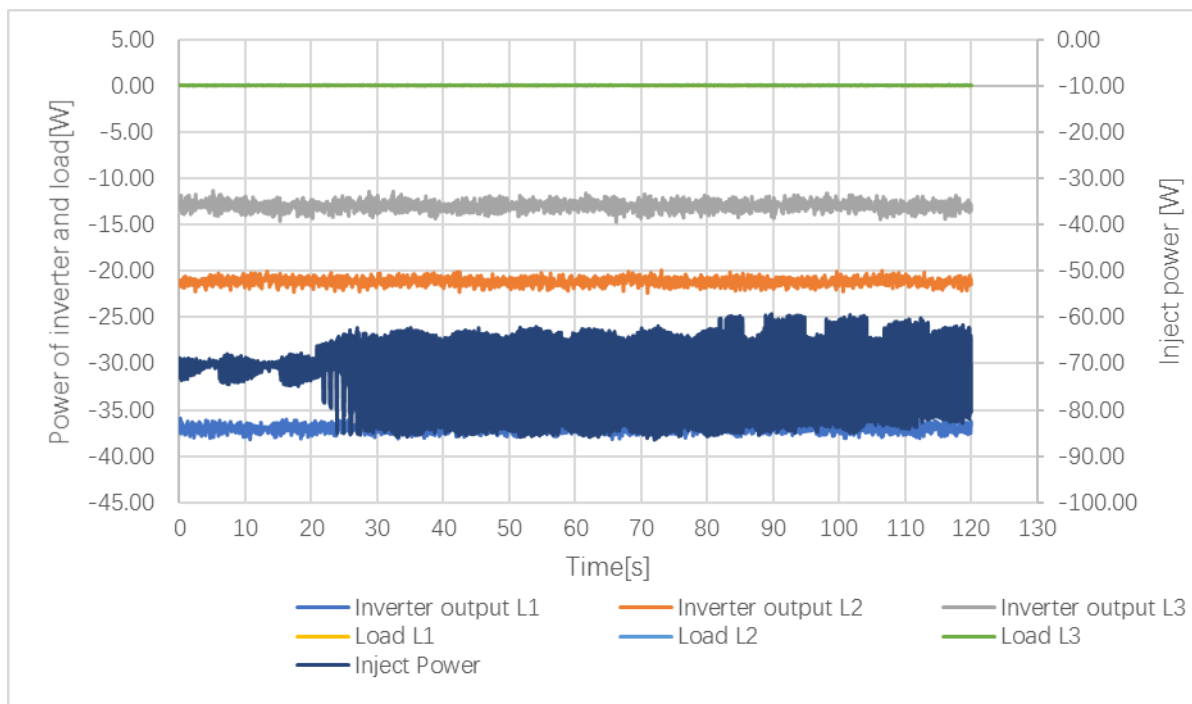


UNE 217001:2015 IN			
Clause	Requirement – Test	Result – Remark	Verdict

Graph_ (15%, 15%, 15%) load

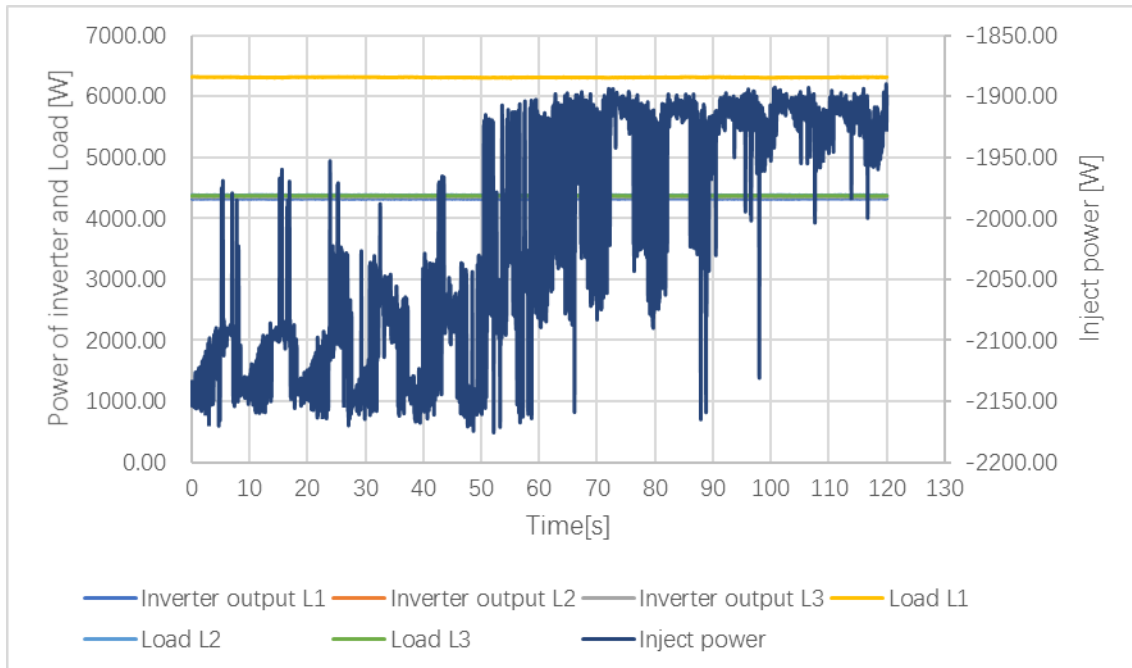


Graph_ (0%, 0%, 0%) load

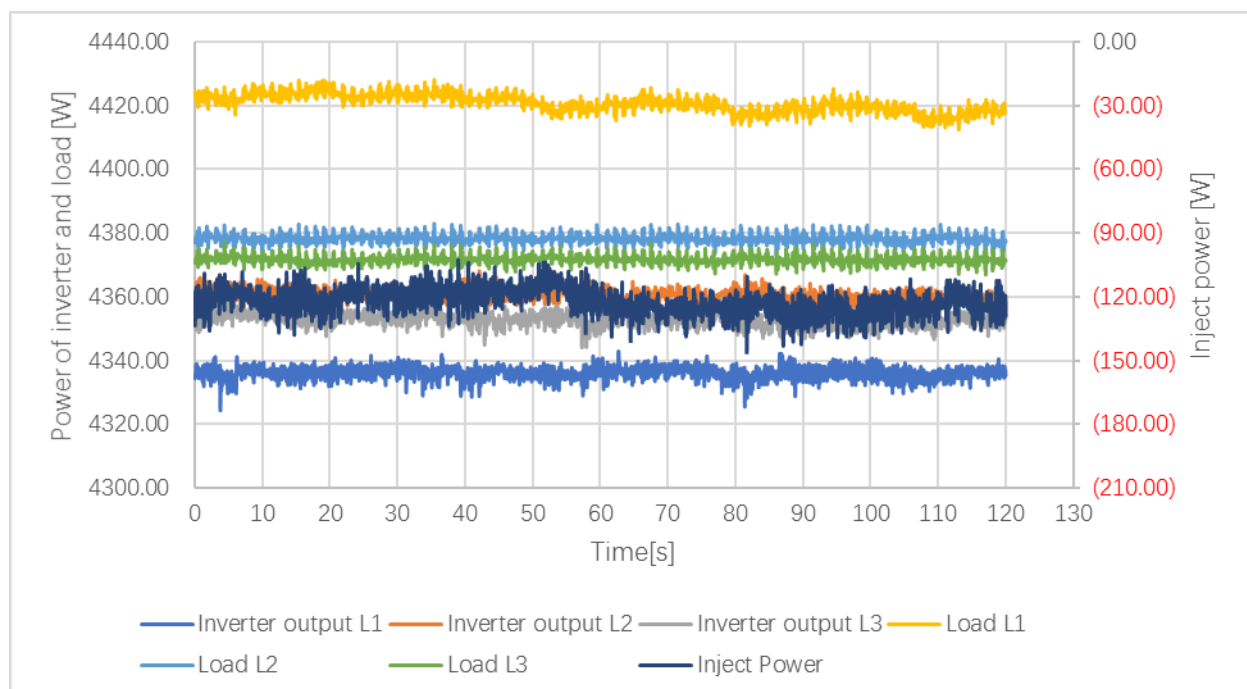


UNE 217001:2015 IN			
Clause	Requirement – Test	Result – Remark	Verdict

Graph_ (95%, 65%, 65%) load

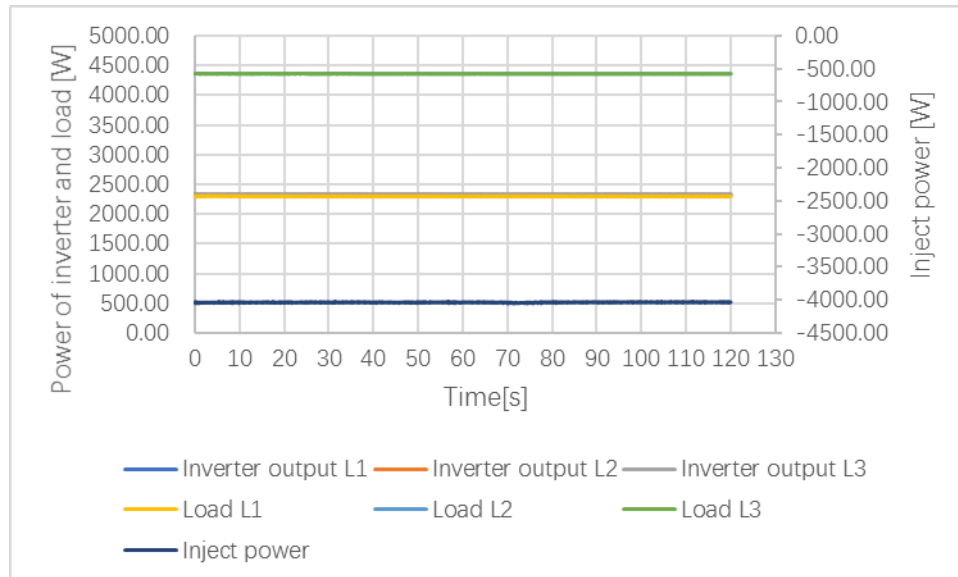


Graph_ (65%, 65%, 65%) load



UNE 217001:2015 IN			
Clause	Requirement – Test	Result – Remark	Verdict

Graph_ (35%, 65%, 65%) load

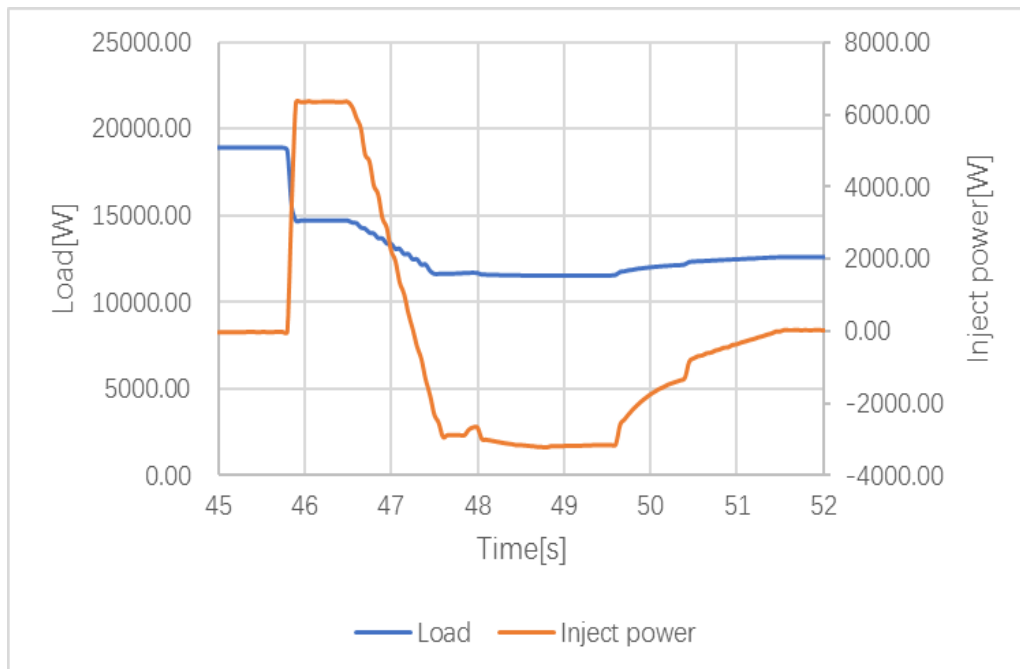
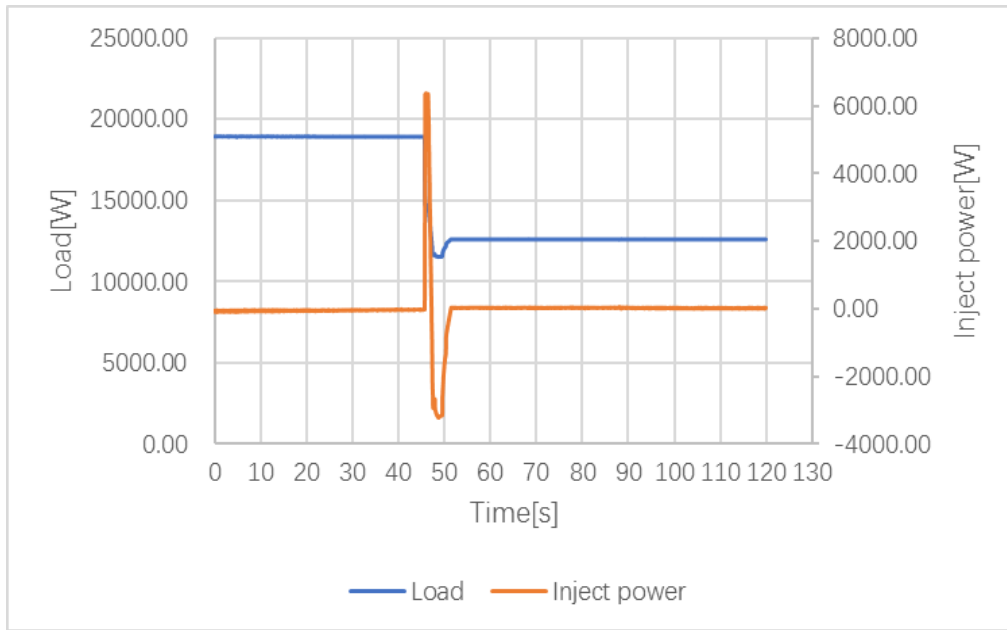


UNE 217001:2015 IN			
Clause	Requirement – Test	Result – Remark	Verdict

5.2	Response to load disconnections						P	
Step	Initial Load	Final load	After disconnection re-adjust time <2s			Frequency [Hz]		
1	95%	65%	1.40s	1.45s	1.30s	50.01	50.01	50.01
2	95%	35%	1.40s	1.35s	1.15s	50.01	50.01	50.01
3	95%	0%	0.50s	0.80s	0.85s	50.01	49.97	50.07
4	65%	35%	0.95s	1.00s	1.20s	50.02	50.01	50.01
5	65%	0%	0.60s	0.70s	0.90s	50.01	50.06	50.05
6	35%	0%	0.55	0.70s	0.45s	50.08	50.01	50.01

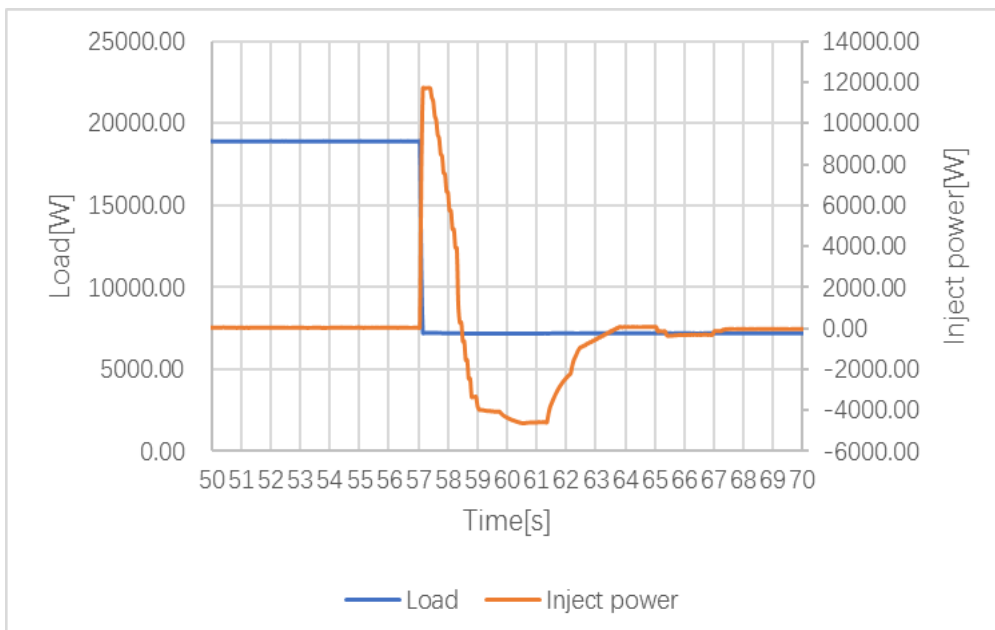
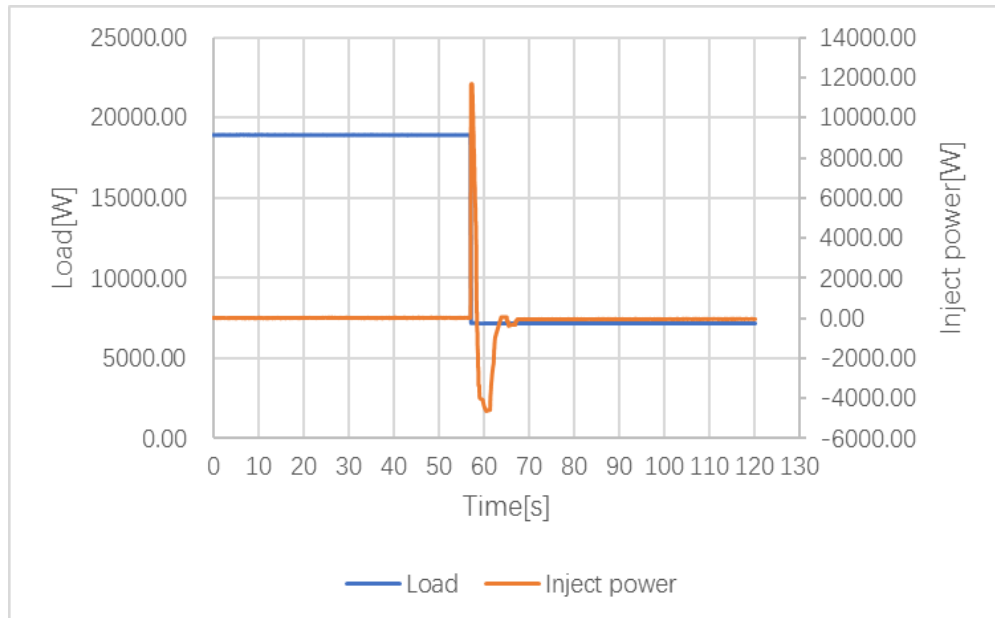
UNE 217001:2015 IN			
Clause	Requirement – Test	Result – Remark	Verdict

Graph 1_95% to 65%



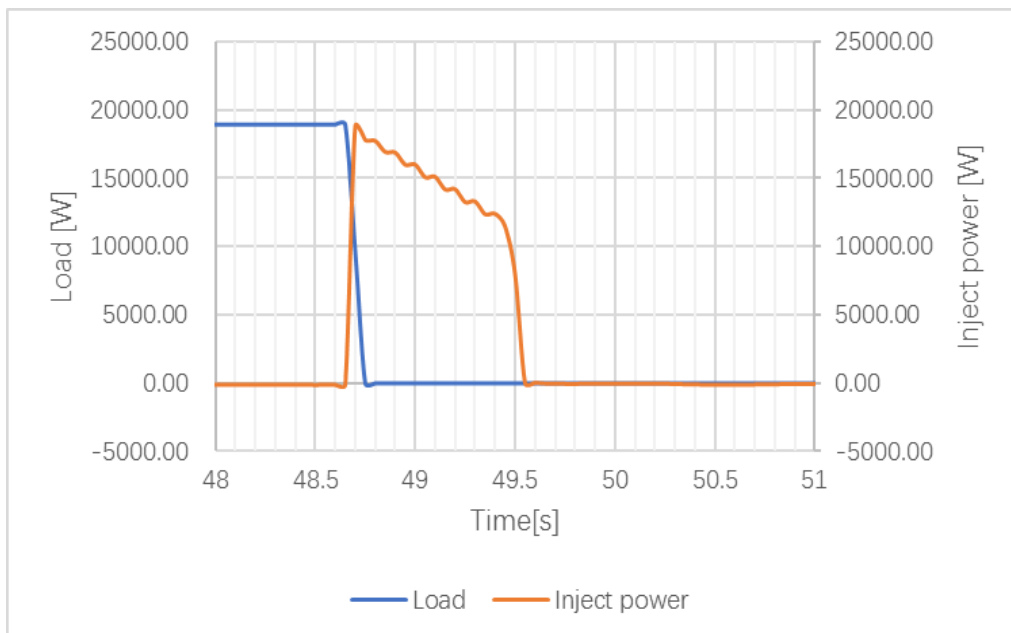
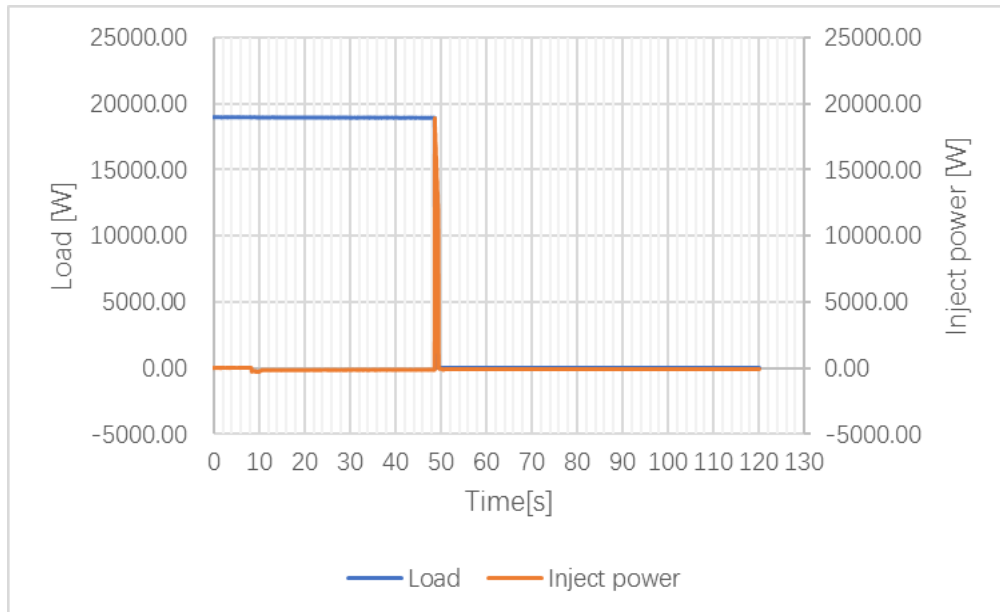
UNE 217001:2015 IN			
Clause	Requirement – Test	Result – Remark	Verdict

Graph 2_95% to 35%



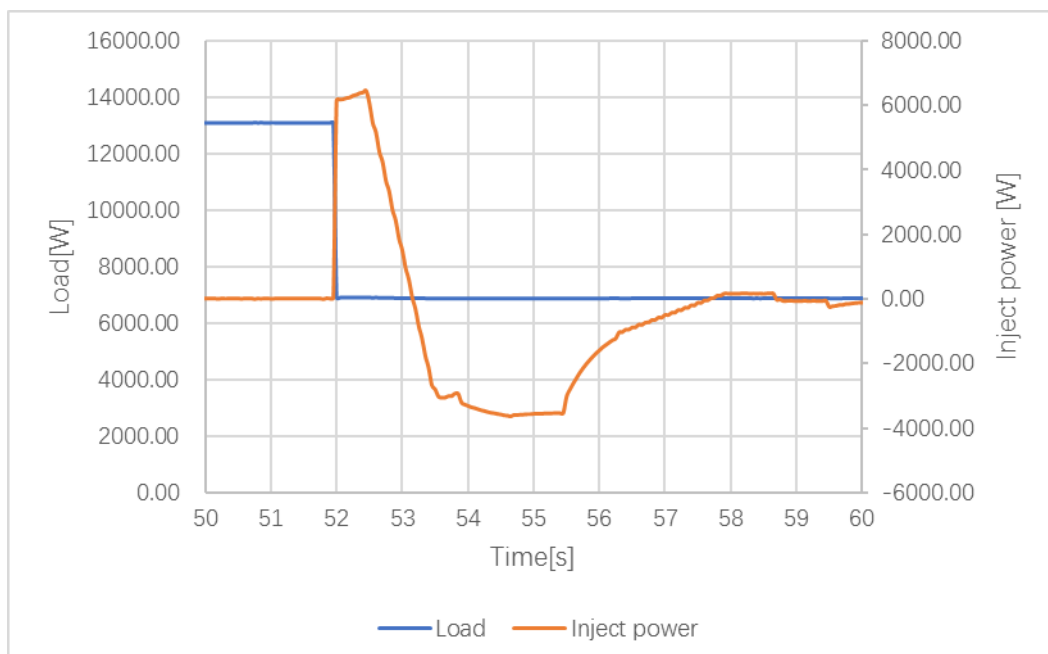
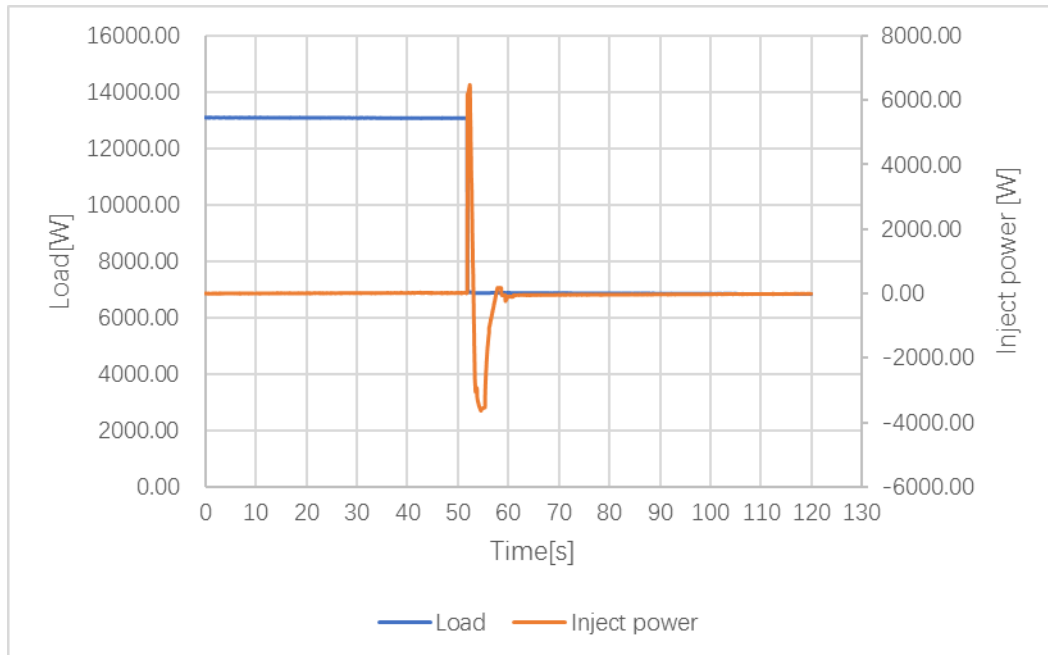
UNE 217001:2015 IN			
Clause	Requirement – Test	Result – Remark	Verdict

Graph 3_95% to 0%



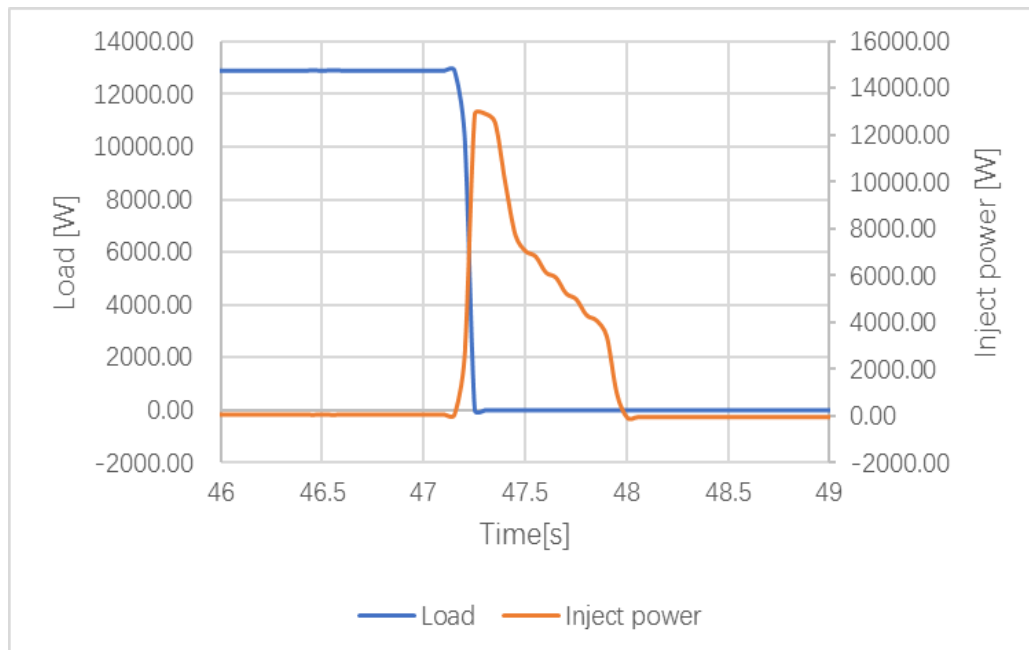
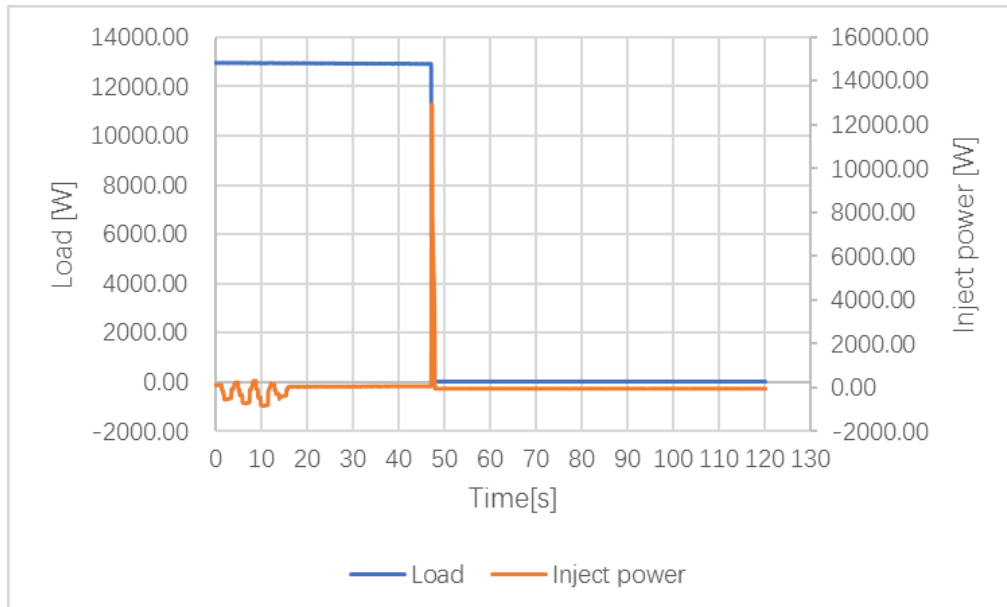
UNE 217001:2015 IN			
Clause	Requirement – Test	Result – Remark	Verdict

Graph 4_65% to 35%



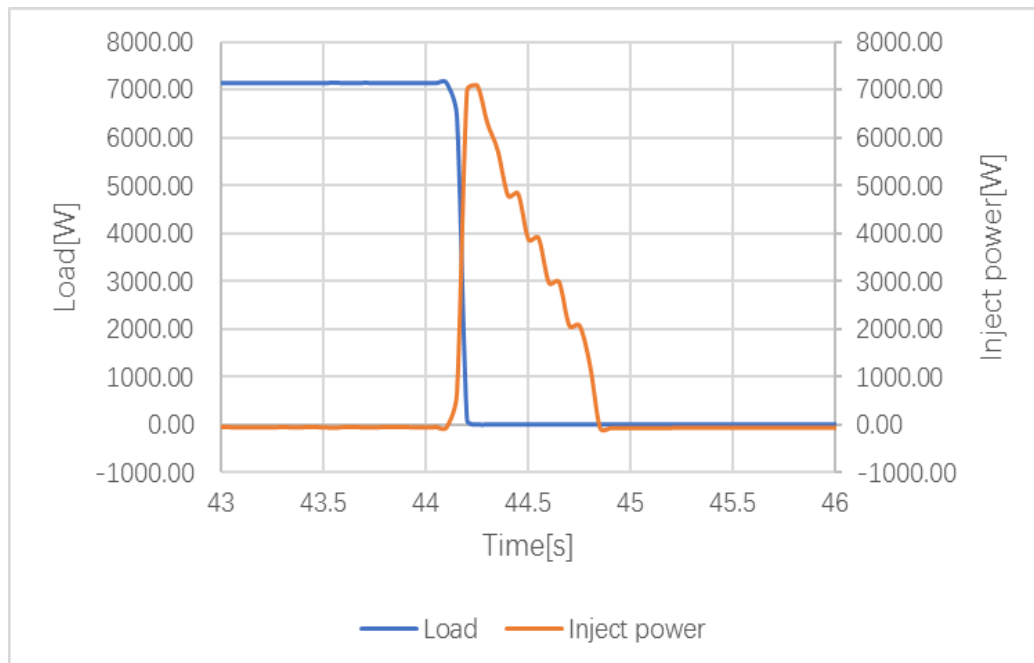
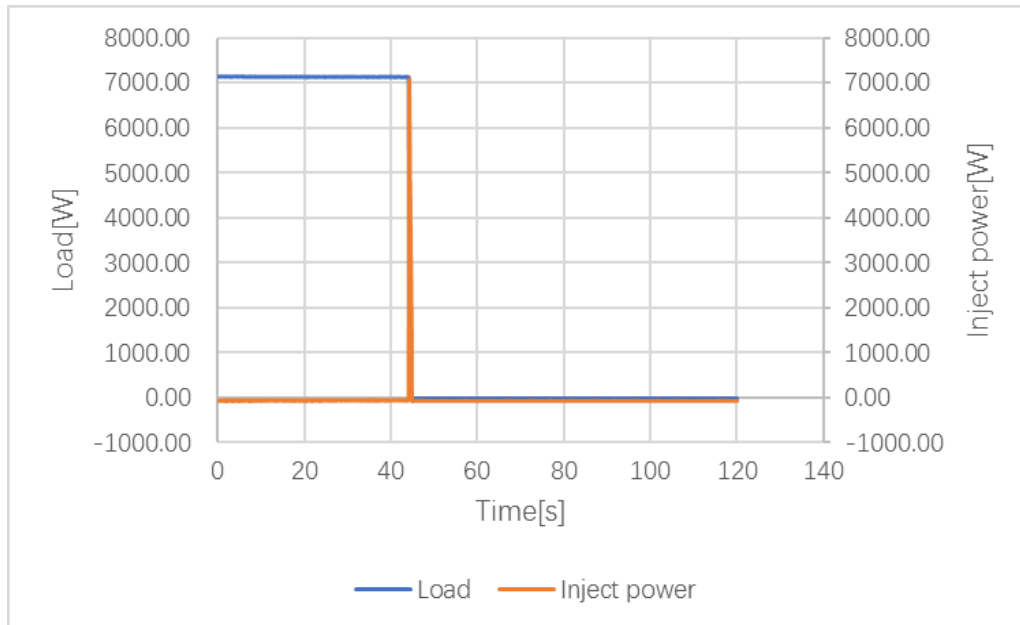
UNE 217001:2015 IN			
Clause	Requirement – Test	Result – Remark	Verdict

Graph 5_65% to 0%



UNE 217001:2015 IN			
Clause	Requirement – Test	Result – Remark	Verdict

Graph 6_35% to 0%

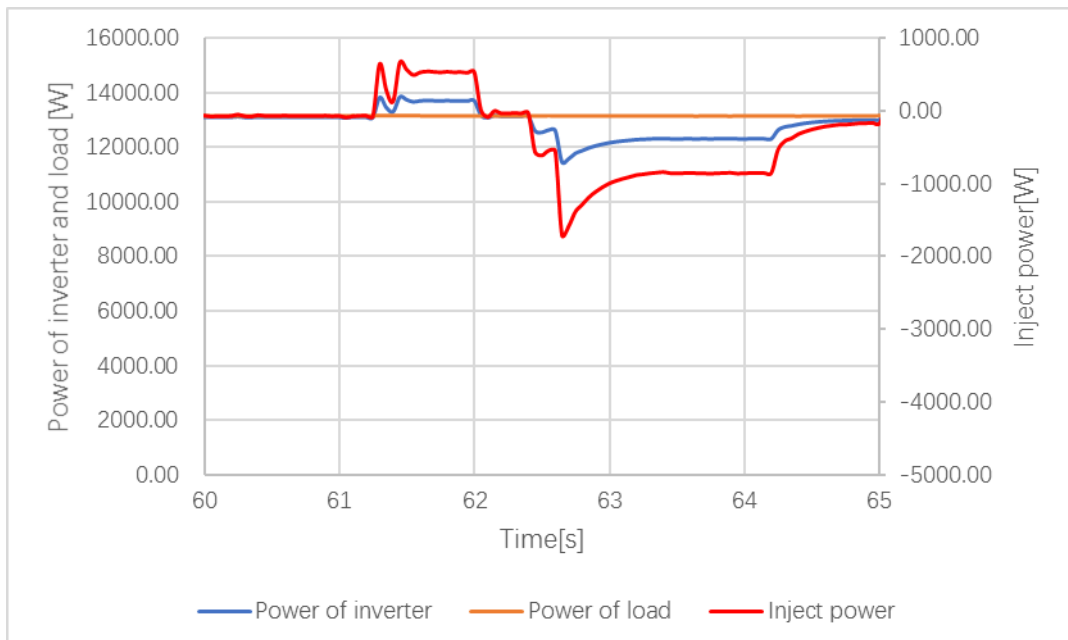
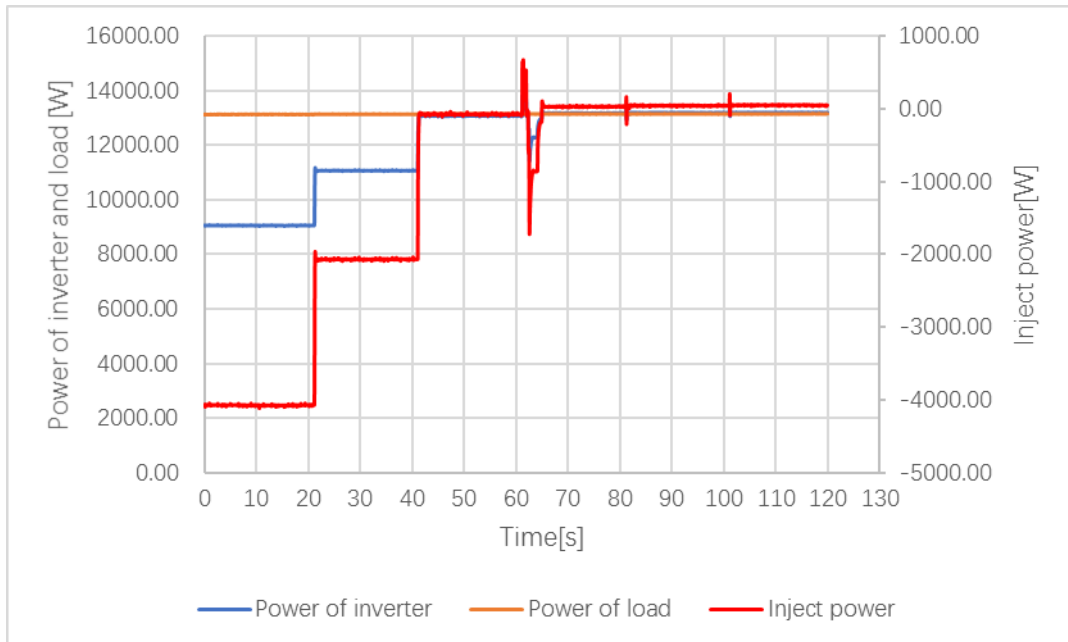


UNE 217001:2015 IN			
Clause	Requirement – Test	Result – Remark	Verdict

5.3	Response to power increases in the primary energy source					P
Step	Power of generator	load	re-adjust time <2s			
1	45%	65%	See graph 1 (0.85s)	See graph 2 (0.90s)	See graph 3 (0.10s)	
2	55%	65%				
3	65%	65%				
4	75%	65%				
5	85%	65%				
6	95%	65%				

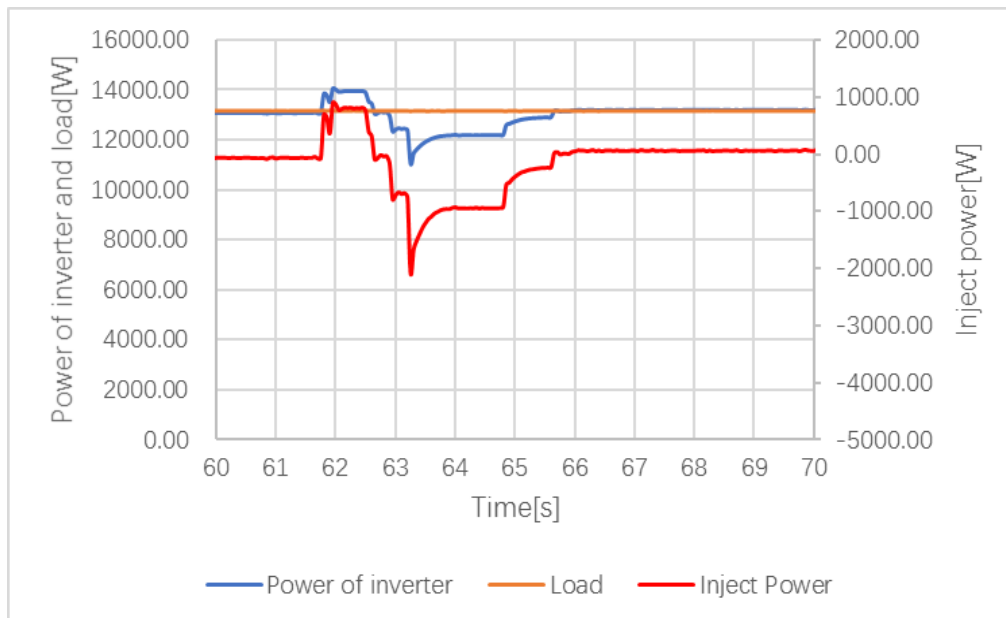
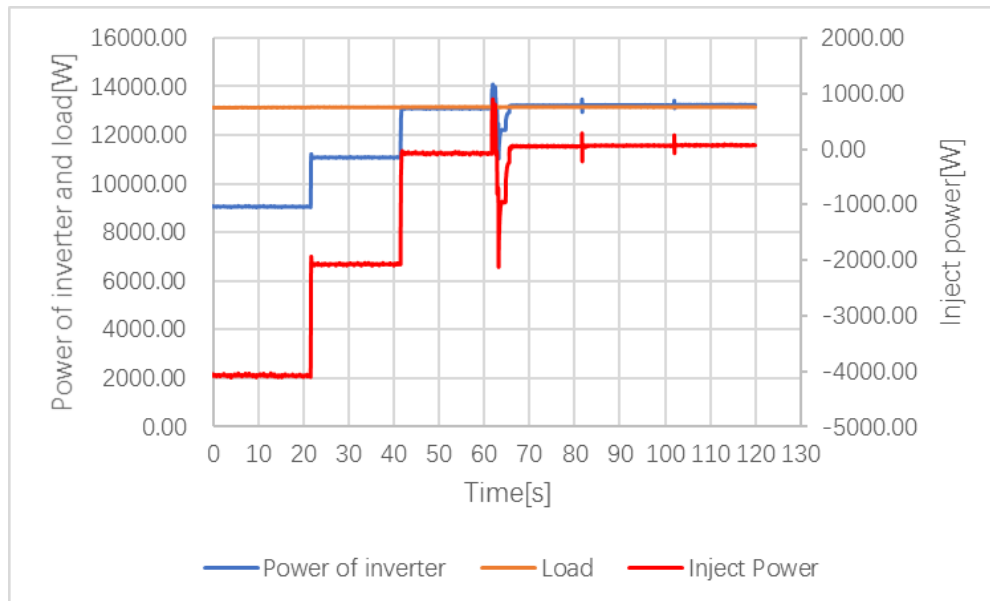
UNE 217001:2015 IN			
Clause	Requirement – Test	Result – Remark	Verdict

Graph 1



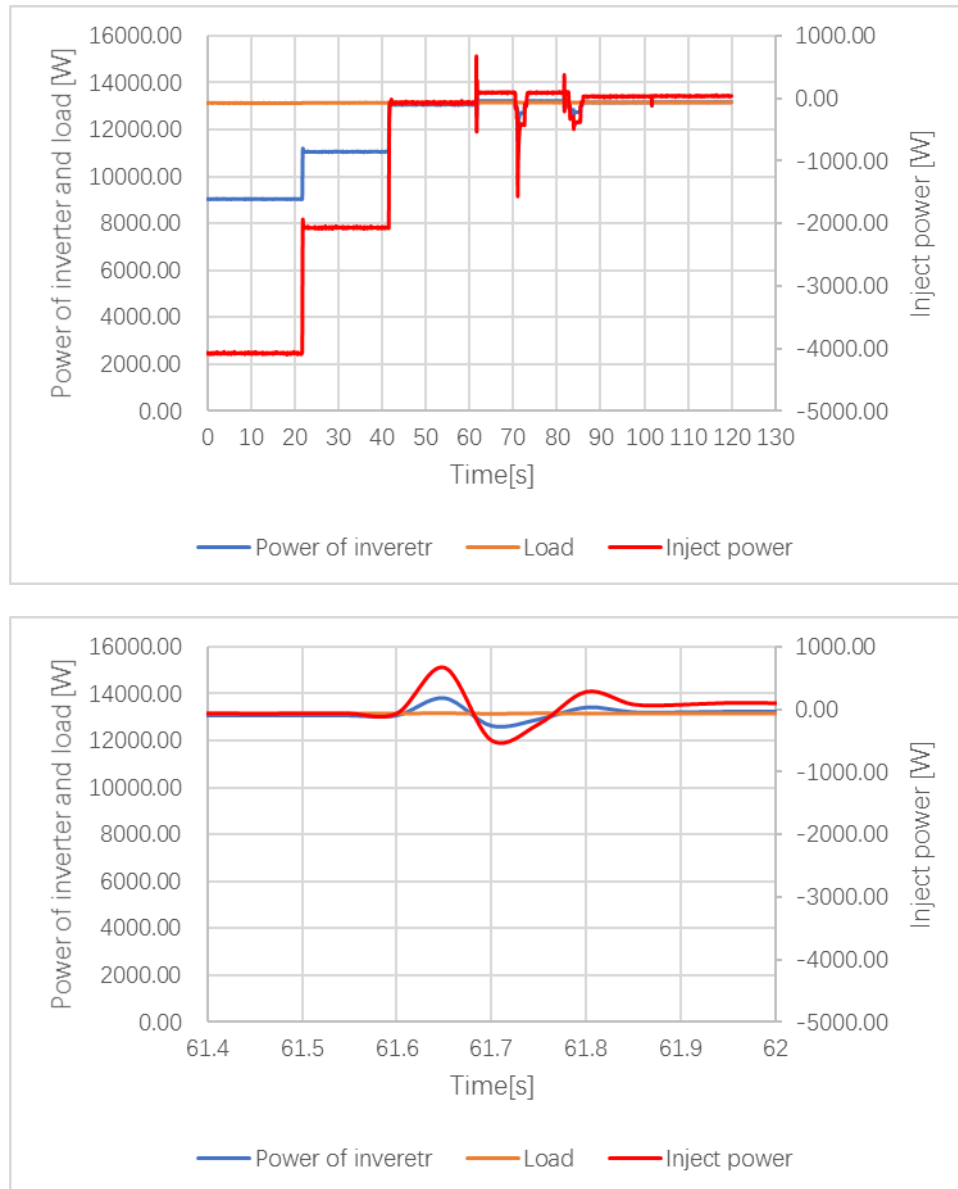
UNE 217001:2015 IN			
Clause	Requirement – Test	Result – Remark	Verdict

Graph 2



UNE 217001:2015 IN			
Clause	Requirement – Test	Result – Remark	Verdict

Graph 3



UNE 217001:2015 IN			
Clause	Requirement – Test	Result – Remark	Verdict

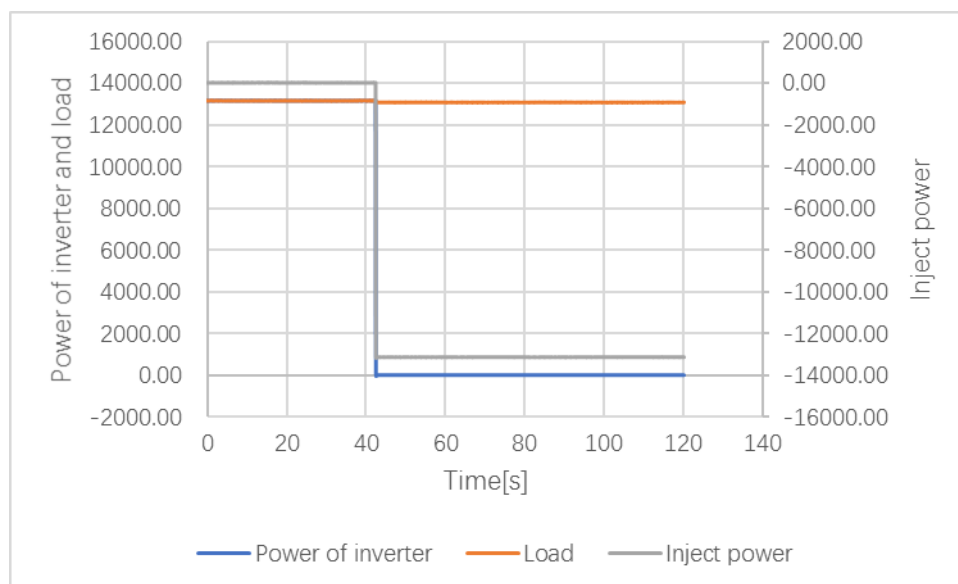
5.4	Action in case of loss of communications			P
Step	Power of generator	load	Cut off communication re-adjust time <2s	
1	100%	65%	622.8ms	
2	100%	65%	712.0ms	
3	100%	65%	702.0ms	

UNE 217001:2015 IN			
Clause	Requirement – Test	Result – Remark	Verdict

Graph 1



CH1 denotes current of inverter, CH2 denotes current of load, CH3 denotes current of Grid, CH4 denotes trip signal of communication

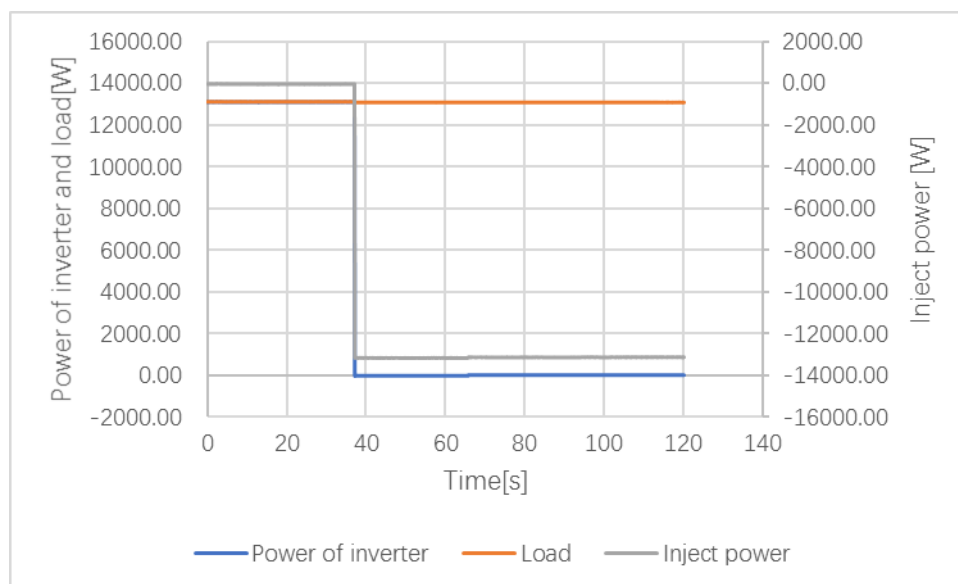


UNE 217001:2015 IN			
Clause	Requirement – Test	Result – Remark	Verdict

Graph 2



CH1 denotes current of inverter, CH2 denotes current of load, CH3 denotes current of Grid, CH4 denotes trip signal of communication

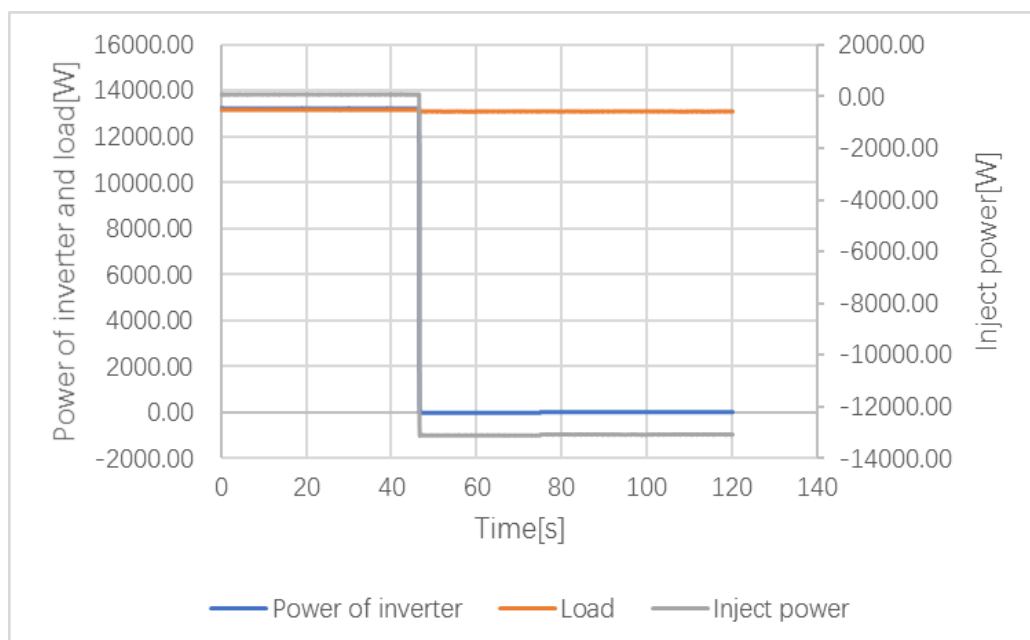


UNE 217001:2015 IN			
Clause	Requirement – Test	Result – Remark	Verdict

Graph 3



CH1 denotes current of inverter, CH2 denotes current of load, CH3 denotes current of Grid, CH4 denotes trip signal of communication



Appendix: photos



Front view of inverter



Meter view

End of Report)



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Add: SAJ Innovation Park, No.9, Lizhishan Road, Science City, Guangzhou High-tech Zone, Guangdong, P.R.China.

EU Declaration of Conformity

We Guangzhou Sanjing Electric Co., Ltd.

No.9, Lizhishan Road, Science City, Guangzhou High-tech Zone, Guangdong, P.R.China

Declare under our own responsibility that the product

Name/Trademark:



Model:

Single phase inverter: R5-0.7K-S1, R5-1K-S1, R5-1.5K-S1, R5-2K-S1, R5-2.5K-S1, R5-3K-S1,
R5-0.7K-S1-15, R5-1K-S1-15, R5-1.5K-S1-15, R5-2K-S1-15,
R5-2.5K-S1-15, R5-3K-S1-15, R5-3K-S2, R5-3.6K-S2, R5-4K-S2,
R5-5K-S2, R5-6K-S2, R5-7K-S2, R5-8K-S2, R5-3K-S2-15, R5-3.6K-S2-15,
R5-4K-S2-15, R5-5K-S2-15, R5-6K-S2-15, R5-7K-S2-15, R5-8K-S2-15

Three-phase inverter: R5-3K-T2, R5-4K-T2, R5-5K-T2, R5-6K-T2, R5-8K-T2, R5-9K-T2,
R5-10K-T2, R5-12K-T2, R5-13K-T2, R5-15K-T2, R5-17K-T2, R5-20K-T2
R5-3K-T2-15, R5-4K-T2-15, R5-5K-T2-15, R5-6K-T2-15, R5-8K-T2-15,
R5-9K-T2-15, R5-10K-T2-15, R5-12K-T2-15

Comply with the following directives and regulations:

- 2014/35/EU (Low Voltage Directive)
- 2014/30/EU (EMC Directive)
- 2011/65/EU (RoHS Directive)
- DIRECTIVE (EU) 2015/863
- Commission Regulation (EU) 2016/631 (RFG)

For the evaluation of the compliance with these Directives and Regulations, the following standards/requirements were applied:

Safety: EN 62109-1:2010, EN 62109-2:2011

EMC: EN 61000-6-1:2019

EN 61000-6-2:2019

EN 61000-6-3:2021

EN 61000-6-4:2019

EN 61000-3-2:2014(Maximum AC current $\leq 16A$)

EN 61000-3-3:2013(Maximum AC current $\leq 16A$)

EN 61000-3-11:2000(Maximum AC current $> 16A$)

EN 61000-3-12:2011(Maximum AC current $> 16A$)

RoHS: EN 50581: 2012

RFG: EN 50549-1: 2019

Notified body: TÜV Rheinland

INTERTEK



Guangzhou

September 29th, 2022

Director of New Energy

Place

Date

Signature



广州三晶电气股份有限公司

Guangzhou Sanjing Electric Co., Ltd.

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EU Declaration of Conformity

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Name/Trademark:



Model:

Single phase inverter: R5-0.7K-S1, R5-1K-S1, R5-1.5K-S1, R5-2K-S1, R5-2.5K-S1, R5-3K-S1,
R5-3K-S2, R5-3.6K-S2, R5-4K-S2, R5-5K-S2, R5-6K-S2, R5-7K-S2,
R5-8K-S2

Three-phase inverter: R5-3K-T2, R5-4K-T2, R5-5K-T2, R5-6K-T2, R5-8K-T2, R5-9K-T2,
R5-10K-T2, R5-12K-T2, R5-13K-T2, R5-15K-T2, R5-17K-T2, R5-20K-T2

Comply with the following directives and regulations:

- 2014/35/EU (Low Voltage Directive)
- 2014/30/EU (EMC Directive)
- 2011/65/EU (RoHS Directive)
- DIRECTIVE (EU) 2015/863

For the evaluation of the compliance with these Directives and Regulations, the following standards/requirements were applied:

Safety: EN 62109-1:2010

EN 62109-2:2011

EMC: EN 61000-6-1:2007

EN 61000-6-2:2005,

EN 61000-6-3:2007+A1:2011

EN 61000-6-4:2007+A1:2011

EN 61000-3-2:2014(Maximum AC current $\leq$ 16A)

EN 61000-3-3:2013(Maximum AC current $\leq$ 16A)

EN 61000-3-11:2000(Maximum AC current $>$ 16A)

EN 61000-3-12:2011(Maximum AC current $>$ 16A)

RoHS: EN 50581: 2012

Notified Bodies: TÜV Rheinland

INTERTEK

Guangzhou

Place

December 21, 2020

Date

Director of New Energy: Li Yun

Signature

Li Yun



广州三晶电气股份有限公司

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R5-3K-S2, R5-3.6K-S2, R5-4K-S2, R5-5K-S2, R5-6K-S2, R5-7K-S2,
R5-8K-S2

Three-phase inverter: R5-3K-T2, R5-4K-T2, R5-5K-T2, R5-6K-T2, R5-8K-T2, R5-9K-T2,
R5-10K-T2, R5-12K-T2, R5-13K-T2, R5-15K-T2, R5-17K-T2, R5-20K-T2

Comply with the following directives and regulations:

- 2014/35/EU (Low Voltage Directive)
- 2014/30/EU (EMC Directive)
- 2011/65/EU (RoHS Directive)
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EN 62109-2:2011
EMC: EN 61000-6-1:2007
EN 61000-6-2:2005,
EN 61000-6-3:2007+A1:2011
EN 61000-6-4:2007+A1:2011
EN 61000-3-2:2014(Maximum AC current $\leq$ 16A)
EN 61000-3-3:2013(Maximum AC current $\leq$ 16A)
EN 61000-3-11:2000(Maximum AC current $>$ 16A)
EN 61000-3-12:2011(Maximum AC current $>$ 16A)
RoHS: EN 50581: 2012

Notified Bodies: TÜV Rheinland
INTERTEK

Guangzhou
Place

December 21, 2020
Date

Director of New Energy: Li Yun

Signature