

Prüfbericht-Nr.: Test report no.:	CN23YREH 001	Auftrags-Nr.: Order no.:	244495829	Seite 1 von 12 Page 1 of 12	
Kunden-Referenz-Nr.: Client reference no.:	2522172	Auftragsdatum: Order date:	2023-02-23		
Auftraggeber: Client:	Shenzhen Sinexcel Isuna Energy Technology Co., Ltd Room 301, Building 6, BaiWangXin High-tech Industrial Park, Nanshan District, Shenzhen, 518055 Guangdong P.R. China				
Prüfgegenstand: Test item:	Hybrid Inverter				
Bezeichnung / Typ-Nr.: Identification / Type no.:	Isuna 10000T, Isuna 12000T, Isuna 15000T, Isuna 18000T, Isuna 20000T				
Auftrags-Inhalt: Order content:	AK Certification				
Prüfgrundlage: Test specification:	G99/1-9/10.22				
Wareneingangsdatum: Date of sample receipt:	2023-07-28				
Prüfmuster-Nr.: Test sample no.:	A003527841-002				
Prüfzeitraum: Testing period:	2023-07-28 – 2023-09-11				
Ort der Prüfung: Place of testing:	Shenzhen Sinexcel Isuna Energy Technology Co., Ltd.				
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.				
Prüfergebnis*: Test result*:	Pass				
geprüft von: tested by:			genehmigt von: authorized by:		
Datum: Date:	2023-09-11		Ausstellungsdatum: Issue date:	2023-09-11	
Stellung / Position:	Project Engineer		Stellung / Position:	Reviewer	
Sonstiges / Other:					
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:			Prüfmuster vollständig und unbeschädigt Test item complete and undamaged		
* Legende: P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet * Legend: P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested					
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the above mentioned test sample as. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>					

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Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse – Bemerkungen/ Measuring results - Remarks	Ergebnis Result
1	Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. <i>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system.</i> <i>Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</i>		
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3	Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt. <i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.</i> <i>Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i>		
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. <i>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</i>		

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Liste der verwendeten Prüfmittel
List of used test equipment

Equip.	Description	Model	Manufacturer	Last Date DD.MM.YYYY	Due Date DD.MM.YYYY
G1819288	20-Channel Armature Multiplexer	34901A	Agilent	25.06.2023	25.06.2024
G1819287	20-Channel Armature Multiplexer	34901A	Agilent	25.06.2023	25.06.2024
G1819286	20-Channel Armature Multiplexer	34901A	Agilent	25.06.2023	25.06.2024
G1819285	Data Acquisiton/Switch Unit	34970A	Agilent	25.06.2023	25.06.2024
G1819284	Caliper	0~ 150mm	Shang Liang	07.06.2023	07.06.2024
G1819283	AC Test Load	ACLT-6150R	INNET INTERNAT IONAL	NA*	NA*
G1819282	Anti-islanding Protection test Load	ACLT-3830H	INNET INTERNAT IONAL	NA*	NA*
G1819280	PV array simulator	62150H-1000S	Chroma Co.	NA*	NA*
G1819279	PV array simulator	62150H-1000S	Chroma Co.	NA*	NA*
G1819278	PV array simulator	62150H-1000S	Chroma Co.	NA*	NA*
G1819277	PV array simulator	62150H-1000S	Chroma Co.	NA*	NA*
G1819275	Temperature and Humidity	175H1	testo	15.12.2022	15.12.2023
G1819274	Impedance Network Device	ACLT-6150	QUNLING Energy Resources	02.02.2023	02.02.2024
G1819272	Leakage Current Testing Network	IEC 60990, Figure 4	Shanghai Anbiao Co., Ltd.	07.07.2023	07.07.2024
G1819271	AC/DC Current Probe	TCP303	Tektronix	07.07.2023	07.07.2024
G1819270	AC/DC Current Probe Amplifier	TCPA300	Tektronix	07.07.2023	07.07.2024
G1819268	Anti-islanding test detection devices	ACLT-4830H	QUNLING Energy Resources	NA*	NA*
G1819267	T-Power Software	TP100-P-LVHA/STP	JAPAN, Yokogawa	NA*	NA*
G1819266	Power Analyser(WT3000)	WT3000	JAPAN, Yokogawa	26.05.2023	26.05.2024
G1819265	ScopeCoder	DL850	JAPAN, Yokogawa	26.05.2023	26.05.2024
9057703	ScopeCoder	DL950	JAPAN, YokoGaWa	07.07.2023	07.07.2024
9057664	Climate Chamber	SETH-Z-120UF	ESPEC	30.03.2023	30.03.2024
9057663	DC Source	PSB 12000-40 4U	EA	07.07.2023	07.07.2024
9057662	DC Source	PSB 12000-40 4U	EA	07.07.2023	07.07.2024
9057661	DC Source	PSB 12000-40 4U	EA	07.07.2023	07.07.2024
9057660	Regenerative Grid Simulator	61800-100	Chroma	07.06.2023	07.06.2024
9057436	Regenerative Grid Simulator	61800-100	Chroma	07.06.2023	07.06.2024
9057434	Regenerative Grid Simulator	61800-100	Chroma	07.06.2023	07.06.2024
9017080	Oscilloscope	MDO3024	Tektronix	26.05.2023	26.05.2024
9017078	Programmable AC Source(61860)	61860	Chroma ATE INC.	NA*	NA*
9017077	Current Sensor(For WT3000)	IT 200-S	LEM	26.05.2023	26.05.2024
9017076	Current Sensor(For WT3000)	IT 200-S	LEM	26.05.2023	26.05.2024
9017075	Current Sensor(For WT3000)	IT 200-S	LEM	26.05.2023	26.05.2024
9017074	Current Sensor(For WT3000)	IT 200-S	LEM	26.05.2023	26.05.2024
9017073	Power Analyser(DEWETRON)	DEWE2-PA7	Austria, DEWETRON	07.07.2023	07.07.2024

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Produktbeschreibung Product description

Copy of marking plate:

Hybrid Inverter
Model name: Isuna 10000T

PV Port

MPPT Voltage 180 to 960d.c.V
Max. Input Voltage 1000d.c.V
Max. Input Current 2×25d.c.A
Short-Circuit Current 2×30d.c.A

Battery Port

Voltage Range 180 to 800d.c.V
Max. Charge Current 2×25d.c.A
Max. Discharge Current 2×25d.c.A

AC Input / Output Port

Nom. Voltage 3L/N/PE 230/400a.c.V
3L/N/PE 220/380a.c.V
Nom. Frequency 50/60Hz
Max. Input Current 29a.c.A
Max. Input Apparent Power 20kVA
Max. Output Current 16a.c.A
Max. Output Apparent Power 11kVA

Back-up Output Port

Nom. Voltage 3L/N/PE 230/400a.c.V
3L/N/PE 220/380a.c.V
Nom. Frequency 50/60Hz
Max. Output Current 16a.c.A
Max. Output Apparent Power 11kVA

General Data

Power factor -0.8 to 0.8
Protective Class I
Ingress Protection IP65
Operating Temperature -25 to 60℃
Derating Temperature >40℃



Manufacturer: Shenzhen Shexuel Isuna Energy Technology Co., Ltd.
Address: Room 301, Building 6, Ba/Wang/Xin High-tech Industrial Park, Nanshan District, Shenzhen City, China

Made in China

Hybrid Inverter
Model name: Isuna 12000T

PV Port

MPPT Voltage 180 to 960d.c.V
Max. Input Voltage 1000d.c.V
Max. Input Current 2×25d.c.A
Short-Circuit Current 2×30d.c.A

Battery Port

Voltage Range 180 to 800d.c.V
Max. Charge Current 2×25d.c.A
Max. Discharge Current 2×25d.c.A

AC Input / Output Port

Nom. Voltage 3L/N/PE 230/400a.c.V
3L/N/PE 220/380a.c.V
Nom. Frequency 50/60Hz
Max. Input Current 35a.c.A
Max. Input Apparent Power 24kVA
Max. Output Current 20a.c.A
Max. Output Apparent Power 13.2kVA

Back-up Output Port

Nom. Voltage 3L/N/PE 230/400a.c.V
3L/N/PE 220/380a.c.V
Nom. Frequency 50/60Hz
Max. Output Current 20a.c.A
Max. Output Apparent Power 13.2kVA

General Data

Power factor -0.8 to 0.8
Protective Class I
Ingress Protection IP65
Operating Temperature -25 to 60℃
Derating Temperature >40℃



Manufacturer: Shenzhen Shexuel Isuna Energy Technology Co., Ltd.
Address: Room 301, Building 6, Ba/Wang/Xin High-tech Industrial Park, Nanshan District, Shenzhen City, China

Made in China

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Produktbeschreibung
Product description

Hybrid Inverter
Model name: Isuna 15000T

PV Port

MPPT Voltage	180 to 960d.c.V
Max. Input Voltage	1000d.c.V
Max. Input Current	2×25d.c.A
Short-Circuit Current	2×30d.c.A

Battery Port

Voltage Range	180 to 800d.c.V
Max. Charge Current	2×25d.c.A
Max. Discharge Current	2×25d.c.A

AC Input / Output Port

Nom. Voltage	3L/N/PE 230/400a.c.V
	3L/N/PE 220/380a.c.V
Nom. Frequency	50/60Hz
Max. Input Current	44a.c.A
Max. Input Apparent Power	30kVA
Max. Output Current	24a.c.A
Max. Output Apparent Power	16.5kVA

Back-up Output Port

Nom. Voltage	3L/N/PE 230/400a.c.V
	3L/N/PE 220/380a.c.V
Nom. Frequency	50/60Hz
Max. Output Current	24a.c.A
Max. Output Apparent Power	16.5kVA

General Data

Power factor	-0.8 to 0.8
Protective Class	I
Ingress Protection	IP65
Operating Temperature	-25 to 60°C
Derating Temperature	>40°C



Manufacturer: Shenzhen Shexco Isuna Energy Technology Co., Ltd.
Address: Room 301, Building 6, BaWangXin High-tech Industrial Park, Nanshan District, Shenzhen City, China

Made In China

Hybrid Inverter
Model name: Isuna 18000T

PV Port

MPPT Voltage	180 to 960d.c.V
Max. Input Voltage	1000d.c.V
Max. Input Current	2×25d.c.A
Short-Circuit Current	2×30d.c.A

Battery Port

Voltage Range	180 to 800d.c.V
Max. Charge Current	2×25d.c.A
Max. Discharge Current	2×25d.c.A

AC Input / Output Port

Nom. Voltage	3L/N/PE 230/400a.c.V
	3L/N/PE 220/380a.c.V
Nom. Frequency	50/60Hz
Max. Input Current	52a.c.A
Max. Input Apparent Power	36kVA
Max. Output Current	29a.c.A
Max. Output Apparent Power	19.8kVA

Back-up Output Port

Nom. Voltage	3L/N/PE 230/400a.c.V
	3L/N/PE 220/380a.c.V
Nom. Frequency	50/60Hz
Max. Output Current	29a.c.A
Max. Output Apparent Power	19.8kVA

General Data

Power factor	-0.8 to 0.8
Protective Class	I
Ingress Protection	IP65
Operating Temperature	-25 to 60°C
Derating Temperature	>40°C



Manufacturer: Shenzhen Shexco Isuna Energy Technology Co., Ltd.
Address: Room 301, Building 6, BaWangXin High-tech Industrial Park, Nanshan District, Shenzhen City, China

Made In China

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Produktbeschreibung
Product description

Hybrid Inverter
Model name: Isuna 20000T

PV Port

MPPT Voltage	180 to 960d.c.V
Max. Input Voltage	1000d.c.V
Max. Input Current	2×25d.c.A
Short-Circuit Current	2×30d.c.A

Battery Port

Voltage Range	180 to 800d.c.V
Max. Charge Current	2×25d.c.A
Max. Discharge Current	2×25d.c.A

AC Input / Output Port

Nom. Voltage	3L/N/PE 230/400a.c.V
	3L/N/PE 220/380a.c.V
Nom. Frequency	50/60Hz
Max. Input Current	58a.c.A
Max. Input Apparent Power	40kVA
Max. Output Current	32a.c.A
Max. Output Apparent Power	22kVA

Back-up Output Port

Nom. Voltage	3L/N/PE 230/400a.c.V
	3L/N/PE 220/380a.c.V
Nom. Frequency	50/60Hz
Max. Output Current	32a.c.A
Max. Output Apparent Power	22kVA

General Data

Power factor	-0.8 to 0.8
Protective Class	I
Ingress Protection	IP65
Operating Temperature	-25 to 60°C
Derating Temperature	>40°C



Manufacturer: Shenzhen Shexuel Isuna Energy Technology Co., Ltd.
Address: Room 301, Building 6, Ba/WangXin High-tech Industrial Park, Nanshan District,
Shenzhen City, China

Made In China

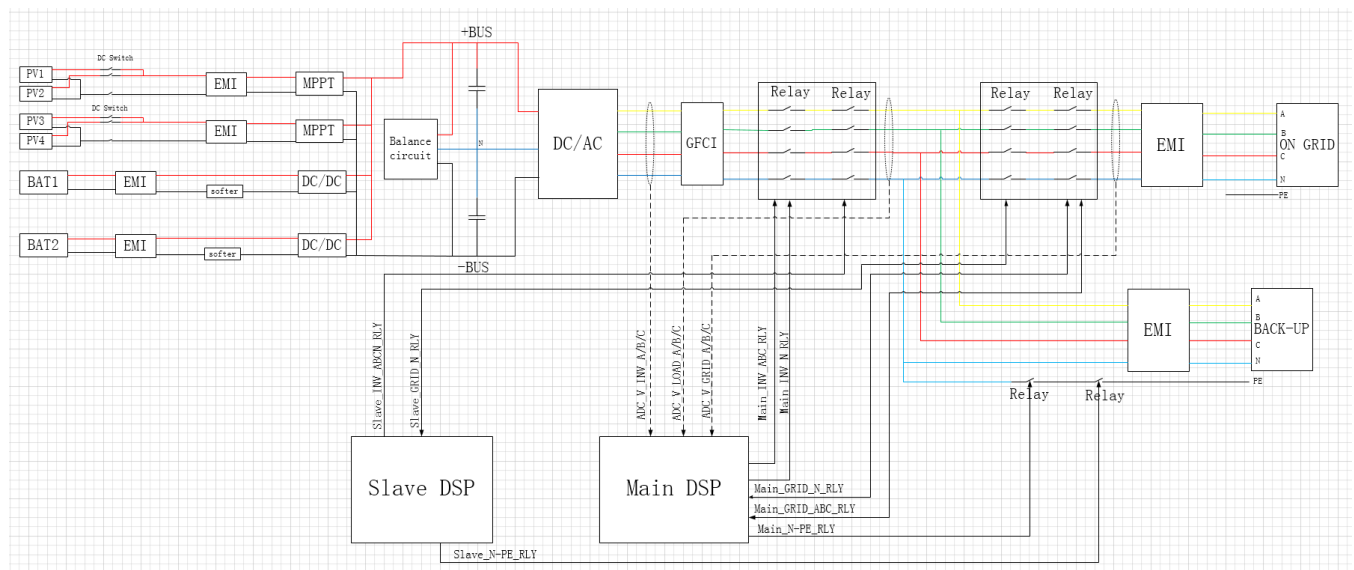
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Produktbeschreibung Product description

Breif description:

The equipment Isuna 10000T, Isuna 12000T, Isuna 15000T, Isuna 18000T and Isuna 20000T are hybrid inverters designed to work with PV panels up to 1000Vd.c and batteries up to 800Vd.c. It is responsible for converting the direct current generated by photovoltaic panels and batteries into Three -phases 230 V, 50 Hz alternative current for feeding into the electrical power distribution grid or the backup load. The Hybrid inverter can operate when it is connected to the electrical power distribution line and as a stand-alone unit or in case of AC grid. The models Isuna 10000T, Isuna 12000T, Isuna 15000T, Isuna 18000T and Isuna 20000T are same family products identical to each other, except for software settings for different output power and current.



Block diagram

The models of Isuna 20000T series are technical equivalent on topological schematic circuit diagram and control solution codes except for the type designation, the input/output rating.

The product was tested on:

Software version: V000

Test condition:

Temperature: 25°C Relative humidity: 65%

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Produktbeschreibung
Product description

Protective function in PCE:

1. PV array insulation resistance detecting
2. Residual current monitoring
3. Over and under grid voltage / frequency protection
4. Anti-islanding protection
5. DC injection current protection
6. Over current protection
7. Over temperature protection and auto derating function
8. Relay self-checking function
9. RCMU self-checking function
10. Relays used in series as grid auto-disconnection devices for redundant NS protection
11. Short-circuit protection relies on external circuit breaks which are specified in the installation manual

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Produktbeschreibung
Product description

Model List:

Model		Isuna 10000T	Isuna 12000T	Isuna 15000T	Isuna 18000T	Isuna 20000T
DC input side	V _{MAX} Input [Vd.c.]	1000				
	MPPT Voltage Range [Vd.c.]	180-960				
	MPPT Full Power Voltage Range[Vd.c.]	250-850	290-850	350-850	410-850	450-850
	Isc PV[Ad.c.]	2×30				
	Maximum DC Input Current [Ad.c.]	2×25				
	Start PV Voltage [Vd.c.]	200				
	Overvoltage Category (OVC)	II				
Battery	Rated Input Voltage [Vd.c.]	400V				
	Input Voltage Range [Vd.c.]	180-800				
	Max. battery charge current [Ad.c.]	2×25	2×25	2×25	2×25	2×25
	Max. battery discharge current [Ad.c.]	2×25	2×25	2×25	2×25	2×25
	Battery Type	Li-ion Battery & Lead-acid Battery				
AC output side	Rated Output Voltage Ur [Va.c.]	3L/N/PE 220/380 3L/N/PE 230/400				
	Rated Output Frequency F _{NETZ} [Hz]	50/60				
	Rated Output Power P _E [kW]	10.0	12.0	15.0	18.0	20.0
	Max.Output Apparent Power[kVA]	11.0	13.2	16.5	19.8	22.0
	Rated. Output Current I _r [Aa.c.]	15/14.5	18/17.4	22.7/21.7	27/26	30/29
	Max. Output Current I _{max} [Aa.c.]	16.0	20.0	24.0	29.0	32.0
	Power Factor cosφ [λ]	-0.8 to 0.8				
	Overvoltage Category (OVC)	III				
Grid input rating	Rated Input Voltage [Va.c.]	3L/N/PE 220/380 3L/N/PE 230/400				
	Rated Input Frequency [Hz]	50/60				
	Max input apparent power	20.0	24.0	30.0	36.0	40.0

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Produktbeschreibung
Product description

	[kVA]					
	Max. input current [Aa.c.]	29.0	35.0	44.0	52.0	58.0
Enclosure Protection (IP)		IP65				
Operating Temperature Range [°C]		-25 to +60 (> 40 derating)				
Humidity (%)		5%~95%				
Pollution degree (PD)		PD·3				
Altitude [m]		4000				
Weight [kg]		35				
Dimension [W*H*D (mm)]		573*509*219				
Cooling Type		forecd·airflow				
Type of inverter		non·isolated				
Software version		V000				
Notes:						

Throughout the test report following abbreviations may be used:

- input	i/p	- Test repeated, similar result(3 times)	TRSR
- output	o/p	- No indication of dielectric breakdown	NB
- short-circuited	s-c	- Cheesecloth remained intact	NC
- overloaded	o-l	- Tissue paper remained intact	NT
- open-circuited	o-c	- No hazards	NH
- normal conditions	N.C.	- The PCE can recover to operate automatically after removing the abnormal condition	RO
- single fault conditions	SFC	- functional insulation	FI
- between parts of opposite polarity	BOP	- basic insulation	BI
- internal protection operated	IPO	- supplementary insulation	SI
- Component damage (list damaged component)	CD	- double insulation	DI
- No component damaged	NCD	- reinforced insulation	RI
Indicate used abbreviations (if any)			

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Absatz <i>Clause</i>	Anforderungen - Prüfungen <i>Requirements - Tests</i>	Messergebnisse - Bemerkungen <i>Measuring results - Remarks</i>	Bewertung <i>Evaluation</i>
10	Protection	Considered, see appended test table for detail.	P
11	Type A Power Generating Module Technical Requirements	Considered, see appended test table for detail.	P

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ZUSATZ-DOKUMENTATION
ADDITIONAL DOCUMENTATION

See attachment for test data.

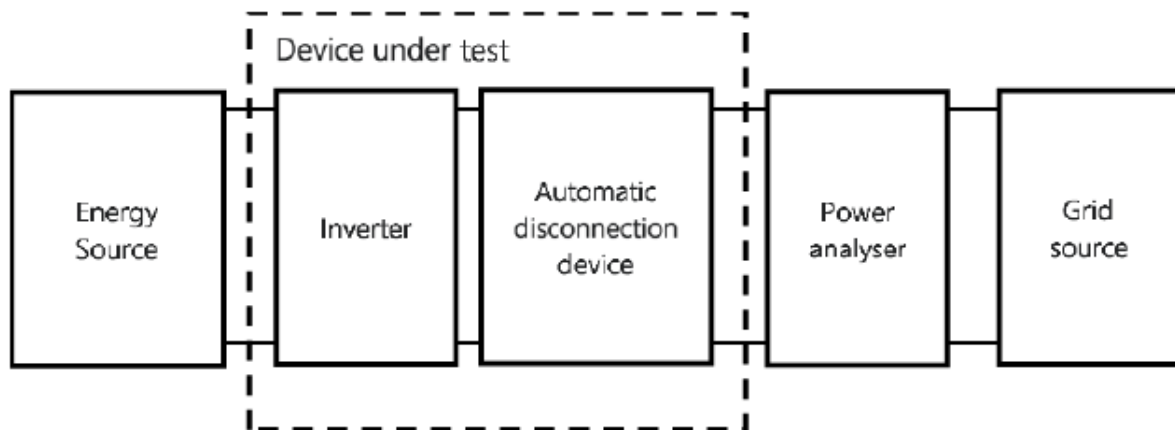
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Project Engineer:	Jiayu Hu	Reviewer:	Allen Hu
Signature:		Signature:	

Testing Location:	
Name:	TÜV Rheinland (Shanghai) Co., Ltd.
Address:	TÜV Rheinland Building, No. 177, Lane 777, West Guangzhong Road, Jingan District, Shanghai 200072, P.R. China

Test bench diagram:



Notes: The automatic disconnection device is integrated in the inverter. See equipment list for detail information.

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<i>Clause</i>	<i>Anforderungen - Prüfungen / Requirements - Tests</i>	<i>Measuring results - Remarks</i>	<i>Evaluation</i>

Clause	Test items	Remark
1	Normal operating range (Operation range)	
2.1	Harmonics current (THDi)	For PGU ≤ 75A, per IEC 61000-3-12
2.2	Harmonics current (linter & lhigher)	Extra test than A2-3 report form, particular for PGU > 75A
3.1	Voltage fluctuations (Flicker)	For PGU ≤ 75A, per IEC 61000-3-11
3.2	Voltage fluctuations (Flicker)	Extra test than A2-3 report form, particular for PGU > 75A
4	DC Injection (Idc)	
5	Power factor	
6	Protection-Frequency tests (OF/UF)	
7	Protection-Frequency tests (OV/UV)	
8.1	Protection-Loss of mains test (Anti-islanding)	
8.2	Vector shift stability test	
8.3	RoCoF stability test (RoCoF)	
9.1	Limited Frequency Sensitive Mode-Over frequency test (LFSM-O)	
9.2	Limited Frequency Sensitive Mode-Under frequency test (LFSM-U)	Extra test than A2-3 report form, particular for type C and type D plant
9.3	Frequency Sensitive Mode (FSM-O)	Extra test than A2-3 report form, particular for type C and type D plant
9.4	Frequency Sensitive Mode (FSM-U)	Extra test than A2-3 report form, particular for type C and type D plant
10	Protection-Reconnection timer (Reconnection)	
11	Fault level contribution	
12	Self-Monitoring solid state switching	N/A, only for solid state switching
13	Wiring functional tests	N/A, none on-site test.
14	Logic interface (input port)	
15	Cyber security	
16	P&Q range	Extra test than A2-3 report form, particular for type B, type C and type D plant
17	Fault Voltage-Ride Through (FVRT)	Extra test than A2-3 report form, particular for type B, type C and type D plant

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1	TABLE: Normal operating range (Operation range)				P
Test Conditions				Measurements	Limitation
U/Un	f [Hz]	cosφ	t [s]		
85%(195.5 V)	47.0	1.00	20	No disconnect	No disconnect
85%(195.5 V)	47.5	1.00	5400	No disconnect	No disconnect
110%(253 V)	51.5	1.00	5400	No disconnect	No disconnect
110%(253 V)	52.0	1.00	900	No disconnect	No disconnect
100%(230 V)	50.0	1.00	5400	No disconnect	No disconnect
RoCoF-frequency change rate 1Hz/s				No disconnect	No disconnect
Note(s): * Function of interface protection and activating active power response to over/under frequency and voltage shall be disable.					

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2.1	TABLE: Harmonics current (THDi)				P
P/Pn[%]	50		100		Limit
Order No.	Measurement				
	[A]	Ih/In [%]	[A]	Ih/In [%]	
1	14.29	49.31	29.05	100.24	--
2	0.28	0.95	0.20	0.70	8.0
3	0.75	2.57	0.79	2.73	--
4	0.14	0.47	0.04	0.14	4.0
5	0.74	2.54	1.11	3.82	10.7
6	0.06	0.21	0.02	0.09	2.67
7	0.38	1.30	0.92	3.17	7.2
8	0.03	0.11	0.04	0.14	2.0
9	0.08	0.27	0.28	0.97	--
10	0.03	0.11	0.03	0.10	1.6
11	0.11	0.38	0.43	1.49	3.1
12	0.03	0.11	0.03	0.10	1.33
13	0.28	0.95	0.32	1.10	2.0
THD ²⁷	4.318		THD ²⁹	6.210	13
PWHD ²⁸	12.790		PWHD ³⁰	12.967	22

Note(s): The worst value of the three phases has been choosed.

Since the nominal current of product $I_n > 75A$, the following extra flicker table 2.2 has been also impelmented per BS EN 61000-4-7, as the requirement of EREC G5.

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3.1	TABLE: Power Quality – Voltage fluctuations and Flicker:							P	
Test start date		2023-08-09		Test end date			2023-08-09		
Test location									
	Starting			Stooping			Running		
	dmax[%]	dc[%]	d(t)[ms]	dmax[%]	dc[%]	d(t)[ms]	P _{st}	P _{lt} 2 hours	
Measured value at test impedance	3.077	2.986	450.0	3.272	3.020	440.0	0.704	0.574	
Z _{ref} Normalised to standard impedance	3.077	2.986	450.0	3.272	3.020	440.0	0.704	0.574	
Z _{max} Normalised to required maximum impedance	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Limitation	4.0%	3.3%	500ms	4.0%	3.3%	500ms	1.0	0.65	
Test impedance Z _{test}	R	0.24		Ω	XI	0.15		Ω	
Z _{ref} Normalised value	R	0.24* 0.4^		Ω	XI	0.15* 0.25^		Ω	
Z _{max} Normalised value	R	N/A		Ω	XI	N/A		Ω	
Note(s): The worst value of the three phases has been chosen. Since the nominal current of product I _n >75A, the following extra flicker table 3.2 has been also impelmented per BS EN 61400-21, as the requirement of EREC P28, clause 8.8.									

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4	TABLE: Power quality – DC injection:			P
Test power level	10%	55%		100%
Recorded DC value in Amps	0.029	0.028		0.056
as % of rated AC current	0.100%	0.097%		0.193%
Limit	0.25%	0.25%		0.25%
Note(s):				

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5		TABLE: Power Factor						P
Test Conditions			Measurements					Limit
P/Pn	cosφ	U/Un	P [kW]	Q [kVar]	cosφ	U [V]	I [A]	cosφ
100%	1.00	0.94	18642.6	366.2	0.999	216.3	28.8	>0.95
100%	1.00	1.0	19974.3	469.0	0.999	230.0	29.0	>0.95
100%	1.00	1.1	20136.7	673.5	0.999	253.0	26.6	>0.95
Note(s):								

6		TABLE: Protection-Frequency tests (OF/UF)		P
Condition	Setting [Hz]	Measurement		Limitation
		Trip value [Hz]		
F>>	52.0	51.96		± 0.1% of f _n
F<	47.5	47.50		
F<<	47	47.00		
Condition	Setting [ms]	Measurement		Limitation
		Trip time		
F>>	500	560.6		500-600
F<	20000	20086		20000-20200
F<<	500	510.0		500-600
Condition		Measurement		limitation
F [Hz]	t [s]			
47.7	30	No trip		No trip
47.2	19.5	No trip		No trip
46.8	0.45	No trip		No trip
51.8	120	No trip		No trip
52.2	0.45	No trip		No trip
Note(s):				

7	TABLE: Protection-Voltage tests (OV/UV)					P
Condition	Setting [U/Un]	Measurement				Limitation
		Trip value [V]				
		L1	L2	L3	L123	
U>>	1.19 (1.13*)	273.4	274.3	274.9	273.6	± 1% of U _n
U>	1.14 (1.10*)	262.0	262.7	263.1	261.9	
U<<	0.80	183.8	183.8	184.2	184.4	
Condition	Setting [ms]	Measurement				Limitation
		Trip time				
		L1	L2	L3	L123	
U>>	500	517	578	526	524	500-600
U>	1000	1033	1052	1049	1035	1000-1100
U<<	2500	2543	2548	2543	2592	2500-2600
Condition		Measurement				limitation
U/Un	t [s]					
0.82	5	No trip				No trip
0.78	2.45	No trip				No trip
1.12	5	No trip				No trip
1.17	0.95	No trip				No trip
1.20	0.45	No trip				No trip
Note(s):*: settings for product connect with a non-standard transformer						

8.1		TABLE: Protection-Loss of mains test					P		
Power 100%									
Input : Vdc									
Conditions	P _R [kW]		Q _L [kVar]		Q _C [kVar]	Q _f	Trip time [ms]	Limitation [ms]	
P _R : -10% Q _C : +10%	L1:	6.07	L1:	7.03	L1:	7.40	1.129	57.6	500
	L2:	6.00	L2:	7.11	L2:	7.63	1.156		
	L3:	5.82	L3:	7.06	L3:	7.48	1.148		
P _R : -10% Q _C : +5%	L1:	5.95	L1:	6.89	L1:	6.94	1.105	58.7	500
	L2:	5.88	L2:	6.98	L2:	7.15	1.130		
	L3:	5.70	L3:	6.91	L3:	6.99	1.125		
P _R : -10% Q _C : 0%	L1:	5.97	L1:	6.91	L1:	6.59	1.073	99.6	500
	L2:	5.92	L2:	7.00	L2:	6.83	1.101		
	L3:	5.69	L3:	6.89	L3:	6.60	1.091		
P _R : -10% Q _C : -5%	L1:	5.97	L1:	6.93	L1:	6.23	1.046	58.0	500
	L2:	5.92	L2:	7.02	L2:	6.49	1.073		
	L3:	5.67	L3:	6.98	L3:	6.24	1.062		
P _R : -10% Q _C : -10%	L1:	5.97	L1:	6.92	L1:	5.92	1.022	52.4	500
	L2:	5.92	L2:	7.01	L2:	6.17	1.047		
	L3:	5.70	L3:	6.90	L3:	5.98	1.041		
P _R : -5% Q _C : +10%	L1:	6.41	L1:	7.04	L1:	7.38	1.071	55.2	500
	L2:	6.33	L2:	7.11	L2:	7.60	1.094		
	L3:	6.12	L3:	7.01	L3:	7.39	1.092		
P _R : -5% Q _C : -10%	L1:	6.32	L1:	6.95	L1:	5.94	0.969	54.4	500
	L2:	6.27	L2:	7.04	L2:	6.18	0.993		
	L3:	6.03	L3:	6.90	L3:	5.98	0.988		
P _R : 0% Q _C : +10%	L1:	6.65	L1:	6.94	L1:	7.28	1.018	54.7	500
	L2:	6.60	L2:	7.04	L2:	7.53	1.045		
	L3:	6.37	L3:	6.96	L3:	7.33	1.038		
P _R : -5% Q _C : +5%	L1:	6.36	L1:	6.97	L1:	7.01	1.048	63.6	500
	L2:	6.29	L2:	7.06	L2:	7.23	1.073		
	L3:	6.09	L3:	6.98	L3:	7.05	1.066		
P _R : -5% Q _C : 0%	L1:	6.36	L1:	6.98	L1:	6.66	1.024	90.4	500
	L2:	6.30	L2:	7.07	L2:	6.89	1.045		
	L3:	6.07	L3:	6.93	L3:	6.64	1.036		
P _R : -5% Q _C : -5%	L1:	6.35	L1:	6.97	L1:	6.31	0.996	62.6	500
	L2:	6.29	L2:	7.05	L2:	6.52	1.018		

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	L3: 6.03	L3: 6.90	L3: 6.28	1.013		
P _R : 0% Q _C : +5%	L1: 6.66	L1: 6.93	L1: 6.98	0.994	57.8	500
	L2: 6.60	L2: 7.02	L2: 7.20	1.019		
	L3: 6.35	L3: 6.92	L3: 7.00	1.019		
P _R : 0% Q _C : 0%	L1: 6.57	L1: 6.91	L1: 6.59	0.981	80.4	500
	L2: 6.50	L2: 7.00	L2: 6.81	1.006		
	L3: 6.26	L3: 6.90	L3: 6.59	1.000		
P _R : 0% Q _C : -5%	L1: 6.64	L1: 6.92	L1: 6.23	0.945	54.1	500
	L2: 6.56	L2: 7.01	L2: 6.47	0.973		
	L3: 6.36	L3: 6.94	L3: 6.30	0.967		
P _R : +5% Q _C : +5%	L1: 6.97	L1: 6.96	L1: 7.02	0.959	62.8	500
	L2: 6.90	L2: 7.05	L2: 7.23	0.982		
	L3: 6.74	L3: 6.98	L3: 7.07	0.972		
P _R : +5% Q _C : 0%	L1: 6.98	L1: 6.96	L1: 6.64	0.933	87.8	500
	L2: 6.91	L2: 7.08	L2: 6.89	0.959		
	L3: 6.73	L3: 6.99	L3: 6.69	0.947		
P _R : +5% Q _C : -5%	L1: 6.97	L1: 6.95	L1: 6.31	0.911	55.6	500
	L2: 6.89	L2: 7.04	L2: 6.53	0.935		
	L3: 6.74	L3: 6.99	L3: 6.37	0.924		
P _R : 0% Q _C : -10%	L1: 6.64	L1: 6.91	L1: 5.92	0.922	47.7	500
	L2: 6.56	L2: 7.00	L2: 6.15	0.951		
	L3: 6.39	L3: 6.96	L3: 6.02	0.942		
P _R : +5% Q _C : +10%	L1: 7.01	L1: 7.02	L1: 7.35	0.980	52.2	500
	L2: 6.92	L2: 7.06	L2: 7.55	0.997		
	L3: 6.74	L3: 6.99	L3: 7.36	0.993		
P _R : +5% Q _C : -10%	L1: 6.92	L1: 6.91	L1: 5.95	0.888	39.3	500
	L2: 6.84	L2: 7.00	L2: 6.14	0.912		
	L3: 6.68	L3: 6.94	L3: 6.00	0.903		
P _R : +10% Q _C : +10%	L1: 7.34	L1: 7.01	L1: 7.37	0.938	52.2	500
	L2: 7.26	L2: 7.08	L2: 7.59	0.959		
	L3: 7.00	L3: 6.99	L3: 7.39	0.960		
P _R : +10% Q _C : +5%	L1: 7.27	L1: 6.94	L1: 6.97	0.918	47.6	500
	L2: 7.19	L2: 7.01	L2: 7.17	0.937		
	L3: 6.94	L3: 6.93	L3: 7.01	0.939		
P _R : +10% Q _C : 0%	L1: 7.30	L1: 6.95	L1: 6.64	0.892	105.0	500
	L2: 7.22	L2: 7.04	L2: 6.86	0.917		

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	L3: 7.01	L3: 7.01	L3: 6.72	0.914		
P _R : +10% Q _C : -5%	L1: 7.28	L1: 6.94	L1: 6.26	0.870	47.8	500
	L2: 7.20	L2: 7.03	L2: 6.50	0.897		
	L3: 6.94	L3: 6.94	L3: 6.31	0.891		
P _R : +10% Q _C : -10%	L1: 7.28	L1: 6.94	L1: 5.97	0.849	47.8	500
	L2: 7.20	L2: 7.02	L2: 6.17	0.872		
	L3: 6.97	L3: 6.96	L3: 6.02	0.869		
Power 66%						
Input : Vdc						
Conditions	P _R [kW]	Q _L [kVar]	Q _C [kVar]	Q _f	Trip time [ms]	Limitation [ms]
P _R : 0% Q _C : -5%	L1: 4.70	L1: 4.84	L1: 4.22	0.926	60.6	500
	L2: 4.59	L2: 4.83	L2: 4.39	0.953		
	L3: 4.40	L3: 4.77	L3: 4.27	0.944		
P _R : 0% Q _C : -4%	L1: 4.71	L1: 4.84	L1: 4.24	0.934	56.0	500
	L2: 4.60	L2: 4.84	L2: 4.41	0.963		
	L3: 4.38	L3: 4.74	L3: 4.28	0.952		
P _R : 0% Q _C : -3%	L1: 4.71	L1: 4.83	L1: 4.32	0.938	60.0	500
	L2: 4.60	L2: 4.83	L2: 4.45	0.962		
	L3: 4.40	L3: 4.76	L3: 4.35	0.948		
P _R : 0% Q _C : -2%	L1: 4.72	L1: 4.84	L1: 4.38	0.942	66.4	500
	L2: 4.61	L2: 4.84	L2: 4.52	0.968		
	L3: 4.40	L3: 4.75	L3: 4.38	0.948		
P _R : 0% Q _C : -1%	L1: 4.71	L1: 4.83	L1: 4.40	0.949	72.8	500
	L2: 4.60	L2: 4.84	L2: 4.55	0.976		
	L3: 4.38	L3: 4.74	L3: 4.41	0.961		
P _R : 0% Q _C : 0%	L1: 4.65	L1: 4.82	L1: 4.44	0.960	98.2	500
	L2: 4.56	L2: 4.84	L2: 4.62	0.977		
	L3: 4.34	L3: 4.74	L3: 4.47	0.973		
P _R : 0% Q _C : +1%	L1: 4.73	L1: 4.84	L1: 4.51	0.953	71.0	500
	L2: 4.61	L2: 4.84	L2: 4.67	0.972		
	L3: 4.42	L3: 4.76	L3: 4.54	0.968		
P _R : 0% Q _C : +2%	L1: 4.72	L1: 4.83	L1: 4.54	0.958	94.8	500
	L2: 4.61	L2: 4.83	L2: 4.70	0.976		
	L3: 4.43	L3: 4.77	L3: 4.61	0.973		
P _R : 0% Q _C : +3%	L1: 4.71	L1: 4.82	L1: 4.58	0.963	69.8	500
	L2: 4.60	L2: 4.83	L2: 4.76	0.985		

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	L3: 4.40	L3: 4.75	L3: 4.64	0.978		
P _R : 0% Q _C : +4%	L1: 4.72	L1: 4.83	L1: 4.66	0.970	64.4	500
	L2: 4.60	L2: 4.83	L2: 4.80	0.989		
	L3: 4.41	L3: 4.76	L3: 4.69	0.984		
P _R : 0% Q _C : +5%	L1: 4.71	L1: 4.82	L1: 4.69	0.974	57.8	500
	L2: 4.60	L2: 4.83	L2: 4.84	0.995		
	L3: 4.39	L3: 4.84	L3: 4.71	0.988		
Power 33%						
Input : Vdc						
Conditions	P _R [kW]	Q _L [kVar]	Q _C [kVar]	Q _f	Trip time [ms]	Limitation [ms]
P _R : 0% Q _C : -5%	L1: 2.32	L1: 2.49	L1: 2.03	0.933	60.6	500
	L2: 2.28	L2: 2.47	L2: 2.05	0.938		
	L3: 2.27	L3: 2.48	L3: 2.06	0.946		
P _R : 0% Q _C : -4%	L1: 2.33	L1: 2.50	L1: 2.05	0.928	59.8	500
	L2: 2.28	L2: 2.48	L2: 2.08	0.946		
	L3: 2.26	L3: 2.47	L3: 2.08	0.960		
P _R : 0% Q _C : -3%	L1: 2.33	L1: 2.49	L1: 2.07	0.934	72.8	500
	L2: 2.28	L2: 2.48	L2: 2.10	0.951		
	L3: 2.26	L3: 2.47	L3: 2.11	0.967		
P _R : 0% Q _C : -2%	L1: 2.32	L1: 2.49	L1: 2.10	0.945	80.6	500
	L2: 2.27	L2: 2.47	L2: 2.11	0.955		
	L3: 2.27	L3: 2.48	L3: 2.12	0.959		
P _R : 0% Q _C : -1%	L1: 2.33	L1: 2.50	L1: 2.08	0.935	89.2	500
	L2: 2.28	L2: 2.48	L2: 2.13	0.958		
	L3: 2.26	L3: 2.47	L3: 2.15	0.968		
P _R : 0% Q _C : 0%	L1: 2.30	L1: 2.49	L1: 2.15	0.960	125.0	500
	L2: 2.25	L2: 2.47	L2: 2.15	0.972		
	L3: 2.23	L3: 2.46	L3: 2.16	0.981		
P _R : 0% Q _C : +1%	L1: 2.32	L1: 2.49	L1: 2.17	0.957	82.4	500
	L2: 2.27	L2: 2.47	L2: 2.17	0.969		
	L3: 2.24	L3: 2.45	L3: 2.17	0.977		
P _R : 0% Q _C : +2%	L1: 2.32	L1: 2.49	L1: 2.19	0.961	72.2	500
	L2: 2.27	L2: 2.47	L2: 2.19	0.973		
	L3: 2.26	L3: 2.47	L3: 2.22	0.984		
P _R : 0% Q _C : +3%	L1: 2.32	L1: 2.49	L1: 2.22	0.968	71.2	500
	L2: 2.27	L2: 2.48	L2: 2.22	0.982		

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	L3: 2.26	L3: 2.47	L3: 2.24	0.988		
P _R : 0% Q _C : +4%	L1: 2.32	L1: 2.49	L1: 2.20	0.963	68.8	500
	L2: 2.28	L2: 2.48	L2: 2.25	0.984		
	L3: 2.27	L3: 2.48	L3: 2.27	0.993		
P _R : 0% Q _C : +5%	L1: 2.32	L1: 2.49	L1: 2.26	0.976	62.2	500
	L2: 2.28	L2: 2.47	L2: 2.27	0.987		
	L3: 2.27	L3: 2.48	L3: 2.30	0.999		
Note(s):						

8.2	TABLE: Loss of Mains Protection, Vector Shift Stability test:			P
	Start Frequency	Change	Measurement	Limit
Positive Vector Shift	49.5Hz	+50degree	No trip	No trip
Negative Vector Shift	50.5Hz	-50degree	No trip	No trip

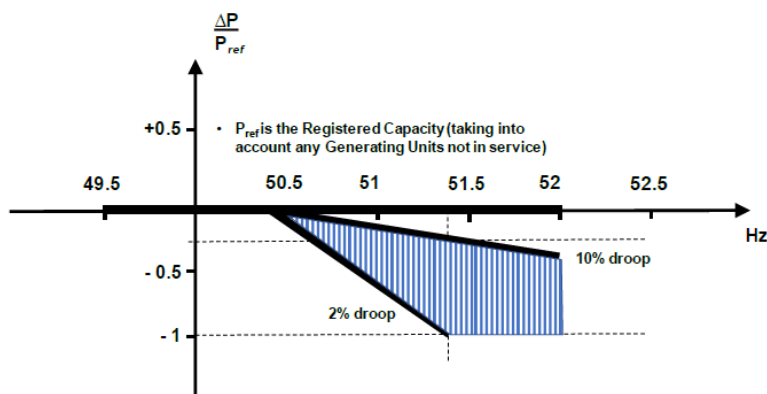
8.3	TABLE: Loss of Mains Protection, RoCoF Stability test:			P
Ramp range	Test frequency ramp	Test Duration	Measurement	Limit
49.0 Hz to 51.0 Hz	+ 0.95 Hz/s	2.1 s	No trip	No trip
51.0 Hz to 49.0 Hz	- 0.95 Hz/s	2.1 s	No trip	No trip

9.1	TABLE: Limitest frequency sensitive mode-over frequency (LFSM-O)								P		
Test No. 1											
Test Conditions	Measurements						Target value	Δ	Limitation		
f [Hz]	P/Pn	f [Hz]	T _{rise} [s]	T _{settling} [s]	Tv [s]	Active Power Gradient	P/Pn	Δ P/Pn	Δ P/Pn	T _{rise} [s]	Tv [s]
a) 50	19935	50.00	--	--	--	100%	100%	0%	≤± 10%	≤10	≤2
b) 50.45	19519	50.45	1.2	1.2	0.0	98%	99%	-1%			
c) 50.7	18956	50.70	1.0	1.0	0.0	95%	94%	1%			
d) 51.15	16958	51.15	1.6	1.6	0.0	85%	83%	2%			
e) 50.7	18953	50.70	1.4	1.4	0.0	95%	94%	1%			
f) 50.45	19517	50.45	1.0	1.0	0.0	98%	99%	-1%			
g) 50	19946	50.00	1.4	1.4	0.0	100%	100%	0%			

Test No. 2											
Test Conditions	Measurements						Target value	Δ	Limitation		
f [Hz]	P/Pn	f [Hz]	T_{rise} [s]	T_{settle} [s]	T_v [s]	Active Power Gradient	P/Pn	Δ P/Pn	Δ P/Pn	T_{rise} [s]	T_v [s]
a) 50	10024	50.00	--	--	--	50%	50%	0%	$\leq \pm 10\%$	≤ 10	≤ 2
b) 50.45	9708	50.45	0.8	0.8	0.0	49%	49%	0%			
c) 50.7	8582	50.70	1.0	1.0	0.0	43%	44%	-1%			
d) 51.15	6813	51.15	1.0	1.0	0.0	34%	33%	1%			
e) 50.7	8581	50.70	1.0	1.0	0.0	43%	44%	-1%			
f) 50.45	9708	50.45	1.0	1.0	0.0	49%	49%	0%			
g) 50	10028	50.00	1.0	1.0	0.0	50%	50%	0%			

Note(s):

P(f) curve setting for test: f1: 50.4Hz; fstop: 50.4Hz (Deactivated); Droop: 10%



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10	TABLE: Protection-Reconnection timer (Reconnection)				P
Condition	Measurement		Limitation		
	Delay time [s]	Power Gradient [per minute]	Delay time [s]	Power Gradient	
Reconnection:					
1.12Un	76.4	--	60	--	
0.82Un	75.4	--			
47.6Hz	72.6	--			
51.9Hz	67.8	--			
1.16Un	No reconnection	--	No reconnection	--	
0.78Un	No reconnection	--			
47.4Hz	No reconnection	--			
52.1Hz	No reconnection	--			
Note(s):					

11	TABLE: Fault level contribution		P
Test Condition	Measurement		
	U [V]	I [A]	
20ms after fault	50.2	29.76	
100ms after fault	50.8	29.18	
250ms after fault	50.9	29.18	
500ms after fault	51.0	29.15	
Trip time [ms]	2570		

12	TABLE: Self-Monitoring solid state switching	P
It has been verified that in the event of the solid state switching device failing to disconnect the Power Park Module, the voltage on the output side of the switching device is reduced to a value below 50 volts within 0.5 s.		P

13	TABLE: Wiring functional tests	P
Confirm that the relevant test schedule is attached (tests to be undertaken at time of commissioning)		P

14	TABLE: Logic interface (input port).	P
Confirm that an input port is provided and can be used to shut down the module.		P

Detail description of logic interface:

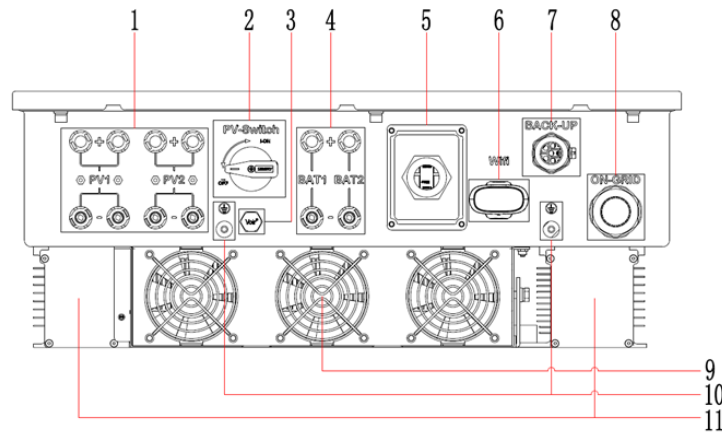


Figure 4.1 Illustration of the appearance of the hybrid inverter

Table 4-2 Appearance of a hybrid inverter

1	PV DC input port (PV+/-)	2	PV DC input switch
3	Waterproof and breathable device	4	Battery DC input port (BAT+/-)
5	Communication module interface	6	WiFi/4G interface
7	Off-grid AC wiring port	8	Grid-connected AC wiring port
9	Fan assembly	10	Protective ground terminal
11	inductive cooling box		



6.8.1 Smart meter connection

1, 2, 3 and 4 on the smart meter are connected to L1, L2, L3 and N of the grid respectively.

Current measurement needs to be connected with current transformers. 5 and 6 on the smart meter are connected to the positive and negative leads of the current transformers, and then the current transformers are fastened as the L1 phase of the grid, and similarly, 7 and 8 are connected to the L2 phase and 9 and 10 are connected to the L3 phase. 12 and 13 on the meter are connected to any one phase of AC and N line.

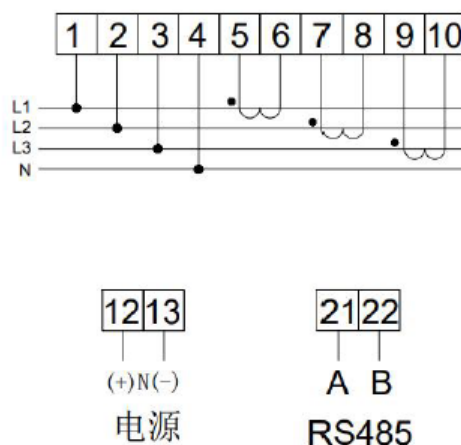


Figure 6.9 Smart meter terminal wiring description diagram

Table 6-4 Description of the BMS2 interface

PIN	Color	Definition	Function	Note
1	White&Orange	RS485-A2-BMS	RS485 differential signal A2	Communication with lithium battery BMS, the inverter can be adaptive to BMS to provide CAN and RS485 communication
2	Orange	RS485-B2-BMS	RS485 differential signal B2	
4	White&Green	CANA-H2-BMS	CAN high level data	
5	Blue	CANA-L2-BMS	CAN low level data	
3、6-12	/	/	/	/

6.8.3 DRMS logic interface connection

Crimp the network cable terminals according to Table 6-4 and Figure 6.9.

Table 6-5 Description of DRMS ports

PIN	Color	Definition	Function	Note
1	White&Orange	DRM1/5	The DRMS interface is applicable to the Australian AS-NZS-4777.2 (some European requirements) safety standard	DRMS logical interface
2	Orange	DRM2/6		
3	White&Green	DRM3/7		
4	Blue	DRM4/8		
5	White&Blue	REF GEN		
6	Green	COM LOAD		
7-12	/	/	/	/

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15	TABLE: Cyber security	P
Confirm that the power generating module has been designed to comply with cyber security requirements, as detailed in 9.1.7.		P

-End of test report-

PHOTO DOCUMENTATION

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for

Hybrid Inverter

Isuna 10000T, Isuna 12000T, Isuna 15000T, Isuna
18000T, Isuna 20000T

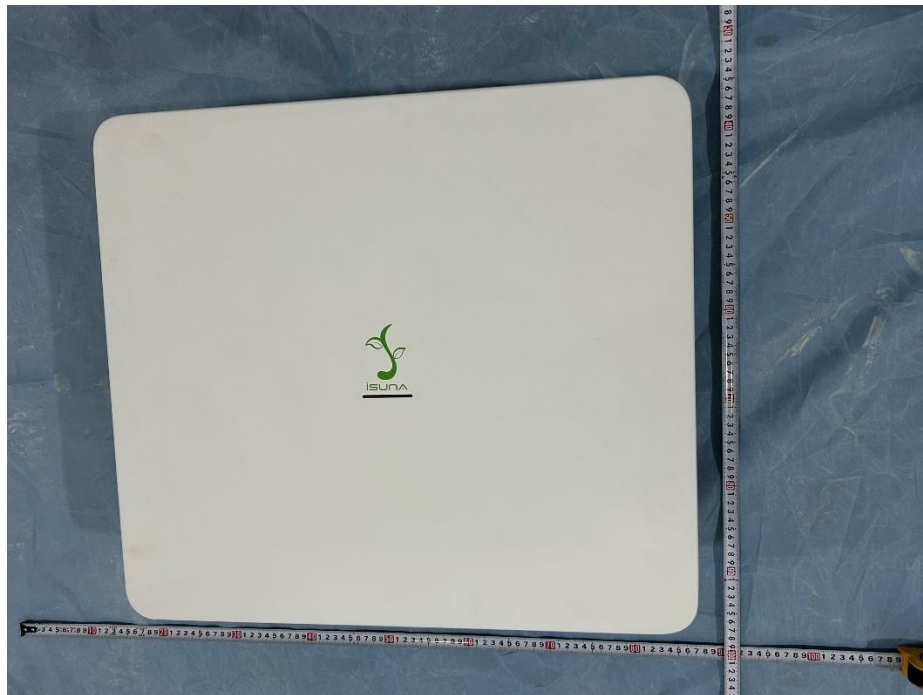
**Shenzhen Sinexcel Isuna Energy Technology
Co., Ltd.**



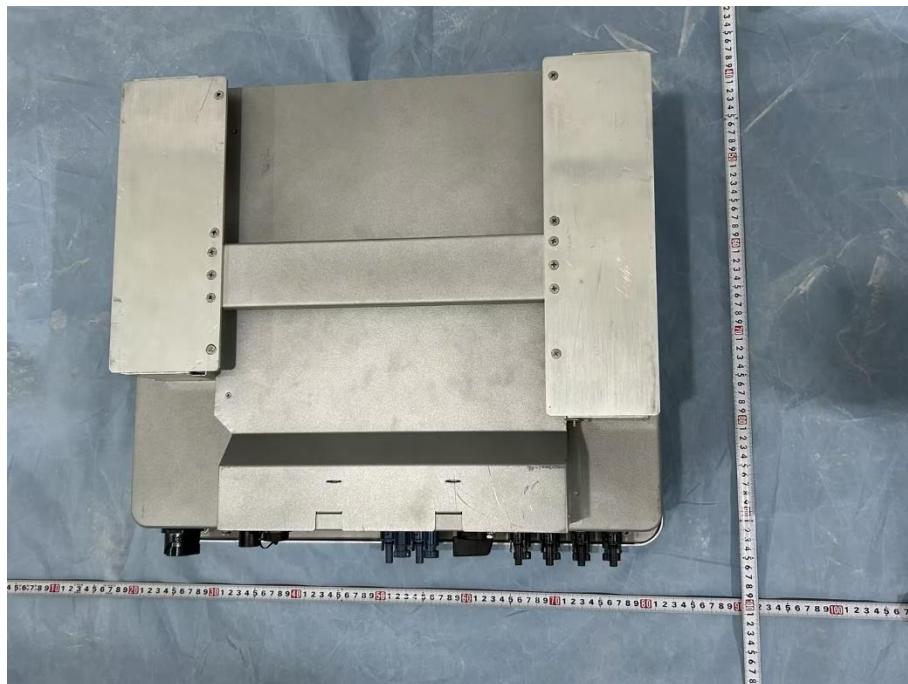
This documentation consists of 11 pages (excluding this cover page)

Report Number: CN23YREH 001 attachment 2

Model: Isuna 10000T, Isuna 12000T, Isuna 15000T, Isuna 18000T, Isuna 20000T



Front view



Back view

Report Number: CN23YREH 001 attachment 2

Model: Isuna 10000T, Isuna 12000T, Isuna 15000T, Isuna 18000T, Isuna 20000T



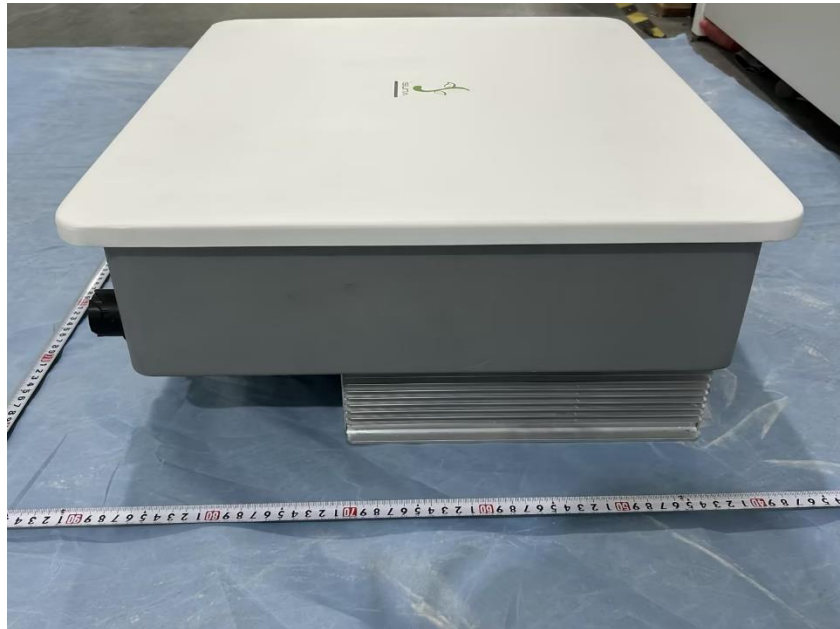
Bottom view



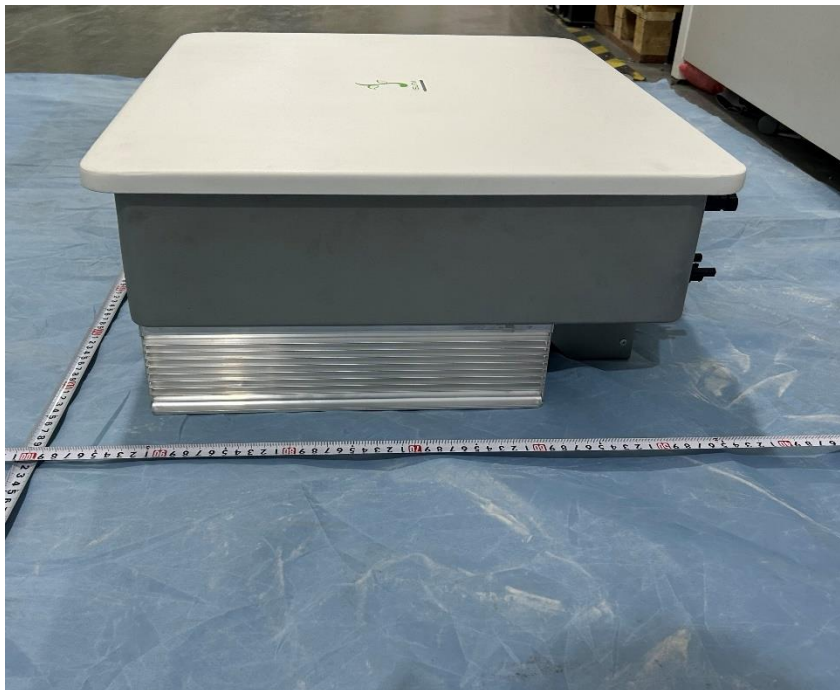
Top view

Report Number: CN23YREH 001 attachment 2

Model: Isuna 10000T, Isuna 12000T, Isuna 15000T, Isuna 18000T, Isuna 20000T



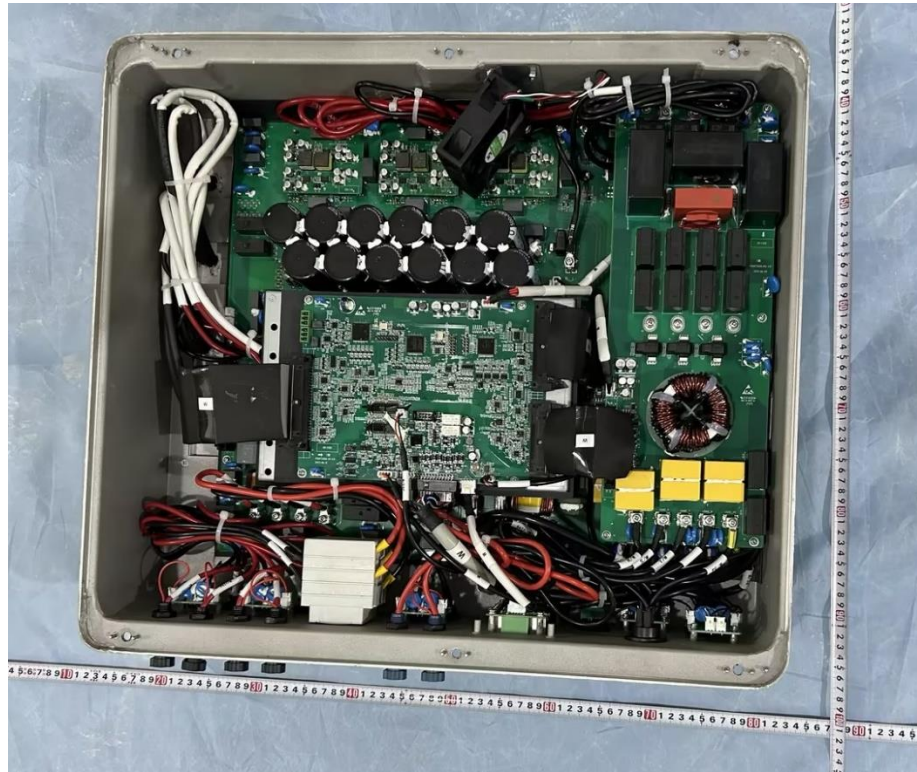
Side view 1



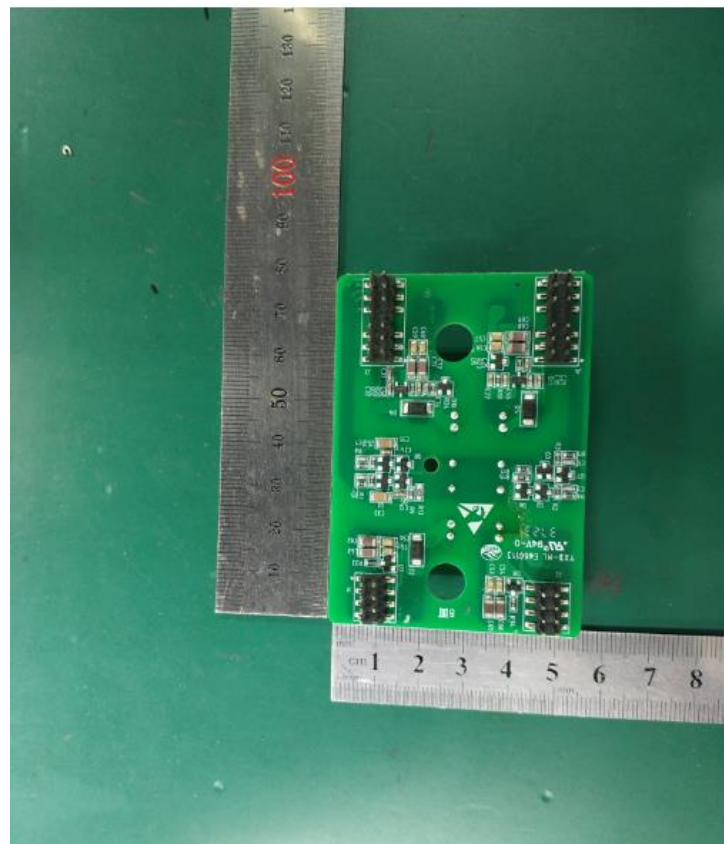
Side view 2

Report Number: CN23YREH 001 attachment 2

Model: Isuna 10000T, Isuna 12000T, Isuna 15000T, Isuna 18000T, Isuna 20000T



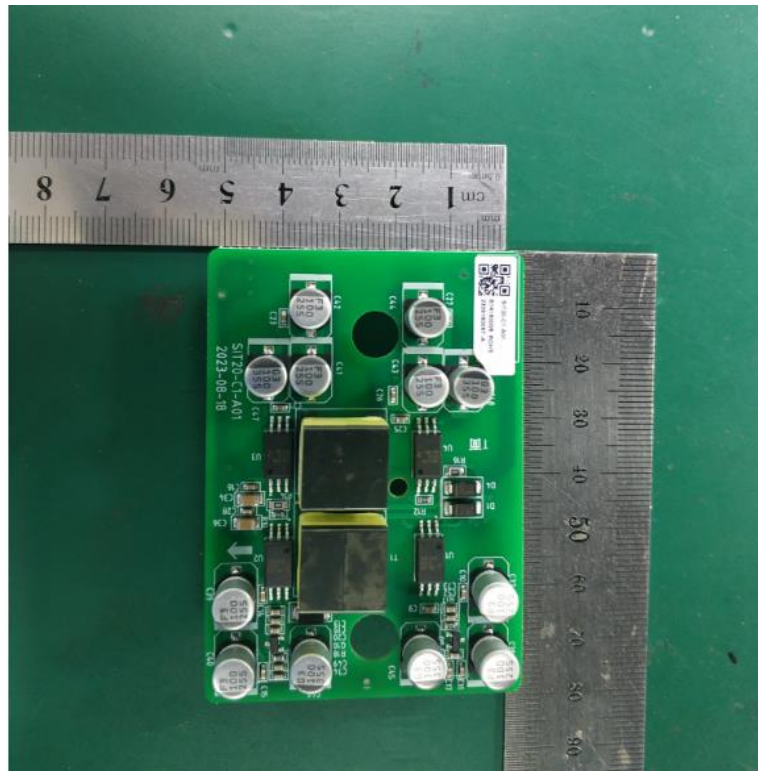
Internal view



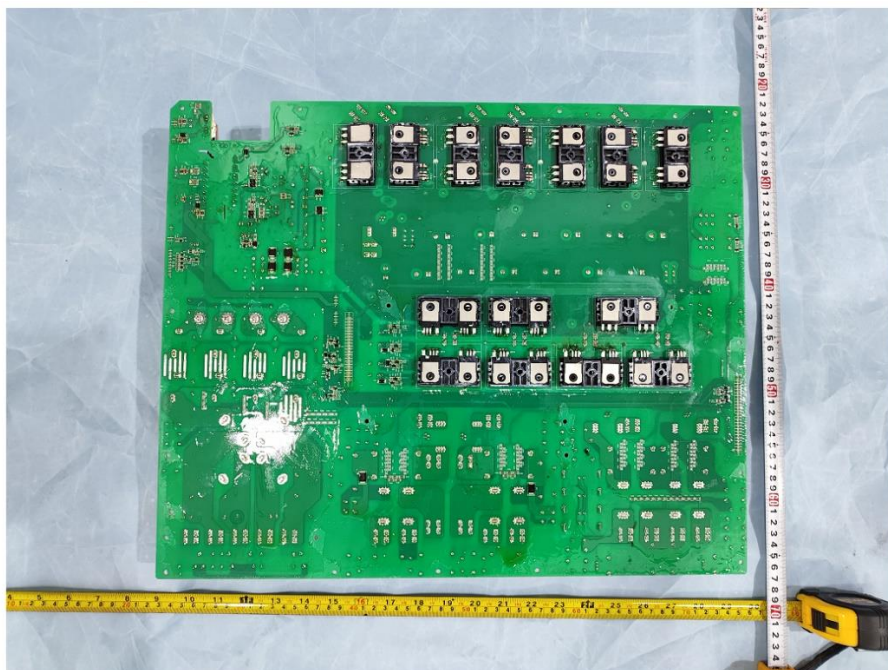
C1 view 1

Report Number: CN23YREH 001 attachment 2

Model: Isuna 10000T, Isuna 12000T, Isuna 15000T, Isuna 18000T, Isuna 20000T



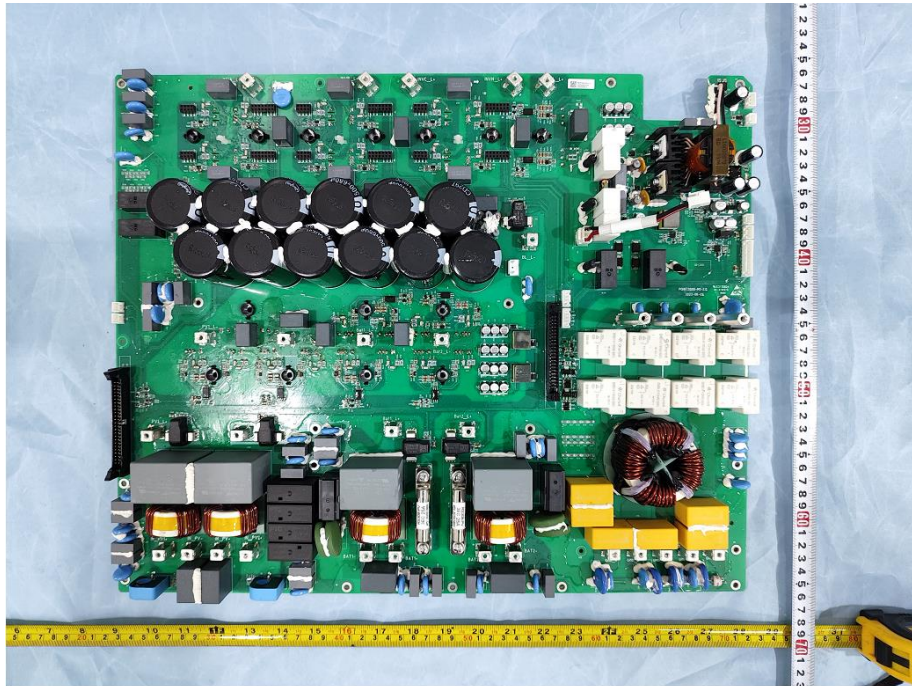
C1 view 2



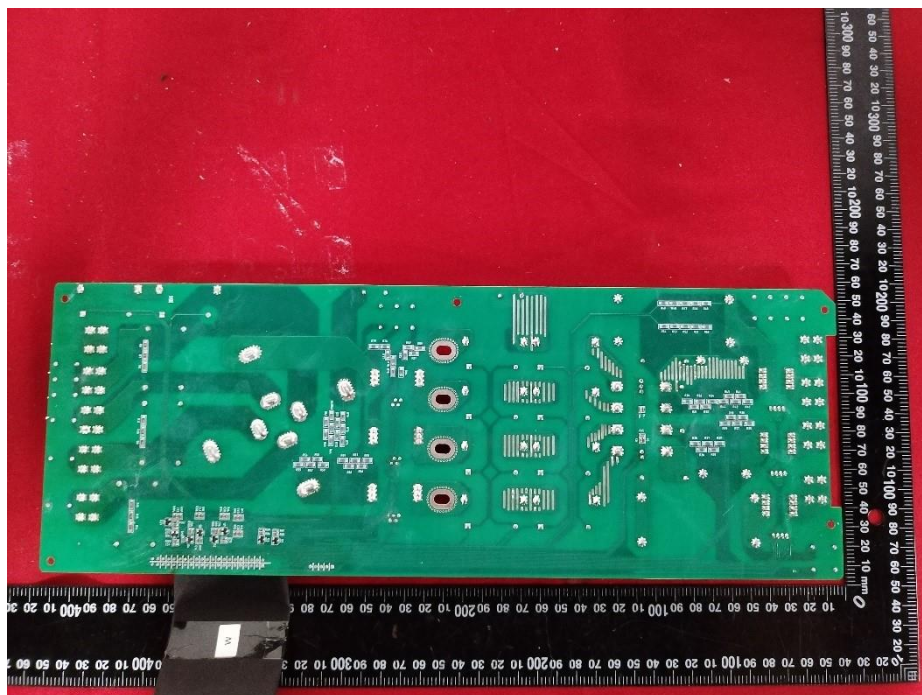
M1 view 1

Report Number: CN23YREH 001 attachment 2

Model: Isuna 10000T, Isuna 12000T, Isuna 15000T, Isuna 18000T, Isuna 20000T



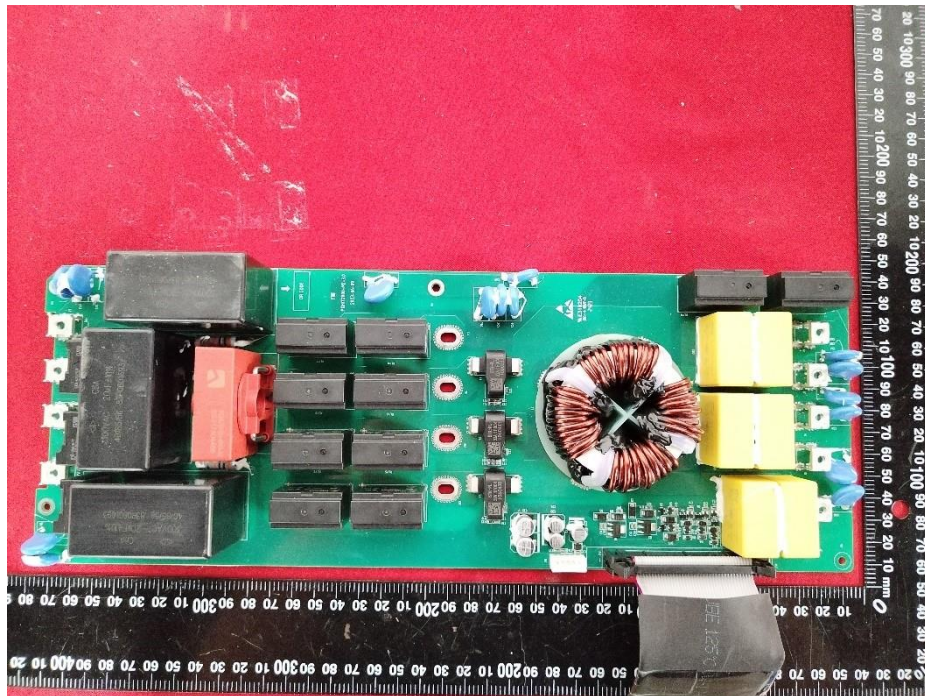
M1 view 2



M2 view 1

Report Number: CN23YREH 001 attachment 2

Model: Isuna 10000T, Isuna 12000T, Isuna 15000T, Isuna 18000T, Isuna 20000T



M2 view 2



U1 view 1

Report Number: CN23YREH 001 attachment 2

Model: Isuna 10000T, Isuna 12000T, Isuna 15000T, Isuna 18000T, Isuna 20000T



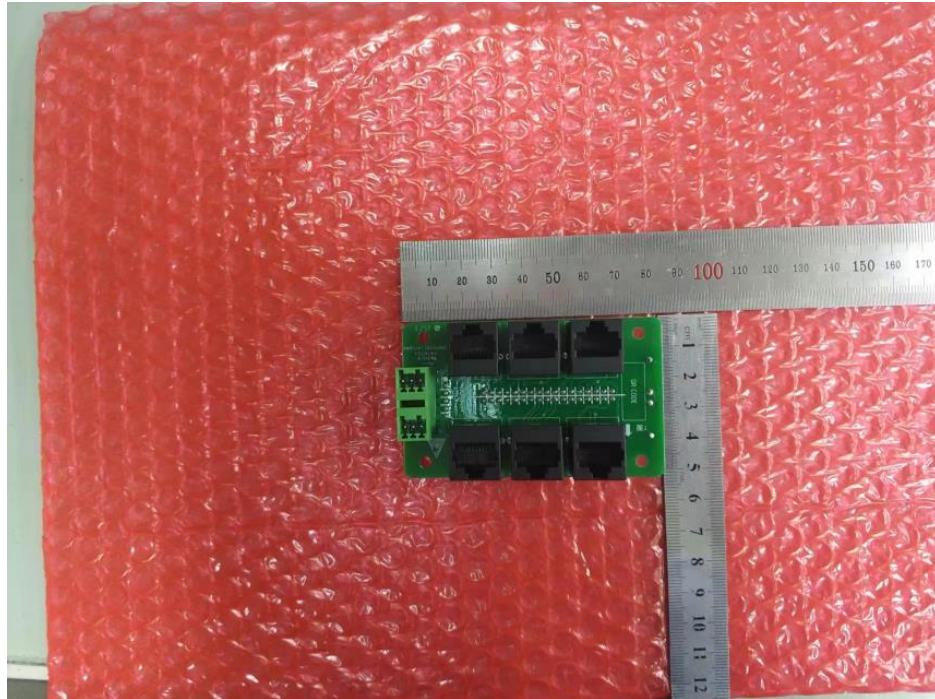
U1 view 2



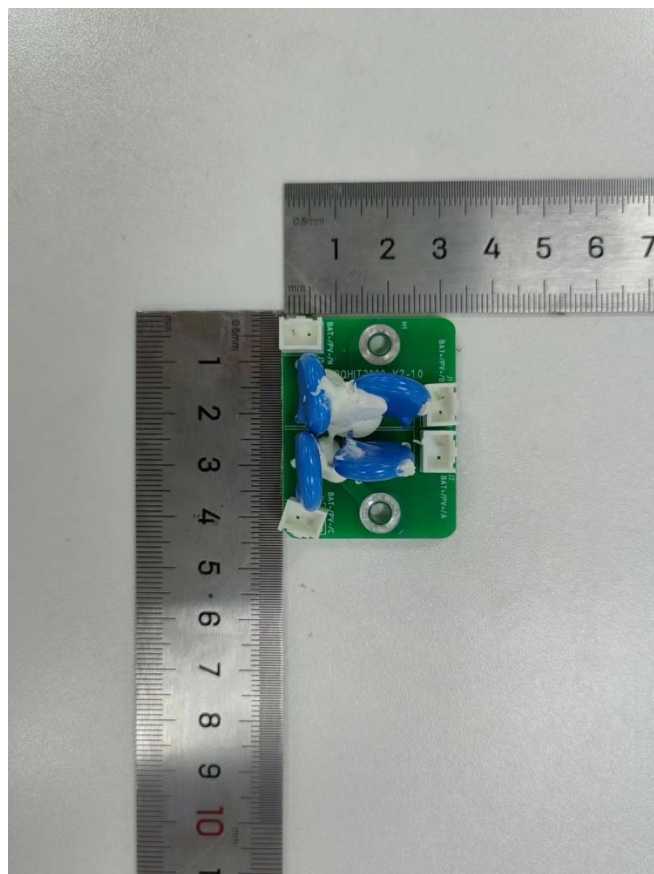
X1 view 1

Report Number: CN23YREH 001 attachment 2

Model: Isuna 10000T, Isuna 12000T, Isuna 15000T, Isuna 18000T, Isuna 20000T



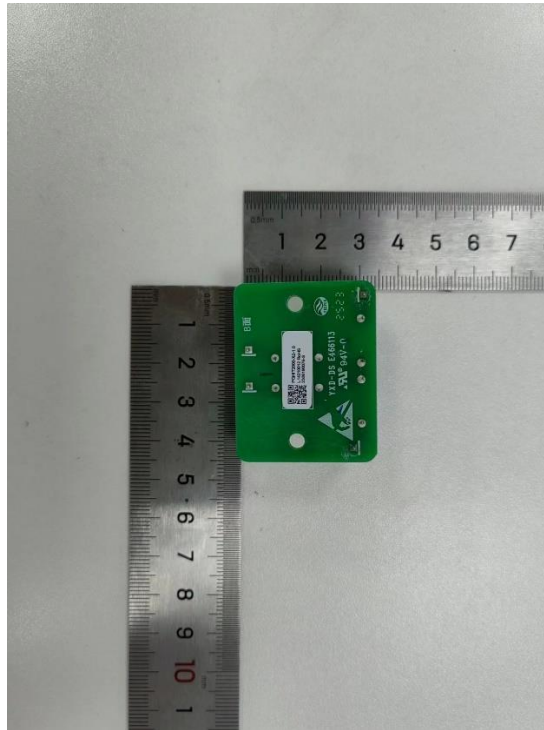
X1 view 2



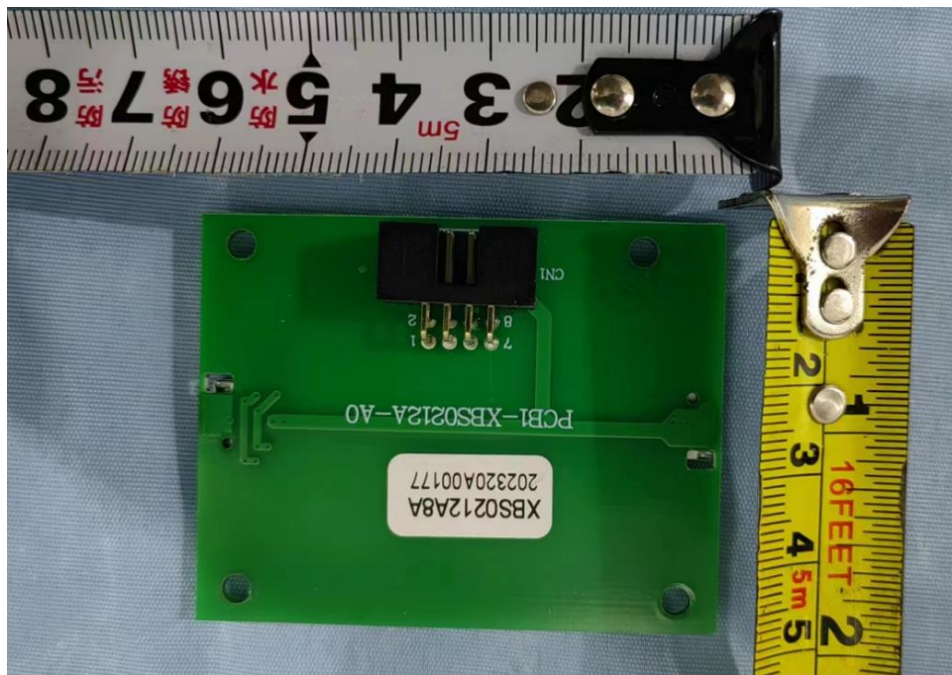
X2 view 1

Report Number: CN23YREH 001 attachment 2

Model: Isuna 10000T, Isuna 12000T, Isuna 15000T, Isuna 18000T, Isuna 20000T



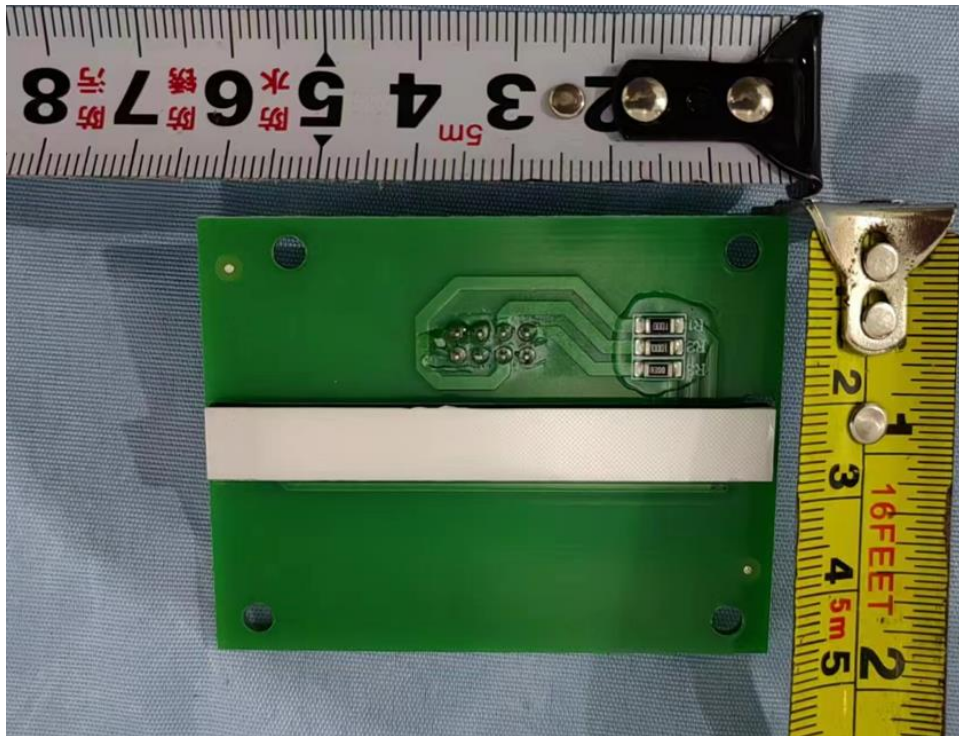
X2 view 2



PCB light board view 1

Report Number: CN23YREH 001 attachment 2

Model: Isuna 10000T, Isuna 12000T, Isuna 15000T, Isuna 18000T, Isuna 20000T



PCB light board view 2