TEST REPORT

IEC 61727:2004

TÜV SÜD Test report for Photovoltaic (PV) systems – Characteristics of the utility interface

Report reference No. :	64.290.16.00040.02
Date of issue :	2017-12-18
Project handler :	Max Fang, Kennen Wang
Testing laboratory :	TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch
Address :	5F, Communication Building, 163 Pingyun Rd, Huangpu Ave. West, Guangzhou 510656, P. R. China
Testing location :	as above
Client :	Shenzhen Kstar New Energy Company Limited
Address :	The 9th floor, R&D building, Kstar Industrial Park, Guangming Hi-Tech Industrial Zone, Shenzhen 518110, Guangdong Province, P.R. China
Contact person :	Mr. Li Bin
Standard :	This TÜV SÜD test report form is based on the following requirements: IEC 61727:2004 IEC 62116:2014
TRF originated by :	TÜV SÜD Certification and Testing (China) Co., Ltd., Mr. Frank Zhu
Copyright blank test report :	This test report is based on the content of the standard (see above). The test report considered selected clauses of the a.m. standard(s) and experience gained with product testing. It was prepared by TUV SUD Product Service GmbH. TUV SUD Group takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.
Test procedure :	☐ GS, ☒ TÜV Mark, ☐ EU-Directive, ☐ without certification
Non-standard test method :	N/A
National deviations :	N/A
Number of pages (Report) :	15
Number of pages (Attachments) :	N/A
Compiled by : Max Fang, Kennen Wang	Approved by : Billy Qiu
(+ signature) Max Fang, Kennen Wang	(+ signature)

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Type Sample ..... :	PV grid-connected inverter
Type of test object ..... :	Photovoltaic
Trademark ..... :	KSTAR
Model and/or type reference ..... :	KSG-10K, KSG-12K, KSG-15K, KSG-17K and KSG-20K
Rating(s) ..... :	See page 7
Manufacturer ..... :	Shenzhen Kstar New Energy Company Limited
Address ..... :	The 9th floor, R&D building, Kstar Industrial Park, Guangming Hi-Tech Industrial Zone, Shenzhen 518110, Guangdong Province, P.R. China
Sub-contractors/ tests (clause) ..... :	N/A
Name ..... :	N/A

Order description… ..... :		
	☒	Complete test according to TRF
	☐	Partial test according to manufacturer's specifications
	☐	Preliminary test
	☐	Spot check

Date of order…… ..... :	2015-12-30
Date of receipt of test item ..... :	2015-12-30
Date(s) of performance of test ..... :	2016-02-15 to 2016-02-25 and 2017-12-08 to 2017-12-15

General remarks:

"(see remark #)" refers to a remark appended to the report.
"(see appended table)" refers to a table appended to the report.
Throughout this report a comma is used as the decimal separator.
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 testing laboratory.

Revision history

This report is based on original report No.: 64.290.16.00040.01 (Certificate No.: Z2 16 03 75386 035), with the parameters of 60 Hz added. Original test report and certificates are cancelled.

Summary of testing:

☐ Abweichung festgestellt / deviation(s) found

☒ keine Abweichung festgestellt / no deviations found

Model: KSG-20K were selected as typical test sample.

Characteristic data Factory:

Factory name: Shenzhen KSTAR Science & Technology Co., Ltd.Guangming Branch.

Address: Kstar High Tech Park,Guangming High Technology Town,Gongming Street,Baoan District 516229 Shenzhen City, Guangdong Province PEOPLE'S REPUBLIC OF CHINA

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Copy of marking plates:

Below electric ratings are silk-screen on label and affixed side of enclosure.

KSTAR

Model: KSG-10K	
Maximum PV array open-circuit voltage	1000 Vdc
Nominal input voltage	620 Vdc
PV input operating voltage range	250~950 Vdc
Maximum operating PV input current	13 Adc ×2
Maximum total PV array short-circuit current	15 Adc ×2
Nominal a.c. output voltage	3/N/PE 400 Vac / 230 Vac
Nominal a.c. output frequency	50/60 Hz
Maximum a.c. output overcurrent protection	17 Aac
Maximum continuous a.c. output current	15 Aac
Maximum continuous a.c. output power	11 KVA
Power factor range	0.8 under-excited to 0.8 over-excited
Ingress protection	IP65

Protective class: I

Serial No.:

5minutes

MADE IN CHINA

KSTAR

Model: KSG-12K	
Maximum PV array open-circuit voltage	1000 Vdc
Nominal input voltage	620 Vdc
PV input operating voltage range	250~950 Vdc
Maximum operating PV input current	13 Adc ×2
Maximum total PV array short-circuit current	15 Adc ×2
Nominal a.c. output voltage	3/N/PE 400 Vac / 230 Vac
Nominal a.c. output frequency	50/60 Hz
Maximum a.c. output overcurrent protection	20 Aac
Maximum continuous a.c. output current	17 Aac
Maximum continuous a.c. output power	13 KVA
Power factor range(full load)	0.8 under-excited to 0.8 over-excited
Ingress protection	IP65

Protective class: I

Serial No.:

5minutes

MADE IN CHINA

KSTAR

Model: KSG-15K	
Maximum PV array open-circuit voltage	1000 Vdc
Nominal input voltage	620 Vdc
PV input operating voltage range	250~950 Vdc
Maximum operating PV input current	21 Adc ×2
Maximum total PV array short-circuit current	23 Adc ×2
Nominal a.c. output voltage	3/N/PE 400 Vac / 230 Vac
Nominal a.c. output frequency	50/60 Hz
Maximum a.c. output overcurrent protection	24 Aac
Maximum continuous a.c. output current	22 Aac
Maximum continuous a.c. output power	16 KVA
Power factor range(full load)	0.8 under-excited to 0.8 over-excited
Ingress protection	IP65

Protective class: I

Serial No.:

5minutes

MADE IN CHINA

KSTAR

Model: KSG-17K	
Maximum PV array open-circuit voltage	1000 Vdc
Nominal input voltage	620 Vdc
PV input operating voltage range	250~950 Vdc
Maximum operating PV input current	21 Adc ×2
Maximum total PV array short-circuit current	23 Adc ×2
Nominal a.c. output voltage	3/N/PE 400 Vac / 230 Vac
Nominal a.c. output frequency	50/60 Hz
Maximum a.c. output overcurrent protection	27 Aac
Maximum continuous a.c. output current	25 Aac
Maximum continuous a.c. output power	18 KVA
Power factor range(full load)	0.8 under-excited to 0.8 over-excited
Ingress protection	IP65

Protective class: I

Serial No.:

5minutes

MADE IN CHINA

KSTAR

Model: KSG-20K	
Maximum PV array open-circuit voltage	1000 Vdc
Nominal input voltage	620 Vdc
PV input operating voltage range	250~950 Vdc
Maximum operating PV input current	21 Adc ×2
Maximum total PV array short-circuit current	23 Adc ×2
Nominal a.c. output voltage	3/N/PE 400 Vac / 230 Vac
Nominal a.c. output frequency	50/60 Hz
Maximum a.c. output overcurrent protection	32 Aac
Maximum continuous a.c. output current	29 Aac
Maximum continuous a.c. output power	22 KVA
Power factor range	0.8 under-excited to 0.8 over-excited
Ingress protection	IP65

Protective class: I

Serial No.:

5minutes

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Note:

Dimension (Approx.): 70x100 mm.

Note: The above artwork nameplate may be only a draft. For the final production, the additional markings or other words which do not conflict with this standard may be added.

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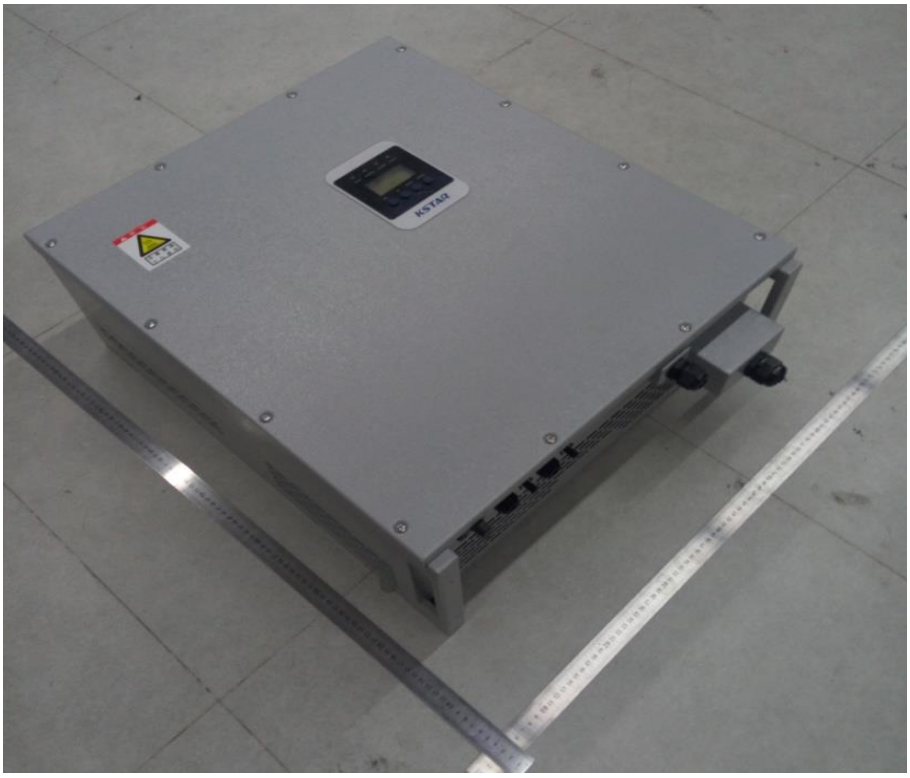
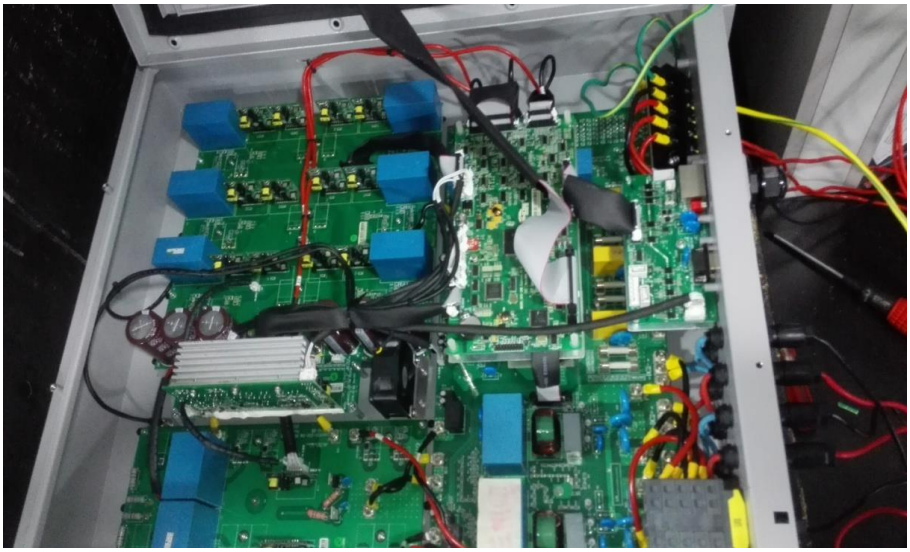
Picture of the product

Front view of the PCE



Internal view of the PCE



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Test item particulars ..... :	PV grid-connected inverter
Equipment mobility ..... :	☐ movable ☐ hand-held ☐ stationary ☒ fixed ☐ transportable ☐ for building-in
Connection to the mains ..... :	☐ pluggable equipment ☐ direct plug-in ☒ permanent connection ☐ for building-in
Enviromental category..... :	☒ outdoor ☐ indoor unconditional ☐ indoor conditional
Over voltage category Mains ..... :	☐ OVC I ☐ OVC II ☒ OVC III ☐ OVC IV
Over voltage category PV ..... :	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV
Mains supply tolerance (%)..... :	+/- 10%
Tested for power systems..... :	TN and TT system
IT testing, phase-phase voltage (V)..... :	N/A
Class of equipment..... :	☒ Class I ☐ Class II ☐ Class III ☐ Not classified
Mass of equipment (kg) ..... :	Model KSG-10K, KSG-12K: Approx. 35.4 kg Model KSG-15K, KSG-17K and KSG-20K: Approx. 39.1 kg
Pollution degree..... :	3 (External), 2 (Internal)
IP protection class ..... :	IP65

Possible test case verdicts:	
- test case does not apply to the test object ..... :	N/A / not included in the order
- test object does meet the requirement..... :	P / (pass)
- test object does not meet the requirement..... :	F. / (fail)
Possible suffixes to the verdicts:	
- suffix for detailed information for the client……..:	- C / (comment)
- suffix for important information for factory inspection...:	- M / (manufacturing)

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General product information:

(1) The units are non-isolated PV grid-connected inverters, for indoor and outdoor use;

(2) The units are intended to be mounted on the wall with screws and expansion tube;

(3) There are two independent MPP trackers and each tracker have two independent strings.

(4) The units shall be used at specified ambient range. Temperature range: -25 °C ~ +60 °C; Altitude: < 2000 m; Overvoltage category: II(DC side), III(AC side); Relative humidity range: 4 % ~ 100 %.

(5) The units shall meet the local grid code, which should be verified separately;

(6) Power factor should be verified separately according to the local grid code.

(7) The firmware version is DSP: V1.5, ARM: V1.3.

(8) The setting of rated frequency and protection are described in the user manual.

Model differences:

1) Model KSG-10K and KSG-12K are identical to each other except for the power rating.
2) Model KSG-15K, KSG -17K and KSG-20K are identical to each other except for the power rating.
3) Model KSG-10K and KSG-20K are identical to each other except for the following Items

Model	KSG-10K	KSG-20K
Relay	SHENZHEN SONGCHUAN Rating: 30A/250Vac	Tyco Electronics Rating: 35A/250Vac
Inductor (Boost circuit)	Φ1.7*2P EIW, 1.6mH	Φ2.1*2P EIW, 0.715mH
Inductor (INV circuit)	Φ 2.1*1P EIW 2.26mH	Φ1.7*2P EIW,1.6mH
Heatsink	Size: 509x330x58mm	Size: 509x330x80.5mm

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Characteristic data:

Model:	KSG-10K	KSG-12K	KSG-15K	KSG-17K	KSG-20K
Vmax PV (Vd.c.)	1000	1000	1000	1000	1000
MPPT voltage range (Vd.c.)	480-800	480-800	480-800	480-800	480-800
Maximum operating PV input current (Ad.c.)	13x2	13x2	21x2	21x2	21x2
Isc PV (Ad.c)	15x2	15x2	23x2	23x2	23x2
a.c. output voltage (Va.c.)	3/N/PE, 400/230V	3/N/PE, 400/230V	3/N/PE, 400/230V	3/N/PE, 400/230V	3/N/PE, 400/230V
Nominal a.c. output frequency (Hz)	50/60	50/60	50/60	50/60	50/60
Maximum continuous a.c. output current(Aa.c.)	15	18	22	25	29
Maximum continuous a.c. output power(kW)	10	12	15	17	20
Power factor range	0.8 under-excited to 0.8 over-excited	0.8 under-excited to 0.8 over-excited	0.8 under-excited to 0.8 over-excited	0.8 under-excited to 0.8 over-excited	0.8 under-excited to 0.8 over-excited
Protection class	I	I	I	I	I
IP code	IP65	IP65	IP65	IP65	IP65

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Clause	Requirement + Test	Result - Remark	Verdict
4	Utility compatibility		P
	The quality of power provided by the PV system for the on-site AC loads and for power delivered to the utility is governed by practices and standards on voltage, flicker, frequency, harmonics and power factor.		P
	Deviation from these standards represents out-of-bounds conditions and may require the PV system to sense the deviation and properly disconnect from the utility system.		P
4.1	Voltage, current and frequency		P
	The PV system AC voltage, current and frequency shall be compatible with the utitliy system.	3/N/PE, 50/60Hz, 230/400V	P
4.2	Normal voltage operating range		P
	Utility-interconnected PV systems do not normally regulate voltage, they inject current into the utility. Therefore, the voltage operating range for PV inverters is selected as a protection function that responds to abnormal utility conditions, not as a voltage regulation function.		P
4.3	Flicker		P
	The operation of the PV system should not cause voltage flicker in excess of limits stated in the relevant sections of IEC 61000-3-3 for systems less than 16 A or IEC 61000-3-5 for systems with current of 16 A and above.	Test method refer to STD IEC 61000-3-5 (see appended table)	P
4.4	DC injection		P
	The PV system shall not inject DC current greater than 1 % of the rated inverter output current, into the utility AC interface under any operating condition.	See appended table	P
4.5	Normal frequency operating range		P
	The PV system shall operate in synchronism with the utility system, and within the frequency trip limits defined in 5.2.2.		P
4.6	Harmonics and waveform distortion		P
	Total harmonic current distortion shall be less than 5 % at rated inverter output. Each individual harmonic shall be limited to the percentages listed in Table 1.	See appended table	P
	Even harmonics in these ranges shall be less than 25 % of the lower odd harmonic limits listed.		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Table 1 – Current distortion limits **Odd harmonics** / **Distortion limit** 3rd through 9th — Less than 4,0 % 11th through 15th — Less than 2,0 % 17th through 21st — Less than 1,5 % 23rd through 33rd — Less than 0,6 % **Even harmonics** / **Distortion limit** 2nd through 8th — Less than 1,0 % 10th through 32nd — Less than 0,5 %		P
4.7	The PV system shall have a lagging power factor greater than 0,9 when the output is greater than 50 % of the rated inverter output power.	See appended table	P
5	Personnel safety and equipment protection		P
	This Clause provides information and considerations for the safe and proper operation of the utility-connected PV systems.	Internal protection function provided	P
5.1	Loss of utility voltage		P
	To prevent islanding, a utility connected PV system shall cease to energize the utility system from a de-energized distribution line irrespective of connected loads or other generators within specified time limits.		P
	A utility distribution line can become de-energized for several reasons. For example, a substation breaker opening due to fault conditions or the distribution line switched out during maintenance.		P
5.2	Over/under voltage and frequency		P
	The abnormal utility conditions of concern are voltage and frequency excursions above or below the values stated in this Clause, and the complete disconnection of the utility, presenting the potential for a distributed resource island.		P
5.2.1	Over/under voltage		P
	When the interface voltage deviates outside the conditions specified in Table 2, the photovoltaic system shall cease to energize the utility distribution system. This applies to any phase of a multiphase system.	See appended table	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Table 2 – Response to abnormal voltages Voltage (at point of utility connection) / Maximum trip time* V < 0,5 × Vnominal / 0,1 s 50 % ≤ V < 85 % / 2,0 s 85 % ≤ V ≤ 110 % / Continuous operation 110 % < V < 135 % / 2,0 s 135 % ≤ V / 0,05 s * Trip time refers to the time between the abnormal condition occurring and the inverter ceasing to energize the utility line. The PV system control circuits shall actually remain connected to the utility to allow sensing of utility electrical conditions for use by the "reconnect" feature.		P
5.2.2	Over/under frequency		P
	When the utility frequency deviates outside the specified conditions the photovoltaic system shall cease to energize the utility line. The unit does not have to cease to energize if the frequency returns to the normal utility continuous operation condition within the specified trip time.	See appended table	P
	When the utility frequency is outside the range of ±1 Hz, the system shall cease to energize the utility line within 0,2 s. The purpose of the allowed range and time delay is to allow continued operation for short-term disturbances and to avoid excessive nuisance tripping in weak-utility system conditions.		P
5.3	Islanding protection		P
	The PV system must cease to energize the utitliy line within 2 s of loss of utility.	Test method refer to the STD IEC 62116 :2014	P
5.4	Response to utility recovery		P
	Following an out-of-range utility condition that has caused the photovoltaic system to cease energizing, the photovoltaic system shall not energize the utility line for 20 s to 5 min after the utility service voltage and frequency have recovered to within the specified ranges.	See appended table	P
5.5	Earthing		P
	The utility interface equipment shall be earthed/grounded in accordance with IEC 60364-7-712.		P
5.6	Short circuit protection		P
	The photovoltaic system shall have short-circuit protection in accordance with IEC 60364-7-712.		P
5.7	Isolation and switching		P
	A method of isolation and switching shall be provided in accordance with IEC 60364-7-712.		P

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4.3	Flicker			P
	Starting	Stopping	Running	
Limit	4%	4%	Pst = 1.0	Plt = 0.65
Test value-L1	0.01%	0.10%	0.108	0.109
Test value-L2	0.01%	0.07%	0.075	0.077
Test value-L3	0.01%	0.07%	0.074	0.075
Remark: N/A				

4.4	Direct current injection								P
Test power level	10%			55%			100%		
Phase	L1	L2	L3	L1	L2	L3	L1	L2	L3
Recorded Value (A)	0.042	0.031	0.029	0.067	0.047	0.032	0.052	0.034	0.030
As % of Rated AC current	0.14	0.11	0.10	0.23	0.16	0.11	0.18	0.12	0.10
Limit	1.00%			1.00%			1.00%		
Supplementary information: Averaged the value in 3 mins .									

4.6	Harmonics and waveform distortion			P
Harmonics	% of Fundamental			Limits (% of Fundamental)
	L1	L2	L3	
2	0.085	0.166	0.193	1.00%
3	0.032	0.065	0.050	4.00%
4	0.061	0.089	0.099	1.00%
5	1.427	1.456	1.420	4.00%
6	0.025	0.034	0.015	1.00%
7	0.694	0.714	0.723	4.00%
8	0.010	0.014	0.018	1.00%
9	0.016	0.027	0.018	4.00%
10	0.012	0.007	0.014	0.50%
11	0.518	0.512	0.505	2.00%
12	0.007	0.007	0.009	0.50%
13	0.405	0.406	0.415	2.00%
14	0.016	0.010	0.015	0.50%
15	0.025	0.028	0.022	2.00%
16	0.009	0.013	0.017	0.50%
17	0.253	0.255	0.240	1.50%

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18	0.009	0.012	0.016	0.50%
19	0.227	0.238	0.242	1.50%
20	0.009	0.009	0.011	0.50%
21	0.009	0.014	0.011	1.50%
22	0.008	0.010	0.012	0.50%
23	0.221	0.219	0.213	0.60%
24	0.007	0.009	0.011	0.50%
25	0.111	0.111	0.116	0.60%
26	0.007	0.008	0.006	0.50%
27	0.012	0.015	0.010	0.60%
28	0.005	0.006	0.005	0.50%
29	0.087	0.084	0.079	0.60%
30	0.005	0.005	0.006	0.50%
31	0.145	0.147	0.155	0.60%
32	0.005	0.007	0.005	0.50%
33	0.010	0.012	0.010	0.60%
THDi(%)	1.801	1.839	1.814	5%
Supplementary information: Unit was tested under 100% power level.				

4.7	**Power factor**				P
Termnial	Items	Phase	%Rated output		
			100%	50%	20%
Input	Voltage (V d.c.)	--	617.16	617.23	618.03
	Current (A d.c.)	--	32.95	16.49	6.58
	Power (W)	--	20326.03	10169.45	4065.40
Output	Voltage (V a.c.)	L1	230.73	230.47	230.31
		L2	230.88	230.52	230.34
		L3	230.74	230.42	230.27
	Current (A a.c.)	L1	28.67	14.42	5.76
		L2	28.74	14.48	5.79
		L3	28.78	14.48	5.79
	Power	L1	6611.93	3320.34	1321.67
		L2	6632.29	3334.71	1330.14
		L3	6639.05	3334.51	1327.93
	Power factor (+/-)	L1	+0.9997	+0.9991	+0.9961
		L2	+0.9997	+0.9992	+0.9966
		L3	+0.9997	+0.9992	+0.9968
Supplementary information: N/A					

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5.2.1 & 5.4	Over/under voltage & Response to utility recovery	P

No.	Utility point Voltage (V)	Maximum trip time (s)	Measured trip time (ms)	Utility return to normal (V)	Measured Self-check time (s)	Limit of Self-check time (s)
01	L1=112.7 Vac	0.1 s	23.8	V=230 Vac	60.1	20 s – 300 s
	L2=112.7 Vac		23.8	V=230 Vac	59.5	
	L3=112.7 Vac		23.8	V=230 Vac	59.1	
02	L1=195.5Vac	2.0 s	737.2	V=230 Vac	51.2	20 s – 300 s
	L2=195.5 Vac		311.2	V=230 Vac	52.0	
	L3=195.5 Vac		703.2	V=230 Vac	47.6	
03	L1=255.3 Vac	2.0 s	915.2	V=230 Vac	69.1	20 s – 300 s
	L2=255.3 Vac		889.2	V=230 Vac	68.4	
	L3=255.3 Vac		919.2	V=230 Vac	68.2	
04	L1=310.5 Vac	0.05 s	29.2	V=230 Vac	44.2	20 s – 300 s
	L2=310.5 Vac		20.6	V=230 Vac	44.3	
	L3=310.5 Vac		26.2	V=230 Vac	44.1	
05	V=0.85Vn	No trip	--	--	--	--
06	V=1.10Vn	No trip	--	--	--	--

Supplementary information:
Test condition: Vn=230 V, 50%Pn =10kw ;

5.2.2 & 5.4	Over/under frequency & Response to utility recovery	P

No.	Utility point Frequency (Fn)	Maximum trip time (s)	Measured trip time (ms)	Utility return to normal (Fn)	Measured Self-check time (s)	Limit of Self-check time (s)
01	F= 50+1	2	78.8 ms	Fn=50 Hz	44.6 s	20 s – 300 s
02	F= 50-1	2	70.2 ms	Fn=50 Hz	44.8 s	20 s – 300 s

Supplementary information:
Test condition: Fn=50Hz, 50%Pn =10kw ;

5.2.2 & 5.4	Over/under frequency & Response to utility recovery	P

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No.	Utility point Frequency (Fn)	Maximum trip time (s)	Measured trip time (ms)	Utility return to normal (Fn)	Measured Self-check time (s)	Limit of Self-check time (s)
01	F= 60+1	2	86.8 ms	Fn=60 Hz	37.6 s	20 s – 300 s
02	F= 60-1	2	107.2 ms	Fn=60 Hz	39.1 s	20 s – 300 s
Supplementary information: Test condition: Fn=60Hz, 50%Pn =10kw ;						

5.3	Islanding protection								P
No.	P_{EUT} (% of EUT rating)	Reactive Load (% of Q_L)	P_{AC} (% of nominal)	Q_{AC} (% of nominal)	Run on time (ms)	P_{EUT} (kW)	Actual Q_f	V_{DC} (V)	Remarks
1	100	100	0	0	457	20.05	1.04	750	Test A at BL
2	66	66	0	0	297	13.35	1.04	630	Test B at BL
3	33	33	0	0	384	6.71	1.05	500	Test C at BL
4	100	100	-5	-5	268	19.71	--	750	Test A at IB
5	100	100	-5	0	298	19.75	--	750	Test A at IB
6	100	100	-5	5	364	19.75	--	750	Test A at IB
7	100	100	0	-5	239	20.02	--	750	Test A at IB
8	100	100	0	5	456	20.03	--	750	Test A at IB
9	100	100	5	-5	287	20.04	--	750	Test A at IB
10	100	100	5	0	343	20.41	--	750	Test A at IB
11	100	100	5	5	358	20.42	--	750	Test A at IB
12	100	100	10	10	178	18.04	--	750	Test A at IB
13	100	100	-5	10	168	19.04	--	750	Test A at IB
14	100	100	0	10	166	20.09	--	750	Test A at IB
15	100	100	5	10	175	21.06	--	750	Test A at IB
16	100	100	-10	10	183	22.06	--	750	Test A at IB
17	100	100	-10	5	380	18.00	--	750	Test A at IB
18	100	100	10	5	219	22.06	--	750	Test A at IB
19	100	100	-10	0	452	18.03	--	750	Test A at IB
20	100	100	10	0	452	22.07	--	750	Test A at IB
21	100	100	-10	-5	272	18.05	--	750	Test A at IB

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22	100	100	10	-5	271	22.05	--	750	Test A at IB
23	100	100	-10	-10	206	18.03	--	750	Test A at IB
24	100	100	-5	-10	201	19.03	--	750	Test A at IB
25	100	100	0	-10	201	20.06	--	750	Test A at IB
26	100	100	5	-10	207	21.05	--	750	Test A at IB
Supplementary information:N/A									

--- End of test report---

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