



**BUREAU
VERITAS**

Certificate of compliance

Applicant: SMA Solar Technology AG
Sonnenallee 1
34266 Niestetal
Germany

Product: Grid-tied photovoltaic (PV) inverter

Model: SB5.0-1AV-40
SB4.0-1AV-40
SB3.6-1AV-40
SB3.0-1AV-40

Use in accordance with regulations:

Automatic disconnection device with single-phase mains surveillance in accordance with Engineering Recommendation G59/3 for photovoltaic systems with a single-phase parallel coupling via an inverter in the public mains supply. The automatic disconnection device is an integral part of the aforementioned inverter. This serves as a replacement for the disconnection device with isolating function that can access the distribution network provider at any time.

Applied rules and standards:

Engineering Recommendation G59/3:2013

Recommendation for the Connection of Generating Plant to the Distribution Systems of licensed Distribution Network Operators.

DIN V VDE V 0126-1-1:2006-02 (Functional safety)

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

The SB3.6-1AV-40, SB3.0-1AV-40 are rated <16A per phase and the inverter SB5.0-1AV-40, SB4.0-1AV-40 >16A per phase and ≤ 17kW (1 phase). The default values for "Small Power Stations" on the low-voltage grid were verified.

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

Report number: PVUK 161226N041-1
Certificate number: U17-0035
Date of issue: 2017-02-01

Certification body



Dieter Zitzmann



Deutsche
Akkreditierungsstelle
D-ZE-12024-01-00

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

Appendix E Type Verification Test Report

Extract from test report according to the Engineering Recommendation G59/3

Nr. PVUK 161226N041-1

Type Approval and declaration of compliance with the requirements of Engineering Recommendation G59/3.

Manufacturer / applicant:	SMA Solar Technology AG Sonnenallee 1 34266 Niestetal Germany			
Generating Unit technology	Grid-tied photovoltaic inverter			
Rated values	SB3.0-1AV-40	SB3.6-1AV-40	SB4.0-1AV-40	SB5.0-1AV-40
Maximum rated capacity	3,00 kW	3,68 kW	4,00 kW	5,00 kW
Rated voltage	230V	230V	230V	230V
Firmware version	from 1.02			
Measurement period:	2016-12-26 to 2017-01-09			

Description of the structure of the power generation unit:

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

The above stated Generating Units are tested according the requirements in the Engineering Recommendation G59/3. Any modification that affects the stated tests must be named by the manufacturer/supplier of the product to ensure that the product meets all requirements of the Engineering Recommendation G59/3.

Appendix E Type Verification Test Report

Extract from test report according to the Engineering Recommendation G59/3

Nr. PVUK 161226N041-1

Protection. Voltage tests.						
SB5.0-1AV-40						
Function	Setting		Trip test		No trip test	
	Voltage	Time delay	Voltage	Time delay	Voltage / time	Confirm no trip
U/V stage 1	200,1V	2,5s	199,7V	2,60s	204,1V / 3,5s	No trip
U/V stage 2	184V	0,5s	183,6V	0,60s	188V / 2,48s	No trip
					180V / 0,48s	No trip
O/V stage 1	262,2V	1,0s	261,5V	1,12s	258,2V / 2,0s	No trip
O/V stage 2	273,7V	0,5s	273,6V	0,61s	269,7V / 0,98s	No trip
					277,7V / 0,48s	No trip

Protection. Frequency tests.						
Function	Setting		Trip test		No trip test	
	Frequency	Time delay	Frequency	Time delay	Frequency / time	Confirm no trip
U/F stage 1	47,5Hz	20s	47,49Hz	20,00s	47,7Hz / 25s	No trip
U/F stage 2	47Hz	0,5s	47,00Hz	0,63s	47,2Hz / 19,98s	No trip
					46,8Hz / 0,48s	No trip
O/F stage 1	51,5Hz	90s	51,50Hz	90,40s	51,3Hz / 95s	No trip
O/F stage 2	52Hz	0,5s	52,01Hz	0,62s	51,8Hz / 89,98s	No trip
					52,2Hz / 0,48s	No trip

Note. For Frequency Trip tests the Frequency required to trip is the setting $\pm 0,1$ Hz. In order to measure the time delay a larger deviation than the minimum required to operate the projection can be used. The "No-trip tests" need to be carried out at the setting $\pm 0,2$ Hz and for the relevant times as shown in the table above to ensure that the protection will not trip in error.

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Nr. PVUK 161226N041-1

Protection. Loss of Mains. BS EN 62116.						
Balancing load on islanded network	33% of -5% Q Test 22	66% of -5% Q Test 12	100% of -5% P Test 5	33% of +5% Q Test 31	66% of +5% Q Test 21	100% of +5% P Test 10
Trip time. Ph1 fuse removed	311	316	232	304	307	280
Note for technologies which have a substantial shut down time this can be added to the 0,5 seconds in establishing that the trip occurred in less than 0,5s. Maximum shut down time could therefore be up to 1,0 seconds for these technologies.						

Protection. Re-connection timer.				
Test should prove that the reconnection sequence starts in no less than 20 seconds for restoration of voltage and frequency to within the stage 1 settings of table 10.5.7.1.				
Voltage				
Time delay setting		Measured delay		
30s		44,4s		
Frequency				
Time delay setting		Measured delay		
30s		45,1s		
	Checks on no reconnection when voltage or frequency is brought to just outside stage 1 limits of table 1.			
	At 266,2V	At 196,1V	At 47,4Hz	At 51,6Hz
Confirmation that the Generating Unit does not re-connect.	No reconnection	No reconnection	No reconnection	No reconnection

Protection. Frequency change, Stability test.				
	Start Frequency	Change	End Frequency	Confirm no trip
Positive Vector Shift	49,5Hz	+9 degrees		No trip
Negative Vector Shift	50,5Hz	- 9 degrees		No trip
Positive Frequency drift	49,5Hz	+0,19Hz/sec	51,5Hz	No trip
Negative Frequency drift	50,5Hz	-0,19Hz/sec	47,5Hz	No trip



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Annex to the G59/3 certificate of compliance No. U17-0035

Appendix E Type Verification Test Report

Extract from test report according to the Engineering Recommendation G59/3

Nr. PVUK 161226N041-1

Power Quality. Harmonics.						
SB5.0-1AV-40						
Generating Unit tested to BS EN 61000-3-12						
Generating Unit rating per phase (rpp)			5,0 kW			
	At 45-55% of rated output 2,5 kW		100% of rated output 5,0 kW			
Harmonic	Measured Value (MV) in Amps	Measured Value (MV) in %	Measured Value (MV) in Amps	Measured Value (MV) in %	Limit in BS EN61000-3-12 in %	
					1 phase	3 phase
2nd	0,0442	0,2033	0,0496	0,2282	8%	8%
3rd	0,0065	0,0299	0,0096	0,0442	21,6%	N/A
4th	0,0063	0,0290	0,0070	0,0322	4%	4%
5th	0,0123	0,0566	0,0157	0,0722	10,7%	10,7%
6th	0,0060	0,0276	0,0065	0,0299	2,67%	2,67%
7th	0,0060	0,0276	0,0072	0,0331	7,2%	7,2%
8th	0,0062	0,0285	0,0066	0,0304	2%	2%
9th	0,0261	0,1201	0,0378	0,1739	3,8%	N/A
10th	0,0064	0,0294	0,0067	0,0308	1,6%	1,6%
11th	0,0238	0,1095	0,0346	0,1592	3,1%	3,1%
12th	0,0064	0,0294	0,0073	0,0336	1,33%	1,33%
13th	0,0210	0,0966	0,0323	0,1486	2%	2%
14th	0,0065	0,0299	0,0073	0,0336	N/A	N/A
15th	0,0170	0,0782	0,0279	0,1283	N/A	N/A
16th	0,0065	0,0299	0,0081	0,0373	N/A	N/A
17th	0,0136	0,0626	0,0257	0,1182	N/A	N/A
18th	0,0066	0,0304	0,0075	0,0345	N/A	N/A
19th	0,0108	0,0497	0,0217	0,0998	N/A	N/A
20th	0,0061	0,0281	0,0082	0,0377	N/A	N/A
21th	0,0109	0,0501	0,0212	0,0975	N/A	N/A
22th	0,0059	0,0271	0,0074	0,0340	N/A	N/A
23th	0,0109	0,0501	0,0185	0,0851	N/A	N/A
24th	0,0060	0,0276	0,0077	0,0354	N/A	N/A
25th	0,0102	0,0469	0,0169	0,0777	N/A	N/A
26th	0,0057	0,0262	0,0078	0,0359	N/A	N/A
27th	0,0095	0,0437	0,0163	0,0750	N/A	N/A
28th	0,0055	0,0253	0,0073	0,0336	N/A	N/A
29th	0,0093	0,0428	0,0154	0,0708	N/A	N/A
30th	0,0052	0,0239	0,0089	0,0409	N/A	N/A
31th	0,0084	0,0386	0,0134	0,0616	N/A	N/A
32th	0,0052	0,0239	0,0080	0,0368	N/A	N/A
33th	0,0083	0,0382	0,0137	0,0630	N/A	N/A
34th	0,0050	0,0230	0,0095	0,0437	N/A	N/A
35th	0,0076	0,0350	0,0122	0,0561	N/A	N/A
36th	0,0047	0,0216	0,0078	0,0359	N/A	N/A
37th	0,0080	0,0368	0,0130	0,0598	N/A	N/A
38th	0,0045	0,0207	0,0079	0,0363	N/A	N/A
39th	0,0072	0,0331	0,0113	0,0520	N/A	N/A
40th	0,0042	0,0193	0,0096	0,0442	N/A	N/A
THD ₄₀	0,3542 %		0,5032 %		23%	13%
PWHD	0,2001 %		0,3372 %		23%	22%



Appendix E Type Verification Test Report

Extract from test report according to the Engineering Recommendation G59/3

Nr. PVUK 161226N041-1

Power Quality. Harmonics.						
SB4.0-1AV-40						
Generating Unit tested to BS EN 61000-3-12						
Generating Unit rating per phase (rpp)			4,0 kW			
	At 45-55% of rated output 2,0 kW		100% of rated output 4,0 kW			
Harmonic	Measured Value (MV) in Amps	Measured Value (MV) in %	Measured Value (MV) in Amps	Measured Value (MV) in %	Limit in BS EN61000-3-12 in %	
					1 phase	3 phase
2nd	0,0460	0,2645	0,0457	0,2628	8%	8%
3rd	0,0063	0,0362	0,0072	0,0414	21,6%	N/A
4th	0,0070	0,0403	0,0065	0,0374	4%	4%
5th	0,0116	0,0667	0,0136	0,0782	10,7%	10,7%
6th	0,0066	0,0380	0,0059	0,0339	2,67%	2,67%
7th	0,0062	0,0357	0,0065	0,0374	7,2%	7,2%
8th	0,0068	0,0391	0,0063	0,0362	2%	2%
9th	0,0213	0,1225	0,0326	0,1875	3,8%	N/A
10th	0,0069	0,0397	0,0068	0,0391	1,6%	1,6%
11th	0,0191	0,1098	0,0281	0,1616	3,1%	3,1%
12th	0,0069	0,0397	0,0067	0,0385	1,33%	1,33%
13th	0,0167	0,0960	0,0251	0,1443	2%	2%
14th	0,0071	0,0408	0,0072	0,0414	N/A	N/A
15th	0,0141	0,0811	0,0219	0,1259	N/A	N/A
16th	0,0068	0,0391	0,0070	0,0403	N/A	N/A
17th	0,0125	0,0719	0,0190	0,1093	N/A	N/A
18th	0,0067	0,0385	0,0078	0,0449	N/A	N/A
19th	0,0119	0,0684	0,0160	0,0920	N/A	N/A
20th	0,0065	0,0374	0,0069	0,0397	N/A	N/A
21th	0,0101	0,0581	0,0151	0,0868	N/A	N/A
22th	0,0064	0,0368	0,0077	0,0443	N/A	N/A
23th	0,0103	0,0592	0,0137	0,0788	N/A	N/A
24th	0,0061	0,0351	0,0070	0,0403	N/A	N/A
25th	0,0099	0,0569	0,0127	0,0730	N/A	N/A
26th	0,0060	0,0345	0,0072	0,0414	N/A	N/A
27th	0,0101	0,0581	0,0117	0,0673	N/A	N/A
28th	0,0056	0,0322	0,0075	0,0431	N/A	N/A
29th	0,0097	0,0558	0,0112	0,0644	N/A	N/A
30th	0,0057	0,0328	0,0067	0,0385	N/A	N/A
31th	0,0091	0,0523	0,0102	0,0587	N/A	N/A
32th	0,0052	0,0299	0,0077	0,0443	N/A	N/A
33th	0,0090	0,0518	0,0089	0,0512	N/A	N/A
34th	0,0051	0,0293	0,0068	0,0391	N/A	N/A
35th	0,0081	0,0466	0,0101	0,0581	N/A	N/A
36th	0,0049	0,0282	0,0073	0,0420	N/A	N/A
37th	0,0082	0,0472	0,0080	0,0460	N/A	N/A
38th	0,0046	0,0265	0,0064	0,0368	N/A	N/A
39th	0,0070	0,0403	0,0088	0,0506	N/A	N/A
40th	0,0043	0,0247	0,0063	0,0362	N/A	N/A
THD ₄₀	0,4261 %		0,5187 %		23%	13%
PWHD	0,2473 %		0,3220 %		23%	22%



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Annex to the G59/3 certificate of compliance No. U17-0035

Appendix E Type Verification Test Report

Extract from test report according to the Engineering Recommendation G59/3

Nr. PVUK 161226N041-1

Power Quality. Harmonics.						
SB3.6-1AV-40						
Generating Unit tested to BS EN 61000-3-12						
Generating Unit rating per phase (rpp)			3,6 kW			
	At 45-55% of rated output 1,8 kW		100% of rated output 3,6 kW			
Harmonic	Measured Value (MV) in Amps	Measured Value (MV) in %	Measured Value (MV) in Amps	Measured Value (MV) in %	Limit in BS EN61000-3-12 in %	
					1 phase	3 phase
2nd	0,0430	0,2747	0,0476	0,3041	8%	8%
3rd	0,0062	0,0396	0,0094	0,0601	21,6%	N/A
4th	0,0062	0,0396	0,0077	0,0492	4%	4%
5th	0,0124	0,0792	0,0137	0,0875	10,7%	10,7%
6th	0,0065	0,0415	0,0062	0,0396	2,67%	2,67%
7th	0,0063	0,0403	0,0068	0,0434	7,2%	7,2%
8th	0,0069	0,0441	0,0064	0,0409	2%	2%
9th	0,0191	0,1220	0,0312	0,1993	3,8%	N/A
10th	0,0068	0,0434	0,0073	0,0466	1,6%	1,6%
11th	0,0166	0,1061	0,0273	0,1744	3,1%	3,1%
12th	0,0068	0,0434	0,0074	0,0473	1,33%	1,33%
13th	0,0151	0,0965	0,0227	0,1450	2%	2%
14th	0,0071	0,0454	0,0078	0,0498	N/A	N/A
15th	0,0126	0,0805	0,0197	0,1259	N/A	N/A
16th	0,0073	0,0466	0,0070	0,0447	N/A	N/A
17th	0,0111	0,0709	0,0162	0,1035	N/A	N/A
18th	0,0073	0,0466	0,0075	0,0479	N/A	N/A
19th	0,0115	0,0735	0,0138	0,0882	N/A	N/A
20th	0,0069	0,0441	0,0071	0,0454	N/A	N/A
21th	0,0102	0,0652	0,0126	0,0805	N/A	N/A
22th	0,0066	0,0422	0,0072	0,0460	N/A	N/A
23th	0,0106	0,0677	0,0118	0,0754	N/A	N/A
24th	0,0062	0,0396	0,0075	0,0479	N/A	N/A
25th	0,0107	0,0684	0,0106	0,0677	N/A	N/A
26th	0,0058	0,0371	0,0067	0,0428	N/A	N/A
27th	0,0110	0,0703	0,0106	0,0677	N/A	N/A
28th	0,0056	0,0358	0,0082	0,0524	N/A	N/A
29th	0,0098	0,0626	0,0091	0,0581	N/A	N/A
30th	0,0055	0,0351	0,0066	0,0422	N/A	N/A
31th	0,0096	0,0613	0,0098	0,0626	N/A	N/A
32th	0,0053	0,0339	0,0072	0,0460	N/A	N/A
33th	0,0088	0,0562	0,0079	0,0505	N/A	N/A
34th	0,0052	0,0332	0,0063	0,0403	N/A	N/A
35th	0,0080	0,0511	0,0087	0,0556	N/A	N/A
36th	0,0049	0,0313	0,0066	0,0422	N/A	N/A
37th	0,0077	0,0492	0,0075	0,0479	N/A	N/A
38th	0,0046	0,0294	0,0065	0,0415	N/A	N/A
39th	0,0069	0,0441	0,0070	0,0447	N/A	N/A
40th	0,0044	0,0281	0,0059	0,0377	N/A	N/A
THD ₄₀	0,4504 %		0,5552 %		23%	13%
PWHD	0,2734 %		0,3220 %		23%	22%



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Extract from test report according to the Engineering Recommendation G59/3

Nr. PVUK 161226N041-1

Power Quality. Harmonics.						
SB3.0-1AV-40						
Generating Unit tested to BS EN 61000-3-12						
Generating Unit rating per phase (rpp)			3,0 kW			
	At 45-55% of rated output 1,5 kW		100% of rated output 3,0 kW			
Harmonic	Measured Value (MV) in Amps	Measured Value (MV) in %	Measured Value (MV) in Amps	Measured Value (MV) in %	Limit in BS EN61000-3-12 in %	
					1 phase	3 phase
2nd	0,0405	0,3105	0,0428	0,3281	8%	8%
3rd	0,0054	0,0414	0,0064	0,0491	21,6%	N/A
4th	0,0061	0,0468	0,0060	0,0460	4%	4%
5th	0,0110	0,0843	0,0129	0,0989	10,7%	10,7%
6th	0,0066	0,0506	0,0056	0,0429	2,67%	2,67%
7th	0,0060	0,0460	0,0056	0,0429	7,2%	7,2%
8th	0,0072	0,0552	0,0060	0,0460	2%	2%
9th	0,0112	0,0859	0,0271	0,2078	3,8%	N/A
10th	0,0078	0,0598	0,0064	0,0491	1,6%	1,6%
11th	0,0094	0,0721	0,0236	0,1809	3,1%	3,1%
12th	0,0082	0,0629	0,0063	0,0483	1,33%	1,33%
13th	0,0093	0,0713	0,0201	0,1541	2%	2%
14th	0,0083	0,0636	0,0063	0,0483	N/A	N/A
15th	0,0114	0,0874	0,0158	0,1211	N/A	N/A
16th	0,0081	0,0621	0,0063	0,0483	N/A	N/A
17th	0,0136	0,1043	0,0122	0,0935	N/A	N/A
18th	0,0083	0,0636	0,0061	0,0468	N/A	N/A
19th	0,0157	0,1204	0,0101	0,0774	N/A	N/A
20th	0,0080	0,0613	0,0062	0,0475	N/A	N/A
21th	0,0166	0,1273	0,0096	0,0736	N/A	N/A
22th	0,0075	0,0575	0,0060	0,0460	N/A	N/A
23th	0,0178	0,1365	0,0092	0,0705	N/A	N/A
24th	0,0072	0,0552	0,0063	0,0483	N/A	N/A
25th	0,0176	0,1349	0,0088	0,0675	N/A	N/A
26th	0,0069	0,0529	0,0059	0,0452	N/A	N/A
27th	0,0176	0,1349	0,0088	0,0675	N/A	N/A
28th	0,0065	0,0498	0,0058	0,0445	N/A	N/A
29th	0,0163	0,1250	0,0078	0,0598	N/A	N/A
30th	0,0063	0,0483	0,0056	0,0429	N/A	N/A
31th	0,0157	0,1204	0,0076	0,0583	N/A	N/A
32th	0,0060	0,0460	0,0055	0,0422	N/A	N/A
33th	0,0148	0,1135	0,0073	0,0560	N/A	N/A
34th	0,0056	0,0429	0,0056	0,0429	N/A	N/A
35th	0,0132	0,1012	0,0067	0,0514	N/A	N/A
36th	0,0053	0,0406	0,0049	0,0376	N/A	N/A
37th	0,0120	0,0920	0,0073	0,0560	N/A	N/A
38th	0,0050	0,0383	0,0048	0,0368	N/A	N/A
39th	0,0113	0,0866	0,0058	0,0445	N/A	N/A
40th	0,0050	0,0383	0,0045	0,0345	N/A	N/A
THD ₄₀	0,5934 %		0,5712 %		23%	13%
PWHD	0,4623 %		0,3090 %		23%	22%

Appendix E Type Verification Test Report

Extract from test report according to the Engineering Recommendation G59/3

Nr. PVUK 161226N041-1

Power Quality. Power factor.				
SB5.0-1AV-40				
	216,2V	230V	253V	Measured at three voltage levels and at full output. Voltage to be maintained within $\pm 1.5\%$ of the stated level during the test.
Measured value	0,9973i	0,9981i	0,9985i	
Limit	>0,95	>0,95	>0,95	
SB4.0-1AV-40				
	216,2V	230V	253V	Measured at three voltage levels and at full output. Voltage to be maintained within $\pm 1.5\%$ of the stated level during the test.
Measured value	0,9977i	0,9980i	0,9982i	
Limit	>0,95	>0,95	>0,95	
SB3.6-1AV-40				
	216,2V	230V	253V	Measured at three voltage levels and at full output. Voltage to be maintained within $\pm 1.5\%$ of the stated level during the test.
Measured value	0,9976i	0,9979i	0,9979i	
Limit	>0,95	>0,95	>0,95	
SB3.0-1AV-40				
	216,2V	230V	253V	Measured at three voltage levels and at full output. Voltage to be maintained within $\pm 1.5\%$ of the stated level during the test.
Measured value	0,9972i	0,9973i	0,9972i	
Limit	>0,95	>0,95	>0,95	

Power Quality. Voltage fluctuation and Flicker.								
SB3.0-1AV-40	Starting			Stopping			Running	
	dmax	dc	d(t)	dmax	dc	d(t)	Pst	Plt 2 hours
Measured values at test impedance	0,37%	0,32%	0,00%	0,51%	0,46%	0,00%	0,296	0,256
Limits set under BS EN 61000-3-11	4%	3,3%	3,3% 500ms	4%	3,3%	3,3% 500ms	1,0	0,65
SB5.0-1AV-40	Starting			Stopping			Running	
	dmax	dc	d(t)	dmax	dc	d(t)	Pst	Plt 2 hours
Measured values at test impedance	0,30%	0,21%	0,00%	0,79%	0,69%	0,00%	0,281	0,246
Limits set under BS EN 61000-3-11	4%	3,3%	3,3% 500ms	4%	3,3%	3,3% 500ms	1,0	0,65

Appendix E Type Verification Test Report

Extract from test report according to the Engineering Recommendation G59/3

Nr. PVUK 161226N041-1

Power Quality. DC injection.			
SB5.0-1AV-40			
Test level power	10%	55%	100%
Recorded value	0,0299 A	0,0298 A	0,0299 A
As % of rated AC current	0,14%	0,14%	0,14%
Limit	0,25%	0,25%	0,25%
SB4.0-1AV-40			
Test level power	10%	55%	100%
Recorded value	0,0300 A	0,0300 A	0,0300 A
As % of rated AC current	0,17%	0,17%	0,17%
Limit	0,25%	0,25%	0,25%
SB3.6-1AV-40			
Test level power	10%	55%	100%
Recorded value	0,0300 A	0,0306 A	0,0324 A
As % of rated AC current	0,19%	0,19%	0,20%
Limit	0,25%	0,25%	0,25%
SB3.0-1AV-40			
Test level power	10%	55%	100%
Recorded value	0,0299 A	0,0299 A	0,0297 A
As % of rated AC current	0,23%	0,23%	0,23%
Limit	0,25%	0,25%	0,25%

Appendix E Type Verification Test Report

Extract from test report according to the Engineering Recommendation G59/3

Nr. PVUK 161226N041-1

Fault level Contribution.					
SB5.0-1AV-40					
For a directly coupled SSEG			For a Inverter SSEG		
Parameter	Symbol	Value	Time after fault	Volts	Amps
Peak Short Circuit current	I_p	N/A	20ms	26,7V	25,3A
Initial Value of aperiodic current	A	N/A	100ms	26,4V	23,0A
Initial symmetrical short-circuit current*	I_k	N/A	250ms	26,4V	22,7A
Decaying (aperiodic) component of short circuit current*	i_{DC}	N/A	500ms	26,5V	22,6A
Reactance/Resistance Ratio of source*	X/R	N/A	Time to trip	0,604	In seconds
SB3.6-1AV-40					
For a directly coupled SSEG			For a Inverter SSEG		
Parameter	Symbol	Value	Time after fault	Volts	Amps
Peak Short Circuit current	I_p	N/A	20ms	26,3V	23,4A
Initial Value of aperiodic current	A	N/A	100ms	26,3V	22,6A
Initial symmetrical short-circuit current*	I_k	N/A	250ms	26,4V	22,5A
Decaying (aperiodic) component of short circuit current*	i_{DC}	N/A	500ms	26,5V	22,5A
Reactance/Resistance Ratio of source*	X/R	N/A	Time to trip	0,600	In seconds

For rotating machines and linear piston machines the test should produce a 0s – 2s plot of the short circuit current as seen at the Generating Unit terminals.

* Values for these parameters should be provided where the short circuit duration is sufficiently long to enable interpolation of the plot.

Self Monitoring – Solid state switching.	N/A
It has been verified that in the event of the solid state switching device failing to disconnect the Generating Unit, the voltage on the output side of the switching device is reduced to a value below 50 volts within 0,5 seconds.	---
Note. Unit do not provide solid state switching relays. In case the semiconductor bridge is switched off, then the voltage on the output drops to 0. In this case the relays on the output will also open.	