BADGER POWER ELECTRONICS
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EN 50549-1:2019 CERTIFICATE

Requirements for generating plants to be connected in parallel with distribution networks –
Part 1: Connection to a LV Distribution Network - Generating Plants up to and including type B

Adress	Century Center, 33-55 Au Pui Street, Fotan, Shantin, New Territories, Hong Kong
Country	Hong Kong
Manufacturer	BPE
Electrical apparatus	*Micro PVInverter*
Trademark	BPE

Type	Rated Power	Firmware Version
BPE-MI-600-EU-IR	600w	V1.0
BPE-MI-1300-EU-IR	1300w	V1.0
BPE-MI-1600-EU	1600W	V1.0
BPE-MI-2000-EU	2000W	V1.0

Our company hereby declares that our inverter fully meets the national standards and parameters of Ireland by EN50549-1:2019. Micro inverter for public low-voltage distribution network, More specifically, it fits well with Ireland's national grid.

Test details:

Harmonic current emission as per BS EN61000-3-2A
Voltage flucation and flicker as per BS EN61000-3-2A
DC injection/Powerfactor
Under/Over frequency switch off
Under/Over voltage switch off
Loss of main test

BPE China ,
2021-4-28

Director of R&D

Jide hai

Certificate Number: BPE000016 001

EN 50549-1:2019

Test results sheet

Test house details:

Name and address of test house	Century Center, 33-55 Au Pui Street, Fotan, Shantin, New Territories, Hong Kong, China
Telephone number	+852 3962 2352
Facsimile number	+852 3962 2352
E-mail address	hello@badgerpowerelectronics.com

Test details:

Date of test	2021-4-28
Name of test Engineer	Jidehai
Remarks	The design of microinverter is identical, Test results of the microinverter are based on 2000G, Harmonic current emission measurements are listed for each model individually.
Signature of test Engineer	

Power quality:

Harmonic current emission BPE-MI-600-EU-IR								
	Maximum permissible harmonic current in accordance wth EN61000-3-2							
Harmonic	2nd	3rd	5th	7th	9th	11th	13th	$15^{th} \leq n \leq 39^{th}$
Limit	1.08	2.3	1.14	0.77	0.4	0.33	0.21	0.15 a) (15/n)
Test value	0.08	0.58	0.36	0.25	0.13	0.05	0.03	0.07
a) 50% or some other declared value close to the mid point between minimum								

Harmonic current emission BPE-MI-1300-EU-IR								
	Maximum permissible harmonic current in accordance wth EN61000-3-2							
Harmonic	2nd	3rd	5th	7th	9th	11th	13th	$15^{th} \leq n \leq 39^{th}$
Limit	1.08	2.3	1.14	0.77	0.4	0.33	0.21	0.15 a) (15/n)
Test value	0.11	0.85	0.51	0.39	0.23	0.13	0.18	0.12
a) 50% or some other declared value close to the mid point between minimum								

Harmonic current emission BPE-MI-1600-EU								
	Maximum permissible harmonic current in accordance wth EN61000-3-2							
Harmonic	2nd	3rd	5th	7th	9th	11th	13th	$15^{th} \leq n \leq 39^{th}$
Limit	1.08	2.3	1.14	0.77	0.4	0.33	0.21	0.15 a) (15/n)
Test value	0.13	0.99	0.28	0.25	0.11	0.07	0.04	0.1
a) 50% or some other declared value close to the mid point between minimum								

Harmonic current emission BPE-MI-2000-EU								
	Maximum permissible harmonic current in accordance wth EN61000-3-2							
Harmonic	2nd	3rd	5th	7th	9th	11th	13th	$15^{th} \leq n \leq 39^{th}$
Limit	1.08	2.3	1.14	0.77	0.4	0.33	0.21	0.15 a) (15/n)
Test value	0.13	1.1	0.32	0.25	0.13	0.09	0.05	0.11
a) 50% or some other declared value close to the mid point between minimum								

Power quality:

Voltage fluctuations and flicker				
	Maximum permissible voltage fluctuation (expressed as a percentage of nominal voltage at 100% power) and flicker in accordance with EN			
	Starting	Stopping	Running	
Limit	3.3%	3.3%	Pst =1.0	Plt =0.65
Test	1.3%	1.1%	0.18	0.15

DC injection			
Limit	20mA,tested at three power levels		
Power level	10%	50%	100%
Test value	0.15	0.56	1.05
a) 50% or some other declared value close to the mid point between minimum and			

	Under frequency		Over frequency	
Parameter	Frequency[Hz]	Time[s]	Frequency[Hz]	Time[s]
Protection limit	48	0.5	50.5	0.5
Actual setting	48	0.5	50.5	0.5
Trip value	48.01	0.48	50.51	0.42

	Under voltage		Over voltage	
Parameter	Voltage [V]	Time[s]	Voltage [V]	Time[s]
Protection limit	207	0.5	253	0.5
Actual setting	207	0.5	253	0.5
Trip value	206.5	0.47	252.5	0.56

Method used	Frequency shift		
Output power level a)	10%	50%	100%
Trip setting clearance time	0.5s	0.5s	0.5s
Trip value clearance time	180ms	195ms	187ms
a) Indicative values are shown for minimum, medium and maximum power levels.			

Comments:

Signed： Jide hai Position：Director of R&D

Date：2021.4.28