

Certificate

Applicant: **changetec Technology GmbH**
Sölterreeke 5
31832 Springe
Deutschland

Product: **Grid monitoring interface between a generator and the public low-voltage grid**

Model:	BISI
Rating:	3x 380/400Vac, 50/60Hz

Intended use:

An automatic disconnection device with three-phase mains surveillance in accordance with Engineering Recommendation G59/3 for de-centralized generators with a three-phase parallel coupling to the public mains supply. LoM protection is realized by RoCoF.

Applied standards and guidelines:

**Engineering Recommendation G59/3-2
Issue 3 Amendment 2 September 2015**

Recommendations for the connection of generating plant to the distribution systems of licensed distribution network operators

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

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Horst Haug

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Certification Department



Protection. Frequency tests

Function	Setting		Trip test		"No trip tests"	
	Frequency	Time delay	Frequency	Time delay	Frequency / time	Confirm no trip
U/F stage 1	47,5Hz	20,0s	47,50Hz	20,4s	47,7Hz 25s	P
U/F stage 2	47,0Hz	0,5s	47,00Hz	0,93s	47,2Hz 19,98s	P
					46,8Hz 0,48s	P
O/F stage 1	51,5Hz	90,0s	51,50Hz	90,4s	51,3Hz 95s	P
O/F stage 2	52,0Hz	0,5s	52,00Hz	0,83s	51,8Hz 89,98s	P
					52,2Hz 0,48s	P

Protection. Voltage tests

Function	Setting		Trip test		"No trip tests"	
	Voltage	Time delay	Voltage	Time delay	Voltage / time	Confirm no trip
U/V stage 1	200,1V	2,5s	198,6V	2,52s	204,1V 3,5s	P
U/V stage 2	184,0V	0,5s	182,5V	0,51s	188,0V 2,48s	P
					180,0V 0,48s	P
O/V stage 1	262,2V	1,0s	262,0V	1,04s	258,2V 2,0s	P
O/V stage 2	273,7V	0,5s	273,5V	0,51s	269,7V 0,98s	P
					277,7V 0,48s	P

Ph 1 removed	Trip confirmed	Ph 2 removed	Trip confirmed	Ph 3 removed	Trip confirmed
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Protection. Re-connection timer.

Time delay settings (s)	Measured delay (s)	Checks on no reconnection when voltage or frequency is brought to just outside stage 1 limits of table 10.5.7.1			
20s	24,8s	At 266,2V	At 196,1V	At 47,4Hz	At 51,6Hz
Confirmation that the Generating Unit does not re-connect		P	P	P	P