Compliance Document

No. D 111812 0017 Rev. 00

E.6 Certificate of the network and system protection

Certificate of NS protection	No. 50.409.22.0078.02-00	
Manufacturer	Suzhou Stealth Energy Technology Co., Ltd. 8F, Zhenghe Mansion, No.198, Jinfeng Road, New District, 215000 Suzhou, PEOPLE'S REPUBLIC OF CHINA.	
Type of NS protection		
Central NS protection	☐	
Integrated NS protection	☑	Assigned to power generation unit type	5 kW (ST-INV-T5.0) 6 kW (ST-INV-T6.0) 8 kW (ST-INV-T8.0) 10 kW (ST-INV-T10.0)
Network connection rules	**VDE-AR-N 4105:2018-11/Corrigendum 1:2020-10** Generators connected to the low-voltage distribution network - Technical requirements for the connection to and parallel operation with low-voltage distribution networks.	
Test requirement	**DIN VDE V 0124-100 (VDE V 0124-100):2020-06 "Network integration of power generation system – Low voltage"** Test requirements for power generation units intended for connection to and parallel operation on the low-voltage network.	
The network and system protection mentioned above meets the requirements of VDE-AR-N 4105.		

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E.7 Requirement for the test report for the NS protection

Extract from test report for NS protection "Determination of electrical properties"	No. 50.409.22.0078.02-00

NS protection test report		
Type of NS system:	Integrated NS protection	**Other Manufacturer indications**
Software version:	V1.1	
Manufacturer:	Suzhou Stealth Energy Technology Co., Ltd. 8F, Zhenghe Mansion, No.198, Jinfeng Road, New District, 215000 Suzhou, PEOPLE'S REPUBLIC OF CHINA.	
Measuring period:	From 2022-10-07 to 2023-03-02	

	Inverter		
	directly coupled synchronous and asynchronous generators with Pn > 50 kW		
Protection function	**Setting value**	**Tripping value**	**Break time NS protection ***
Rise-in-voltage protection $U \gg$	$1.25 * U_n$	L1-N/L2-N/L3-N: 287 V, 287 V, 287 V, L1-N: 289 V, L2-N: 287 V, L3-N: 287 V, L1-L2: 498 V, L2-L3: 496 V, L3-L1: 497 V,	L1-N/L2-N/L3-N: 85 ms, L1-N: 92 ms, L2-N: 82 ms, L3-N: 97 ms, L1-L2: 76 ms, L2-L3: 65 ms, L3-L1: 71 ms,
Rise-in-voltage protection $U >$	$1.10 * U_n$	$1.0 * U_n$	ms**
Voltage drop protection $U <$	$0.8 * U_n$	L1-N/L2-N/L3-N: 184 V, 184 V, 184 V, L1-N: 184 V, L2-N: 183 V, L3-N: 183 V, L1-L2: 318 V, L2-L3: 318 V, L3-L1: 318 V,	L1-N/L2-N/L3-N: 3008 ms, L1-N: 3022 ms, L2-N: 3021 ms, L3-N: 3008 ms, L1-L2: 3017 ms, L2-L3: 3009 ms, L3-L1: 3010 ms,
Voltage drop protection $U \ll$	$0.45 * U_n$	L1-N/L2-N/L3-N: 103 V, 103 V, 103 V, L1-N: 103 V, L2-N: 103 V, L3-N: 103 V, L1-L2: 178 V, L2-L3: 178 V, L3-L1: 178 V,	L1-N/L2-N/L3-N: 305 ms, L1-N: 333 ms, L2-N: 311 ms, L3-N: 311 ms, L1-L2: 313 ms, L2-L3: 314 ms, L3-L1: 322 ms,
Frequency decrease protection $f <$	47.5 Hz	47.49 Hz	72 ms
Frequency increase protection $f >$	51.5 Hz	51.50 Hz	57 ms

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