Product Certificate Number	**20539-1-CER-E2**
Applicant	Vacon Oy Runsorintie 7. 65380. Vaasa, Finland.
Series	NX series (Air cooled) NX series (Liquid cooled)
Models/	See page 3
Type of generating unit	Grid converter
Technical Data	See page 3 to 6
Software version	ARFIF106
Checksum	See page 3
Software environment	DIgSilent PowerFactory (2018)
Network connection code	**VDE-AR-N 4110:** 2018-11. Technical requirements for the connection and operation of customer installations to the medium voltage network (TCR medium voltage). **VDE-AR-N 4120:** 2018-11. Technical requirements for the connection and operation of customer installations to the high voltage network (TCR high voltage).

Having assessed the report number:

- Test report: 20539-1-TR-E1 and 20539-3-TR performed by CERE (Accredited Laboratory Nº 5314.01) based on the requirements of the EN ISO/IEC 17025: 2017.

- Simulation report 20539-1-S-E1 and 20539-3-S performed by CERE (Accredited Laboratory Nº 5314.01) based on the requirements of the EN ISO/IEC 17025: 2017.

- Certificate annex with unit certificate requirements 20539-1-CER-E2 ANNEX 1 performed by CERE (EA Accredited Entity Nº 147/C-PR335) based on the requirements of the EN ISO/IEC 17065: 2012

- Certificate annex with plausibility test 20539-1-CER ANNEX 2 and 20539-1-CER ANNEX 3 performed by CERE (EA Accredited Entity Nº 147/C-PR335) based on the requirements of the EN ISO/IEC 17065: 2012.

The above-mentioned generating unit complies with the requirements of the:

VDE-AR-N 4110:2018-11. Technical requirements for the connection and operation of customer installations to the medium voltage network (TCR medium voltage),
VDE-AR-N 4120:2018-11. "Technical requirements for the connection and operation of customer installations to the high voltage network (TCR high voltage)"

Certification programme:
TG 8 – Certification of the Electrical Characteristics of Power Generating Units, Systems and Storage Systems as well as for their Components to the Grid. **Rev 9**
TG 3 – Determination of the Electrical Characteristics of Power Generating Units and systems, Storage Systems as well for their Components in medium-, high- and extra-high voltage grids. **Rev 25.**
TG 4 – Demands on Modelling and Validating Simulation Models of the Electrical characteristics of Power Generating Units and Systems, Storage Systems as well as for their Components. **Rev 9**.

The certificates include the following information:

- Technical data of the power generating unit, the auxiliary equipment and the software version used;
- schematic structure of the power generating unit;
- summarized information on the properties of the power generating unit.

This certification is according the CERE internal process PET-CERE-29 Rev 0 based on the requirements of the EN ISO/IEC 17065:2012. For this certification process the conformity assessment activities were based on:

- Testing of production samples selected by CERE.
- Audit of quality system according ISO 9001 with certificate number: DK014774-107 issued by a certification body accredited according EN ISO/IEC 17021.
- Inspection of the manufacturing process.

This certificate cancels and supersedes the certificate 20539-1-CER-E1 issued on October 01, 2021.

Madrid, October 19, 2021. This certificate is valid until March 23, 2026.

Miguel Martínez Lavin
Certification Manager

Checksum MD5

File	Checksum MD5
DLL_Interface_VDE_VaconNXPGridConverter.dll	FAB498A7133E249204E4F576E2429D05
Vacon_NXP_GridConverter_ARFIF106_win64.dll	796A4AFE9B357ED1626E9E7AB7227179
VDE-AR-N Vacon NXP Grid Converter.pfd	55FE5C275A5EC7745290344AAA75A99D

Technical data

Air cooled

Unit	Frame size	Iac nom. (A)	Pac (kW)	Voltage range (V)	Idc max (A)	Vdc (V)	Configuration	Filter
NXA_0168_5	FI9	140	97	180-500	154	334-800	Single	LCL-0261-5
NXA_0205_5	FI9	168	116	180-500	187	334-800	Single	LCL-0261-5
NXA_0261_5	FI9	205	142	180-500	225	334-800	Single	LCL-0261-5
NXI_0300_5	FI9	261	181	180-500	287	334-800	Single	LCL-0460-5
NXA_0385_5	FI10	300	208	180-500	330	334-800	Single	LCL-0460-5
NXA_0460_5	FI10	385	267	180-500	423	334-800	Single	LCL-0460-5
NXA_0520_5	FI10	460	319	180-500	506	508-1100	Single	LCL-0460-5
NXA_0125_6	FI9	100	104	300-600	572	508-1100	Single	LCL-0170-6
NXA_0144_6	FI9	125	130	300-600	649	508-1100	Single	LCL-0170-6
NXA_0170_6	FI9	144	150	300-600	715	508-1100	Single	LCL-0170-6
NXI_0208_6	FI9	170	177	300-600	803	508-1100	Single	LCL-0170-6
NXA_0261_6	FI10	208	216	300-600	814	508-1100	Single	LCL-0325-6
NXA_0325_6	FI10	261	271	300-600	902	508-1100	Single	LCL-0325-6
NXI_0385_6	FI10	325	338	300-600	1012	508-1100	Single	LCL-0325-6
NXI_0590_5	FI12	520	360	180-500	1012	334-800	Starcoupler	LCL-0460-5
NXI_0650_5	FI12	590	409	180-500	1133	334-800	Starcoupler	LCL-0460-5
NXI_0730_5	FI12	650	450	180-500	1265	334-800	Starcoupler	LCL-0460-5
NXI_0820_5	FI12	730	506	180-500	1430	334-800	Starcoupler	LCL-0460-5
2xNXA_0460_5	2xFI10	740	513	180-500	1760	334-800	DriveSync	LCL-0460-5
NXI_0920_5	FI12	820	568	180-500	2134	334-800	Starcoupler	LCL-0460-5
2xNXI_0520_5	2xFI10	920	637	180-500	2145	334-800	DriveSync	LCL-0460-5
NXI_1030_5	FI12	920	637	180-500	2530	334-800	Starcoupler	LCL-0460-5
NXA_1150_5	FI13	1030	714	180-500	2530	334-800	Single	LCL-1300-5
NXA_1300_5	FI13	1150	797	180-500	3606	334-800	Single	LCL-1300-5
NXI_1450_5	FI13	1300	901	180-500	4027	334-800	Single	LCL-1300-5
NXI_1770_5	FI14	1600	1109	180-500	4807	334-800	Starcoupler	LCL-1300-5

NXI_2150_5	FI14	1940	1344	180-500	5361	334-800	Starcoupler	LCL-1300-5
2xNXA_1300_5	2xFI13	1950	1351	180-500	110	334-800	DriveSync	LCL-1300-5
2xNXI_1450_5	2xFI13	2300	1593	180-500	137	334-800	DriveSync	LCL-1300-5
NXI_2700_5	FI14	2300	1593	180-500	158	334-800	Starcoupler	LCL-1300-5
3xNXA_1300_5	3xFI13	3278	2271	180-500	187	334-800	DriveSync	LCL-1300-5
3xNXI_1450_5	3xFI13	3661	2537	180-500	229	334-800	DriveSync	LCL-1300-5
4xNXA_1300_5	4xFI13	4370	3028	180-500	287	334-800	DriveSync	LCL-1300-5
4xNXI_1450_5	4xFI13	4874	3377	180-500	358	334-800	DriveSync	LCL-1300-5
NXI_0460_6	FI12	385	400	300-600	424	508-1100	Starcoupler	LCL-0325-6
2xNXA_0261_6	2xFI10	395	410	300-600	435	508-1100	DriveSync	LCL-0325-6
NXI_0502_6	FI12	460	478	300-600	506	508-1100	Starcoupler	LCL-0325-6
2xNXA_0325_6	2xFI10	496	515	300-600	546	508-1100	DriveSync	LCL-0325-6
NXI_0590_6	FI12	502	522	300-600	552	508-1100	Starcoupler	LCL-0325-6
NXI_0650_6	FI12	590	613	300-600	649	508-1100	Starcoupler	LCL-0325-6
2xNXI_0385_6	2xFI10	618	642	300-600	680	508-1100	DriveSync	LCL-0325-6
NXI_0750_6	FI12	650	675	300-600	715	508-1100	Starcoupler	LCL-0325-6
NXA_0920_6	FI13	820	852	300-600	902	508-1100	Single	LCL-1030-6
NXA_01030_6	FI13	920	956	300-600	1012	508-1100	Single	LCL-1030-6
NXI_1180_6	FI13	1030	1070	300-600	1133	508-1100	Single	LCL-1030-6
NXI_1500_6	FI14	1300	1351	300-600	1430	508-1100	Starcoupler	LCL-1030-6
2xNXA_0920_6	2xFI13	1558	1619	300-600	1714	508-1100	DriveSync	LCL-1030-6
NXI_1900_6	FI14	1500	1559	300-600	1650	508-1100	Starcoupler	LCL-1030-6
2xNXA_1030_6	2xFI13	1666	1731	300-600	1833	508-1100	DriveSync	LCL-1030-6
NXI_2250_6	FI14	1854	1927	300-600	2039	508-1100	Starcoupler	LCL-1030-6
2xNXI_1180_6	2xFI13	1874	1948	300-600	2061	508-1100	DriveSync	LCL-1030-6
3xNXA_1030_6	3xFI13	2811	2921	300-600	3092	508-1100	DriveSync	LCL-1030-6
3xNXI_1180_6	3xFI13	2811	2921	300-600	3092	508-1100	DriveSync	LCL-1030-6
4xNXA_1030_6	4xFI13	3332	3463	300-600	3665	508-1100	DriveSync	LCL-1030-6
4xNXI_1180_6	4xFI13	3748	3895	300-600	4123	508-1100	DriveSync	LCL-1030-6

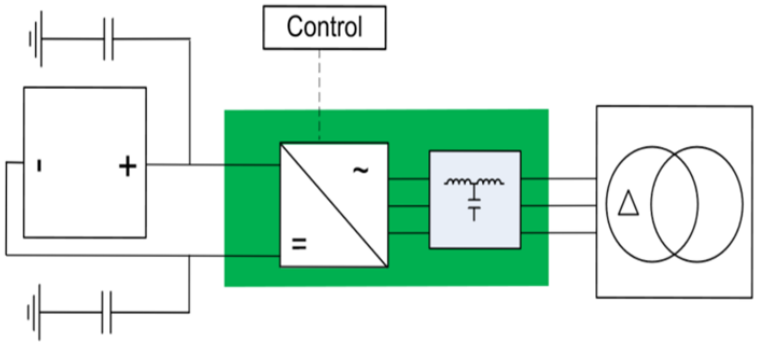
Liquid cooled

Unit	Frame size	Iac nom. (A)	Pac (kW)	Voltage range (V)	Idc max (A)	Vdc (V)	Configuration	Filter
NXA_0300_5	CH61	261	181	180-500	287	334-800	Single	RLC-0385-6
NXA_0385_5	CH61	300	208	180-500	330	334-800	Single	RLC-0385-6
NXA_0170_6	CH61	144	150	300-600	158	508-1100	Single	LCL-0170-6
NXA_0280_6	CH61	170	177	300-600	187	508-1100	Single	REG-0287-6
NXA_0261_6	CH61	208	216	300-600	229	508-1100	Single	REG-0287-6
NXA_0325_6	CH62	261	271	300-600	287	508-1100	Single	RLC-0385-6
NXA_0385_6	CH62	325	338	300-600	357	508-1100	Single	RLC-0385-6
NXA_0416_6	CH62	325	338	300-600	357	508-1100	Single	RLC-0520-6
NXA_0460_6	CH62	385	400	300-600	423	508-1100	Single	RLC-0520-6
NXA_0520_6	CH62	460	478	300-600	506	508-1100	Single	RLC-0520-6
NXA_0590_6	CH63	502	522	300-600	552	508-1100	Single	RLC-0750-6
NXA_0650_6	CH63	590	613	300-600	649	508-1100	Single	RLC-0750-6
NXA_0750_6	CH63	650	675	300-600	715	508-1100	Single	RLC-0750-6
2xNXA_0502_6	2xCH62	460	478	300-600	506	508-1100	DriveSync	RLC-0520-6
NXA_0820_6	CH64	750	779	300-600	825	508-1100	Single	RLC-0920-6
NXA_0920_6	CH64	820	852	300-600	902	508-1100	Single	RLC-0920-6
NXA_1030_6	CH64	920	956	300-600	1012	508-1100	Single	RLC-1180-6
NXA_1180_6	CH64	1030	1070	300-600	1133	508-1100	Single	RLC-1180-6
NXA_1300_6	CH64	1180	1226	300-600	1298	508-1100	Single	RLC-1640-6
NXA_1500_6	CH64	1300	1351	300-600	1430	508-1100	Single	RLC-1640-6
NXA_1700_6	CH64	1500	1559	300-600	1650	508-1100	Single	RLC-1640-6
NXP_1850_6	2xCH64	1700	1767	300-600	1870	508-1100	Starcoupler	RLC-1180-6
2xNXA_1030_6	2xCH64	1710	1777	300-600	1881	508-1100	DriveSync	RLC-1180-6
NXP_2120_6	2xCH64	1850	1923	300-600	2035	508-1100	Starcoupler	RLC-1180-6
2xNXA_1180_6	2xCH64	1860	1933	300-600	2046	508-1100	DriveSync	RLC-1180-6
NXP_2340_6	2xCH64	2120	2203	300-600	2332	508-1100	Starcoupler	RLC-1180-6
2xNXA_1300_6	2xCH64	2130	2214	300-600	2343	508-1100	DriveSync	RLC-1180-6
NXP_2700_6	2xCH64	2340	2432	300-600	2574	508-1100	Starcoupler	RLC-1640-6
2xNXA_1500_6	2xCH64	2350	2442	300-600	2585	508-1100	DriveSync	RLC-1640-6
NXP_3100_6	2xCH64	2700	2806	300-600	2970	508-1100	Starcoupler	RLC-1640-6
2xNXA_1700_6	2xCH64	2710	2816	300-600	2981	508-1100	DriveSync	RLC-1640-6
3xNXA_1300_6	3xCH64	3195	3320	300-600	3515	508-1100	DriveSync	RLC-1640-6
3xNXA_1500_6	3xCH64	3525	3663	300-600	3878	508-1100	DriveSync	RLC-1640-6

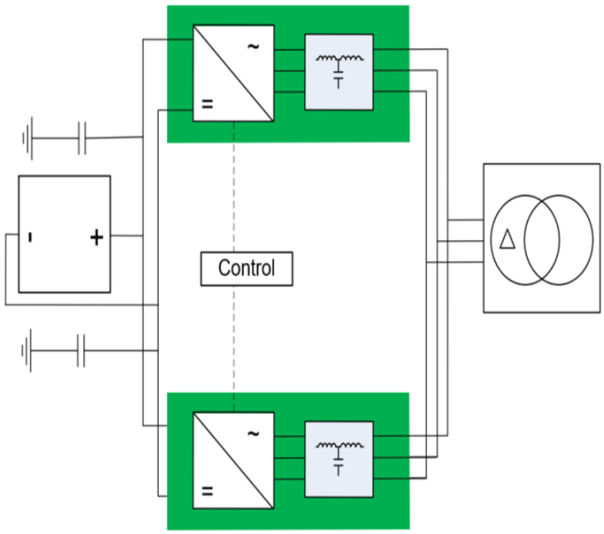
3xNXA_1700_6	3xCH64	4065	4224	300-600	4472	508-1100	DriveSync	RLC-1640-6
4xNXA_1300_6	4xCH64	4260	4427	300-600	4686	508-1100	DriveSync	RLC-1180-6
4xNXA_1500_6	4xCH64	4700	4884	300-600	5170	508-1100	DriveSync	RLC-1640-6
4xNXA_1700_6	4xCH64	5420	5633	300-600	5962	508-1100	DriveSync	RLC-1640-6

Topologies for different configurations

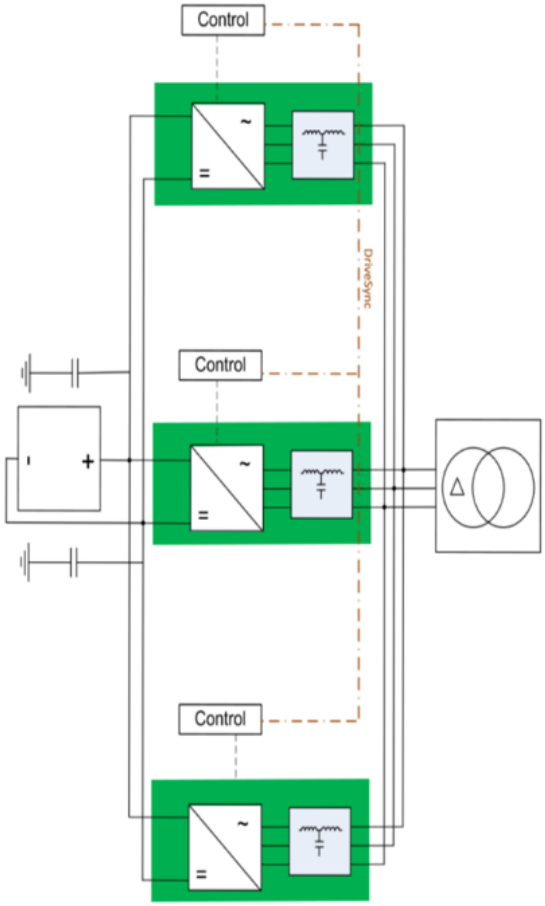
Single configuration: DC source + Grid Converter + LCL-filter + Single Winding transformer



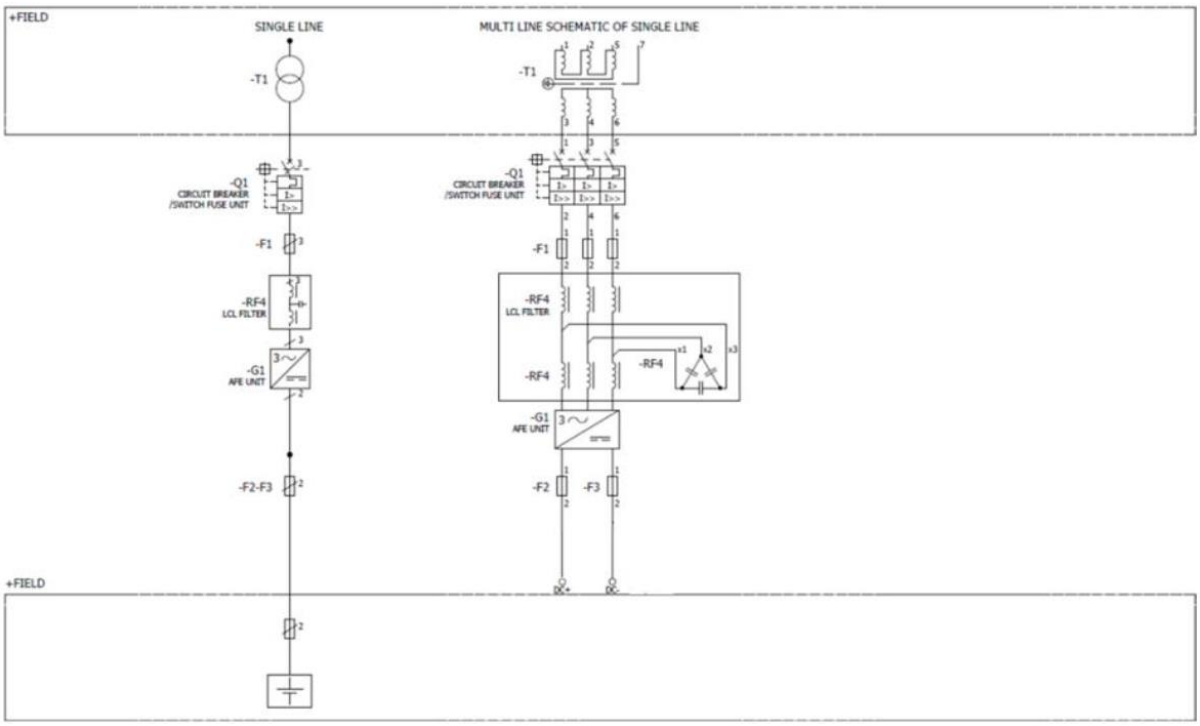
Starcoupler configuration: DC source + Grid Converter with Star-Coupler + LCL Filter + Single Winding transformer



DriveSync configuration: DC source + parallel Grid converters synchronised using Drive Sync (2 to 4) + LCL-filter + Single Winding transformer



Electrical Diagram of NX series (Air and Liquid cooled)



The sample selected to test was representative of the production. The sample was selected in:

Vacon Oy
Runsorintie 7.
65380. Vaasa, Finland.

Sample Report Number:

20539-1-TM
20539-2-TM

The inspection of manufacturing process was performed in:
On November 24, 2020.

Vacon Oy
Runsorintie 7.
65380. Vaasa, Finland.

Inspection Report Number:

20095-20-1-IF

RECORD OF CHANGES

Revision	Modification / Changes	Date
0	Initial version	24/03/2021
1	New edition to include new variant models	01/10/2021
2	New edition due to editorial changes	19/10/2021