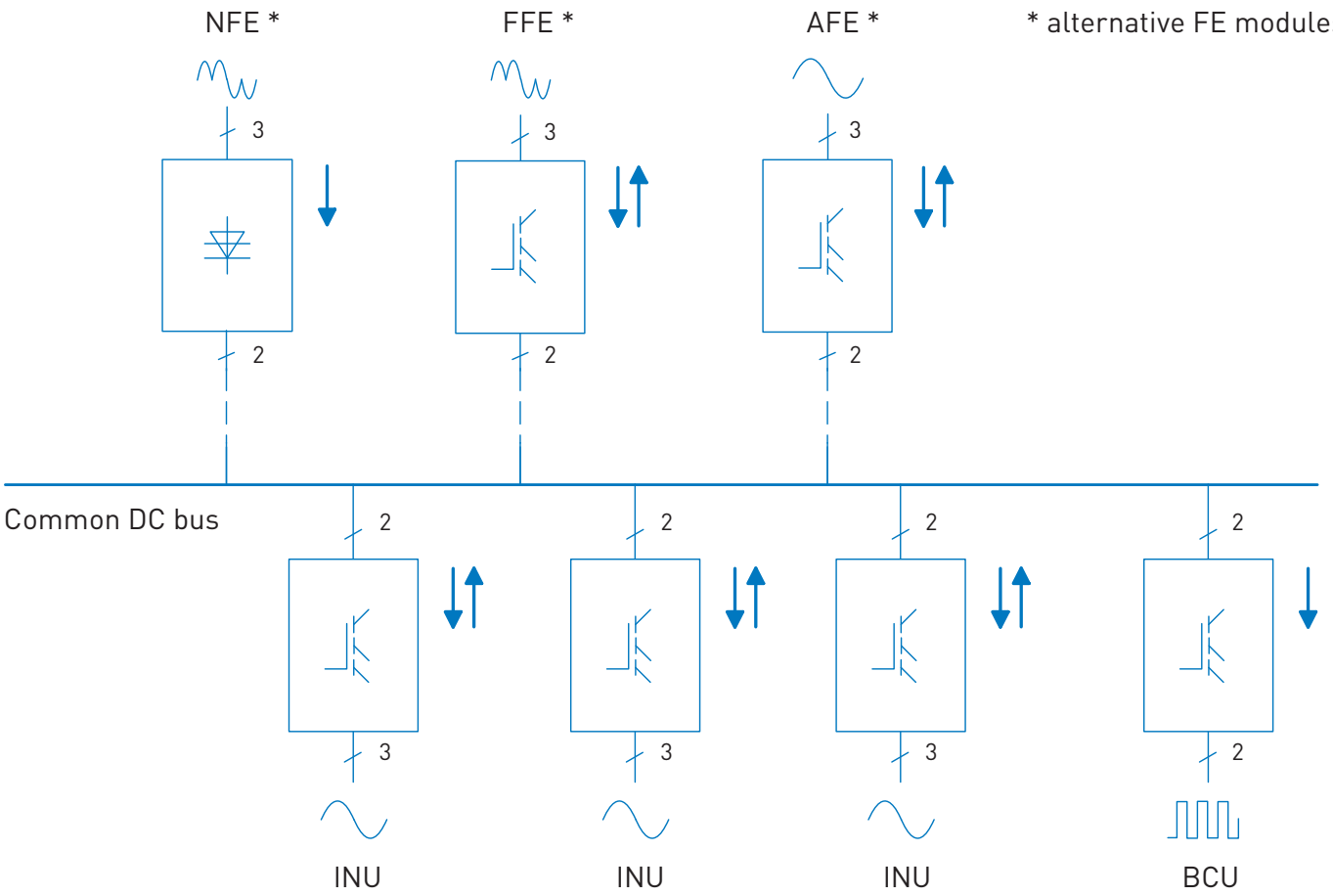
VACON NX PRODUCTS FOR COMMON DC BUS SYSTEMS

VACON

DRIVEN BY DRIVES

HIGH CONFIGURABILITY



Vacon offers a comprehensive range of common DC bus drive products. The product family covers a number of front-end units, inverter units and brake chopper units in the entire power range from 1 to 2000 kW at 380 VAC to 690 VAC. The drive components are built on the Vacon NX technology.

Common DC bus components are used in a multitude of combinations. In a typical DC bus configuration, the drives which are braking can transfer the energy directly to the drives in motoring mode.

FR4

FR6

FR7

FR8

Front-end units

The front-end units convert a mains AC voltage and current into a DC voltage and current. The power is transferred from the mains to a common DC bus (and, in certain cases, vice versa).

The AFE (Active front-end) unit is a bidirectional (regenerative) power converter for the front-end of a common DC bus drive line-up. An external LCL filter is used at the input. This unit is suitable in applications where low mains harmonics are required. AFE is able to boost DC link voltage (default +10%) higher than nominal DC link voltage (1,35x UN). AFE needs an external pre-charging circuit. However, AFE does not need any external measurements to operate. AFE units can be connected parallel without any special connections between the units. AFE units can be connected to the same fieldbus with inverters, and they can be controlled and monitored via fieldbus.

The FFE (Fundamental front-end) unit is a bidirectional (regenerative) power converter for the front-end of a common DC bus drive line-up. The FFE is a device that operates as a diode bridge for motoring power and like an anti-parallel thyristor bridge for regenerating power. In the FFE unit, IGBTs are used instead of thyristors. A dedicated external choke is used at the input. The FFE unit is suitable as a rectifying device when a "normal" level of harmonics is accepted but regeneration to the mains is required. There are many benefits when conparing with the anti-parallel thyristor bridges: no autotransformers are needed (for nominal DC link voltage 1,35xUN), max motor voltage is the same as supply voltage without autotransformer, controlled operation in case of supply failure and the spare parts are the same as in the inverter of the same size. FFE needs an external charging circuit. FFE unit can be connected to the same fieldbus with inverters, and it can be controlled and monitored via fieldbus.

The NFE (Non-regenerative front-end) unit is a unidirectional (motoring) power converter for the front-end of a common DC bus drive line-up. The NFE is a device that operates as a diode bridge using diode/thyristor components. A dedicated external choke is used at the input. The NFE unit has the capacity to charge a common DC bus. This unit is suitable as a rectifying device when a "normal" level of harmonics is accepted and no regeneration to the mains is required. No external charging circuit is needed because the charging is made by the controlling thyristors. NFE units can be connected parallel without any special connections between the units.

Inverter unit

The INU (Inverter unit) is a bidirectional DC-fed power inverter for the supply and control of AC motors. The INU is supplied from a common DC bus drive line-up. A charging circuit is needed in case the connection possibility to a live DC bus is required. The DC side charging circuit is integrated up to 75 kW (FR4-FR8) and external for higher power ratings (FI9-FI14).

Brake chopper unit

The BCU (Brake chopper unit) is a unidirectional power converter for the supply of excessive energy from a common DC bus drive line-up to resistors where the energy is dissipated as heat. External resistors are needed. By using two brake resistors, the braking power of the brake chopper is doubled.

FI9

FI10

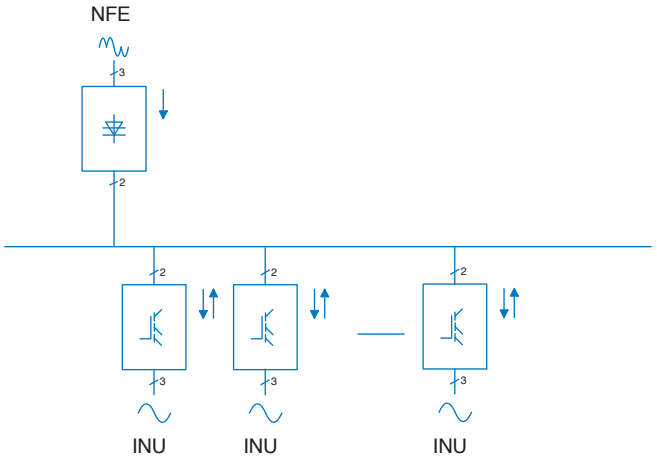
FI12

FI13

SELECTING COMMON DC BUS FRONT-ENDS

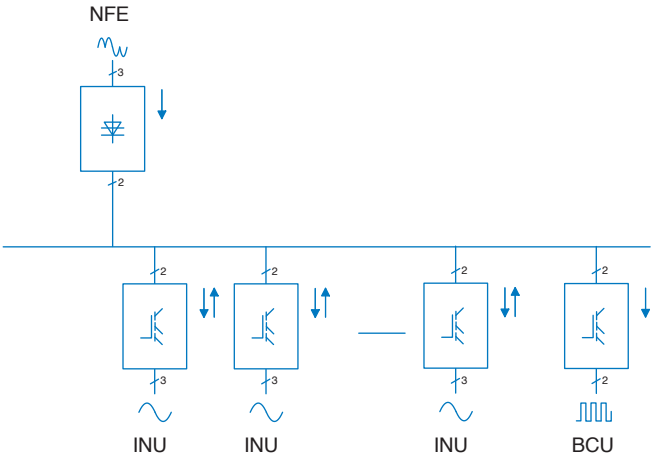
The Vacon common DC bus product portfolio fulfills all solution demands with a flexible architecture.

Vacon front-end units are selected according to the level of line harmonics and power requirements. Typical drive system configurations are illustrated below.



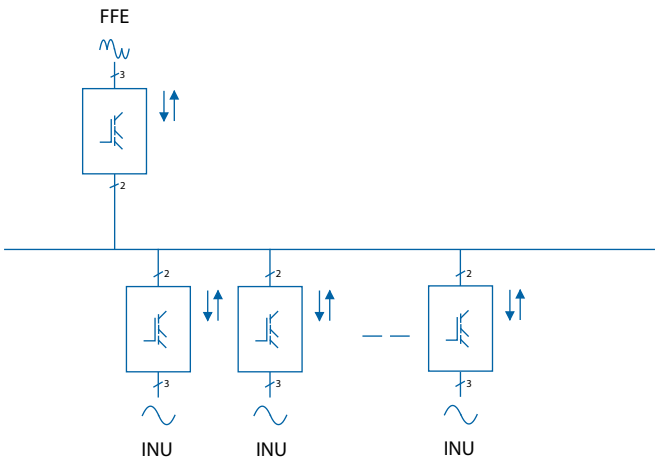
NFE + INUs

- low total mains power, $P_{mains} \leq \sum P_{INU}$
- suitable e.g. for small processing line with un- and recoiler, em-stop coasting



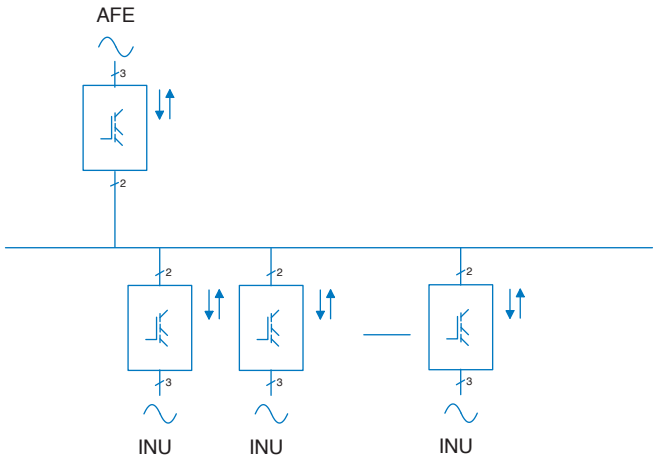
NFEs + INUs + BCU

- high total mains power, $P_{mains} \leq \sum P_{INU}$, short time small power braking
- suitable e.g. for big processing line or PM (dry end)



FFE + INUs

- high total mains power, $-P_{mains} \approx +P_{mains}$, $P_{mains} \leq \sum P_{INU}$
- suitable e.g. for process line or PM



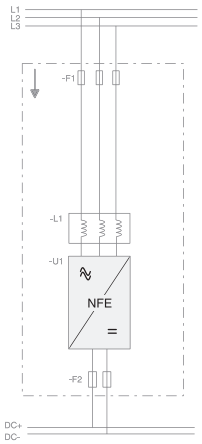
AFE + INU

- low harmonics, $-P_{mains} \approx +P_{mains}$, $P_{mains} \leq \sum P_{INU}$
- suitable for almost every applications

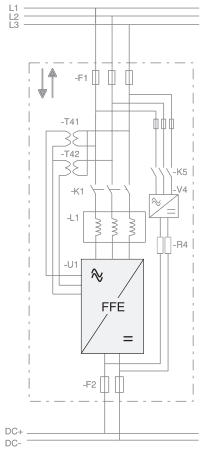
	NFE Non-regenerative front-end	FFE Fundamental front-end	AFE Active front-end	Conventional regenerative front-end *)
Input device	Choke (L)	Choke (L)	Filter (LCL)	Choke or auto-transformer (L)
Bridge type	Diode/thyristor bridge	IGBT bridge, two-level type	IGBT bridge, two-level type	Anti-parallel connected thyristor bridge
Type of operation	Controlled half-bridge	Average switching frequency approx. equivalent to line frequency	High frequency modulation (1.5 to 3.6 kHz)	Firing angle controlled
Direction of power	Motoring	Motoring and regenerating	Motoring and regenerating	Motoring and regenerating
Charging	Constant current	External required	External required	Usually internal
DC voltage	Nominal (approx. 1.35 * U_N)	Nominal (approx. 1.35 * U_N)	Stable at +10% of nominal (approx. 110% of 1.35 * U_N).	Lowered DC voltage for commutation margin (e.g. 17% fi approx. 83% of 1.35 * U_N) or autotransformer on regenerative bridge
Motor voltage	Same as supply voltage	Same as supply voltage	Same as supply voltage. Can be more than supply voltage if DC voltage boost is used	Less than supply voltage without autotransformer
THD (current)	Similar to 6-pulse bridge, normally < 40%	Similar to 6-pulse bridge, normally < 40%	<5%	Similar to 6-pulse bridge or worse
Paralelling	yes	no	yes	no
	12-, 18- or 24-pulse	12-, 18- or 24-pulse		12-, 18- or 24-pulse

*) Conventional regenerative front-end (aka "Anti-parallel thyristor bridge") is not available from Vacon.

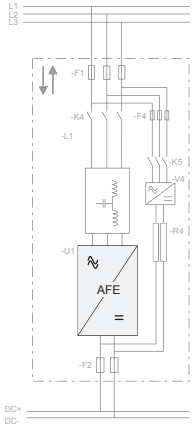
TYPICAL DEVICE CONFIGURATIONS



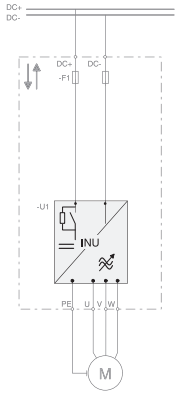
NON-REGENERATIVE FRONT-END



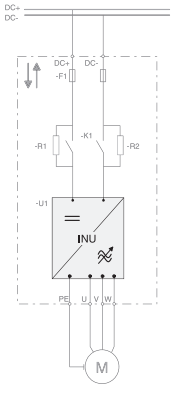
FUNDAMENTAL FRONT-END



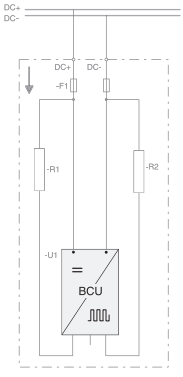
ACTIVE FRONT-END



INVERTER UNIT (FR4-FR8)



INVERTER UNIT (FI9-FI14)



BRAKE CHOPPER UNIT

ELECTRICAL RATINGS

380-500 VAC Inverter modules

Type	Unit		Low overload (AC current)		High overload (AC current)		I_{max}
	Code	Frame	$I_{L\text{-}cont}$ [A]	I_{1min} [A]	$I_{H\text{-}cont}$ [A]	I_{1min} [A]	I_{2s} [A]
INU	NXI_0004 5	FR4	4.3	4.7	3.3	5.0	6.2
	NXI_0009 5	FR4	9	9.9	7.6	11.4	14
	NXI_0012 5	FR4	12	13.2	9	13.5	18
	NXI_0016 5	FR6	16	17.6	12	18	24
	NXI_0022 5	FR6	23	25.3	16	24	32
	NXI_0031 5	FR6	31	34	23	35	46
	NXI_0038 5	FR6	38	42	31	47	62
	NXI_0045 5	FR6	46	51	38	57	76
	NXI_0061 5	FR7	61	67	46	69	92
	NXI_0072 5	FR7	72	79	61	92	122
	NXI_0087 5	FR7	87	96	72	108	144
	NXI_0105 5	FR7	105	116	87	131	174
	NXI_0140 5	FR8	140	154	105	158	210
	NXI_0168 5	FI9	170	187	140	210	280
	NXI_0205 5	FI9	205	226	170	255	336
	NXI_0261 5	FI9	261	287	205	308	349
	NXI_0300 5	FI9	300	330	245	368	444
	NXI_0385 5	FI10	385	424	300	450	540
	NXI_0460 5	FI10	460	506	385	578	693
	NXI_0520 5	FI10	520	572	460	690	828
	NXI_0590 5	FI12	590	649	520	780	936
	NXI_0650 5	FI12	650	715	590	885	1062
	NXI_0730 5	FI12	730	803	650	975	1170
	NXI_0820 5	FI12	820	902	730	1095	1314
	NXI_0920 5	FI12	920	1012	820	1230	1476
	NXI_1030 5	FI12	1030	1133	920	1380	1656
	NXI_1150 5	FI13	1150	1265	1030	1545	1854
	NXI_1300 5	FI13	1300	1430	1150	1725	2070
	NXI_1450 5	FI13	1450	1595	1300	1950	2340
	NXI_1770 5	FI14	1770	1947	1600	2400	2880
	NXI_2150 5	FI14	2150	2365	1940	2910	3492
	NXI_2700 5	FI14	2700	2970	2300	3278	3933

Front-end modules

Type	Unit		Low overload (AC current)		High overload (AC current)		DC Power ($P_{L\text{-}cont}$)	
	Code	Frame	$I_{L\text{-}cont}$ [A]	I_{1min} [A]	$I_{H\text{-}cont}$ [A]	I_{1min} [A]	400 V mains P (kW)	500 V mains P (kW)
AFE	NXA_0261 5	FI9	261	287	205	308	176	220
	NXA_0460 5	FI10	460	506	385	578	310	388
	2 x NXA0460 5	2 x FI10	875	962	732	1100	587	735
	NXA_1300 5	FI13	1300	1430	1150	1725	876	1092
	2 x NXA_1300 5	2 x FI13	2470	2717	2185	3278	1660	2075
	3 x NXA_1300 5	3 x FI13	3705	4076	3278	4916	2490	3115
FFE 6-pulse	NXF_0300 5	FI9	300	330	245	368	189	237
	NXF_0520 5	FI10	520	572	460	690	328	410
	NXF_1450 5	FI13	1450	1595	1300	1950	916	1144
FFE 12-pulse	2 x NXF_0300 5	2 x FI9	600	660	490	736	378	474
	2 x NXF_0520 5	2 x FI10	1030	1133	920	1380	656	820
	2 x NXF_1450 5	2 x FI13	2700	2970	2300	3278	1832	2288
NFE	NXN_0650 5	FI9	650	715	507	793	410	513
	2 x NXN_0650 5	2 x FI9	1235	1359	963	1507	780	975
	3 x NXN_0650 5	3 x FI9	1853	2038	1445	2260	1170	1462
	4 x NXN_0650 5	4 x FI9	2470	2717	1927	3013	1560	1950
	5 x NXN_0650 5	5 x FI9	3088	3396	2408	3767	1950	2437
	6 x NXN_0650 5	6 x FI9	3705	4076	2890	4520	2340	2924

In case you need to reduce the power, please use the next formulas: [1] $P_{H\text{-}cont} = P_{L\text{-}cont} \times \frac{I_{H\text{-}cont}}{I_{L\text{-}cont}}$ [2] $P_{1min} = P_{L\text{-}cont} \times 1.1$ (Low overload) $P_{1min} = P_{H\text{-}cont} \times 1.5$ (High overload) [3] $P_{L\text{-}cont} \times \frac{U_x}{400\ V}$

Brake chopper modules

Type	Unit		Braking current	Min. Braking resistor (Per resistor)		Continuous braking power	
	Code	Frame	$I_{L\text{-}cont}$[1] [A]	540 VDC [Ω]	675 VDC [Ω]	540 VDC [kW]	675 VDC P (kW)
BCU	NXB_0004 5	FR4	8	159.30	199.13	5	6
	NXB_0009 5	FR4	18	70.80	88.50	11	14
	NXB_0012 5	FR4	24	53.10	66.38	15	19
	NXB_0016 5	FR6	32	39.83	49.78	20	25
	NXB_0022 5	FR6	44	28.96	36.20	28	35
	NXB_0062 5	FR6	62	20.55	25.69	40	49
	NXB_0038 5	FR6	76	16.77	20.96	48	61
	NXB_0045 5	FR6	90	14.16	17.70	57	72
	NXB_0061 5	FR7	122	10.45	13.06	78	97
	NXB_0072 5	FR7	148	8.61	10.76	94	118
	NXB_0087 5	FR7	174	7.32	9.16	111	139
	NXB_0105 5	FR7	210	6.07	7.59	134	167
	NXB_0140 5	FR8	280	4.55	5.69	178	223
	NXB_0168 5	FI9	336	3.79	4.74	214	268
	NXB_0205 5	FI9	410	3.11	3.89	261	327
	NXB_0261 5	FI9	522	2.44	3.05	333	416
	NXB_0300 5	FI9	600	2.12	2.66	382	478
	NXB_0385 5	FI10	770	1.66	2.07	491	613
	NXB_0460 5	FI10	920	1.39	1.73	586	733
	NXB_0520 5	FI10	1040	1.23	1.53	663	828
	NXB_1150 5	FI13	2300	0.55	0.69	1466	1832
	NXB_1300 5	FI13	2600	0.49	0.61	1657	2071
	NXB_1450 5	FI13	2900	0.44	0.55	1848	2310

Please note: [1] Total braking current

ELECTRICAL RATINGS

525-690 VAC Inverter modules

	Unit		Low overload (AC current)		High overload (AC current)		I_{max}
Type	Code	Frame	$I_{L\text{-}cont}$ [A]	I_{1min} [A]	$I_{H\text{-}cont}$ [A]	I_{1min} [A]	I_{2s} [A]
INU	NXI_0004 6	FR6	4.5	5	3.2	5	6.4
	NXI_0005 6	FR6	5.5	6	4.5	7	9
	NXI_0007 6	FR6	7.5	8	5.5	8	11
	NXI_0010 6	FR6	10	11	7.5	11	15
	NXI_0013 6	FR6	13.5	15	10	15	20
	NXI_0018 6	FR6	18	20	13.5	20	27
	NXI_0022 6	FR6	22	24	18	27	36
	NXI_0027 6	FR6	27	30	22	33	44
	NXI_0034 6	FR6	34	37	27	41	54
	NXI_0041 6	FR7	41	45	34	51	68
	NXI_0052 6	FR7	52	57	41	62	82
	NXI_0062 6	FR8	62	68	52	78	104
	NXI_0080 6	FR8	80	88	62	93	124
	NXI_0100 6	FR8	100	110	80	120	160
	NXI_0125 6	FI9	125	138	100	150	200
	NXI_0144 6	FI9	144	158	125	188	213
	NXI_0170 6	FI9	170	187	144	216	245
	NXI_0208 6	FI9	208	229	170	255	289
	NXI_0261 6	FI10	261	287	208	312	375
	NXI_0325 6	FI10	325	358	261	392	470
	NXI_0385 6	FI10	385	424	325	488	585
	NXI_0416 6	FI10	416	458	325	488	585
	NXI_0460 6	FI12	460	506	385	578	693
	NXI_0502 6	FI12	502	552	460	690	828
	NXI_0590 6	FI12	590	649	502	753	904
	NXI_0650 6	FI12	650	715	590	885	1062
	NXI_0750 6	FI12	750	825	650	975	1170
	NXI_0820 6	FI12	820	902	650	975	1170
	NXI_0920 6	FI13	920	1012	820	1230	1476
	NXI_1030 6	FI13	1030	1133	920	1380	1656
	NXI_1180 6	FI13	1180	1298	1030	1464	1755
	NXI_1500 6	FI14	1500	1650	1300	1950	2340
	NXI_1900 6	FI14	1900	2090	1500	2250	2700
	NXI_2250 6	FI14	2250	2475	1900	2782	3335

Front-end modules

Type	Unit		Low overload (AC current)		High overload (AC current)		DC Power (Continuous)
	Code	Frame	$I_{L\text{-}cont}$ [A]	I_{1min} [A]	$I_{H\text{-}cont}$ [A]	I_{1min} [A]	690 V mains P (kW)
AFE	NXA_0170 6	FI9	170	187	144	216	198
	NXA_0325 6	FI10	325	358	261	392	378
	2 x NXA_0325 6	2 x FI10	634	698	509	764	716
	NXA_1030 6	FI13	1030	1133	920	1380	1195
	2 x NXA_1030 6	2 x FI13	2008	2209	1794	2691	2270
	3 x NXA_1030 6	3 x FI13	2987	3286	2668	4002	3405
	4 x NXA_1030 6	4 x FI13	3965	4362	3542	5313	4538
FFE 6-pulse	NXF_0208 6	FI9	208	229	170	255	227
	NXF_0416 6	FI10	416	458	325	488	453
	NXF_1180 6	FI13	1180	1298	1030	1464	1285
FFE 12-pulse	2 x NXF_0208 6	2 x FI9	416	458	340	510	454
	2 x NXF_0416 6	2 x FI10	1640	916	650	976	906
	2 x NXF_1180 6	2 x FI13	4500	2596	2060	2928	2570
NFE	NXN_0650 6	FI9	650	715	507	793	708
	2 x NXN_0650 6	2 x FI9	1235	1359	963	1507	1345
	3 x NXN_0650 6	3 x FI9	1853	2038	1445	2260	2018
	4 x NXN_0650 6	4 x FI9	2470	2717	1927	3013	2690
	5 x NXN_0650 6	5 x FI9	3088	3396	2408	3767	3363
	6 x NXN_0650 6	6 x FI9	3705	4076	2890	4520	4036

In case you need to reduce the power, please use the next formulas: [1] $P_{H\text{-}cont} = P_{L\text{-}cont} \times \frac{I_{H\text{-}cont}}{I_{L\text{-}cont}}$ [2] $P_{1min} = P_{L\text{-}cont} \times 1.1$ (Low overload) $P_{1min} = P_{H\text{-}cont} \times 1.5$ (High overload) [3] $P_{L\text{-}cont} \times \frac{U_x}{690\ V}$

Brake chopper modules

	Unit		Braking current	Min. Braking resistor (Per resistor)		Continuous braking power	
Type	Code	Frame	$I_{L\text{-}cont}$[1] [A]	708 VDC [Ω]	931 VDC [Ω]	708 VDC P [kW]	931 VDC P (kW)
BCU	NXB_0004 6	FR6	8	238.36	274.65	6.7	9
	NXB_0005 6	FR6	10	190.69	219.72	8	11
	NXB_0007 6	FR6	14	136.21	156.94	12	15
	NXB_0010 6	FR6	20	95.34	109.86	17	22
	NXB_0013 6	FR6	26	73.34	84.51	22	29
	NXB_0018 6	FR6	36	52.97	61.03	30	40
	NXB_0022 6	FR6	44	43.34	49.94	37	48
	NXB_0027 6	FR6	54	35.31	40.69	45	59
	NXB_0034 6	FR6	68	28.04	32.31	57	75
	NXB_0041 6	FR7	82	23.25	26.79	69	90
	NXB_0052 6	FR7	104	18.34	21.13	87	114
	NXB_0062 6	FR8	124	15.38	17.72	104	136
	NXB_0080 6	FR8	160	11.92	13.73	134	176
	NXB_0100 6	FR8	200	9.53	10.99	167	220
	NXB_0125 6	FI9	250	7.63	8.79	209	275
	NXB_0144 6	FI9	288	6.62	7.63	241	316
	NXB_0170 6	FI9	340	5.61	6.46	284	374
	NXB_0208 6	FI9	416	4.58	5.28	348	457
	NXB_0261 6	FI10	522	3.65	4.21	436	573
	NXB_0325 6	FI10	650	2.93	3.38	543	714
	NXB_0385 6	FI10	770	2.48	2.85	643	846
	NXB_0416 6	FI10	832	2.29	2.64	695	914
	NXB_0920 6	FI13	1840	1.04	1.19	1537	2021
	NXB_1030 6	FI13	2060	0.93	1.07	1721	2263
	NXB_1180 6	FI13	2360	0.81	0.93	1972	2593

Please note: [1] Total braking current

DIMENSIONS AND FUSES

380-500 VAC

Type	Module			Module dimensions				AC fuses					DC fuses				
	Code	Frame	VAC (V)	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)	Ferraz Shawmut type (aR)	U_N (V)	I_N (A)	Size	Q'ty	Ferraz Shawmut type (aR)	U_N (V)	I_N (A)	Size	Q'ty
INU	NXI_0004 5	FR4	380...500	292	128	190	5						NH00UD10C32P	1000	32	00	2
	NXI_0009 5	FR4	380...500	292	128	190	5						NH00UD10C32P	1000	32	00	2
	NXI_0012 5	FR4	380...500	292	128	190	5						NH00UD10C32P	1000	32	00	2
	NXI_0016 5	FR6	380...500	519	195	237	16						NH00UD10C32P	1000	32	00	2
	NXI_0022 5	FR6	380...500	519	195	237	16						NH00UD10C63P	1000	63	00	2
	NXI_0031 5	FR6	380...500	519	195	237	16						NH00UD10C63P	1000	63	00	2
	NXI_0038 5	FR6	380...500	519	195	237	16						PC70UD13C80PA	1250	80	0	2
	NXI_0045 5	FR6	380...500	519	195	237	16						PC70UD13C125PA	1250	125	0	2
	NXI_0061 5	FR7	380...500	591	237	257	29						PC70UD13C125PA	1250	125	0	2
	NXI_0072 5	FR7	380...500	591	237	257	29						PC70UD13C200PA	1250	200	0	2
	NXI_0087 5	FR7	380...500	591	237	257	29						PC70UD13C200PA	1250	200	0	2
	NXI_0105 5	FR7	380...500	591	237	257	29						PC70UD13C200PA	1250	200	0	2
	NXI_0140 5	FR8	380...500	758	289	344	48						PC71UD13C315PA	1250	315	1	2
	NXI_0168 5	FI9	380...500	1030	239	372	67						PC71UD13C315TF	1250	315	1	2
	NXI_0205 5	FI9	380...500	1030	239	372	67						PC71UD13C400TF	1250	400	1	2
	NXI_0261 5	FI9	380...500	1030	239	372	67						PC73UD13C500TF	1250	630	3	2
	NXI_0300 5	FI9	380...500	1030	239	372	67						PC73UD13C630TF	1250	630	3	2
	NXI_0385 5	FI10	380...500	1032	239	552	100						PC73UD13C800TF	1250	800	3	2
	NXI_0460 5	FI10	380...500	1032	239	552	100						PC73UD95V11CTF	950	1100	3	2
	NXI_0520 5	FI10	380...500	1032	239	552	100						PC73UD95V11CTF	950	1100	3	2
	NXI_0590 5	FI12	380...500	1032	478	552	200						PC73UD13C630TF	1250	630	3	4
	NXI_0650 5	FI12	380...500	1032	478	552	200						PC73UD13C800TF	1250	800	3	4
	NXI_0730 5	FI12	380...500	1032	478	552	200						PC73UD13C800TF	1250	800	3	4
	NXI_0820 5	FI12	380...500	1032	478	552	200						PC73UD13C800TF	1250	800	3	4
	NXI_0920 5	FI12	380...500	1032	478	552	200						PC73UD95V11CTF	950	1100	3	4
	NXI_1030 5	FI12	380...500	1032	478	552	200						PC73UD95V11CTF	950	1100	3	4
	NXI_1150 5	FI13	380...500	1032	708	553	306						PC84UD11C22CTQ	1100	2200	84	2
	NXI_1300 5	FI13	380...500	1032	708	553	306						PC84UD11C24CTQ	1100	2400	84	2
	NXI_1450 5	FI13	380...500	1032	708	553	306						PC84UD10C27CTQ	1000	2700	84	2
	NXI_1770 5	FI14	380...500	1032	2 x 708	553	612						PC84UD12C18CTQ	1150	1800	84	4
	NXI_2150 5	FI14	380...500	1032	2 x 708	553	612						PC84UD11C20CTQ	1100	2000	84	4
	NXI_2700 5	FI14	380...500	1032	2 x 708	553	612						PC84UD10C27CTQ	1000	2700	84	4
AFE	NXA_0261 5	FI9	380...500	1030	239	372	67	NH2UD69V500PV	690	500	2	2	PC73UD13C500TF	1250	500	3	2
	NXA_0460 5	FI10	380...500	1032	239	552	100	NH3UD69V800PV	690	800	3	3	PC73UD95V11CTF	950	1100	3	2
	NXA_1300 5	FI13	380...500	1032	708	553	306	PC44UD75V22CTQ	750	2200	44	3	PC84UD11C24CTQ	1100	2400	84	2
FFE	NXF_0300 5	FI9	380...500	1030	239	372	67	NH2UD69V500PV	690	500	2	3	PC73UD13C630TF	1250	630	3	2
	NXF_0520 5	FI10	380...500	1032	239	552	100	NH3UD69V1000PV	690	1000	3	3	PC73UD95V11CTF	950	1100	3	2
	NXF_1450 5	FI13	380...500	1032	708	553	306	PC44UD75V24CTQ	750	2400	44	3	PC84UD10C27CTQ	1000	2700	84	2
NFE	NXN_0650 5	FI9	380...500	1030	239	372	67	NH3UD69V1000PV	690	1000	3	3	PC73UD11C13CTF	1100	1250	73(LR)	2
BCU	NXB_0004 5	FR4	380...500	292	128	190	5						NH00UD10C32P	1000	32	00	2
	NXB_0009 5	FR4	380...500	292	128	190	5						NH00UD10C32P	1000	32	00	2
	NXB_0012 5	FR4	380...500	292	128	190	5						NH00UD10C63P	1000	63	00	2
	NXB_0016 5	FR6	380...500	519	195	237	16						NH00UD10C63P	1000	63	00	2
	NXB_0022 5	FR6	380...500	519	195	237	16						PC70UD13C80PA	1250	80	0	2
	NXB_0031 5	FR6	380...500	519	195	237	16						PC70UD13C125PA	1250	125	0	2
	NXB_0038 5	FR6	380...500	519	195	237	16						PC70UD13C125PA	1250	125	0	2
	NXB_0045 5	FR6	380...500	519	195	237	16						PC70UD13C200PA	1250	200	0	2
	NXB_0061 5	FR7	380...500	591	237	257	29						PC70UD13C200PA	1250	200	0	2
	NXB_0072 5	FR7	380...500	591	237	257	29						PC71UD13C315PA	1250	315	1	2
	NXB_0087 5	FR7	380...500	591	237	257	29						PC71UD13C315PA	1250	315	1	2
	NXB_0105 5	FR7	380...500	591	237	257	29						PC71UD13C400PA	1250	400	1	2
	NXB_0140 5	FR8	380...500	758	289	344	48						PC73UD13C500PA	1250	500	3	2
	NXB_0168 5	FI9	380...500	1030	239	372	67						PC73UD13C630TF	1250	630	3	2
	NXB_0205 5	FI9	380...500	1030	239	372	67						PC73UD13C800TF	1250	800	3	2
	NXB_0261 5	FI9	380...500	1030	239	372	67						PC73UD95V11CTF	950	1100	3	2
	NXB_0300 5	FI9	380...500	1030	239	372	67						PC73UD95V11CTF	950	1100	3	2
	NXB_0385 5	FI10	380...500	1032	239	552	100						PC83UD11C13CTF	1150	1250	83	2
	NXB_0460 5	FI10	380...500	1032	239	552	100						PC84UD13C15CTQ	1250	1500	84	2
	NXB_0520 5	FI10	380...500	1032	239	552	100						PC84UD12C18CTQ	1150	1800	84	2
	NXB_1150 5	FI13	380...500	1032	708	553	306						PC87UD11C38CP50	1050	3800	2 x 84	2
	NXB_1300 5	FI13	380...500	1032	708	553	306						PC87UD10C44CP50	1000	4400	2 x 84	2
	NXB_1450 5	FI13	380...500	1032	708	553	306						PC87UD10C50CP50	1000	5000	2 x 84	2

FI9-FI14 are flush-end type.

525-690 VAC

Type	Module			Module dimensions				AC fuses					DC fuses				
	Code	Frame	VAC (V)	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)	Ferraz Shawmut type (aR)	U_N (V)	I_N (A)	Size	Q'ty	Ferraz Shawmut type (aR)	U_N (V)	I_N (A)	Size	Q'ty
INU	NXI_0004 6	FR6	525...690	519	195	237	16						NH00UD10C32P	1000	32	00	2
	NXI_0005 6	FR6	525...690	519	195	237	16						NH00UD10C32P	1000	32	00	2
	NXI_0007 6	FR6	525...690	519	195	237	16						NH00UD10C32P	1000	32	00	2
	NXI_0010 6	FR6	525...690	519	195	237	16						NH00UD10C32P	1000	32	00	2
	NXI_0013 6	FR6	525...690	519	195	237	16						NH00UD10C32P	1000	32	00	2
	NXI_0018 6	FR6	525...690	519	195	237	16						NH00UD10C63P	1000	63	00	2
	NXI_0022 6	FR6	525...690	519	195	237	16						NH00UD10C63P	1000	63	00	2
	NXI_0027 6	FR6	525...690	519	195	237	16						NH00UD10C63P	1000	63	00	2
	NXI_0034 6	FR6	525...690	519	195	237	16						NH00UD10C63P	1000	63	00	2
	NXI_0041 6	FR7	525...690	591	237	257	29						PC70UD13C80PA	1250	80	0	2
	NXI_0052 6	FR7	525...690	591	237	257	29						PC70UD13C125PA	1250	125	0	2
	NXI_0062 6	FR8	525...690	758	289	344	48						PC70UD13C125PA	1250	125	0	2
	NXI_0080 6	FR8	525...690	758	289	344	48						PC70UD13C200PA	1250	200	0	2
	NXI_0100 6	FR8	525...690	758	289	344	48						PC70UD13C200PA	1250	200	0	2
	NXI_0125 6	FI9	525...690	1030	239	372	67						PC71UD13C315TF	1250	315	1	2
	NXI_0144 6	FI9	525...690	1030	239	372	67						PC71UD13C315TF	1250	315	1	2
	NXI_0170 6	FI9	525...690	1030	239	372	67						PC71UD13C400TF	1250	400	1	2
	NXI_0208 6	FI9	525...690	1030	239	372	67						PC71UD13C400TF	1250	400	1	2
	NXI_0261 6	FI10	525...690	1032	239	552	100						PC73UD13C500TF	1250	500	3	2
	NXI_0325 6	FI10	525...690	1032	239	552	100						PC73UD13C630TF	1250	630	3	2
	NXI_0385 6	FI10	525...690	1032	239	552	100						PC73UD13C800TF	1250	800	3	2
	NXI_0416 6	FI10	525...690	1032	239	552	100						PC73UD13C800TF	1250	800	3	2
	NXI_0460 6	FI12	380...500	1032	478	552	200						PC73UD13C500TF	1250	500	3	4
	NXI_0502 6	FI12	380...500	1032	478	552	200						PC73UD13C500TF	1250	500	3	4
	NXI_0590 6	FI12	380...500	1032	478	552	200						PC73UD13C630TF	1250	630	3	4
	NXI_0650 6	FI12	380...500	1032	478	552	200						PC73UD13C630TF	1250	630	3	4
	NXI_0750 6	FI12	380...500	1032	478	552	200						PC73UD13C800TF	1250	800	3	4
	NXI_0820 6	FI12	380...500	1032	478	552	200						PC73UD13C800TF	1250	800	3	4
	NXI_0920 6	FI13	525...690	1032	708	553	306						PC84UD12C18CTQ	1150	1800	84	2
	NXI_1030 6	FI13	525...690	1032	708	553	306						PC84UD11C20CTQ	1100	2000	84	2
	NXI_1180 6	FI13	525...690	1032	708	553	306						PC84UD11C22CTQ	1100	2200	84	2
	NXI_1500 6	FI14	525...690	1032	2 x 708	553	612						PC84UD13C15CTQ	1250	1500	84	4
	NXI_1900 6	FI14	525...690	1032	2 x 708	553	612						PC84UD12C18CTQ	1150	1800	84	4
	NXI_2250 6	FI14	525...690	1032	2 x 708	553	612						PC84UD11C22CTQ	1100	2200	84	4
AFE	NXA_0170 6	FI9	525...690	1030	239	372	67	PC71UD13C315PA	1250	315	1	3	PC71UD13C400TF	1250	400	1	2
	NXA_0325 6	FI10	525...690	1032	239	552	100	PC73UD13C630PA	1150	700	3	3	PC73UD13C630TF	1250	630	3	2
	NXA_1030 6	FI13	525...690	1032	708	553	306	PC84UD12C18CTQ	1150	1800	84	3	PC84UD11C20CTQ	1100	2000	84	2
FFE	NXF_0208 6	FI9	525...690	1030	239	372	67	PC71UD13C400PA	1250	400	1	3	PC71UD13C400TF	1250	400	1	2
	NXF_0416 6	FI10	525...690	1032	239	552	100	PC73UD12C700PA	1200	700	3	3	PC73UD13C800TF	1250	800	3	2
	NXF_1180 6	FI13	525...690	1032	708	553	306	PC84UD11V20CTQ	1100	2000	84	3	PC84UD11C22CTQ	1100	2200	84	2
NFE	NXN_0650 5	FI9	525...690	1030	239	372	67	NH3UD69V1000PV	690	1000	3	3	PC73UD11C13CTF	1100	1250	73(LR)	2
BCU	NXB_0004 6	FR6	525...690	519	195	237	16						NH00UD10C32P	1000	32	00	2
	NXB_0005 6	FR6	525...690	519	195	237	16						NH00UD10C32P	1000	32	00	2
	NXB_0007 6	FR6	525...690	519	195	237	16						NH00UD10C32P	1000	32	00	2
	NXB_0010 6	FR6	525...690	519	195	237	16						NH00UD10C32P	1000	32	00	2
	NXB_0013 6	FR6	525...690	519	195	237	16						NH00UD10C63P	1000	63	00	2
	NXB_0018 6	FR6	525...690	519	195	237	16						NH00UD10C63P	1000	63	00	2
	NXB_0022 6	FR6	525...690	519	195	237	16						PC70UD13C80PA	1250	80	0	2
	NXB_0027 6	FR6	525...690	519	195	237	16						PC70UD13C125PA	1250	125	0	2
	NXB_0034 6	FR6	525...690	519	195	237	16						PC70UD13C125PA	1250	125	0	2
	NXB_0041 6	FR7	525...690	591	237	257	29						PC70UD13C125PA	1250	125	0	2
	NXB_0052 6	FR7	525...690	591	237	257	29						PC70UD13C200PA	1250	200	0	2
	NXB_0062 6	FR8	525...690	758	289	344	48						PC70UD13C200PA	1250	200	0	2
	NXB_0080 6	FR8	525...690	758	289	344	48						PC71UD13C315PA	1250	315	1	2
	NXB_0100 6	FR8	525...690	758	289	344	48						PC71UD13C400PA	1250	400	1	2
	NXB_0125 6	FI9	525...690	1030	239	372	67						PC71UD13C400TF	1250	400	1	2
	NXB_0144 6	FI9	525...690	1030	239	372	67						PC73UD13C500TF	1250	500	3	2
	NXB_0170 6	FI9	525...690	1030	239	372	67						PC73UD13C630TF	1250	630	3	2
	NXB_0208 6	FI9	525...690	1030	239	372	67						PC73UD13C800TF	1250	800	3	2
	NXB_0261 6	FI10	525...690	1032	239	552	100						PC83UD12C11CTF	1200	1100	83	2
	NXB_0325 6	FI10	525...690	1032	239	552	100						PC83UD12C11CTF	1200	1100	83	2
	NXB_0385 6	FI10	525...690	1032	239	552	100						PC83UD11C13CTF	1250	1250	83	2
	NXB_0416 6	FI10	525...690	1032	239	552	100						PC83UD11C14CTF	1250	1500	83	2
	NXB_0920 6	FI13	525...690	1032	708	553	306						PC87UD12C30CP50	1200	3000	2 x 84	2
	NXB_1030 6	FI13	525...690	1032	708	553	306						PC87UD11C34CP50	1100	3400	2 x 84	2
	NXB_1180 6	FI13	525...690	1032	708	553	306						PC87UD11C38CP50	1050	3800	2 x 84	2

FI9-FI14 are flush-end type.

Standard features						INU			AFE		FFE	NFE	BCU	
						NXI AAAA V			NXA AAAA V		NXF AAAA V	NXN AAAA V	NXB AAAA V	
						FR4, 6, 7	FR8	FI9...	FR7	FR8, FI9...	FI9...	FI9...	FR4, 6, 7	FI9
IP00							●	●		●	●	●		●
IP21						●			●				●	
Air cooling						●	●	●	●	●	●	●	●	●
Standard board						●	●	●	●	●	●		●	●
Varnished board												●		
Alphanumeric keypad						●	●	●	●	●	●		●	●
EMC class T (EN 61800-3 for IT networks)						●	●	●	●	●	●	●	●	●
Safety CE / UL						●	●	●	●	●	●	●	●	●
Line reactor, external (required)											o	o		
LCL filter, external (required)									o	o				
No integrated charging								●	●	●	●			●
Integrated charging (DC side)						●	●					●	●	
Diode/thyristor rectifier												●		
IGBT						●	●	●	●	●	●		●	●
Standard I/O	**Card slot**													
	A	**B**	**C**	**D**	**E**	**Number of I/O channels**								
OPT-A1 Binary input (24 VDC)						6	6	6	6	6	6	n/a	6	6
OPT-A1 Binary output (24 VDC)						1	1	1	1	1	1	n/a	1	1
OPT-A1 Analog input						2	2	2	2	2	2	n/a	2	2
OPT-A1 Analog output						1	1	1	1	1	1	n/a	1	1
OPT-D7 Voltage measurement						-	-	-	-	-	2	n/a	-	-
OPT-A2 Relay output (NO/NC)						2	2	2	2	2	2	2 (NO)	2	2
Options														
Optional I/O cards														
OPT-A3 Relay output + Thermistor input						o	o	o	o	o	o	n/a	o	o
OPT-A4 Encoder TTL type						o	o	o	-	-	-	n/a	-	-
OPT-A5 Encoder HTL type						o	o	o	-	-	-	n/a	-	-
OPT-A7 Double encoder HTL type						o	o	o	-	-	-	n/a	-	-
OPT-A8 I/O as OPT-A1 (galvanic isolation)						o	o	o	o	o	o	n/a	o	o
OPT-A9 I/O as OPT-A1 (2.5 mm² terminals)						o	o	o	o	o	o	n/a	o	o
OPT-AE Encoder HTL type (Divider + direction)						o	o	o	-	-	-	n/a	-	-
[1] OPT-AF Safe disable EN954-1, cat 3						o	o	o	-	-	-	n/a	-	-
I/O expander cards (OPT-B)														
OPT-B1 Selectable I/O						o	o	o	o	o	o	n/a	o	o
OPT-B2 Relay output						o	o	o	o	o	o	n/a	o	o
OPT-B4 Analog input/output						o	o	o	o	o	o	n/a	o	o
OPT-B5 Relay output						o	o	o	o	o	o	n/a	o	o
OPT-B8 PT100						o	o	o	o	o	o	n/a	o	o
OPT-B9 Binary input + RO						o	o	o	o	o	o	n/a	o	o
OPT-BB + EnDat + Sin/Cos 1 Vp-p						o	o	o	-	-	-	n/a	-	-
OPT-BC Encoder out = Resolver simulation						o	o	o	-	-	-	n/a	-	-
Fieldbus cards (OPT-C)														
OPT-C2 RS-485 (Multiprotocol)						o	o	o	o	o	o	n/a	o	o
OPT-C3 Profibus DP						o	o	o	o	o	o	n/a	o	o
OPT-C4 LonWorks						o	o	o	o	o	o	n/a	o	o
OPT-C5 Profibus DP (D9-type connector)						o	o	o	o	o	o	n/a	o	o
OPT-C6 CANopen (slave)						o	o	o	o	o	o	n/a	o	o
OPT-C7 DeviceNet						o	o	o	o	o	o	n/a	o	o
OPT-C8 RS-485 (Multiprotocol, D9-type connector)						o	o	o	o	o	o	n/a	o	o
OPT-CF CAN / Euromap						o	o	o	o	o	o	n/a	o	o
OPT-CG SELMA 2 protocol (SAMI)						o	o	o	o	o	o	n/a	o	o
OPT-CI Ethernet (Modbus/TCP)						o	o	o	o	o	o	n/a	o	o
Communication cards (OPT-D)														
OPT-D1 System Bus adapter (2 x fiber optic pairs)						o	o	o	o	o	o	n/a	o	o
OPT-D2 System Bus adapter (1 x fiber optic pair) & CAN-bus adapter (galvanically decoupled)						o	o	o	o	o	o	n/a	o	o
OPT-D3 RS232 adapter card (galvanically decoupled), used mainly for application engineering to connect another keypad						o	o	o	o	o	o	n/a	o	o
OPT-D6 CAN-bus adapter (galvanically decoupled)						o	o	o	o	o	o	n/a	o	o
OPT-D7 Voltage measurement card						o	o	o	o	o	-	n/a	o	o

[1] Certification pending ● = included o = optional

Supply connection	Input voltage U_{in} (AC) Front-end modules	380-500 VAC / 525-690 VAC -10%...+10% (according to EN60204-1)
	Input voltage U_{in} (DC) Inverter and brake chopper modules	465...800 VDC / 640...1100 VDC. The voltage ripple of the inverter supply voltage, formed in rectification of the electric network's alternating voltage in basic frequency, must be less than 50 V peak-to-peak
	Output voltage U_{out} (AC) Inverter	3~ 0...U_{in} / 1.4
	Output voltage U_{out} (DC) Active front-end module	1.10 x 1.35 x U_{in} (Factory default)
	Output voltage U_{out} (DC) Fundamental and non-regenerative front-end module	1.35 x U_{in}
Ambient conditions	Ambient operating temperature	–10°C (no frost)...+40°C: I_H –10°C (no frost)...+40°C: I_L 1.5% derating for each 1°C above 40°C Max. ambient temperature +50°C
	Storage temperature	–40°C...+70°C
	Relative humidity	0 to 95% RH, non-condensing, non-corrosive, no dripping water
	Air quality: - chemical vapours - mechanical particles	 IEC 721-3-3, unit in operation, class 3C2 IEC 721-3-3, unit in operation, class 3S2
	Altitude	100% load capacity (no derating) up to 1000 m 1.5% derating for each 100 m above 1000 m Max. altitudes: NX_2: 3000 m; NX_5: 3000 m; NX_6: 2000 m
	Vibration EN50178/EN60068-2-6	FR4...FR8: Displacement amplitude 1 mm (peak) at 5...15.8 Hz Max acceleration 1 G at 15.8...150 Hz
		FI9...FI13: Displacement amplitude 0.25 mm (peak) at 5...31 Hz Max acceleration 1 G at 31...150 Hz
	Shock EN50178, EN60068-2-27	UPS Drop Test (for applicable UPS weights) Storage and shipping: max 15 G, 11 ms (in package)
	Cooling capacity required	approximately 2%
	Cooling air required	FR4 70 m^3/h, FR6 425 m^3/h, FR7 425 m^3/h, FR8 650 m^3/h FI9 1150 m^3/h, FI10 1400 m^3/h, FI12 2800 m^3/h, FI13 4200 m^3/h
	Unit enclosure class	FR8, FI9...14 (IP00); FR4...7 (IP21)
EMC (at default settings)	Immunity	Fulfils all EMC immunity requirements, level T
Safety		CE, UL, CUL, EN 61800-5-1 (2003), see unit nameplate for more detailed approvals
Control connections	Analogue input voltage	0...+10 V, R_i = 200 kΩ, (–10 V...+10 V joystick control) Resolution 0.1%, accuracy ±1%
	Analogue input current	0(4)...20 mA, R_i = 250 Ω differential
	Digital inputs	6, positive or negative logic; 18...30 VDC
	Auxiliary voltage	+24 V, ±15%, max. 250 mA
	Output reference voltage	+10 V, +3%, max. load 10 mA
	Analogue output	0(4)...20 mA; R_L max. 500 Ω; resolution 10 bits Accuracy ±2%
	Digital outputs	Open collector output, 50 mA / 48 V
	Relay outputs	2 programmable change-over relay outputs Switching capacity: 24 VDC / 8 A, 250 VAC / 8 A, 125 VDC / 0.4 A Min. switching load: 5 V / 10 mA
Protections	Overvoltage protection	**NX_5**: 911 VDC; **NX_6**: 1200 VDC
	Undervoltage protection	**NX_5**: 333 VDC; **NX_6**: 460 VDC
	Earth fault protection	Yes
	Motor phase supervision	Trips if any of the output phases is missing
	Overcurrent protection	Yes
	Unit overtemperature protection	Yes
	Motor overload protection	Yes
	Motor stall protection	Yes
	Motor underload protection	Yes
	Short-circuit protection of +24 V and +10 V reference voltages	Yes

VACON COMMON DC BUS PRODUCTS, TYPE DESIGNATION CODE

Vacon NX Inverter

NX I AAAA V A 2 T 0 C S S A1 A2 00 00 00

Option boards; each slot is represented by two characters where
- A = Basic I/O board
- B = Expander I/O board
- C = Fieldbus board
- D = Special board

Hardware modifications; module type - S Boards
- S = Direct connection, standard boards, FR4...8
- V = Direct connection, varnished boards, FR4...8
- F = Fiber connection, standard boards, FI9...FI14
- G = Fiber connection, varnished boards, FI9...FI14

If OPT-AF option board is used
- N = IP54 control box, fiber connection, standard boards, FI9-FI14
- O = IP54 control box, fiber connection, varnished boards, FI9-FI14

- S = Standard air cooled drive
- U = Standard air cooled power unit - external supply for main fan

- C = INU - with integrated charging circuit
- I = INU - no charging circuit

- 0 = N/A (no brake chopper)

EMC emission level
- T = IT networks (EN61800-3)

Enclosure class
- 5 = IP54, FR4...7
- 2 = IP21, FR4...7
- 0 = IP00, FR8, FI9...14

Control keypad
- A = standard (alpha numeric)

Nominal supply voltage
- 5 = 380...500 VAC / 465...800 VDC
- 6 = 525...690 VAC / 640...1100 VDC

Nominal current (low overload)
- 0004 = 4 A, 0520 = 520 A, etc.

Module type
- I = INU Inverter

Product generation

VACON COMMON DC BUS PRODUCTS, TYPE DESIGNATION CODE

Vacon NX Brake Chopper Unit

NX B AAAA V A 2 T 0 8 S S A1 A2 00 00 00

Option boards; each slot is represented by two characters where
- A = Basic I/O board
- B = Expander I/O board
- C = Fieldbus board
- D = Special board

Hardware modifications; module type - S Boards
- S = Direct connection, standard boards, FR4...8
- V = Direct connection, varnished boards, FR4...8
- F = Fiber connection, standard boards, FI9...FI13
- G = Fiber connection, varnished boards, FI9...FI13

S = Standard air cooled drive
U = Standard air cooled power unit - external supply for main fan

8 = BCU - with integrated charging circuit, FR4...FR8

0 = N/A (no brake chopper)

EMC emission level
- T = IT networks (EN61800-3)

Enclosure class
- 5 = IP54, FR4...7
- 2 = IP21, FR4...7
- 0 = IP00, FR8, FI9...13

Control keypad
- A = standard (alpha numeric)

Nominal supply voltage
- 5 = 380...500 VAC / 465...800 VDC
- 6 = 525...690 VAC / 640...1100 VDC

Nominal current (low overload)
- 0004 = 4 A, 0520 = 520 A, etc.

Module type
- B = BCU Brake Chopper unit

Product generation

VACON COMMON DC BUS PRODUCTS, TYPE DESIGNATION CODE

Vacon NX Active Front-End

NX A AAAA V A 0 T 0 2 S F A1 A2 00 00 00

0261	5
0460	5
1300	5
0170	6
0325	6
1030	6

Option boards; each slot is represented by two characters where
A = Basic I/O board
B = Expander I/O board
C = Fieldbus board
D = Special board

Hardware modifications; module type - S Boards
F = Fiber connection, standard boards, FI9...FI13
G = Fiber connection, varnished boards, FI9...FI13

S = Standard air cooled drive
U = Standard air cooled power unit - external supply for main fan

Delivery include
2 = AFE module

Internal brake chopper
0 = N/A (no brake chopper)

EMC emission level
T = IT networks (EN61800-3)

Enclosure class
0 = IP00, FI9...13

Control keypad
A = standard (alpha numeric)

Nominal supply voltage
5 = 380...500 VAC / 465...800 VDC
6 = 525...690 VAC / 640...1100 VDC

Nominal current (low overload)
0261 = 261 A, 1030 = 1030 A, etc.

Module type
A = AFE Active Front-End

Product generation

Vacon NX Non-Regenerative Front-End

NX N 0650 6 X 0 T 0 S S V 00 00 00 00 00

Option boards; each slot is represented by two characters where
No option board possible

Hardware modifications; module type - S Boards
V = Direct connection, varnished boards

S = Standard air cooled drive
U = Standard air cooled power unit - external supply for main fan

Delivery include
N = NFE module
S = NFE module + AC choke

Internal brake chopper
0 = N/A (no brake chopper)

EMC emission level
T = IT networks (EN61800-3)

Enclosure class
0 = IP00, FI9

Control keypad
X = Standard (alpha numeric)

Nominal supply voltage
6 = 380...690 VAC / 513...931 VDC

Nominal current (low overload)
0650 = 650 A only

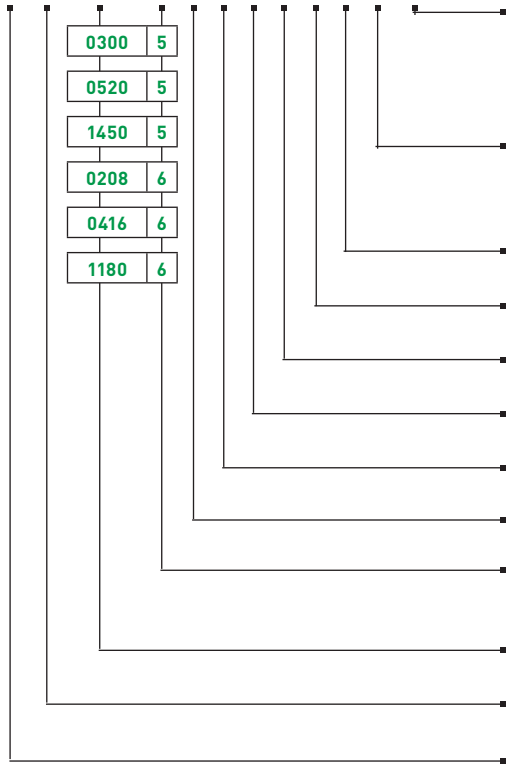
Module type
N = NFE Non-Regenerative Front-End

Product generation

VACON COMMON DC BUS PRODUCTS, TYPE DESIGNATION CODE

Vacon NX Fundamental Front-End

NX F AAAA A A 0 T 0 3 S F A1 A2 D7 00 00



Option boards; each slot is represented by two characters where
- A = Basic I/O board
- B = Expander I/O board
- C = Fieldbus board
- D = Special board

Hardware modifications; module type - S Boards
- F = Fiber connection, standard boards, FI9...FI13
- G = Fiber connection, varnished boards, FI9...FI13

- S = Standard air cooled drive
- U = Standard air cooled power unit - external supply for main fan

Delivery include
- 3 = FFE module

Internal brake chopper
- 0 = N/A (no brake chopper)

EMC emission level
- T = IT networks (EN61800-3)

Enclosure class
- 0 = IP00, FI9...13

Control keypad
- A = standard (alpha numeric)

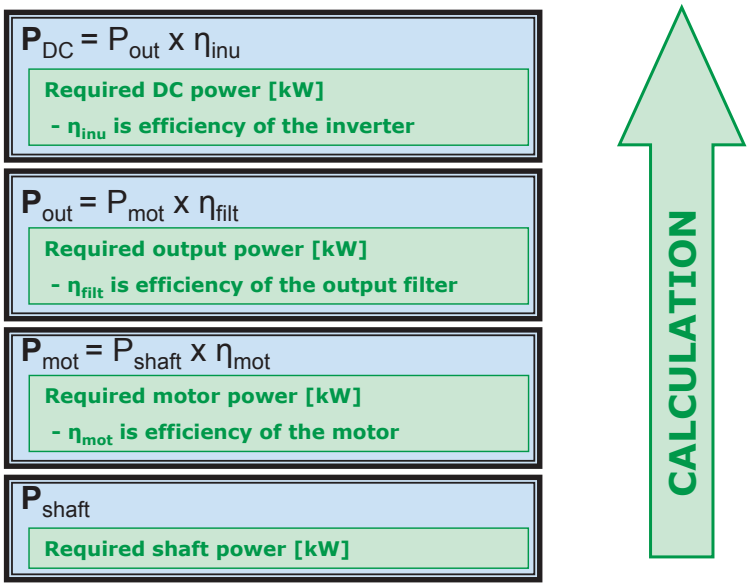
Nominal supply voltage
- 5 = 380...500 VAC / 465...800 VDC
- 6 = 525...690 VAC / 640...1100 VDC

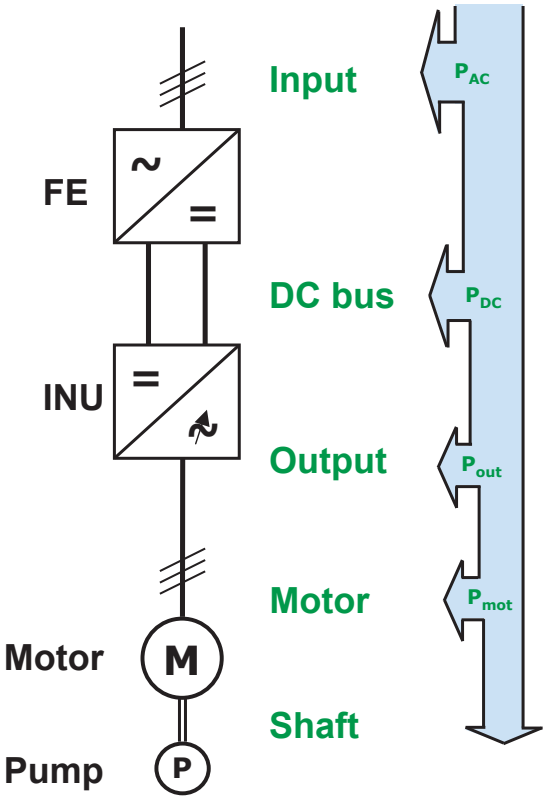
Nominal current (low overload)
- 0300 = 300 A, 1180 = 1180 A, etc.

Module type
- F = FFE Fundamental Front-End

Product generation

FRONT-END DIMENSIONING





VACON LCL FILTERS, TYPE DESIGNATION CODE

	Product range	Current	Voltage	Versio	IP class	HF capacitors	Reserve	Balancing resistor	LCL cooling fan	Manufacturer
Type code	Vacon LCL	AAAA	V	A	0	L	0	1	1	T
Types available	Vacon LCL	0261	5	A	0	L	0	1	1	T
	Vacon LCL	0460	5	A	0	L	0	1	1	T
	Vacon LCL	1300	5	A	0	L	0	1	1	T
	Vacon LCL	0170	6	A	0	L	0	1	1	T
	Vacon LCL	0325	6	A	0	L	0	1	1	T
	Vacon LCL	1030	6	A	0	L	0	1	1	T

Manufacturer
T = Trafotek
LCL cooling fan
1 = DC fan
Balancing resistors
1 = on HF capacitors
0 = No resistors (IT networks)
Reserve
HF capacitors
L = Mounted (á 25 uF)
0 = No capacitors
IP Class
0 = IP00
Version (Hardware)
A = DC fan without DC/DC power supply
B = DC fan with integrated DC/DC power supply
Voltage
5 = 380...500 VAC
6 = 525...690 VAC
Current
0460 = 460 A
0385 = 385 A, etc
Product range
LCL = LCL filter for AFE

VACON L FILTERS FOR FFE, TYPE DESIGNATION CODE

	Product range	Current	Voltage	Versio	IP class	Reserve	Reserve	Reserve	Cooling fan	Manufacturer
Type code	Vacon L	AAAA	V	A	0	0	0	0	1	T
Types available	Vacon L	0300	5	A	0	0	0	0	1	T
	Vacon L	0520	5	A	0	0	0	0	1	T
	Vacon L	1450	5	A	0	0	0	0	1	T
	Vacon L	0208	6	A	0	0	0	0	1	T
	Vacon L	0416	6	A	0	0	0	0	1	T
	Vacon L	1180	6	A	0	0	0	0	1	T

Manufacturer
T = Trafotek
L cooling fan
1 = DC fan
Reserve
Reserve
Reserve
IP Class
0 = IP00
Version (Hardware)
A = DC fan without DC/DC power supply
B = DC fan with integrated DC/DC power supply
Voltage
5 = 380...500 VAC
6 = 525...690 VAC
Current
0520 = 520 A
0416 = 416 A, etc
Product range
L = L filter for FFE modules

VACON

DRIVEN BY DRIVES

www.vacon.com

Vacon Partner

BC00169M

Subject to change without notice.