

Fact Sheet

VACON® NXP Liquid Cooled non regenerative front-end (NFE) Plenty of power in a very compact package



The VACON® NXP Liquid Cooled non regenerative front-end (LC NFE)

provides a lot of power to your common DC bus liquid-cooled system in a very compact package.

Versatile and flexible solutions

The single module can be connected as a 6-pulse or 12-pulse bridge providing flexibility for systems where reduced harmonics are required.

2400

amps DC output
in one module

External AC chokes (air- or liquid-cooled) minimize the module weight to ease the installation in a cabinet while reducing effects from line disturbances.

With the ability to be connected in parallel, the modules can deliver all the required power to common DC bus systems and provide redundancy for maximum system uptime in critical applications.

Monitored for control

Through a simple robust diode supply, the VACONR NXP LC NFE can monitor voltage, current, temperature and fault conditions, providing valuable feedback for system conditions. You can also take advantage of fieldbus options to connect to control systems.

Maximum heat transfer

With heat transfer of over 92% of thermal losses to the cooling liquid, the VACON® NXP LC NFE reduces the need for air conditioning systems for enclosures and electrical rooms.

Overall, the VACON® NXP LC NFE provides a compact, cost-effective solution for liquid-cooled common DC bus solutions.

Power range

3 x 400-500 V 1605 kW
3 x 525-690 V 2336 kW

Feature	Benefit
Reliability	
Simple diode supply	Minimal part count reduces downtime
Liquid cooled	Reduce the temperature cycling, eliminate air conditioning
Compact	
High power density	Reduced cabinet footprint
Versatile	
Third party approvals	UL and Marine approvals reduce cost of system integrators' approvals
Voltage, current and fault monitoring	Less additional equipment required
Flexible	
6-pulse or 12-pulse operation	Reduced harmonics without additional components
Can be connected in parallel	High power with the same components

Approvals



Rating and dimensions

VACON® NXN Liquid Cooled non regenerative front-end, DC bus voltage 465-800 V DC, 6/12-pulse

AC drive type	AC current			DC power				Power loss c/a/T* [kW]	Chassis
	Thermal I _{th} [A]	Rated I _L [A]	Rated I _H [A]	400 VAC mains I _{th} [kW]	500 VAC mains I _{th} [kW]	400 VAC mains I _L [kW]	500 VAC mains I _L [kW]		
NXN20006A0T0	2000	1818	1333	1282	1605	1165	1458	5.7/0.5/6.2	CH60

VACON® NXN Liquid Cooled non regenerative front-end, DC bus voltage 640-1100 V DC, 6/12-pulse

AC drive type	AC current			DC power				Power loss c/a/T* [kW]	Chassis
	Thermal I _{th} [A]	Rated I _L [A]	Rated I _H [A]	525 VAC mains I _{th} [kW]	690 VAC mains I _{th} [kW]	525 VAC mains I _L [kW]	690 VAC mains I _L [kW]		
NXN20006A0T0	2000	1818	1333	1685	2336	1531	2014	5.7/0.5/6.2	CH60

VACON® NXP Liquid Cooled dimensions: drives consisting of one module

Chassis	Width [mm]	Height [mm]	Depth [mm]	Weight [kg]
CH60	246	673	374	55

VACON® NXN Liquid Cooled non regenerative front-end line filters

Choke type	Suitability	Power loss c/a/T* [kW]	Dimensions 1 pc W x H x D	Total weight [kg]	Pcs for NXN	Cooling
CHK1030N6A0	NXN20006A0T0TWVA1A2BHB100	0/1.17/1.17	497 x 677 x 307	213	2	Air
FLU-CHK-1030-6-DL	NXN20006A0T0WWVA1A2BHB100	1.18/0.5/1.68	506 x 676 x 302	237	2	Liquid

I_{th} = Thermal maximum continuous RMS current. Perform dimensioning according to this current when the process does not require any overloadability.
 – include any load variation or margin for overloadability.
 I_L = Low overloadability current. Allows +10% load variation. 10% continuous excess load is permitted.
 *) c = power loss into coolant; a = power loss into air; T = total power loss

Technical data

Mains connection	Input voltage U _{in}	2 x 3 ph 400-690 VAC (-10% to +10%)
	Input frequency	45-66 Hz
Output connections	Output voltage	U _{in} x 1.35
	Output frequency	DC-voltage
	DC bank capacitance	4800 µF
Current capacity	Input current	I _{th} 2 x 1000 AAC
	Output current	I _{th} 2400 ADC
	Overload	No overload
	Power losses	Power loss into coolant: 5.7 kW Power loss into air: 0.5 kW
Ambient conditions	Ambient operating temperature	-10 °C (no frost) to +50 °C (at I _{th}) The NXP Liquid Cooled drives must be used in an heated indoor controlled environment
	Installation temperature	0 to +70 °C
	Relative humidity	5 to 96% RH, non-condensing, no dripping water
	Altitude	400-500 V: 3000 m ASL; in case network is not corner grounded 500-690 V: max. 2000 m ASL
	Vibration	5-150 Hz
	Shock	Storage and shipping: max 15 G, 11 ms (in package)
	Enclosure class	IP00/open

EMC	Immunity	Fulfils IEC/EN 61800-3 EMC immunity requirements
	Emissions	– EMC level N for THN/TT networks – EMC level T for IT networks
Liquid cooling	Allowed cooling agents	Drinking water; Water-glycol mixture
	Temperature of cooling agent	0-43 °C (I _{th})(input); 43-55 °C please see manual for further details Temperature rise during circulation max. 5 °C. No condensation allowed
	System max. working pressure	6 bar/30 bar peak
	Cooling agent flow rates	25 L/min; flow requirements depend on Glycol content, consult manual for further details
Protections		Undervoltage, overvoltage, mains supervision, unit under-temperature, overtemperature, cooling fan operation, ACB operation, DC precharging operation, choke temperature