ENGINEERING
TOMORROW

Fact Sheet | VACON® 3000 Drive Kit

Boost your **toughest applications** with a unique **modular** approach

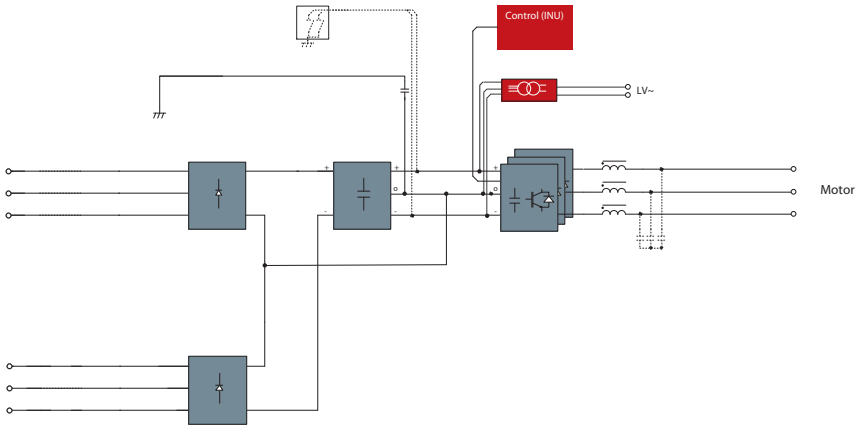
Definite purpose
Medium-voltage drives

drives.danfoss.com | VACON®

Power rating

12-pulse DFE drives

AC drive type	Continuous rating (variable torque)		Low overload rating 110% (constant torque)		High overload rating 150% (constant torque)		Output frame size
	Continuous current I_{th}[A]	Continuous power [kVA]	Continuous current I_L [A]	Continuous power [kVA]	Continuous current I_H [A]	Continuous power [kVA]	
Nominal voltage 3300 V							
VACON3000-12-0425-03	425	2430	386	2209	283	1620	L20HLx3 (425-03)
VACON3000-12-0640-03	640	3660	582	3327	427	2440	L30HLx3 (640-03)
VACON3000-12-0820-03	820	4690	745	4264	547	3127	L20HLx6 (425-03)
VACON3000-12-1230-03	1230	7030	1118	6391	650	4680	L30HLx6 (640-03)
Nominal voltage 4160 V							
VACON3000-12-0340-04	340	2450	309	2227	227	1633	L20HLx3 (340-04)
VACON3000-12-0510-04	510	3670	464	3336	340	2447	L30HLx3 (510-04)
VACON3000-12-0650-04	650	4680	591	4255	433	3120	L20HLx6 (340-04)
VACON3000-12-0980-04	980	7060	891	6418	650	4680	L30HLx6 (510-04)



Active Front End drives

AC drive type	Continuous rating (variable torque)		Low overload rating 110% (constant torque)		High overload rating 150% (constant torque)		Output frame size
	Continuous current I_{th}[A]	Continuous power [kVA]	Continuous current I_L [A]	Continuous power [kVA]	Continuous current I_H [A]	Continuous power [kVA]	
Nominal voltage 3300 V							
VACON3000-4Q-0425-03	425	2430	386	2209	283	1620	L20HLx3 (425-03)
VACON3000-4Q-0640-03	640	3660	582	3327	427	2440	L30HLx3 (640-03)
VACON3000-4Q-0820-03	820	4690	745	4264	547	3127	L20HLx6 (425-03)
VACON3000-4Q-1230-03	1230	7030	1118	6391	650	4680	L30HLx6 (640-03)
Nominal voltage 4160 V							
VACON3000-4Q-0340-04	340	2450	309	2227	227	1633	L20HLx3 (340-04)
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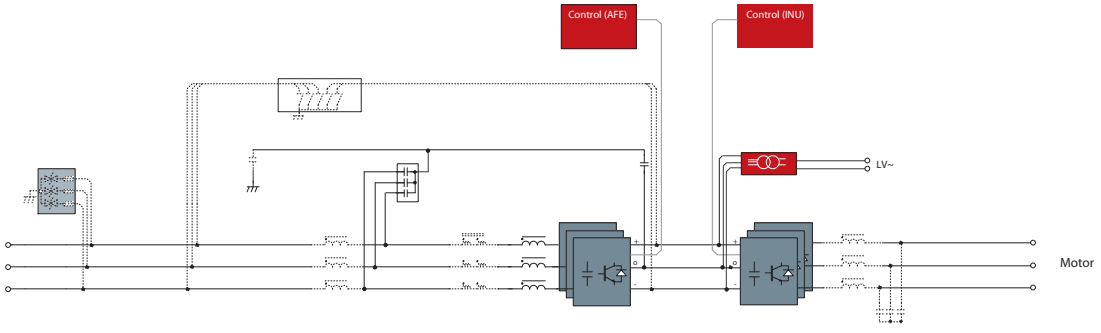

Options

VACON® 3000 Drive Kit

Factory option	Description	Option slot				AC drive
		B	C	D	E	VACON® 3000
I/O options						
+HRGR	Standard I/O board: 2 x AI, 6 x DI, 1 x AO, 10 V_{ref}, 24 V_{in}, 2 x 24 V_{out}, RS485, 3 x RO	■				■
+S_B1	6 x DI / DO, programmable		■	■	■	■
+S_B4	1 x A1, 2 x AO (isolated)		■	■	■	■
+S_B5	3 x RO		■	■	■	■
+S_B9	1 x RO, 5 x DI (42-240 V AC)		■	■	■	■
+S_BF	1 x AO, 1 x DO, 1 x RO		■	■	■	■
+S_BH	3 x Temp sensor inputs (PT100, PT1000, KTY84-130, KTY84-150, KTY84-131, NI1000)		■	■	■	■
Communications						
+S_E3	PROFIBUS DPV1			■	■	■
+S_E5	PROFIBUS DPV1 (D9)			■	■	■
+S_E6	CANopen			■	■	■
+S_E7	DeviceNet			■	■	■
+S_EC	EtherCAT			■	■	■
+S_E9	Dual Port Ethernet			■	■	■
Power dependent options						
+PICM	Input common mode filter *(for AFE variants only)*					■
+QTVS	Transient suppressor on input					■
+PODU	Output dU/dt filter					■
+POSI	Output sine filter					■
+PHSI	High source impedance *(for AFE variants only)*					■
+DBCU	Brake chopper for dynamic braking *(excl. resistor)*					■
Auxiliary units options						
+QAIT	Isolated auxiliary transformer for power section					■
+PRAC	Rack for power modules assembly					■
+QGSW	Grounding switch					■

VACON® 3000 Drive Kit

Standard factory option	Description	AC drive
		VACON® 3000
Default for all VACON® 3000 drives		
+HMGR	Graphical keypad	■
+FBIE	Industrial Ethernet protocols: PROFINET IO and EtherNet/IP™ *(software option onboard)*	■
+SRBT	Real time clock battery	■
+DPAP	Printed manuals	■
+DLUS	English (USA)	■
+WT01	Extended warranty: 18 months from shipment or 12 months of commissioning	■

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Technical data

Topology	3-level neutral point clamped (NPC)	HV-IGBT
Inverter capacity	L20-HLx3	425 A, 3300 V, 2.4 MVA* 340 A, 4160 V, 2.4 MVA*
	L30-HLx3	640 A, 3300 V, 3.7 MVA* 510 A, 4160 V, 3.7 MVA* * Higher power capacities achieved by paralleling inverters
Input voltage		3300 V, 3 phases ± 10 %
		4160 V, 3 phases ± 10 %
Input frequency		50 Hz ± 5 % (3300 V) or 60 Hz ± 5 % (4160 V)
Rectifier	Active Front End	AFE
	Diode Front End	12 and 24-pulse DFE
Input current THD	AFE	< 5 %
	12-pulse DFE	Typically 15%
	24-pulse DFE	Typically 8%
Power factor		>0.95
Output voltage levels		3 (5 phase-to-phase)
Output frequency		0-120 Hz
Accel./Decel. time		0.1-3600 s
Grounding		Resistance grounded neutral point, high or low resistance grounding system of electricity supply, if no dedicated transformer is installed. For operation in an IT network without a dedicated transformer, speak to Danfoss Drives.
Switching frequency		AFE: 1050 Hz (50 Hz) and 1260 Hz (60 Hz) INU: 900 Hz synchronous PWM
Motor control method	Asynchronous (induction) motor	U/f control Open loop control Indirect closed loop control Closed loop control
Communication		AI/O, DI/O, fieldbuses (e.g. PROFIBUS DPV1, DeviceNet), industrial Ethernet protocols (PROFINET IO and EtherNet IP™), VACON® PC tool
Main protective functions		Torque and power limit, current limit, overcurrent, overvoltage, undervoltage, loss of auxiliary power, loss of communication, ground fault detection
Efficiency	AFE + INU	>98 %
	DFE + INU	>98.5 %, excluding the input transformer
Temperature	Operational *(ambient)*	0 °C to +45 °C (+30 °F to +113 °F)
	Storage *(ambient)*	-40 °C to +70 °C (-40 °F to +158 °F); No liquid in heat sink under 0 °C (+32 °F)
	Power module inlet cooling liquid	0 °C to +43 °C (+32 °F to +109 °F). Lowest allowed cooling liquid temperature 2 °C (3.6 °F) above the dew point.
Relative humidity		< 95 % RH, non-condensation, non-corrosive
Cooling	Power module *(phase modules, rectifiers)*	Liquid cooled
	Chokes	Hybrid cooling *(forced air cooled with air-to-liquid heat exchanger)*
Standards		IEC**, cUL**, marine standards**

** *certification pending*


L20-HL


L30-HL


Control unit


Pre-charge


Choke

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