

Fact Sheet | VACON® 1000

Configurable, versatile and reliable medium-voltage drive for **industrial applications**

**2.4 kV up
to 11 kV**

full range for
industrial MV
general purpose
drive applications



MV drive designed with **you in mind**

Danfoss' unsurpassed experience in advanced AC drive technologies makes the VACON® 1000 air-cooled MV drive the preferred choice for industrial medium-voltage general purpose applications, especially for variable torque loads such as pumps and fans in the low and mid-power range. The standalone version, available at 215 A and below, is one of the most compact and versatile multi-level MV drives in its class.

Feature	Benefit
High reliability	
High MTBF	Up to 200,000 hours of non-stop operation (depending on voltage class and current rating)
Electronic bypass	IGBT based power cell bypass function enables fast (1 ms) reaction time (optional, +PPCB)
Power cell redundancy	Continued full power operation in case of fault in power cell (optional, +PPCR)
Low-voltage (LV) ride-through	Allows for continued operation during <100 ms grid voltage sag down to -30% of nominal input voltage
High temperature operation	Up to +50° C (122° F) derated operation to avoid overheating
Harsh environment	IP31 as default, optional IP42, and chemical environment protection level IEC 660721: Class 3C2
Redundant cooling fan	Enables non-stop operation in case of a fan failure and extended overall lifetime (optional, +QDFR)
UPS for control voltage (DC)	Control stays on in case of supply interruptions
Air filter clogging sensor	Additional protection to prevent overheating
Detailed fault monitoring	Alarm and fault information for reduced downtime
External auxiliary power (LV)	External source input for cooling fans (optional, +QDEX)
Safety	
Door interlock	Prevents opening of cabinet door unless mains power is off
Residual voltage indicators	LEDs and HMI as well as visual DC-link voltage indicators on power cells provide complementary information for increased safety
PTC sensors for temperature monitoring	Transformer thermal protection
MV drives standard compliance	Complies with international MV drive safety requirements according to applicable IEC and UL standards
Fiber optic cables between MV and LV control parts	Galvanic isolation between LV controls and MV section
Low ownership cost	
Less than 5% THDi	Causes very low grid harmonics, minimal network disturbances, complies with IEEE-519
Designed for 20 years of operation	Long lifetime
High total efficiency >96.5%, including transformer	Short return on investment
Only front access required for installation and maintenance	Easy service access, saves space in electric room (no back-access needed)
No special requirements on motor insulation	Motor-friendly
Up to 2000 m (6562 ft) operation	Install the drive in the optimal location, not necessarily next to motor
Process Performance	
Vector control	Closed-loop and sensorless vector control for applications requiring more precise control
U/f multipoint control	Increases efficiency in pump and fan applications
Different autotuning modes	Motor autotuning with three (3) different modes for easier start-up (coupled, uncoupled or non-rotational motor)
Configurable overload	Up to 300% maximum torque limit (with base load derating)
Overvoltage prevention during deceleration	Automatic limit control during fast deceleration to avoid overvoltage tripping
Voltage boost	Booster function for high starting torque requirements
Selectable for variable torque or constant torque rating	Optimal drive selection according to application needs
Multi-motor applications	Drive can be configured for alternating change-over of up to 8 motors (VSD to DOL), optional bypass switchgear needed
System bypass (Manual, Auto, Synchronous)	Engineered option bypass configurations (to and from DOL) including make-before-brake switch over (optional, +PMBP Manual motor bypass, Automatic motor bypass, or Synchronous transfer for 1 or multiple motor only)
User-friendly	
Easy and simple selections	Wide variety of standard options supports flexible configuration
Touch screen as standard	HMI 7" screen as default, optional 10" screen (+MHMI), for local control and monitoring
Commissioning tool	PC tool for parameter setting with embedded oscilloscope-like function
Event log	Log up to 500 events with event description
Fieldbus communication	Most common communication protocols available for flexible system control (optional)
Space saving	
High power density	Standalone version with smallest footprint in the market available at 215 A and below (≤6.9 kV)
Standalone design (≤215 A, ≤6.9 kV)	No on-site interconnection of separate sections needed
Simple cable installation	Allows for top and bottom cabling for input and output power and control

Technical data

Topology type	Multilevel IGBT topology (Cascade H-Bridge)
Technology	Voltage source inverter (VSI)
Inverter configuration	Pulse Width Modulated (PWM) power modules
Input frequency	50/60 Hz ($\pm 5\%$ transients)
Input voltage tolerance	$\pm 10\%$ of nominal, unbalance up to 3%, per IEC 610002-4
Input voltage sag	-30% of nominal without tripping; Continuous operation with reduced power, derated power between 70-90%
Short circuit current rating (SCCR)	31.5 kA, 100 ms
Input current THD	<5% (at rated load)
Input voltage THD	<5% (at rated load)
Output current THDi (1st...49th)	<2% at rated speed
Output dU/dt	<3000 V/ μ s
Power factor	>0.96 (at rated load)
System efficiency	>98.5% (at rated load, excluding transformer); >96.5% (at rated load, including transformer)
Output voltage range	2.4–11 kV
Output frequency range	0–75 Hz (higher frequencies, for example, 120 Hz can be evaluated)
Loading	Squared torque; Constant torque; Constant torque and/or power
Motor control method	U/F control; Sensorless vector control; Vector control with speed feedback; Speed and torque control
Motor type	Induction (asynchronous) motor or Synchronous motor (with separate excitation)
Frequency resolution	0.01 Hz
Speed control range	1–100% (with closed-loop vector control); 5–100% (with sensorless vector control)
Steady state speed control accuracy (% of rated speed)	$\pm 0.01\%$ (with closed-loop vector control, depending on sensor accuracy) $\pm 0.5\%$ (with sensorless vector control)
Acceleration/Deceleration time	0–3000 s (configurable)
Control voltage with circuit protection	1– 230 VAC, 50 Hz; 1– 220 VAC, 60 Hz
Control power	Single phase AC 120–240V; Three Phase AC 240–480V; capacity 5 kVA (other voltages available)
Design operating time	24 hours/day
Minimum availability per 12 months	99.97%
MTBF	Up to 200,000 hours of nonstop operation depending on the voltage class and current rating
Product lifetime	20 years
Input impedance device	Multiphase isolation transformer integrated into the drive
Transformer type of construction	Dry type, phase shifting, Cu/Cu; Forced air cooling; Al/Cu or Al/Al available as an engineered option
Transformer insulation type	Class 180 (H)
Transformer secondary for auxiliaries	Three phase, 460 VAC with neutral and with a 380 VAC tap, 50/60 Hz
Temperature sensors in transformer windings	3x PT100, one in each winding
Grounding system	As per IEC61936-1
Ground busbar	Tin-plated grounding bus bar section
Cabinet sheet metal thickness	Doors and panels: 1.5 mm. Base plinth: 5 mm
Cabinet lights	In the control cabinet
Power cell bypass	Automatic via IGBT, 1 ms bypass time (optional, +PPCB)
UPS for control voltage (DC)	30 minutes running time
External auxiliary AC voltage for cooling fan (optional, +QDEX)	380–460 VAC, 50 Hz 380–460 VAC, 60 Hz
Enclosure IP and access	IP31 (IEC) (standard); IP42 (IEC) (optional, +IP42)
Cables entry	Input, motor and control cables: bottom and top
Cooling System	Forced air cooling including fan monitoring. Fan redundancy (optional, +QDFR)
Ambient temperature (operation)	0°–40°C (normal operation); 40°–50°C (derated operation); 32°–104°F (normal); 105°–122°F (derated)
Ambient temperature (storage/transportation)	-40–70° C; -40–158° F
Relative humidity (operation)	5–95% non-condensing
Relative humidity (storage/transportation)	10–95% non-condensing
Chemical environment conditions	IEC 60721-3-3: Class 3C2
Environment corrosion category	According to ISO/EN 12944-2: C1 as default; C4 as an engineered option
Electromagnetic compatibility environment	IEC 61000-2-5: Industrial
Altitude	<1000 m (3280 ft) (standard); 1000–2000 m (3280–6562 ft) (derating); >2000 m (6562 ft) (on request)
Seismic zone/Ground acceleration	Zone 2 (standard); Zone 4 (optional, +SZ04)
System burn-in at factory prior to delivery	4 h minimum, according to IEEE 1566
ATEX area: Flammable product/Zone	IEC 60079-10-1/2: as an engineered option, certified per EN 50495:2010
Noise level	≤ 85 dB(A) at 1 m from the enclosure

Power rating (UL variant)

AC drive type	Low overload rating 110% (Variable torque)		High overload rating 150% (Constant torque)		Cabinet dimensions			Weight
	I _L [A]	S [kVA]	I _{HD} [A]	S [kVA]	HxWxD [in]			[lb]
Nominal voltage 2400 V (18-pulse, 3 power cell per phase, 60 Hz)								
VACON1000-ED-036-024+GAUL	36	150	26	110	110.1	47.6	49.2	4409
VACON1000-ED-050-024+GAUL	50	210	37	150	110.1	47.6	49.2	4519
VACON1000-ED-070-024+GAUL	70	290	51	210	110.1	47.6	49.2	4630
VACON1000-ED-090-024+GAUL	90	370	66	270	113.7	63.4	49.2	6283
VACON1000-ED-100-024+GAUL	100	420	73	300	113.7	63.4	49.2	6393
VACON1000-ED-116-024+GAUL	116	480	85	350	113.7	63.4	49.2	6449
VACON1000-ED-120-024+GAUL	120	500	88	370	113.7	63.4	49.2	6504
VACON1000-ED-140-024+GAUL	140	580	103	430	113.7	63.4	49.2	6614
VACON1000-ED-160-024+GAUL	160	670	117	490	113.7	75.2	49.2	9590
VACON1000-ED-180-024+GAUL	180	750	132	550	113.7	75.2	49.2	9700
VACON1000-ED-215-024+GAUL	215	890	158	660	113.7	75.2	49.2	9480
VACON1000-ED-230-024+GAUL	230	960	169	700	110.1	150	55.1	10141
VACON1000-ED-250-024+GAUL	250	1040	183	760	110.1	150	55.1	10362
VACON1000-ED-265-024+GAUL	265	1100	194	810	110.1	150	55.1	10582
VACON1000-ED-285-024+GAUL	285	1180	209	870	110.1	150	55.1	10803
VACON1000-ED-305-024+GAUL	305	1270	224	930	110.1	150	55.1	11023
VACON1000-ED-325-024+GAUL	325	1350	238	990	110.1	161.8	55.1	11244
VACON1000-ED-350-024+GAUL	350	1450	257	1070	110.1	161.8	55.1	11685
VACON1000-ED-378-024+GAUL	378	1570	277	1150	110.1	185.5	55.1	12897
VACON1000-ED-408-024+GAUL	408	1700	299	1240	110.1	185.5	55.1	13338
VACON1000-ED-438-024+GAUL	438	1820	321	1330	110.1	185.5	55.1	13779
VACON1000-ED-475-024+GAUL	475	1970	348	1450	110.1	185.5	55.1	14551
VACON1000-ED-515-024+GAUL	515	2140	378	1570	110.1	185.5	55.1	15212
VACON1000-ED-560-024+GAUL	560	2330	411	1710	110.1	197.3	55.1	16314
VACON1000-ED-600-024+GAUL	600	2490	440	1830	110.1	197.3	55.1	16645
VACON1000-ED-640-024+GAUL	640	2660	469	1950	110.1	197.3	55.1	17306
VACON1000-ED-680-024+GAUL	680	2830	499	2070	110.1	197.3	55.1	18188
Nominal voltage 3000 V (18-pulse, 3 power cell per phase, 60 Hz)								
VACON1000-ED-036-030+GAUL	36	190	26	140	110.1	47.6	49.2	4630
VACON1000-ED-040-030+GAUL	40	210	29	150	110.1	47.6	49.2	4685
VACON1000-ED-050-030+GAUL	50	260	37	190	110.1	47.6	49.2	4740
VACON1000-ED-061-030+GAUL	61	320	45	230	110.1	47.6	49.2	4795
VACON1000-ED-070-030+GAUL	70	360	51	270	110.1	47.6	49.2	4630
VACON1000-ED-077-030+GAUL	77	400	56	290	113.7	63.4	49.2	6393
VACON1000-ED-090-030+GAUL	90	470	66	340	113.7	63.4	49.2	6504
VACON1000-ED-095-030+GAUL	95	490	70	360	113.7	63.4	49.2	6559
VACON1000-ED-100-030+GAUL	100	520	73	380	113.7	63.4	49.2	6614
VACON1000-ED-118-030+GAUL	118	610	87	450	113.7	63.4	49.2	6669
VACON1000-ED-120-030+GAUL	120	620	88	460	113.7	63.4	49.2	6724
VACON1000-ED-140-030+GAUL	140	730	103	540	113.7	63.4	49.2	6834
VACON1000-ED-180-030+GAUL	180	940	132	690	113.7	75.2	49.2	9921
VACON1000-ED-186-030+GAUL	186	970	136	710	113.7	75.2	49.2	9976
VACON1000-ED-215-030+GAUL	215	1120	158	820	113.7	75.2	49.2	10141
VACON1000-ED-230-030+GAUL	230	1200	169	880	110.1	150	55.1	11023
VACON1000-ED-250-030+GAUL	250	1300	183	950	110.1	161.8	55.1	11244
VACON1000-ED-265-030+GAUL	265	1380	194	1010	110.1	161.8	55.1	11244
VACON1000-ED-285-030+GAUL	285	1480	209	1090	110.1	161.8	55.1	11685
VACON1000-ED-305-030+GAUL	305	1580	224	1160	110.1	161.8	55.1	12125
VACON1000-ED-325-030+GAUL	325	1690	238	1240	110.1	161.8	55.1	12346
VACON1000-ED-350-030+GAUL	350	1820	257	1340	110.1	161.8	55.1	12787
VACON1000-ED-378-030+GAUL	378	1960	277	1440	110.1	185.5	55.1	14220
VACON1000-ED-408-030+GAUL	408	2120	299	1550	110.1	185.5	55.1	14881

Height excluding cooling fan is 96.1 in

Power rating (UL variant)

AC drive type	Low overload rating 110% (Variable torque)		High overload rating 150% (Constant torque)		Cabinet dimensions			Weight
	I _L [A]	S [kVA]	I _{HD} [A]	S [kVA]	HxWxD [in]			[lb]
Nominal voltage 3000 V (18-pulse, 3 power cell per phase, 60 Hz)								
VACON1000-ED-438-030+GAUL	438	2280	321	1670	110.1	185.5	55.1	15322
VACON1000-ED-475-030+GAUL	475	2470	348	1810	110.1	197.3	55.1	16535
VACON1000-ED-515-030+GAUL	515	2680	378	1960	110.1	197.3	55.1	17196
VACON1000-ED-560-030+GAUL	560	2910	411	2140	110.1	197.3	55.1	18298
VACON1000-ED-600-030+GAUL	600	3120	440	2290	110.1	197.3	55.1	18850
VACON1000-ED-640-030+GAUL	640	3330	469	2440	110.1	197.3	55.1	19511
VACON1000-ED-680-033+GAUL	680	3530	499	2590	110.1	197.3	55.1	20613
Nominal voltage 3300 V (18-pulse, 3 power cell per phase, 60 Hz)								
VACON1000-ED-036-033+GAUL	36	210	26	150	110.1	47.6	49.2	4850
VACON1000-ED-040-033+GAUL	40	230	29	170	110.1	47.6	49.2	4905
VACON1000-ED-050-033+GAUL	50	290	37	210	110.1	47.6	49.2	4960
VACON1000-ED-061-033+GAUL	61	350	45	260	110.1	47.6	49.2	5016
VACON1000-ED-070-033+GAUL	70	400	51	290	110.1	47.6	49.2	5071
VACON1000-ED-077-033+GAUL	77	440	56	320	113.7	63.4	49.2	6614
VACON1000-ED-090-033+GAUL	90	510	66	380	113.7	63.4	49.2	6724
VACON1000-ED-095-033+GAUL	95	540	70	400	113.7	63.4	49.2	6779
VACON1000-ED-100-033+GAUL	100	570	73	420	113.7	63.4	49.2	6834
VACON1000-ED-118-033+GAUL	118	670	87	500	113.7	63.4	49.2	6889
VACON1000-ED-120-033+GAUL	120	690	88	500	113.7	63.4	49.2	6945
VACON1000-ED-140-033+GAUL	140	800	103	590	113.7	63.4	49.2	7055
VACON1000-ED-180-033+GAUL	180	1030	132	750	113.7	75.2	49.2	10141
VACON1000-ED-186-033+GAUL	186	1060	136	780	113.7	75.2	49.2	10196
VACON1000-ED-215-033+GAUL	215	1230	158	900	113.7	75.2	49.2	10362
VACON1000-ED-230-033+GAUL	230	1310	169	970	110.1	161.8	55.1	11244
VACON1000-ED-250-033+GAUL	250	1430	183	1050	110.1	161.8	55.1	11685
VACON1000-ED-265-033+GAUL	265	1510	194	1110	110.1	161.8	55.1	11685
VACON1000-ED-285-033+GAUL	285	1630	209	1190	110.1	161.8	55.1	12125
VACON1000-ED-305-033+GAUL	305	1740	224	1280	110.1	161.8	55.1	12787
VACON1000-ED-325-033+GAUL	325	1860	238	1360	110.1	161.8	55.1	12787
VACON1000-ED-350-033+GAUL	350	2000	257	1470	110.1	161.8	55.1	13448
VACON1000-ED-378-033+GAUL	378	2160	277	1580	110.1	185.5	55.1	14881
VACON1000-ED-408-033+GAUL	408	2330	299	1710	110.1	185.5	55.1	15763
VACON1000-ED-438-033+GAUL	438	2500	321	1830	110.1	197.3	55.1	16424
VACON1000-ED-475-033+GAUL	475	2710	348	1990	110.1	197.3	55.1	17417
VACON1000-ED-515-033+GAUL	515	2940	378	2160	110.1	197.3	55.1	18078
VACON1000-ED-560-033+GAUL	560	3200	411	2350	110.1	197.3	55.1	19180
VACON1000-ED-600-033+GAUL	600	3430	440	2510	110.1	197.3	55.1	19952
VACON1000-ED-640-033+GAUL	640	3660	469	2680	110.1	197.3	55.1	20834
VACON1000-ED-680-033+GAUL	680	3890	499	2850	110.1	213	55.1	21936
Nominal voltage 4160 V (24-pulse, 4 power cell per phase, 60 Hz)								
VACON1000-ED-036-041+GAUL	36	260	26	150	110.1	47.6	49.2	5291
VACON1000-ED-040-041+GAUL	40	290	29	170	110.1	47.6	49.2	5346
VACON1000-ED-050-041+GAUL	50	360	37	210	110.1	47.6	49.2	5401
VACON1000-ED-053-041+GAUL	53	380	39	220	110.1	47.6	49.2	5456
VACON1000-ED-059-041+GAUL	59	430	43	250	110.1	47.6	49.2	5512
VACON1000-ED-070-041+GAUL	70	500	51	290	110.1	47.6	49.2	5512
VACON1000-ED-078-041+GAUL	78	560	57	330	113.7	63.4	49.2	7055
VACON1000-ED-090-041+GAUL	90	650	66	380	113.7	63.4	49.2	7165
VACON1000-ED-100-041+GAUL	100	720	73	420	113.7	63.4	49.2	7275
VACON1000-ED-105-041+GAUL	105	760	77	440	113.7	63.4	49.2	7330
VACON1000-ED-116-041+GAUL	116	840	85	490	113.7	63.4	49.2	7330

Height excluding cooling fan is 96.1 in

Power rating (UL variant)

AC drive type	Low overload rating 110% (Variable torque)		High overload rating 150% (Constant torque)		Cabinet dimensions			Weight
	I _L [A]	S [kVA]	I _{HD} [A]	S [kVA]	HxWxD [in]			[lb]
Nominal voltage 4160 V (24-pulse, 4 power cell per phase, 60 Hz)								
VACON1000-ED-120-041+GAUL	120	860	88	500	113.7	63.4	49.2	7385
VACON1000-ED-128-041+GAUL	128	920	94	540	113.7	63.4	49.2	7441
VACON1000-ED-140-041+GAUL	140	1010	103	590	113.7	63.4	49.2	7496
VACON1000-ED-160-041+GAUL	160	1150	117	670	113.7	75.2	49.2	10472
VACON1000-ED-180-041+GAUL	180	1300	132	750	113.7	75.2	49.2	10582
VACON1000-ED-193-041+GAUL	193	1390	142	810	113.7	75.2	49.2	10692
VACON1000-ED-215-041+GAUL	215	1550	158	900	113.7	75.2	49.2	10803
VACON1000-ED-230-041+GAUL	230	1660	169	970	110.1	181.5	55.1	12897
VACON1000-ED-250-041+GAUL	250	1800	183	1050	110.1	181.5	55.1	13558
VACON1000-ED-265-041+GAUL	265	1910	194	1110	110.1	181.5	55.1	13999
VACON1000-ED-285-041+GAUL	285	2050	209	1190	110.1	181.5	55.1	14440
VACON1000-ED-305-041+GAUL	305	2200	224	1280	110.1	181.5	55.1	15102
VACON1000-ED-325-041+GAUL	325	2340	238	1360	110.1	181.5	55.1	15543
VACON1000-ED-350-041+GAUL	350	2520	257	1470	110.1	193.3	55.1	16424
VACON1000-ED-378-041+GAUL	378	2720	277	1580	110.1	213	55.1	18078
VACON1000-ED-408-041+GAUL	408	2940	299	1710	110.1	213	55.1	18739
VACON1000-ED-438-041+GAUL	438	3160	321	1830	110.1	213	55.1	19842
VACON1000-ED-475-041+GAUL	475	3420	348	1990	110.1	213	55.1	20723
VACON1000-ED-515-041+GAUL	515	3710	378	2160	110.1	228.8	55.1	21826
VACON1000-ED-560-041+GAUL	560	4030	411	2350	110.1	228.8	55.1	23589
VACON1000-ED-600-041+GAUL	600	4320	440	2510	110.1	228.8	55.1	24141
VACON1000-ED-640-041+GAUL	640	4610	469	2680	110.1	228.8	55.1	25243
VACON1000-ED-680-041+GAUL	680	4900	499	2850	110.1	228.8	55.1	26345
Nominal voltage 6000 V (30-pulse, 5 power cell per phase, 60 Hz)								
VACON1000-ED-025-060+GAUL	25	260	18	190	110.1	91	49.2	7606
VACON1000-ED-036-060+GAUL	36	370	26	270	110.1	91	49.2	7716
VACON1000-ED-040-060+GAUL	40	420	29	300	110.1	91	49.2	7771
VACON1000-ED-050-060+GAUL	50	520	37	380	110.1	91	49.2	7826
VACON1000-ED-060-060+GAUL	60	620	44	460	110.1	91	49.2	7882
VACON1000-ED-070-060+GAUL	70	730	51	530	110.1	91	49.2	7937
VACON1000-ED-080-060+GAUL	80	830	59	610	113.7	106.7	49.2	10582
VACON1000-ED-090-060+GAUL	90	940	66	690	113.7	106.7	49.2	10692
VACON1000-ED-100-060+GAUL	100	1040	73	760	113.7	106.7	49.2	10803
VACON1000-ED-110-060+GAUL	110	1140	81	840	113.7	106.7	49.2	10858
VACON1000-ED-120-060+GAUL	120	1250	88	910	113.7	106.7	49.2	10913
VACON1000-ED-140-060+GAUL	140	1450	103	1070	113.7	106.7	49.2	11023
VACON1000-ED-150-060+GAUL	150	1560	110	1140	113.7	118.5	49.2	12897
VACON1000-ED-170-060+GAUL	170	1770	125	1300	113.7	118.5	49.2	12952
VACON1000-ED-180-060+GAUL	180	1870	132	1370	113.7	118.5	49.2	13007
VACON1000-ED-190-060+GAUL	190	1970	139	1440	113.7	118.5	49.2	13118
VACON1000-ED-200-060+GAUL	200	2080	147	1530	113.7	118.5	49.2	13173
VACON1000-ED-210-060+GAUL	210	2180	154	1600	113.7	118.5	49.2	13173
VACON1000-ED-215-060+GAUL	215	2230	158	1640	113.7	118.5	49.2	13228
VACON1000-ED-223-060+GAUL	223	2320	164	1700	110.1	191.4	55.1	15653
VACON1000-ED-236-060+GAUL	236	2450	173	1800	110.1	191.4	55.1	16314
VACON1000-ED-250-060+GAUL	250	2600	183	1900	110.1	203.2	55.1	16976
VACON1000-ED-263-060+GAUL	263	2730	193	2010	110.1	203.2	55.1	17196
VACON1000-ED-276-060+GAUL	276	2870	202	2100	110.1	203.2	55.1	17637
VACON1000-ED-290-060+GAUL	290	3010	213	2210	110.1	203.2	55.1	18298
VACON1000-ED-305-060+GAUL	305	3170	224	2330	110.1	203.2	55.1	18960
VACON1000-ED-325-060+GAUL	325	3380	238	2470	110.1	203.2	55.1	19401

Height excluding cooling fan is 96.1 in

Power rating (UL variant)

AC drive type	Low overload rating 110% (Variable torque)		High overload rating 150% (Constant torque)		Cabinet dimensions			Weight
	I _L [A]	S [kVA]	I _{HD} [A]	S [kVA]	HxWxD [in]			[lb]
Nominal voltage 6000 V (30-pulse, 5 power cell per phase, 60 Hz)								
VACON1000-ED-350-060+GAUL	350	3640	257	2670	110.1	203.2	55.1	20283
VACON1000-ED-370-060+GAUL	370	3850	271	2820	110.1	236.7	55.1	22487
VACON1000-ED-390-060+GAUL	390	4050	286	2970	110.1	252.4	55.1	23149
VACON1000-ED-415-060+GAUL	415	4310	304	3160	110.1	252.4	55.1	24251
VACON1000-ED-438-060+GAUL	438	4550	321	3340	110.1	252.4	55.1	25353
VACON1000-ED-460-060+GAUL	460	4780	337	3500	110.1	252.4	55.1	26345
VACON1000-ED-483-060+GAUL	483	5020	354	3680	110.1	252.4	55.1	27007
VACON1000-ED-507-060+GAUL	507	5270	372	3870	110.1	252.4	55.1	27888
VACON1000-ED-532-060+GAUL	532	5530	390	4050	110.1	260.3	55.1	28991
VACON1000-ED-560-060+GAUL	560	5820	411	4270	110.1	260.3	55.1	30314
VACON1000-ED-588-060+GAUL	588	6110	431	4480	110.1	260.3	55.1	31085
VACON1000-ED-617-060+GAUL	617	6410	452	4700	110.1	260.3	55.1	31967
VACON1000-ED-648-060+GAUL	648	6730	475	4940	110.1	283.9	63	33290
VACON1000-ED-680-060+GAUL	680	7070	499	5190	110.1	283.9	63	34172
Nominal voltage 6300 V (36-pulse, 6 power cell per phase, 60 Hz)								
VACON1000-ED-025-063+GAUL	25	270	18	200	110.1	91	49.2	7937
VACON1000-ED-030-063+GAUL	30	330	22	240	110.1	91	49.2	7992
VACON1000-ED-036-063+GAUL	36	390	26	280	110.1	91	49.2	7992
VACON1000-ED-045-063+GAUL	45	490	33	360	110.1	91	49.2	8047
VACON1000-ED-050-063+GAUL	50	550	37	400	110.1	91	49.2	8047
VACON1000-ED-065-063+GAUL	65	710	48	520	110.1	91	49.2	8102
VACON1000-ED-070-063+GAUL	70	760	51	560	110.1	91	49.2	8157
VACON1000-ED-085-063+GAUL	85	930	62	680	113.7	106.7	49.2	10913
VACON1000-ED-100-063+GAUL	100	1090	73	800	113.7	106.7	49.2	11023
VACON1000-ED-115-063+GAUL	115	1250	84	920	113.7	106.7	49.2	11133
VACON1000-ED-125-063+GAUL	125	1360	92	1000	113.7	106.7	49.2	11188
VACON1000-ED-140-063+GAUL	140	1530	103	1120	113.7	106.7	49.2	11244
VACON1000-ED-160-063+GAUL	160	1750	117	1280	113.7	118.5	49.2	13118
VACON1000-ED-170-063+GAUL	170	1860	125	1360	113.7	118.5	49.2	13173
VACON1000-ED-180-063+GAUL	180	1960	132	1440	113.7	118.5	49.2	13228
VACON1000-ED-190-063+GAUL	190	2070	139	1520	113.7	118.5	49.2	13338
VACON1000-ED-205-063+GAUL	205	2240	150	1640	113.7	118.5	49.2	13393
VACON1000-ED-210-063+GAUL	210	2290	154	1680	113.7	118.5	49.2	13393
VACON1000-ED-215-063+GAUL	215	2350	158	1720	113.7	118.5	49.2	13448
VACON1000-ED-230-063+GAUL	230	2510	169	1840	110.1	213	55.1	18298
VACON1000-ED-250-063+GAUL	250	2730	183	2000	110.1	213	55.1	19401
VACON1000-ED-265-063+GAUL	265	2890	194	2120	110.1	213	55.1	19842
VACON1000-ED-285-063+GAUL	285	3110	209	2280	110.1	213	55.1	20503
VACON1000-ED-305-063+GAUL	305	3330	224	2440	110.1	213	55.1	21605
VACON1000-ED-325-063+GAUL	325	3550	238	2600	110.1	213	55.1	22046
VACON1000-ED-350-063+GAUL	350	3820	257	2800	110.1	228.8	55.1	23589
VACON1000-ED-378-063+GAUL	378	4120	277	3020	110.1	268.2	55.1	25684
VACON1000-ED-408-063+GAUL	408	4450	299	3260	110.1	268.2	55.1	27007
VACON1000-ED-438-063+GAUL	438	4780	321	3500	110.1	268.2	55.1	28770
VACON1000-ED-475-063+GAUL	475	5180	348	3800	110.1	276	55.1	30314
VACON1000-ED-515-063+GAUL	515	5620	378	4120	110.1	276	55.1	32077
VACON1000-ED-560-063+GAUL	560	6110	411	4480	110.1	299.7	63	33180
VACON1000-ED-600-063+GAUL	600	6550	440	4800	110.1	299.7	63	35825
VACON1000-ED-640-063+GAUL	640	6980	469	5120	110.1	299.7	63	37368
VACON1000-ED-680-063+GAUL	680	7420	499	5450	110.1	378.4	55.1	40896

Height excluding cooling fan is 96.1 in

Power rating (UL variant)

AC drive type	Low overload rating 110% (Variable torque)		High overload rating 150% (Constant torque)		Cabinet dimensions			Weight
	I _L [A]	S [kVA]	I _{HD} [A]	S [kVA]	HxWxD [in]			[lb]
Nominal voltage 6600 V (36-pulse, 6 power cell per phase, 60 Hz)								
VACON1000-ED-025-066+GAUL	25	290	18	210	110.1	91	49.2	8047
VACON1000-ED-032-066+GAUL	32	370	23	260	110.1	91	49.2	8102
VACON1000-ED-036-066+GAUL	36	410	26	300	110.1	91	49.2	8157
VACON1000-ED-040-066+GAUL	40	460	29	330	110.1	91	49.2	8212
VACON1000-ED-050-066+GAUL	50	570	37	420	110.1	91	49.2	8267
VACON1000-ED-055-066+GAUL	55	630	40	460	110.1	91	49.2	8322
VACON1000-ED-065-066+GAUL	65	740	48	550	110.1	91	49.2	8322
VACON1000-ED-070-066+GAUL	70	800	51	580	110.1	91	49.2	8378
VACON1000-ED-080-066+GAUL	80	910	59	670	113.7	106.7	49.2	11133
VACON1000-ED-100-066+GAUL	100	1140	73	830	113.7	106.7	49.2	11244
VACON1000-ED-120-066+GAUL	120	1370	88	1010	113.7	106.7	49.2	11354
VACON1000-ED-140-066+GAUL	140	1600	103	1180	113.7	106.7	49.2	11464
VACON1000-ED-155-066+GAUL	155	1770	114	1300	113.7	118.5	49.2	13338
VACON1000-ED-160-066+GAUL	160	1830	117	1340	113.7	118.5	49.2	13393
VACON1000-ED-180-066+GAUL	180	2060	132	1510	113.7	118.5	49.2	13448
VACON1000-ED-200-066+GAUL	200	2290	147	1680	113.7	118.5	49.2	13558
VACON1000-ED-210-066+GAUL	210	2400	154	1760	113.7	118.5	49.2	13614
VACON1000-ED-215-066+GAUL	215	2460	158	1810	113.7	118.5	49.2	13669
VACON1000-ED-230-066+GAUL	230	2630	169	1930	110.1	213	55.1	18298
VACON1000-ED-250-066+GAUL	250	2860	183	2090	110.1	213	55.1	19401
VACON1000-ED-265-066+GAUL	265	3030	194	2220	110.1	213	55.1	19842
VACON1000-ED-285-066+GAUL	285	3260	209	2390	110.1	213	55.1	20503
VACON1000-ED-305-066+GAUL	305	3490	224	2560	110.1	213	55.1	21605
VACON1000-ED-325-066+GAUL	325	3720	238	2720	110.1	213	55.1	22046
VACON1000-ED-350-066+GAUL	350	4000	257	2940	110.1	228.8	55.1	23589
VACON1000-ED-378-066+GAUL	378	4320	277	3170	110.1	268.2	55.1	25684
VACON1000-ED-408-066+GAUL	408	4660	299	3420	110.1	268.2	55.1	27007
VACON1000-ED-438-066+GAUL	438	5010	321	3670	110.1	268.2	55.1	28770
VACON1000-ED-475-066+GAUL	475	5430	348	3980	110.1	276	55.1	30314
VACON1000-ED-515-066+GAUL	515	5890	378	4320	110.1	276	55.1	32077
VACON1000-ED-560-066+GAUL	560	6400	411	4700	110.1	299.7	63	33180
VACON1000-ED-600-066+GAUL	600	6860	440	5030	110.1	299.7	63	35825
VACON1000-ED-640-066+GAUL	640	7320	469	5360	110.1	299.7	63	37368
VACON1000-ED-680-066+GAUL	680	7770	499	5700	110.1	378.4	55.1	40896
Nominal voltage 6900V (36-pulse, 6 power cell per phase, 60 Hz)								
VACON1000-ED-025-069+GAUL	25	300	18	220	110.1	91	49.2	8267
VACON1000-ED-032-069+GAUL	32	380	23	270	110.1	91	49.2	8378
VACON1000-ED-036-069+GAUL	36	430	26	310	110.1	91	49.2	8433
VACON1000-ED-040-069+GAUL	40	480	29	350	110.1	91	49.2	8488
VACON1000-ED-050-069+GAUL	50	600	37	440	110.1	91	49.2	8543
VACON1000-ED-060-069+GAUL	60	720	44	530	110.1	91	49.2	8598
VACON1000-ED-065-069+GAUL	65	780	48	570	110.1	91	49.2	8598
VACON1000-ED-070-069+GAUL	70	840	51	610	110.1	91	49.2	8598
VACON1000-ED-080-069+GAUL	80	960	59	710	113.7	106.7	49.2	11685
VACON1000-ED-100-069+GAUL	100	1200	73	870	113.7	106.7	49.2	11685
VACON1000-ED-120-069+GAUL	120	1430	88	1050	113.7	106.7	49.2	11685
VACON1000-ED-140-069+GAUL	140	1670	103	1230	113.7	106.7	49.2	11685
VACON1000-ED-150-069+GAUL	150	1790	110	1310	113.7	118.5	49.2	13448
VACON1000-ED-160-069+GAUL	160	1910	117	1400	113.7	118.5	49.2	13558
VACON1000-ED-180-069+GAUL	180	2150	132	1580	113.7	118.5	49.2	13669
VACON1000-ED-190-069+GAUL	190	2270	139	1660	113.7	118.5	49.2	13834

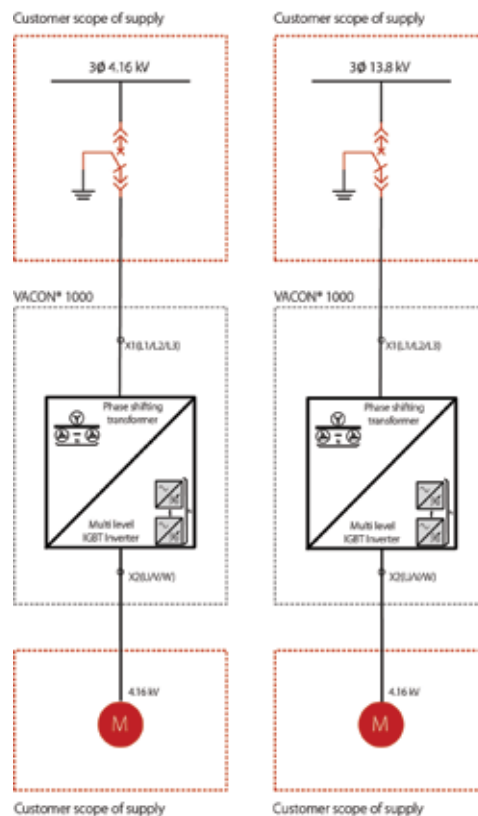
Height excluding cooling fan is 96.1 in

Power rating (UL variant)

AC drive type	Low overload rating 110% (Variable torque)		High overload rating 150% (Constant torque)		Cabinet dimensions			Weight
	I_L [A]	S [kVA]	I_{HD} [A]	S [kVA]	HxWxD [in]			[lb]
Nominal voltage 6900V (36-pulse, 6 power cell per phase, 60 Hz)								
VACON1000-ED-200-069+GAUL	200	2390	147	1760	113.7	118.5	49.2	13834
VACON1000-ED-210-069+GAUL	210	2510	154	1840	113.7	118.5	49.2	13889
VACON1000-ED-215-069+GAUL	215	2570	158	1890	113.7	118.5	49.2	13889
VACON1000-ED-230-069+GAUL	230	2750	169	2020	110.1	213	55.1	18739
VACON1000-ED-250-069+GAUL	250	2990	183	2190	110.1	213	55.1	19842
VACON1000-ED-265-069+GAUL	265	3170	194	2320	110.1	213	55.1	20283
VACON1000-ED-285-069+GAUL	285	3410	209	2500	110.1	213	55.1	20944
VACON1000-ED-305-069+GAUL	305	3650	224	2680	110.1	213	55.1	22046
VACON1000-ED-325-069+GAUL	325	3880	238	2840	110.1	228.8	55.1	22708
VACON1000-ED-350-069+GAUL	350	4180	257	3070	110.1	228.8	55.1	24251
VACON1000-ED-378-069+GAUL	378	4520	277	3310	110.1	268.2	55.1	26345
VACON1000-ED-408-069+GAUL	408	4880	299	3570	110.1	276	55.1	27668
VACON1000-ED-438-069+GAUL	438	5230	321	3840	110.1	276	55.1	29432
VACON1000-ED-475-069+GAUL	475	5680	348	4160	110.1	276	55.1	31416
VACON1000-ED-515-069+GAUL	515	6150	378	4520	110.1	276	55.1	33180
VACON1000-ED-560-069+GAUL	560	6690	411	4910	110.1	299.7	63	35384
VACON1000-ED-600-069+GAUL	600	7170	440	5260	110.1	299.7	63	36707
VACON1000-ED-640-069+GAUL	640	7650	469	5610	110.1	378.4	55.1	39793
VACON1000-ED-680-069+GAUL	680	8130	499	5960	110.1	378.4	55.1	41998

Height excluding cooling fan is 96.1 in

VACON® 1000 Single line diagram



Options

Options	Description
Degree of protection	
+IP42	Protection rating IP42
Input frequency	
+LS50	50 Hz input frequency
+LS60	60 Hz input frequency
I/O options	
+IBF2	Advanced control module
+ICF3	Excitator control I/O
+IDF4	PID control module
+IEF5	Motor temperature module (8 channels)
I/O PLC options	
+IAP1	PLC DI module (16 DI)
+IBP2	PIC DIO module (8DI/8DO)
+ICP3	PLC AIO module (2AI/4AO)
+IDP4	Motor temperature module (8 channels)
Fieldbus options	
+S_E2	Modbus RTU
+S_E5	PROFIBUS DP-V0
+S_E6	CANopen
+S_E7	DeviceNet™
+S_EC	EtherCAT
+S_EI	Modbus TCP
+S_EL	POWERLINK
+S_EN	ControNet™
+S_EP	PROFINET I/O
+S_EQ	EtherNet/IP™
User interface	
+MHMI	HMI 10"
System firmware	
+F101	Asynchronous Motor
+F102	Synchronous Motor (external exciter)
Cell bypass	
+PPCB	Power cell bypass
Cell redundancy*	
+PPCR	Power cell redundancy
Cabinet bypass*	
+PSB2	Engineered synchronous transfer
Output devices*	
+POCK	Reactor for synchronous transfer
+PODU	dV/dt filter** for cable <2000 m (<6562 ft)

*If this option is selected it could impact the overall dimensions and weight of the product.

** If this option is selected the drive will comply with NEMA MG 1 Part 30 dV/dt limits.

Options	Description
Cabinet options	
+QDFR	Cooling fan redundancy
+QDEX	External cooling fan supply
+QT01	Control power without heater XFMR
+QT02	Control power with heater XFMR
Mechanical options	
+MHET	Heater + Thermostat
+MHEH	Heater + Humidity sensor
Input voltage options*	
+I023	Input voltage: 2300 V
+I024	Input voltage: 2400 V
+I030	Input voltage: 3000 V
+I033	Input voltage: 3300 V
+I040	Input voltage: 4000 V
+I041	Input voltage: 4160 V
+I042	Input voltage: 4200 V
+I048	Input voltage: 4800 V
+I050	Input voltage: 5000 V
+I060	Input voltage: 6000 V
+I063	Input voltage: 6300 V
+I066	Input voltage: 6600 V
+I069	Input voltage: 6900 V
+I072	Input voltage: 7200 V
+I084	Input voltage: 8400 V
+I100	Input voltage: 10000 V
+I110	Input voltage: 11000 V
+I114	Input voltage: 11400 V
+I120	Input voltage: 12000 V
+I124	Input voltage: 12400 V
+I132	Input voltage: 13200 V
+I138	Input voltage: 13800 V
Environment	
+THAL	High altitude, >2000 m above sea level (>6562 ft)
+T50C	50° C (122° F) ambient temperature operation
Seismic zone	
+SZ04	Zone 4
Factory acceptance test	
+QFAT	FAT
+QFNO	No-load FAT

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Any information, including, but not limited to information on selection of product, its application or use, product design, weight, dimensions, capacity or any other technical data in product manuals, catalogues descriptions, advertisements, etc. and whether made available in writing, orally, electronically, online or via download, shall be considered informative, and is only binding if and to the extent, explicit reference is made in a quotation or order confirmation. Danfoss cannot accept any responsibility for possible errors in catalogues, brochures, videos and other material. Danfoss reserves the right to alter its products without notice. This also applies to products ordered but not delivered provided that such alterations can be made without changes to form, fit or function of the product. All trademarks in this material are property of Danfoss A/S or Danfoss group companies. Danfoss and the Danfoss logo are trademarks of Danfoss A/S. All rights reserved.