



VACON MOTOR MOUNTABLE AC DRIVES READY FOR A ROUGH RIDE

VACON
DRIVEN BY DRIVES

DECENTRALISED SOLUTIONS

By using decentralised drive solutions engineers and machine designers can save on costs and space. Vacon Motor Mountable products are exactly what the name suggests, products that can be mounted directly onto the motor, machine or wherever the most efficient location for the drive is.

Decentralised solutions

In a decentralised drive solution the drives are located as close as possible to the motor. The solution allows the machine designer to utilise the available space in and around the machine optimally. Significant savings can be achieved in cabling costs, space and energy when the machine or the solution does not require discrete drives mounted in a separate electrical room.

Motor mountable OEM solutions

The motor mounted approach has been used in mechanical transmission applications for many years. Vacon is now bringing this trend to a wider range of OEM applications, such as high power pumps, fans, compressors and many more. For OEM manufacturers this is an opportunity to increase the drives in his delivery while offering the customer a better optimised solution.

Flexible Motor Mountable Solutions

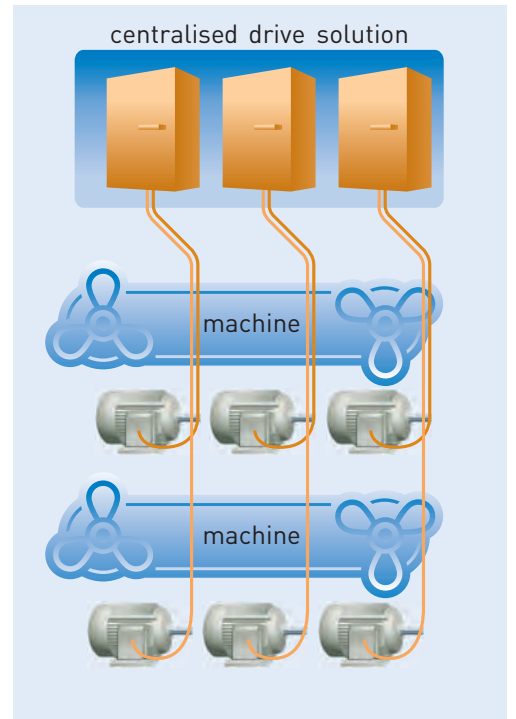
Vacon offers a range of motor mountable products that have been designed to fully utilise the possibilities of a decentralised approach. Unlike what most of the competition has done, Vacon wanted to design products that are truly usable in a wide variety of applications. In a decentralised solution there is no compromise in the performance or flexibility of the drive.

An independent drives supplier

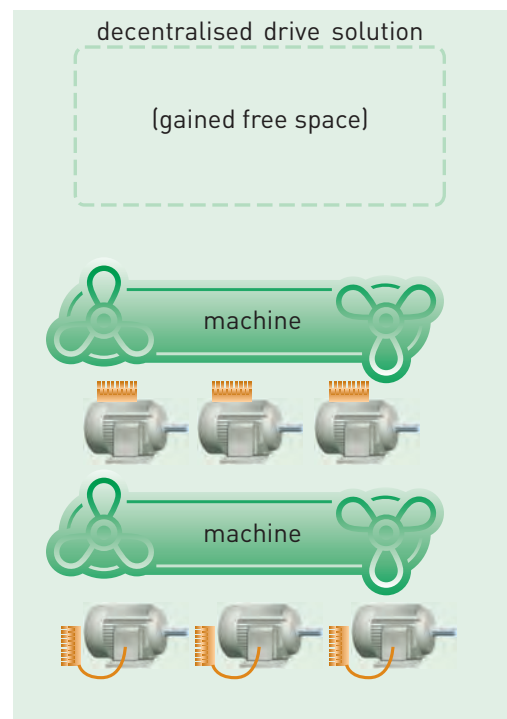
Vacon motor mountable drives are not tied to any certain motor supplier. In fact, in many cases the best location for the drive can be directly on the working machine, close to the motor. By selecting Vacon the customer will receive all the advantages and all the freedom.

THE DECENTRALISED DRIVES APPROACH IN A NUTSHELL

- LOCATING the drive as close to the motor as possible
- MINIMISING the use of electrical rooms
- INTEGRATING the drive as part of the machine
- NO CABINETS used for the drives



AC drive cabinets — Motor cables



AC drives — Motor cables



Save on cabinet costs

These are examples of how Vacon Motor Mountable drives help save on cabinet costs:

- No cabinet needed for the drive
- Heat loss from the drives do not have to be ventilated out of the cabinet
- Weight and size of the cabinet is significantly reduced
- Installation time for the drive is shorter if mounted without an enclosure

Save more in high powers

With drives available in powers all the way up to 30 kW the decentralised drive technology can be utilised in new applications that have previously been limited to traditional cabinet solutions. Examples of how Vacon Motor Mountable drives save more power in high powers:

- Lower cabinet ventilation costs, if cabinet still needed, as drive heat loss is external
- Savings in cable costs increase with the size of the motor cable
- Less cooling costs for electrical rooms

Save on cabling costs

Compared to a traditional solution, with the AC drives located in an electrical room, a decentralised solution offers significant savings potential in cabling costs. By locating the drive at the machine the length of the motor cable will be minimised. Examples of how Vacon Motor Mountable drives help save on cabling costs:

- Minimised length of more costly shielded motor cable
- Reduced cable laying costs

Single package from the machine builder

A decentralised solution provides a more flexible solution as an OEM manufacturer can deliver its' machine in one piece and there is no need to install the drives in a separate location.

- A complete package delivered in one piece
- Possibility to offer the customer a better optimized solution
- Minimised installation costs for the end-customer

ACTIVITY	COST CENTRALISED	COST DECENTRALISED	
Cabinet + Accessories + Drive Mounting	760 €	0 €	
Additional cost for shielded motor cable	50m x 6 €	1m x 6 €	
Additional cost for fieldbus cable	1m x 2 €	50m x 2 €	
Cabinet/Drive installation on site	3h x 30 €	1h x 30 €	
Total cost	1152 €	136 €	Savings 1016 €

Example cost for the installation of a 30 kW drive in a centralised cabinet vs. a decentralised drive solution. AC drive costs not included in calculation.

VACON 100 MOTOR MOUNTABLE

As a leading company in the drives business Vacon is setting a new benchmark for decentralised drives. The Vacon 100 Motor Mountable drive is a tough drive for applications requiring a control as smooth as silk. With high advanced control capability and built-in harmonic filtering chokes it is the ideal solution for a large variety of applications.



1 Power Head

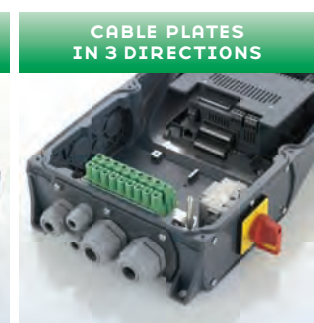
Contains all the power handling components in one compact and robust unit. The power head can easily be removed as all connections are done with removable connectors.

2 Terminal Box

Contains the control unit and all the wiring to the drive in one unit.

3 Mounting the Drive

The drive can be mounted onto any flat surface. Motor mounting is done using additional adapter parts.



FEATURES AND BENEFITS

Performance in rough environments

- Durable all-metal die-cast frame
- Withstands heat, dirt and vibrations
- No extra enclosure needed
- Easy to keep clean

Approved for public networks

- Flexible installation
- Meets EN61000-3-12 requirements for public networks
- Meets EMC requirements according to class C2 (C1)

High efficiency

- Efficient design and the latest technology
- Top class energy efficiency

Communication and connectivity

- Full freedom with built-in main interfaces as standard (RS-485 and Ethernet)
- Ethernet connectivity solutions are increasing in importance

Functional Safety

- Built-in functional safety as standard
- STO according to EN61800-5-2 and ISO13849-1

Vacon Programming

- Built-in EN61131-3 Programmability
- Contains a soft PLC that runs on the main processor of the drive
- Enables the creation of top-notch integrated solutions for an almost infinite variety of OEM applications

Long lifetime

- Utilises the latest technology without electrolytic capacitors
- Will last longer than most products on the market
- The high efficiency and simulated air flow keeps the drive as clean and cool as possible

380-480 V RATINGS

PRODUCT CODE	MOTOR SHAFT POWER AND CURRENT High Overload (150%)			Overload Amps [1 Min/10 Min]	SIZE/PROT. FR/IP	DIMENSIONS		WEIGHT (kg)
	kW	HP	Amps			W x H x D		
						(mm)	Inches	
VACON0100-3L-0003-4-MM	1.1	1.5	3.4	5.1	MM4/IP55	191 x 314 x 187	7.52 x 12.36 x 7.36	8.8
VACON0100-3L-0004-4-MM	1.5	2	4.8	7.2	MM4/IP55	191 x 314 x 187	7.52 x 12.36 x 7.36	8.8
VACON0100-3L-0005-4-MM	2.2	3	5.6	8.4	MM4/IP55	191 x 314 x 187	7.52 x 12.36 x 7.36	8.8
VACON0100-3L-0008-4-MM	3	5	8	12	MM4/IP55	191 x 314 x 187	7.52 x 12.36 x 7.36	8.8
VACON0100-3L-0009-4-MM	4	5	9.6	14	MM4/IP55	191 x 314 x 187	7.52 x 12.36 x 7.36	8.8
VACON0100-3L-00012-4-MM	5.5	7.5	12	18	MM4/IP55	191 x 314 x 187	7.52 x 12.36 x 7.36	8.8
VACON0100-3L-00016-4-MM	7.5	10	16	24	MM5/IP55	233 x 366 x 205	9.17 x 14.41 x 8.07	14.9
VACON0100-3L-00023-4-MM	11	15	23	34	MM5/IP55	233 x 366 x 205	9.17 x 14.41 x 8.07	14.9
VACON0100-3L-00031-4-MM	15	20	31	46	MM5/IP55	233 x 366 x 205	9.17 x 14.41 x 8.07	14.9
VACON0100-3L-00038-4-MM	18.5	25	38	57	MM6/IP55	314 x 489 x 225	12.36 x 19.25 x 8.86	28.5
VACON0100-3L-00046-4-MM	22	30	46	69	MM6/IP55	314 x 489 x 225	12.36 x 19.25 x 8.86	28.5
VACON0100-3L-00061-4-MM	30	40	61	91	MM6/IP55	314 x 489 x 225	12.36 x 19.25 x 8.86	28.5

WHAT DOES MOTOR MOUNTABLE MEAN?

- IT IS AS robust as the motor itself
- IT IS A fully decentralised solution
- IT CAN be mounted anywhere
- IT IS not tied to a certain motor supplier

ADVANCED MOTOR CONTROL

- INDUCTION motors
- PERMANENT MAGNET motors

READY FOR A ROUGH RIDE



The Vacon 100 Motor Mountable drive comes packed with performance and the latest technology. The modular drive control is designed to give the best possible efficiency and control of the motor, also in demanding applications.

The robust die-cast frame and the large and open cooling ribs are the perfect starting point for designing a drive for demanding applications. In the Vacon 100 Motor Mountable has not been forgotten the inside technology either. Powerful control with advanced motor control functionality, extensive I/O and numerous control options make the Vacon 100 Motor Mountable drive ideal for demanding tasks. Thanks to the built-in PLC functionality, it is possible to create customer-specific software solutions without any extra hardware costs.

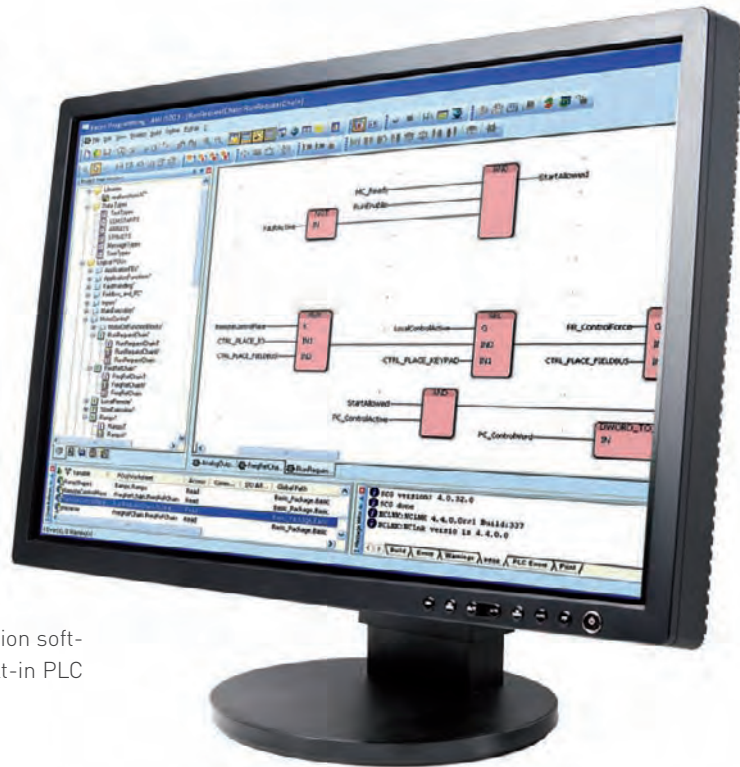


TECHNICAL SPECIFICATION		
MAINS CONNECTION	Input voltage U_n	380...480 V, -15 %...+10 % 3-
	Input frequency	45...66 Hz
	Connection to mains	Once per minute or less (normal case)
MOTOR CONNECTION	Output voltage	0... U_n
	Output current	Continuous rated current I_N at rated ambient temperature overload 1.5 x I_N max. 1 min/10 min
	Starting current / Torque	Current 2 x I_N for 2 secs in every 20 sec period Torque depends on motor
	Output frequency	0...320 Hz
	Frequency resolution	0.01 Hz
CONTROL CHARACTERISTICS	Control method	Frequency Control U/f. Open loop sensorless vector control
	Switching frequency	1.5...16 kHz; Factory default 6 kHz
	Braking torque	100 % x T_N with integrated brake chopper 30 % x T_N with DC-braking. Dynamic flux braking available in all types
AMBIENT CONDITIONS	Ambient operating temperature	-10°C (no frost)...+40°C (50°C with derating)
	Storage temperature	-40°C...+70°C
	Altitude	100 % load capacity (no derating) up to 1000 m 1 % derating for each 100 m above 1000 m; max. 3000 m
	Enclosure class	IP55 (IP66)
EMC	Immunity	Complies with EN61800-3, level C2 (C1)
	Emissions	
APPROVALS	CE, UL, cUL, IEC (not all versions, see unit nameplate for more detailed approvals)	



The optional fully graphical keypad can be the main control interface for any OEM machine.

It is possible to create customer-specific application software using the Vacon Programming tool with built-in PLC programmability.



I/O CONNECTIONS

BASIC I/O BOARD		
TERMINAL		SIGNAL
1	+10 Vref	Reference output
2	AI1+	Analog input, voltage or current
3	AI1-	Analog input common (current)
4	AI2+	Analog input, voltage or current
5	AI2-	Analog input common (current)
6	24 Vout	24 V aux. voltage
7	GND	I/O ground
8	DI1	Digital input 1
9	DI2	Digital input 2
10	DI3	Digital input 3
11	CM	Common for DI1-DI6
12	24 Vout	24 V aux. voltage
13	GND	I/O ground
14	DI4	Digital input 4
15	DI5	Digital input 5
16	DI6	Digital input 6
17	CM	Common for DI1-DI6
18	A01+	Analog signal (+output)
19	A0-/GND	Analog output common
30	+24 Vin	24 V auxiliary input voltage
A	RS485	Differential receiver/transmitter
B	RS485	Differential receiver/transmitter
-	RJ-45	Ethernet interface

RELAY BOARD

TERMINAL		SIGNAL
21	R01/1	Relay output 1
22	R01/2	
23	R01/3	
24	R02/1	Relay output 1
25	R02/2	
26	R02/3	
28	TI1+	Thermistor input
29	TI1-	

OPTIONS

DISCONNECT SWITCH	
+QDSS	Integrated disconnect switch
KEYPAD	
+HMMG	Graphical Keypad IP66