ENGINEERING
TOMORROW

Selection Guide | VACON® 100 | 0.55 – 800 kW

VACON® 100 – versatile AC drives designed to **save energy** and **improve process control**

Available from
0.55 to 800 kW
to fit your application

drives.danfoss.com | VACON®

VACON® 100 INDUSTRIAL and VACON® 100 FLOW – Innovation and high quality for your applications

VACON® 100 INDUSTRIAL and VACON® 100 FLOW AC drives are ideal for saving energy, optimizing process control and improving productivity. They are designed for multi-purpose use while remaining also user-friendly. VACON 100 INDUSTRIAL and VACON 100 FLOW are at the core of what we do – providing innovative and reliable high-quality products for key applications across various industries. They are well suited for a wide range of variable torque and constant power/torque applications including pumps, fans, compressors and conveyors. These are applications where energy efficiency and productivity improvements often result in a rapid return on project investments.

Wall mounted

Module

Enclosed

The VACON 100 INDUSTRIAL and VACON 100 FLOW are available in full power capacity up to 800 kW.
All power sizes are available as drive modules. Larger power sizes are also available in a free-standing enclosed version.
The enclosed version contains a wide range of configurable options as well as an innovative control compartment for safe access, without opening the main door. See more on p. 12–13.

VACON® 100 INDUSTRIAL – one drive, extensive applications

The VACON 100 INDUSTRIAL is a workhorse for a wide range of industrial applications. It is easy to integrate into all major control systems and is quickly adaptable to different needs. Just choose your application and let the VACON 100 INDUSTRIAL bring you clear savings. Integrated RS485 and Ethernet interfaces that support major industrial protocols save on the need for additional interface cards. For OEMs, VACON® Programming enables the built-in PLC functionality according to IEC61131-3 to integrate their own functionality in the drive. The VACON® Customizer facilitates smaller logic adaptations for special needs or retrofit situations.

VACON® 100 FLOW – dedicated functionality

VACON 100 FLOW is an AC drive dedicated to improving flow control and saving energy in pumping and ventilating applications. Combining the core functionality of VACON 100 INDUSTRIAL, the VACON 100 FLOW provides specific flow-control functions to enhance pump and fan performance and protect pipes and equipment to ensure reliable operation.

VACON 100 FLOW places an emphasis on user-friendliness and functionalities created for use in pump and fan applications. For instance, standard PID control eliminates the need for an external controller by using a sensor to control pump speed. This is useful when reacting to fluctuations in demand.

VACON® 100 product platform highlights

Available in the power range of:

- 3 x 208-240 V.....0.55-90 kW (0.75-125 HP)
- 3 x 380-500 V.....1.1-630 kW (1.5-800 HP)
- 3 x 525-600 V.....3.0-200 HP
- 3 x 525-690 V.....5.5-800 kW (7.5-800 HP)

Connect to your control system

All VACON® 100 AC drives are equipped with built-in Ethernet. This feature means that no additional options or gateways are needed to communicate with process automation. It also provides access for commissioning and maintenance through the VACON® Live configuration tool and makes local or remote monitoring possible.

Runs high-efficiency motors

Select the most efficient motor for your task, with the ability to run the new high-efficiency motor technologies, such as permanent magnet and synchronous reluctance motors, for improved system efficiency.

Built to last without interruption

All VACON 100 drives use electrolytic-free DC link technology which guarantees users the longest possible lifecycle and availability. By avoiding the need to replace electrolytic capacitors – that often wear out over time – interruptions and costs are kept to a minimum.

In harmony with the environment

While saving energy with the VACON 100 range of drives, you naturally contribute to reduced emissions and pollution. Our VACON 100 portfolio fulfills key international standards and global requirements, including RoHS (lead free), EMC and Harmonics approvals.

We have also carried out a lifecycle analysis of a VACON 100 AC drive to determine its carbon footprint. During the production of one 18.5-kW VACON 100 drive, 255 kg of CO_2e (carbon dioxide equivalent) emissions occur. However, when that drive is put to work in a typical fan application (compared to a two-speed electric motor), it actually saves 24,500 kg in CO_2e emissions over a 10-year period.

Film capacitors last up to 300,000 hours – that's about 30 years of reliable operation

Easy to operate

User-friendly keypad

The user interface is intuitive to use. You will enjoy the keypad's well-structured menu system that allows for fast commissioning and trouble-free operation.

- Graphical and text keypad with multiple language support
- 9 signals can be monitored at the same time on a single multi-monitor page and is configurable to 9, 6 or 4 signals
- 3-color LED status indication on the control unit
- Trend display for two signals at the same time

Quick set up

Easy commissioning tools ensure a hassle-free set up whatever the application. Easy diagnostic with help in plain text is provided for each parameter, signal and fault.
StartUp Wizard – for fast setup of the drive
Application Selections – for easy commissioning:

- VACON 100® INDUSTRIAL – Standard, Local Remote, PID, Multi Step, Multi Purpose, Motor Potentiometer
- VACON® 100 FLOW – PID, Multipump single and Multipump Multidrive applications, HVAC

All VACON 100 AC drives also feature a real-time clock that supports calendar-based functions.

Easy installation

- Both IP21/UL Type 1 and IP54/UL Type 12 units require the same mounting space. Compact IP54/UL Type 12 units can be installed side-by-side to save space
- Frame sizes MR8 through MR12 are also available as IP00/UL Open Type for cabinet installation
- Flange-mounting option for through-hole mounting, reducing heat loss and enclosure size
- Integrated lead-in grommets and 360-degree grounding ensure IP54/UL Type 12 and EMC compliance and lead to further cost savings
- Enclosed drives with a wide range of integrated options ready to use

Drive customizer

VACON 100 comes equipped with a built-in functionality that enables the AC drive to adapt to almost any function requiring I/O and control logic. The drive customizer function features a wide array of logical and numerical function blocks that can combine and extend standard drive functionalities, ensuring specific user requirements are met. The drive customizer does not require any special tools or training, while a fully graphical configuration can be performed using the VACON® Live configuration tool. Configurations can be copied using VACON Live as part of the normal parameter list.

VACON® Programming

Machine builders or OEMs can achieve a high level of machine performance by optimizing the application with the VACON Programming software tools. These licensed tools feature built-in PLC functionality based on IEC 61131-3. You simply program and secure your own control logic into the drive.

Easy to integrate

Ethernet connectivity

You don't need to purchase additional communication tools as integrated Ethernet connectivity allows remote drive access for monitoring, configuring and troubleshooting.
Ethernet protocols such as PROFINET IO, EtherNet/IP and Modbus TCP are available for all VACON® 100 drives. New Ethernet protocols are being continuously developed.

Fieldbus options

- In addition to the integrated Ethernet connectivity, the VACON 100 drives also include built-in RS485 for Modbus RTU
- For other protocols, click-in fieldbus options facilitate integration to traditional systems for the following: PROFIBUS DP, DeviceNet, LonWorks, CANOpen and EtherCAT. This ensures increased control and monitoring with reduced cabling
- Other communications options include: BACnet MSTP, BACnet IP, Metasys N2

Safe Torque Off, Safe Stop 1

- Safe Torque Off (STO) prevents the AC drive from generating torque on the motor shaft and prevents unintentional start-ups. The function also corresponds to an uncontrolled stop in accordance with stop category 0, EN60204-1
- Safe Stop 1 (SS1) initiates the motor deceleration and initiates the STO function after an application-specific time delay. The function also corresponds to a controlled stop in accordance with stop category 1, EN 60204-1
- The optional integrated STO and SS1 safety options have several advantages over standard safety technology using electromechanical switchgear. For example, separate components and the efforts required to wire and service them are no longer necessary, but the required level of safety at work is maintained

ATEX-certified thermistor input

Certified and compliant with the European ATEX directive 94/9/EC, the optional integrated thermistor input is specially designed for the temperature supervision of motors that are placed in areas:

- in which potentially explosive gas, vapor, mist or air mixtures are present
- with combustible dust

If over-heating is detected, the drive immediately stops feeding energy to the motor. As no external components are needed, the cabling is minimized, improving reliability and saving on both space and costs.

VACON® Save

VACON Save is a savings calculator for pump, fan and compressor applications which can be used to estimate cost and energy savings. It's a great tool for customers who are looking to work out the best and most economical pump and fan solution.

VACON® 100 INDUSTRIAL

It may look like a traditional AC drive – but it's not. VACON® 100 INDUSTRIAL is full of smart features, dedicated for a wide range of constant power/torque applications. Benefit from functional safety with Safe Torque Off to prevent the motor from generating torque on the motor shaft, Safe Stop 1, and ATEX-certified motor over-temperature protection.

The VACON 100 INDUSTRIAL has as standard features such as built-in I/Os with 3 option slots, integrated RS485 and Ethernet-based fieldbus support and varnished boards. Easy-to-use and robust motor control features improve the reliability and efficiency of all AC motor types (induction motors, permanent magnet motors and synchronous reluctance motors).

The wall-mountable drive modules are easy to install and operate, with IP21/ UL Type1 provided as standard. Options include IP54/UL Type12 and flange (through-hole) mounting. Frame sizes MR8 through MR12 are also available as compact IP00 for easy installation to any enclosure. Enclosed drives come with a wide range of integrated options.

Typical applications for VACON® 100 INDUSTRIAL		
Process industry	**Marine**	**Industrial HVAC/Semiconductor industry**
■ Conveyors ■ Pumps and fans ■ Chippers, debarking drums, sawmills	■ Cargo pumps ■ Compressors ■ Steering gear	■ Compressors ■ Pumps and fans
Water	**Chemical, oil and gas**	**Mining and minerals**
■ Distribution ■ Desalination ■ Treatment ■ Pumps ■ Compressors, conveyors	■ Pumps and fans ■ Compressors	■ Conveyors ■ Pumps and fans
Cement auxiliary drives		
■ Conveyors ■ Pumps and fans		

What's in it for you

	Common features	Benefits
	Compliance with global standards	Global compatibility
	Built-in Modbus TCP/IP and Modbus RTU Extensive variety of fieldbus options ■ Ethernet always included – Modbus TCP/IP & BACnet/IP – PROFINET IO and EtherNet/IP (Software option) Ease of connectivity – multiple fieldbus options ■ PROFIBUS DP ■ CanOpen ■ DeviceNet ■ EtherCAT	Most of what is needed is in-built Easy integration with plant automation
	Safe Torque Off, Safe Stop1, ATEX-certified thermistor input	Improves safety at work
	EMC compliance with integrated RFI filter Integrated DC chokes	No additional accessories required
	Conformal coating	High reliability in difficult environments
	Compact IP54/UL Type 12 with same footprint as IP21/UL Type 1 Flange mounting Side-by-side mounting for IP54/UL Type 12	Easy and cost-effective installation
	Standard I/O + 3 free slots Fieldbus options, built-in PLC capability	Reduces need for an external controller
	High efficiency > 97% + energy optimization	Fast investment payback, increases profits
	Energy counter and Real-time clock with calender-based functions Optimized control of cooling fan	Easy monitoring of energy savings Reduces noise levels
	Film capacitors	Extended lifespan: last up to 300,000 hours – that's about 30 years of reliable operation Optimized performance: always ready for immediate use – no stocking problems Reduced losses: cut losses by 2% Environmentally friendly: contain no hazardous waste
	Wide motor support	Induction motor support – general purpose usage PM motor support – demanding applications and high efficiency SynRM motor support – cost-efficient motor and high efficiency Save commissioning time Plug-and-play identification run available for multiple motors
	Omitting encoder – sensorless vector control	Converting simple closed loop
	Dedicated features	**Added benefits**
Pumps	2 PID controllers with sleep mode, soft fill, jockey pump, pump autoclean PM and induction motor support Multipump control solutions	Demand-based optimization of the process for accurate process control and energy saving Easy selection for any motor PM motor allows higher power density, less mechanics
Fans	Flying start, motor switch 3 prohibit frequency ranges PM and induction motor support	Save time during process operation and maintenance Fan lifetime increased due to reduced mechanical stress Easy selection for any motor PM motor allows higher power density = energy savings
Compressors	IP21/UL Type 1 and IP54/UL Type 12 Flange (through-hole) mounting IP00 for MR8 and MR12	Suitable for wide installation needs Easy to integrate into the machine, saving space and cost of integration and cooling
Conveyors	Load drooping, identification run without disconnecting the motor from the load, mechanical brake, torque boost	Avoid stress on mechanics Easy commissioning

VACON® 100 FLOW

The VACON® 100 FLOW is an AC drive dedicated to improving flow control in pumping and ventilating applications. It combines the core functionality of VACON® 100 with dedicated functions that are specifically designed with flow-control application processes in mind.

Multipump control solutions

Get the best functionality and cost-efficiency from your process with the VACON 100 FLOW. Choose from three Multipump control solutions, each of which offers unsurpassed control of flow and pressure.

Demand for water or ventilation fluctuates throughout the course of a day. For instance, cooling water demand in a plant may peak during the day as the plant runs at full capacity. Conversely, in the middle of the night the plant may run at reduced capacity reducing the requirements for cooling water.

The use of several pumps instead of just a single one results in higher efficiency as several pumps share the load. This also makes the system more redundant: if one pump fails, the others can take on its load.

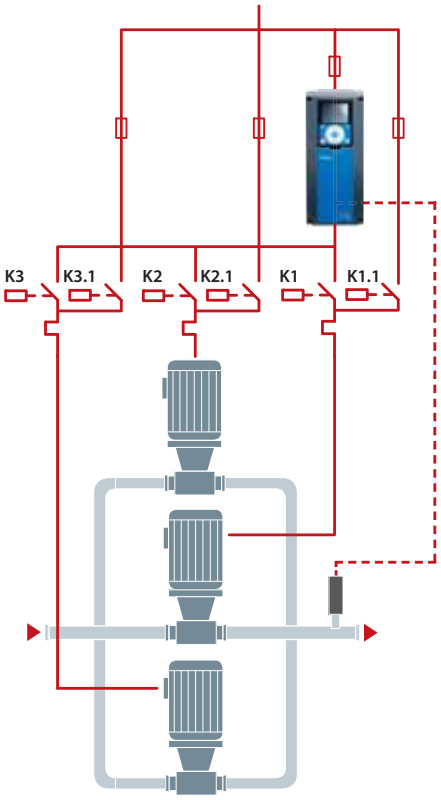
Single drive pump system

Multipump control is a single drive solution in which one AC drive controls the leading pump. If the demand exceeds the capabilities of the pump, additional fixed-speed pumps can be connected online directly or with a soft starter. You can choose between fixed setups and solutions in which the leading and auxiliary pumps alternate in roles to equalize wear and tear.

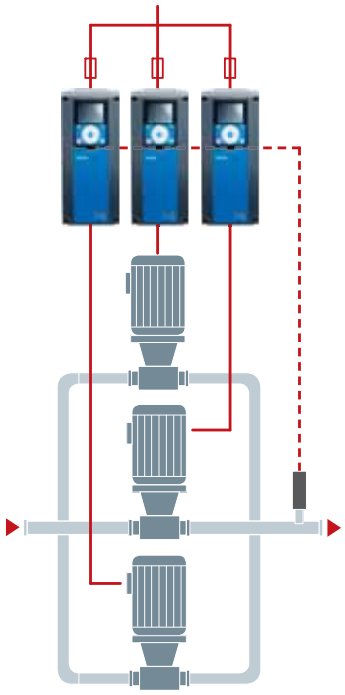
Single drive system in brief

- Maximum 8 pumps
- No need for an external controller
- Alternation of all pumps or only auxiliary pumps

Typical applications for VACON® 100 FLOW	
Industrial water treatment	**General industry**
■ Cooling water systems ■ Boiler water systems	■ Compressors ■ Pumps and fans



Single drive system



Multidrive system

Multidrive pump systems

In Multimaster technology, separate AC drives control each pump. The integrated RS485 interface allows the drives to communicate without the need for any external controller. As demand increases, the leading drive increases its speed until the capacity is exceeded, at which point the excess load is transferred to the next drive in the series. This method ensures pumps start and stop smoothly, and reduces the need for additional control wiring, motor protection relay and contactors.

Multifollower mode follows the same principle as Multimaster in that separate AC drives control each pump. Where this system differs is that, as demand increases and the lead drive's capacity is exceeded, the system brings additional parallel drives into operation. This ensures that all pumps run at the same operating speed, reducing noise and general stress, thus improving reliability.

Multidrive systems in brief

- Maximum 8 pumps
- No need for an external controller
- Communication between drives using integrated RS485

What's in it for you – dedicated pump, fan and compressor features

	Dedicated features	Added benefits
Pumps	2 PID controllers with sleep mode, soft fill, jockey pump, pump autoclean, PM and induction motor support Multipump control solutions	Demand-based optimization of the process for accurate process control and energy saving Easy selection for any motor PM motor allows higher power density, less mechanics
Fans	Flying start, motor switch 3 prohibit frequency ranges PM and induction motor support	Save time during process operation and maintenance Fan lifetime increased due to reduced mechanical stress Easy selection for any motor PM motor allows higher power density = energy savings
Compressors	IP21/UL Type 1 and IP54/UL Type 12 Flange (through-hole) mounting IP00 for MR8 and MR12	Suitable for wide installation needs Easy to integrate into the machine, saving space and cost of integration and cooling

VACON® 100 wall-mounted drives

The VACON® 100 wall-mounted drives are compact and comprehensive drive packages, with all the necessary components integrated in a single drive. VACON 100 wall-mounted drives are available in IP21/UL Type 1 or IP54/UL Type 12. They are available at 230 V, 500 V and 690 V.

Features

- Conformal coating
- IP54/UL Type 12 has the same footprint as IP21/UL Type 1
- Flange mounting
- Side-by-side mounting for IP54/UL Type 12
- Integrated DC choke and EMC filters
- Integrated brake chopper standard in frames MR4 to MR6

Benefits

- Reduced installation space and costs
- Higher reliability in demanding environments

Power range

3 x 208-240 V	0.55-90 kW
3 x 380-500 V	1.1-160 kW
3 x 525-600 V	3.0-200 HP
3 x 525-690 V	5.5-200 kW

VACON® 100 drive modules

VACON® 100 IP00 drive modules are intended for installation into any enclosure. Module installation in standard enclosures is easy due to the compact design.

VACON 100 drive modules start at frame size MR8 and go up to frame MR12. The modules contain all necessary components including DC chokes and brake choppers (optional).

Module frame sizes MR10 and MR12 have an options module that can house optional output filters and brake choppers. The options are integrated in the main cooling channel.

Features

- Wide power range using only four frames
- Integrated DC chokes
- Integrated brake chopper (optional)
- Integrated output filters (optional)
- Options module for easy integration (frames MR10 and MR12)
- Remotely mountable control box
- IP54 main cooling channel

Benefits

- Reduced installation space and costs
- Easier integration
- Improved reliability by separating the main cooling air flow from the rest of the drive electronics

Power range

3 x 208-240 V.....37-90 kW
3 x 380-500 V.....75-630 kW
3 x 525-690 V.....45-800 kW

VACON® 100 enclosed drives

The VACON 100® enclosed drives are designed to meet the most demanding requirements for flexibility, robustness, compactness and service-friendliness. They are a smart choice for many applications and available from 75 to 630 kW at 380-500 V and 75 to 800 kW at 525-690 V.

Proven solution

Our VACON 100 enclosed drives are compact and tested to meet harsh operating conditions. They can be installed in many different standard applications such as pumps or conveyors. The innovative air-cooling channel ensures reliable thermal handling of the enclosure and provides extended lifetime of the drive with trouble-free operation in tough environments. Approved EMC solutions ensure reliable operation of the drive without disturbing other electrical equipment.

The VACON 100 Enclosed drives are configurable with power, control and enclosure options to meet the needs of the application. Output filter options, input disconnects and brake choppers are integrated into the cabinet solution eliminating the need for additional equipment outside of the enclosure. Power options, such as output filters, are integrated into the air-cooling solution and provide a thermally proven cabinet design.

Features

- Separate cooling air channel
- Common mode and dU/dt filters integrated in cooling air channel
- Back channel cooling option available
- Fast acting aR input fuses as standard
- Integrated output filters and fuse switch as options

Benefits

- IP54/UL without derating
- Reduced installation space and costs
- Higher reliability in demanding environments
- Safe, complete, integrated solution

Power range

3 x 380-500 V.....75-630 kW
3 x 525-690 V.....75-800 kW

Features

- Configured to order with pre-engineered options
- Door-mounted control compartment separate from the main drive
- I/O wired to standard terminal blocks
- Dedicated area for signal lights and control switches
- All components accessible from the front of the enclosure

Benefits

- Standard product configured to user's needs
- Safe accessibility to controls
- Easier installation
- Complete solutions
- Faster commissioning and serviceability

Flexible interface

VACON 100® enclosed drives feature an accessible door-mounted control compartment for the relay, auxiliary terminals and other control options. All standard I/O are wired to control terminal blocks simplifying the installation and commissioning. The control door has a dedicated area for signal lights and switches based on the product configuration options.

Power ratings

Power range 208-240 V / VACON® 100 INDUSTRIAL, VACON® 100 FLOW

Mains voltage 208-240 V, 50-60 Hz	Module drive	Enclosed drive	Low overload (10% overloadability) -INDUSTRIAL, -FLOW			High overload (5% overloadability) -INDUSTRIAL			Max current Is (2s) [A]	Enclosure size
			Loadability	Motor shaft power		Loadability	Motor shaft power			
AC drive type			40 °C continuous current I_{Lout} [A]	230 V supply power 40 °C LO [kW]	NEC 230 V supply power 40 °C LO [HP]	50 °C continuous current I_{Hout} [A]	230 V supply power 50 °C HO [kW]	NEC 230 V supply power 50 °C HO [HP]		
VACON 0100-3L-0003-2-xxxx			3.7	0.55	0.75	2.6	0.37	0.5	5.2	MR4
VACON 0100-3L-0004-2-xxxx			4.8	0.75	1	3.7	0.55	0.75	7.4	
VACON 0100-3L-0007-2-xxxx			6.6	1.1	1.5	4.8	0.75	1	9.6	
VACON 0100-3L-0008-2-xxxx			8	1.5	2	6.6	1.1	1.5	13.2	
VACON 0100-3L-0011-2-xxxx			11	2.2	3	8	1.5	2	16	
VACON 0100-3L-0012-2-xxxx			12.5	3	4	9.6	2.2	3	19.6	
VACON 0100-3L-0018-2-xxxx			18	4	5	12.5	3	4	25	MR5
VACON 0100-3L-0024-2-xxxx			24	5.5	7.5	18	4	5	36	
VACON 0100-3L-0031-2-xxxx			31	7.5	10	25	5.5	7.5	46	
VACON 0100-3L-0048-2-xxxx			48	11	15	31	7,5	10	62	MR6
VACON 0100-3L-0062-2-xxxx			62	15	20	48	11	15	96	
VACON 0100-3L-0075-2-xxxx			75	18.5	25	62	15	20	124	MR7
VACON 0100-3L-0088-2-xxxx			88	22	30	75	18.5	25	150	
VACON 0100-3L-0105-2-xxxx			105	30	40	88	22	30	176	
VACON 0100-3L-0140-2-xxxx	*		140	37	50	114	30	40	210	MR8
VACON 0100-3L-0170-2-xxxx	*		170	45	60	140	37	50	280	
VACON 0100-3L-0205-2-xxxx	*		205	55	75	170	45	60	340	
VACON 0100-3L-0261-2-xxxx	*		261	75	100	211	55	75	410	MR9
VACON 0100-3L-0310-2-xxxx	*		310	90	125	251	75	100	502	

* IP00, IP21 and IP54

Power range 380-500 V / VACON® 100 INDUSTRIAL, VACON® 100 FLOW

Mains voltage 380-500 V, 50-60 Hz	Module drive	Enclosed drive	Low overload -INDUSTRIAL, -FLOW			High overload -INDUSTRIAL			Max current Is (2s) [A]	Enclosure size
			Loadability	Motor shaft power		Loadability	Motor shaft power			
AC drive type			40 °C continuous current I_{Lout} [A]	400 V supply power 40 °C LO [kW]	480 V NEMA / NEC power 40 °C LO [HP]	50 °C continuous current I_{Hout} [A]	400 V supply power 50 °C HO [kW]	480 V NEMA / NEC power 50 °C HO [HP]		
VACON 0100-3L-0003-5-xxxx			3.4	1.1	1.5	2.6	0.75	1	5.2	MR4
VACON 0100-3L-0004-5-xxxx			4.8	1.5	2	3.4	1.1	1.5	6.8	
VACON 0100-3L-0005-5-xxxx			5.6	2.2	3	4.3	1.5	2	8.6	
VACON 0100-3L-0008-5-xxxx			8	3	4	5.6	2.2	3	11.2	
VACON 0100-3L-0009-5-xxxx			9.6	4	5	8	3	4	16	
VACON 0100-3L-0012-5-xxxx			12	5.5	7.5	9.6	4	5	19.2	
VACON 0100-3L-0016-5-xxxx			16	7.5	10	12	5.5	7.5	24	MR5
VACON 0100-3L-0023-5-xxxx			23	11	15	16	7.5	10	32	
VACON 0100-3L-0031-5-xxxx			31	15	20	23	11	15	46	
VACON 0100-3L-0038-5-xxxx			38	18.5	25	31	15	20	62	MR6
VACON 0100-3L-0046-5-xxxx			46	22	30	38	18.5	25	76	
VACON 0100-3L-0061-5-xxxx			61	30	40	46	22	30	92	
VACON 0100-3L-0072-5-xxxx			72	37	50	61	30	40	122	MR7
VACON 0100-3L-0087-5-xxxx			87	45	60	72	37	50	144	
VACON 0100-3L-0105-5-xxxx			105	55	75	87	45	60	174	
VACON 0100-3L-0140-5-xxxx	*	-ED	140	75	100	105	55	75	210	MR8
VACON 0100-3L-0170-5-xxxx	*	-ED	170	90	125	140	75	100	280	
VACON 0100-3L-0205-5-xxxx	*	-ED	205	110	150	170	90	125	340	
VACON 0100-3L-0261-5-xxxx	*	-ED	261	132	200	205	110	150	410	MR9
VACON 0100-3L-0310-5-xxxx	*	-ED	310	160	250	251	132	200	502	
VACON 0100-3L-0385-5-xxxx	**	-ED	385	200	300	310	160	250	620	MR10
VACON 0100-3L-0460-5-xxxx	**	-ED	460	250	350	385	200	300	770	
VACON 0100-3L-0520-5-xxxx	**	-ED	520	250	450	460	250	350	920	
VACON 0100-3L-0590-5-xxxx	**	-ED	590	315	500	520	250	450	1040	
VACON 0100-3L-0650-5-xxxx	**	-ED	650	355	500	590	315	500	1180	MR12
VACON 0100-3L-0730-5-xxxx	**	-ED	730	400	600	650	355	500	1300	
VACON 0100-3L-0820-5-xxxx	**	-ED	820	450	700	730	400	600	1460	
VACON 0100-3L-0920-5-xxxx	**	-ED	920	500	800	820	450	700	1640	
VACON 0100-3L-1040-5-xxxx	**	-ED	1040	560	900	920	500	800	1840	
VACON 0100-3L-1180-5-xxxx	**	-ED	1180	630	1000	920	500	800	1840	

* IP00, IP21 and IP54
** IP00

Power range 525-600 V / VACON® 100 INDUSTRIAL, VACON® 100 FLOW

Mains voltage 525-600 V, 50-60 Hz	Module drive	Enclosed drive	Low overload -INDUSTRIAL, -FLOW		High overload -INDUSTRIAL		Max current Is (2s) [A]	Enclosure size
			Loadability	Motor shaft power	Loadability	Motor shaft power		
AC drive type			40 °C continuous current I_{Lout} [A]	600 V supply power 40 °C LO [HP]	50 °C continuous current I_{Hout} [A]	600 V supply power 50 °C HO [HP]		
VACON 0100-3L-0004-6-xxxx			3.9	3	2.7	2	5.4	MR5
VACON 0100-3L-0006-6-xxxx			6.1	5	3.9	3	7.8	
VACON 0100-3L-0009-6-xxxx			9	7.5	6.1	5	12.2	
VACON 0100-3L-0011-6-xxxx			11	10	9	7.5	18	
VACON 0100-3L-0018-6-xxxx			18	15	13.5	10	27	MR6
VACON 0100-3L-0022-6-xxxx			22	20	18	15	36	
VACON 0100-3L-0027-6-xxxx			27	25	22	20	44	
VACON 0100-3L-0034-6-xxxx			34	30	27	25	54	
VACON 0100-3L-0041-6-xxxx			41	40	34	30	68	MR7
VACON 0100-3L-0052-6-xxxx			52	50	41	40	82	
VACON 0100-3L-0062-6-xxxx			62	60	52	50	104	
VACON 0100-3L-0080-6-xxxx			80	75	62	60	124	MR8
VACON 0100-3L-0100-6-xxxx			100	100	80	75	160	
VACON 0100-3L-0125-6-xxxx			125	125	100	100	200	
VACON 0100-3L-0144-6-xxxx			144	150	125	125	250	MR9
VACON 0100-3L-0208-6-xxxx			208	200	170	150	340	

Power range 525-690 V / VACON® 100 INDUSTRIAL, VACON® 100 FLOW

Mains voltage 525-690 V, 50-60 Hz	Module drive	Enclosed drive	Low overload -INDUSTRIAL, -FLOW			High overload -INDUSTRIAL			Max current Is (2s) [A]	Enclosure size
			Loadability	Motor shaft power		Loadability	Motor shaft power			
AC drive type			40 °C continuous current I_{Lout} [A]	690 V supply power 40 °C LO [kW]	600 V supply power 40 °C LO [HP]	50 °C continuous current I_{Hout} [A]	690 V supply power 50 °C HO [kW]	600 V supply power 50 °C HO [HP]		
VACON 0100-3L-0007-7-xxxx			7.5	5.5	5	5.5	4	3	11	MR6
VACON 0100-3L-0010-7-xxxx			10	7.5	7.5	7.5	5.5	5	15	
VACON 0100-3L-0013-7-xxxx			13.5	11	10	10	7.5	7.5	20	
VACON 0100-3L-0018-7-xxxx			18	15	15	13.5	11	10	27	
VACON 0100-3L-0022-7-xxxx			22	18.5	20	18	15	15	36	
VACON 0100-3L-0027-7-xxxx			27	22	25	22	18.5	20	44	
VACON 0100-3L-0034-7-xxxx			34	30	30	27	22	25	54	
VACON 0100-3L-0041-7-xxxx			41	37	40	34	30	30	68	MR7
VACON 0100-3L-0052-7-xxxx			52	45	50	41	37	40	82	
VACON 0100-3L-0062-7-xxxx			62	55	60	52	45	50	104	
VACON 0100-3L-0080-7-xxxx	*	-ED	80	75	75	62	55	60	124	MR8
VACON 0100-3L-0100-7-xxxx	*	-ED	100	90	100	80	75	75	160	
VACON 0100-3L-0125-7-xxxx	*	-ED	125	110	125	100	90	100	200	
VACON 0100-3L-0144-7-xxxx	*	-ED	144	132	150	125	110	125	250	MR9
VACON 0100-3L-0170-7-xxxx	*	-ED	170	160	150	144	132	150	288	
VACON 0100-3L-0208-7-xxxx	*	-ED	208	200	200	170	160	150	340	
VACON 0100-3L-0261-7-xxxx	**	-ED	261	250	250	208	200	200	416	MR10
VACON 0100-3L-0325-7-xxxx	**	-ED	325	315	300	261	250	250	522	
VACON 0100-3L-0385-7-xxxx	**	-ED	385	355	400	325	315	300	650	
VACON 0100-3L-0416-7-xxxx	**	-ED	416	400	450	385	355	300	770	
VACON 0100-3L-0460-7-xxxx	**	-ED	460	450	450	416	400	400	832	MR12
VACON 0100-3L-0520-7-xxxx	**	-ED	520	500	500	460	450	450	920	
VACON 0100-3L-0590-7-xxxx	**	-ED	590	560	600	520	500	500	1040	
VACON 0100-3L-0650-7-xxxx	**	-ED	650	630	650	590	560	600	1180	
VACON 0100-3L-0750-7-xxxx	**	-ED	750	710	700	650	630	650	1300	
VACON 0100-3L-0820-7-xxxx	**	-ED	820	800	800	650	630	650	1300	

* IP00 & IP21and IP54
** IP00

Technical data

VACON® 100 INDUSTRIAL, VACON® 100 FLOW

Mains connection	Input voltage	208-240 V; 380-500 V; 525-690 V
	Input frequency	50-60 Hz
Motor connection	Output voltage	0-Input voltage
	Output frequency	0-320 Hz
Control connection	I/O	2 x AI, 6 x DI, 1 x AO, 10 Vref, 24 Vin, 2 x 24 Vout, 3 x RO or 2 x RO + TI
	Ethernet	Modbus TCP/IP, BACnet IP, PROFINET, EtherNet/IP
	RS485	Modbus RTU, Metasys N2, BACnet MSTP
Ambient conditions	Ambient operating temperature	-10 °C-50 °C (-14 °F-122 °F), derating 1,5%/1 °C above 40 °C (104 °F)
	Enclosure class	IP21/UL Type 1 as standard IP54/UL Type 12 as option IP00 for frames MR8-MR12
EMC	Immunity	IEC 61800-3, first and second environment
	Emissions	IEC 61800-3, Category C2 IEC 61800-3, Category C3 for IP00 modules and enclosed drives
Functional safety	Safe Torque Off	Option board OPT-BJ

Dimensions

VACON® 100 INDUSTRIAL, VACON® 100 FLOW

Frame size	IP21 and IP54				IP00				Enclosed drive IP21 and IP54			
	W x H x D		Weight		W x H x D		Weight		W x H x D		Weight	
	mm	inch	kg	lb	mm	inch	kg	lb	mm	inch	kg	lb
MR4	128 x 328 x 190	5 x 12.9 x 7.5	6	13.2								
MR5	144 x 419 x 214	5.7 x 16.5 x 8.4	10	22								
MR6	195 x 557 x 229	7.7 x 21.9 x 9	20	44.1								
MR7	237 x 660 x 259	9.3 x 26 x 10.2	37.5	82.7								
MR8	290 x 966 x 343	11.4 x 38 x 13.5	66	146	290 x 794 x 343	11.4 x 31.3 x 13.5	62	137	406 x 2100 x 600	16.0 x 82.7 x 23.6	200	440
MR9	480 x 1150 x 365	18.9 x 45.3 x 14.4	120	264	480 x 840 x 365	18.9 x 33.1 x 14.4	104	228	606 x 2100 x 600	23.9 x 82.7 x 23.6	270	595
MR10					508 x 980 x 525*	20.0 x 38.6 x 20.7*	205	452	606 x 2100 x 600	23.9 x 82.7 x 23.6	420	925
MR12					1016 x 980 x 525*	40.0 x 38.6 x 20.7*	410	905	1212 x 2100 x 600	47.7 x 82.7 x 23.6	850	1870

* without options module

Documentation options

Factory options	Description
+DPAP	Full manuals supplied (Default for enclosed drives and IP00 drives)
+DQCK	Only Quick Guide manuals supplied (Default for wall-mount drives)
+DNOT	User documentation not included

Factory options	Documentation language (availability varies with product)
+DLUK	English *(included as default)*
+DLBR	Portuguese (Brazilian version)
+DLCN	Chinese
+DLCZ	Czech
+DLDE	German
+DLDK	Danish
+DLEE	Estonian
+DLES	Spanish
+DLFI	Finnish
+DLFR	French

Factory options	Documentation language (availability varies with product)
+DLGR	Greek
+DLHU	Hungarian
+DLIT	Italian
+DLLT	Lithuanian
+DLLV	Latvian
+DLNL	Dutch
+DLNO	Norwegian
+DLPL	Polish
+DLPT	Portuguese
+DLRO	Romanian
+DLRU	Russian
+DLSE	Swedish
+DLSI	Slovenian
+DLSK	Slovak
+DLTR	Turkish

Options

VACON® 100 INDUSTRIAL, VACON® 100 FLOW

Factory option	Loose option	Description	Option slot				AC drive		
			B	C	D	E	VACON 100 INDUSTRIAL	VACON 100 FLOW	Enclosed
I/O options									
	OPT-F3-V	Standard I/O board: 2 x AI, 6 x DI, 1 x AO, 10 Vref, 24 Vin, 2 x 24 Vout, RS485, 3 x RO	■	■			■	■	■
+SBF4	**OPT-F4-V**	Optional I/O board: 2 x AI, 6 x DI, 1 x AO, 10 Vref, 24 Vin, 2 x 24 Vout, RS485, 2 x RO, Thermistor input	■				■	■	■
+S_B1*	**OPT-B1-V**	6 x DI / DO, programmable		■	■	■	■	■	■
+S_B2*	**OPT-B2-V**	2 x RO, Thermistor input		■	■	■	■	■	■
+S_B4*	**OPT-B4-V**	1 x AI, 2 x AO (isolated)		■	■	■	■	■	■
+S_B5*	**OPT-B5-V**	3 x RO		■	■	■	■	■	■
+S_B9*	**OPT-B9-V**	1 x RO, 5 x DI (42-240 VAC)		■	■	■	■	■	■
+S_BF*	**OPT-BF-V**	1 x AO, 1 x DO, 1 x RO		■	■	■	■	■	■
+S_BH*	**OPT-BH-V**	3 x Temp sensor inputs (PT100, PT1000, KTY84-130, KTY84-150, KTY84-131, NI1000)		■	■	■	■	■	■
Communication options									
+FBIE		Industrial Ethernet protocols: PROFINET IO and EtherNet/IP (software option onboard)					■	■	■
+S_C4*	**OPT-C4-V**	LonWorks			■	■	■	■	■
+S_E3*	**OPT-E3-V**	PROFIBUS DPV1			■	■	■	■	■
+S_E5*	**OPT-E5-V**	PROFIBUS DPV1 (D9)			■	■	■	■	■
+S_E6*	**OPT-E6-V**	CANopen			■	■	■	■	■
+S_E7*	**OPT-E7-V**	DeviceNet			■	■	■	■	■
+S_EC*	**OPT-EC-V**	EtherCAT			■	■	■	■	■
Other options									
+S_BJ*	**OPT-BJ-V**	Safe Torque Off (STO) / Safe Stop 1 (SS1) / ATEX				■	■	■	■
+HMTX	**VACON-PAN-HMTX-MK01**	Text keypad					■	■	■
+HMPA	**PAN-HMPA-MK01**	Panel adapter IP54 (dummy keypad)					■	■	■
+SRBT		Real time clock battery					■	■	
+IP54	**VACON-ENC-IP54-MR04/05/06**	IP54 enclosure; loose option also available for frames MR4, MR5, MR6					■	■	■
+IP00		IP00 available for frames MR8-MR12					■	■	
+EMC4		Change to EMC-level C4 for IT networks					■	■	■
+DBIN		Internal integrated dynamic braking MR7-MR12					■		■
+QFLG	**ENC-QFLG-MR04/05/06/07**	Flange mounting MR4-MR7 / MR8 IP00 / MR9 IP00 Loose option available for frames MR4-MR7					■	■	
+QDSS		Drive supply switch for MR4-MR7 (IP54) and MM4-MM6					■	■	
+QGLC		Conduit plate with inch holes, MR4-MR9					■	■	■
+EMAR		Marine construction					■	■	■
+POCM		Integrated Common mode filter for IP00 frames MR10 and MR12 and enclosed drives					■	■	■
+PODU	**ENC-QMMF-MM04/05/06**	Integrated dU/dt filter for IP00 frames MR10 and MR12 and enclosed drives					■	■	■
+PCTB		External power connection block for IP00 frames MR10 and MR12					■	■	
Kits and cables									
	VACON-PAN-HMDR-MK01-xx	VACON 100 door mounting kit, xx = cable lengths NM (no cable), 2M, 3M, 6M, 15M (2, 3, 6, 15 meter)							
	VACON-PAN-HMHH-MK01	Hand held panel kit, VACON brand							
	CAB-USB/RS485	PC cable for SW tools, USB to RS-485, cable length 3 m							
	VACON-ENC-IN12-MR0x	Type 12 kit, 0x = enclosure sizes (04, 05, 06)							

* Replace '_' with preferred option slot (Example +SCB5 means option board B5 will installed to option slot C in factory)

Factory option	Enclosed drive option description	Group	Option slot				AC drive		
			B	C	D	E	VACON 100 INDUSTRIAL	VACON 100 FLOW	Enclosed
+CAMH	Motor heater control	Auxiliary equipment					■	■	■
+CACH	Cabinet heater						■	■	■
+CACL	Cabinet light						■	■	■
+CAPT	Auxiliary voltage transformer	Cabinet power supply for accessories					■	■	■
+CAPD	24 V DC power supply						■	■	■
+CAPS	AC customer socket						■	■	■
+CDLP	Signal lights and reset button	Door-mounted options					■	■	■
+CTID	Extended I/O terminals	Control terminals					■	■	■
+CAPU	Auxiliary AC supply terminals						■	■	■
+CPS0	STO with emergency stop push button on door	Protection devices					■	■	■
+CPS1	SS1 with emergency stop push button on door						■	■	■
+CPSB	Emergency switch off						■	■	■
+CPIF	Insulation monitoring						■	■	■
+CIFD	AC fuses and fuse switch	Input devices					■	■	■
+CICO	Input contactor						■	■	■
+CHIT	Input cabling from top	Cabeling options					■	■	■
+CHOT	Output cabling from top						■	■	■
+CHCT	Cabling from top						■	■	■
+CHPH	Base plinth 200 mm	Base plinth options					■	■	■
+CHCB	Back channel cooling	Cooling options					■	■	■
+GAUL	UL listed version	Approvals					■	■	■

Options

VACON® 100 INDUSTRIAL, VACON® 100 FLOW

Factory option	Enclosed drive options	Description	Group	Option slot				AC drive		
				B	C	D	E	VACON 100 INDUSTRIAL	VACON 100 FLOW	Enclosed
Software language package:										
+FL01		English, German, Finnish, Swedish, Italian, French						■	■	■
+FL02		English, German, Finnish, Swedish, Danish, Norwegian						■	■	■
+FL03		English, Italian, French, Spanish, Portuguese Brazil, Dutch, Greek						■	■	■
+FL04		English, German, Polish, Russian, Czech, Slovak, Lithuanian, Latvian						■	■	■
+FL05		English, German, Estonian, Hungarian, Romanian, Turkish						■	■	■
+FL06		English, Chinese, Russian, Korean						■	■	■
+FL07		English, German, Slovenian, Croatian, Serbian, Bulgarian						■	■	■

Type code key

VACON® 100 INDUSTRIAL, VACON® 100 FLOW

VACON0100	3L	0310	5	ED	FLOW	R02	+IP54

VACON0100 — **Product range**
VACON 100

3L — **Three-phase input**

0310 — **Drive rating in Ampere**
e.g. 0310 = 310 A

5 — **Supply voltage**
2 = 208-240 V
4 = 380-480 V
5 = 380-500 V
6 = 525-600 V
7 = 525-690 V

ED — **Enclosure type**
(empty) = Drive module
ED = Enclosed drive

FLOW — **Drive type**
(empty) = VACON® 100 INDUSTRIAL, for multi-purpose applications
FLOW = VACON 100 FLOW, for intelligent process control

R02 — **Regional code**
(empty) = International
R02 = North America

IP54 — **+IP54** = IP54 enclosure
Please refer to option chart for available options.

100 reasons to choose VACON® 100

This one-drive-for-all-applications makes VACON 100 your easy, economical solution to improved process control and energy savings.

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- Refrigeration
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- Wind

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