

ENGINEERING
TOMORROW



Danfoss Drives Product Overview

Our products for your applications

An aerial photograph of a city, likely New York City, with a large, curved, metallic structure on the left side. Two transparent 3D models of Danfoss drives are shown in the center and right, connected by lines to a point on the city skyline. The background shows a dense urban landscape with many skyscrapers and a body of water in the distance.

SOLUTIONS
for your
business

www.danfoss.com/drives

VLT®

VAGON®

Product overview

VLT® products

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VACON® products

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Communications functionality

Integral elements

RS 485	RS 485 connection
USB	USB connection
BAC	BACnet (integrated)
ASi	AS interface
META	Metasys N2

Optional

PB	PROFIBUS DP V1
PN	PROFINET
PL	Powerlink
DN	DeviceNet
CAN	CANopen
AKD	LONworks for AKD
LON	LONworks
BAC	BACnet (MSTP)
MOD	RTU mode (optional)
TCP	Modbus TCP
EIP	EtherNet/IP
ECAT	EtherCAT

This legend indicates the communication interface and fieldbus protocol functionality specific to each product. For details, please refer to the individual product brochures.

United by a passion for perfection, Danfoss and Vacon are teaming up to offer you more. Together, we're the world's largest independent drives provider. We're driven by passion to deliver the quality solutions you need to get the most out of your applications, today and tomorrow. Ask us, and you'll always get the right drive for your application.

VLT® Micro Drive FC 51

The smallest frequency converters in the VLT® Micro Drive series are particularly suitable for side-by-side mounting with a high integration density. The typical features of Danfoss drives are still retained.

Compact

Up to 40 per cent smaller than drives with comparable power.

Protection for electronics

To ensure a long service life, the cooling air does not flow directly over the power electronics.

Power range

1 x 200 – 240 V.....	0.18 – 2.2 kW
3 x 200 – 240 V.....	0.25 – 3.7 kW
3 x 380 – 480 V.....	0.37 – 22 kW

VLT® Micro Drive FC 51



Fieldbus

RS 485

Enclosure

IP 00	IP 20	IP 21/Type 1
	■	
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x



VLT® AutomationDrive FC 300

The VLT® AutomationDrive FC 300 series is a modular drive platform designed to comply with all modern industrial application requirements with easy configuration and a wide power range.

One Drive concept

With identical installation and operating features, the FC 301 is ideal for more simple applications, while the FC 302 is designed for all applications.

Safety where it matters

The FC 302 features Safe Torque Off as standard. Easily configurable options are available: SS1, SLS, SMS, SSM.

High functionality

All functions necessary for industrial applications can be realised and configured quickly and easily.

Power range

FC 301

3 x 200 – 240 V 0.25 – 37 kW

3 x 380 – 480 V 0.37 – 75 kW

FC 302

3 x 200 – 240 V 0.25 – 37 kW

3 x 380 – 500 V 0.37 – 1100 kW

3 x 525 – 600 V 0.75 – 75 kW

3 x 525 – 690 V 1.1 – 1400 kW

Fieldbus

RS 485	USB	PB	PN	PL
DN	CAN	MOD	TCP	EIP
ECAT				

Enclosure

IP 00	IP 20	IP 21/Type 1
■	■	■
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x
■	■	■

VLT® AQUA Drive FC 202

The VLT® AQUA Drive FC 202 is suitable for driving and controlling all types of pumps. In addition to the widely used centrifugal pumps (quadratic load torque), the FC 202 is ideal for displacement pumps or eccentric screw pumps (constant load torque).

Focusing on water and pumps

Functions such as burst pipe monitoring, dry-running protection and flow compensation are the main features of this drive.

Aggressive environment

Enclosures rated IP55 or IP66 and coated printed circuit boards can withstand aggressive environments, e.g. chlorinated air.

Cascade controller as standard

The cascade controller connects or disconnects pumps as necessary and according to specified limits. An option enables master/follower operation.

Power range

1 x 200-240 V AC 1.1-22 kW

1 x 380-480 V AC 7.5 -37 kW

3 x 200 – 240 V 0.25 – 45 kW

3 x 380 – 480 V 0.37 – 1000 kW

3 x 525 – 600 V 0.75 – 90 kW

3 x 525 – 690 V 45 – 1400 kW

Fieldbus

RS 485	USB	PB	PN	DN
MOD	TCP	EIP		

Enclosure

IP 00	IP 20	IP 21/Type 1
■	■	■
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x
■	■	■

VLT® HVAC Drive FC 102

The ideal choice for fan and pump applications in modern buildings. The drive offers maximum flexibility in installation, bus connections and control intelligence.

HVAC Inside

Perfectly engineered for building automation with intelligent HVAC functions.

Optimal EMC protection

Standard integrated chokes and high-quality RFI filters ensure interference-free operation at all times.

EC+

The intelligent VVC+ PM control principle enables the use of permanent magnet motors with an efficiency equal to or better than EC technology.

Power range

3 x 200 – 240 V 1.1 – 45 kW

3 x 380 – 480 V 1.1 – 1000 kW

3 x 525 – 600 V 1.1 – 90 kW

3 x 525 – 690 V 45 – 1400 kW

Fieldbus

RS 485	USB	BAC	PB	PN
DN	LON	BAC	MOD	TCP
EIP				

Enclosure

IP 00	IP 20	IP 21/Type 1
■	■	■
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x
■	■	■

VLT® Lift Drive LD 302



VLT® Refrigeration Drive FC 103

Optimized to control compressors, pumps and fans for significant energy savings in refrigerating plants, whilst prolonging the service life of components.

Improving COP (Coefficient of performance)

Intelligent power adjustment increases system stability and optimises the volumetric efficiency of the evaporator the compressor, and the total refrigeration system.

Refrigeration terminology

The use of refrigeration terminology allows quick and easy configuration.

Variable speed drive as standard

The combination of speed-controlled and mains-operated compressors enables the design of low-wear and energy-efficient systems.

Power range

3 x 200 – 240 V.....	1.1 – 45 kW
3 x 400 V.....	1.1 - 450 kW
3 x 525 – 600 V.....	1.1 – 90 kW
3 x 690 V.....	0.75 - 630 kW

Fieldbus

RS 485	USB	MOD	AKD	PB
PN				

Enclosure

IP 00	IP 20	IP 21/Type 1
	■	■
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x
■	■	■

VLT® Lift Drive LD 302

Suitable for both traction and hydraulic elevators, the LD 302 is compatible with open or closed-loop systems.

Smooth, silent and safe

Absolute safety is standard with all VLT® drive solutions, and comfort is our highest priority. With a high switching frequency, specially-controlled internal cooling fan and no motor contacts, LD 302 ensures a quiet run with low acoustic noise and high reliability.

Power range

380-480 V.....	4-55 kW
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Enclosure

IP 00	IP 20	IP 21/Type 1
	■	■
IP 54/Type 12	IP 55/Type 12	IP66/Type 4X
	■	



VLT® Low Harmonic Drive

12-Pulse VLT® drive

VLT® Low Harmonic Drive

The combination of the latest VLT® frequency converters with active AAF filters offers high motor performance in confined spaces. Active compensation of harmonics minimises system load.

System neutral

The drive reduces harmonics to below 3% at best, and below 5% for pre-loaded systems with up to 2% phase shift.

Cost-efficient

Features include an innovative cooling concept, tried and tested energy-saving functions and low maintenance design.

Power range

3 x 380 – 480 V 132 – 710 kW

Fieldbus

Fieldbus options depend on the frequency converter type (VLT® AutomationDrive, VLT® HVAC Drive or VLT® AQUA Drive), see page 3.

Enclosure

IP 00	IP 20	IP 21/Type 1
		■
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x
■		

12-Pulse VLT® drive

This frequency converter, which is suitable for supply applications, e.g. via three-winding transformers, is a robust and cost-effective solution for reducing harmonics in demanding industrial applications.

Proven technology

The input module consists of the combination of proven rectifier circuits from the current FC series.

Step-up - step-down solution

Suitable for applications where a transformer steps down a medium voltage which changes the VLT® voltage/frequency and a further transformer subsequently steps up the voltage again.

Power range

3 x 380 – 690 V 250 – 1200 kW
(FC 302)

3 x 380 – 690 V 315 – 1400 kW
(FC 102, FC 202)

Fieldbus

Fieldbus options depend on the frequency converter type (VLT® AutomationDrive, VLT® HVAC Drive or VLT® AQUA Drive), see page 3.

Enclosure

IP 00	IP 20	IP 21/Type 1
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x
■		■

VLT® Advanced Active Filter AAF

The active filter analyses load-applied harmonics and compensates these by active counter-control. It is suitable for the compensation of frequency converters and improvement of the system quality.

Easy to use

The VLT® Advanced Active Filter is configured for most applications upon leaving the factory.

Optimal filtering

Individually adjustable compensation modes for adaptation to suit specific requirements.

Versatile

Can be used for central, individual or group compensation.

Power range

380 – 480 V 190 A, 250 A, 310 A and 400 A

Fieldbus

RS 485 USB

Enclosure

IP 00	IP 20	IP 21/Type 1
		■
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x
■		

VLT® Advanced Harmonic Filter AHF 005/010

Harmonic filters with additional functions specially adapted for use with VLT® frequency converters. When connected upstream of a frequency converter, the filter reduces the total current distortion fed back to the system to 5% or 10%.

Compact units

Small, compact enclosure that fits perfectly in a control cabinet.

Retrofit

Simple to use for retrofitting in a system

Flexible

One filter module can be used for several frequency converters.

Power range

3 x 400 – 500V 190 – 400 A
3 x 380 – 690 V 10 – 400 A*

** Higher rating when connected in parallel*

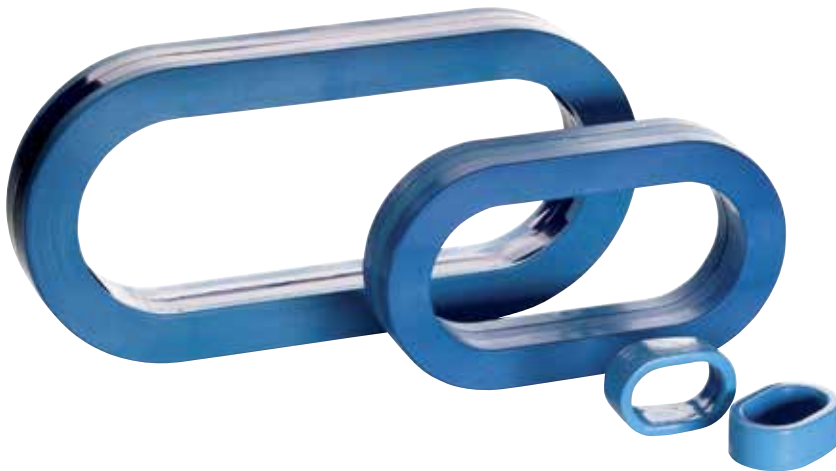
Enclosure

IP 00	IP 20	IP 21/Type 1
■	■	
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x

VLT® Advanced Active Filter AAF



VLT® Advanced Harmonic Filter AHF 005/010



VLT® Common Mode Filter

High-frequency common mode cores for reducing electromagnetic interference and protecting against bearing currents.

Wide coverage

Just four sizes cover the range up to 480 A.

Combinable

The filters can be combined with other output filters.

Power range

3 x 380 – 690 V 10 – 480 A

VLT® Sine-Wave Filters

VLT® Sine-Wave Filters smooth the output voltage of the VLT® and reduce motor insulation stress and bearing currents as well as noise development in the motor.

For critical motors

Frequency converter operation of older motors, low permitted voltages in terminal boxes or without phase insulation.

Long motor cables

Enables the use of motor cables with a length of 500 m and more.

Power range

3 x 200 – 690 V 2.5 – 800 A*

**(for higher power ratings a combination of several modules is possible)*

VLT® dU/dt Filters

VLT® dU/dt Filters reduce the rate of voltage rise on the motor terminals and protect old or weak motor insulation against breakdown. This is particularly important for short motor cables.

Retrofit

Easy retrofitting in older systems or motors.

Compact

Smaller, lighter and more affordable compared to sine-wave filters.

Power range

3 x 200 – 690 V 2.5 – 800 A*

**(for higher power ratings a combination of several modules is possible)*



Enclosure

IP 00	IP 20	IP 21/Type 1
■	■	
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x
■		

Enclosure

IP 00	IP 20	IP 21/Type 1
■	■	
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x
■		

VLT® Decentral Drive FCD 302

This decentral drive in a rugged design offers a high degree of flexibility and functionality. It can be mounted close to the motor and is ideal for demanding applications.

One-Box concept

All required modules and available options are accommodated in the frequency converter housing.

Minimising installation costs

Fewer components and connectors save installation, assembly and maintenance time.

Hygienic Design

Complies with all requirements for ease of cleaning and hygienic design according to EHEDG (European Hygienic Engineering & Design Group).

Power range

3 x 380 – 480 V 0.37 – 3 kW

Fieldbus

RS 485	USB	PB	PN	EIP
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Enclosure

IP 00	IP 20	IP 21/Type 1
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x

VLT® Decentral Drive FCD 300

A compact frequency converter designed for decentral mounting. It can be mounted close to or directly on the motor. This reduces the need for central devices and saves space in switchgear and control cabinets.

Plug-and-drive

Installation and replacement is a simple matter of plugging in or changing the electronics section.

Flexible installation

The FCD 300 series facilitates power supply installation via integrated T-distributors.

Service switch

The optional, lockable service switch ensures disconnection of the frequency converter and motor during servicing.

Power range

3 x 380 – 480 V 0.37 – 3.3 kW

Fieldbus

RS 485	PB	ASi
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Enclosure

IP 00	IP 20	IP 21/Type 1
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x



VLT® Decentral Drive FCD 302



VLT® Decentral Drive FCD 300



VLT® DriveMotor FCM 106



VLT® DriveMotor FCM 300

VLT® DriveMotor FCM 106

A fully-integrated motor and drive solution, available with either an IE4 PM motor or IE2 induction motor. The compact design helps to reduce both installation costs and complexity significantly. By eliminating the need for cabinets, additional cooling and long motor cables, costs are reduced further.

No control cabinet necessary

Mounting the frequency converter directly on the motor can eliminate the need for a control cabinet.

IE3 alternative

EU Regulation 640/2009 defines IE2 motors with frequency converters as an alternative to IE3 motors.

Power range

3 x 380 – 480 V0.55 – 7.5 kW

Fieldbus

TCP BAC

Enclosure

IP 00	IP 20	IP 21/Type 1
IP 54/UL Type 3R	IP 55/Type 12	IP 66/Type 4x
■		

VLT® DriveMotor FCM 300

Consisting of motor and VLT® frequency converter, this unit is the ideal solution for simple control applications. It is no higher than the standard motor enclosure and no wider or longer than the motor.

No control cabinet necessary

Mounting the frequency converter directly on the motor can eliminate the need for a control cabinet.

IE3 alternative

EU Regulation 640/2009 defines IE2 motors with frequency converters as an alternative to IE3 motors.

Power range

3 x 380 – 480 V 0.55 – 7.5 kW

Fieldbus

PB

Enclosure

IP 00	IP 20	IP 21/Type 1
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x
	■	■



VLT® OneGearDrive®

VLT® OneGearDrive®

The highly efficient combination of a permanent magnet motor and optimised bevel gearing, powered by a central or decentral VLT® frequency converter, contributes significantly to operating and maintenance cost savings.

Long service intervals

A OneGearDrive operating under partial load does not require an oil change until after 35,000 operating hours.

Fewer variants

With only one motor type and three gear ratios available, the motor concept covers all typical conveyor drives.

Hygienic version

For use in wet areas including aseptic areas and clean room production areas.

Power range

3 x 380 – 480 V 1.5 – 3.0 kW



VLT® Integrated Servo Drive
ISD 410 System

VLT® Integrated Servo Drive ISD 410 System

A decentral compact drive based on a synchronous servomotor that is energy-efficient, precise and easy to install. The drive is especially suited to applications that require high flexibility and dynamics.

Trajectory generator/Curve planner

Cam discs can be operated directly via the integrated motion controller in the ISD 410 local control.

Hybrid cable

Power supply and CAN bus communication take place via a single cable assembly.

Open master system

Programming is based on the standard IEC 61131-3.

Power range

300 V DC nom. 1.7 – 2.1 Nm
/max. 8 – 11 Nm

Fieldbus

RS 485 CAN

Enclosure

IP 00	IP 20	IP 21/Type 1
IP 54/Type 12	IP 67/IP 69K	IP 65/IP 67
		■

Enclosure

IP 00	IP 20	IP 21/Type 1
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x
■		■



VLT® Soft Starter MCD 500

VLT® Compact Starter MCD 200

VLT® Soft Start Controller MCD 100

VLT® Soft Start Controller MCD 100

The compact soft starter series is a cost-effective alternative to traditional contactors and can also replace star/delta combinations. The ramp time is adjusted via controls on the front of the unit.

Almost unlimited number of motor starts

For a power rating of up to 25 A, up to 480 starts per hour are possible. For ratings up to 15 A, this is 3000 starts per hour.

Technical data

Input..... 3x 208 – 600 V
Control voltage 24 – 480 V AC or DC
Power..... 0.1 kW – 11 kW (25 A)

Enclosure

IP 00	IP 20	IP 21/Type 1
	■	
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x

VLT® Compact Starter MCD 200

While the basic MCD 201 version is only used for motor starting, the extended MCD 202 version offers additional motor protection functions. These include, for example, current limitation during motor starting.

Integral bypass

After the motor is started, the device connects the motor to the mains supply via the bypass. This minimises losses during operation under full load.

Technical data

Input..... 3x 200 – 575 V
Control voltage 24V AC or DC/110-440V AC
Power 7.5 kW – 110 kW (200 A)

Fieldbus

RS 485 PB DN MOD

Enclosure

IP 00	IP 20	IP 21/Type 1
■	■	
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x

VLT® Soft Starter MCD 500

The MCD 500 is the comprehensive solution for soft starting and stopping of three-phase asynchronous motors. Integrated current transducers measure the motor current and provide important data for optimal start and stop ramps. An integrated bypass is available for motors up to 961 A.

Fast commissioning

The four-line graphic display (choice of eight languages) and quick menu ensures easy and reliable configuration.

Load-oriented start

Adaptive Acceleration Control (AAC), adjusted to the respective load, ensure the best possible start and stop ramps in order to avoid water hammering.

Comprehensive protection

Phase error detection, thyristor monitoring and bypass contact overload are just a few integrated monitoring functions.

Technical data

Input..... 3x 200 – 690 V
Control voltage 24V/110-220V /380-440V
Power..... 7.5 – 850 /1200* (1600A) kW
*“Inside delta connection”

Fieldbus

RS 485 USB PB DN MOD

Enclosure

IP 00	IP 20	IP 21/Type 1
■	■	
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x

VLT® Software

VLT® Motion Control Tool MCT 10

VLT® Motion Control Tool MCT 10 is a windows-based engineering tool with a clearly structured interface that provides an instant overview of all the drives in a system of any size. The software runs under Windows and enables data exchange over a traditional RS485 interface, fieldbus (PROFIBUS, Ethernet, or other) or via USB.

Parameter configuration is possible both online on a connected drive and offline in the tool itself. Additional documentation, such as electrical diagrams or operating manuals, can be embedded in MCT 10. This reduces the risk of incorrect configuration while offering fast access to troubleshooting.

VLT® Energy Box

Calculate the energy consumption of HVAC applications controlled by VLT® frequency converters and compare this with alternative - and less energy efficient - methods of air flow control.

Using VLT® Energy Box it is easy to evaluate and document the savings achieved by using a VLT® HVAC Drive by comparison with other types of capacity control systems - for new installations as well as retrofit situations.

VLT® ecoSmart

VLT® ecoSmart is the online tool which makes it easy to calculate IE and IES classes according to EN 50598-2, for frequency converters or frequency converter+asynchronous motor systems.

VLT® ecoSmart uses nameplate data to perform the efficiency calculations, and produces a pdf report for documentation.

VLT® Motion Control Tool MCT 31

This software is designed to quickly assess the loads placed on the system by frequency converters in the planning phase. This allows suitable measures to be taken to correct the system harmonics in advance.

MCT 31 calculates system harmonic distortion for both Danfoss and non-Danfoss drives, and calculates the effects of using various harmonic mitigation measures, including Danfoss harmonic filters.

Use MCT 31 in the planning phase to determine whether harmonics will be an issue in your installation, and if so, which strategy is most cost-effective in addressing the problem.



VACON® 20 Family

Possibilities and performance in a low power drive.



VACON® 20

VACON® 20 comes with a compactness and functionality that makes it one of the most adaptable variable speed drives available. Its built-in PLC functionality and wide power range bring cost savings to the user.

Power range

1 x 105-120 V*	0.25-1.1 kW
1/3 x 208-240 V	0.25-18.5 kW
3 x 380-480 V	0.37-11 kW
3 x 520-600 V*	0.75-5.5 kW

*North America only

VACON® 20 Cold Plate

This drive offers all the same features as the standard VACON® 20 but comes with a completely different cooling concept, allowing the user to integrate the drive into a machine in an optimal manner. The cold plate of the drive can be mounted on any suitable cool metal surface, ensuring reliable cooling under all conditions.

Power range

1 x 208-240 V	0.75-1.5 kW
3 x 208-240 V	0.75-4.0 kW
3 x 380-480 V	0.75-7.5 kW

VACON® 20 X

VACON® 20 X is a decentralized drive with a sealed IP65/Type 4X approved enclosure. It offers outstanding reliability and performance in extreme conditions and is suitable for decentralized installations exposed to moisture, dust, and fluctuating temperatures. It is easy to commission and it offers both flexible functionality and a wide range of options, making it the right choice for a large range of applications.

Power range

1 x 208-240 V	0.75-1.5 kW
3 x 208-240 V	0.75-4.0 kW
3 x 380-480 V	0.75-7.5 kW

Fieldbus

RS 485	MOD	PB	DN	CAN
ECAT				

Enclosure

IP 00	IP 20	IP 21/Type 1
	■	■
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x

Fieldbus

RS 485	MOD	PB	DN	CAN
LON	TCP	EIP	PN	ECAT

Enclosure

IP 00	IP 20	IP 21/Type 1
■		
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x

Fieldbus

RS 485	MOD	PB	DN	CAN
LON	TCP	EIP	PN	ECAT

Enclosure

IP 00	IP 20	IP 21/Type 1
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x
		■

VACON® 100 family

One of the widest standard category ranges on the market, the VACON® 100 family provides solutions for a wide range of applications in all industries. It comes in three different versions, sharing the same user logic, panel and software tools.



VACON® 100 HVAC

VACON® 100 INDUSTRIAL

The versatile drive that's ideal for hundreds of applications in all segments of industry.

Industries

- Process Industry
- Marine
- Mining and Minerals
- Chemical
- Oil and Gas

Applications

- Fans
- Pumps
- Compressors
- Extruders
- Conveyors

Power range

0.55-800 kW

Supply voltage

208-690 V

VACON® 100 FLOW

Dedicated functionality to improve flow control in industrial applications.

Industries

- Water and Wastewater
- General industry

Applications

- Fans
- Pumps
- Compressors

Power range

0.55-800 kW

Supply voltage

208-690 V

VACON® 100 HVAC

Improve total building performance in terms of comfort, control and energy saving, and enjoy a fast return on investment.

Industries

- Building Automation

Applications

- Fans
- Pumps

Power range

0.55-160 kW

Supply voltage

208-600 V

Fieldbus

MOD	META	PB	DN	CAN
BAC	LON	TCP	BAC	EIP
PN	ECAT			

Enclosure

*Dependent upon enclosure size

IP 00	IP 20	IP 21/Type 1
■		■*
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x
■*		

Fieldbus

MOD	META	PB	DN	CAN
BAC	LON	TCP	BAC	EIP
PN	ECAT			

Enclosure

*Dependent upon enclosure size

IP 00	IP 20	IP 21/Type 1
■		■*
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x
■*		

Fieldbus

MOD	META	BAC	LON	TCP
BAC				

Enclosure

*Dependent upon enclosure size

IP 00	IP 20	IP 21/Type 1
■		■*
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x
■*		



VACON® 100 X

VACON® 100 INDUSTRIAL

VACON® 100 FLOW

VACON® 100 X

The VACON® 100 X sets a new benchmark for decentralized drives. It offers powers up to 37 kW in an IP66/Type 4X enclosure and has a highly advanced control capability to ensure that your process runs as it should. It includes the chokes required to allow it to run on public networks. It shares the control logic and PC tools with the VACON® 100 family.

Industries

- Building Automation
- Process Industry
- Marine
- Mining and Minerals
- Chemical
- Oil and Gas
- Water and Wastewater
- OEMs

Applications

- Fans
- Pumps
- Compressors
- Extruders
- Conveyors

Power range

1.1-37 kW

Supply voltage

208–480 V

Fieldbus

MOD	META	PB	DN	CAN
BAC	LON	TCP	BAC	EIP
PN	ECAT			

Enclosure

IP 00	IP 20	IP 21/Type 1
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x



VACON® 100 X

VACON® NXP family

A range of drives with proven reliability and performance for all applications in heavy process industries and offshore. The basic unit is used to create a large range of different products, each tailored for the needs of a specific customer segment.



VACON® NXP Air Cooled

VACON® NXP Air Cooled

Wide power range of air-cooled drives ideal for industrial drive applications.

Industries

- Mining and Minerals
- Compressors
- Marine and Offshore
- Cranes and Hoists
- Metals
- Chemical and Refining
- Water and Wastewater
- Oil and Gas
- Pulp and Paper
- Cement and Glass
- General process industry

Applications

- Elevators and escalators
- Cranes and hoists
- Winches and cargo pumps
- Pumps and fans
- Conveyors
- Oil pumps
- Winders and unwinders

Power range

0.55 kW-2000 kW
(DriveSynch 2800 kW)

Supply voltage

230-690 V

Fieldbus

MOD	META	PB	DN	CAN
BAC	LON	TCP	EIP	PN

Enclosure

*Dependent upon enclosure size

IP 00	IP 20	IP 21/Type 1
■		■*
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x
■*		

VACON® NXC Air Cooled Enclosed Drives

Space-saving enclosed drive with a lot of options and ability to customize to specific applications.

Industries

- Mining and Minerals
- Compressors
- Marine and Offshore
- Cranes and Hoists
- Metals
- Chemical and Refining
- Water and Wastewater
- Oil and Gas
- Pulp and Paper
- Cement and Glass
- General process industry

Applications

- Pumps and fans
- Extruders
- Conveyors
- Power conversion
- Propulsion and thrusters

Power range

90 kW-2000 kW
(DriveSynch 2800 kW)

Supply voltage

380-690 V

Fieldbus

MOD	META	PB	DN	CAN
BAC	LON	TCP	EIP	PN

Enclosure

IP 00	IP 20	IP 21/Type 1
		■
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x
■		

VACON® NXP Common DC Bus

Everything you need for common DC bus solutions, including all products for Active Front End, regenerative, inverter and braking modules.

Industries

- Pulp and Paper
- Metal
- Crane systems
- Mining and Minerals
- Marine and Offshore
- Oil and Gas

Applications

- Metal lines
- Continuous websystems
- Winders and unwinders
- Crane systems and winches
- Conveyors

Power range

1.1-2000 kW
(DriveSynch 2800 kW)

Supply voltage

380-690 V

Fieldbus

MOD	META	PB	DN	CAN
BAC	LON	TCP	EIP	PN

Enclosure

IP 00	IP 20	IP 21/Type 1
■		
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x

VACON® NXP System Drive

VACON® NXP Liquid Cooled Enclosed Drives



VACON® NXP System Drive

Standardized yet configurable system drive for multi-motor applications.

Industries

- Pulp and Paper
- Metal
- Crane systems
- Mining
- Marine and Offshore
- Oil and Gas

Applications

- Metal lines
- Continuous websystems
- Winders and unwinders
- Crane systems and winches
- Conveyors

Current ratings

380-500 V.....630-5000 A
525-690 V.....630-5000 A

VACON® NXP Grid Converter

Air-cooled and liquid-cooled drives designed for marine energy management applications.

Industries

- Marine and Offshore

Applications

- Shore supply and shaft generator

Power range

176 kW-1.976 MW

Supply voltage

380-690 V

VACON® NXC Low Harmonic

Regenerative and low harmonic drives for reduced impact on the supply and for applications requiring feeding of braking power back into the supply.

Industries

- Water and Wastewater
- Marine and Offshore
- Oil and Gas
- Cranes and Hoists
- General process industries

Applications

- Pumps and fans
- Propulsion

Power range

132-2000 kW

Supply voltage

380-690 V

Fieldbus

MOD	META	PB	DN	CAN
BAC	LON	TCP	EIP	PN

Enclosure

IP 00	IP 20	IP 21/Type 1
		■
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x

Fieldbus

MOD	META	PB	DN	CAN
BAC	LON	TCP	EIP	PN

Enclosure

IP 00	IP 20	IP 21/Type 1
■		
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x

Fieldbus

MOD	META	PB	DN	CAN
BAC	LON	TCP	EIP	PN

Enclosure

IP 00	IP 20	IP 21/Type 1
		■
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x
■		

VACON® NXP Liquid cooled drives

Powerful performance
in extreme environments



VACON® NXP Liquid cooled drives

VACON® NXP Liquid Cooled

The extensive portfolio of liquid-cooled drive modules ensures you achieve the right configuration, optimal performance and significant energy savings. Liquid-cooled AC drives can be used in a multitude of combinations – from a single dedicated frequency converter to large-scale common DC bus systems.

Industries

- Marine and Offshore
- Metal
- Mining
- Pulp and Paper
- Oil and Gas
- Renewable energy

Applications

- Propulsion and thrusters
- Crushers
- Extruders
- Power conversion
- Draw works, pumps and fans

Power range

7.5 kW-2800 kW
(DriveSynch 5300 kW)

Supply voltage

380-690 V

Fieldbus

MOD	META	PB	DN	CAN
BAC	LON	TCP	EIP	PN

Enclosure

IP 00	IP 20	IP 21/Type 1
■		
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x

VACON® NXP Liquid Cooled Enclosed Drive

The NXP liquid-cooled enclosed drives range has been developed especially with ease of use in mind. Packed full of features, these fully standardized, compact variable speed drives with a full power range help maximize the utilization of space while minimizing overall costs. The robust enclosure makes it ideal for harsh environments.

Industries

- Marine and Offshore
- Metal
- Mining
- Pulp and Paper
- Oil and Gas
- Renewable energy

Applications

- Propulsion and thrusters
- Crushers
- Extruders
- Power conversion
- Draw works, pumps and fans

Power range

700 kW-1550 kW
(DriveSynch 2800 kW)

Supply voltage

Supply voltage
380-690 V

Fieldbus

MOD	META	PB	DN	CAN
BAC	LON	TCP	EIP	PN

Enclosure

IP 00	IP 20	IP 21/Type 1
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x
■		

VACON® NXP Liquid Cooled Common DC Bus

This compact solution offers everything you need for common DC bus solutions, where space is restricted.

Industries

- Pulp and Paper
- Metal
- Crane systems
- Mining and Minerals
- Marine and Offshore
- Oil and Gas

Applications

- Metal lines
- Continuous websystems
- Winders and unwinders
- Crane systems and winches
- Conveyors

Power range

7.5 kW-2800 kW
(DriveSynch 5300 kW)

Supply voltage

380-690 V

Fieldbus












MOD	META	PB	DN	CAN
BAC	LON	TCP	EIP	PN

Enclosure

IP 00	IP 20	IP 21/Type 1
■		
IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x

VACON® Software

The VACON suite of software tools is designed to provide easy operation and the highest level of customization of variable speed drives. Some of them are web-based tools; others are standalone programs that need to be installed on a PC. For ease of use, each tool has a built-in user guide.

	Software tool	Products supported						
		VACON® 20 VACON® 20 X	VACON® 100 VACON® 100 X	VACON® 100 INDUSTRIAL	VACON® 100 FLOW	VACON® 100 HVAC	VACON® NXP family	VACON® NXP Grid Converter
Commission and monitor	 VACON® LIVE Commissioning, maintenance, parameterisation and monitoring of multiple drives.	■	■	■	■	■		
	 VACON® LOADER Updating drive software.	■	■	■	■	■		
	 NCDRIVE Commissioning, maintenance, parameterisation and monitoring of drives.						■	■
	 NCLOAD Updating drive software.						■	
Customize behaviour	 VACON® CUSTOMIZER To freely customise the operation of a variable speed drive.		■	■	■			
	 VACON® PROGRAMMING A drive application programming tool to optimise drive behaviour.	■	■	■			■	
	 VACON® KEY Manage and handle VACON NXP Grid Converter licenses.							■
Analyze performance	 VACON® HARMONICS Simulate the expected harmonics of a drive or group of drives.	■	■	■	■	■	■	
	 VACON® SAVE Calculate energy savings when using an AC drive with pumps, fans and compressors.	■	■	■	■	■	■	
Dimension and document	 VACON® LAYOUT Configure and obtain documentation						NXP System Drive only	
	 VACON® DOCUMENTATION WIZARD Diagrams and drawings						NXC only	

Danfoss Drives

Danfoss Drives is a world leader in variable speed control of electric motors. Since 1968, variable speed drives have been our business, our focus. In 2014, VACON and Danfoss merged forming one of the largest companies in the industry. Together we will continue to be driven by a passion to develop, manufacture and sell the most versatile variable speed drives in the world. We can adapt to any motor technology and supply products in a power range from 0.18 kW to 5.3 MW.



Our extensive product portfolio is complemented by a comprehensive range of product lifecycle services. From supplying individual drive components to planning and delivering complete drive systems, our experts are ready to support our customers all the way. In our consulting services, we draw on years of experience within industries that include: HVAC, Food & Beverage, Water & Wastewater, Refrigeration, Lift & Crane, Marine, Mining, Pulp & Paper, Chemical and Automation.

Our applied expertise and understanding of our customers' businesses allows us to deliver dedicated, reliable and user-friendly

products and services that fit specific application requirements and reduce total cost of ownership. Danfoss Drives is an international workplace with a culture of high performance and excellent career opportunities. Our production and R&D units are located in China, Denmark, Finland, Germany, India, Italy and the USA. With sales and service centers in more than 50 countries, our products and services are never far away.