

# Improves fan efficiency & minimises commissioning time

Can be pre-configured to suit your application

Creates a Demand Control Ventilation system



**VACON**<sup>®</sup>  
Member of Danfoss Group

Fantech's high performance axial fans can be supplied with pre-configured Danfoss Vacon VSDs to suit a range of sensors and applications. This minimises on-site commissioning time and creates an energy efficient, Demand Control Ventilation system that modulates the ventilation rate to match the requirements of the area.

  
**FANTECH**  
Intelligent Ventilation

# 100 HVAC

## Variable Speed Drive

The Danfoss Vacon 100 HVAC is a dedicated VSD designed to work with heating, ventilation and air conditioning systems. This drive is easy to install and features an efficient trouble-free set up which ensures it is fast to commission. It incorporates thin film capacitors to maintain a smaller drive size and offers significant benefits such as speed reduction, energy savings, soft start and real time clock functions.

The Vacon 100 HVAC includes a high resolution display with user-friendly and intuitive software that makes operation simple and easy. Its high switching frequency and efficient cooling fan ensures quiet, low noise operation and optimised performance.

The Vacon 100 HVAC includes a motor switch ride-through feature that allows a maintenance switch near the fan to be opened and closed while the drive is running, without causing a trip. Its sleep mode is activated when there is no demand on the drive which ensures cost saving, energy efficient operation. The 100 HVAC keeps a back-up of all parameters, faults, alarms and software details, and can quickly send a service information file to facility maintenance staff.

### Features

- User friendly interface with start-up wizard for quick and easy configuration
- Simultaneous display of 9 values on the keypad
- Built-in RFI filter to meet electromagnetic compatibility standard AS/NZ 61800-3:2005, Category C2
- Built-in DC Link harmonic filters to meet harmonic standard AS/NZ 61000.3.12
- Modbus RTU, Metasys N2 and BACnet via RS485, BACnetIP and Modbus TCP/IP as standard
- Integrated 2 x PID controllers provide accurate control of temperature, pressure or flow
- Fire mode with 3 pre-set frequencies, closed loop and external speed reference
- Real time clock with battery backup allows it to run 5 calendar-based schedules and 3 timer inputs



### Standard I/O

- 6 x Digital input
- 2 x Analogue input
- 1 x Digital output
- 1 x Analogue output
- 3 x Relay output

### Technical Data

Model	Input / Output	Motor kW @ 40° C	Amps @ 40° C	Frame Size	Protection Class	Dimensions, mm	Weight, kg
V01003L00035H	3 phase / 3 phase	1.1	3.4	MR4	IP54	128W x 328H x 190D	6.0
V01003L00045H		1.5	4.8				
V01003L00055H		2.2	5.6				
V01003L00085H		3.0	8.0				
V01003L00095H		4.0	9.6				
V01003L00125H		5.5	12.0				
V01003L00165H		7.5	16.0	MR5		144W x 419H x 214D	10.0
V01003L00235H		11.0	23.0				
V01003L00315H		15.0	31.0				
V01003L00385H		18.5	38.0	MR6		195W x 557H x 229D	20.0
V01003L00465H		22.0	46.0				
V01003L00615H		30.0	61.0				
V01003L00725H		37.0	72.0	MR7		237W x 660H x 259D	37.5
V01003L00875H		45.0	87.0				
V01003L01055H		55.0	105.0				
V01003L01405H		75.0	140.0	MR8		290W x 966H x 343D	70.0
V01003L01705H		90.0	170.0				
V01003L02055H		110.0	205.0				
V01003L02615H	132.0	261.0	MR9	480W x 1150H x 365D	108.0		
V01003L03105H	160.0	310.0					

# 20X Variable Speed Drive

The Danfoss Vacon 20X is designed to work in challenging indoor environments where moisture, dust and fluctuations in temperature may be present. It can be mounted in a decentralised position close to the fan which can potentially reduce the required length of costly shielded motor cable.

The Vacon 20X features a unique removable keypad that can be used remotely during commissioning, and if required mounted next to the drive for easier access and viewing. It includes a wide range of fieldbus connections, safe Torque Off mode, AC choke and brake chopper to balance voltage drops and spikes.

The robust Vacon 20X is resistant to 2G vibrations, and includes large cooling ribs that help the drive perform in temperatures up to 40°C. It also comes equipped with a Gore-Tex® snap-in vent that allows the enclosure to breathe and helps protect the drive's seals from wearing.

## Features

- User friendly interface with start-up wizard for quick and easy configuration
- Built-in RFI filter to reduce electromagnetic interference
- Integrated PID controller provides smoother variable speed control
- Built-in RS485 interface for fieldbus control
- Certified IP66 dust and weather protected enclosure
- Can be used in limited adverse/corrosive environments (For more information refer to Fantech)
- HVAC software available
- HVAC fire mode with quick start wizard available

## Compliances

- EMC Standard AS/NZ 61800-3:2005 Category C2
- 2G resistance to vibrations (according to 3M6/IEC 60068-2)



## Standard I/O

- 6 x Digital input
- 2 x Analogue input
- 1 x Digital output
- 1 x Analogue output
- 2 x Relay output

## Technical Data

Model	Main Switch	Voltage	Input / Output	Motor kW @ 40°C	Amps @ 40°C	Frame Size	Class Protection	Dimensions, mm	Weight kg
V00203L00034X	Integrated	380-480 VAC	3 phase / 3 phase	0.75	2.4	MU2	IP66	170W x 295H x 174D	3.4
V00203L00044X				1.1	3.3				
V00203L00054X				1.5	4.3				
V00203L00064X				2.2	5.6				
V00203L00084X				3.0	7.6				
V00203L00094X				4.0	9.0				
V00203L00124X				5.5	12.0	MU3		206W x 376H x 203D	6.0
V00203L00164X				7.5	16.0	MU2		170W x 295H x 174D	3.4
V00203L00034XMS				0.75	2.4				
V00203L00044XMS				1.1	3.3				
V00203L00054XMS				1.5	4.3				
V00203L00064XMS				2.2	5.6				
V00203L00084XMS				3.0	7.6				
V00203L00094XMS				4.0	9.0	MU3		206W x 376H x 203D	6.0
V00203L00124XMS				5.5	12.0				
V00203L00164XMS				7.5	16.0				

# 100X Variable Speed Drive

The Danfoss Vacon 100X sets a new benchmark for decentralized drive solutions. It has been designed to work in challenging outdoor environments and includes highly advanced control capabilities for accurate operation. The breathable Gore-Tex® vent allows the enclosure to breathe, helps protect the drive's seals from wearing and prevents external factors such as dust or moisture from entering the drive.

The Vacon 100X incorporates a speed controlled fan that effectively dissipates heat, and large open cooling ribs that allow the drive to perform in ambient temperatures up to 60°C (with derating). The robust and durable 100X is capable of withstanding 3G vibrations and features a powder coated enclosure that provides protection against corrosion.

The Vacon 100X does not need to be mounted in an electrical cabinet and is ideal for external mounting close to the fan. This can potentially reduce labour costs and the required length of costly shielded cable from the motor to the VSD.

## Features

- User friendly interface with start-up wizard for quick and easy configuration
- Built-in RFI filter to reduce electromagnetic interference
- Supports both induction and permanent magnet motors
- Integrated RS485 Modbus and Ethernet communication for BacNet IP and Modbus TCP/IP
- Safe Torque Off (STO) mode
- DC choke and thin film capacitors
- Certified IP66 class protection rating with die-cast metal enclosure
- Can be used in limited adverse/corrosive environments. (For more information refer to Fantech)
- Options available: HVAC software, HVAC fire mode with quick start wizard

## Standard I/O

- 6 x Digital input
- 2 x Analogue input
- 1 x Analogue output
- 2 x Relay output

## Compliances

- Harmonics Standard AS/NZ 61800-3-12
- EMC Standard AS/NZ 61800-3:2005 Category C2
- 3G resistance to vibrations (according to 3M7/IEC 60068-2)



## Technical Data

Model	Input / Output	Motor kW @ 40°C	Amps @ 40°C	Frame Size	Protection Class	Dimensions, mm	Weight, kg
V01003L00034X	3 phase / 3 phase	1.1	3.4	MM4	IP66	191W x 316H x 214D	8.8
V01003L00044X		1.5	4.8				
V01003L00054X		2.2	5.6				
V01003L00084X		3.0	8.0				
V01003L00094X		4.0	9.6				
V01003L00124X		5.5	12.0				
V01003L00164X		7.5	16.0	MM5		233W x 367H x 231D	14.9
V01003L00234X		11.0	23.0				
V01003L00314X		15.0	31.0				
V01003L00384X		18.5	38.0				
V01003L00464X		22.0	46.0	MM6		350W x 500H x 255D	31.5
V01003L00614X		30.0	61.0				
V01003L00724X		37.0	72.0				

# Driving performance & energy efficiency forward

Fantech is committed to supplying its customers with innovative and energy efficient products and systems that optimise the indoor environment while lowering power consumption. These products help create a comfortable and healthy indoor space for building occupants, while lowering a building's running costs and reducing its carbon footprint.

Variable speed drives (VSDs) enable greater energy efficiency and optimal performance of a ventilation system. In addition to regulating fan speed, the technology enhances fan performance, saves energy and lowers starting currents that reduces stress on the motor and other fan components.

## Danfoss Drives – a global leader

Danfoss Drives are among the best in the world and are recognised within the HVAC industry for their quality and performance. Vacon was founded in 1993 and had built a strong reputation as an innovator and global leader. In December 2014 Vacon became part of the Danish Danfoss Group who is known for their quality, innovation and reliability. With the aim of providing customers with a complete solution, Fantech has supplied the range of Vacon VSDs throughout Australia and New Zealand since 2009. Our sales engineers have vast knowledge of VSDs and are equipped with experience in numerous applications to ensure the right fan/drive combination is selected.

## Optimal efficiency & performance

Danfoss Vacon VSDs are being utilised in a range of commercial HVAC applications including hospitals, apartments, sports centres, shopping centres, universities and office buildings. They improve the controllability of the ventilation system, reduce maintenance costs, and can help increase the life and reliability of the fan.

The Vacon VSDs are ideally suited to the high performance range of Fantech adjustable pitch axial fans for most applications and environments. Fantech axial fans feature aerofoil shaped impeller blades that harness the latest design and construction technologies to deliver high air flows, energy efficiency and reduced noise levels. The new Magnetite axial range with permanent magnet motor technology, comes standard with a Vacon VSD to deliver significant savings on running costs and efficient performance under partial loads.

The Vacon VSDs are also fully integrated into Fantech's JetVent car park ventilation systems. The VSDs help improve reliability and provide greater control to create an intelligent, energy efficient system that is simple to install and commission.

## Pre-configured for optimal performance

The Vacon VSDs can be pre-configured in the Fantech factory to suit a range of sensors and parameters. Sensors monitor the ambient conditions and provide real time feedback to the VSD which adjusts the speed of the axial fan accordingly. This creates an energy efficient, Demand Control Ventilation (DCV) system that modulates the ventilation rate to match the specific requirements of the area and optimise occupant comfort.

Fantech axial fans coupled with pre-configured Vacon VSDs and sensors create a time saving 'plug and play' system which means installers do not need to have specialised control programming knowledge. This can minimise on-site commissioning time and saves the cost of a separate controller.



# There's a Vacon Variable Speed Drive to Suit almost every HVAC application.

When connected to a Fantech fan, a Vacon VSD can:

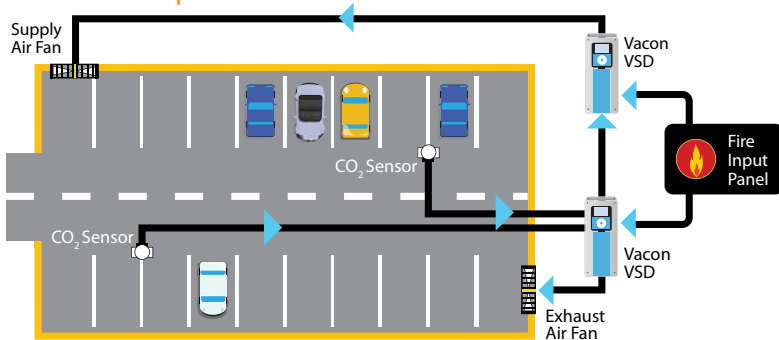
- **Reduce the amount of power consumed** and therefore reduce energy costs
- **Reduce the noise level made by the fan** and therefore reduce the amount of attenuation required
- **Create a Demand Control Ventilation system** which improves energy efficiency and optimises occupant comfort
- **Eliminate the need for a separate controller for basic DCV applications** and therefore save on capital costs
- **Speed up and simplify installation** because the VSD has been factory pre-programmed to match installed sensors or customer parameters



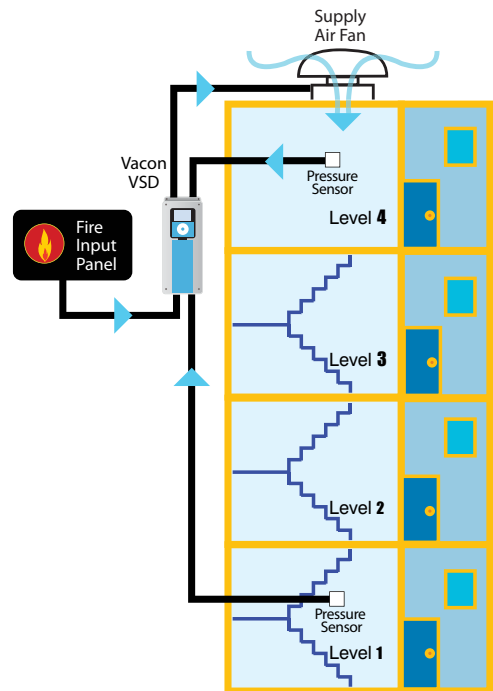
## Typical Applications

Vacon VSDs can be supplied pre-configured in the Fantech factory to suit a range of sensors. Together with Fantech axial fans and sensors, they deliver a Demand Control Ventilation (DCV) system that modulates the ventilation rate to meet the application requirements.

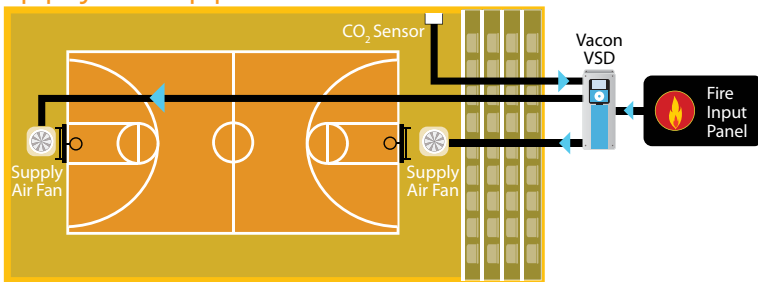
### Small car park



### Stairwell pressurisation



### Supply air application



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