



## Option Overview

VLT® HVAC Drive, VLT® AQUA Drive  
and VLT® AutomationDrive



### VLT® PROFIBUS DP V1 MCA 101

Operating the frequency converter via a field bus lets you reduce the cost of your system, communicate faster and more efficiently, and benefit from an easier user interface.

- PROFIBUS DP V1 gives you wide compatibility, a high level of availability, support for all major PLC vendors, and compatibility with future versions

- Fast, efficient communication, transparent installation, advanced diagnosis and parameterisation and auto-configuration of process data via GSD-file
- A-cyclic parameterisation using PROFIBUS DP V1, PROFIdrive or Danfoss FC profile state machines, PROFIBUS DP V1, Master Class 1 and 2

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1100 uncoated 130B1200 coated	●	●	●	●



### VLT® DeviceNet MCA 104

DeviceNet offers robust, efficient data handling thanks to advanced Producer/Consumer technology.

- This modern communications model offers key capabilities that let you effectively determine what information is needed and when

- You will also benefit from ODVA's strong conformance testing policies, which ensure that products are interoperable

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1102 uncoated 130B1202 coated	●	●	●	●



### VLT® CAN Open MCA 105

High flexibility and low cost are two of the “cornerstones” for CAN Open. The CAN Open option for the AutomationDrive is fully equipped with both high priority access to control and status of the Drive (PDO Communication) and access to all Parameters through acyclic data (SDO Communication).

For interoperability the option has implemented the DSP402 AC drive Profile. This all guarantees standardised handling, interoperability and low cost.

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1103 uncoated 130B1205 coated			●	●



### VLT® LonWorks MCA 108

LonWorks is a fieldbus system developed for building automation. It enables communication between individual units in the same system (peer-to-peer) and thus supports decentralising of control.

- No need for big main station (master-follower)

- Units receive signals directly
- Supports Echelon free-topology interface (flexible cabling and installation)
- Supports embedded I/Os and I/O options (easy implementation of de-central I/Os)
- Sensor signals can quickly be moved to another controller via bus cables
- Certified as compliant with LonMark ver. 3.4 specifications

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1106 uncoated 130B1206 coated	●			



### VLT® BACnet MCA 109

The open communications protocol for world-wide building automation use. The BACnet protocol is an international protocol that efficiently integrates all parts of building automation equipment from the actuator level to the building management system.

- BACnet is the world standard for building automation
- International standard ISO 16484-5

- With no license fees, the protocol can be used in building automation systems of all sizes
- The BACnet option lets the drive communicate with building management systems running the BACnet protocol
- Typical areas where BACnet is used include heating, ventilation, cooling and climate equipment control
- The BACnet protocol is easily integrated into existing control equipment networks

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1144 uncoated 130B1244 coated	●			



### VLT® EtherNet IP MCA 121

EtherNet will become the future standard for communication at the factory floor. The EtherNet Option is based on the newest technology available for the Industrial use and handles even the most demanding requirements. EtherNet/IP extends commercial off-the-shelf EtherNet to the Common Industrial Protocol (CIP™) – the same upper-layer protocol and object model found in DeviceNet.

- The VLT® MCA 121 offers advanced features as:
- Built-in high performance switch enabling line-topology, and eliminating the need for external switches
  - Advanced switch and diagnoses functions
  - Built-in web server
  - E-mail client for service notification

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1119 uncoated 130B1219 coated		●	●	●



### VLT® 3000 Converter MCA 113

The conversion kit is a special version of the fieldbus options that emulates the VLT® 3000 commands in the VLT® AutomationDrive. This is useful for users who want to keep the PLC program. The VLT® 3000 can then be replaced by the VLT® AutomationDrive, or the system can

be expanded without costly change of the PLC program. For upgrade to a different fieldbus, the installed converter is easily removed and replaced with a new option. This secures the investment without losing flexibility.

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
NA uncoated 130B1245 coated				●



### VLT® 5000 Converter MCA 114

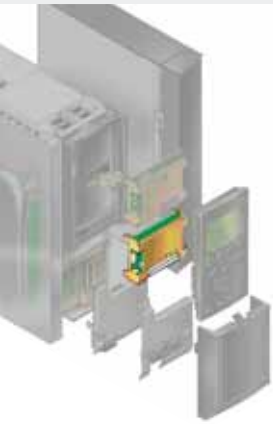
The conversion kit is a special version of the fieldbus options that emulates the VLT® 5000 commands in the VLT® AutomationDrive. This is useful for users who want to keep the PLC program. The VLT® 5000 can then be replaced by the VLT® AutomationDrive, or the system can

be expanded without costly change of the PLC program. For upgrade to a different fieldbus, the installed converter is easily removed and replaced with a new option. This secures the investment without losing flexibility. The option supports DPV1.

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
NA uncoated 130B1246 coated				●

# Slot B

All options are built in and tested at the factory



## VLT® General Purpose I/O MCB 101

I/O option offers an extended number of control inputs and outputs.

- 3 digital inputs 0-24 V: Logic '0' < 5 V; Logic '1' > 10V
- 2 analogue inputs 0-10 V: Resolution 10 bit plus sign

- 2 digital outputs NPN/PNP push pull
- 1 analogue output 0/4-20 mA
- Spring loaded connection
- Separate parameter settings

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1125 uncoated 130B1212 coated	●	●	●	●



## VLT® Encoder Input MCB 102

A universal option for connection of encoder feedback from either a motor or a process. Feedback for asynchronous or brushless servo (Permanent Magnet) motors.

- Encoder module supports:
  - Incremental encoders
  - SinCos encoders as Hyperface®

- Power supply for encoders
- RS422 interface
- Plug-and-Play principle
- Fit to all FC 300 AutomationDrives
- Connection to all standard 5 V incremental encoders
- Spring-loaded connection

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1115 uncoated 130B1203 coated			●	●



## VLT® Resolver Input MCB 103

Supports resolver feedback from brushless servo motors, and feedback for flux vector controlled asynchronous motors in rough environment.

- Primary Voltage ..... 2 - 8 Vrms
- Primary Frequency ..... 2.0 kHz - 15 kHz
- Primary current max ..... 50 mA rms
- Secondary input voltage ..... 4 Vrms
- Spring loaded connection
- Separate parameter settings

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1127 uncoated 130B1227 coated			●	●



## VLT® Relay Option MCB 105

Lets you extend relay functions with 3 additional relay outputs.

Max. terminal load:

- AC-1 Resistive load ..... 240 V AC 2 A
- AC-15 Inductive load @cos fi 0.4 ..... 240 V AC 0.2 A
- DC-1 Resistive load ..... 24 V DC 1 A
- DC-13 Inductive load @cos fi 0.4 ..... 24 V DC 0.1 A

Min. terminal load:

- DC 5 V ..... 10 mA
- Max switch rate at rated load/min. load ..... 6 min<sup>-1</sup>/20 sec<sup>-1</sup>
- Plug-and-play principle, fits into slot B
- Protects control cable connection
- Spring-loaded control wire connection
- Selection of relay functions in normal parameter settings

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1110 uncoated 130B1210 coated	●	●	●	●



### VLT® Safe PLC I/O MCB 108

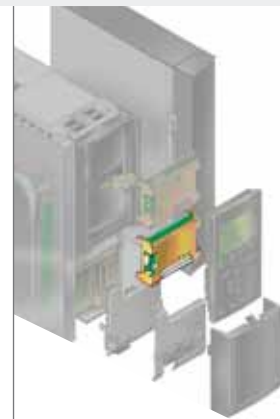
The FC 302 provides a safety input based on a single pole 24 V DC input.

- For the majority of applications this input enables the user to implement safety in a cost-effective way. For application that works with more advanced products like Safety PLC,

Lightcurtains etc. the new Safe PLC interface enables the connection of a two wire safety link

- The Safe PLC Interface allows the Safe PLC to interrupt on the plus or the minus link without interfering the sense signal of the Safe PLC

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1120 uncoated 130B1220 coated				●



### VLT® Analog I/O Option MCB 109

This Analog input/output option is easily fitted in the frequency converter for upgrading to advanced performance and control using the additional in/outputs. This option also upgrades the frequency converter with a battery back-up supply for the clock built into the frequency converter. This provides stable use of all frequency converter clock functions as timed actions etc.

- 3 analogue inputs, each configurable as both voltage and temperature input
- Connection of 0-10 V analogue signals as well as PT1000 and NI1000 temperature inputs
- 3 analogue outputs each configurable as 0-10 V outputs
- Incl. Back-up supply for the standard clock function in the frequency converter

The back-up battery typically lasts for 10 years, depending on environment.

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1143 uncoated 130B1243 coated	●	●		



### VLT® PTC Thermistor Card MCB 112

With the MCB 112 PTC Thermistor Card, the Danfoss VLT® AutomationDrive FC 302 now offers improved surveillance of the motor condition compared to the built-in ETR function and thermistor terminal.

- Protects the motor from overheating
- ATEX approved for use in potentially explosive atmospheres
- Uses Safe Stop function, which is approved in accordance with Cat. 3 EN954-1

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
NA uncoated 130B1137 coated				●



### VLT® Sensor Input Card MCB 114

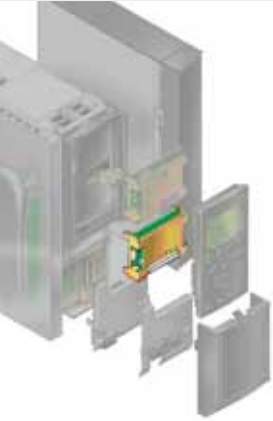
The option protects the motor from being overheated by monitoring the bearings and windings temperature in the motor. The limits as well as the action are adjustable and the individual sensor temperature is visible as a read out in the display or by field bus.

- Protects the motor from overheating
- Three self-detecting sensor inputs for 2 or 3 wire PT100/PT1000 sensors
- One additional analogue input 4-20mA

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1172 uncoated 130B1272 coated		●		

## Slot B

All options are built in and tested at the factory



### VLT® Extended Cascade Controller MCO 101

Easily fitted and upgrades the built-in cascade controller to operate more pumps and more advanced pump control in master/follower mode.

- Up to 6 pumps in standard cascade setup
- Up to 5 pumps in master/follower setup
- Technical specification: See MCB 105 Relay Option

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1118 uncoated 130B1218 coated		●		



### USB extension

USB extension for IP 55 and IP 66 enclosures. Makes the USB connector available outside the drive. The USB extension is designed for mounting in a cable gland in the bottom of the drive, which makes PC communication very easy even in drives with high IP rating.

- USB extension for A5-B1 enclosures,  
350 mm cable ..... 130B1155  
USB extension for B2-C enclosures,  
650 mm cable ..... 130B1156

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1155 350 mm cable	●	●	●	●
130B1156 650 mm cable	●	●	●	●

## Slot C

All options are built in and tested at the factory



### VLT® Advanced Cascade Controller MCO 102

Easily fitted and upgrades the built-in cascade controller to operate up to 8 pumps and more advanced pump control in master/follower mode.

The same cascade controller hardware goes for the entire power range up to 1.2 MW.

- Up to 8 pumps in standard cascade setup
- Up to 8 pumps in master/follower setup

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1154 uncoated 130B1254 coated		●		



### VLT® Extended Relay Card MCB 113

The Extended Relay Card MCB 113 adds inputs/outputs to VLT® AutomationDrive for increased flexibility.

- 7 digital inputs
- 2 analogue outputs
- 4 SPDT relays
- Meets NAMUR recommendations
- Galvanic isolation capability

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1164 uncoated 130B1264 coated			●	●



## VLT® Motion Control MCO 305

An integrated programmable Motion Controller for VLT® AutomationDrive FC 301 and FC 302; it adds functionality and flexibility to the already very comprehensive standard functionality of these drives.

MCO 305 is optimised for all types of positioning and synchronising applications.

- Basic features: Synchronisation (electronic shaft), Positioning and electronic Cam control
- 2 inputs supporting both incremental and absolute encoders
- 1 encoder output (virtual master function)
- 10 digital inputs
- 8 digital outputs
- Sending and receiving data via fieldbus interface (requires fieldbus option)
- PC software tools for programming and commissioning

Ordering number	VLT® HVAC Drive		VLT® AQUA Drive		VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302	FC 301	FC 302
130B1134 uncoated 130B1234 coated					●	●



## VLT® Synchronizing Control MCO 350

The Synchronizing Controller option for VLT® AutomationDrive expands the functional properties of the converter in synchronising applications. It replaces traditional mechanical solutions.

- Display of actual synchronising error on frequency converter control panel
- Speed synchronising

- Position (angle) synchronising with or without marker correction
- On-line adjustable gear ratio
- On-line adjustable position (angle) offset
- Encoder output with virtual master function for synchronization of multiple followers
- Homing

Ordering number	VLT® HVAC Drive		VLT® AQUA Drive		VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302	FC 301	FC 302
130B1152 uncoated 130B1252 coated					●	●



## VLT® Positioning Control MCO 351

The Positioning Controller option offers a host of user-friendly benefits for positioning applications in many industries. They are based on a range of thought-through and innovative features.

- Direct positioning via Fieldbus
- Relative positioning
- Absolute positioning

- Touch probe positioning
- End limit handling (software and hardware)
- Mechanical brake handling (programmable hold delay)
- Error handling
- Jog speed/manual operation
- Marker related positioning
- Home function

Ordering number	VLT® HVAC Drive		VLT® AQUA Drive		VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302	FC 301	FC 302
130B1153 uncoated 130B1253 coated					●	●



## VLT® Center Winder MCO 352

With the closed loop center winder control material is evenly wound up regardless of the production speed.

- Follows line speed
- Diameter calculator adjusts winder reference
- Tension PID adjusts reference

Ordering number	VLT® HVAC Drive		VLT® AQUA Drive		VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302	FC 301	FC 302
130B1165 uncoated 130B1266 coated					●	●

## Slot D

All options are built in and tested at the factory



### VLT® 24 V DC Supply Option MCB 107

The option is used to connect an external DC supply to keep the control section and any installed option active by mains power down.

- Input voltage range .....24 V DC +/- 15% (max. 37 V in 10 sec.)
- Max. input current ..... 2.2 A
- Max. cable length ..... 75 m

- Input capacitance load ..... < 10 uF
- Power-up delay ..... < 0.6 s
- Easy to install in drives in existing machines
- Keep the control board and options active by power cut
- Keep fieldbuses active by power cuts

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1108 uncoated 130B1108 coated	●	●	●	●

## LCP

All options are built in and tested at the factory



### LCP 102 Graphical Local Control Panel

- Multi-language display
- Status messages
- Quick menu for easy commissioning
- Parameter setting and explanation of parameter function
- Adjusting of parameters
- Full parameter backup and copy function

- Alarm logging
- Info button – explains the function of the selected item on display
- Hand-operated start/stop, or Automatic mode selection
- Reset function
- Trend graph

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1107	●	●	●	●



### LCP 101 Numerical Local Control Panel

The numerical control panel offers an excellent MMI interface to the drive.

- Status messages
- Quick menu for easy commissioning
- Parameter setting and adjusting
- Hand-operated start/stop function or Automatic mode select
- Reset function

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1124	●	●	●	●



### LCP Panel Mounting Kit

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1113 – Incl. graphical LCP, fasteners, 3 m cable and gasket	●	●	●	●
130B1114 – Incl. numerical LCP, fasteners and gasket	●	●	●	●
130B1117 – Mounting kit for all LCP's including fasteners, 3 m cable and gasket	●	●	●	●
130B1129 LCP front mounting IP55/IP66	●	●	●	●
130B1170 Panel Mounting Kit for all LCP w.o. cable	●	●	●	●



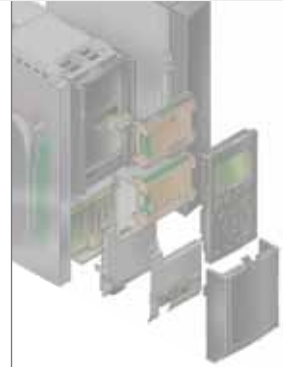


For use with option A

### Profibus Adapter Sub-D9 Connector

The adapter makes linking of fieldbus connections pluggable.

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1112	●	●	●	●



For use with option A

### Decoupling Plate for Fieldbus Cables

Strengthens fieldbus mounting.

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B0524 To be used only for IP 20/NEMA type 1 units up to 7.5 kW	●	●	●	●



### VLT® A/B in C Option Adapter MCF 106

The A/B in C Option Adapter can be placed in the Option C slot and allows for up to four A- and B-options in different combinations. Limitations are due to the facts – that the drive cannot handle more than one fieldbus at the time, cannot handle several identical options, and that the physical layout of options can cause limitations.

VLT® Relay Card MCB 105 and VLT® PTC Thermistor Card MCB 112 are not supported by the adapter and must thus only be installed in the standard slot B of the Control Card.

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1130 uncoated 130B1230 coated			●	●



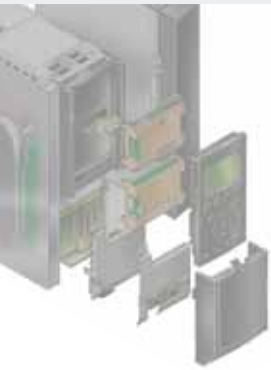
### IP 21/Type 12 (NEMA1) Kit

The IP 21/Type 12 (NEMA1) kit is used for installation of VLT® drives in dry environments. The enclosure kits are available for frame sizes A1, A2, A3, B3, B4, C3 and C4

- Supports VLT® drives from 1.1 to 90 kW
- Used on standard VLT® drive with or without mounted option modules
- IP 41 on top side
- PG 16 and PG 21 holes for glands

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
130B1121 For frame size A1	●	●	●	●
130B1122 For frame size A2	●	●	●	●
130B1123 For frame size A3	●	●	●	●
130B1187 For frame size B3	●	●	●	●
130B1189 For frame size B4	●	●	●	●
130B1191 For frame size C3	●	●	●	●
130B1193 For frame size C4	●	●	●	●

# Power Options



## VLT® Brake Resistors

Energy generated during braking is absorbed by the resistors, protecting electrical components from heating up. Danfoss brake resistors cover the full power range.

- Quick braking of heavy load
- Braking energy is only absorbed into the brake resistor
- External mounting makes it possible to use the generated heat
- All necessary approvals are available

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
See relevant Design Guide	●	●	●	●



## VLT® Harmonic Filter AHF 005/010 MCE

Easy, effective harmonic distortion reduction by connecting the AHF 005/010 harmonic filter in front of a Danfoss frequency converter.

- AHF 005 reduces total harmonic current distortion to 5%
- AHF 010 reduces total harmonic current distortion to 10%
- Small compact housing that fits into a panel
- Easy to use in retrofit applications
- User-friendly start-up – no adjustment necessary
- No routine maintenance required

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
See relevant Design Guide	●	●	●	●



## VLT® Sine-Wave Filters MCC 101

Sine-wave filters are placed between the frequency converter and the motor to optimise the motor power current. It provides a sinusoidal phase-to-phase motor voltage. The filters reduce motor insulation stress, acoustic noise from the motor, and bearing currents (especially in large motors).

- Reduce motor insulation stress
- Reduce acoustic noise from the motor
- Reduce bearing currents (especially in large motors)
- Enables use of longer motor cables
- Reduce losses in the motor
- Prolongs service lifetime

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
See relevant Design Guide	●	●	●	●



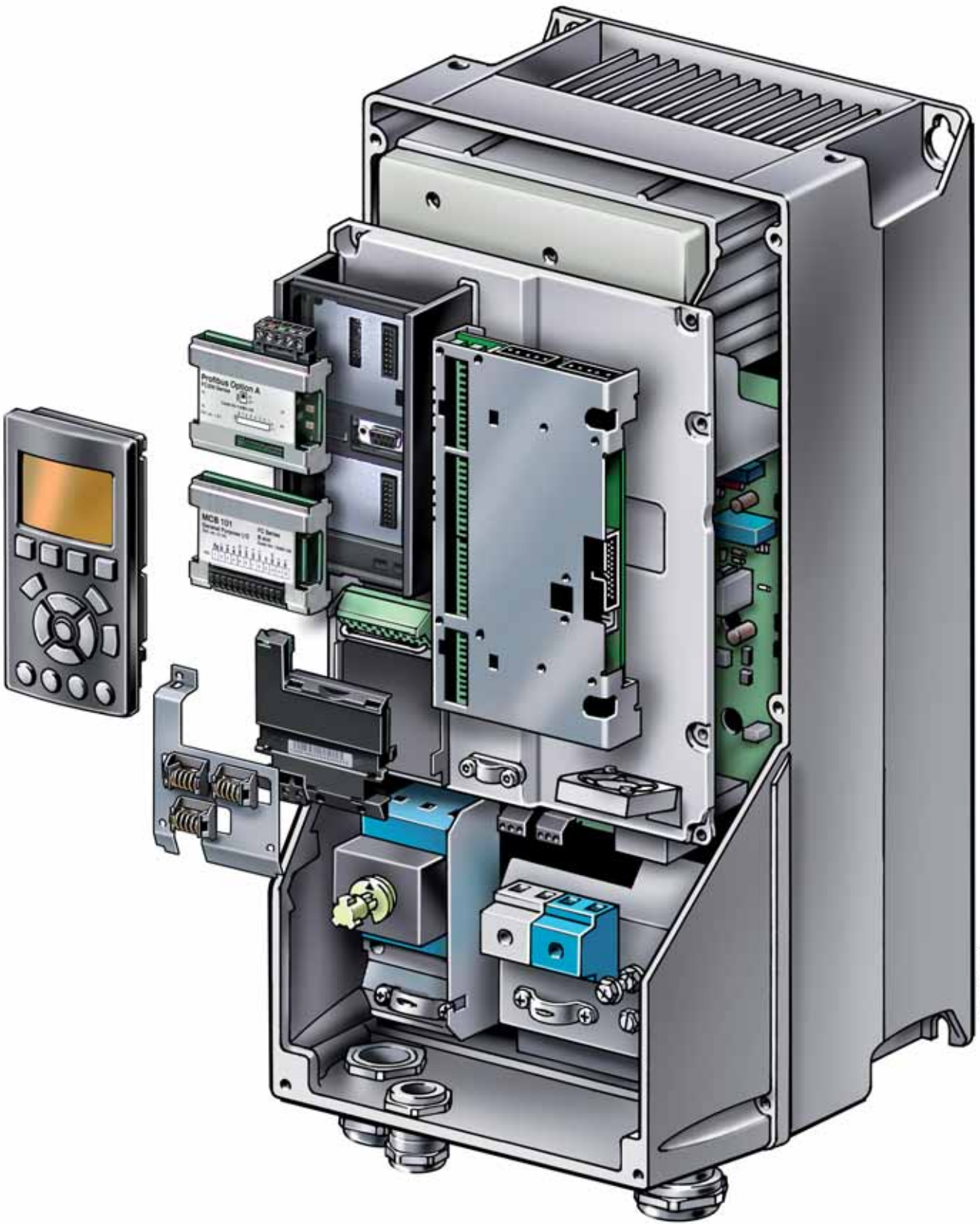
## VLT® dU/dt filter MCC 102

VLT® dU/dt filters are placed between the frequency converter and the motor to eliminate very fast voltage changes. The motor terminal phase-to-phase voltage is still pulse shaped but its dU/dt values are reduced.

- These filters reduce stress on the motor's insulation and are recommended in applications

with older motors, aggressive environments or frequent braking which cause increased DC link voltage.

Ordering number	VLT® HVAC Drive	VLT® AQUA Drive	VLT® AutomationDrive	
	FC 102	FC 202	FC 301	FC 302
See relevant Design Guide	●	●	●	●



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## Environmentally responsible

VLT® products are manufactured with respect for the safety and well-being of people and the environment.

All activities are planned and performed taking into account the individual employee, the work environment and the external environment. Production takes place with a minimum of noise, smoke or other pollution and environmentally safe disposal of the products is prepared.

### UN Global Compact

Danfoss has signed the UN Global Compact on social and environmental responsibility and our companies act responsibly towards local societies.

### EU Directives

All factories are certified according to ISO 14001 standard. All products fulfil the EU Directives for General Product Safety and the Machinery directive. Danfoss Drives is, in all product series, implementing the EU Directive concerning Hazardous Substances in Electrical and Electrical Equipment (RoHS) and is designing all new product series according to the EU Directive on Waste Electrical and Electronic Equipment (WEEE).

### Impact on energy savings

One year's energy savings from the annual production of VLT® drives will save the energy equivalent to the energy production from a power plant. Better process control at the same time improves product quality and reduces waste and wear on equipment.

# What VLT® is all about

*Danfoss Drives is the world leader among dedicated drives providers – and still gaining market share.*

### Dedicated to drives

Dedication has been a key word since 1968, when Danfoss introduced the world's first mass produced variable speed drive for AC motors – and named it VLT®.

Twentyfive hundred employees develop, manufacture, sell and service drives and softstarters in more than one hundred countries, focused only on drives and soft starters.

### Intelligent and innovative

Developers at Danfoss Drives have fully adopted modular principles in development as well as design, production and configuration.

Tomorrow's features are developed in parallel using dedicated technology platforms. This allows the development of all elements to take place in parallel, at the same time reducing time to market and ensuring that customers always enjoy the benefits of the latest features.

### Rely on the experts

We take responsibility for every element of our products. The fact that we develop and produce our own features, hardware, software, power modules, printed circuit boards, and accessories is your guarantee of reliable products.

### Local backup – globally

VLT® motor controllers are operating in applications all over the world and Danfoss Drives' experts located in more than 100 countries are ready to support our customers with application advice and service wherever they may be.

Danfoss Drives experts don't stop until the customer's drive challenges are solved.

