ENGINEERING
TOMORROW

Selection guide | VLT® AutomationDrive FC 360 | 0.37 – 75 kW

High **performer** in **challenging environments**

450 kg
force at 0.6 Hz
High torque performance of the 0.75 kW drive

www.danfoss.com/FC360 | VLT®

1968 was the year when Danfoss presented the first mass produced frequency converter in the world – and named it VLT®

PERFORMANCE, RELIABILITY AND SPEED

Increase quality and efficiency with energy efficient, user friendly control of motors from 0.37 to 75 kW.

Built on the success of the tried and tested VLT® platform that Danfoss developed and launched in the 1960's, the VLT® AutomationDrive FC 360 shares the same technical heritage as the popular and versatile VLT® AutomationDrive FC 300 series. Developed to meet a general purpose operation profile the drive lacks the expandability of its larger sibling, but still delivers powerful performance out of the box.

Due to the fact that all Danfoss frequency converters follow the same basic design and operating principle, existing owners and users of VLT® drives will instantly feel at home when operating the VLT AutomationDrive FC 360.

The VLT® AutomationDrive FC 360 is a dedicated industry drive , designed for OEMs, that provides precise and efficient motor control in a wide range of industrial applications.

Built-in features help owners save

- Space in installations
- Time in setup
- Effort in daily maintenance.

The result is a powerful and versatile solution that increases process efficiency and quality in a cost-efficient package

Built-in features provide high performance and reduce the need for external components. This reduces complexity and makes the ordering process easier.

REDUCED HARMONICS
A built-in DC choke reduces harmonics to 40-48% THDi and significantly extends the lifetime of the DC capacitor.

Designed for challenging environments

Using advanced coating and quality internal electronics protection, the FC 360 has the rugged characteristics demanded by the textile, plastics, rubber, food, beverage and building materials industries.

Maximize productivity

IP20 standard protection and an easy to use control panel saves valuable time in commissioning and maintainance, and enables owners to maximize uptime and save energy..

Compact design for easy installation

The compact, lightweight design enables owners to optimize panels space by mounting several drives side-by-side mounting with zero clearance.

Save time on setup

Easy parameter setup makes the path to energy savings both short and simple, and can be carried out with an enhanced numeric LCP or graphical control panel that supports English and Chinese. Targeted 'Application Selections' make it easy for users to set up and commission typical applications.

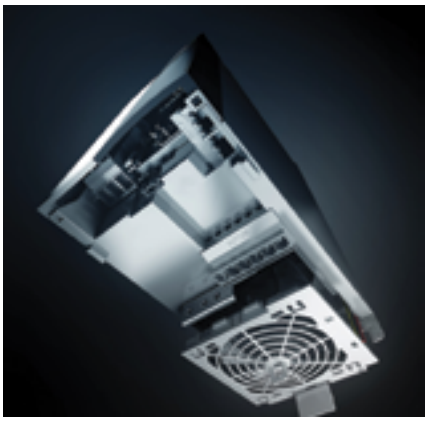
HIGH RELIABILITY

Coated Printed Circuit Boards
High level 3C3 Printed Circuit Board (PCB) coating as standard provides high reliability in harsh environments to prevent failures and downtime. The lifetime of the drive is also increased as a result of the IEC 60721-3-3 conformal coating.

55 °C Working Temperature
VLT® AutomationDrive FC 360 is designed to operate at 45-50°C ambient temperature at full load (depending on model) and 55°C with derating. This means there is no need to install extra cooling equipment or oversize the drive, resulting in cost savings.

Efficient heat management
A unique cooling concept ensures that there is no forced air flow over the electronics. This reduces the risk of downtime, while strengthening stability in daily operation.

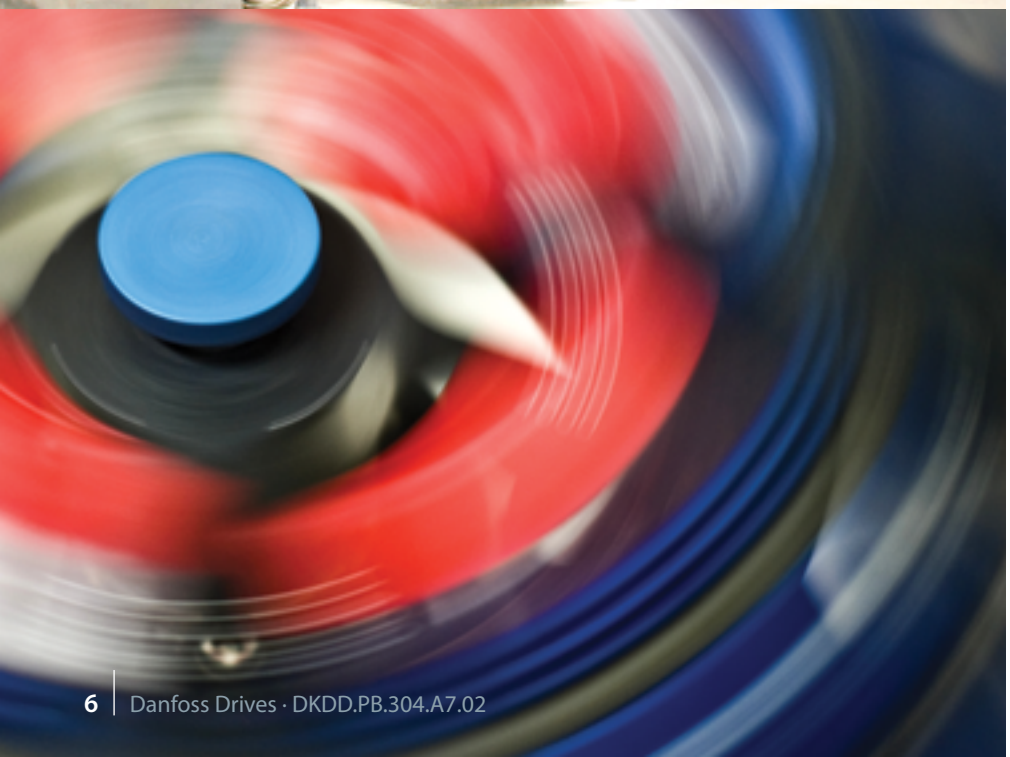
By preventing dust and particles from accumulating on the small internal components and legs, the risk of short circuits is significantly reduced, especially in humid environments.



EASY CLEANING
An easy to remove fan makes it easy to keep dust from affecting the drive's ventilation.

DISPLAY
Customer can select enhanced numerical display or graphical control panel that supports English and Chinese (requires adaptor).

ENCLOSURE
The VLT® AutomationDrive FC 360 is available with an IP 20 enclosure.



Optimized for industrial applications

- Extruders
- Escalators
- Winders
- Material Handling
- Palletizer
- Conveyor
- Draw Bench
- Textile Machinery
- Hoist
- Air Compressor
- Printing & Dyeing
- Glass Production Line
- Centrifuge separators
- Pumps
- Fans

450 kg force at 0.6 Hz. The high torque performance of a 0.75 kW VLT® AutomationDrive FC 360 fully meets the demands for tensile testing at Samuya Technocrates in India.

HIGH PERFORMANCE CONTROLLER
VLT® AutomationDrive FC 360 has an advanced controller with high speed response making high-end, complicated applications easy.

SPEED

PM motor control

The FC 360 can provide highly efficient permanent magnet (PM) motor control in open loop under VVC+ mode in motors up to 75kW. Using Automatic Motor Adaptation (AMA) the drive adapts to the specific characteristics of the permanent magnet motor.

Smart Logic Control

Smart Logic is a simple and clever way to keep the drive, motor and application working together. The smart logic controller monitors a specific event, and when it occurs, it triggers a predefined action which is monitored for 20 steps, before returning to step 1.

The Smart Logic Controller can monitor any parameter that can be defined as "true" or "false", providing users with significant freedom to tailor the control strategy to their specific needs. This includes digital commands and logic expressions, where sensor outputs can influence operation using parameters such as temperature, pressure, torque, flow, time, load, frequency, voltage, and others, combined with the operators ">", "<", "=", "and" and "or" as logical statements.

Expand with control and feedback modules

Fieldbus communication in VLT® AutomationDrive FC 360 is integrated in the control card. In addition, the drive can be expanded with options for additional control and encoder feedback.

With the VLT® Encoder Input MCB 102 and VLT® Resolver Input MCB 103 the VLT® AutomationDrive FC 360 can receive encoder feedback from either a motor or a process.

Time saving setup VLT® Motion Control Tool MCT 10

The FC 360 can be configured and monitored with Danfoss own VLT® Motion Control Tool MCT 10 software. This provides plant managers with a comprehensive overview over the system at any point in time and a high level of flexibility in configuration and monitoring.

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 RS 485 interface or fieldbus (PROFIBUS).

Parameter configuration is possible both online and offline, and the software can be configured to link to the system's electrical diagrams or operating manuals. This helps to reduce the risk of incorrect configuration while offering fast access to troubleshooting.

EASY SETUP VIA PC
Connect the VLT ® AutomationDrive FC 360 directly to a PC for fast and easy transfer of settings.

USE WITH VLT® OneGearDrive®
The VLT® AutomationDrive FC 360 is designed to work perfectly with permanent magnet motors, such as the VLT® OneGearDrive®, which is widely used in Danfoss VLT® FlexConcept®.

FEATURES DESIGNED TO MEET INDUSTRIAL NEEDS

The VLT® AutomationDrive FC 360 is designed to provide maximum uptime and reliability in a wide range of environments.

Built-in Brake Chopper
A built-in brake chopper up to 22kW saves money and panel space.

Pulse Input as Speed Reference
VLT® AutomationDrive FC 360 offers the capability to convert pulse input as a speed reference, avoiding the need to purchase an analog signal module for PLC.

Center Winder
FC 360 supports center winder functionality, eliminating the need for a special module in the programmable logic control (PLC).

Built-in PID Controller
The built in PID controller calculates an 'error' value as the difference between a measured process variable and a desired setpoint.

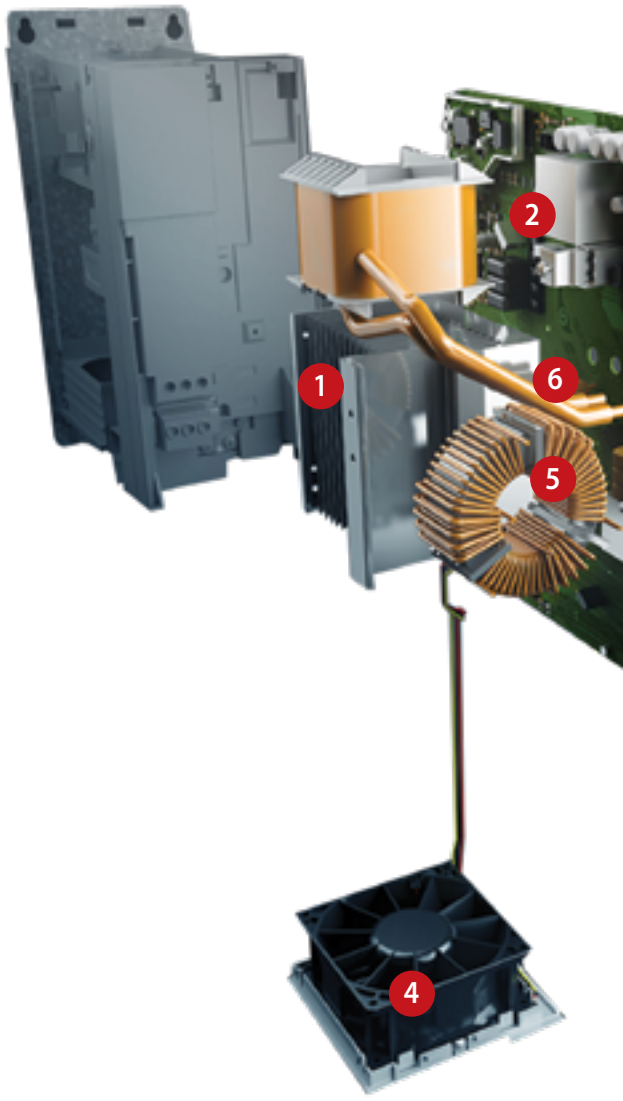
Built-in RFI Filter
Built-in filters not only save space, but also eliminate additional costs for fitting, wiring, and material. The most important advantage is the perfect EMC conformance and cabling of integrated filters.

Positioning
With the integrated encoder input or MCB option, the positioning control includes features such as homing, position reference setting, position feedback and PID control. It supports both absolute positioning and relative positioning applications, such as palletizer or line conveyors.

Torque Closed Loop Control
Torque close loop control actualizes the functionality through encoder feedback; both terminal 32/33 pulse inputs and MCB102 inputs are available.

PM Motor Control
FC 360 supports synchronous motor control, including Surface Placed Magnets (SPM) and Interior Placed Magnets (IPM).

Communicative
FC 360 communicates using your preferred choice of process automation protocols:
PROFIBUS
PROFINET with dual port
Modbus RTU and FC Protocol are integrated as standard



See the interactive presentation and video at www.danfoss.com/fc360

DESIGNED FOR A WIDE RANGE OF POWER SUPPLY CONDITIONS
VLT® AutomationDrive FC 360 can operate at -15% of supply voltage

1. Designed for use in ambient temperatures up 45-50 °C without derating. Max. ambient temperature 55 °C
2. No forced air over PCB for whole power range (0.37 to 75 kW)
3. Class 3C3 coated components for increased reliability in harsh environments (IEC 60721-3-3)
4. Removable fan
5. Integrated EMC filter
6. Built-in brake chopper up to 22 kW
7. Fieldbus embedded in control card (FC Protocol, Modbus RTU, Options: PROFIBUS and PROFINET)
8. I/0 number and functions
   - 7DI / 2AI / 2AO / 2 DO
   - Pulse input as speed reference
   - Pulse feedback and 24 V encoder feedback
   - 24 V (100 mA)
   - 12 V
9. Display options
   - Graphic LCP
   - Enhanced numeric LCP
   - Blind cover

* Full automatic motor adaptation (AMA) optimizes compatibility between frequency converter and motor in VVC+ mode

* Built-in Smart Logic Controller

* RFI Swtich

** Not visible on picture*

SPECIFICATIONS

(Basic unit without extensions)

Main supply (L1, L2, L3)	
Supply voltage	380–480 V -15%/+10%
Supply frequency	50/60 Hz ±5%
Displacement power factor (cos ϕ)	> 0.98
Switching on input supply L1, L2, L3	0.37-7.5 kW maximum 2 times/min. 11-75 kW maximum 1 time/min.
Harmonic disturbance	Meets EN 61000-3-12

Output data (U, V, W)	
Output voltage	0 – 100% of supply voltage
Output frequency	0-500 Hz 0-200 Hz under VVC+ Mode
Switching on output	Unlimited
Ramp times	0.01-3600 sec

Note: 160% current can be provided for 1 minute.
Higher overload rating is achieved by oversizing the drive.

Digital inputs	
Programmable digital inputs	7
Changeable to digital output	2 (Terminal 27,29)
Logic	PNP or NPN
Voltage level	0 – 24 V DC
Maximum voltage on input	28 V DC
Input resistance, Ri	Approx. 4 kΩ
Scan interval	1 ms

** 2 can be used as digital outputs*

Analog inputs	
Analogue inputs	2
Modes	Voltage or current
Voltage level	0 to +10 V (scaleable)
Current level	0/4 to 20 mA (scaleable)
Accuracy of analog inputs	Max. error 0.5% of full scale

Pulse/encoder inputs	
Programmable pulse/ encoder inputs	2/1
Voltage level	0 – 24 V DC (PNP positive logic)
Pulse input accuracy (0.1 – 1 kHz)	Max. error: 0.1% of full scale
Encoder input accuracy	4Hz-32kHz

** Utilize some of the digital inputs*

Digital outputs	
Programmable digital/pulse outputs	2
Voltage level at digital/frequency output	0 – 24 V DC
Max. output current (sink or source)	40 mA
Maximum output frequency at frequency output	4Hz to 32 kHz
Accuracy on frequency output	Max. error: 0.1% of full scale

** Utilize 2 digital inputs*

Analogue output	
Programmable analogue outputs	2
Current range at analogue output	0/4 – 20 mA
Max. load to common at analogue output (clamp 30)	500 Ω
Accuracy on analogue output	Max. error: 0.8 % of full scale

Control card	
RS485 interface	Up to 115 kBaud
Max. load (10 V)	15 mA
Max. load (24 V)	100 mA

Relay output	
Programmable relay outputs	2
Max. terminal load (AC) on 1-3 (break), 1-2 (make), 4-6 (break) power card	250V AC, 3 A
Max. terminal load (AC) on 4-5 (make) power card	250V AC, 3 A
Min. terminal load on 1-3 (break), 1-2 (make), 4-6 (break), 4-5 (make) power card	250V AC, 0.2 A

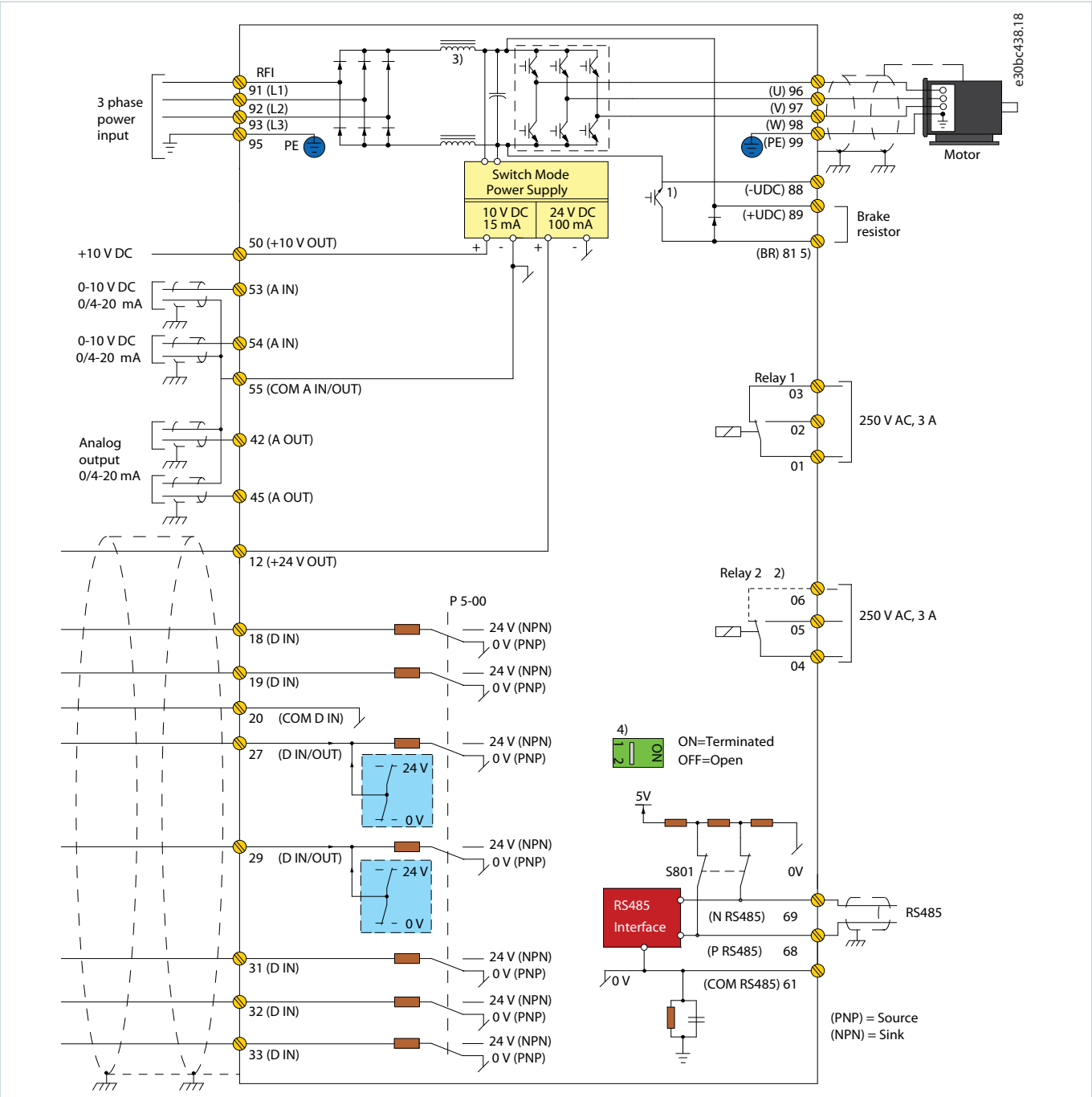
Surroundings/external	
Enclosure	IP20
Vibration test	1.0 g
Max. relative humidity	5-95% (IEC 60721-3-3; Class 3K3 (non-condensing) during operation
Ambient temperature	max. 55°C with derating
Galvanic isolation of all	I/O supplies according to PELV
Aggressive environment	Class 3C3

Fieldbus communication	
Standard built-in	FC Protocol Modbus RTU
Fieldbus built-in control card variants	PROFIBUS or PROFINET

CE

CONNECTION EXAMPLES

The numbers represent the terminals on the drive



[1] Built-in brake chopper available from J1–J5.
[2] Relay 2 is 2-pole for J1–J3 and 3-pole for J4–J7. Relay 2 of J4–J7 with terminals 4, 5, and 6 has same NO/NC logic as relay 1. Relays are pluggable in J1–J5, and fixed in J6–J7
[3] Single DC choke in J1–J5; Dual DC choke in J6–J7.
[4] Switch S801 (bus terminal) can be used to enable termination on the RS485 port (terminals 68 and 69).
[5] No BR for J6–J7.

The diagram shows the port terminals of the VLT® AutomationDrive FC 360.

The numbers indicated refer to the terminal numbers of the drives.
Users can set the mode of the analogue inputs 53 and 54 by setting software parameters.

The FC 360 features a RS485 interface as standard. The RS485 terminations are integrated in the drive (S801).

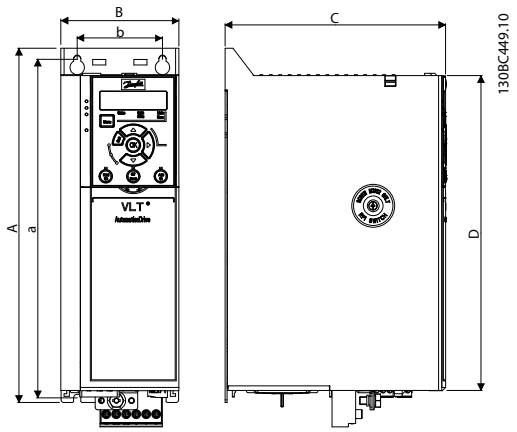
PROFIBUS DP or PROFINET can be specified by configuring different control cassette when ordering.

To switch from NPN to PNP logic for the digital signals, use parameter 5-00.

POWER, CURRENTS, ENCLOSURES AND ORDERING TYPE CODE

T4 380 – 480 V (High and normal overload)				
		Amp.		
FC 360	kW	380-439V	440-480V	IP 20 /Chassis
HK37	0.37	1.2	1.1	J1
HK55	0.55	1.7	1.6	
HK75	0.75	2.2	2.1	
H1K1	1.1	3.0	2.8	
H1K5	1.5	3.7	3.4	
H2K2	2.2	5.3	4.8	
H3K0	3.0	7.2	6.3	J2
H4K0	4.0	9.0	8.2	
H5K5	5.5	12	11	
H7K5	7.5	15.5	14	J3
H11K/Q11K	11	23	21	J4
H15K/Q15K	15	31	27	
H18K/Q18K	18	37	34	J5
H22K/Q22K	22	42.5	40	
H30K/Q30K	30	61	52	J6
H37K/Q37K	37	73	65	
H45K/Q45K	45	90	80	
H55K/Q55K	55	106	96	J7
H75K/Q75K	75	147	124	

Dimensions [mm]

Frame size 380-480 V	J1	J2	J3	J4	J5	J6	J7
Power size [kW]	0.37-2.2	3.0-5.5	7.5	11-15	18.5-22	30-45	55-75
Dimensions [mm]							
Height A	210	272.5	272.5	317.5	410	515	550
Width B	75	90	115	133	150	233	308
Depth C (with option B)	168 (173)	168 (173)	168 (173)	245 (250)	245 (250)	241	323
Mounting holes							
a	198	260	260	297.5	390	495	521
b	60	70	90	105	120	200	270
Mounting screw	M4	M5	M5	M6	M6	M8	M8

[1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13] [14]

FC-360 – [ ] – [ ] – [ ] – [ ] – [ ] – [ ] – [ ] – [ ] – [ ] – X – SXX X – X – [ ] – [ ]

[1] Application

360	VLT® AutomationDrive FC 360

[2] Power Size

HK37	*See ratings data on page 11 for power ratings*
HK55	
HK75	
H1K1	
H1K5	
H2K2	
H3K0	
H4K0	
H5K5	
H7K5	
H11K/Q11K	
H15K/Q15K	
H18K/Q18K	
H22K/Q22K	
H30K/Q30K	
H37K/Q37K	
H45K/Q45K	
H55K/Q55K	
H75K/Q75K	

[3] AC Line Voltage

T4	3 x 380/480 V AC *(High overload)*
	3 x 380/480 V AC *(Normal overload)*

[4] Enclosure

For cabinet mounting:	
E20	IP 20/Chassis

[5] RFI Filter (EN 55011)

H1	RFI-Filter, Class A1 (C2)
H2	RFI-Filter, Class A2 (C3)

** 30 - 75kW only support H2 RFI-filter*

[6] Braking

X	No brake IGBT
B	Built-in brake IGBT

** 0.37-22kW built-in; 30-75kW not*

[7] Display (Local Control Panel)

X	No LCP, blind cover

** Following accessories available: NLCP, GLCP and blind cover*

[8] Conformal Coating (IEC 60721-3-3)

C	Conformal coating on all PCBs

[9] Mains Input

D	Load sharing terminals

[10] Cable

X	Standard Cable Entry

[13] Fieldbus embedded in control cassette

AX	No fieldbus option
A0	PROFIBUS
AL	PROFINET

[14] B Option (Application)

BX	No application option

** VLT® Encoder Input MCB102 and VLT® Resolver Input MCB 103 available as accessories*

380 – 480 VAC

Enclosure		IP20	J1						J2			J3
		HO	HK37	HK55	HK75	H1K1	H1K5	H2K2	H3K0	H4K0	H5K5	H7K5
Typical Shaft Output		[kW]	0.37	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5
Typical Shaft Output at 460 V		[HP]	0.5	0.75	1	1.5	2	3	4	5.5	7.5	10
Output Current (3 x 380 – 440 V)	Continuous	[A]	1.2	1.7	2.2	3	3.7	5.3	7.2	9	12	15.5
Output Current (3 x 441 – 480 V)	Continuous	[A]	1.1	1.6	2.1	3	3.4	4.8	6.3	8.2	11	14
Intermittent (60 s overload)		[A]	1.9	2.7	3.5	4.8	5.9	8.5	11.5	14.4	19.2	24.8
Output Power (400 V AC)	Continuous	[kVA]	0.8	1.2	1.5	2.1	2.6	3.7	5.0	6.2	8.3	10.7
Output Power (460 V AC)	Continuous	[kVA]	0.9	1.3	1.8	2.5	2.8	4	5.2	6.8	9.2	11.6
Max. cable size (Mains, motor, brake and load sharing)		[mm²] ([AWG])	4 mm²									
Max. Input Current (3 x 380 – 440 V)	Continuous	[A]	1.2	1.6	2.1	2.6	3.5	4.7	6.3	8.3	11.2	15.1
Max. Input Current (3 x 441 – 480 V)	Continuous	[A]	1	1.2	1.8	2	2.9	3.9	4.3	6.8	9.4	12.6
Intermittent (60 s overload)		[A]	1.9	2.6	3.4	4.2	5.6	7.5	10.1	13.3	17.9	24.2
Max. pre-fuses		[A]	10						25			32
Environment												
Estimated power loss at rated max. load		[W]	20.8	25.1	30	40	52.9	73.9	94.8	115.5	157.5	192.8
Weight												
IP 20		[kg]	2.3	2.3	2.3	2.3	2.3	2.5	3.6	3.6	3.6	4.1
Efficiency			0.96	0.97				0.98				

Enclosure		IP20	J4		J5		J6			J7	
		HO (NO)	H11K (Q11K)	H15K (Q15K)	H18K (Q18K)	H22K (Q22K)	H30K (Q30K)	H37K (Q37K)	H45K (Q45K)	H55K (Q55K)	H75K (Q75K)
Typical Shaft Output		[kW]	11	15	18	22	30	37	45	55	75
Typical Shaft Output at 460 V		[HP]	15	20	25	30	40	50	60	75	100
Output Current (3 x 380 – 440 V)	Continuous	[A]	23	31	37	42.5	61	73	90	106	147
Output Current (3 x 441 – 480 V)	Continuous	[A]	21	27	34	40	52	65	80	96	124
Intermittent (60 s overload)		[A]	34.5 (25.3)	46.5 (34.1)	55.5 (40.7)	63.8 (46.8)	91.5 (67.1)	109.5 (80.3)	135 (99)	159 (116.6)	220.5 (161.7)
Output Power (400 V AC)	Continuous	[kVA]	15.9	21.5	25.6	29.5	42.3	50.6	62.4	73.4	101.8
Output Power (460 V AC)	Continuous	[kVA]	17.5	22.5	28.3	33.3	43.2	54	66.5	79.8	103.1
Max. cable size (Mains, motor, brake)		[mm²] ([AWG])	16 mm²				50 mm²				95 mm²
Max. Input Current (3 x 380 – 440 V)	Continuous	[A]	22.1	29.9	35.2	41.5	57	70.3	84.2	102.9	140.3
Max. Input Current (3 x 441 – 480 V)	Continuous	[A]	18.4	24.7	29.3	34.6	49.2	60.6	72.2	88.6	120.9
Intermittent (60 s overload)		[A]	33.2 (24.3)	44.9 (32.9)	52.8 (38.7)	62.3 (45.7)	85.5 (62.7)	105.45 (77.3)	126.3 (92.6)	154.35 (113.2)	210.45 (154.3)
Max. pre-fuses		[A]	50		80		160			250	
Environment											
Estimated power loss at rated max. load		[W]	289.5	393.3	402.8	467.5	630	848	1175	1300	1507
Weight											
IP 20		[kg]	9.4	9.5	12.3	12.5	22.4	22.5	22.6	37.3	38.7
Efficiency			0.98								

ACCESSORIES

HMI
VLT® Control Panel LCP 21 (Numeric) ***Ordering number**: 132B0254*
VLT® Control Panel LCP 102 (Graphical) ***Ordering number:** 130B1107*
VLT® Control Panel LCP Blind Cover ***Ordering number:** 132B0262*
Graphical LCP Adapter ***Ordering number:** 132B0281*
LCP Panel Mounting Kit ***Ordering number:*** *132B0102: (Numerical) with fasteners, gasket and without LCP and with 3 m (10 ft) cable* *130B1117: (Graphical) with fasteners, gasket and without LCP and with 3 m (10 ft) cable*
LCP Remote Mounting Cable, 3 m (10 ft) ***Ordering number:** 132B0132*
VLT® Control Panel LCP 21 - RJ45 Converter Kit ***Ordering number:** 132B0254*
MCB Options
VLT® Encoder Input MCB 102 ***Ordering number:** 132B0282*
VLT® Resolver Input MCB 103 ***Ordering number:** 132B0283*
Terminal Cover for drive with MCB option ***Ordering number:*** *132B0263: J1* *132B0265: J2* *132B0266: J3* *132B0267: J4* *132B0268: J5*
Other Accessories
Decoupling Plate Mounting kit ***Ordering number:*** *132B0258: J1* *132B0259: J2 & J3* *132B0260: J4 & J5* *132B0284: J6* *132B0285: J7*

**Ordering number and selection tables: See relevant Design Guide*

VLT® Encoder Input MCB 102

A universal option for connection of encoder feedback from either a motor or a process. Feedback for asynchronous motors.

Encoder module supports:

- Incremental encoders
- SinCos encoders as Hyperface®
- Power supply for encoders
- RS422 interface
- Connection to all standard 5 V incremental encoders

VLT® Resolver Input MCB 103

Supports resolver feedback for asynchronous motors.

- Primary Voltage: 2 – 8 Vrms
- Primary Frequency: 2.0 kHz – 15 kHz
- Primary current max: 50 mA rms
- Secondary input voltage: 4 Vrms

VLT® Brake Resistors MCE 101

Energy generated during braking is absorbed by the resistors, protecting electrical components from heating up. Danfoss brake resistors are optimized for the FC-series. General versions for horizontal and vertical applications are also available.

- Enclosure protection as IP20 and up to IP65
- Built-in thermo switch
- Versions for vertical and horizontal mounting
- UL-recognized – only types for vertical mounting

VLT® Control Panel LCP 21

The numerical control panel features an excellent user 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

Graphical LCP Adapter for FC 360

The converter between FC 360 and the graphical control panel of VLT® AutomationDrive FC 300 series.

VLT® Control Panel LCP 102

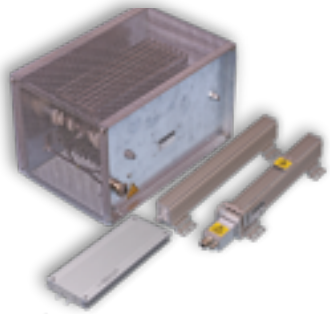
functions for FC 360

- English and Chinese 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
- Hand-operated start/stop, or Automatic mode selection
- Reset function

MCB102 / MCB103

VLT® Control Panel LCP 21

VLT® Control Panel LCP 102



VLT® Brake Resistors MCE 101

Graphical LCP Adapter for FC 360

ENGINEERING
TOMORROW

A better tomorrow is **driven by drives**

Danfoss Drives is a world leader in variable speed control of electric motors.
We offer you unparalleled competitive edge through quality, application-optimized products and a comprehensive range of product lifecycle services.

You can rely on us to share your goals. Striving for the best possible performance in your applications is our focus. We achieve this by providing the innovative products and application know-how required to optimize efficiency, enhance usability, and reduce complexity.

From supplying individual drive components to planning and delivering complete drive systems; our experts are ready to support you all the way.

You will find it easy to do business with us. Online, and locally in more than 50 countries, our experts are never far away, reacting fast when you need them.

You gain the benefit of decades of experience, since 1968. Our low voltage and medium voltage AC drives are used with all major motor brands and technologies in power sizes from small to large.

VACON® drives combine innovation and high durability for the sustainable industries of tomorrow.

For long lifetime, top performance, and full-throttle process throughput, equip your demanding process industries and marine applications with VACON® single or system drives.

- Marine and Offshore
- Oil and Gas
- Metals
- Mining and Minerals
- Pulp and Paper
- Energy
- Elevators and Escalators
- Chemical
- Other heavy-duty industries

VLT® drives play a key role in rapid urbanization through an uninterrupted cold chain, fresh food supply, building comfort, clean water and environmental protection.

Outmaneuvering other precision drives, they excel, with remarkable fit, functionality and diverse connectivity.

- Food and Beverage
- Water and Wastewater
- HVAC
- Refrigeration
- Material Handling
- Textile

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