

Fact Sheet

# VLT® DriveMotor FCM 106



**Easy to install and delivered with either permanent magnet or standard induction motor mounted.**

With a wide range of standard, integrated pump and fan features, the VLT® DriveMotor FCM 106 is a highly dedicated, space saving motor and control solution in the 0.55-7.5 kW range.

The drive is delivered from the factory attached to either a standard induction motor or a size optimized permanent magnet motor.

This enables the FCM 106 to reduce both installation costs and complexity significantly. The compact design of the motor mounted drive solution also eliminates the need for cabinets.

Due to the fact that the drive is mounted directly on the motor, long motor cables are eliminated, reducing costs further for both OEMs and end users. A plug connects the drive to the motor making assembly/disassembly fast and service friendly.

The DriveMotor is part of Danfoss EC+ concept, which maximizes the advantages and efficiency of permanent magnet motors, variable speed drives and plugfan technologies.

## Product range

3 x 380 – 480 V.....0.55 – 7.5 kW  
*(with 110% overload torque)*

3 x 380 – 480 V.....0.55 – 5.5 kW  
*(with 160% overload torque by one step up in power size)*

## Enclosure rating

IP 54 (UL type 3R).....0.55 – 7.5 kW

Feature	Benefit
Alphanumerical display, 7 languages	Effective commissioning
External connection for display as standard	Fast connectivity
Motor data pre-programmed	No programming needed
IP 54/UL type 3R	Reliable in wet and dirty environments
PCB protection class 3C3	Reliable in corrosive environments
Vibration fullfilling LVD requirements	Suitable for all motor-mounted challenges
110% overload (0.55 – 7.5 kW)	Optimised for fans and pumps
160% overload (0.55 – 5.5 kW)	High starting torque by one step up in power size
Asynchronous or permanent magnet motor	Free choice of motor technology
Sleep mode	Save energy and extend lifetime
Automatic Energy Optimizer function	Saves an additional 5 – 15% energy
AHU dedicated functions	Reduces cost and saves energy
Pump dedicated functions	Protects the pump and extends the lifetime
Built-in PI controller	No external PI controller required
Smart Logic Controller	Often makes PLC/ DDC unnecessary
Control signal for mechanical brake	Reduce effort in PLC
FC Protocol, Modbus, Metasys, BACnet, integrated	Flexible connectivity
Integrated DC link	Meets EN 61000-6-12, small power cable
Integrated EMC filters	Meets EN 61800-3, (C1 and C2), and EN 55011 Class (B and A1)

# IE4

**efficiency. The VLT® DriveMotor FCM 106 complies with both IE3 and IE4 (fprEN 60034-30-1) efficiency requirements.**

### VLT® Control Panel LCP 31 (LCP only)

Alphanumeric display for commissioning and status indication during operation. Connection easy accessible through cable gland.

**Ordering number: 132B0200**

### VLT® Control Panel LCP 31 Mounting Kit

Includes 3m cable, panel mounting bracket, gasket and fasteners.

**Ordering number: 134B0557**

### Local Operation Pad LOP

Panel for start/stop and setting the reference.

**Ordering number: 175N0128**

### Potentiometer for cable gland

For setting the reference directly at the drive.

**Ordering number: 177N0011**

### PC software tool: VLT® Motion Control Tool MCT 10

Ideal for commissioning and servicing the drive with motor attached.



Choose the FCM 106 with a standard induction motor or permanent magnet motor.

### Specifications

Mains supply (L1, L2, L3)	
Supply voltage	380 – 480 V ±10%
Supply frequency	50/60 Hz
Displacement Power Factor (cos φ)	Near unity (> 0.98)
Switching on input supply L1, L2, L3	1–2 times/min.
Output data (U, V, W)	
Output voltage	0 – 100% of supply voltage
Switching on output	Unlimited
Ramp times	1–3600 sec.
Output frequency	IM: 0 – 200 Hz / PM: 0 – 390 Hz
Digital inputs	
Programmable digital inputs	4
Logic	PNP or NPN
Voltage level	24 V
Analogue input	
Analogue inputs	2
Modes	Voltage and current
Voltage level	0 – 10 V (scaleable)
Current level	0/4 to 20 mA (scaleable)
Digital/Analogue Output	
Programmable outputs	2
Analogue output current level	0/4 to 20 mA (scaleable)
Relay output	
Programmable relay outputs	2 (resistive load 250 VAC, 3 A 30VDC, 2A)

### IEC standard motor frame sizes

PM 1500 rpm	PM 3000 rpm	IM 3000 rpm	IM 1500 rpm	MH frame size	kW
71	NA	NA	NA	MH1	0.55
71	71	71	80		0.75
71	71	80	90		1.1
71	71	80	90		1.5
90	71	90	100	MH2	2.2
90	90	90	100		3
90	90	100	112		4
112	90	112	112	MH3	5.5
112	112	112	132		7.5