

VLT® DriveMotor FCM 300

The VLT® DriveMotor FCM 300 series is an integrated drive-motor solution which combines a VLT® frequency converter and a high standard quality motor in a single product.



The frequency converter is attached in place of the motor terminal box and it is no higher than the standard terminal box nor wider or longer than the motor.

Incorporated to a high standard quality motor, the VLT® DriveMotor FCM 300 is also available in a multitude of variants, individualised to meet customer requirements.

On the motor
The VLT® electronic motor control together with the motor totally eliminates motor cables and thereby minimises EMC problems. Heat from the drive is dissipated together with the motor heat.

Power range
0.55 – 7.5 kW, 3 x 380 – 480 V

Enclosure
IP 55 (standard)
IP 65/IP 66 (optional)

Motor type
2-pole
4-pole

Mounting versions
B03 foot
B05 flange
B35 foot + flange
B14 face
B34 foot + face

IE2

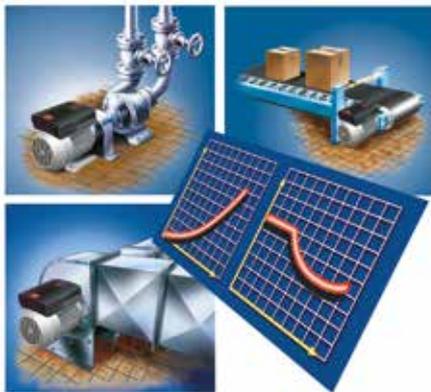
motors for high efficiency combined with a high-performance, energy saving VLT®.

Feature	Benefit
Reliable	Maximum uptime
Robust enclosure	Withstands harsh environments
No power cable length limitation	Increased flexibility
Thermal protection	Total motor-inverter protection
Straightforward EMC compliance	No problem with electromagnetic interferences
User-friendly	Saves commissioning and operating cost
Motor and drive perfectly matched to each other	Saves commissioning time
No panel space required – the DriveMotor is placed on the machine	Saves space
Flexible mounting – foot/flange/face/foot-flange/foot-face	Meets customer requirements
Retrofit without mechanical changes	Easy service
Set-up and controlled through a remote control panel or fieldbus communication and dedicated MCT 10 set-up software	Easy commissioning



Control panel

A Local Control Panel is used for operating, setup and diagnostics. The LCP can be handheld or mounted in a panel front (IP 65).



Sleep Mode

In Sleep Mode the motor will stop in a no load situation. When the load returns, the frequency converter will restart the motor.

Also available:

Forced ventilation

For constant operation at low speed without torque reduction.

Motor drain holes

For applications where formation of condensate water might occur.

Sensorless Pump Control – OEM version

Offers precise pressure (head) control without using a pressure transmitter.

Specifications

Mains supply (L1, L2, L3)	
Supply voltage	3 x 380/400/415/440/460/480V ± 10%
Supply frequency	50/60 Hz
Power factor (cos φ)	Max. 0.9/1.0 at rated load
Max. imbalance of supply voltage	± 2% of rated supply voltage
Switching on supply input	Once every 2 minutes
Control Characteristics (frequency converter)	
Frequency range	0 – 132 Hz
Overload torque	160% for 60 sec.
Resolution on output frequency	0.1%
System response time	30 msec. ± 10 msec.
Speed accuracy	± 15 RPM (open loop, CT mode, 4-pole motor 150 – 1500 RPM)
Digital inputs	
Programmable digital inputs	4
Voltage level	0 – 24 V DC (PNP positive logic)
Analogue inputs	
Analogue inputs	2 (1 voltage, 1 current)
Voltage/current level	0 – 10 V DC / 0/4 – 20 mA (scaleable)
Pulse input	
Programmable pulse inputs	1 (24 V DC)
Max. frequency	70 kHz (push-pull) / 8 kHz (open collector)
Analogue/digital output	
Programmable analogue/digital outputs	1
Current/voltage range	0/4 – 20 mA / 24 V DC
Relay output	
Programmable relay outputs	1
Max. terminal load	250 V AC, 2 A, 500 VA
Fieldbus communication	
FC Protocol, Modbus RTU	Built-in
Profibus DP	Optional (integrated)
Externals	
Vibration test	1.0 g (IEC 60068)
Max. relative humidity	95% (IEC 60068-2-3)
Ambient temperature	Max. 40°C (24 hour average max. 35°C)
Min. ambient temperature in full operation	0°C
Min. ambient temperature at reduced performance	-10°C

Technical Data

FCM	305	307	311	315	322	330	340	355	375
Motor output [HP]	0.75	1.0	1.5	2.0	3.0	4.0	5.0	7.5	10.0
Motor output [kW]	0.55	0.75	1.1	1.5	2.2	3.0	4.0	5.5	7.5
Motor torque 2-pole [Nm] ¹⁾	1.8	2.4	3.5	4.8	7.0	9.5	12.6	17.5	24.0
Motor torque 4-pole [Nm] ²⁾	3.5	4.8	7.0	9.6	14.0	19.1	25.4	35.0	48.0
Frame size [mm]	80	80	90	90	100	100	112	132	132
Input current [A] 380 V 2-pole	1.5	1.8	2.3	3.4	4.5	5.0	8.0	12.0	15.0
Input current [A] 380 V 4-pole	1.4	1.7	2.5	3.3	4.7	6.4	8.0	11.0	15.5
Input current [A] 480 V 2-pole	1.2	1.4	1.8	2.7	3.6	4.0	6.3	9.5	11.9
Input current [A] 480 V 4-pole	1.1	1.3	2.0	2.6	3.7	5.1	6.3	8.7	12.3

¹⁾ at 400 V, 3000 RPM
²⁾ at 400 V, 1500 RPM