



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

Perfect
match for:

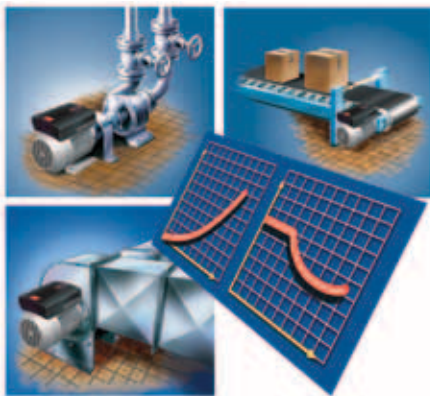
- Air Handling Unit fan wheels
- Pumps
- Simple Conveyors

| 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