# VLT® DriveMotor FCM 300



**The perfect match for:**
- Conveyors
- Pumps
- Air handling units
- Small machines, for example labelling machines

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

**Enclosure:**
IP55 (IP65, IP66)

*Also available:*
*2-pole or 4-pole motors*
*Sensorless pump control software*

**The VLT® DriveMotor FCM 300 is a very compact alternative to the traditional solution with a VLT® frequency converter and motor as separate units.**

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.

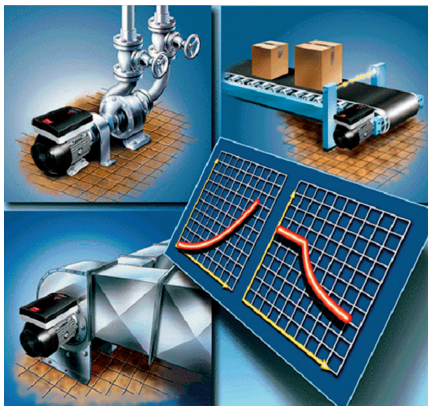
Incorporated to a high standard quality motor, the VLT® DriveMotor FCM 300 is also available in a multitude of variants, individualised to meet customer requirements.

| Features | Benefits |
|---|---|
| **User-friendly** | **– Save 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 |
| **Reliable** | **– Maximum up-time** |
| • 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 |



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

**Operation Pad**
A local operation pad can be used for speed up/speed down, start/stop, and jog e.g. Other features are speed indication by LED, mounting on FCM or kit for wall mounting.



**FCM applications**
The VLT® MotorDrive FCM 300 is able to run applications with constant torque as well as variable torque loads.

**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.

## 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** | |
| Programmabel digital inputs | 4 |
| Voltage level | 0 – 24 V DC (PNP positive logic) |
| **Analog inputs** | |
| Analog inputs | 2 (1 voltage, 1 current) |
| Voltage/current level | 0 – 10 V DC / 0/4 – 20 mA (scaleables) |
| **Pulse input** | |
| Programmable pulse input | 1 (24 V DC) |
| Max. frequency | 70 kHz (push-pull) / 8 kHz (open collector) |
| **Analog/digital output** | |
| Programmable analog/digital output | 1 |
| Current/voltage range | 0/4 – 20 mA / 24 V DC |
| **Relay output** | |
| Programmable relay output | 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 |
| [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 |
| 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 |
| 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 |
| 4-pole | 1.1 | 1.3 | 2.0 | 2.6 | 3.7 | 5.1 | 6.3 | 8.7 | 12.3 |
| Efficiency at nom. speed | | | | | | | | | |
| 2-pole (%) | 61 | 64 | 76 | 75 | 76 | 85 | 82 | 83 | 91 |
| 4-pole (%) | 66 | 71 | 74 | 80 | 80 | 81 | 80 | 84 | 84 |

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

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