

VLT® AutomationDrive & VLT® Motion Control Option MCO 305

Replace complexity with flexibility **Control your PM motors** with a VLT® drive

Improve productivity and cost efficiency without sacrificing precision.

For many years servo technology has been an industry favourite due to its dynamics and precision in synchronising and positioning applications. This level of performance comes at a price, as servo drives may require that 2000-4000 parameters are set during commissioning. A process that adds complexity to the system, including extra time and effort for setup.

VLT® control of PM motors

By replacing a servo drive with a Danfoss VLT® frequency converter to control direct torque, permanent magnet (PM) motors, it is possible to achieve precision and consistency with less system complexity.

VLT drives are easy to install and commission, and provide accurate dynamic motion control, synchronisation, positioning, cam-control, monitoring, and protection. This means that owners can maintain high quality processes, which increase productivity and minimise costs. In fact, it is possible to save up to 40% on costs by choosing a VLT® AutomationDrive and control options, compared with a PLC and servo system.

Increase performance with MCO 305

When combined with the Motion Control Option MCO 305, the AutomationDrive can control extremely complex applications where direct drive and/or torque control are required.

This option is built directly into the drive and the setup is handled via the VLT® Software Tool MCT10. The PC tool includes a programming editor with program examples, graphical cam profile editor and “testrun” and “scope” functions for controller optimisation.

Globally supported standard products

A major advantage of a VLT drive is that it has built on standard components. Extra options are built directly into the drive. VLT drives are available in a wide variety of frame sizes. For customers who already use VLT® AutomationDrives, the fact that the drives can be used to control PM motors enables them to reduce the number of suppliers.

**40%**

Cost savings with
VLT® Automation-
Drive and MCO 305
compared with a PLC
and servo system

A system built around standard components is also beneficial when application support is needed. Finding local help and support is easy.

Customers already acquainted with VLT drives will benefit from working with a known platform. New users will quickly see why Danfoss is a leading global supplier of drive solutions.

VLT® AutomationDrive Power range

- 3 x 200-240 V, 0.25-37 kW
- 3 x 380-480/500, 0.37-800 kW
- 3 x 525-600 V, 0.75-75 kW
- 3 x 535-690 V, 37-1200 kW

Motion Control MCO 305 benefits

- Accurate and dynamic motion control
- Synchronisation (electronic shaft)
- Positioning and electronic cam control
- Monitoring and error handling
- Limited jerk function
- Programmable logical functions

Synchronising functions

- Speed synchronising
- Position synchronising
- Position synchronising with marker corrections
- Electronic cam with dynamic curve calculations

Positioning functions

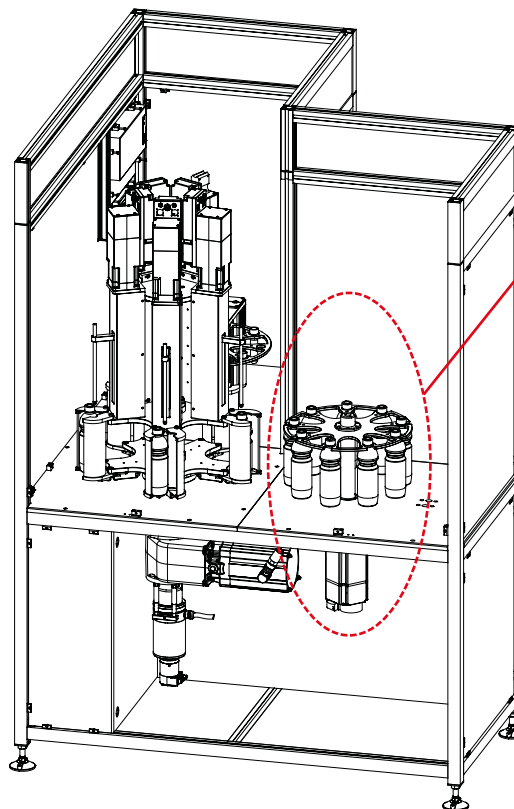
- Absolute positioning
- Relative positioning
- Touch-probe positioning

Encoder feedback support

- SSI
- Incremental
- Encoder output (virtual master)
- Resolver (with B-option)
- Sine-cosine encoder
- CANopen encoder
- Hiperface® encoder
- EnDat® encoder

VLT® AutomationDrive

Feature	Benefit
Reliable	Maximum uptime
Ambient temperature 50 °C without derating	Less need for cooling or oversizing
Available in IP 00, 20, 21, 54, 55 and 66 enclosures	Suitable for harsh and wash down areas
Resistant to wear and tear	Low lifetime cost
Back-channel cooling for frame D, E and F	Prolonged lifetime of electronics
User-friendly	Saves commissioning and operating costs
Plug-and-play technology	Easy upgrade and change over
Awarded control panel	User-friendly
Intuitive VLT® interface	Saves time
Pluggable cage clamp connectors	Easy connection
Exchangeable languages	User-friendly
Intelligent	Design flexibility
Intelligent warning systems	Warning before controlled stop
Safe stop	Safety cat. 3 (EN 954-1), PL d (ISO 13849-1), Stop cat. 0 (EN 60204-1)
Advanced plug-in features	Easy commissioning
STO: Safe Torque Off (IEC 61800-5-2)	SIL 2 (IEC 61508) SIL CL 2 (IEC 62061)
Intelligent heat management	Excess heat effectively removed



- Direct torque control**
- Accurate application control
 - No gearbox with power loss
 - No mechanical backlash