VLT® Motion Control Option MCO 305

The VLT® AutomationDrive FC 301 and FC 302 with the Motion Control Option MCO 305 is an intelligent drive offering highly accurate and dynamic motion control featuring

- Synchronising function
- Positioning function
- Cam Control function
- Logical functions and process control
- Full FC 300 control and access

Motion Control on the user's terms
The VLT® Motion Control Option MCO 305 is user-friendly, enabling set-up of all parameters via the VLT® AutomationDrive Local Control Panel or via the VLT® set-up software MCT10.

The VLT® Motion Control Option MCO 305 is an integrated free pro-grammable Motion Controller for VLT® AutomationDrive FC301 and 302; it adds functionality and flexibility to applications like:

- Flying saw
- Labelling machines
- Palletisers
- Storage systems
- Pick & place systems
- Cranes, hoists, elevators
- Tool machines
- Testing and simulation devices
- Printing lines
- Bottle washers & conveyor belts
- Packaging and material handling systems
- Concrete vibrating machinery

Features	Benefits
• Home function	• Ensures high repeatability and accuracy
• Absolute and relative positioning, velocity, position and marker synchronising	• Highly flexible system and reduced mechanical wear
• Software and Hardware end limits	• Increased safety for system and user
• Cam control	• Replaces mechanical cams and systems
• Virtual master function for synchronising of multiple followers	• Removes delay and errors because of simultaneous start of multiple axis
• On-line adjustable gear-ratio • On-line adjustable offset	• On the fly system adjustment and less machine downtime
• Definition of application parameters accessible via FC 300 local control panel	• Customer to application interfacing made easy
• Read/Write access to all FC 300 parameters	• Increase intelligence, control and flexibility of system
• Sending and receiving data via Fieldbus interface (requires Fieldbus option)	• Interfacing to existing network, central logging and control made easy
• Interrupts can be triggered by various events: Digital input, position, Fieldbus data, parameter change, status change and time, calculation, comparison, bit manipulation and logical gating, conditional and unconditional jumps	• Application software is highly flexible and accurate
• Graphical PID optimising tool	• Commissioning made visual and easy
• Debugging tools	• Development and fault finding of application software made easy

THE REAL DRIVE

Technical features

- Covers the entire series of VLT® AutomationDrive
- Built-in option preserves the IP/NEMA rating
- Control and status signals via I/O or fieldbus. Fieldbus requires an additional option card
- Access to VLT® and option parameters via fieldbus or the VLT® AutomationDrive control panel
- Improved encoder resolution thanks to quadrature signals
- Test run, PID optimising
- Restoring of factory settings
- VLT® mode, open loop speed control for emergency VLT® operation

Two versions:
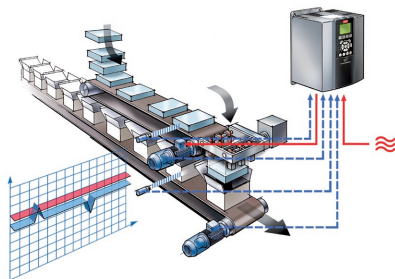The VLT® Motion Control Option MCO 305 is available with and without conformal coating.

Option card or built-in:
The option can be supplied either as an option card for field installation or as a built-in option in all VLT® AutomationDrives.
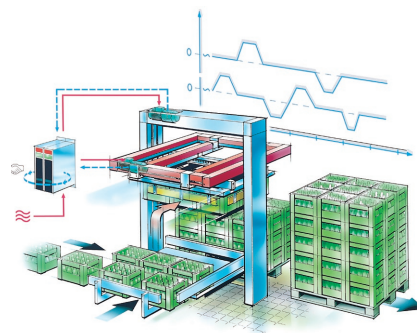
MCO 305 can be delivered with a pre-installed customer-defined application program.
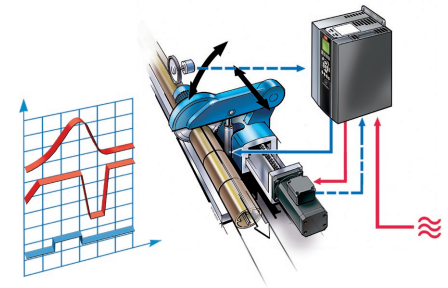
Specifications

Digital inputs	
Programmable digital inputs	10 (12)
Logic	PNP or NPN
Voltage level	0 – 24 V DC

Digital outputs	
Programmable digital outputs	8 (6) *)
Logic	PNP or NPN
Voltage level	0 – 24 V DC

*) Terminals X59-1 and X59-2 can be programmed as input, parameter 33-60

Encoder inputs	
Encoder inputs	2

Incremental encoder spec.	
Incr. encoder type	RS422/TTL
Maximum frequency	410 kHz
Phase displacement between A and B	90° ± 30°
Maximum cable length	300 m

Absolute encoder specifications	
Absolute encoder type	SSI
Data coding	Gray
Data length	12 – 37 bit
Clock frequency	78 kHz – 2 MHz
Maximum cable length	150 m

Encoder options (B)	
Sinus/cosinus Resolver	

Encoder output (virtual master)	
Number of encoder outputs	1
Signal type	RS422
Maximum frequency	410 kHz
Maximum number of slaves	31 (more with repeater)
Maximum cable length	400 m

Encoder voltage supply	
24 V, max. load	250 mA
8 V, max. load	250 mA
5 V, max. load	400 mA

Control characteristics	
Sample time of position PID loop	1 ms
Positioning static accuracy	± 1 increment
Synchronising static accuracy	± 1 increment

Synchronising

Positioning

Flying Saw

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