VLT® AutomationDrive

The VLT® AutomationDrive is a single drive concept that covers the entire range of application, which is a major benefit in commissioning, operating and maintaining the equipment.

The modular open-technology platform that VLT® AutomationDrive is built on makes it exceptionally adaptable and programmable. Its configurable, user-friendly interface supports local languages and letters.

Pluggable options
The drive solution can be adapted to any application due to the flexible option structure. Numerous options are available and can be mounted and tested from factory or be plugged in later for change-over or upgrade.

Adapts to the future
The modular concept of VLT® AutomationDrive makes it highly adaptable – also to future features and options.

Modularity offers the benefit of buying on a need-to-have basis without losing future possibilities.

Hot pluggable Control Panel
The Local Control Panel (LCP) can be plugged in directly or connected through a cable for remote commissioning. The LCP can be disconnected during operation and replaced with a blind cover. Settings are easily transferred via the LCP from one drive to another or from a PC to a drive with the VLT® Set-up Software MCT 10.

Awarded
VLT® AutomationDrive has received the Frost & Sullivan award for innovation and the iF Design Award for its user-friendliness.

The perfect solution for:
- Industrial automation
- High dynamic applications
- Safety installations

Power range
0.25 – 37 kW ..... (200 – 240 V)
0.37 – 800 kW..... (380 – 500 V)
0.75 – 75 kW ..... (525 – 600 V)
37 kW – 1.2 MW..... (525 – 690 V)

Features	Benefit
Reliable	**Maximum uptime**
• Ambient temperature 50° C without derating	• Less need for cooling or oversizing
• Available in IP 20, 21, 55 and 66 enclosures	• Suitable for harsh and wash down areas
• Resistant to wear and tear	• Low lifetime cost
User-friendly	**Saves commissioning and operating cost**
• 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	
• Intelligent warning systems	• Warning before controlled stop
• Smart Logic Control	• Reduces need for PLC capacity
• Advanced plug-in features	• Easy commissioning
• Safe stop	• Safety cat. 3 (EN 954-1), PL d (ISO 13849-1), Stop cat. 0 (EN 60204-1)
• STO: Safe Torque Off (IEC 61800-5-2)	• SIL 2 (IEC 61508) SIL CL 2 (IEC 62061)
• Intelligent heat management	• Excess heat effectively removed

VLT®
THE REAL DRIVE

Options

The following options are available:

Fieldbus options
- MCA 101 Profibus
- MCA 104 DeviceNet
- MCA 105 CanOpen
- MCA 113 Profibus VLT® 3000 protocol converter
- MCA 114 Profibus VLT® 5000 protocol converter
- MCA 121 Ethernet IP

I/O and feedback options
- MCA 101 General Purpose I/O
- MCB 102 Encoder
- MCB 103 Resolver
- MCB 105 Relay
- MCB 113 Extended Relay Card
- MCB 107 24 V input option for control voltage

Safety options
- MCA 131 SafetyBUS p option with Safe I/O
- MCB 108 Safety PLC interface (DC/DC converter)
- MCB 112 ATEX-PTC Thermistor Card

Motion Control Options
- MCO 305 Programmable Motion Controller
- MCO 350 Synchronizing Controller
- MCO 351 Positioning Controller
- MCO 352 Center Winder Controller

Power options
- Brake resistors
- Sine-Wave Filters
- dU/dt Filters
- Harmonic Filters (AHF)

Other accessories
- IP 21/NEMA 1 Kit (convert IP 20 to IP 21)
- Sub-D9 Connector
- Decoupling plate for fieldbus cables
- USB connection cable to PC
- Panel Through option

Specifications

Mains supply (L1, L2, L3)	
Supply voltage	200 – 240 V ±10% FC 301: 380 – 480 V ±10% FC 302: 380 – 500 V ±10%, 525 – 600 V ±10% 525-690 V ±10%
Supply frequency	50/60 Hz
True Power Factor (λ)	0.92 nominal at rated load
Displacement Power Factor (cosϕ) near unity	(>0.98)
Switching on input supply L1, L2, L3	Maximum 2 times/min.
Output data (U, V, W)	
Output voltage	0 – 100% of supply
Output frequency	FC 301: 0.2 – 1000 Hz (0.25 – 75 kW) FC 302: 0 – 1000 Hz (0.25–75 kW) 0 – 800 Hz (90 – 1000 kW) 0 – 300 Hz (Flux mode)
Switching on output	Unlimited
Ramp times	0.01 – 3600 sec.

Note: 160% current can be provided for 1 minute. Higher overload rating is achieved by oversizing the drive.

Digital inputs	
Programmable digital inputs	FC 301: 4 (5) / FC 302: 4 (6)
Logic	PNP or NPN
Voltage level	0 – 24 V DC

Note: One/two digital inputs can be programmed as digital output for FC 301/FC 302.

Analogue inputs	
Number of analogue inputs	2
Modes	Voltage or current
Voltage level	FC 301: 0 to +10 V / FC 302: -10 to +10 V (scaleable)
Current level	0/4 – 20 mA (scaleable)

Pulse/encoder inputs	
Programmable pulse/encoder inputs	FC 301: 1/FC 302: 2
Voltage level	0 – 24 V DC (PNP positive logic)

Digital output*	
Programmable digital/pulse outputs	FC 301: 1/FC 302: 2
Voltage level at digital/frequency output	0 – 24 V

Analogue output*	
Programmable analogue outputs	1
Current range	0/4 – 20 mA

Relay outputs*	
Programmable relay outputs	FC 301: 1 / FC 302: 2

Cable lengths	
Max. motor cable lengths	FC 301: 50 m/FC 302: 150 m (screened/armoured) FC 301: 75 m/FC 302: 300 m (unscreened/unarmoured)

**More analogue and digital inputs/outputs can be added by options*

Dimensions [mm]

	A1	A2	A3	A5	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4	E1	E2	F1	F2	F3	F4
H	200	268		420	480	650	399	520	680	770	550	660	1209	1589	1046	1327	2000	1547	2204			
W	75	90	130	242			165	230	308	370	308	370	420		408		600	585	1400	1800	2000	2400
D	207	205		195	260		249	242	310	335	333		380		375		494	498	606			
H+		375					475	670			755	950										
W+		90	130				165	255			329	391										

H and W dimensions are with back-plate. H+ and W+ are with IP upgrade kit. D dimensions are without option A/B.