

Fact Sheet

# VLT® Midi Drive FC 280

## Flexible. Communicative. Easy to use.



Access your true high-efficiency potential with the VLT® Midi Drive FC 280, the evolution of the popular VLT® 2800 drive. Profit from new savings, with a wide range of features designed to make installing, using, and maintaining the drive as simple and as easy as possible – just set and forget.

This AC drive delivers precise and efficient motor control for machine builders in the food and beverage, material handling, and processing industries. It is strong on control performance, functional safety, and flexible fieldbus communication.

It's also an easy retrofit for the VLT® 2800 in established plant or machinery concepts.

Active power factor correction for single-phase units reduces harmonics to less than

**8% THDi**

The right mix of features ensures the AC drive suits your task, whether for conveyor systems, mixers, and packaging systems or driving pumps, fans, and compressors.

VLT® Midi Drive saves installation time, with all pluggable connectors, and USB port for convenient PC connection. For easy and intelligent commissioning, transfer, or programming of factory settings, use the handy VLT® Memory Module.

Set-up wizards simplify commissioning for common applications.

Integrated features free you from finding space and budget to install extra components:

- Harmonic mitigation
- RFI filter
- Dual-channel Safe Torque Off (STO)
- Brake chopper

### Product range

3 x 380-480 V .....	0.37-22 kW
3 x 200-240 V .....	0.37-3.7 kW
1 x 200-240 V .....	0.37-2.2 kW

Feature	Benefit
<b>Integrated harmonics and EMC design</b>	
Integrated DC choke or active power factor correction (PFC)	<ul style="list-style-type: none"> <li>– Saves installation time and panel space requirements</li> <li>– Improves power supply quality</li> <li>– Reduces effective input current/VA rating</li> </ul>
Integrated EMC filter	<ul style="list-style-type: none"> <li>– Avoids malfunction and improves reliability of surrounding components</li> <li>– Saves installation time and panel space requirements</li> <li>– Proven compliance to Cat. C2/EN 61800-3 (Class A1/EN 55011)</li> </ul>
RFI switch	<ul style="list-style-type: none"> <li>– Operates safely on IT mains</li> </ul>
<b>Easy to install and set up</b>	
Pluggable terminals	<ul style="list-style-type: none"> <li>– Fast installation and unit exchange</li> </ul>
USB port	<ul style="list-style-type: none"> <li>– Easy PC connection for troubleshooting or commissioning</li> <li>– No need for adapter or PC-USB driver</li> </ul>
Application set-up wizards	<ul style="list-style-type: none"> <li>– Easy commissioning</li> </ul>
Enhanced numerical LCP (option)	<ul style="list-style-type: none"> <li>– Cost effective user interface</li> </ul>
Graphical LCP supporting various languages, including adapter (option)	<ul style="list-style-type: none"> <li>– Easy set-up in one of seven main languages</li> <li>– Fast troubleshooting</li> </ul>
Memory module (option)	<ul style="list-style-type: none"> <li>– Convenient transfer of parameter set-up</li> <li>– Easy firmware updates</li> <li>– Easy and fast commissioning</li> </ul>
Memory module reader (option)	<ul style="list-style-type: none"> <li>– Convenient transfer files to and from the VLT® Memory Module MCM 102 via PC</li> </ul>
<b>Strategic design for applications, safety, and motor control</b>	
Integrated Safe Torque Off (STO), dual channel	<ul style="list-style-type: none"> <li>– Eliminates external components</li> <li>– Enables reliable functional safety</li> </ul>
Control algorithm runs both induction and PM motors	<ul style="list-style-type: none"> <li>– Freedom to choose the best high-efficiency motor for the task</li> </ul>
Integrated brake chopper for 3-phase drives in all power sizes up to 22 kW	<ul style="list-style-type: none"> <li>– No cost for external braking chopper</li> </ul>
Side-by-side or horizontal mounting, without derating and clearance	<ul style="list-style-type: none"> <li>– Allows flexible mounting and saves cabinet space and cost</li> </ul>
Operates at up to 45 °C without derating and clearance	<ul style="list-style-type: none"> <li>– Saves cost for external cooling and reduces downtime for overtemperature failures</li> </ul>

### Integrated harmonic mitigation

In compliance with IEC/EN 61000-3-2/61000-3-12, the integrated DC chokes for all 3-phase units reduce harmonics to less than 48% THDi.

For single-phase units the harmonics are less than 8% thanks to the integrated active PFC.

### Integrated RFI filter

Built-in filters not only save space, but also eliminate extra costs for fitting, wiring and material.

### Dual-channel Safe Torque Off

The Safe Torque Off (STO) function is a component in a safety control system. STO prevents the unit from generating the energy that is required to rotate the motor, which ensures safe conditions in emergency situations.

### PM motor compatibility

The VLT® Midi Drive provides highly efficient permanent magnet (PM) motor control in open loop under VVC+ in the whole power range.

### Your choice of fieldbus

- PROFINET with dual port
- POWERLINK with dual port
- EtherNet/IP™ with dual port
- PROFIBUS
- CANopen
- Modbus RTU and FC Protocol are integrated as standard

The optional 24 V DC back-up power supply keeps the fieldbus communication on, while disconnected from mains.

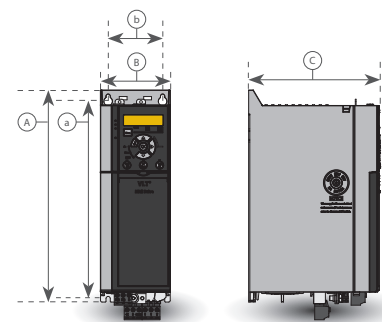
## Specifications

Mains supply (L1, L2, L3)	
Supply voltage	200-240 V (-15%/+10%) 380-480 V (-15%/+10%)
Supply frequency	50/60 Hz
Displacement power factor (cos φ)	Near unity (> 0.98)
Switching frequency on input supply L1, L2, L3	Switching maximum 2 times/minute
Output data (U, V, W)	
Output voltage	0-100% of supply voltage
Switching on output	Unlimited
Ramp times	0.01-3600 s
Frequency range	0-500 Hz
Programmable digital inputs and outputs	
Digital inputs / digital outputs*	6 (7) / 1
Logic	PNP or NPN
Voltage level	0-24 V DC
<i>One of 6 digital inputs can be configured as digital output or pulse output. One of analog inputs can be configured as an extra digital input, thereby bring the quantity of digital inputs to 7.</i>	
Pulse and encoder inputs	
Pulse inputs / encoder inputs**	2/2
Voltage level	0-24 V DC
<i>**Note: Two digital inputs can be configured as pulse inputs. One pair of inputs can be configured as encoder inputs.</i>	
Programmable analog inputs	
Analog inputs	2
Modes	1 voltage or current / 1 voltage or DI
Voltage level	0 V to +10 V (scaleable)
Current level	0/4 to 20 mA (scaleable)
Programmable analog outputs	
Analog outputs	1
Current range at analog output	0/4 to 20 mA
Programmable relay outputs	
Relay outputs	1
Approvals	
Approvals	CE, UL listed, cUL, TÜV, RCM (C-Tick), EAC



### Easy connectivity

For convenient PC connection during commissioning or service, use the integrated USB port.



## Dimensions and weights

Enclosure IP20		K1					K2			K3	K4		K5	
Power size [kW]	Single-phase 200-240 V	0.37	0.55	0.75	1.1	1.5	2.2							
	3-phase 200-240 V	0.37	0.55	0.75	1.1	1.5	2.2			3.7				
	3-phase 380-480 V	0.37	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5	11	15	18.5
Dimensions [mm]	Height A	210					272.5			272.5	320		410	
	Width B	75					90			115	135		150	
	Depth C	168					168			168	245		245	
Mounting holes	a	198					260			260	297.5		390	
	b	60					70			90	105		120	
Weight [kg]	IP20	2.3				2.5	3.6			4.1	9.4	9.5	12.3	12.5

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