

## Fact Sheet

## VLT® Common AC Drive Modules

Build cabinets exactly how you need them, using VLT® common AC drive modules. By using multiple high power drives connected in parallel, you can achieve greater power sizes in a modular solution.



VLT® common AC drive modules comprise sets of two to four VLT® high power drives connected in parallel, with 6-pulse and 12-pulse variants.

A reference design for the cabinet of the drives has been made using the Rittal TS8 enclosure. This reference design makes it easy for panel builders and machine builders to build their own cabinets, worldwide.

**Reliability**

Enjoy long drive lifetime and save on extra components, with integrated fuses and DC coils. The high-power drive modules are delivered with these components built-in as standard.

Increase uptime with the Reduce Run functionality. This function enables the system to run at part load even if one of the drive units fails.

**Back-channel cooling**

A unique design uses a ducted back channel to pass cooling air over heat sinks with minimal air passing through the electronics area. This design allows

90% of the heat losses to be exhausted directly outside of the enclosure. Back-channel cooling improves reliability and prolongs life by dramatically reducing temperature rise and contamination of the electronic components. There is an IP54 seal between the back-channel cooling duct and the electronics area of the VLT® drive.

**Product families**

- VLT® AutomationDrive FC 302
- VLT® AQUA Drive FC 202
- VLT® HVAC Drive FC 102

**Power range**

- 6-pulse
  - 450–1200 kW
  - 600–1350 hp
- 12-pulse
  - 250–1200 kW
  - 350–1350 hp

**Voltage range**

- 380-480/500 V
- 525-690 V

**Enclosure rating**

- IP00

**Up to 1.2 MW**  
output power,  
in compact  
modular design  
with 98%  
efficiency

Feature	Benefit
VLT® family – one platform, one user interface, common graphical LCP	Know one drive, know them all. Savings in time and cost for training, service, ordering and spare parts logistics.
Compact size – high power density	Savings in space and cost, in cabinet design.
Runs at 100% load up to 45 °C	Full and reliable performance at high ambient temperatures.
Coated PCBs as standard	Extended lifetime, with high environmental resistance.
Built-in DC link reactors	Reduced harmonics distortion level and: – No need for external AC chokes – No additional panel space required
Built-in AC fuses	Savings on cost and space, for extra components.
Reduce Run function	Allows the system to run at part load, even if one of the drives fails.
98% efficiency	Low lifetime operating cost.
Back-channel cooling	Reduces the scale of air conditioning required for the room, reducing up-front cost and operating expenses.

### Options

- Stainless steel back channel
- RFI filter
- Brake chopper
- Heat sink access panel
- Fieldbus options
- Application options
- Control power back-up input

### Busbar kit

Factory designed kit, including:

- Flexible busbars
- Common AC terminals
- DC busbars
- Ground busbars
- EMC screens

### Cooling Duct kits

Pre-fabricated kits in four different versions:

- Bottom-in/top-out
- Back-in/back-out
- Bottom-in/back-out
- Back-in/top-out

For more details, refer to [www.danfoss.com/drives](http://www.danfoss.com/drives).

### PC Software

#### VLT® Motion Control Tool MCT 10 set-up software

MCT 10 offers advanced programming functionality for all VLT® products, greatly reducing programming and set-up time.

#### VLT® Motion Control Tool MCT 31 Harmonics Calculation Software

MCT 31 calculates the system harmonic distortion due to AC drives, and determines the most cost-effective method to mitigate harmonics.

- Calculate system harmonic distortion
- Estimate the benefits of adding various harmonic mitigation solutions from the VLT® product portfolio

### Nominal ratings

	400 V AC				460 V AC				690 V AC				Module dimensions (number of modules) H x W x D	
	Normal overload		High overload		Normal overload		High overload		Normal overload		High overload			
	Power [kW]	Current [A]	Power [kW]	Current [A]	Power [hp]	Current [A]	Power [hp]	Current [A]	Power [kW]	Current [A]	Power [kW]	Current [A]		
12-pulse	315	600	250	480	450	540	350	443	315	344	250	290	(2x) 1122 x 350 x 44 x 14 x 15 in.	
	355	658	315	600	500	590	450	540	400	400	315	344		
	400	745	355	658	600	678	500	590	450	450	355	380		
	450	800	400	695	600	730	550	678	500	500	400	410		
									560	570	500	500		
								630	630	560	570			
6-pulse/12-pulse	500	880	450	800	650	780	600	730						(4x) 1122 x 350 x 44 x 14 x 15 in.
	560	990	500	880	750	890	650	780	710	730	630	630		
	630	1120	560	990	900	1050	750	890	800	850	710	730		
	710	1260	630	1120	1000	1160	900	1050	900	945	800	850		
	800	1460	710	1260	1200	1380	1000	1160	1000	1060	900	945		
	1000	1720	800	1460	1350	1530	1200	1380	1200	1260	1000	1060		

**Normal overload:** 110% of nominal current can be applied for intermittent duty (60 sec).  
**High overload:** 150% of nominal current can be applied for intermittent duty (60 sec).

### Compliance

- CE & UL Listed for common AC drive module design
- EMC compliance:
  - EN 55011, Class A2/IEC 61800-3 Category C3 (standard)
  - EN 55011, Class A1/IEC 61800-3 Category C2 (optional)
- Safety category 3, PL d (ISO 13849-1)
- Stop category 0 (EN 60204-1)
- STO: Safe Torque Off (IEC 61800-5-2) SIL 2 (IEC 61508)
- SILCL 2 (IEC 62061)

