VLT® 12-pulse drive

Robust and cost effective harmonic solution for the higher power range. The Danfoss VLT® 12-pulse drive offers reduced harmonics for demanding industry applications above 250 kW.

The VLT® 12-pulse is a high efficiency variable frequency converter which is built with the same modular design as the popular 6-pulse VLT® drives. It is offered with similar drive options and accessories and can be configured according to customer need.

Together with the needed 30°-phase shifting transformer the solution provides durability and reliability at a low cost.

Under ideal grid conditions the solution eliminates the 5^{th}, 7^{th}, 17^{th} and 19^{th} harmonics and results in a THiD of around 12% at full load.

The needed transformer makes this solution ideal for applications where stepping down from medium voltage is required or where isolation from the grid is needed.

The Danfoss VLT® 12-pulse drive provides harmonic reduction without adding capacitive or inductive components which often require network analysis to avoid potential system resonance problems.

Power Range:
- 250 kW – 1.4 MW

Voltage Range:
- 380 – 690 V

Enclosure:
- IP 21/NEMA Type 1
- IP 54/NEMA Type 12

Optimised for:

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

Feature	Benefit
Reliable	**Maximum uptime**
Maintenance free	No running expenses
Durability	Long lifetime
Coated PCBs	Environmental robustness
100% factory tested	Low failure rate
Backchannel cooling	Prolonged lifetime of electronics
Design	**Easy operation and user-friendly set-up**
Modular design	Easy serviceability
Same easy programming as a 6-pulse drive	User-friendly operation
– Standard award-winning control panel (LCP) – Available in 27 languages	Effective commissioning and operation

Options

The following options are available:

- RFI filters
- Disconnect
- Fuses
- Mains shielding
- Feedback and I/O options
- Fieldbus options
- dU/dt filters
- Sine wave filters

PC Software

VLT® MCT 10 Setup Software

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

VLT® MCT 10 Basic (available free of charge on www.danfoss.com) allows access to a finite number of drives with limited functionality. The advanced edition, offering a higher level of functionality, is available from your Danfoss sales partner.

VLT® MCT 31 Harmonics Calculation Software

With VLT® MCT 31 you can determine whether harmonics will be an issue in your installation when drives are added.

VLT® MCT 31 estimates the benefits of adding various harmonic mitigation solutions from the Danfoss product portfolio and calculates system harmonic distortion.

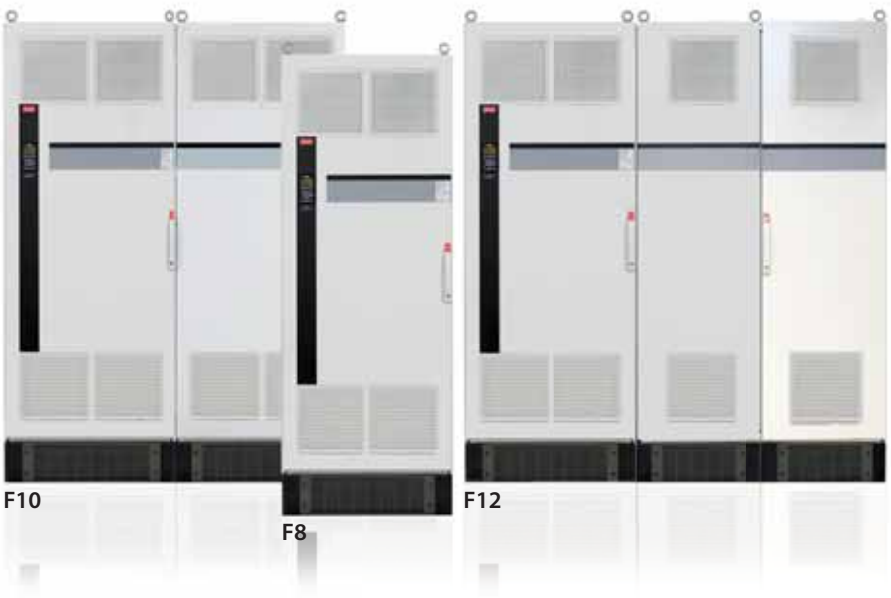
From www.danfoss.com you can download the free tool VLT® Harmonic Calculation MCT 31.

Specifications

THiD* at: – 40% load – 70% load – 100% load	 20% 14% 12%
Efficiency* at: – 40% load – 70% load – 100% load	 95% 97% 98%
True power factor* at: – 40% load – 70% load – 100% load	 91% 95% 97%
Ambient temperature	45° C without derating
Cooling	Back-channel air cooling

** Measured at balanced grid without pre-distortion*

Norms and recommendations	Compliance
IEEE519	Depends on grid and load conditions
IEC61000-3-2 (up to 16 A)	Out of scope
IEC61000-3-12 (between 16 and 75 A)	Out of scope
IEC61000-3-4 (above 75 A)	Always



400 V AC				460 V AC				690 V AC				Frame dimensions	
Normal Overload		High Overload		Normal Overload		High Overload		Normal Overload		High Overload		Without options cabinet H x W x D IP 21 [mm]	With options cabinet H x W x D IP 21 [mm]
Power [kW]	Current [A]	Power [kW]	Current [A]	Power [HP]	Current [A]	Power [HP]	Current [A]	Power [kW]	Current [A]	Power [kW]	Current [A]		
315	600	250	480	450	540	350	443	450	450	355	380	F8 2280 x 800 x 607	F9 2280 x 1400 x 607
355	658	315	600	500	590	450	540	500	500	400	410		
400	745	355	658	600	678	500	590	560	570	500	500		
450	800	400	695	600	730	550	678	630	630	560	570		
500	880	450	800	650	780	600	730	710	730	630	630	F10 2280 x 1600 x 607	F11 2280 x 2400 x 607
560	990	500	880	750	890	650	780	800	850	710	730		
630	1120	560	990	900	1050	750	890	900	945	800	850		
710	1260	630	1120	1000	1160	900	1050						
800	1460	710	1260	1200	1380	1000	1160	1000	1060	900	945	F12 2280 x 2000 x 607	F13 2280 x 2800 x 607
1000	1720	800	1460	1350	1530	1200	1380	1200	1260	1000	1160		
								1400	1415	1200	1260		

Danfoss VLT Drives, Ulsnaes 1, DK-6300 Graasten, Denmark, Tel. +45 74 88 22 22, Fax +45 74 65 25 80
www.danfoss.com/drives, E-mail: info@danfoss.com