



VLT® Low Harmonic Drive

The Danfoss VLT® Low Harmonic Drive is the first solution combining an active filter and a drive in one package.



The VLT® Low Harmonic Drive continuously regulates harmonic suppression according to the load and grid conditions without affecting the connected motor.

The Total Harmonic Current Distortion is reduced to less than 3% at ideal conditions and to less than 5% at heavy distortion grids with up to 2% phase unbalance. As individual harmonics also fulfil toughest harmonic requirements, the VLT® Low Harmonic Drive meets all present harmonic standards and recommendations.

Unique features such as sleep mode and back channel cooling offers unmatched energy efficiency for Low Harmonic Drives.

The VLT® Low Harmonic Drive requires the same set-up and installation as a standard VLT® drive and out of the box it ensures optimum harmonic performance.

The VLT® Low Harmonic Drive has the same modular build-up as our standard high power drives and shares similar features: Built-in RFI filters, coated PCB and user-friendly programming.

Voltage range

- 380 – 480 V AC 50 – 60 Hz

Power Range

- 132 – 630 kW High Overload/
160 – 710 kW Normal Overload
(Matching drive frames D, E and F)

Enclosure degree

- IP 21/NEMA 1
- IP 54/NEMA 12

Optimised

for:

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

Feature	Benefit
Reliable	Maximum uptime
- No increased winding stress on motor	- Longer motor lifetime
- 100% factory tested	- Less initial cost (no output filter needed)
- Coated PCBs	- Low failure rate
- Innovative cooling concept	- Prolonged lifetime of electronics
User-friendly	Saves commissioning and operating cost
- No extra wiring and set-up needed	- Easy commissioning and low initial costs
- Modular design	- Easy serviceability
- Full readout of grid conditions	- Reduces needed harmonic testing
Energy saving	Lower operation costs
- High efficiency	- Low running expenses
- Sleep mode and progressive switching freq.	- Increased transformer efficiency
- Independent of grid and load changes	- Reduced cable losses

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 from 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. Furthermore the software provides quick indication of whether the installation complies with the most recognised harmonic norms and recommendations.

From www.danfoss.com you can download the free tool VLT® Harmonic Calculation MCT 31 – the most up-to-date version of the calculation software.

Specifications

THiD* at:	
– 40% load	< 5,5%
– 70% load	< 3,5%
– 100% load	< 3%
Efficiency* at:	
– 40% load	> 93%
– 70% load	> 95%
– 100% load	> 96%
True power factor* at:	
– 40% load	> 98%
– 70% load	> 98%
– 100% load	> 98%
Ambient temperature	40° C without derating
Cooling	Back-channel air cooling

* Measured at balanced grid without pre-distortion

Norms and recommendations	Compliance
IEEE519	Always
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 VAC (380 – 460 VAC)										
Normal Overload			High Overload			Frame	Dimensions		Weight	
Power	Current		Power	Current			H x W x D	kg	lbs	
kW	HP	[A]	kW	HP	[A]					
160	250	315	132	200	260	D13	1740 x 1020 x 380 mm 68.5 x 49.6 x 14.9 inches	306.6	676	
200	300	395	160	250	315					
250	350	480	200	300	395					
315	450	600	250	350	480	E9	2000 x 1200 x 500 mm 78.7 x 56.7 x 19.7 inches	676.2	1491	
355	500	658	315	450	600					
400	625	745	355	500	658					
450	700	800	400	625	695					
500	780	880	450	700	800	F18	2200 x 2800 x 600 mm 86.6 x 145.6 x 23.6 inches	1899	4187	
560	875	990	500	780	880					
630	985	1120	560	875	990					
710	1100	1260	630	985	1120					