

VLT

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 fulfill 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 VAC 50 – 60 Hz

Power Range:

175 – 800 HP High Overload/
200 – 950 HP Normal Overload
(Matching drive frames D, E and F)

Enclosure degree:

IP 21 / NEMA 1, IP 54 Hybrid

Optimized for:

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

Features	Benefits
Energy Saving	Lower operation costs
High efficiency Sleep mode and progressive switching frequency	Low running expenses
Independent of grid and load changes	Increased transformer efficiency Reduced cable losses
Reliable	Maximum uptime
No increased winding stress on motor	Longer motor lifetime Less initial cost (no output filter needed)
100% factory tested Coated PCBs	Low failure rate
Innovative cooling concept	Prolonged lifetime of electronics
User-friendly	Save commissioning and operation costs
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



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.danfossdrives.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 recognized harmonic norms and recommendations.

From www.danfossdrives.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	Backchannel air cooling

* measured at balanced grid without pre-distortion

Norms and recommendations	Compliance
IEEES19	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			
kW	HP	[A]	kW	HP	[A]		IP 21		kg	lbs
160	250	315	132	200	260	D11	1740 x 1260 x 380 mm 68.5 x 49.6 x 14.9 inches		380	836
200	300	395	160	250	315				380	836
250	350	480	200	300	395				406	893
315	450	600	250	350	480				596	1311
355	500	658	315	450	600	E7	2000 x 1440 x 500 mm 78.7 x 56.7 x 19.7 inches		623	1370
400	625	745	355	500	658				646	1421
450	700	800	400	625	695				646	1421
500	780	880	450	700	800				2009	4420
560	875	990	500	780	880	F17	2200 x 3700 x 600 mm 86.6 x 145.6 x 23.6 inches		2009	4420
630	985	1120	560	875	990				2009	4420
710	1100	1260	630	985	1120				2009	4420

www.danfossdrives.com

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