motralec Danfoss VLT Low Harmonic Drive
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ENGINEERING TOMORROW

Fact Sheet

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 mitigation according to the load and grid conditions without affecting the connected motor.

The total harmonic current distortion is reduced to less than 3% on grids with balanced mains and minimum pre-distortion and to less than 5% on grids with high harmonic distortion and 2% phase imbalance. 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 features the same modular construction as our standard high power drives and shares similar features: Built-in RFI filters, coated PCB and user-friendly programming.

Highest harmonic performance
at lowest operating expenses in its power range

Product Series
- VLT® HVAC Drive FC 102
- VLT® Refrigeration Drive FC 103
- VLT® AQUA Drive FC 202
- VLT® AutomationDrive FC 302

Enclosure
- IP21/NEMA 1
- IP54/NEMA 12

Voltage range
- 380 – 480 V AC 50 – 60 Hz

Power range
- High overload:
  132-630 kW
  200-900 hp
- Normal overload:
  160-710 kW
  250-1000 hp

Feature	Benefit
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	**Saves commissioning and operating cost**
No extra wiring and set-up needed	Easy comissioning and low initial costs
Modular design	Easy serviceability
Full readout of grid conditions	Reduces needed harmonic testing
Energy saving	**Lower operation costs**
– High efficiency – Sleep mode and progressive switching freq.	Lower operating expenses
Independent of grid and load changes	– Reduced harmonic transformer losses – Reduced cable losses

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4 rue Lavoisier, 95220 Herblay-sur-Seine . Tél. 01 39 97 65 10 . service-commercial@motralec.com . www.motralec.com

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

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.

Calculation Software

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

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.

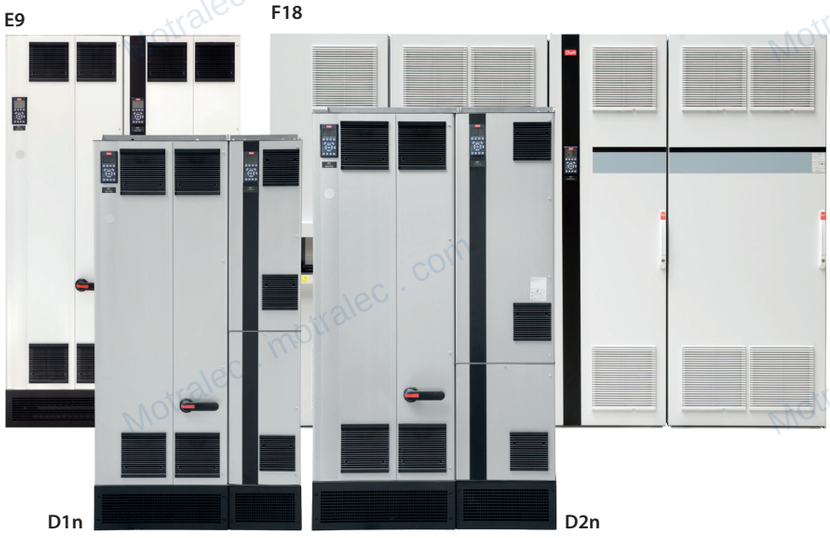
From www.danfoss.com you can download the free tool MCT 31 – the most up-to-date version of the calculation software.

Specifications

THiD* at: – 40% load – 70% load – 100% load	 < 5.5% < 3.5% < 3%
Efficiency* at: – 40% load – 70% load – 100% load	 **> 93%** **> 95%** **> 96%**
True power factor* at: – 40% load – 70% load – 100% load	 > 98% > 98% > 98%
Ambient temperature	50° C without derating (D-frame 45° C)
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		
kW	HP	[A]	kW	HP	[A]		IP 21/54	kg	lbs
160	250	315	132	200	260	D1n	1780 x 915 x 380 mm 79 x 36 x 15 inches	353	777
200	300	395	160	250	315	D2n	1780 x 1020 x 380 mm 70 x 40 x 15 inches	413	910
250	350	480	200	300	395			413	910
315	450	600	250	350	480	E9	2000 x 1200 x 500 mm 79 x 47 x 19 inches	676	1491
355	500	658	315	450	600			676	1491
400	625	745	355	500	658			676	1491
450	700	800	400	625	695			676	1491
500	780	880	450	700	800	F18	2277 x 2800 x 600 mm 90 x 110 x 24 inches	1899	4187
560	875	990	500	780	880			1899	4187
630	985	1120	560	875	990			1899	4187
710	1100	1260	630	985	1120			1899	4187

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

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Besoin d'un prix ou d'un conseil technique ?

Danfoss VLT Low Harmonic Drive

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- Devis rapide et conseil technique par nos spécialistes
- Plus de 200 000 références et 30 marques distribuées
- Vente, réparation, bobinage et SAV en atelier
- Livraison partout en France, accompagnement avant et après-vente

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