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VLT® Advanced Active Filter AAF 006

A flexible and adaptable solution for central or de-central harmonic mitigation.

Danfoss Advanced Active Filters can compensate for individual VLT® drives or can be installed as a compact stand-alone solution at a common point of coupling, compensating for several loads simultaneously.

Consequently the filter ensures optimal harmonic suppression independent of the number of loads and their individual load profile. In addition the active filter corrects the power factor and balances the phase load providing an optimal energy utilization.

This improves the system efficiency and increases the grid robustness to avoid downtime.

The AAF 006 is built using proven VLT® components. The modular construction ensures high reliability and energy efficiency, back channel cooling, and high enclosure grades without size increase.

The VLT® Advanced Active Filter is easily controlled via the user-friendly LCP, sharing design and programming structure with the VLT® drives series.

Without dismounting existing installation, the VLT® Advanced Active Filters are easily retrofitted to the existing installation, where harmonics are increased because of enlarged employment of non-linear loads such as variable speed drives.

Enclosure

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

Voltage range

- 380 – 480 V AC 50 – 60 Hz

Power range

190 A, 250 A, 310 A, 400 A.
Up to 4 units can be paralleled for higher power.

Perfect

match for industrial automation, high dynamic applications, and safety installations.

Feature	Benefit
Reliable	Maximum uptime
– 100% factory tested – Coated PCBs – >90% components from the reliable VLT FC series	Low failure rate
Innovative cooling concept	Prolonged lifetime of electronics
User-friendly and flexible	Save commissioning and operation costs
– Innovative programming possibilities	– Easy commissioning and low initial costs
– Modular design	– Easy serviceability
– Wide range of options	– Reduces needed harmonic testing
Energy saving	Lower operation costs
– High efficiency – Sleep mode and progressive switching frequency – Power factor correction	– Low running expenses

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Options:

The following options are available:

- RFI filters
- Disconnect
- Fuses
- Mains shielding

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 recognizsd harmonic norms and recommendations.

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

Specifications:

THiD* at:	
– 40% load	< 7%
– 70% load	< 5.5%
– 100% load	< 5%
Efficiency* at:	
– 40% load	> 95%
– 70% load	> 98%
– 100% load	> 98%
True power factor* at:	
– 40% load	> 0.98
– 70% load	> 0.98
– 100% load	> 0.98
Ambient temperature	45˚C
Cooling	Backchannel air cooling

** Measured at balanced grid without pre-distortion and with VLT® drive matching full load demand*

Norms and recommendations	Compliance
IEEE519	Appplication and load dependent
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)	Out of scope

400 VAC (380 – 480 VAC)					
Total Current [A]	Max. Reactive [A]	Max. Harmonic [A]	Frame	Dimensions H x W x D mm [Inches]	Weight Kg [Lbs]
190	190	170	D14	1740 x 600 x 380 [68.2 x 33.5 x 15.0]	283 [623]
250	250	225	E1	2000 x 600 x 500 [78.7 x 33.5 x 19.4]	476 [1047]
310	310	280			
400	400	360			498 [1096]

D14

E1

Total Current [A]	Max. individual harmonic compensation [A]							
	I_5	I_7	I_{11}	I_{13}	I_{17}	I_{19}	I_{23}	I_{25}
190	119	85	55	48	34	31	27	24
250	158	113	72	63	45	40	36	32
310	196	140	90	78	56	50	45	40
400	252	180	115	100	72	65	58	50

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