VLT® Advanced Harmonic Filter

Optimised harmonic performance with the VLT® FC series up to 250 kW.

With a >98% efficiency the passive Advanced Harmonic Filters offer cost effective and very robust harmonic solutions specifically for power up to 250 kW.

As stand-alone options the Advanced Harmonic Filters feature a compact housing that is easily integrated into existing panel space. This makes them well-suited for retrofit applications with limited adjustments of the frequency converter.

Line Voltage
- 380 – 415 V AC (50 and 60 Hz)
- 440 – 480 V AC (60 Hz)
- 500 – 525V (50 Hz)
- 690 V (50 Hz)

Filter current
- 10 A – 480 A (380 – 415 V, 50/60 Hz)
- 10 A – 436 A (440 – 480 V, 60 Hz)
- (Modules can be paralleled for higher power)

Enclosure degree
- IP 20/IP 00

The Danfoss Advanced Harmonic Filters have been specially designed to match the Danfoss frequency converters for unmatched performance and design.

Compared to traditional harmonic trap filters they offer a smaller foot print and higher harmonic reduction.

Two variants are available – AHF 005 and AHF 010. When connected in front of a Danfoss VLT® frequency converter, the harmonic current distortion generated back to the mains is reduced to 5% and 10% Total Harmonic Current Distortion at full load.

Perfect
match for:
- Industrial automation
- High dynamic applications
- Safety installations

Feature	Benefit
Reliable	**Maximum uptime**
– 100% factory tested – Based on proven and tested filter concept	– Low failure rate
Energy saving	**Lower operation costs**
– High efficiency – Electrically matched to the individual VLT® FC drives	– Low running expenses
Design	**Compact and aesthetic enclosure**
– Innovative coil design – Side-by-side mounting – Optimized for mounting in panels	– Smaller footprint – Less wall space needed
– Easy commissioning	– Low commissioning costs
– Enclosure size and colour matches	– Danfoss look and feel

Options

The following options are available:

- IP 21/NEMA 1 kit

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

	AHF 010	AHF 005
THiD* at: – 40% load – 70% load – 100% load	 ~ 12% ~ 11% < 10%	 ~ 7% ~ 6% < 5%
Efficiency* at 100% load	>98.5%	
True power factor* at: – 40% load – 70% load – 100% load	 ~ 81% ~ 96% > 99%	 ~ 80% ~ 95% > 98%
Ambient temperature	45° C without derating	
Cooling	Back-channel air cooling	

** Measured at balanced grid without pre-distortion*

Norms and recommendations	Compliance
IEEE519	AHF 005 always AHF 010 depends on grid and load conditions
IEC61000-3-2 (up to 16 A)	Always
IEC61000-3-12 (between 16 and 75 A)	Always
IEC61000-3-4 (above 75 A)	Always

Enclosures

380–415 V 50/60 Hz	440–480 V 60 Hz	Enclosure Type	
Current [A]	Current [A]	AHF010	AHF005
10	10	X1	X1
14	14	X1	X1
22	19	X2	X2
29	25	X2	X2
34	31	X3	X3
40	36	X3	X3
55	48	X3	X3
66	60	X4	X4
82	73	X4	X4
96	95	X5	X5
133	118	X5	X5
171	154	X6	X6
204	183	X6	X6
251	231	X7	X7
304	291	X7	X7
325	355	X7	X7
381	380	X7	X8
480	436	X7	X8

Dimensions

Enclosure Type	Dimensions in mm		
	A (height)	B (width)	C (depth)
X1	332	190	206
X2	450	232	248
X3	594	378	242
X4	624	378	333
X5	739	418	333
X6	778	418	596
X7	909	468	449
X8	911	468	543

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