

VLT® Advanced Active Filter AAF 006

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



E-frame

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 extensive re-use of proven VLT® components and the modular construction ensures a high reliability and at the same time offers high 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 dismantling 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.

Voltage range

380 – 480 V AC 50 – 60 Hz

Current range

190 A, 250 A, 310 A, 400 A.

Up to 4 units can be paralleled for higher power.

Enclosure degree

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

Perfect

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

| Feature | Benefit |
|---|--|
| Reliable | Maximum uptime |
| <ul style="list-style-type: none"> - 100% factory tested - Coated PCBs - >90% components re-used from proven VLT® FC series | <ul style="list-style-type: none"> - Low failure rate |
| <ul style="list-style-type: none"> - Innovative cooling concept | <ul style="list-style-type: none"> - Prolonged lifetime of electronics |
| User-friendly and flexible | Saves commissioning and operating cost |
| <ul style="list-style-type: none"> - Innovative programming possibilities - Modular design | <ul style="list-style-type: none"> - Low running expenses - Easy serviceability |
| <ul style="list-style-type: none"> - Wide range of options | <ul style="list-style-type: none"> - Low initial investment - High degree of customisation |
| Energy saving | Lower operation costs |
| <ul style="list-style-type: none"> - High efficiency - Sleep mode and progressive switching freq. - Power factor correction | <ul style="list-style-type: none"> - Low running expenses |

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.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 | < 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 | Back-channel air cooling |

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

| Norms and recommendations | Compliance |
|-------------------------------------|--------------------------------|
| IEEE519 | Application 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 V AC (380 – 480 V AC) | | | | | |
|---------------------------|-------------------|-------------------|-------|---------------------------------------|-----------------|
| 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 | | | 498 [1096] |
| 400 | 400 | 360 | | | |

| 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 |