

Fact Sheet

# Danfoss Advanced Active Filter AAF 007 – the intelligent choice for harmonic mitigation



unmatched high efficiency and effective elimination of high-order harmonics. The filter is compatible for use with any drive from the entire Danfoss product portfolio.

### Plug and play

The filter is delivered pre-configured and tuned from factory, ready to use with the accompanying current transducers. When mains has no relevant resonances and filter is sized to given drive/load commissioning time is significantly reduced.

### Versatile

Suitable for central or decentral harmonic mitigation.

IP20 filters are flexible for integration in any enclosure with individual drives or at the connection point for central mitigation. IP54 filters are provided as fully integrated solution in a standard Rittal cabinet with central terminals for mains, control and communication, including the option of a touch panel to parametrize and monitor the filter.

### Talented

Enjoy harmonic mitigation, power factor correction and imbalance compensation, all in one product.

You can adjust the settings to your needs and put focus on the area that is important in your application.

Selective harmonic mitigation and automatic resonance detection ensure reliable operation tailored to your application requirements.

The Danfoss Advanced Active Filter AAF007 is designed to reduce harmonic distortion of Danfoss drives. The newest-generation SiC switches give

**60%**  
lower power losses  
compared to similar  
filters

Feature	Benefit
<b>Compact modular design</b> <ul style="list-style-type: none"> <li>– Low module weight</li> <li>– Uniquely compact</li> <li>– Parallel multiple modules in one product utilizing the same current measurements</li> </ul>	Reduces space requirement
<b>Easy serviceability</b> <ul style="list-style-type: none"> <li>– Few service parts</li> <li>– Easy exchange of modules due to low weight</li> <li>– Fast exchange of filter modules through Danfoss Service</li> </ul>	Reduces service time and cost
<b>Resonance control</b> <ul style="list-style-type: none"> <li>– Automatic detection of resonances</li> <li>– Adaptation of switching frequency allows continuous operation without shutdown</li> </ul>	Improves uptime
<b>Versatile: One product manages 3 power quality challenges</b> <ul style="list-style-type: none"> <li>– Focus on current harmonic mitigation, load balancing, power factor correction or all simultaneously</li> <li>– Possible focus on individual harmonics mitigation</li> </ul>	Fewer components required, reduces complexity
<b>Efficient operation</b> <ul style="list-style-type: none"> <li>– Lower running expenses</li> <li>– Longer lifetime of unit</li> <li>– High robustness in harsh environments</li> </ul>	Reduces total cost of ownership
<b>Simple commissioning</b> <ul style="list-style-type: none"> <li>– Plug and play with delivered current transducer from factory in resonant free supply grid and matched load</li> <li>– Easy optional parametrizing via PC software and RS485</li> </ul>	Get up and running fast

## Setup software

Danfoss AAF 007 Setup Tool offers monitoring of the power network quality and adjustment to Danfoss Advanced Active Filter AAF 007 parameters.

Application specifics like sensor location and current transducer setup, but also compensation priority and compensation force can be adjusted.

## Validation of harmonic compliance

Use the MyDrive® Harmonics tool to determine whether harmonics will be an issue in your installation, when drives are installed. MyDrive® Harmonics shows you the benefits of employing harmonic mitigation solutions from the Danfoss product portfolio and calculates system harmonic distortion. Furthermore, the software gives you a quick indication of whether the installation complies with the most recognized harmonic norms and recommendations.

To find all software tools, go to MyDrive® Suite:  
<http://mydrive.danfoss.com/>

## Retrofit without dismantling existing installation

Danfoss Advanced Active Filters are easily retrofitted to existing installations, where harmonics are increased due to use of additional non-linear loads such as variable speed drives.

## Specifications

Mains voltage (L1, L2, L3)	
Voltage range	3 x 380-480 V AC
Current ratings	35 A/55 A/100 A/150 A modules
Supply frequency	50/60 Hz ±2%
Network	3-phase, 4 wire <sup>1)</sup> 3-phase, 3 wire
Compensation	Harmonic mitigation 2 <sup>nd</sup> to 60 <sup>th</sup> order Power factor correction Imbalance compensation
Current transducer (CT) accuracy	0.5 or better
Standard and requirements	<b>Modules</b> UL 508 EN IEC 62477-1:2012/A1:2017 EN IEC 61000-6-2:2019-11 EN IEC 61000-6-4:2020-09 IEEE 519-2022 <b>Cabinets</b> EN IEC 61439-1:2021
Switching frequency	40 kHz – 60 kHz
Efficiency	
Power loss	556 W (35 A) 833 W (55 A) 1283 W (100 A) 2120 W (150 A)
Current rating	
Rating	35 A/55 A /100 A/150 A
Maximum rating	600 A (4 filter modules with 150 A)
Communication interface	
PC communication	RS485 based
System communication	Modbus RTU
Environmental conditions and built-in options	
Enclosures (side-by-side mounting)	IP20: 35 A – 600 A IP54: 100 A – 600 A
Ambient temperature	40 °C without derating
Humidity	5-95% (non-condensing) during operation
Altitude	<1000 m, derating 5%/1000 m, max 4000 m
Built-in options	Contactors for modules in IP54 cabinet

<sup>1)</sup> IP20 enclosure only

**>98.2%**

Filter efficiency  
using advanced  
SiC technology