

## DPQFm-150-480-50/60-20-A

### Main

Product type	150Amp Active harmonic filter modules for reduction of the harmonic distortion of non linear loads. SiC-Power MOSFET's and Schottky Diodes allows for very high efficiency and also enables switching frequency of 50kHz, which results in efficient reduction of high harmonics. This filter can reduce the THD of the current to <5% depending on the load.
Type code	DPQFm-150-480-50/60-20-A
Topology	SiC-Power MOSFET's and Schottky Diodes
Control Methodology	Open or Closed loop
Supply voltage	3 phase, 3 or 4 wire. 380 - 480 (+10%/ -15%) 50Hz/60Hz (+/- 2%)
Compensation	Harmonic Mitigation of 2nd to 60th order harmonics Power Factor Correction (Lead & Lag) Imbalance compensation
Rated current	150A (combined compensation current)
Typical VSD Rating	280kW (from 35% to <5% THID @400V)
CT accuracy	0.5 or higher
Standards and requirements	IEC/EN 61000-2-2 / -4 IEC/EN 61000-3-2 / -4 / -12 EN 50160 IEEE 519-2022 ENA ETR G5/5
Humidity	5....95% - (non-condensing) during operation
Ambient temp.	min. -10°C (14°F) max. 40 °C (104°F) derating above 40°C (104°F): >40°C <45°C = 10%                      ≥45°C <50°C = 20% ≥50°C <55°C = 30%                      ≥55°C = 100% (off)
Altitude	<1000m derating above 1000m: -5%/1000m (up to 4000m)

### specific data

Power loss	2120W
Efficiency	98.3%
Sys. Efficiency	>99,4% (for 280kW drive rating)
Weight	33kg

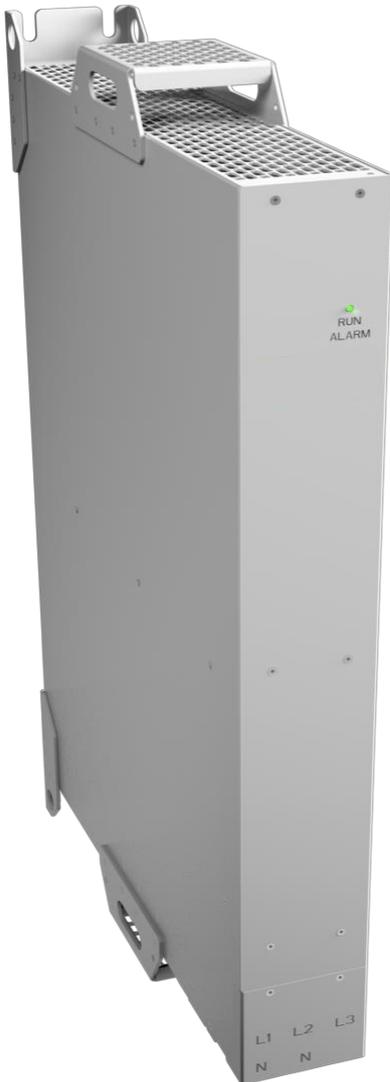
### Electrical connections, controls and auxiliary supply

Main supply - See connection diagram below

Control	RS485 PC control, USB, Free configuration & monitoring software
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### Other Ratings Available

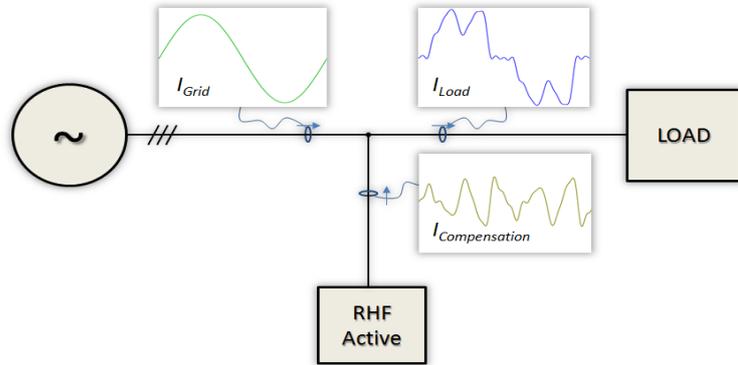
15Amps, 35Amps, 55Amps, 100Amps or multiples thereof including mixed ratings



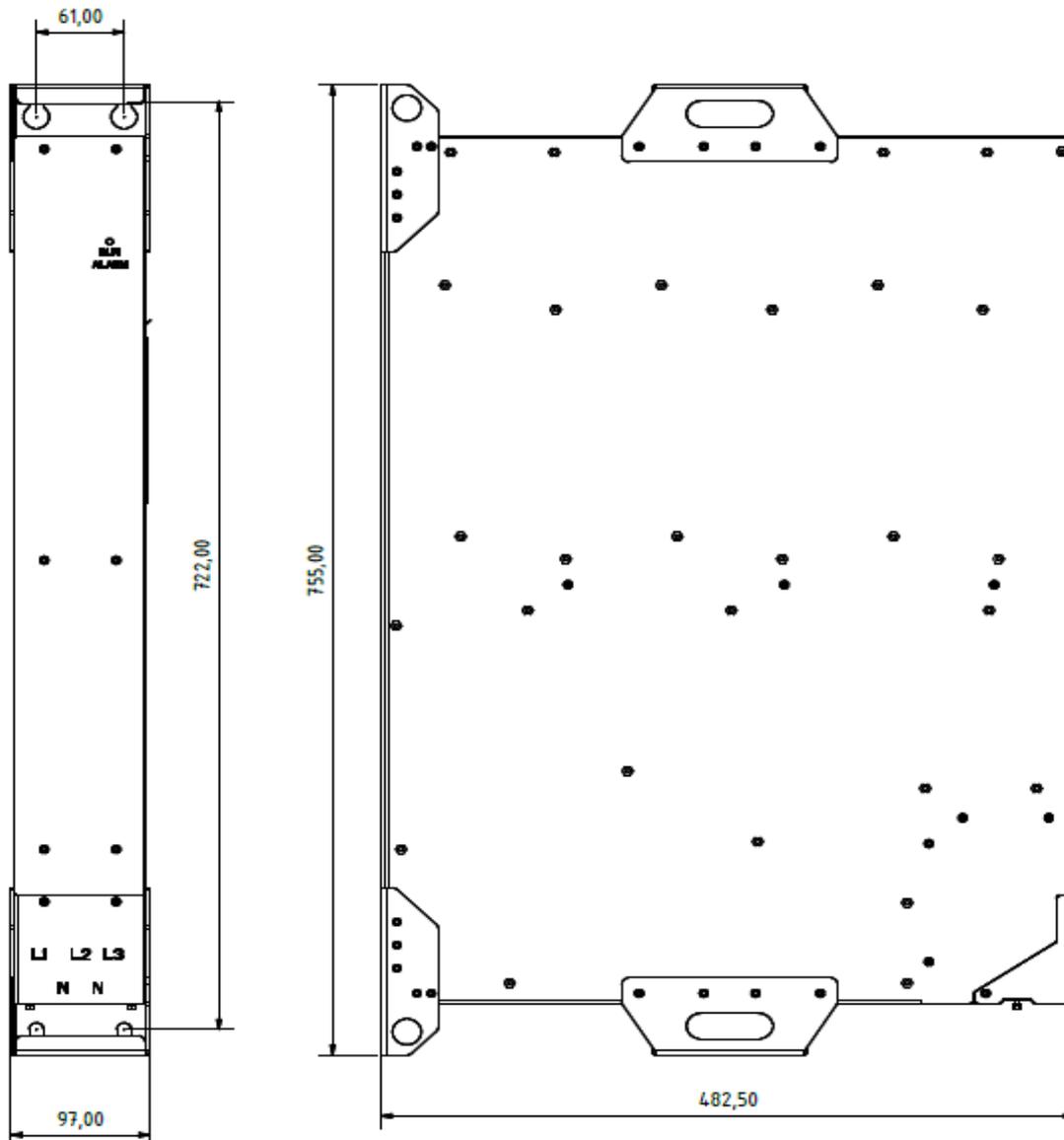
## Working principle RHF-Active

Active Harmonic Filters are parallel filter circuits injecting harmonics into the supply. These Harmonics are phase shifted by  $180^\circ$  compared to the harmonics in the load. Therefore, the injected Harmonics reduce the total Harmonics seen from the mains supply. The following diagram helps to clarify the principle.

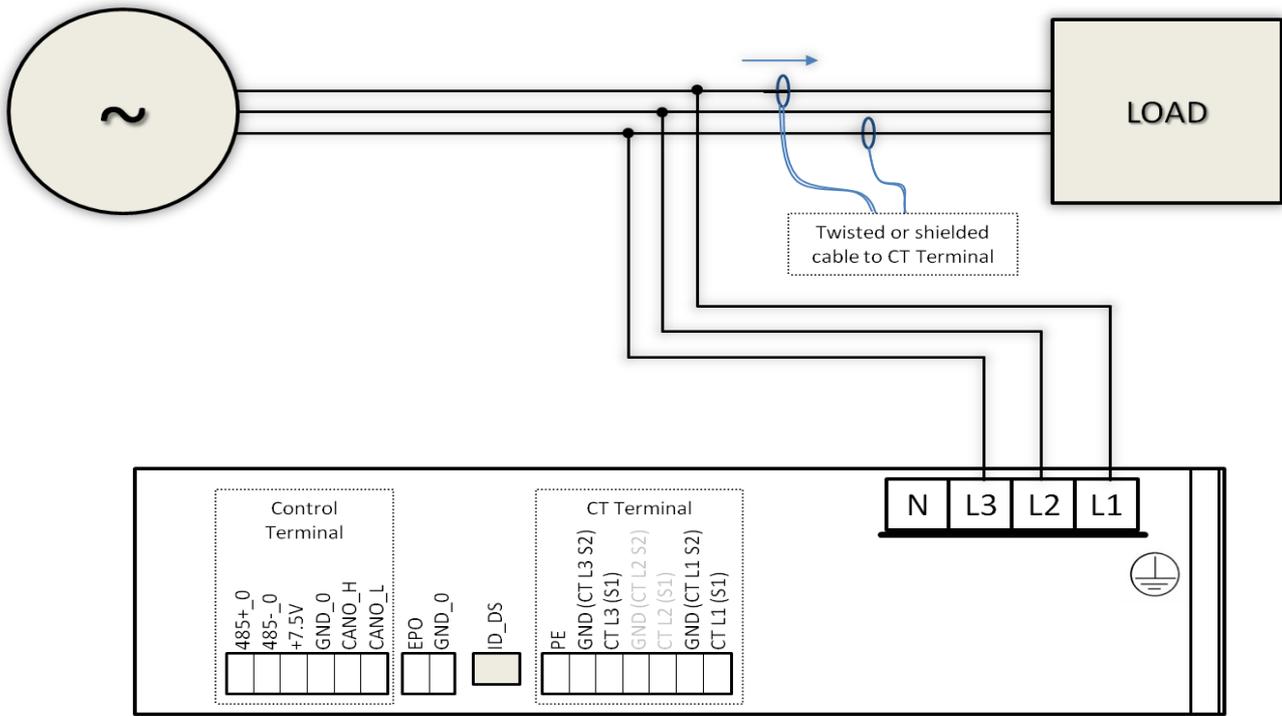
The DPQFm unit, does not require any expensive commissioning on site. After power up, the unit can self commission in order to reach the best possible performance, but of course individual settings are also possible. Beside harmonic mitigation of harmonics from the 2nd to 60th order, the DPQFm offers additional compensation functions such as power factor correction and imbalance compensation.



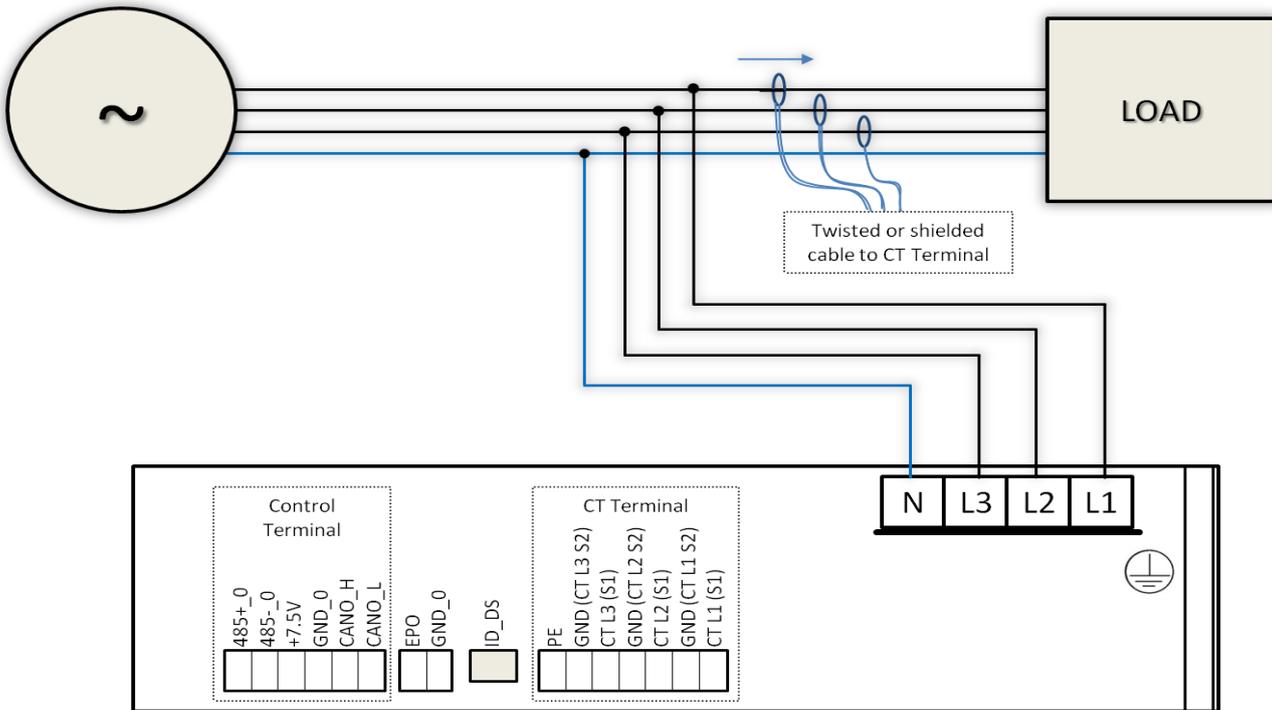
## Physical dimensions DPQFm-150-480-50/60-20-A



### Wiring Principle 3P3W



### Wiring Principle 3P4W



## Product Overview

General Data	
Mains voltage	380-480V (+10% / -15%)
Network type	3 phase with/ without neutral 3P4W/3P3W
Nominal current	150 A
Colour	White
Electrical data	
Mains frequency	50Hz / 60Hz ( $\pm 5$ Hz)
Harmonic compensation	1st - 60th Harmonics individually selectable and scaleable
Response time	20 $\mu$ s
Full Compensation time	5ms
Filter performance	>96%
Switching frequency	40kHz-60kHz, typical 50kHz
Technology	Advanced SIC
System topology	Two level topology
Function	Harmonic compensation, power factor correction, three phase balancing
User-Interface & Remote monitoring	
HMI	External - if required
Communication protocol	RS485
PC-Software	V3.2.3
Efficiency	
$\eta$	>98.3%
Power loss (100% load)	2120W
Installation / Configuration	
Noise	<60db
Current transformer ratio	5/5~10000/5
Cooling	Forced air cooling
Air flow requirement	>160m <sup>3</sup> /h
Mounting	Wall or panel mounted
Parallel configuration	Unlimited
Extensions	Modules in parallel
Protection level	IP20
Cable entering	bottom
RFI level	class A
Environmental	
Ambient temperature	-10 $^{\circ}$ C~40 $^{\circ}$ C
Temperature-Derating	Derating above 40 $^{\circ}$ C (10%/5K)
Maximum temperature	50 $^{\circ}$ C
Relative Humidity	5%~95% Class F without condensation
Altitude	below 1000m
Altitude Derating	above 1000m (5%/1000m to 4000m)
Weight, Dimensions	
Weight	33kg
Dimensions W*D*H(mm)	97*482*755
Certifications	
Certifications	CE,UL (in progress)
Transport/Storage	
Ambient temperature (Transport)	-25 $^{\circ}$ C~+70 $^{\circ}$ C (following DIN EN 50178)
Ambient temperature (Storage)	-25 $^{\circ}$ C~+55 $^{\circ}$ C (following DIN EN 50178)