



Optimizing your drive!

## RHF-8P XXX-600-60-YY-Z



### Main

Product type	The REVCON Harmonic Filter - RHF-5P - reduces the THDi of nonlinear loads from typically 35% to significantly below 5% even under realistic ambient conditions. Due to the use of a two-stage filter module, the RHF is able to achieve a significant higher efficiency and a smooth damping across the full harmonic spectrum.	
Performance	8P = <8% THDi	
Motor Power [XXX]	11kW - 900kW	
Degree of Protection [YY] and design [Z]	C = Compact: 11kW - 355kW (IP20) S = Split: 400kW - 900kW panel mount design (IP00). E = Enclosed: 400kW - 900kW panel mount (var. IP ratings)	
Design	High efficient two-stage filter (no RC damping)	
Supply voltage	UL=600V (+10% / -15%)      CE=690V (+10% / -15%) 60Hz (+/- 2%)	
Power factor	1 at nominal power	
Overload	1.5	
Efficiency	>98.4% - 99.4% (efficiency depend on rating and load)	
Standards and requirements	IEC/EN 61000-2-2 / -4 IEC/EN 61000-3-2 / -4 / -12 IEEE 519-2014 Engineering Recommendation G5-5	
Humidity	Humidity class F without condensation 5.....85% - Class 3K3 (non-condensing) during operation	
Ambient temp.	min. 5°C (41°F)    max. 45 °C (113°F) derating above 45°C (113°F) = -1.5%/K (up to 60°C (140°F))	
Altitude	<1000m derating above 1000m: -5%/1000m (up to 4000m)	

### Applications

- Water and wastewater treatment
- HVAC / Pumps and Fans (VFD)
- Industrial/ Factory Process (VFD)
- DC charger
- Buildings / IEEE 519-2014 requirement
- Marine
- Symetrical load multiple VFD



General Industry



Marine



Oil & Gas



Water Treatment



Data Center

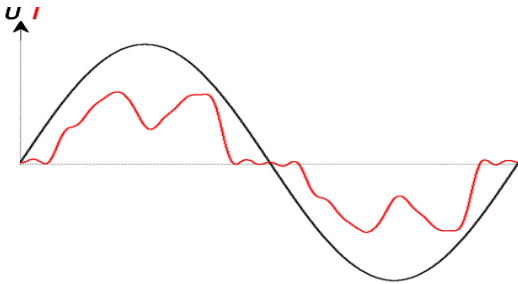


Buildings

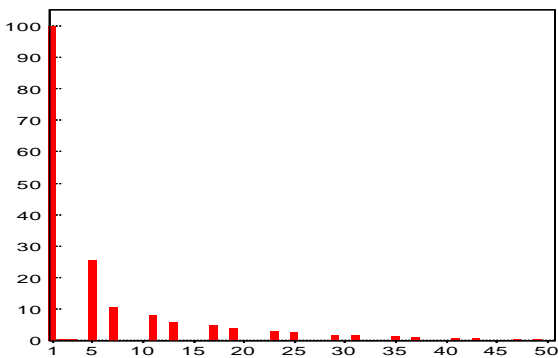
## Harmonic current on standard 6-Pulse VFD

Systems with significant part of non linear loads will cause harmonic distortion on the voltage supply, which may damage equipment and supply transformer. REVCON Harmonic Filter – RHF - reduces the THDi of nonlinear loads from typically 35% to significantly below 5% (RHF-5P) or below 8% (RHF-8P) even under realistic ambient conditions.

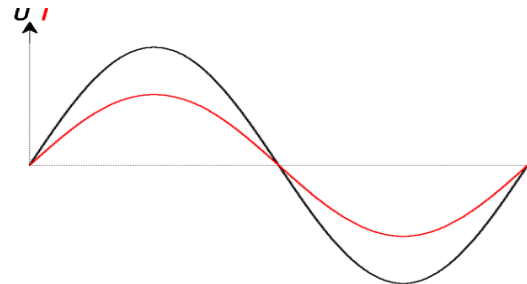
Due to the use of a two-stage filter module, the RHF is able to achieve a significant higher efficiency and a smooth damping across the full harmonic spectrum.



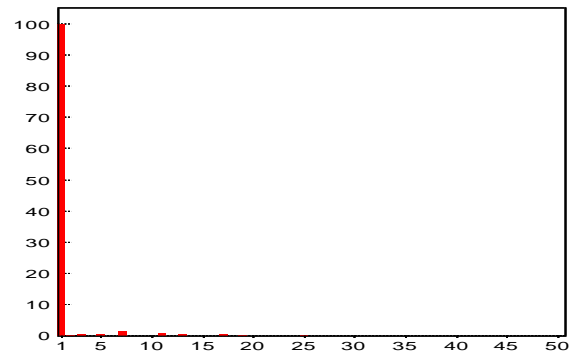
Typical input current shape when using a standard 6-pulse drive



Typical harmonic current spectrum when using a standard 6-pulse drive with DC-Choke



Typical input current shape when using a standard 6-pulse drive with RHF harmonic filter



Typical harmonic current shape when using a standard 6-pulse drive with RHF-5P

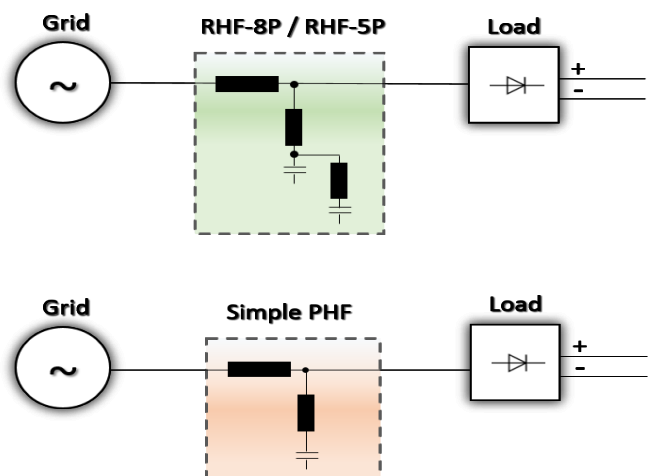
## Working Principle RHF-5P - REVCON Passive Harmonic Filter

The following pictures describe the RHF-5P hardware configuration. Instead of using a simple drain circuit (Simple PHF) for the 5th Harmonic, the RHF-5P use a two-stage filter which enables the following advantages:

**1. Performance:** The RHF is designed to reach its stated performance in the field and not defined for unique simulated conditions. The double stage filter offers a smooth damping of all Harmonics, instead of focusing on the 5th Harmonic.

**2. Full Drive Power:** The RHF allows for 100% DC Bus voltage at 100% drive load. This avoid further calculations and de-rating of the drive. (Drives connected to Simple Harmonic Filter may have up to 7% lower power ratings)!

**3. Efficiency:** Simple Harmonic Filter may add RC circuits in order to reach specified performance which leads to a significant lower efficiency. The RHF-5P double stage harmonic filter cause up to 70% less power loss than comparable <5% THDi solutions.



Available size for 3 Phase supply / 600V / 60Hz / 8% THDi

Revcon Filter RHF-5P	Order code	Input current [A]	max current [A]	Motor size*	Filter encl.	Weight [kg]	Power- loss [W]
RHF-8P 11-600-60-20-C	25001205	15	23	11kW	X3	25	194
RHF-8P 15-600-60-20-C	25001206	18	27	15kW	X3	36	198
RHF-8P 18.5-600-60-20-C	25001207	20	30	18.5kW	X3	36	203
RHF-8P 22-600-60-20-C	25001208	24	36	22kW	X3	40	212
RHF-8P 30-600-60-20-C	25001209	36	54	30kW	X4	52	322
RHF-8P 37-600-60-20-C	25001210	40	60	37kW	X5	56	328
RHF-8P 45-600-60-20-C	25001211	50	75	45kW	X5	56	344
RHF-8P 55-600-60-20-C	25001212	58	87	55kW	X5	62	398
RHF-8P 75-600-60-20-C	25001213	77	116	75kW	X6	74	458
RHF-8P 90-600-60-20-C	25001214	109	164	90kW	X6	105	713
RHF-8P 110-600-60-20-C	25001215	128	192	110kW	X6	123	834
RHF-8P 132-600-60-20-C	25001216	155	233	132kW	X7	136	845
RHF-8P 160-600-60-20-C	25001217	170	255	160kW	X7	142	860
RHF-8P 185-600-60-20-C	25001218	197	296	185kW	X7	142	892
RHF-8P 200-600-60-20-C	25001219	210	315	200kW	X7	163	975
RHF-8P 220-600-60-20-C	25001220	240	360	220kW	X7	163	1115
RHF-8P 250-600-60-20-C	25001221	260	390	250kW	X8	205	1175
RHF-8P 280-600-60-20-C	25001222	296	444	280kW	X8	205	1228
RHF-8P 315-600-60-00-S	25001223	366	549	315kW	X8	228	1482
RHF-8P 355-600-60-00-S	25001224	394	591	355W	X8	261	1792
RHF-8P 400-600-60-00-S	25001225	420	630	400kW	**	***	2010
RHF-8P 450-600-60-00-S	25001226	480	720	450kW	**	***	2135
RHF-8P 500-600-60-00-S	25001227	520	780	500kW	**	***	2260
RHF-8P 560-600-60-00-S	25001228	575	863	560kW	**	***	2305
RHF-8P 630-600-60-00-S	25001229	650	975	630kW	**	***	2470
RHF-8P 710-600-60-00-S	25001230	720	1080	710kW	**	***	2922
RHF-8P 800-600-60-00-S	25001231	830	1245	800kW	**	***	3050
RHF-8P 900-600-60-00-S	25001232	960	1440	900kW	**	***	3720

\*The corresponding motor size listed in this file is based on the following technical specification:  
Motor is IE3 6-Pol or lower. VFD efficiency is 97% or higher and have internal DC-Choke of 3% or higher.

\*\* Split range (design for Panel installation) includes separate line choke and filter circuit. Design is to meet 600mm or 800mm wide Panel. Drawings on request.

\*\*\* Split range (design for Panel installation) includes separate line choke and filter circuit. Individual weight depend on required options and setup.

## Overview enclosure size

Enclosure Size	Height A [mm]	Width B [mm]	Depth C [mm]	Height MH [mm]	Width MW [mm]	Mount MS [mm]
X0	285	71	265	273	50	5.5
X1	322	196	205	278	163	6.8
X2	454	232	248	382	205	6,8
X3	592	378	245	523	353	9
X4	621	378	338	554	353	9
X5	736	418	333	661	392	9
X6	764	418	405	661	392	9
X7	957	468	451	780	443	9
X8	957	468	515	780	443	9

