



Optimizing your drive!

RHF-8P XXX-380-60-YY-Z



Main

Product type	The REVCON Harmonic Filter - RHF-5P - reduces the THDi of nonlinear loads from typically 35% to below 8% 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]	4kW - 630kW
Degree of Protection [YY] and design [Z]	C = Compact: 4kW - 280kW (IP20) S = Split: 315kW - 630kW panel mount design (IP00). E = Enclosed: 315kW - 630kW panel mount (var. IP ratings)
Design	High efficient two-stage filter (no RC damping)
Supply voltage	3 • 380-415V (+10% / -15%) 60Hz (+/- 2%)
Power factor	1 at nominal power
Overload	1.5
Efficiency	>98.8% - 99.6% (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



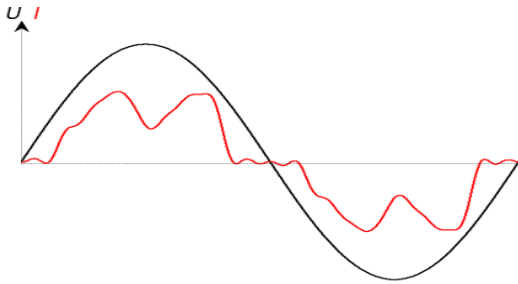
Data Center



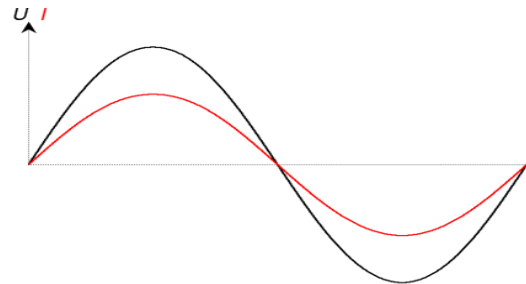
Buildings

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.

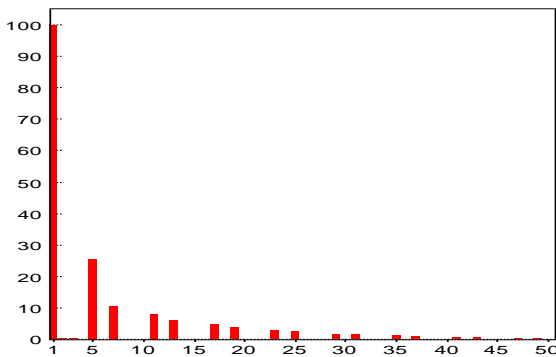
Due to the use of a two-stage filter module, the RHF is able to achieve a significant higher efficiency and a smooth damping across the full harmonic spectrum.



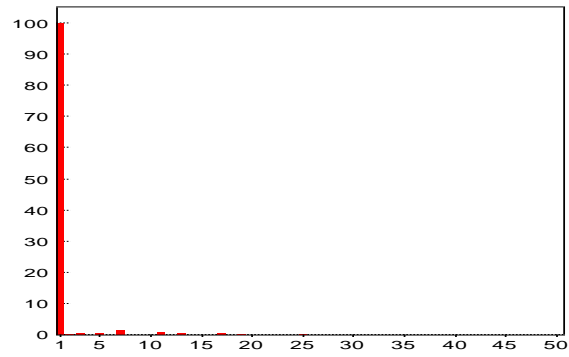
Typical input current shape when using a standard 6-pulse drive



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



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



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

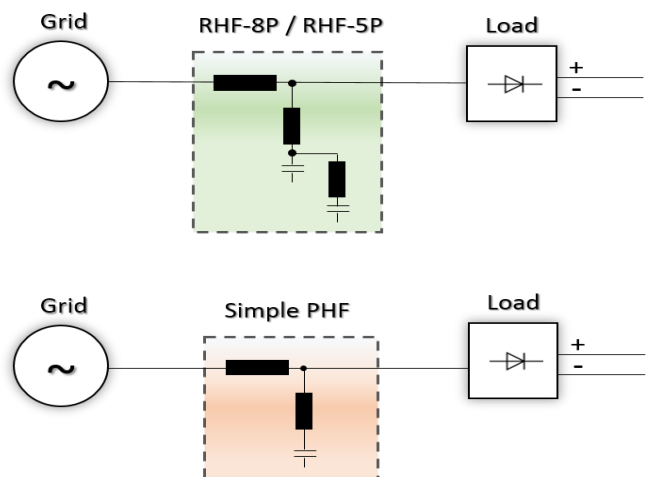
Working Principle RHF-8P - REVCON Passive Harmonic Filter

The following pictures describe the RHF-8P hardware configuration. Instead of using a simple drain circuit (Simple PHF) for the 5th Harmonic, the RHF-5P and RHF-8P 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 / 380V / 60Hz / 8% THDi

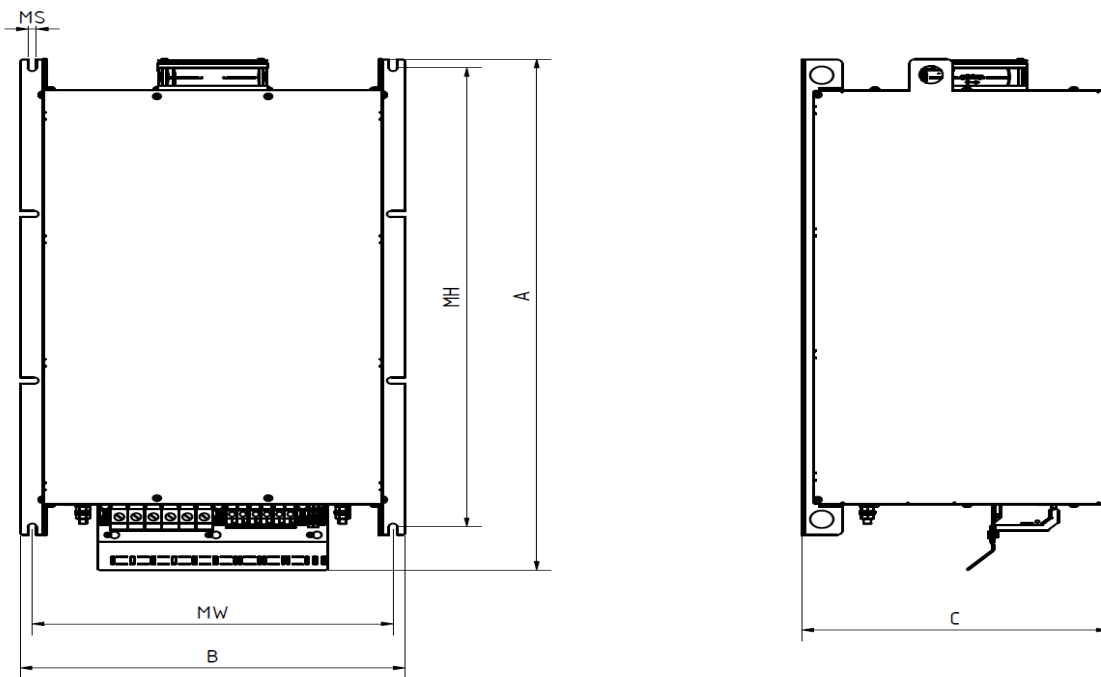
Compact range - All filter components combined in one enclosure							
Revcon Filter RHF-5P	Order code	Input current [A]	max current [A]	Motor size*	Filter encl.	Weight [kg]	Power- loss [W]
RHF-8P 4.0-380-60-20-C	25001102	7.3	11	4.0kW	X1	14	82
RHF-8P 5.5-380-60-20-C	25001103	10	15	5.5kW	X1	14	93
RHF-8P 7.5-380-60-20-C	25001104	14	21	7.5kW	X1	15	103
RHF-8P 11-380-60-20-C	25001105	22	33	11kW	X2	21	191
RHF-8P 15-380-60-20-C	25001106	27	41	15kW	X2	24	209
RHF-8P 18.5-380-60-20-C	25001107	32	48	18.5kW	X3	33	203
RHF-8P 22-380-60-20-C	25001108	38	57	22kW	X3	37	212
RHF-8P 30-380-60-20-C	25001109	52	78	30kW	X3	39	244
RHF-8P 37-380-60-20-C	25001110	63	95	37kW	X4	44	322
RHF-8P 45-380-60-20-C	25001111	76	114	45kW	X4	56	354
RHF-8P 55-380-60-20-C	25001112	92	138	55kW	X5	62	398
RHF-8P 75-380-60-20-C	25001113	125	188	75kW	X5	74	458
RHF-8P 90-380-60-20-C	25001114	150	225	90kW	X6	85	662
RHF-8P 110-380-60-20-C	25001115	182	273	110kW	X6	102	713
RHF-8P 132-380-60-20-C	25001116	217	326	132kW	X7	119	804
RHF-8P 160-380-60-20-C	25001117	262	393	160kW	X7	136	822
RHF-8P 185-380-60-20-C	25001118	304	456	185kW	X7	142	845
RHF-8P 200-380-60-20-C	25001119	328	492	200kW	X7	163	892
RHF-8P 220-380-60-20-C	25001120	360	540	220kW	X7	172	1115
RHF-8P 250-380-60-20-C	25001121	410	615	250kW	X8	205	1265
RHF-8P 280-380-60-20-C	25001122	460	690	280kW	X8	205	1420

Split range - Filter consisting of line choke and filter enclosure X9-X11								
Revcon Filter RHF-5P	Order code	Input current [A]	max current [A]	Motor size*	Filter encl.	Weight		Power- loss [W]
						Filter Modul [Kg]	line inductor [Kg]	
RHF-8P 315-380-60-00-S	25001123	520	780	315kW	X9	170	100	1430
RHF-8P 355-380-60-00-S	25001124	600	900	355kW	X10	240	125	1650
RHF-8P 400-380-60-00-S	25001125	650	975	400kW	X10	240	130	1780
RHF-8P 450-380-60-00-S	25001126	720	1080	450kW	X10	270	140	2015
RHF-8P 500-380-60-00-S	25001127	830	1245	500kW	X10	270	150	2149
RHF-8P 560-380-60-00-S	25001128	920	1380	560kW	X10	315	160	2323
RHF-8P 630-380-60-00-S	25001129	1030	1545	630kW	X10	315	190	2625

*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.

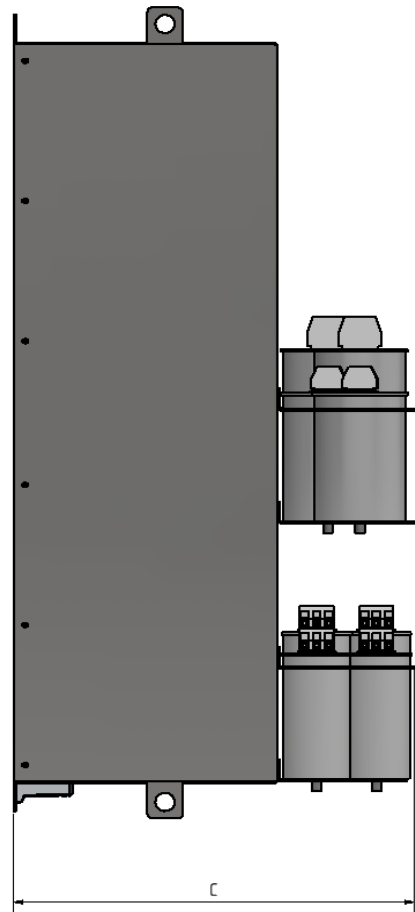
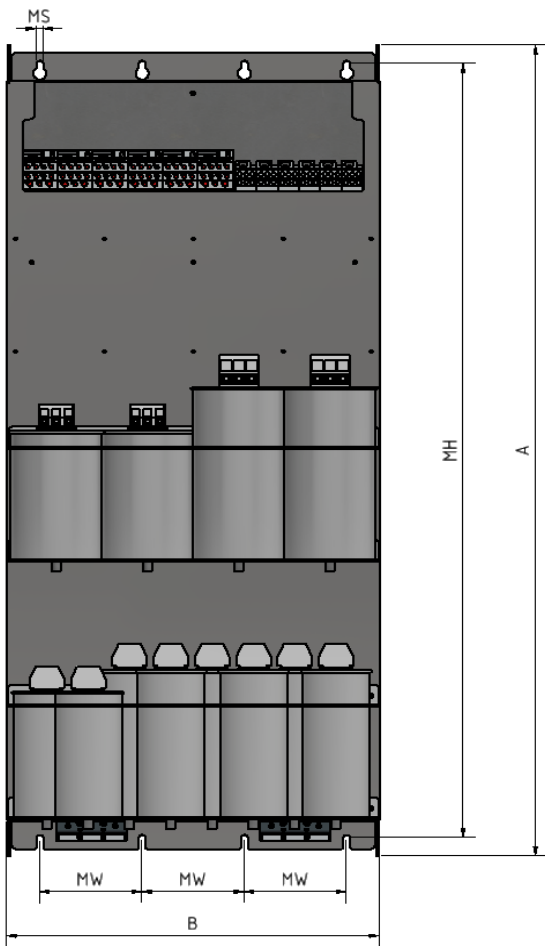
Overview enclosure size compact execution

Enclosure Size	Height A [mm]	Width B [mm]	Depth C [mm]	Height MH [mm]	Width MW [mm]	Mount MS [mm]
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



Overview enclosure size separate execution

Enclosure Size	Height A [mm]	Width B [mm]	Depth C [mm]	Height MH [mm]	Width MW [mm]	Mount MS [mm]
X9	1100	274	510	1052	211	9
X10	1100	474	510	1050	130	9
X11	1100	674	510	1050	200	9



Overview line inductor size separate execution

line inductor type	Width A [mm]	Height B [mm]	Depth 1 C [mm]	Depth 2 D [mm]	bus bars MH E [mm]	Width MW F [mm]	depth MW G [mm]	bus bars MW H [mm]	Mount MS I/J [mm]
RHF-8P 315-380-60-00-S	420	370	223	340	230	370	181	140	14
RHF-8P 355-380-60-00-S	420	370	253	370	230	370	211	140	14
RHF-8P 400-380-60-00-S	420	370	253	370	230	370	211	140	14
RHF-8P 450-380-60-00-S	480	420	250	370	260	430	210	160	14
RHF-8P 500-380-60-00-S	480	420	265	385	260	430	225	160	14
RHF-8P 560-380-60-00-S	480	420	280	400	260	430	240	160	14
RHF-8P 630-380-60-00-S	480	520	300	420	340	430	260	160	14

