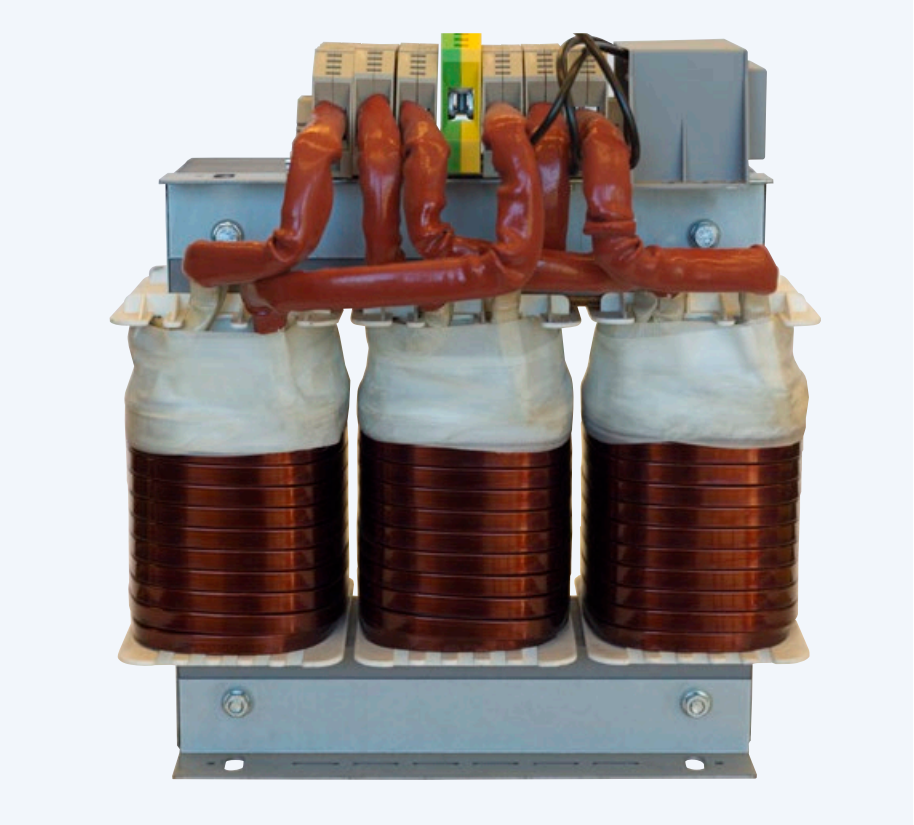
SINE-WAVE FILTERS

Protects from voltage spikes and
extends the life of your motor



Protects from voltage spikes and extends the life of your motor.

Rapidly switching components combined with long cables and high impedance motors cause voltage reflections. This leads to higher voltages at the motors and faster changes in the voltage levels (du/dt). This causes the motors lifespan to shorten.

With a sine-wave filter you can protect your variable frequency drive operated electric motor from over-voltages and rapid changes.

Features and benefits.

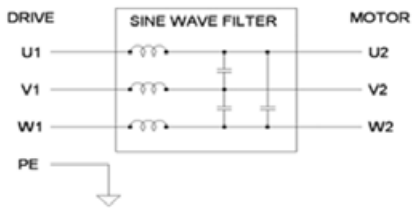
- Smooth sine-wave without hazardous voltage peaks and lower residual ripple
- Perfect motor protection. Reduces bearing currents and allows longer cable lenghts
- With a sine-wave filter you can protect your variable frequency drive operated electric motor from over-voltages and rapid voltage changes
- Wall-mount enclosures available for different IP-classes like IP21, IP23, IP34
- UL-listed materials
- Standards: EN 61558-2-20

Filter series standard features:

Line voltage	400 ... 480 V
Motor frequency	0...70 Hz
Switching frequency	4...16 kHz
Max. motor cable length	500 m*
Impedance (uk)	10 % @ IN, 400V & 50Hz
Insulation voltage	3000 V
Thermal insulation class	F/H
Protection index	IP00, IP23, IP34 (up to 42A)
Design corresponding to	IEC/EN 61558-2-20

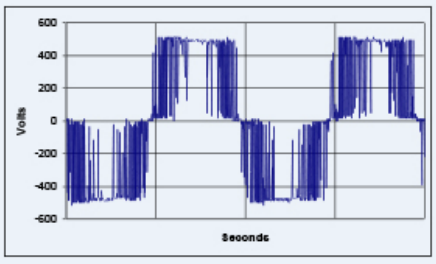
*Depends on motor and switching frequencies, cable type and system stray parameters.

Electrical Schematic



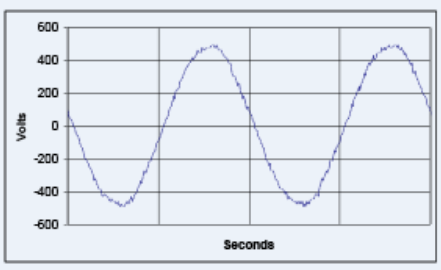
Problem and our solution

The current waveform from the frequency converter is almost sinusoidal but the voltage waveform is distorted.



Picture 1. Voltage of the motor without a filter (fs = 8 kHz, lcable = 100 m & Pmotor = 15 kW).

With a sine-wave filter the output phase to phase voltages and currents are sinusoidal. This reduces the losses in the motor and protects it against voltage spikes, prolonging its lifetime.



Picture 2. Voltage of the motor with a sine wave filter. (fs = 8 kHz, lcable = 100 m & Pmotor = 15 kW).

Filter selection table

Sine Wave Filter

Product code	Rated current	L[mH]	C[µF]	Losses [W] @ In 50Hz	Drawing	H [mm]	W [mm]	w [mm]	D [mm]	d [mm]	Ø [mm]	Terminal [mm2]	Weight [kg]
04-29780	2,5	22,4	3,3 / y	15	Fig.1	113	96	50	92	34	4,5x8,5	4	1
04-29848	4,5	11	3,3 / y	25	Fig.1	113	96	50	101	43	4,5x8,5	4	1,5
04-29849	6,5	9	3,3 / y	38	Fig.1	134	120	65	108	51	5x10	4	2,3
04-29850	8	7,2	3,3 / y	32	Fig.1	134	120	65	108	51	5x10	4	2,5
04-29851	10	5,8	3,3 / y	45	Fig.1	149	150	80	107	49	5x10	4	4
04-29853	13	4,5	3,3 / y	45	Fig.1	149	150	80	122	64	5x10	4	5,5
04-29739	18	3,5	4,7 / y	67	Fig. 2	210	220	190	130	58	8,5x18	10	7
04-29740	24	2,4	4,7 / y	55	Fig. 2	210	220	190	150	78	8,5x18	10	9,5
04-29741	32	2	5,6 / y	110	Fig.1	255	230	173	125	64	8,5x18	16	16,5
04-29854	42	1,7	5,6 / y	130	Fig.1	255	230	173	148	88	8,5x18	16	20,5
04-29855	48	1,5	10 / y	135	Fig. 3	295	265	190	132	74	8,5x18	16	22,5
04-29770	60	1,1	10 / y	140	Fig. 3	295	265	190	158	100	8,5x18	35	31,5
04-29806	66	1	10 / y	150	Fig. 3	295	265	190	158	100	8,5x18	35	32
04-29856	75	0,9	10 / y	195	Fig. 3	325	300	220	140	82	8,5x18	35	32
04-29765	90	0,8	10 / y	265	Fig. 3	325	300	220	165	107	8,5x18	35	42,5
04-32519	150	0,5	8,5 / Δ	365	Fig. 4	425	365	264	225	124	10x18	95	45
04-32520	180	0,45	15 / Δ	435	Fig. 4	425	365	264	225	139	10x18	95	60
04-32521	210	0,4	15 / Δ	525	Fig. 4	450	425	316	225	147	12x18	95	75
04-32522	250	0,33	15 / Δ	580	Fig. 4	450	425	316	240	177	12x18	95	100

Fig. 1

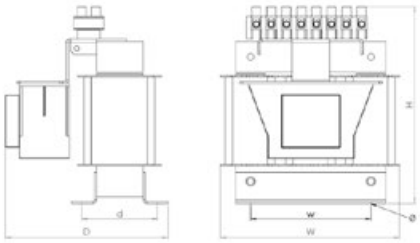


Fig. 2

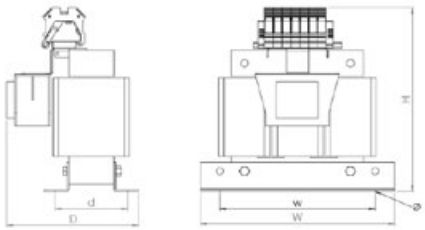


Fig. 3

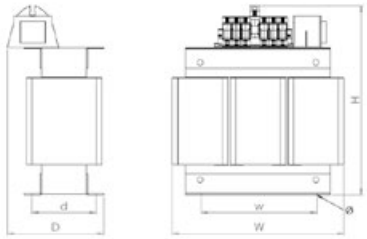
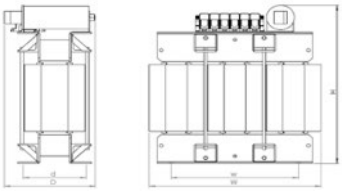


Fig. 4



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