

This method significantly increases the service life of the motor bearings ...

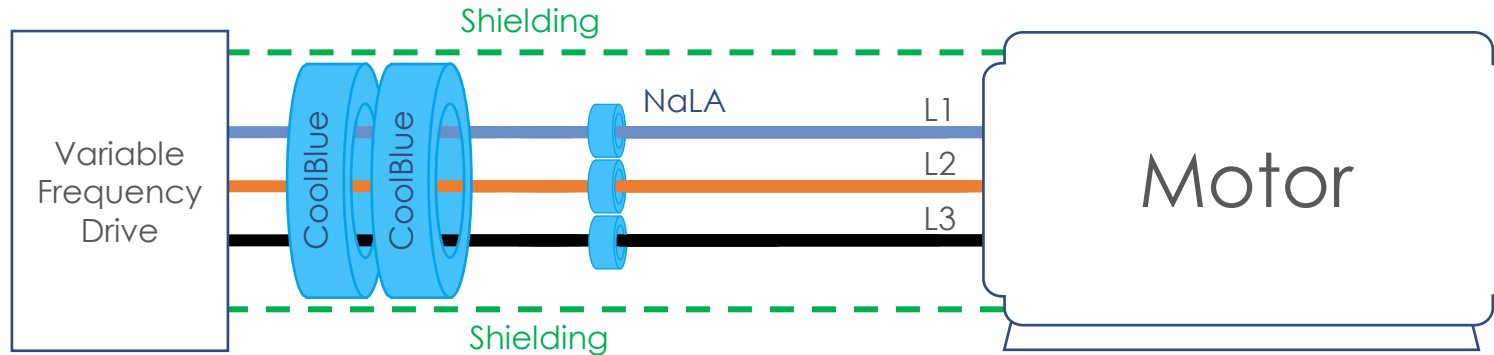
...and thus reduces maintenance costs and standstill periods.

Advanced reduction of noise and bearing currents in motor-inverter systems

Easy to install and to retrofit

Typical applications:
Pumps, fans, wind turbines, trains, mills

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High frequency common mode currents leading to electrical breakdown in the lubrication of the motor bearings and are causing additional maintenance costs. The Magnetec Nanoperm CoolBlue line made of nanocrystalline material Nanoperm is being used to reduce damaging motor bearing currents in inverter – motor systems. The CoolBlue cores are used for suppressing the common mode EMI noise generated by the frequency converters. In order to achieve an efficient reduction of these destructive effects, CoolBlue cores have to be placed over the connector cables (without N and PE) in the DC-link or at the inverter output. In this configuration, the cores operate as a common-mode choke.

CoolBlue Selection Guide

Kilowatt	≤ 0,7	≤ 7,5	≤ 30	≤ 75	≤ 315	≤ 1.200	> 1.200
Part No oval	n/a	M-049	M-049	M-283	M-302	M-111	M-248
Part No round	M-923	M-967	M-967	M-113	M-116	M-117	M-205
Isat*/Apk N=1	2	4	4	6	12	16	22
Turns [N]	2	2	1	1	1	1	1
Cable length	50m	2	2	4	4	4	4
up to	100m	4	4	4	4	4	4
	200m	4	4	6	6	6	6
	300m	4	4	6	6	6	6

Only for information, no guaranteed values . For all information no liability assumed. *Isat: "Quasi Saturation Current" @ B = 1,0 T / μ_{nom} / N = 1
Saturation Current Isat of NANOPERM®: Peak value of the exiting current when the initial inductance level is dropped to 10 per cent, see www.magnetec.de ; oval: stadium shape

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Types	Nominal dim. [mm] do x di x h	Finished dim [mm] Do _{max} xDi _{min} xH _{max}	AI [uH] @ 10kHz	AI uH] @ 100kHz	Lfe [cm]	Afe [cm ²]	Isat* [Apk]
M-923	30 x 20 x 10	32,7 x 17,8 x 12,6	13,6 – 27,2	>6,70	7,8	0,36	2,0
M-967	50 x 40 x 20	53,4 x 36,6 x 23,5	10,4-20,8	>7,30	14,1	0,73	4,5
M-049	50 x 40 x 20	oval:60,7/40,7x42,7/24,8x22,3	12,6 – 28,4	>6,30	14,1	0,8	3,5
M-112	63 x 50 x 30	68 x 43 x 36	23,3 – 46,6	>11,0	17,7	1,44	4,5
M-649	63 x 50 x 30	oval:82,8/45,5x57,5/20,6x33	23,3 – 46,6	>11,0	17,7	1,44	4,5
M-378	75 x 50 x 30	80 x 43 x 36	37,3 – 74,6	>18,5	19,4	2,78	5,0
M-113	80 x 63 x 30	85 x 57 x 35,5	24,1 – 48,2	>12,0	22,4	1,86	6,0
M-283	80 x 63 x 30	oval: 101/62x68/28x37	24,1 – 48,2	>12,0	22,4	1,86	6,0
M-114	100 x 80 x 30	105 x 75 x 35	22,5 – 45,0	>11,2	28,2	2,25	7,5
M-284	100 x 80 x 30	oval: 130/66x94/30x37	22,5 – 45,0	>11,2	28,2	2,25	7,5
M-115	130 x 100 x 30	135 x 94 x 34	24,6 – 52,9	>12,2	35,9	3,33	9,5
M-116	160 x 130 x 30	165 x 123 x 34	20,9 – 45,0	>10,5	45,4	3,24	12
M-302	160 x 130 x 30	oval: 197/111x155/69x36	20,9 – 45,0	>10,5	44,7	3,30	12
M-117	200 x 175 x 30	208 x 166 x 37	12,3 – 24,6	>6,00	58,8	2,74	15,5
M-111	237 x 201 x 30	oval: 305/147x249/95x37	14,5 – 29,9	>7,20	69,6	3,94	18,5
M-205	300 x 254 x 30	304 x 246 x 36	15,8 – 31,5	7,20	87,1	5,20	23
M-248	300 x 254 x 30	oval: 392/160x326/94x37	15,8 – 31,5	>7,90	87,1	5,20	23
M-503**	500 x 450 x 30	513 x 437 x 37	8,0 – 20,0		149,1	5,60	40

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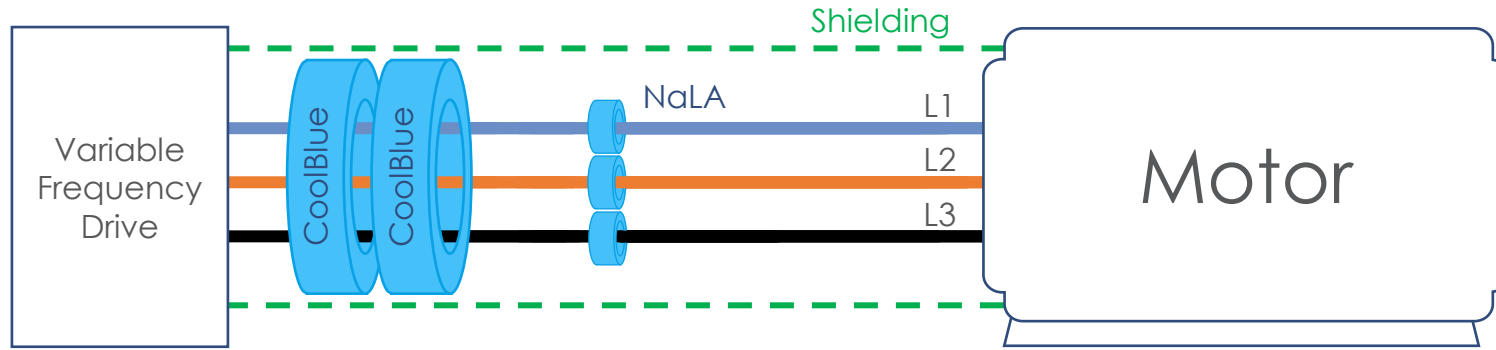
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Efficient and effective usage, only in combination with CoolBlue

Easy to install and to retrofit

Works against asymmetrical and symmetrical noise

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Magnetec developed special cores with own developed CoolBLUE annealing with the special purpose to absorb the high frequency noise – we call our CoolBLUE cores inductive absorber as the noise is transferred to thermal energy instead of unwanted discharges at the motor bearings.

The combination of Magnetec CoolBlue cores with NaLA cores is a very effective way to have an advanced reduction of the noise in inverter-motor systems. The CoolBlue cores are put over all the 3 phases whereas one NaLA core needs to be put over each phase acc. to the picture above. The optimal place for the cores is very close to the noise-source namely the inverter.

NaLA Selection Guide

Kilowatt	≤0,7	≤7,5	≤30	≤75	≤315	≤1.200	> 1.200
Part No round	<u>M-606</u>	<u>M-853</u>	<u>M-102</u>	<u>M-981</u>	<u>M-613</u>	<u>M-614</u>	<u>M-616</u>
Cable length							
up to	50m	100m	200m	300m			
	2	4	6	8	1	2	3
	1	2	3	4	1	2	3
	1	2	3	4	1	2	3
	1	2	3	4	1	2	3

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