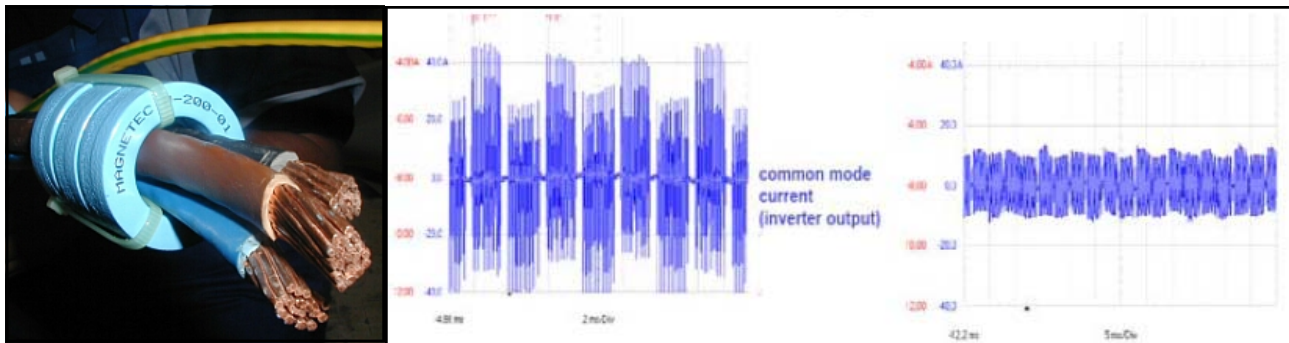


COOL BLUE® Cool Blue Tape Wound Cores Reduce Motor-Bearing Currents

Cool Blue® toroids made from the nanocrystalline material NANOPERM are being used increasingly to reduce damaging motor bearing currents in modern high power inverter systems operating at high switching frequencies. As a result of these unwanted currents, the bearings corrugate, leading to electrical breakdown in the lubrication and finally to a standstill of the entire motor.

The use of Cool Blue® cores not only significantly reduces the over voltage peaks at the motor terminals, but also suppresses the asymmetrical EMI currents which are generated by the parasitic currents of the motor itself together with the motor cable. In order to achieve an efficient reduction in these destructive effects, one or more Cool Blue® of suitable geometry have to be placed together over the connector cables in the DC-link as well as at the inverter output. In this configuration, the cores operate as a common-mode choke.

This method significantly increases the service life of the motor bearings and thus reduces maintenance costs and standstill periods.



TYPE	Nominal OD x ID x TH (mm)	Physical OD x ID x TH (mm)	Mass (gm)	Path Length (l_e) (cm)	Core Area (A_e) (cm ²)	AL Value @ 10KHz (μH)	Current I_{cm} (A)
M-112	63 x 50 x 30	68.0 x 43.0 x 36.0	204	17.7	1.44	23.3—46.6	4
M-113	80 x 63 x 30	86.0 x 55.0 x 36.0	338	22.4	2.04	24.1—48.2	6
M-283	80 x 63 x 30	OVAL	338	22.4	2.04	24.1—48.2	6
M-114	100 x 80 x 30	108 x 70.0 x 36.0	500	28.2	2.40	22.5—45.0	8
M-284	100 x 80 x 30	OVAL	500	28.2	2.40	22.5—45.0	8
M-115	130 x 100 x 30	135 x 92.0 x 36.0	958	35.9	3.60	26.4—52.9	9
M-142	130 x 100 x 30	OVAL	604	36.7	2.22	16.0—32.0	8
M-116	160 x 130 x 30	164 x 122 x 36.0	1,208	45.4	3.60	20.9 x 41.9	12
M-302	160 x 130 x 30	OVAL	1,208	45.4	3.60	20.9 x 41.9	12
M-117	200 x 175 x 30	204 x 166 x 36.0	1,302	58.8	3.00	13.5—26.9	16
M-111	240 x 200 x 30	OVAL	2,219	69.9	4.32	16.4—32.8	20
M-248	300 x 254 x 30	OVAL	3,242	86.7	5.04	15.3—30.5	22
M-205	300 x 250 x 30	304 x 246 x 34.0	3,722	86.2	5.85	18.0 x 36.0	23
M-503	500 x 450 x 30	504 x 446 x 36.0	6,430	149.1	5.85	10.3—20.7	40

Operating Temperature Range: -40 to +120°C. Temp Class E, Isolation Class B, Plastic cases fulfill UL-94HB



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