

SCHWARZBECK MESS - ELEKTRONIK

An der Klinge 29 D-69250 Schönau Tel.: 06228/1001 Fax.: (49)6228/1003

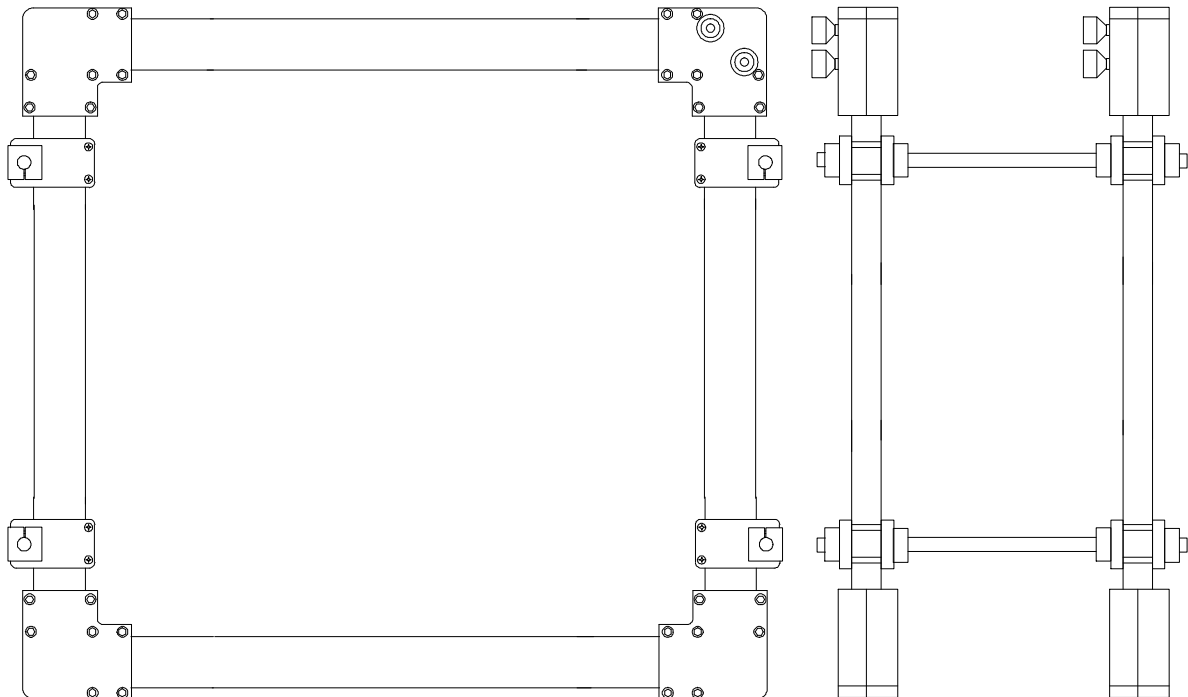
Helmholtz-Spulen HHS 5213-50 *Helmholtz Coils HHS 5213-50*

Technische Daten:

Windungszahl (pro Spule):	50
Maximaler Spulenstrom:	8 A, 5 min.
Spulenstrom, nominell:	5 A continuous
Max. Magn. Feldstärke:	390 A/m, 5 min.
Magn. Nennfeldstärke:	240 A/m continuous
Magn. Feldstärke bei 1 A	48.5 A/m
Spulenstrom:	(Coil Dist. 0.75 m)
Erforderlicher Strom für 1 A/m:	20.6 mA (Coil Dist. 0.75 m)
Abmessungen:	1.36 m x 1.36 m x 0.9 m
Effektive Spulenabmessungen:	1.27 x 1.27 x 0.75 m
Max. Spulenabstand:	0.82 m
Spulenabstand gem. EN 55103	0.75 m
Nutzbarer Frequenzbereich:	0 - 20 kHz
Induktivität (pro Spule):	10.5 mH
Induktivität (Spulenpaar):	25 mH (Coil Dist. 0.75 m)
Wirkwiderstand (pro Spule):	3.9 Ω
Resonanzfrequenz (pro Spule):	> 30 kHz
Gewicht:	18 kg

Specifications:

<i>Number of turns (per Coil):</i>
<i>Maximum Coil Current:</i>
<i>Nominal Coil Current:</i>
<i>Maximum Magnetic Field Strength:</i>
<i>Nominal Magnetic Field Strength:</i>
<i>Magnetic Fieldstrength, 1 A Coil</i>
<i>Current:</i>
<i>Current required for 1 A/m:</i>
<i>Mechanical Dimensions:</i>
<i>Effective Coil Dimensions:</i>
<i>Maximum Coil Separation:</i>
<i>Coil Separation acc. EN 55103:</i>
<i>Usable Frequency Range:</i>
<i>Inductance (per Coil):</i>
<i>Inductance (Coil pair):</i>
<i>Resistance (per Coil):</i>
<i>Resonant Frequency (per Coil):</i>
<i>Weight:</i>



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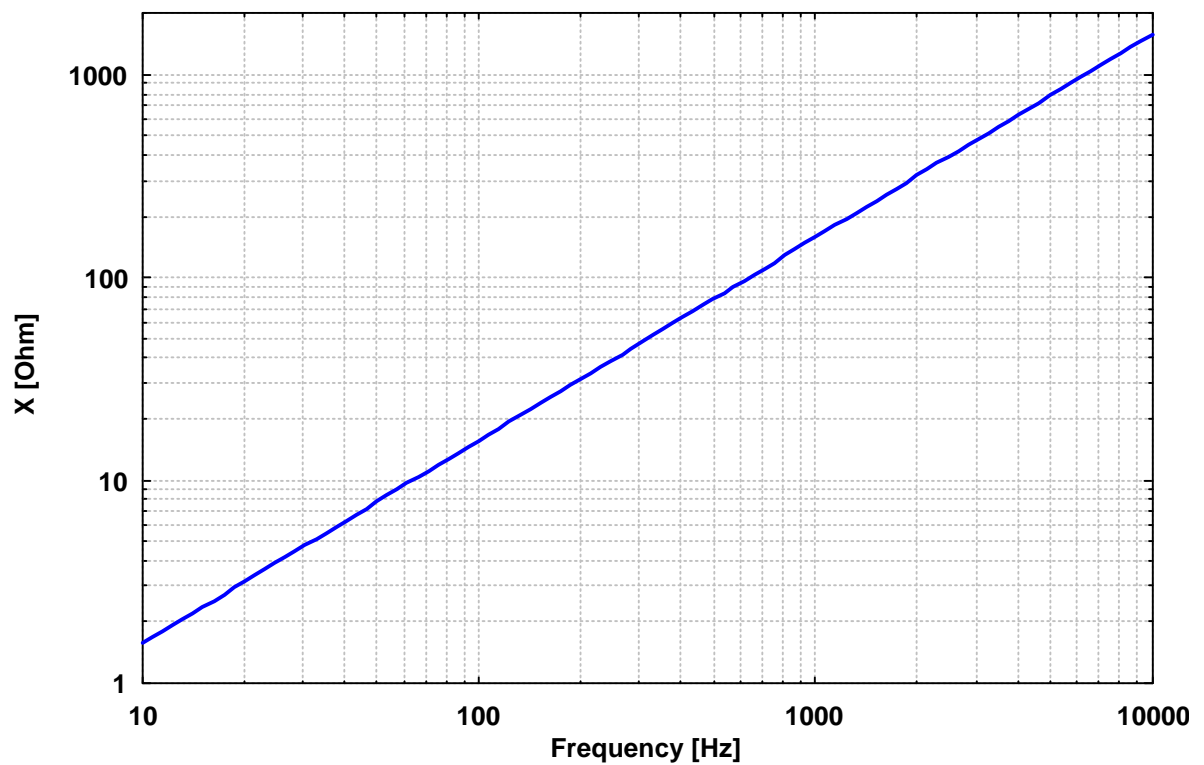
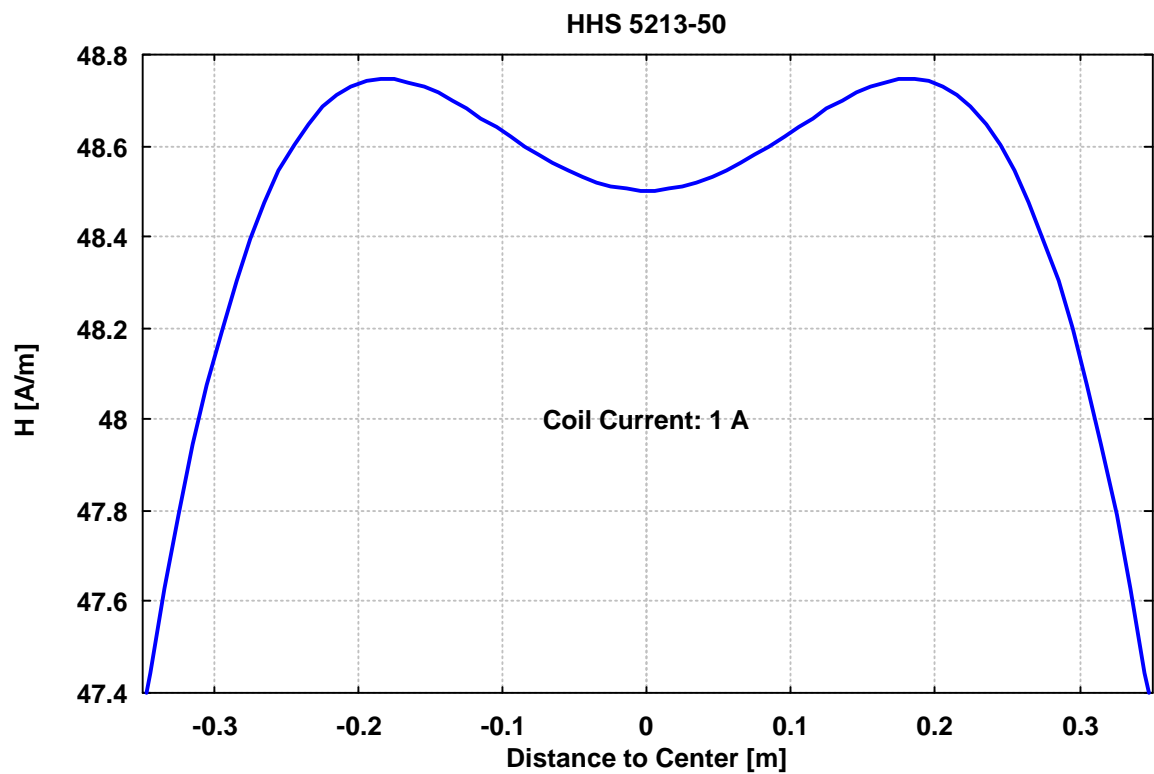
HHS 5213-50 50+50 turns. , Kantenlänge <i>Sidelength</i> = 1.27 m, Spulenabstand <i>Coil Distance</i> = 0.75 m, I = 1 Amp Längskomponente der magnetischen Feldstärke entlang der Spulenlängsachse <i>Magnet. Fieldstrength, longitudinal component along rotational axis</i>						
Abst	H1[A/m]	H2[A/m]	Hges[A/m]	H1[dBµA/m]	H2[dBµA/m]	Hges[dBµA/m]
0.00 (Center Plane)	24.4662	24.0358	48.5020	147.77	147.62	153.72
0.01	24.8979	23.6071	48.5051	147.92	147.46	153.72
0.02	25.3304	23.1807	48.5111	148.07	147.30	153.72
0.03	25.7632	22.7569	48.5200	148.22	147.14	153.72
0.04	26.1956	22.3361	48.5316	148.36	146.98	153.72
0.05	26.6270	21.9187	48.5457	148.51	146.82	153.72
0.06	27.0569	21.5050	48.5619	148.65	146.65	153.73
0.07	27.4846	21.0954	48.5800	148.78	146.48	153.73
0.08	27.9093	20.6900	48.5994	148.91	146.32	153.73
0.09	28.3305	20.2893	48.6197	149.05	146.15	153.74
0.10	28.7472	19.8933	48.6405	149.17	145.97	153.74
0.11	29.1588	19.5024	48.6612	149.30	145.80	153.74
0.12	29.5645	19.1166	48.6811	149.42	145.63	153.75
0.13	29.9635	18.7362	48.6996	149.53	145.45	153.75
0.14	30.3549	18.3612	48.7161	149.64	145.28	153.75
0.15	30.7379	17.9919	48.7298	149.75	145.10	153.76
0.16	31.1117	17.6283	48.7401	149.86	144.92	153.76
0.17	31.4755	17.2705	48.7460	149.96	144.75	153.76
0.18	31.8283	16.9186	48.7470	150.06	144.57	153.76
0.19	32.1694	16.5727	48.7421	150.15	144.39	153.76
0.20	32.4978	16.2327	48.7305	150.24	144.21	153.76
0.21	32.8128	15.8988	48.7115	150.32	144.03	153.75
0.22	33.1134	15.5708	48.6843	150.40	143.85	153.75
0.23	33.3990	15.2489	48.6480	150.47	143.66	153.74
0.24	33.6687	14.9331	48.6018	150.54	143.48	153.73
0.25	33.9218	14.6232	48.5451	150.61	143.30	153.72
0.26	34.1576	14.3194	48.4770	150.67	143.12	153.71
0.27	34.3753	14.0215	48.3968	150.72	142.94	153.70
0.28	34.5743	13.7296	48.3039	150.78	142.75	153.68
0.29	34.7541	13.4435	48.1976	150.82	142.57	153.66
0.30	34.9140	13.1632	48.0773	150.86	142.39	153.64
0.31	35.0537	12.8888	47.9425	150.89	142.20	153.61
0.32	35.1726	12.6200	47.7926	150.92	142.02	153.59
0.33	35.2705	12.3569	47.6273	150.95	141.84	153.56
0.34	35.3469	12.0993	47.4462	150.97	141.66	153.52
0.35	35.4016	11.8472	47.2488	150.98	141.47	153.49
0.36	35.4345	11.6006	47.0351	150.99	141.29	153.45
0.37	35.4455	11.3593	46.8048	150.99	141.11	153.41

Spulenabstand 0.75 m
Coil Distance 0.75 m

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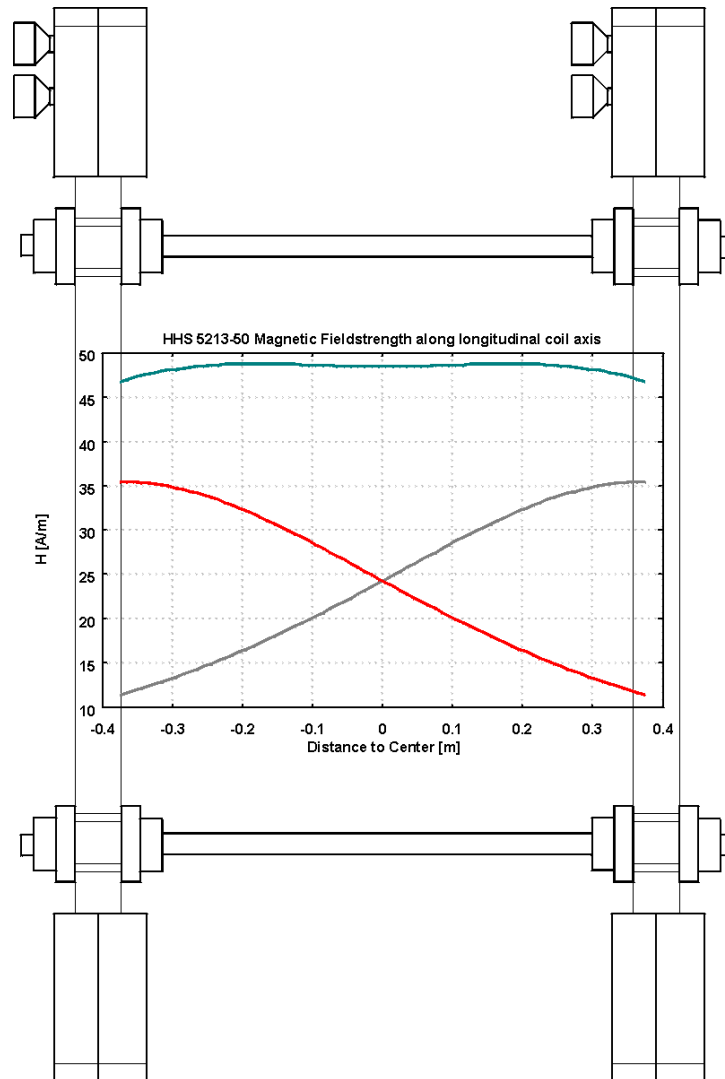
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Helmholtzspulen und resultierender Feldstärkeverlauf in Achsrichtung grafisch dargestellt. Die Gesamtfeldstärke ergibt sich aus der Summe der beiden Einzelbeiträge der Spulen. Bei günstiger Abstandswahl (Abstand = $0.6 \cdot$ Kantenlänge) läßt sich ein relativ großes Volumen mit homogenem Feldstärkeverlauf erreichen.

Helmholtz Coils and resulting fieldstrength in direction of the rotational axis presented in a graph. The total fieldstrength between the coils is the sum of both contributions of each single coil. A uniform fieldstrength characteristic over a large volume can be achieved choosing the appropriate coil spacing (Coil spacing = $0.6 \cdot$ sidelength).