

SCHWARZBECK MESS - ELEKTRONIK

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

Helmholtz-Spule HHS 5215-100 Helmholtz Coil HHS 5215-100



Technische Daten:

Windungszahl (pro Spule):	100
Maximaler Spulenstrom:	20 A, 5 min.
Spulenstrom, nominell:	10 A continuous
Max. Magn. Feldstärke:	ca. 2000 A/m max. 5 min., dist. 0.6 m*
Magn. Nennfeldstärke:	842 A/m continuous
Spulenabstand für beste Feldhomogenität:	0.84 m*
Magn. Feldstärke bei 1 A	84,2 A/m (Coil dist. 0.84 m*)
Spulenstrom (Spulenfaktor):	1.19 A (Coil dist. 0.84 m*)
Erforderlicher Strom für 100 A/m bei bestmöglicher Homogenität:	
Außenabmessungen:	1.69 m x 1.60 m x 1.00 m
Mittlere elektrische Kantenlänge	1.533 m
Max. Spulenabstand:	0.93 m*
Nutzbarer Frequenzbereich:	0 - 6 kHz
Induktivität (pro Spule):	52 mH
Induktivität (Spulenpaar):	112 mH
Wirkwiderstand (Spulenpaar):	9 Ω
Resonanzfrequenz (Spulenpaar):	> 20 kHz
Gewicht:	53 kg

Specifications:

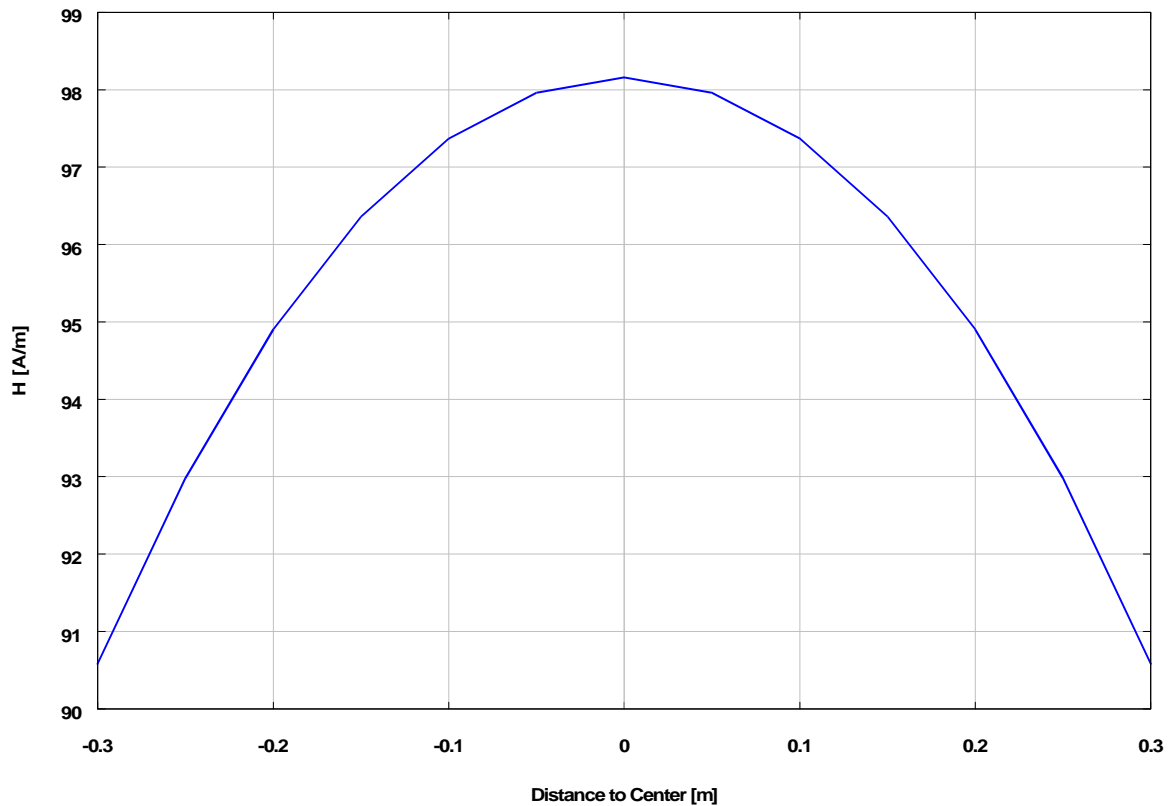
Number of turns (per Coil):	
Maximum coil current:	
Nominal coil current:	
Maximum magnetic field strength:	
Nominal magnetic field strength:	
Coil Separation for best uniformity:	
Magnetic field strength caused by 1 A coil current (coil factor):	
Current required for 100 A/m at best possible homogeneity:	
Outer mechanical dimensions:	
Average electrical side length:	
Maximum coil separation:	
Usable frequency range:	
Inductance (per coil):	
Inductance (Pair of coils):	
Resistance (Pair of coils):	
Resonant frequency (Pair of coils):	
Weight:	

* Gemessen von Spulenmitte zu Spulenmitte / Measured from coil center to coil center

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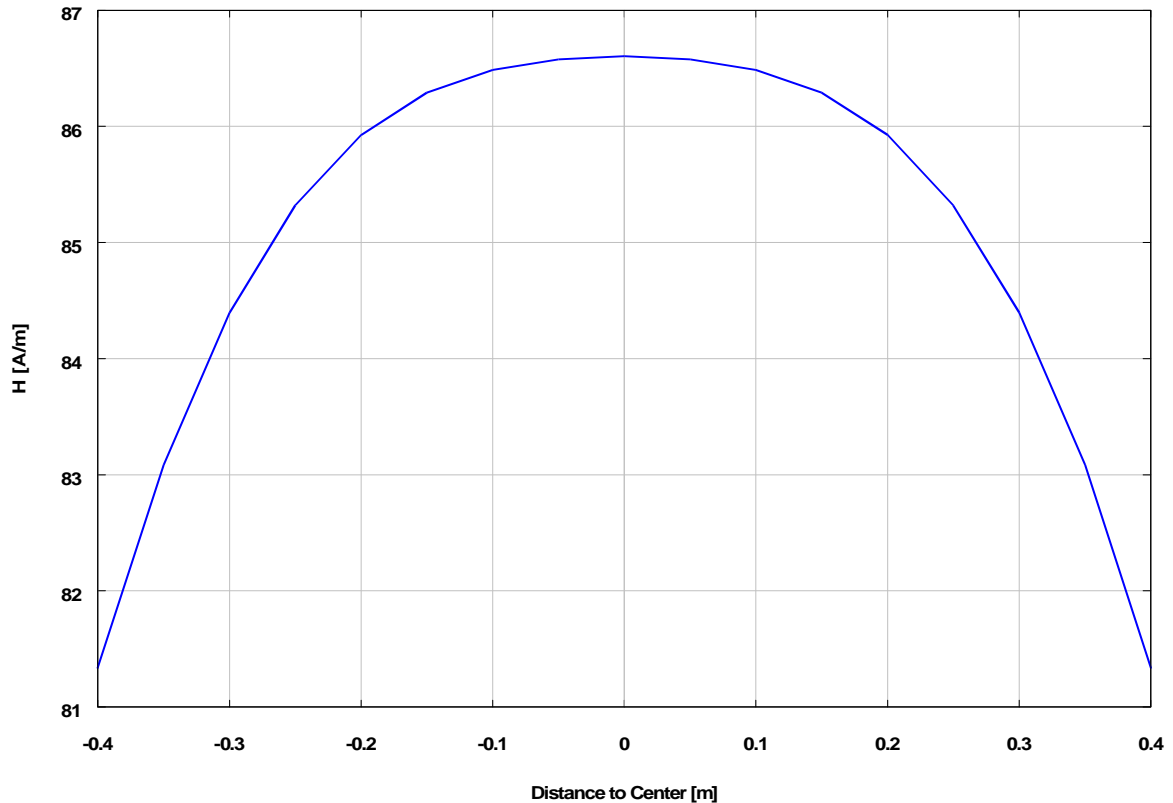


HHS 5215-100						
Spulenabstand <i>Coil Distance</i> 0.6 m, I = 1 A						
Längskomponente der magnetischen Feldstärke entlang der Spulenlängsachse						
<i>Magnet. Fieldstrength, longitudinal component along rotational axis</i>						
Abstand zur Spulenmitte	H1[A/m]	H2[A/m]	Hges[A/m]	H1[dBµA/m]	H2[dBµA/m]	Hges[dBµA/m]
<i>Distance</i>	H1[A/m]	H2[A/m]	Hges[A/m]	H1[dBµA/m]	H2[dBµA/m]	Hges[dBµA/m]
-0.30 (Center Coil 2)	31,8606	58,7214	90,5820	150,07	155,38	159,14
-0.25	34,5722	58,4105	92,9827	150,77	155,33	159,37
-0.20	37,4094	57,4948	94,9042	151,46	155,19	159,55
-0.15	40,3360	56,0224	96,3584	152,11	154,97	159,68
-0.10	43,3019	54,0669	97,3688	152,73	154,66	159,77
-0.05	46,8049	51,7193	97,9616	153,41	154,27	159,82
-0.00 (Center Plane)	49,0784	49,0784	98,1568	153,82	153,82	159,84
0,05	51,7193	46,2423	97,9616	154,27	153,30	159,82
0,10	54,0669	43,3019	97,3688	154,66	152,73	159,77
0,15	56,0224	40,3360	96,3584	154,97	152,11	159,68
0,20	57,4948	37,4094	94,9042	155,19	151,46	159,55
0,25	58,4105	34,5722	92,9827	155,33	150,77	159,37
0.30 (Center Coil 1)	58,7214	31,8606	90,5820	155,38	150,07	159,14
Spulenabstand 0.6 m						
<i>Coil Distance 0.6 m</i>						

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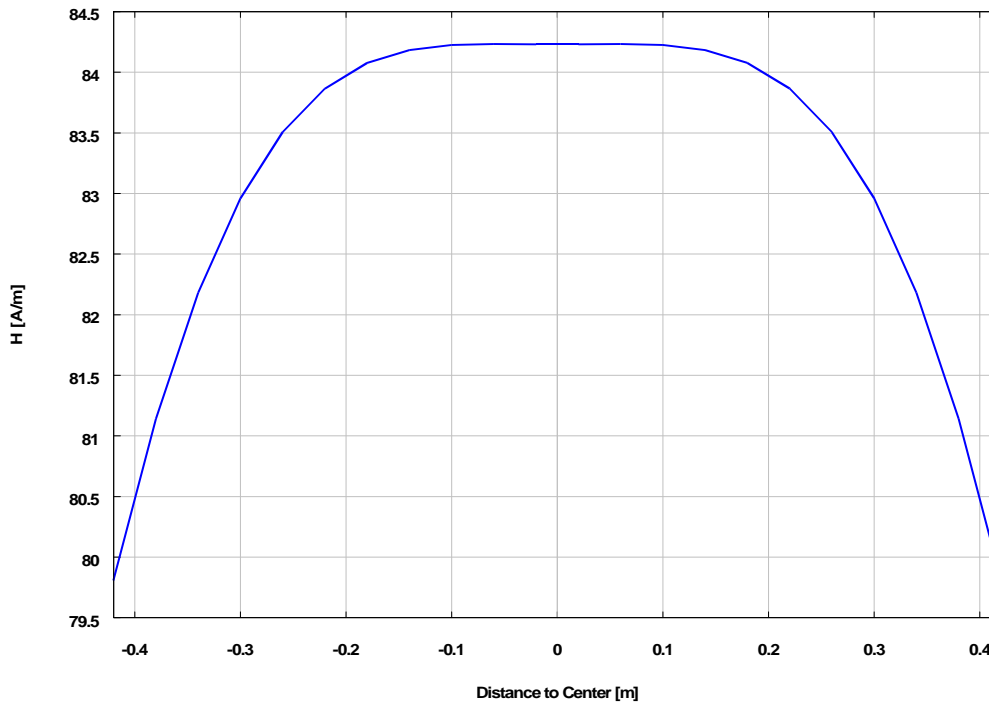


HHS 5215-100 Spulenabstand <i>Coil Distance</i> 0.8 m, <i>I</i> = 1 A Längskomponente der magnetischen Feldstärke entlang der Spulenlängsachse Magnet. Fieldstrength, longitudinal component along rotational axis						
Abstand zur Spulenmitte	H1[A/m]	H2[A/m]	Hges[A/m]	H1[dBµA/m]	H2[dBµA/m]	Hges[dBµA/m]
<i>Distance</i>	H1[A/m]	H2[A/m]	Hges[A/m]	H1[dBµA/m]	H2[dBµA/m]	Hges[dBµA/m]
-0.40 (Center Coil 2)	22,6180	58,7214	81,3393	147,09	155,38	158,21
-0,35	24,6744	58,4105	83,0850	147,84	155,33	158,39
-0,30	26,9015	57,4948	84,3963	148,60	155,19	158,53
-0,25	29,2990	56,0224	85,3214	149,34	154,97	158,62
-0,20	31,8606	54,0669	85,9275	150,07	154,66	158,68
-0,15	34,5722	51,7193	86,2915	150,77	154,27	158,72
-0,10	37,4094	49,0784	86,4878	151,46	153,82	158,74
-0,05	40,3360	46,2423	86,5783	152,11	153,30	158,75
0.00 (Center Plane)	43,3019	43,3019	86,6038	152,73	152,73	158,75
0,05	46,2423	40,3360	86,5783	153,30	152,11	158,75
0,10	49,0784	37,4094	86,4878	153,82	151,46	158,74
0,15	51,7193	34,5722	86,2915	154,27	150,77	158,72
0,20	54,0669	31,8606	85,9275	154,66	150,07	158,68
0,25	56,0224	29,2990	85,3214	154,97	149,34	158,62
0,30	57,4948	26,9015	84,3963	155,19	148,60	158,53
0,35	58,4105	24,6744	83,0850	155,33	147,84	158,39
0.40 (Center Coil 1)	58,7214	22,6180	81,3393	155,38	147,09	158,21
Spulenabstand 0.8 m Coil Distance 0.8 m						

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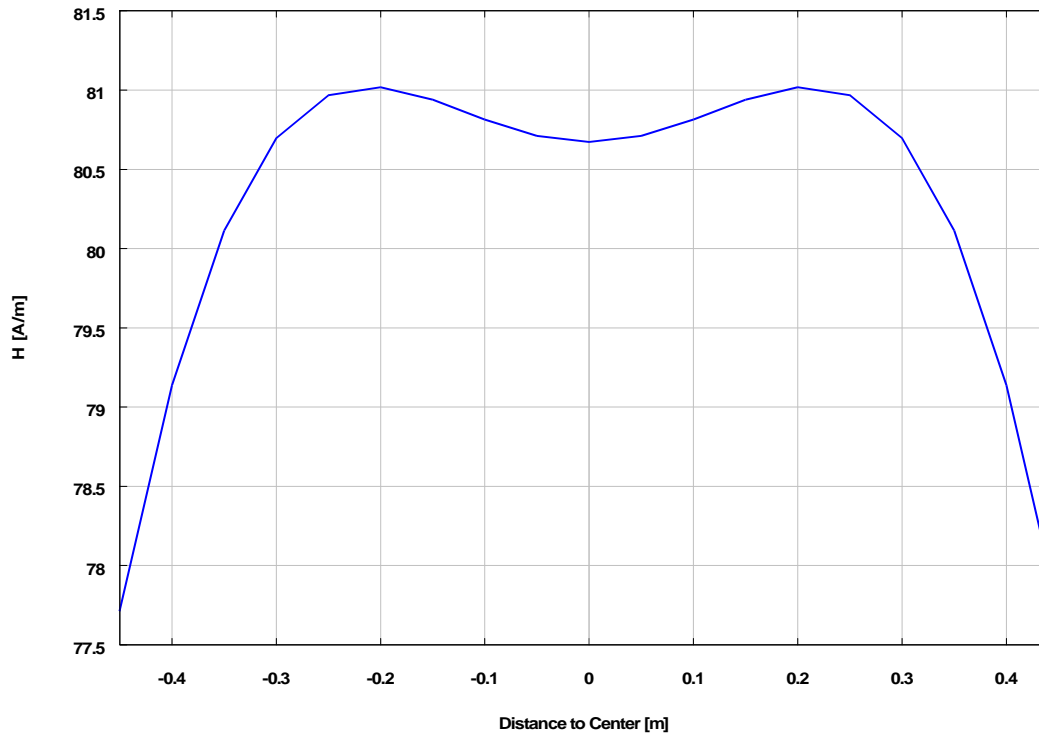


HHS 5215-100						
Spulenabstand <i>Coil Distance</i> 0.84 m, $I = 1$ A						
Längskomponente der magnetischen Feldstärke entlang der Spulenlängsachse						
Magnet. Fieldstrength, longitudinal component along rotational axis						
Abstand zur Spulenmitte	H1[A/m]	H2[A/m]	Hges[A/m]	H1[dB μ A/m]	H2[dB μ A/m]	Hges[dB μ A/m]
<i>Distance</i>	H1[A/m]	H2[A/m]	Hges[A/m]	H1[dB μ A/m]	H2[dB μ A/m]	Hges[dB μ A/m]
-0.42 (Center Coil 2)	21.0930	58.7214	79.8143	146.48	155.38	158.04
-0.38	22.6180	58.5221	81.1401	147.09	155.35	158.18
-0.34	24.2496	57.9313	82.1808	147.69	155.26	158.30
-0.30	25.9901	56.9690	82.9591	148.30	155.11	158.38
-0.26	27.8403	55.6672	83.5074	148.89	154.91	158.43
-0.22	29.7985	54.0669	83.8654	149.48	154.66	158.47
-0.18	31.8606	52.2155	84.0761	150.07	154.36	158.49
-0.14	34.0189	50.1636	84.1824	150.63	154.01	158.50
-0.10	36.2615	47.9621	84.2235	151.19	153.62	158.51
-0.06	38.5718	45.6599	84.2317	151.73	153.19	158.51
-0.02	40.9279	43.3019	84.2298	152.24	152.73	158.51
0.00 (Center Plane)	42.1146	42.1146	84.2293	152.49	152.49	158.51
0.02	43.3019	40.9279	84.2298	152.73	152.24	158.51
0.06	45.6598	38.5718	84.2317	153.19	151.73	158.51
0.10	47.9621	36.2615	84.2235	153.62	151.19	158.51
0.14	50.1636	34.0189	84.1824	154.01	150.63	158.50
0.18	52.2155	31.8606	84.0761	154.36	150.07	158.49
0.22	54.0669	29.7985	83.8654	154.66	149.48	158.47
0.26	55.6672	27.8403	83.5074	154.91	148.89	158.43
0.30	56.9690	25.9901	82.9591	155.11	148.30	158.38
0.34	57.9313	24.2496	82.1808	155.26	147.69	158.30
0.38	58.5221	22.6180	81.1401	155.35	147.09	158.18
0.42 (Center Coil 1)	58.7214	21.0930	79.8143	155.38	146.48	158.04
Spulenabstand 0.84 m						
Coil Distance 0.84 m						

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HHS 5215-100 Spulenabstand <i>Coil Distance</i> 0.9 m, $I = 1$ A Längskomponente der magnetischen Feldstärke entlang der Spulenlängsachse Magnet. Fieldstrength, longitudinal component along rotational axis						
Abstand zur Spulenmitte	H1[A/m]	H2[A/m]	Hges[A/m]	H1[dB μ A/m]	H2[dB μ A/m]	Hges[dB μ A/m]
<i>Distance</i>	H1[A/m]	H2[A/m]	Hges[A/m]	H1[dB μ A/m]	H2[dB μ A/m]	Hges[dB μ A/m]
-0.45 (Center Coil 2)	18.9973	58.7214	77.7187	145.57	155.38	157.81
-0.40	20.7280	58.4105	79.1385	146.33	155.33	157.97
-0.35	22.6180	57.4948	80.1128	147.09	155.19	158.07
-0.30	24.6744	56.0224	80.6968	147.84	154.97	158.14
-0.25	26.9015	54.0669	80.9684	148.60	154.66	158.17
-0.20	29.2990	51.7193	81.0183	149.34	154.27	158.17
-0.15	31.8606	49.0784	80.9390	150.07	153.82	158.16
-0.10	34.5722	46.2423	80.8145	150.77	153.30	158.15
-0.05	37.4094	43.3019	80.7113	151.46	152.73	158.14
0.00 (Center Plane)	40.3360	40.3360	80.6720	152.11	152.11	158.13
0.05	43.3019	37.4094	80.7113	152.73	151.46	158.14
0.10	46.2423	34.5722	80.8145	153.30	150.77	158.15
0.15	49.0784	31.8606	80.9390	153.82	150.07	158.16
0.20	51.7193	29.2990	81.0183	154.27	149.34	158.17
0.25	54.0669	26.9015	80.9684	154.66	148.60	158.17
0.30	56.0224	24.6744	80.6968	154.97	147.84	158.14
0.35	57.4948	22.6180	80.1128	155.19	147.09	158.07
0.40	58.4105	20.7280	79.1385	155.33	146.33	157.97
0.45 (Center Coil 1)	58.7214	18.9973	77.7187	155.38	145.57	157.81
Spulenabstand 0.9 m Coil Distance 0.9 m						