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## Z4 series D.C. Motors (H100~710)

SIMO IMPORT & EXPORT CORP., LTD.

## **Brief introduction for Z4 series motors**

### **Brief Introduction**

Z4 series D.C. motors are widely used in the field such as mill auxiliary in metallurgical industry, metal cutting machine toll, paper making, printing, cement making, plastic extruding machine, etc.

Performance and technical requirements of the motors conform to IEC 34-1 standard or DIN 57530 standard of Germany.

Base features as follow:

Rated voltage: 160V, 440V

Protection degree: IP21S

Cooling method: IC411

Insulation class: F

Ambient temperature: not exceed 40

Altitude: not exceed 1000 meters

**Technical Data see the following list.**

Type	Rated power	Rated speed			Rated current	Speed with field weakened	Exciting power	Armature circuit resistance	Armature inductance	Magnetic field inductance	External inductance	Efficiency	Moment of inertia	Weight
		160V	400V	440V										
	kW	r/min			A	r/min	W	$\Omega(20^\circ\text{C})$	mH	H	mH	%	$\text{kg}\cdot\text{m}^2$	kg
Z4-100-1	2.2	1500			17.9	3000	315	1.19	11.2	22	10	67.8	0.044	60
	1.5	1000			13.4	2000		2.2	21.4	13	13	58.5		
	4	3000			10.7	4000		2.85	26	18		80.1		
	2	1310			6.5	3000		9.23	86	18		68.4		
	2.2	1500			6.5	3000						70.6		
	1.4	900			5.1	2000		16.8	163	18		60.3		
	1.5	1000			4.8	2000						63.2		
Z4-112/2-1	5.5	3000			14.7	4000	335	2.02	17.9	18		81.1	0.072	78
	2.8	1350			9.1	3000		6.26	59	17		71.2		
	3	1500			8.7	3000						72.8		
	1.9	900			6.9	2000		11.7	110	13		61.1		
	2.2	1000			7.1	2000						63.5		
	3	1540			24	3000		0.79	7.1	13	9	69.1		
	2.2	1000			19.6	2000		1.5	14.1	13	20	62.1		
Z4-112/2-2	7	2700			20.4	4000	390	1.29	14	19		82.4	0.088	86
	7.5	3000			19.6	4000						83.5		
	3.7	1350			11.7	3000		4.45	48.5	24		74.1		
	4	1500			11.3	3000						76		
	2.6	900			9	2000		7.94	83	14		65.1		
	3	1010			9.3	2000						67.3		
	4	1500			31.4	3000		0.575	6.2	14	9	72.3		
	3	1070			24.8	2000		0.934	10.3	14	9	66.8		
Z4-112/4-1	5.5	1520			42.7	3000	510	0.392	3.85	6.8	6	73	0.128	84
	4	1000			33.7	2000		0.741	7.7	6.7	4	64.9		
	10	2700			29	3500		0.939	9	6.8		82.7		
	11	3000			28.9	3500						83.3		
	5	1340			15.7	1800		3.28	32	9.3		74.3		
	5.5	1500			15.6	1800						75.7		
	3.7	900			13	1100		5.95	63	9.1		65.2		
	4	1000			12.3	1100						68.7		
Z4-112/4-2	5.5	1090			43.6	2000	640	0.445	5.1	5.8	3	69.5	0.156	94
	13	2740			37	3600		0.565	6.4	5.8		84.4		
	15	3035			38.6	3600						85.4		
	6.7	1330			20.6	1800		2.2	24.1	7.8		76.8		
	7.5	1500			20.6	1800						78.4		
	5	955			16.1	1200		4	42.5	5.8		71.1		
	5.5	1025			16.1	1200						71.9		
Z4-132-1	18.5	3000			47.4	4000	650	0.409	5.3	6.5		85.9	0.32	123
	10	1360			30.1	2200		1.31	18.9	9		79.4		
	11	1500			29.6	2200						80.9		
	7	865			21.8	1600		2.56	37.5	6.4		71.9		
	7.5	1000			21.4	1600						74.5		

Type	Rated power	Rated speed			Rated current	Speed with field weakened	Exciting power	Armature circuit resistance	Armature inductance	Magnetic field inductance	External inductance	Efficiency	Moment of inertia	Weight					
		160V	400V	440V															
	kW	r/min			A	r/min	W	$\Omega(20^\circ\text{C})$	mH	H	mH	%	$\text{kg}\cdot\text{m}^2$	kg					
Z4-132-2	20	2800			55.4	3600	730	0.223	3.65	10		87.8	0.4	142					
	22	3090			55.3	3600						88.3							
	15	1510			39.3	2500						83.4							
	10	905			31.3	1400						75.6							
	11	1000			30.7	1400						77.7							
Z4-132-3	27	2720			75	3600	815	0.168	2.75	7.2		88.2	0.48	162					
	30	3000			75	3600						88.6							
	18.5	1540			48	2200						84.7							
	13.5	945			41	1600						79.4							
	15	1050			41	1600						80.5							
Z4-160-11	33	2710			93.4	3500	820	0.183	3.15	10		88.5	0.64	202					
	37	3000										58.8			3000	0.62	10.4	7.7	82.6
	19.5	1350																	
	22	1500																	
Z4-160-22	40.5	2710			113	3500	920	0.143	2.7	10		89.1	0.76	224					
	45	3000																	
Z4-160-21	16.5	900			51.1	2000	920	0.915	17.7	7.9		79.4	0.76	224					
	18.5	1000																	
Z4-160-32	49.5	2710			137	3500	1050	0.0967	2.07	11		90.2	0.88	250					
	55	3010																	
Z4-160-31	27	1350			77.8	3000	1050	0.376	8.3	10		85.7	0.88	250					
	30	1500																	
	19.5	900																	
	22	1000																	
Z4-180-11	33	1350			95	3000	1200	0.263	4.9	7.67		86.5	1.52	305					
	37	1500																	
	16.5	670			51.2	1900		0.912	16.2	6.36	78.1								
	18.5	750																	
	13	540			43.8	2000		1.41	22.7	7.85	74.1								
	15	600																	
Z4-180-22	67	2710			185	3400	1400	0.064	1.2	6.67		90.7	1.72	335					
	75	3000																	
Z4-180-21	40.5	1350			115	2800	1400	0.217	4.7	6.3		87	1.72	335					
	45	1500																	
	27	900			79	2000		0.423	9.2	7.96	83.7								
	30	1000																	
	19.5	670			60.3	1400		0.766	16.3	7.76	79.7								
	22	750																	
	16.5	540			52	1600		0.973	19.9	6.96	76.8								
	18.5	600																	
Z4-180-31	33	900			97.5	2000	1500	0.346	6.8	6.34		83.6	1.92	370					
	37	1000																	
	19.5	540			62.1	1250		0.87	18.3	6.18	76.6								
	22	600																	

Type	Rated power	Rated speed			Rated current	Speed with field weakened	Exciting power	Armature circuit resistance	Armature inductance	Magnetic field inductance	External inductance	Efficiency	Moment of inertia	Weight
		160V	400V	440V										
	kW	r/min			A	r/min	W	$\Omega(20^\circ\text{C})$	mH	H	mH	%	$\text{kg}\cdot\text{m}^2$	kg
Z4-180-42	81	2710			221	3200	1700	0.0504	0.82	8.16		91.3	2.2	395
	90	3000												
Z4-180-41	50	1350			140	3000	1700	0.159	3.2	8.03		87.1	2.2	395
	55	1500												
	27	670			80.6	2000		0.0495	11.3	5.61		81.1		
	30	750												
Z4-200-12	99	2710			270	3000	1400	0.0373	0.78	7.91		91.6	3.68	470
	110	3000												
Z4-200-11	40.5	900			117	2000	1400	0.267	7.9	7.07		85.5	3.68	470
	45	1000												
	33	670			98.6	1600		0.354	9.9	8.12		82.9		
	37	750												
	19.5	450			61.6	1000		0.839	23.3	12		77.4		
	22	500												
Z4-200-21	67	1350			188	3000	1500	0.094	2.6	9.84		89.6	4.2	515
	75	1500												
	27	540			82.1	1000		0.563	15.3	9.3		80.4		
	30	600												
Z4-200-32	119	2710			322	3200	1360	0.0318	0.74	7.79		92.4	4.8	565
	132	3000												
Z4-200-31	81	1350			224	2800	1360	0.0754	2.5	8.2		89.8	4.8	565
	90	1500												
	49.5	900			140	2000		0.173	4.5	8.7		87.1		
	55	1000												
	40.5	670			118	1400		0.295	8	8.53		84.1		
	45	750												
	33	540			99.5	1200		0.403	11.4	8.67		82		
	37	600												
	27	450			82.7	750		0.575	16.5	8.44		79.5		
	30	500												
Z4-225-11	99	1360			275	3000	2200	0.065	1.9	6.15		89.4	5	680
	110	1500												
	67	900			194	2000		0.151	4.6	11.3		86.5		
	75	1000												
	49	680			145	1300		0.239	8.1	5.9		84		
	55	750												
	40	540			122	1200		0.362	11.3	5.93		80.8		
	45	600												
	33	450			102	1000		0.472	14.1	6.24		78.8		
	37	500												
Z4-225-21	49	540			147	1000	2130	0.262	8.9	5.66		82.4	5.6	735
	55	600												
	40	450			125	1000		0.397	12.8	5.49		78.9		
	45	500												

Type	Rated power	Rated speed			Rated current	Speed with field weakened	Exciting power	Armature circuit resistance	Armature inductance	Magnetic field inductance	External inductance	Efficiency	Moment of inertia	Weight				
		160V	400V	440V														
	kW	r/min			A	r/min	W	$\Omega(20^\circ\text{C})$	mH	H	mH	%	$\text{kg}\cdot\text{m}^2$	kg				
Z4-225-31	119	1360			325	2400	2360	0.0562	1.4	9.75		90.5	6.2	810				
	132	1500																
	81	900			227	2000		0.096	3.2	5.27		88						
	90	1000																
	67	680			195	2250		0.153	4.8	5.56		85.1						
	75	750																
Z4-250-12	144	1360			397	2100	2560	0.0392	0.83	4.97		90.3	8.8	880				
	160	1500																
Z4-250-11	99	900			280	2000		0.0866	2.3	8.14		88.1						
	110	1000																
Z4-250-21	167	1360			459	2200		2400	0.0325	0.86		5.73				90.5	10	960
	185	1500																
	81	680			230	2250	0.131		3.6	5.63	85.2							
	90	750																
Z4-250-31	67	540			197	2000	2400		0.171	4	6.13		84.1	11.2		1060		
	75	600																
	49	450			147	1500		0.256	5.8	6.08	82.2							
	55	500																
	180	1360			492	2400		0.0274	0.82	7.22	91.5							
	200	1500																
	119	900			332	2000		0.0608	1.6	7.46	89.1							
	132	1000																
Z4-250-42	144	900			402	2000	2990	0.0484	1.4	6.93		89.2	12.8	1170				
	160	1000																
Z4-250-41	99	680			282	1600		0.0957	2.6	5.66		86.9						
	110	750																
	198	1360			540	2400		0.0235	0.69	6.74		91.7						
	220	1500																
	81	540			234	1600		0.138	4.4	4.65		85						
	90	600																
	67	450			199	1500	0.181	4.8	7.13	83.5								
	75	500																
Z4-280-11	226	1355			615	2000	2540	0.0214	0.65	6.26		91.6	16.4	1230				
	250	1500																
Z4-280-22	253	1355			684	1800		0.0167	0.56	5.82		92.1						
	280	1500																
Z4-280-21	180	900			498	2000		2880	0.0375	1.2		5.87				90.1	18.4	1350
	200	1000																
	119	675			332	1600			0.0649	2.2		5.77				88.6		
	132	750																
	99	540			284	1500	0.0968		2.9	6	86							
	110	600																

Type	Rated power	Rated speed			Rated current	Speed with field weakened	Exciting power	Armature circuit resistance	Armature inductance	Magnetic field inductance	External inductance	Efficiency	Moment of inertia	Weight				
		160V	400V	440V														
	kW	r/min			A	r/min	W	$\Omega(20^\circ\text{C})$	mH	H	mH	%	$\text{kg}\cdot\text{m}^2$	kg				
Z4-280-32	284	1360			767	1800	3210	0.0149	0.056	6.88		92.6	21.2	1500				
	315	1500																
	144	675			401	1700		0.052	1.9	5.53		89.1						
	160	750																
Z4-280-31	198	900			544	2000	3210	0.0308	1	5.54		90.6	21.2	1500				
	220	1000																
	118	540			338	1000		0.0829	2.4	5.81		86.8						
	132	600																
	80	450			234	1000		0.137	5	6.61		85.4						
	90	500																
Z4-280-42	225	900			616	1800	3590	0.0249	0.9	5.21		91.1	24	1650				
	250	1000																
Z4-280-41	166	675			463	1900		3590	0.0438	1.6		5.14				89.4	24	1650
	185	750																
	98	450			282	1000	0.0976		3.5	9	86.9							
	110	500																
Z4-315-11	144	540			409	1900	3800	0.0692	0.96	7.53		86.4	21.2	1900				
	160	600										87.4						
	118	450			342	1600		0.0971	1.7	7.01		84.4						
	132	500										86.3						
	98	360			292	1200		0.137	2.1	9.92		81.7						
	110	400										84.3						
Z4-315-12	321	1360			864	1800	3800	0.0138	0.5	6.48		92.2	21.2	1900				
	355	1500										92.6						
	253	900			687	1600		0.0224	0.33	5.07		90.4						
	280	1000										91.6						
	180	680			501	1900		0.0436	0.6	4.97		88.4						
	200	750										89.4						
Z4-315-21	166	540			466	1600	4195	0.0518	0.83	5.13		87.2	24	2090				
	185	600										88.5						
	143	450			413	1500		0.0758	1.1	5.18		84.7						
	160	500										86						
Z4-315-22	284	900			770	1600		4195	0.0188	0.25		5.51				91	24	2090
	315	1000														91.9		
	225	680			623	1600	0.0337		0.54	5.11	88.7							
	250	750									89.6							
Z4-315-31	118	360			343	1200	3960		0.0981	1.5	6.37		83.2	27.2		2300		
	132	400											85.3					
Z4-315-32	320	900			869	1600		3960	0.0149	0.22	6.81				91		27.2	2300
	355	1000													92			
	252	680			700	1600			0.0314	0.59	5.86				89.1			
	280	750													89.8			
	180	540			501	1500	0.0454		0.68	6.45	88.2							
	200	600									89.4							

Type	Rated power	Rated speed			Rated current	Speed with field weakened	Exciting power	Armature circuit resistance	Armature inductance	Magnetic field inductance	External inductance	Efficiency	Moment of inertia	Weight				
		160V	400V	440V														
	kW	r/min			A	r/min	W	$\Omega(20^\circ\text{C})$	mH	H	mH	%	$\text{kg}\cdot\text{m}^2$	kg				
Z4-315-41	166	450			468	1500	4590	0.055	0.9	7.58		87.3	30.8	2530				
	185	500										88.3						
	143	360			416	1200		0.0809	1.3	5.03		84						
	160	400										85.3						
Z4-315-42	361	900			972	1400	4590	0.013	0.24	7.88		92.1	30.8	2530				
	400	1000										92.7						
	284	680			779	1600		0.0241	0.48	4.74		90						
	315	750										90.7						
	225	540			628	1600		0.0369	0.63	4.98		88.3						
	250	600										89						
Z4-355-11	253	540			694	1500	4490	0.0291	0.66	5.29		89.2	42	2900				
	280	600										90.3						
	180	450			507	1500		0.0536	1.1	18.6		87.6						
	200	500										88.9						
Z4-355-12	406	900			1093	1500	4490	0.0122	0.26	7.3		91.8	42	2900				
	450	1000										92.8						
	321	680			874	1500		0.0207	0.43	5.29		90.4						
	355	750										91.2						
	166	360			478	1200		0.0683	1.1	5.71		85.1						
	185	400										86.1						
Z4-355-21	180	360			512	1200	4250	0.0586	1.2	9.27		86.3	46	3180				
	200	400										87.5						
Z4-355-22	361	680			982	1600		4250	0.017	0.32		6.78				90.8	46	3180
	400	750														91.7		
	284	540			782	1500	0.0264		0.59	6.41	89.5							
	315	600									90.5							
	225	450			626	1600	0.0373		0.91	8.84	88.4							
	250	500									89.5							
Z4-355-31	197	360			556	1200	5840	0.0467	0.96	8.26		86.6	52	3500				
	220	400										88.4						
Z4-355-32	406	680			1098	1100		5840	0.0133	0.28		4.62				91.3	52	3500
	450	750														92.1		
	320	540			875	1600	0.0207		0.5	4.84	89.9							
	355	600									91							
	284	450			787	1500	0.0289		0.65	4.5	88.3							
	315	500									89.5							
Z4-355-42	361	540			982	1300	6470	0.0171	0.37	4.35		90.5	60	3850				
	400	600										91.2						
	320	450			890	1200		0.0262	0.56	4.23		88.9						
	355	500										89.2						
	225	360			627	1200		0.0377	0.85	5.59		87.5						
	250	400										88.8						



Type	Rated power	Rated speed			Rated current	Speed with field weakened	Exciting power	Armature circuit resistance	Armature inductance	Magnetic field inductance	External inductance	Efficiency	Moment of inertia	Weight			
		160V	400V	440V													
	kW	r/min			A	r/min	W	$\Omega(20^\circ\text{C})$	mH	H	mH	%	$\text{kg}\cdot\text{m}^2$	kg			
Z4-400-22	435	680			1175	1400	5720	0.0139	0.33	7.85		90.8	74	4520			
	480	750										92					
Z4-400-21	235	360			675	1200	5720	0.0497	1	7.3		84.8	74	4520			
	260	400										86.3					
	180	270			537	900		0.0804	1.6	7.44		81.8					
	200	300										83.1					
Z4-400-32	500	680			1340	1400	6450	0.0112	0.3	9.57		91.2	84	4920			
	550	750										92.5					
	400	540			1083	1300		0.0162	0.35	4.51		89.9					
	440	600										91.1					
	344	450			952	1300		0.0248	0.58	6		88.1					
	380	500										89.5					
Z4-400-31	270	360			768	1200	6450	0.0382	0.82	6.11		86	84	4920			
	300	400										87.5					
	208	270			611	900		0.0659	1.5	5.89		82.8					
	230	300										84					
Z4-400-42	435	540			1175	1300	7150	0.0134	0.32	5.54		90.8	94	5320			
	480	600										92					
	390	450			1070	1400		0.0201	0.47	6.86		88.6					
	430	500										90					
Z4-400-41	316	360			880	1200		7150	0.0274	0.73	5.41				87.7	94	5320
	350	400													89		
	235	270			676	900	0.0508		1.2	5.38		84					
	260	300										85.4					
Z4-450-22	472	540			1286	1200	6550		0.0133	0.29	10.2		90.8	138	5620		
	520	600											92.1				
	408	450			1114	1400		0.0159	0.41	7.99		90					
	450	500										91.3					
	362	360			1010	1200		0.0232	0.61	5.79		88.1					
	400	400										89.4					
Z4-450-21	253	270			720	900	6550	0.0415	1	5.85		85.8	138	5620			
	280	300										87.1					
Z4-450-32	500	540			1358	1200		7100	0.0134	0.39	19.6				90.8	156	6000
	550	600													92		
	453	450			1228	1300			0.0145	0.32	7.36				90		
	500	500													91.4		
	408	360			1130	1200	0.0205		0.53	7.17		88.5					
	450	400										89.7					
	309	270			875	900	0.0342		0.83	4.8		85.9					
	340	300										87.1					
Z4-450-31	200	180			595	600	7100	0.0751	1.9	9.09		81.3	156	6000			
	220	200										82.6					

Type	Rated power	Rated speed			Rated current	Speed with field weakened	Exciting power	Armature circuit resistance	Armature inductance	Magnetic field inductance	External inductance	Efficiency	Moment of inertia	Weight
		160V	400V	440V										
	kW	r/min			A	r/min	W	$\Omega(20^\circ\text{C})$	mH	H	mH	%	$\text{kg}\cdot\text{m}^2$	kg
Z4-450-42	545	540			1492	1100	7800	0.0134	0.51	28.2		90.3	174	6700
	600	600										91.5		
	500	450			1367	1100		0.0145	0.43	18.6		90		
	550	500										91.4		
	453	360			1254	1200		0.0178	0.42	5.85		88.9		
	500	400										90		
	345	270			972	900		0.0275	0.81	5.62		86.8		
	380	300										88.1		
Z4-450-41	235	180			698	600	0.0612	1.7	5.73		81.7			
	260	200									83			

Type	Rated power	Rated voltage	Rated current	Speed with field weakened	Max. speed	Exciting power	Armature circuit resistance	Armature inductance	Magnetic field inductance	External inductance	Efficiency	Moment of inertia	Weight
	kW	V	A	r/min	W		$\Omega(20^\circ\text{C})$	mH	H		mH	%	
Z4-100-1	4	220	21.6	3000	3600	280	0.437	6.5	18		79.9	0.044	60
	2.2	220	13.1	1500	3000		1.43	21.4	18		70.1		
	1.5	220	9.7	1000	2000		2.73	40.5	22		63.3		
	4	400	11.8	3000	3600		1.43	21.4	18		79.8		
	2.2	400	7	1550	3000		4.39	66	18		71.5		
	1.5	400	5.1	1060	2000		7.69	12.5	18		64.6		
Z4-112/2-1	5.5	220	29.4	3070	3600	310	0.267	4.15	18		81.2	0.072	78
	3	220	17.5	1520	3000		0.99	14.1	17		72.3		
	2.2	220	14.2	1000	2000		1.89	26.5	17		64.4		
	5.5	400	16.2	3010	3600		0.99	44.1	18		80.7		
	3	400	9.5	1500	3000		3.18	49.5	18		73		
	2.2	400	7.7	1010	2000		6.11	88	17		65.1		
Z4-112/2-2	7.5	220	39.5	3100	3600	390	0.189	3.2	19		83.2	0.088	86
	4	220	23	1500	3000		0.716	11.5	19		74.5		
	3	220	18.4	1020	2000		1.19	21.5	19		68.8		
	7.5	400	21.8	3000	3600		0.716	11.5	19		82.9		
	4	400	12.4	1500	3000		2.23	39	19		75.8		
	3	400	10.1	1000	2000		4.14	70	14		67.7		
Z4-112/4-1	11	220	58.2	3000	3600	470	0.117	2.25	9.3		83.5	0.128	84
	5.5	220	31.2	1520	3000		0.39	7.7	9.3		75.8		
	4	220	24.6	1000	2000		0.77	15.4	9.2		69.1		
	11	400	31.8	3030	3400		0.373	7	6.8		83.3		
	5.5	400	17	1540	2000		1.2	24.6	9.3		76.4		
	4	400	13.3	1070	1400		2.33	45	9.2		69.9		
Z4-112/4-2	7.5	220	41.4	1530	3000	580	0.13	5.7	7.8		78.2	0.156	94
	5.5	220	32.1	1040	2000		0.466	11	7.8		72.9		
	15	400	42.4	3090	3400		0.225	5.1	5.8		85.5		
	7.5	400	22.6	1520	2000		0.86	19.2	7.8		78.6		
	5.5	400	17.6	1050	1400		1.62	35.5	7.8		73.1		
Z4-132-1	11	220	59.9	1500	3000	660	0.155	4.75	9		80.2	0.32	123
	7.5	220	42.6	1000	2000		0.33	99	6.4		75		
	18.5	400	51.9	3000	3600		0.158	4.15	6.5		86.2		
	11	400	32.4	1510	2000		0.592	14.5	6.4		80.8		
	7.5	400	23.4	1000	1500		1.18	29.5	6.4		75		
Z4-132-2	15	220	79.6	1500	3000	670	0.121	3.65	9.8		82.9	0.4	142
	11	220	60.9	1040	2000		0.214	6.5	7.8		78.3		
	22	400	60.9	3000	3600		0.0959	3.1	8.1		87.7		
	15	400	43.5	1500	2000		0.366	11.2	7.9		82.9		
	11	400	33.7	1000	1500		0.736	22.9	7.8		77.9		
Z4-132-3	30	400	82.3	3080	3600	810	0.0629	2.16	7.2		88.8	0.48	162
	18.5	400	52.6	1500	2500		0.249	8.6	7.1		84.7		
Z4-160-12	37	400	103	3000	3600		0.1	2.6	10		87.9		

Type	Rated power	Rated voltage	Rated current	Speed with field weaked	Max. speed	Exciting power	Armature circuit resistance	Armature inductance	Magnetic field inductance	External inductance	Efficiency	Moment of inertia	Weight
	kW	V	A	r/min		W	$\Omega(20^\circ\text{C})$	mH	H	mH	%	$\text{kg}\cdot\text{m}^2$	kg
Z4-160-11	18.5	220	98.1	1510	3000	760	0.1	2.6	10		83.2	0.64	202
	15	220	84.6	1000	2000		0.19	5.1	7.8		77.5		
	22	400	64.5	1520	2200		0.314	8.4	10		93.1		
	15	400	46.2	1020	1500		0.628	16.2	7.8		78		
Z4-160-22	22	220	117	1500	3000	830	0.087	2.7	9.5		83.3	0.76	224
	18.5	220	100	1040	2000		0.122	4.05	8.2		80.7		
	45	400	124	3000	3600		0.068	2.14	10		89.2		
Z4-160-21	18.5	400	55.7	1030	1500		0.444	13.4	8.1		80		
Z4-160-32	30	220	157	1500	3000	900	0.0581	2.07	7.7		84.8	0.88	250
	22	220	119	1020	3000		0.175	3.4	8.5		81.5		
	55	400	151	3010	3400		0.0434	1.52	8.7		89.7		
Z4-160-31	30	400	85.3	1500	2500		0.173	6.1	8.3		85.7		
	22	401	64.8	1000	1500		0.324	12.2	8.5		82.1		
Z4-180-11	37	220	192	1500	300	990	0.0386	1.1	7.91		85.63	1.52	305
	18.5	220	103	750	2250		0.137	4.1	7.76		78.4		
	15	220	88.1	600	1750		0.217	7.1	9.4		74.02		
	37	400	105	1500	3000		0.137	4.1	10		88.36		
	18.5	400	56.3	750	2000		0.466	14.8	9.93		82.18		
Z4-180-22	30	220	160	1000	2000		0.0695	2.3	9.75		82.82		
	75	400	204	3000	3600		0.0293	1.1	9.43		92.01		
Z4-180-21	22	220	122	750	2250	1070	0.111	3.7	9.71		79.3	1.72	335
	18.5	220	105	600	2000		0.149	5	8.31		76.48		
	22	400	66.2	750	1500		0.378	12.7	9.72		83.07		
	15	400	47	600	1500		0.611	21.6	12.3		79.84		
Z4-180-32	45	220	229	1500	3000	1380	0.0193	0.8	4.53		86.31	1.92	370
Z4-180-31	45	400	127	1500	3000		0.0912	2.9	10.4		88.89		
	30	400	86.4	1000	3000		0.165	5.6	6.45		86.77		
	18.5	400	56.7	600	1500		0.418	13.8	6.49		81.63		
Z4-180-42	37	220	195	1000	2000		0.0362	1.4	6.15		83.2	2.2	395
	30	220	161	750	2250		0.06	2.3	6.12		81.04		
	90	400	244	3000	3600		0.0197	0.67	8.25		92.38		
Z4-180-41	22	220	122	600	2000	1535	0.102	3.4	6.18		77.3	2.2	395
	55	400	154	1500	3000		0.0624	2	6.34		89.39		
	37	400	106	1000	2000		0.137	5.1	11.4		87.04		
	30	400	88.2	750	2000		0.217	7.3	6.24		85.01		
	22	400	67.1	600	1500		0.375	14.7	10.8		81.95		
Z4-200-11	22	220	124	500	2000	1065	0.126	5.7	12		77.92	3.68	470
	22	400	68.2	500	1200		0.446	21.1	11.6		80.67		
	37	400	108	750	2000		0.194	9	10.3		85.58		

Type	Rated power	Rated voltage	Rated current	Speed with field weakened	Max. speed	Exciting power	Armature circuit resistance	Armature inductance	Magnetic field inductance	External inductance	Efficiency	Moment of inertia	Weight
	kW	V	A	r/min	W		$\Omega(20^\circ\text{C})$	mH	H		mH		
Z4-200-21	45	220	232	1000	2000	1180	0.0298	1.5	9.52		86.36	4.2	515
	37	220	197	750	2250		0.0561	2.7	14.5		83.66		
	30	220	165	600	2000		0.0889	4.5	13.9		80.76		
	110	400	295	3000	3600		0.017	0.65	12.5		93.11		
	45	400	127	1000	2000		0.108	5.2	14.9		88.37		
	30	400	88.7	600	1200		0.239	11.9	9.77		84.55		
Z4-200-32	30	220	169	500	200	1375	0.0968	4.9	7.84		78.1	4.8	565
Z4-200-31	45	220	238	750	2250		0.0443	2	8.42		83.9		
	37	220	200	600	2000		0.0611	2.9	8.58		81.4		
	75	400	206	1500	3000		0.0374	1.8	8.6		91.18		
	55	400	155	1500	2000		0.0761	3.6	8.85		88.85		
	45	400	129	750	1400		0.129	6.6	8.59		86.9		
	37	400	109	600	1500		0.198	9.4	8.71		84.72		
	30	400	90.6	500	750		0.264	13.2	8.68		82.78		
Z4-225-11	132	400	357	3000	3400	1910	0.0108	0.48	11.4		92.4	5	680
	90	400	247	1500	3000		0.0356	1.5	6.36		91.12		
	37	400	109	600	1200		0.226	9.5	11.6		84.88		
Z4-225-21	45	220	245	600	2000	2140	0.0524	2.9	13.4		81.8	5.6	735
	37	220	201	500	2000		0.0662	3.1	7.75		80.3		
	110	400	302	1500	2000		0.0315	1.5	10.3		91.11		
	75	400	210	1000	2000		0.0652	3.5	10.5		89.36		
	55	400	157	750	1200		0.104	5.1	7.66		87.47		
	45	400	131	600	1500		0.157	7.3	5.76		85.57		
	37	400	111	500	1200		0.224	10.7	10.6		83.5		
Z4-225-31	45	220	244	500	2000	2380	0.053	2.6	9.87		81.3	6.2	810
	132	400	360	1500	3000		0.0217	1.1	5.55		91.68		
	90	400	250	1000	2000		0.0469	2.7	9.61		89.87		
	55	400	161	600	1500		0.125	7.8	9.14		85.62		
	45	400	133	500	1200		0.171	8.7	5.5		84.45		
Z4-250-22	160	400	435	1500	2000	2010	0.0181	0.93	7.02		91.98	10	960
Z4-250-21	110	400	306	1000	2000		0.0398	1.6	7.58		90		
	75	400	212	750	2000		0.0772	3.1	46.6		88.62		
Z4-250-32	185	400	502	1500	2000	2655	0.0144	0.72	7.09		92.19	11.2	1060
Z4-250-31	132	400	364	1000	2000		0.0297	1.5	5.38		90.67		
	90	400	252	750	2000		0.0564	2.8	9.15		89.45		
	75	400	214	600	1500		0.0837	3.6	9.65		87.79		
	55	400	159	500	1000		0.113	5.2	9.63		86.62		
Z4-250-42	200	400	540	1500	2000		0.0117	0.57	9.07		92.56		

Type	Rated power	Rated voltage	Rated current	Speed with field weakened	Max. speed	Exciting power	Armature circuit resistance	Armature inductance	Magnetic field inductance	External inductance	Efficiency	Moment of inertia	Weight
	kW	V	A	r/min		W	$\Omega(20^\circ\text{C})$	mH	H	mH	%	$\text{kg}\cdot\text{m}^2$	kg
Z4-250-41	132	400	361	1000	2000	2440	0.0246	1.2	9.22		91.38	12.8	1170
	110	400	307	750	1600		0.0412	2.2	8.92		89.71		
	90	400	255	600	1500		0.0615	3.1	6.98		88.14		
	75	400	216	500	1200		0.0913	4.1	7.08		86.63		
Z4-280-12	220	400	593	1500	2000	2550	0.0114	0.57	6.16		92.67	16.4	1230
	160	400	441	1000	1600		0.028	1.4	10.2		90.7		
Z4-280-22	250	400	671	1500	1800	2890	0.00914	0.45	5.9		93.19	18.4	1350
	185	400	508	1000	1600		0.0228	1.3	5.31		91.09		
Z4-280-21	132	400	365	750	1500		0.0324	1.9	7.6		90.42		
	110	400	313	600	1500		0.0578	3.2	9.53		87.84		
Z4-280-32	280	400	750	1500	1800	3185	0.00781	0.4	7.3		93.31	21.2	1500
Z4-280-31	200	400	542	1000	2000		0.0161	0.92	7.11		92.27		
	160	400	442	750	1800		0.0272	1.7	5.39		90.49		
	90	400	254	500	1200		0.0627	3.6	9.55		88.61		
Z4-280-42	315	400	841	1500	1800	3590	0.00704	0.43	8.4		93.59	24	1650
	185	400	510	750	2000		0.0222	1.4	6.74		90.75		
Z4-280-41	220	400	595	1000	2000		0.012	0.77	5.18		92.5		
	132	400	365	600	1500		0.0333	1.8	7.18		90.32		
	110	400	310	500	1200	0.0467	3	6.78	88.82				

Type	Rated power	Rated voltage	Rated current	Rated speed / Max. speed	Exciting power	Efficiency	Moment of inertia	Ventilation	
								Air flow	Air press
	kW	V	A	r/min	kW	%	kg·m <sup>2</sup>	M <sup>3</sup> /S	Pa
Z4-500-1	160	220	878	205/600	6.2	80.3	70.2	2.4	1050
	200		1062	250/800	6.2	83.4	70.2	2.4	1050
	250		1293	320/1000	6.2	86	72.1	2.6	1210
	355		1787	465/1200	6.2	88.9	73.8	2.7	1290
	400		1999	520/1200	6.2	89.7	73.8	2.8	1380
	250	330	879	320/1000	6.2	86.2	70.2	2.5	1130
	315		1063	400/1200	6.2	88.3	70.2	2.5	1130
	400		1325	530/1200	6.2	90.2	72.1	2.7	1290
	500		1636	685/1200	6.2	91.6	73.8	2.8	1380
	600		1949	825/1200	6.2	92.4	73.8	3.0	1560
	355	440	888	465/1200	6.2	89.5	70.2	2.6	1210
	400		990	520/1200	6.2	90.6	70.2	2.6	1210
	530		1294	725/1200	6.2	92.1	72.1	2.8	1380
	670		1620	965/1200	6.2	93.2	73.8	3.0	1560
	750		1809	1095/1200	6.2	93.5	73.8	3.2	1760
Z4-500-2	160	220	896	165/500	6.3	78.7	80.2	2.6	1210
	200		1082	200/600	6.3	81.9	80.2	2.6	1210
	250		1307	255/800	6.3	85.1	81	2.7	1290
	335		1704	350/1000	6.3	87.9	85.2	2.8	1380
	400		2008	415/1200	6.3	89.3	85.2	2.9	1470
	250	330	873	260/800	6.3	85	80.2	2.7	1290
	300		1024	305/1000	6.3	87.2	80.2	2.7	1290
	400		1331	420/1000	6.3	89.8	81	2.8	1380
	500		1643	540/1200	6.3	91.2	85.2	2.9	1470
	600		1949	655/1200	6.3	92.4	85.2	3.1	1660
	335	440	850	350/1000	6.3	88.3	80.2	2.7	1290
	740		997	415/1200	6.3	89.9	80.2	2.8	1380
	530		1297	575/1200	6.3	91.9	81	2.9	1470
	670		1623	765/1200	6.3	93	85.2	3.0	1560
	750		1809	875/1200	6.3	93.5	85.2	3.2	1760
Z4-500-3	150	220	856	125/400	7.8	76.5	94.4	2.9	1470
	185		1015	150/500	7.8	80.1	94.4	2.9	1470
	250		1318	210/600	7.8	84	95.8	3.0	1560
	335		1711	285/1000	7.8	87.2	99.8	3.1	1660
	400		2015	340/1000	7.8	88.7	99.8	3.1	1660
	250	330	882	210/600	7.8	83.7	94.4	3.0	1560
	300		1031	250/700	7.8	86.2	94.4	2.9	1470
	400		1340	345/1000	7.8	88.9	95.8	3.0	1560
	500		1645	440/1200	7.8	90.8	99.8	3.1	1660
	600		1957	535/1200	7.8	91.8	99.8	3.2	1760
	335	440	854	285/1000	7.8	87.4	94.4	3.0	1560
	400		1001	340/1000	7.8	89.3	94.4	3.0	1560
	500		1230	445/1200	7.8	91.1	95.8	3.0	1560
	630		1532	585/1200	7.8	92.4	99.8	3.2	1760
	750		1810	710/1200	7.8	93.3	99.8	3.3	1870

Type	Rated power	Rated voltage	Rated current	Rated speed / Max. speed	Exciting power	Efficiency	Moment of inertia	Ventilation	
								Air flow	Air press
	kW	V	A	r/min	kW	%	kg·m <sup>2</sup>	M <sup>3</sup> /S	Pa
Z4-500-4	150	220	884	105/300	8.5	73.9	110.8	3.1	1660
	185		1038	125/350	8.5	78.1	110.8	3.2	1660
	250		1339	175/500	8.5	82.5	113.2	3.2	1760
	315		1633	220/650	8.5	85.7	119.1	3.3	1870
	395		1908	260/800	8.5	87.6	119.1	3.3	1870
	220	330	790	155/500	8.5	81.8	110.8	3.2	1760
	280		975	190/600	8.5	84.5	110.8	3.1	1660
	375		1269	265/800	8.5	87.8	113.2	3.2	1760
	475		1574	345/1000	8.5	90	119.1	3.3	1870
	560		1837	405/1200	8.5	91.1	119.1	3.4	1970
	315	440	813	220/650	8.5	86.1	110.8	3.2	1760
	375		950	260/800	8.5	88	110.8	3.2	1760
	500		1237	365/1200	8.5	90.5	113.2	3.2	1760
	630		1539	475/1200	8.5	91.9	119.1	3.3	1870
	710		1720	545/1200	8.5	92.8	119.1	3.4	1970
	Z4-560-2	200	220	1116	160/500	8	78.9	120.4	3.3
250		1338		195/700	8	82.7	119.6	3.2	1240
315		1653		250/800	8	84.8	119.6	3.5	1450
400		2037		315/1000	8	87.8	126.3	3.5	1450
315		330	1095	250/800	8	85.3	120.4	3.3	1310
375			1273	300/1000	8	87.6	119.6	3.3	1310
475			1592	385/1200	8	89.1	119.6	3.6	1530
600			1974	490/1200	8	91	126.3	3.6	1530
425		440	1074	345/1000	8	88.5	120.4	3.4	1380
500			1245	405/1200	8	90	119.6	3.4	1380
630			1552	530/1200	8	91.2	119.6	3.8	1690
750			1829	640/1200	8	92.3	126.3	3.8	1690
Z4-560-3	185	220	1054	120/400	9	76.8	140.2	3.6	1530
	250		1359	160/500	9	81.2	148.4	3.5	1450
	315		1670	200/700	9	83.7	148.4	3.8	1690
	400		2056	255/800	9	86.7	150.1	3.7	1510
	300	330	1059	195/700	9	83.7	140.2	3.6	1530
	375		1285	240/800	9	86.6	148.4	3.6	1530
	475		1601	310/1000	9	88.4	148.4	3.9	1770
	600		1984	395/1200	9	90.4	150.1	3.9	1770
	425	440	1079	280/800	9	87.9	140.2	3.7	1610
	500		1250	330/1000	9	89.5	148.4	3.7	1610
	630		1559	425/1200	9	90.7	148.4	4.0	1860
	750		1831	515/1200	9	92.1	150.1	3.9	1860



Type	Rated power	Rated voltage	Rated current	Rated speed / Max. speed	Exciting power	Efficiency	Moment of inertia	Ventilation	
								Air flow	Air press
	kW	V	A	r/min	kW	%	kg·m <sup>2</sup>	M <sup>3</sup> /S	Pa
Z4-560-4	185	220	1087	95/300	9.9	74.3	180.6	3.8	1770
	220		1223	115/400	9.9	78.9	184.7	4.1	1690
	315		1693	165/500	9.9	82.4	184.7	4.0	1950
	375		1954	195/600	9.9	85.3	188.9	4.0	1860
	300	330	1076	160/500	9.9	82.2	180.6	3.9	1860
	375		1301	195/700	9.9	85.4	184.7	4.0	1770
	475		1614	250/800	9.9	87.6	184.7	4.0	1950
	560		1862	300/1000	9.9	89.7	188.9	4.1	1950
	400	440	1035	210/600	9.9	86	180.6	4.0	1860
	500		1260	265/800	9.9	88.6	184.7	3.9	1770
	630		1564	345/1000	9.9	90.3	184.7	4.2	2030
	750		1841	415/1200	9.9	91.5	188.9	4.2	2030
Z4-630-2	564	440	1410	330/1000	12.4	91.5	276	3.8	1140
	662		1633	390/1200	12.4	92.2	280	4.0	1240
	723		1769	420/1100	12.4	92.9	282	4.0	1240
	839		2052	530/1200	12.4	92.9	285	4.5	1540
Z4-630-3	561	440	1403	260/800	13.8	90.9	310	4.1	1300
	660		1636	310/900	13.8	91.7	318	4.3	1420
	723		1776	340/1000	13.8	92.5	320	4.3	1420
	840		2061	425/1000	13.8	92.6	325	4.8	1730
Z4-630-4	555	440	1400	215/600	15.8	90	365	4.5	1540
	654		1633	250/800	15.8	91	370	4.7	1670
	717		1771	270/800	15.8	92	370	4.6	1610
	826		2061	335/800	15.8	92.2	380	5.1	1940
Z4-710-2	490	440	1233	230/690	7.6	89.1	405	6.5	1000
	638		1585	280/840	6.8	90.6	413	6.5	1000
	807		1998	345/930	6.8	91.1	413	6.5	1000
Z4-710-3	487	440	1230	180/540	8.7	88.6	448	7.0	1150
	634		1576	225/675	8.7	90.3	462	7.0	1150
	808		2008	280/840	8.7	90.6	462	7.0	1150
Z4-710-4	482	440	1229	145/435	9.6	87.6	530	7.5	1350
	629		1580	185/555	9.6	89.3	550	7.5	1350
	798		1978	225/675	9.6	90.7	550	7.5	1350