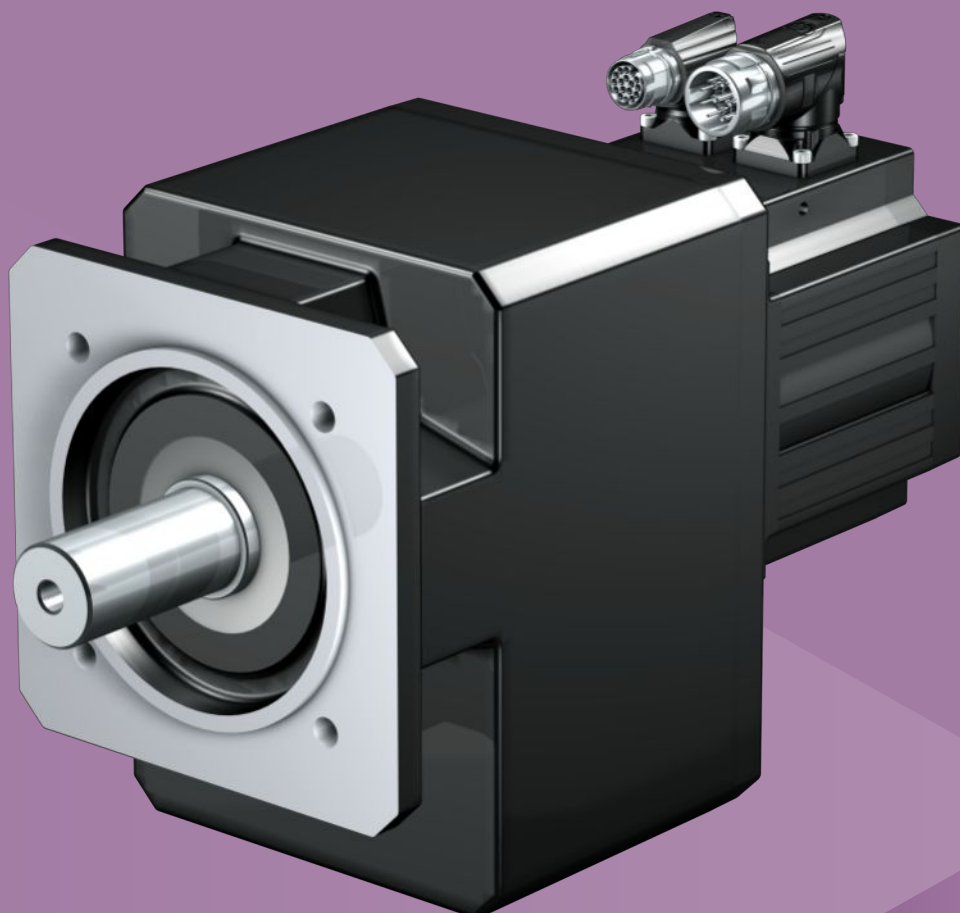




7

Helical geared motors

C

7.1 Overview

Compact helical geared motors

Features

Power density	★☆☆☆☆
Backlash	★★★★☆
Price category	€
Shaft load	★★★★☆
Smooth operation	★★★★☆
Torsional stiffness	★★★★☆
Mass moment of inertia	★★★★★
Helical gearing	✓
Maintenance-free (C0 – C5)	✓
FKM seal ring at the input	✓
Reinforced output bearing	✓ (on request)
Compact and highly dynamic due to direct motor attachment	✓

Key ★☆☆☆☆ good | ★★★★★ excellent

€ Economy | €€€€€ Premium

Technical data

i	2 – 270
M_{2acc}	9.7 – 6500 Nm
$\Delta\phi_2$	10 – 20 arcmin
η_{get}	96 – 97 %

7.2 Selection tables

The technical data specified in the selection tables applies to:

- Installation altitudes up to 1000 m above sea level
- Surrounding temperatures from 0 °C to 40 °C
- Drives with convection-cooled motors (e.g. EZ401U)
- Weight specification for mounting position EL1, housing design N

For the technical data on drives with forced ventilated motors (e.g. EZ401B), refer to

<https://configurator.stoeber.de/en-US/>.

An explanation of the formula symbols can be found in Chapter [▶ 20.1](#).

n_{2N}	M_{2N}	$M_{2,0}$	a_{th}	S	Type	M_{2acc}	M_{2NOT}	i	i_{exakt}	n_{1maxDB}	n_{1maxZB}	J_1	$\Delta\phi_2$	C_2	m
[rpm]	[Nm]	[Nm]				[Nm]	[Nm]			EL1,2,3,4 [rpm]	EL5,6 [rpm]	[kgcm ²]	[arcmin]	[Nm/ arcmin]	[kg]
C0 ($n_{1N} = 3000$ rpm, $M_{2acc,max} = 72$ Nm)															
48	56	57	2.1	1.1	C002_0620 EZ301U	72	120	62.35	1247/20	4000	4000	7000	0.20	16.0	7.5
54	50	52	2.0	1.2	C002_0560 EZ301U	65	120	55.97	2015/36	4000	4000	7000	0.21	16.0	7.5
60	45	46	1.9	1.3	C002_0500 EZ301U	72	120	49.94	899/18	4000	4000	7000	0.21	16.0	7.5
64	42	43	1.9	1.4	C002_0470 EZ301U	65	120	46.82	7865/168	4000	4000	7000	0.21	16.0	7.5
72	38	38	1.7	1.6	C002_0420 EZ301U	72	120	41.77	3509/84	4000	4000	7000	0.21	16.0	7.5
86	32	32	1.6	1.9	C002_0350 EZ301U	65	120	35.03	1261/36	4000	4000	7000	0.23	16.0	7.5
86	54	57	2.7	1.1	C002_0350 EZ302U	65	120	35.03	1261/36	4000	4000	7000	0.33	16.0	8.1
96	28	29	1.5	2.1	C002_0310 EZ301U	72	120	31.26	2813/90	4000	4000	7000	0.23	16.0	7.5
96	48	51	2.6	1.2	C002_0310 EZ302U	72	120	31.26	2813/90	4000	4000	7000	0.33	16.0	8.1
107	25	26	1.4	2.4	C002_0280 EZ301U	65	120	27.99	2015/72	4000	4000	7000	0.25	16.0	7.5
107	43	46	2.4	1.4	C002_0280 EZ302U	65	120	27.99	2015/72	4000	4000	7000	0.35	16.0	8.1
107	56	59	3.2	1.1	C002_0280 EZ303U	65	120	27.99	2015/72	4000	4000	7000	0.46	16.0	8.6
120	23	23	1.4	2.7	C002_0250 EZ301U	68	120	24.97	899/36	4000	4000	7000	0.25	16.0	7.5
120	39	41	2.3	1.6	C002_0250 EZ302U	72	120	24.97	899/36	4000	4000	7000	0.35	16.0	8.1
120	50	53	3.0	1.2	C002_0250 EZ303U	72	120	24.97	899/36	4000	4000	7000	0.46	16.0	8.6
129	21	21	1.3	2.9	C002_0230 EZ301U	63	120	23.21	325/14	4000	4000	7000	0.27	16.0	7.5
129	36	38	2.2	1.7	C002_0230 EZ302U	65	120	23.21	325/14	4000	4000	7000	0.37	16.0	8.1
129	47	49	2.9	1.3	C002_0230 EZ303U	65	120	23.21	325/14	4000	4000	7000	0.48	16.0	8.6
145	19	19	1.2	3.2	C002_0210 EZ301U	56	120	20.71	145/7	4000	4000	7000	0.27	16.0	7.5
145	32	34	2.1	1.9	C002_0210 EZ302U	72	120	20.71	145/7	4000	4000	7000	0.37	16.0	8.1
145	42	44	2.7	1.4	C002_0210 EZ303U	72	120	20.71	145/7	4000	4000	7000	0.48	16.0	8.6
145	56	60	3.7	1.1	C002_0210 EZ401U	72	120	20.71	145/7	4000	4000	7000	1.0	16.0	10
171	16	16	1.1	3.8	C002_0175 EZ301U	48	120	17.53	3575/204	4000	4000	6500	0.31	16.0	7.5
171	27	29	1.9	2.2	C002_0175 EZ302U	65	120	17.53	3575/204	4000	4000	6500	0.41	16.0	8.1
171	35	37	2.5	1.7	C002_0175 EZ303U	65	120	17.53	3575/204	4000	4000	6500	0.52	16.0	8.6
171	48	51	3.4	1.3	C002_0175 EZ401U	65	120	17.53	3575/204	4000	4000	6500	1.0	16.0	10
192	14	14	1.1	4.3	C002_0155 EZ301U	42	114	15.64	1595/102	4000	4000	6500	0.31	16.0	7.5
192	24	25	1.8	2.5	C002_0155 EZ302U	72	114	15.64	1595/102	4000	4000	6500	0.41	16.0	8.1
192	31	33	2.4	1.9	C002_0155 EZ303U	72	114	15.64	1595/102	4000	4000	6500	0.52	16.0	8.6
192	42	46	3.2	1.4	C002_0155 EZ401U	72	120	15.64	1595/102	4000	4000	6500	1.0	16.0	10
213	13	13	1.0	4.7	C002_0140 EZ301U	38	102	14.08	169/12	4000	4000	6500	0.35	16.0	7.5
213	22	23	1.7	2.8	C002_0140 EZ302U	65	102	14.08	169/12	4000	4000	6500	0.45	16.0	8.1
213	28	30	2.3	2.1	C002_0140 EZ303U	65	102	14.08	169/12	4000	4000	6500	0.56	16.0	8.6
213	38	41	3.1	1.6	C002_0140 EZ401U	65	120	14.08	169/12	4000	4000	6500	1.1	16.0	10
213	59	64	4.7	1.0	C002_0140 EZ501U	65	120	14.08	169/12	4000	4000	6500	3.1	16.0	11
239	19	20	1.6	3.1	C002_0125 EZ302U	61	91	12.57	377/30	4000	4000	6500	0.45	16.0	8.1
239	25	27	2.1	2.4	C002_0125 EZ303U	72	91	12.57	377/30	4000	4000	6500	0.56	16.0	8.6
239	34	37	2.9	1.8	C002_0125 EZ401U	72	120	12.57	377/30	4000	4000	6500	1.1	16.0	10
239	52	57	4.4	1.1	C002_0125 EZ501U	72	120	12.57	377/30	4000	4000	6500	3.1	16.0	11
239	57	63	4.9	1.0	C002_0125 EZ402U	72	120	12.57	377/30	4000	4000	6500	1.8	16.0	11
260	18	19	1.6	3.3	C002_0115 EZ302U	56	84	11.54	3185/276	3700	3600	6000	0.49	16.0	8.1
260	23	25	2.1	2.5	C002_0115 EZ303U	65	84	11.54	3185/276	3700	3600	6000	0.60	16.0	8.6
260	31	34	2.9	1.9	C002_0115 EZ401U	65	120	11.54	3185/276	3700	3600	6000	1.1	16.0	10
260	48	53	4.4	1.2	C002_0115 EZ501U	65	120	11.54	3185/276	3700	3600	6000	3.1	16.0	11
260	53	58	4.8	1.1	C002_0115 EZ402U	65	120	11.54	3185/276	3700	3600	6000	1.8	16.0	11
291	16	17	1.6	3.5	C002_0105 EZ302U	50	75	10.30	1421/138	3700	3600	6000	0.49	16.0	8.1
291	21	22	2.1	2.7	C002_0105 EZ303U	60	75	10.30	1421/138	3700	3600	6000	0.60	16.0	8.6
291	28	30	2.8	2.0	C002_0105 EZ401U	72	120	10.30	1421/138	3700	3600	6000	1.1	16.0	10
291	43	47	4.3	1.3	C002_0105 EZ501U	72	120	10.30	1421/138	3700	3600	6000	3.1	16.0	11
291	47	52	4.7	1.2	C002_0105 EZ402U	72	120	10.30	1421/138	3700	3600	6000	1.8	16.0	11
325	14	15	1.6	3.8	C002_0092 EZ302U	45	67	9.228	1495/162	3700	3600	6000	0.56	16.0	8.1

7.2 Selection tables 7 C helical geared motors

n_{2N}	M_{2N}	$M_{2,0}$	a_{th}	S	Type	M_{2acc}	M_{2NOT}	i	i_{exakt}	n_{1maxDB}		n_{1maxZB}	J_1	$\Delta\varphi_2$	C_2	m
[rpm]	[Nm]	[Nm]				[Nm]	[Nm]			EL1,2,3,4	EL5,6	[rpm]	[kgcm ²]	[arcmin]	[Nm/arcmin]	[kg]
C8 ($n_{1N} = 3000$ rpm, $M_{2acc,max} = 4800$ Nm)																
22	1588	1905	1.5	1.9	C813_1380 EZ702U	3718	4648	138.4	2491/18	2900	2700	4300	15	10.0	204	175
22	2183	2752	2.1	1.4	C813_1380 EZ703U	3718	4648	138.4	2491/18	2900	2700	4300	23	10.0	204	177
22	2905	4834	2.4	1.2	C813_1360 EZ802U	4140	7200	136.3	954/7	2900	2700	4300	61	10.0	204	191
22	3466	6280	2.8	1.0	C813_1360 EZ803U	4140	7200	136.3	954/7	2900	2700	4300	86	10.0	204	197
23	2762	4595	2.1	1.4	C813_1300 EZ802U	4800	8400	129.5	58941/455	2900	2700	4300	60	10.0	204	191
23	3294	5969	2.6	1.2	C813_1300 EZ803U	4800	8400	129.5	58941/455	2900	2700	4300	86	10.0	204	197
28	761	854	0.9	3.8	C813_1080 EZ701U	2057	4214	107.6	4841/45	2900	2700	4300	11	10.0	204	173
28	1234	1481	1.4	2.3	C813_1080 EZ702U	3371	4214	107.6	4841/45	2900	2700	4300	16	10.0	204	175
28	1697	2139	1.9	1.7	C813_1080 EZ703U	3371	4214	107.6	4841/45	2900	2700	4300	24	10.0	204	177
28	2259	3758	2.1	1.6	C813_1060 EZ802U	4140	7200	105.9	3708/35	2900	2700	4300	61	10.0	204	191
28	2694	4882	2.5	1.3	C813_1060 EZ803U	4140	7200	105.9	3708/35	2900	2700	4300	87	10.0	204	197
30	2143	3565	2.0	1.7	C813_1010 EZ802U	4800	7453	100.5	28143/280	2900	2700	4300	61	10.0	204	191
30	2556	4631	2.4	1.4	C813_1010 EZ803U	4800	7453	100.5	28143/280	2900	2700	4300	86	10.0	204	197
33	643	721	0.8	4.3	C813_0910 EZ701U	1736	3558	90.82	18800/207	2900	2700	4300	11	10.0	204	173
33	1042	1250	1.4	2.6	C813_0910 EZ702U	2846	3558	90.82	18800/207	2900	2700	4300	16	10.0	204	175
33	1433	1806	1.9	1.9	C813_0910 EZ703U	2846	3558	90.82	18800/207	2900	2700	4300	24	10.0	204	177
34	1907	3172	1.9	1.9	C813_0890 EZ802U	4140	7200	89.44	14400/161	2900	2700	4300	62	10.0	204	191
34	2274	4121	2.3	1.6	C813_0890 EZ803U	4140	7200	89.44	14400/161	2900	2700	4300	87	10.0	204	197
38	561	630	1.0	3.8	C813_0790 EZ701U	1517	3108	79.34	285619/3600	2900	2700	4300	11	10.0	204	173
38	910	1092	1.6	2.3	C813_0790 EZ702U	2486	3108	79.34	285619/3600	2900	2700	4300	16	10.0	204	175
38	1251	1578	2.3	1.7	C813_0790 EZ703U	2486	3108	79.34	285619/3600	2900	2700	4300	24	10.0	204	177
38	1666	2771	1.8	2.1	C813_0780 EZ802U	4800	6759	78.13	54693/700	2900	2700	4300	61	10.0	204	191
38	1987	3600	2.2	1.7	C813_0780 EZ803U	4800	6759	78.13	54693/700	2900	2700	4300	87	10.0	204	197
44	1490	2479	1.7	2.4	C812_0690 EZ802U	4140	6770	68.89	620/9	2900	2700	4300	64	10.0	204	179
44	1777	3221	2.0	2.0	C812_0690 EZ803U	4140	6770	68.89	620/9	2900	2700	4300	89	10.0	204	185
45	1406	2340	1.8	2.4	C813_0660 EZ802U	4800	6222	65.96	10620/161	2900	2700	4300	62	10.0	204	191
45	1677	3040	2.1	2.0	C813_0660 EZ803U	4800	6222	65.96	10620/161	2900	2700	4300	87	10.0	204	197
55	1171	1949	1.5	3.1	C812_0540 EZ802U	4140	6248	54.15	704/13	2900	2700	4300	67	10.0	204	179
55	1397	2532	1.8	2.6	C812_0540 EZ803U	4140	6248	54.15	704/13	2900	2700	4300	92	10.0	204	185
61	1048	1744	1.7	2.9	C813_0490 EZ802U	3710	4638	49.18	49914/1015	2900	2700	4300	63	10.0	204	191
61	1251	2266	2.0	2.4	C813_0490 EZ803U	3710	4638	49.18	49914/1015	2900	2700	4300	89	10.0	204	197
66	985	1639	1.4	3.7	C812_0460 EZ802U	4140	5251	45.54	592/13	2900	2700	4300	70	10.0	204	179
66	1175	2129	1.6	3.1	C812_0460 EZ803U	4140	7200	45.54	592/13	2900	2700	4300	95	10.0	204	185
75	864	1437	1.3	4.3	C812_0400 EZ802U	3686	4608	39.94	2596/65	2900	2700	4300	67	10.0	145	179
75	1030	1867	1.5	3.6	C812_0400 EZ803U	3686	4608	39.94	2596/65	2900	2700	4300	92	10.0	145	185
85	764	1272	1.2	4.7	C812_0350 EZ802U	3427	4648	35.33	106/3	2900	2700	4300	76	10.0	204	179
85	912	1652	1.4	3.9	C812_0350 EZ803U	4140	7200	35.33	106/3	2900	2700	4300	101	10.0	204	185
89	726	1209	1.4	4.3	C812_0340 EZ802U	3098	3872	33.59	2183/65	2900	2700	4300	70	10.0	145	179
89	867	1570	1.3	4.6	C812_0340 EZ803U	4724	8400	33.59	2183/65	2900	2700	4300	96	10.0	145	185
115	564	938	1.4	4.9	C812_0260 EZ802U	2528	3428	26.06	3127/120	2900	2700	4300	76	10.0	145	179
C9 ($n_{1N} = 2000$ rpm, $M_{2acc,max} = 6500$ Nm)																
18	4614	6979	2.6	1.3	C913_1100 EZ805U	6500	9997	110.4	21645/196	2800	2600	4000	138	10.0	393	317
26	3247	4912	2.9	1.4	C913_0780 EZ805U	5630	7037	77.73	60939/784	2800	2600	4000	139	10.0	393	317
C9 ($n_{1N} = 3000$ rpm, $M_{2acc,max} = 6500$ Nm)																
14	4591	7638	1.9	1.3	C913_2150 EZ802U	6500	12000	215.4	3015/14	2800	2600	4000	61	10.0	393	298
14	5476	9923	2.2	1.1	C913_2150 EZ803U	6500	12000	215.4	3015/14	2800	2600	4000	87	10.0	393	304
17	3754	6246	1.7	1.6	C913_1760 EZ802U	6500	12000	176.1	34515/196	2800	2600	4000	62	10.0	393	298
17	4478	8114	2.0	1.3	C913_1760 EZ803U	6500	12000	176.1	34515/196	2800	2600	4000	87	10.0	393	304
27	2354	3917	1.4	2.4	C913_1100 EZ802U	6500	9997	110.4	21645/196	2800	2600	4000	64	10.0	393	298
27	2808	5089	1.7	2.0	C913_1100 EZ803U	6500	9997	110.4	21645/196	2800	2600	4000	89	10.0	393	304
39	1657	2757	1.7	2.4	C913_0780 EZ802U	5630	7037	77.73	60939/784	2800	2600	4000	64	10.0	393	298
39	1977	3582	2.0	2.0	C913_0780 EZ803U	5630	7037	77.73	60939/784	2800	2600	4000	89	10.0	393	304