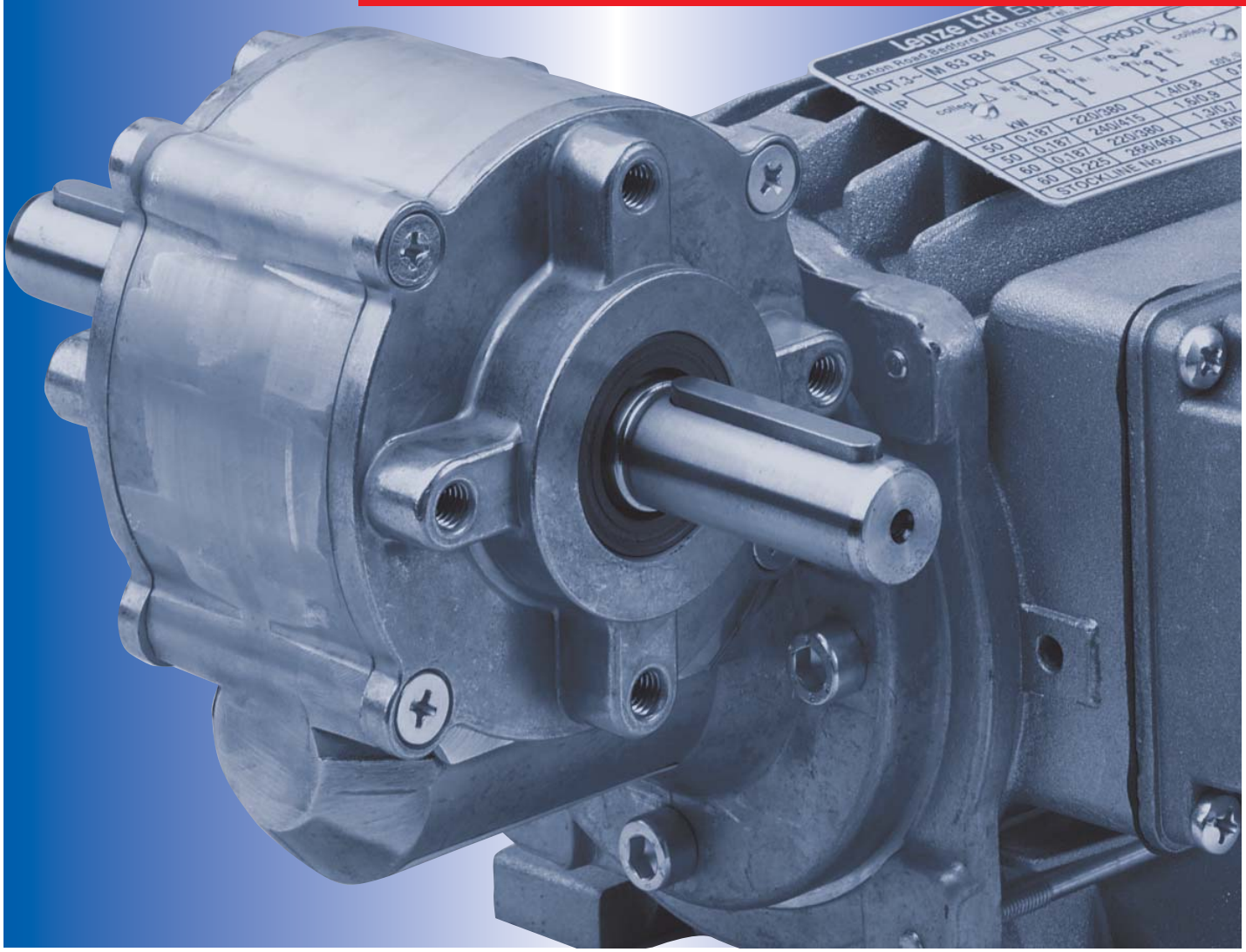
Small geared motors

Geared motors 45W-4kW

Small ac and dc geared motors

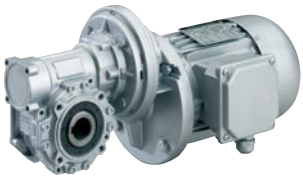


Lenze

ideas in motion

Small geared motors | index

ac geared motors



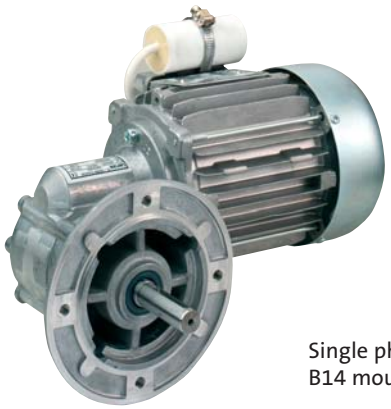
dc geared motors

dc controllers

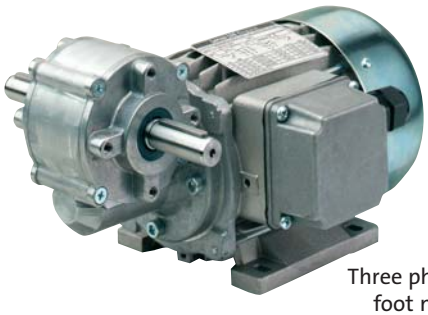
Small geared motors | FHP ac worm geared

45 - 270W

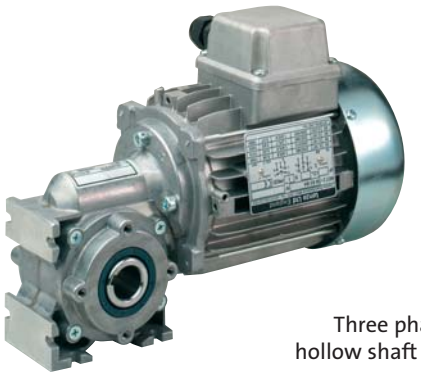
- Rugged motors with adaptable worm gearbox
- Compact design
- Foot (B3), Face (B14) and Hollow shaft mounting
- Three phase 230/400V ±10% 50Hz also 255/440V ±10% 60Hz
- Single phase 220-240V 50Hz
- No maintenance
- IP55 protection standard
- Thermal cut-out (Klixon) standard



Single phase with B14 mounting



Three phase with foot mounting



Three phase with hollow shaft gearbox

General description

The motors are constructed from high quality robust light alloy requiring no maintenance. Rotors are finely balanced and mounted in substantial rolling bearings. The steel worm and bronze wheel are accurately machined to give minimum noise and wear whilst transmitting high load torques.

The gearbox is lubricated at assembly and requires no further attention during the life of the geared unit. The large terminal box has six terminals. The motors are enclosed to IP55 and are fan cooled incorporating metal fan cowls.

Gearbox shaft loadings

Axial and radial forces on the gearbox output shafts must be limited to those shown below.

Gearbox size	Maximum force (N) Radial B3	B14	H/S	Axial
25	63	80	–	50
31	2x100*	200	300	300
40	2x300*	600	600	400

N.B. Both axial and radial forces must not be applied together at their maximum values.

* Double shaft B3 models should have the load shared between the two shafts.

Operating factors

Shocks to drive	none	medium	strong
Operating factor f_1	1	1.2	1.5
Frequency of starts	10/h	60/h	360/h
Starting factor f_2	1	1.1	1.2
Duty cycle ED	<40%	<70%	<100%
Duty cycle factor f_3	0.77	0.88	1.0

Options

- Other voltages and speeds
- Encoders and brakes can be fitted to certain models
- Blower: only available for MM63 and M63 single phase: 220-240V/1/50-60Hz, 0.18A recommended to use when running the three phase motor with an inverter at lower speeds (below approx. 600r/min motor speed)

Ordering example – single phase

Quantity	5 off
Output speed r/min	35r/min
Gearbox type	SSN40-1FHAR-40
Motor type	MM63B4 1 phase 150W
Gearbox handing (shaft position/gearbox handling/terminal box position)	15/A/5 (see page 9)
Optional accessories	TQARM40

FHP ac worm geared | Series MM 1 phase

45 - 75W 1 phase

45W	Motor type MM50L4 1380 r/min; 0.53A; gearbox size 25				
Gearbox output speed r/min	Ratio i	Gearbox torque Nm	Foot mounting B3* gearbox type	Face mounting B14* gearbox type	Hollow shaft mounting* Gearbox type
23	60	5.6+	SSN25-1FDAR-60	SSN25-1FVCL-60	-
27	50	5.6+	SSN25-1FDAR-50	SSN25-1FVCL-50	-
34	40	5.3	SSN25-1FDAR-40	SSN25-1FVCL-40	-
46	30	4.5	SSN25-1FDAR-30	SSN25-1FVCL-30	-
69	20	3.6	SSN25-1FDAR-20	SSN25-1FVCL-20	-
92	15	3.0	SSN25-1FDAR-15	SSN25-1FVCL-15	-
138	10	2.2	SSN25-1FDAR-10	SSN25-1FVCL-10	-
172	8	1.9	SSN25-1FDAR-8	SSN25-1FVCL-8	-
276	5	1.3	SSN25-1FDAR-5	SSN25-1FVCL-5	-

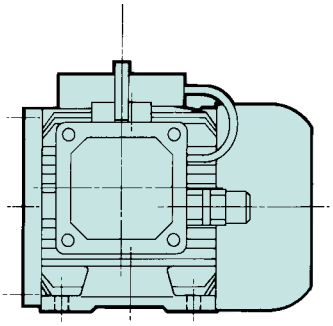
60W	Motor type MM50L2 2700 r/min; 0.64A; gearbox size 25				
Gearbox output speed r/min	Ratio i	Gearbox torque Nm	Foot mounting B3* gearbox type	Face mounting B14* gearbox type	Hollow shaft mounting* Gearbox type
45	60	4.2	SSN25-1FDAR-60	SSN25-1FVCL-60	-
54	50	3.8	SSN25-1FDAR-50	SSN25-1FVCL-50	-
68	40	3.6	SSN25-1FDAR-40	SSN25-1FVCL-40	-
90	30	3.1	SSN25-1FDAR-30	SSN25-1FVCL-30	-
135	20	2.5	SSN25-1FDAR-20	SSN25-1FVCL-20	-
180	15	2.0	SSN25-1FDAR-15	SSN25-1FVCL-15	-
270	10	1.5	SSN25-1FDAR-10	SSN25-1FVCL-10	-
338	10	1.5	SSN25-1FDAR-8	SSN25-1FVCL-8	-
540	5	0.9	SSN25-1FDAR-5	SSN25-1FVCL-5	-

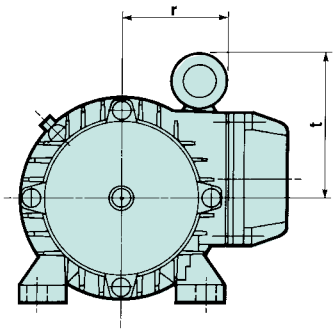
75W	Motor type MM56B4 1340 r/min; 0.8A; gearbox size 31				
Gearbox output speed r/min	Ratio i	Gearbox torque Nm	Foot mounting B3* gearbox type	Face mounting B14* gearbox type	Hollow shaft mounting* Gearbox type
13	100	12.3+	SSN31-1FDAR-100	SSN31-1FVCL-100	SSN31-1FHAR-100
18	75	12.3+	SSN31-1FDAR-75	SSN31-1FVCL-75	SSN31-1FHAR-75
24	55	14.1	SSN31-1FDAR-55	SSN31-1FVCL-55	SSN31-1FHAR-55
27	50	11.2	SSN31-1FDAR-50	SSN31-1FVCL-50	SSN31-1FHAR-50
35	38	11.0	SSN31-1FDAR-38	SSN31-1FVCL-38	SSN31-1FHAR-38
45	30	8.8	SSN31-1FDAR-30	SSN31-1FVCL-30	SSN31-1FHAR-30
54	25	7.6	SSN31-1FDAR-25	SSN31-1FVCL-25	SSN31-1FHAR-25
67	20	7.1	SSN31-1FDAR-20	SSN31-1FVCL-20	SSN31-1FHAR-20
89	15	5.7	SSN31-1FDAR-15	SSN31-1FVCL-15	SSN31-1FHAR-15
134	10	4.0	SSN31-1FDAR-10	SSN31-1FVCL-10	SSN31-1FHAR-10
191	7	3.0	SSN31-1FDAR-7	SSN31-1FVCL-7	SSN31-1FHAR-7
268	5	2.2	SSN31-1FDAR-5	SSN31-1FVCL-5	SSN31-1FHAR-5

\+ Limited by gearbox

* Please make sure you state the required gearbox handing when ordering. See page 9

Capacitor arrangement 1 phase





Frame size	r	t
MM50	65	75
MM56	70	85
MM63	75	90

135W	MM56B2 2700 r/min; 1.6A; gearbox size 31				
Gearbox output speed r/min	Ratio i	Gearbox torque Nm	Foot mounting B3* gearbox type	Face mounting B14* gearbox type	Hollow shaft mounting* Gearbox type
27	100	11.0+	SSN31-1FDAR-100	SSN31-1FVCL-100	SSN31-1FHAR-100
36	75	11.0+	SSN31-1FDAR-75	SSN31-1FVCL-75	SSN31-1FHAR-75
49	55	13.7	SSN31-1FDAR-55	SSN31-1FVCL-55	SSN31-1FHAR-55
54	50	11.0	SSN31-1FDAR-50	SSN31-1FVCL-50	SSN31-1FHAR-50
71	38	10.3	SSN31-1FDAR-38	SSN31-1FVCL-38	SSN31-1FHAR-38
90	30	8.5	SSN31-1FDAR-30	SSN31-1FVCL-30	SSN31-1FHAR-30
108	25	7.3	SSN31-1FDAR-25	SSN31-1FVCL-25	SSN31-1FHAR-25
135	20	6.6	SSN31-1FDAR-20	SSN31-1FVCL-20	SSN31-1FHAR-20
180	15	5.3	SSN31-1FDAR-15	SSN31-1FVCL-15	SSN31-1FHAR-15
270	10	3.7	SSN31-1FDAR-10	SSN31-1FVCL-10	SSN31-1FHAR-10
386	7	2.8	SSN31-1FDAR-7	SSN31-1FVCL-7	SSN31-1FHAR-7
540	5	2.0	SSN31-1FDAR-5	SSN31-1FVCL-5	SSN31-1FHAR-5

150W	MM63B4 1380 r/min; 1.37A; gearbox size 40				
Gearbox output speed r/min	Ratio i	Gearbox torque Nm	Foot mounting B3* gearbox type	Face mounting B14* gearbox type	Hollow shaft mounting* Gearbox type
17	80	26.8+	SSN40-1FDAR-80	SSN40-1FVCL-80	SSN40-1FHAR-80
23	60	21.0	SSN40-1FDAR-60	SSN40-1FVCL-60	SSN40-1FHAR-60
28	50	26.0	SSN40-1FDAR-50	SSN40-1FVCL-50	SSN40-1FHAR-50
35	40	21.6	SSN40-1FDAR-40	SSN40-1FVCL-40	SSN40-1FHAR-40
46	30	18.4	SSN40-1FDAR-30	SSN40-1FVCL-30	SSN40-1FHAR-30
55	25	15.6	SSN40-1FDAR-25	SSN40-1FVCL-25	SSN40-1FHAR-25
69	20	14.1	SSN40-1FDAR-20	SSN40-1FVCL-20	SSN40-1FHAR-20
92	15	11.0	SSN40-1FDAR-15	SSN40-1FVCL-15	SSN40-1FHAR-15
138	10	8.2	SSN40-1FDAR-10	SSN40-1FVCL-10	SSN40-1FHAR-10
204	6.75	5.7	SSN40-1FDAR-6.75	SSN40-1FVCL-6.75	SSN40-1FHAR-6.75

240W	MM63B2 2820 r/min; 2.4A; gearbox size 40				
Gearbox output speed r/min	Ratio i	Gearbox torque Nm	Foot mounting B3* gearbox type	Face mounting B14* gearbox type	Hollow shaft mounting* Gearbox type
35	80	24.0+	SSN40-1FDAR-80	SSN40-1FVCL-80	SSN40-1FHAR-80
47	60	18.5	SSN40-1FDAR-60	SSN40-1FVCL-60	SSN40-1FHAR-60
56	50	21.9	SSN40-1FDAR-50	SSN40-1FVCL-50	SSN40-1FHAR-50
71	40	18.2	SSN40-1FDAR-40	SSN40-1FVCL-40	SSN40-1FHAR-40
94	30	15.1	SSN40-1FDAR-30	SSN40-1FVCL-30	SSN40-1FHAR-30
113	25	13.0	SSN40-1FDAR-25	SSN40-1FVCL-25	SSN40-1FHAR-25
141	20	11.5	SSN40-1FDAR-20	SSN40-1FVCL-20	SSN40-1FHAR-20
188	15	9.0	SSN40-1FDAR-15	SSN40-1FVCL-15	SSN40-1FHAR-15
282	10	6.6	SSN40-1FDAR-10	SSN40-1FVCL-10	SSN40-1FHAR-10
418	6.75	4.6	SSN40-1FDAR-6.75	SSN40-1FVCL-6.75	SSN40-1FHAR-6.75

\+ Limited by gearbox

N.B. Axial and radial forces on the gearbox output shafts must be limited to those shown on page 3

* Please make sure you state the required gearbox handing when ordering. See page 9

Single phase units

The stated torque is developed with the RUN capacitor permanently connected. The starting torque may be as low as 70% of this figure. With an additional START capacitor connected in parallel with the RUN capacitor, the starting torque is increased to approximately 130% of the stated torque. This additional capacitor must be disconnected once the motor is running. Details supplied on request.

FHP ac worm geared | Series M 3 phase

45 - 150W 3 phase

45W	Motor type M50L4 1340 r/min; 0.32A @ 400V, 0.55A @ 230V; gearbox size 25				
Gearbox output speed r/min	Ratio i	Gearbox torque Nm	Foot mounting B3* gearbox type	Face mounting B14* gearbox type	Face mounting B14* Gearbox type
22	60	5.6+	SSN25-1FDAR-60	SSN25-1FVCL-60	-
27	50	5.8	SSN25-1FDAR-50	SSN25-1FVCL-50	-
33	40	5.5	SSN25-1FDAR-40	SSN25-1FVCL-40	-
44	30	4.6	SSN25-1FDAR-30	SSN25-1FVCL-30	-
67	20	3.7	SSN25-1FDAR-20	SSN25-1FVCL-20	-
89	15	3.1	SSN25-1FDAR-15	SSN25-1FVCL-15	-
134	10	2.3	SSN25-1FDAR-10	SSN25-1FVCL-10	-
167	8	1.9	SSN25-1FDAR-8	SSN25-1FVCL-8	-
268	5	1.3	SSN25-1FDAR-5	SSN25-1FVCL-5	-

60W	Motor type M50L2 2750 r/min; 0.25A @ 400V, 0.43A @ 230V; gearbox size 25				
Gearbox output speed r/min	Ratio i	Gearbox torque Nm	Foot mounting B3* gearbox type	Face mounting B14* gearbox type	Face mounting B14* Gearbox type
46	50	4.1	SSN25-1FDAR-60	SSN25-1FVCL-60	-
55	50	3.8	SSN25-1FDAR-50	SSN25-1FVCL-50	-
69	40	3.6	SSN25-1FDAR-40	SSN25-1FVCL-40	-
92	30	3.0	SSN25-1FDAR-30	SSN25-1FVCL-30	-
138	20	2.4	SSN25-1FDAR-20	SSN25-1FVCL-20	-
183	15	2.0	SSN25-1FDAR-15	SSN25-1FVCL-15	-
275	10	1.5	SSN25-1FDAR-10	SSN25-1FVCL-10	-
344	8	1.3	SSN25-1FDAR-8	SSN25-1FVCL-8	-
550	5	0.9	SSN25-1FDAR-5	SSN25-1FVCL-5	-

90W	Motor type M56A4 1370 r/min; 0.45A @ 400V, 0.78A @ 230V; gearbox size 31				
Gearbox output speed r/min	Ratio i	Gearbox torque Nm	Foot mounting B3* gearbox type	Face mounting B14* gearbox type	Face mounting B14* Gearbox type
14	100	12.3+	SSN31-1FDAR-100	SSN31-1FVCL-100	SSN31-1FHAR-100
18	75	12.3+	SSN31-1FDAR-75	SSN31-1FVCL-75	SSN31-1FHAR-75
25	55	16.6	SSN31-1FDAR-55	SSN31-1FVCL-55	SSN31-1FHAR-55
27	50	13.2	SSN31-1FDAR-50	SSN31-1FVCL-50	SSN31-1FHAR-50
36	38	12.9	SSN31-1FDAR-38	SSN31-1FVCL-38	SSN31-1FHAR-38
46	30	10.4	SSN31-1FDAR-30	SSN31-1FVCL-30	SSN31-1FHAR-30
55	25	8.9	SSN31-1FDAR-25	SSN31-1FVCL-25	SSN31-1FHAR-25
69	20	8.3	SSN31-1FDAR-20	SSN31-1FVCL-20	SSN31-1FHAR-20
91	15	6.7	SSN31-1FDAR-15	SSN31-1FVCL-15	SSN31-1FHAR-15
137	10	4.7	SSN31-1FDAR-10	SSN31-1FVCL-10	SSN31-1FHAR-10
196	7	3.6	SSN31-1FDAR-7	SSN31-1FVCL-7	SSN31-1FHAR-7
274	5	2.6	SSN31-1FDAR-5	SSN31-1FVCL-5	SSN31-1FHAR-5

150W	Motor type 150W M56B2 2800 r/min; 0.43A @ 400V, 0.83A @ 230V; gearbox size 31				
Gearbox output speed r/min	Ratio i	Gearbox torque Nm	Foot mounting B3* gearbox type	Face mounting B14* gearbox type	Face mounting B14* Gearbox type
28	100	11+	SSN31-1FDAR-100	SSN31-1FVCL-100	SSN31-1FHAR-100
37	75	11+	SSN31-1FDAR-75	SSN31-1FVCL-75	SSN31-1FHAR-75
51	50	11.8	SSN31-1FDAR-55	SSN31-1FVCL-55	SSN31-1FHAR-55
56	50	11.8	SSN31-1FDAR-50	SSN31-1FVCL-50	SSN31-1FHAR-50
74	38	11.1	SSN31-1FDAR-38	SSN31-1FVCL-38	SSN31-1FHAR-38
93	30	9.1	SSN31-1FDAR-30	SSN31-1FVCL-30	SSN31-1FHAR-30
112	25	7.8	SSN31-1FDAR-25	SSN31-1FVCL-25	SSN31-1FHAR-25
140	20	7.1	SSN31-1FDAR-20	SSN31-1FVCL-20	SSN31-1FHAR-20
187	15	5.7	SSN31-1FDAR-15	SSN31-1FVCL-15	SSN31-1FHAR-15
280	10	3.9	SSN31-1FDAR-10	SSN31-1FVCL-10	SSN31-1FHAR-10
400	7	3.0	SSN31-1FDAR-7	SSN31-1FVCL-7	SSN31-1FHAR-7
560	5	2.2	SSN31-1FDAR-5	SSN31-1FVCL-5	SSN31-1FHAR-5

185W	Motor type M63B4 1370 r/min; 0.85A @ 400V, 1.47A @ 230V; gearbox size 40				
Gearbox output speed r/min	Ratio i	Gearbox torque Nm	Foot mounting B3* gearbox type	Face mounting B14* gearbox type	Face mounting B14* Gearbox type
17	80	26.8+	SSN40-1FDAR-80	SSN40-1FVCL-80	SSN40-1FHAR-80
23	60	25.7+	SSN40-1FDAR-60	SSN40-1FVCL-60	SSN40-1FHAR-60
27	50	32.2	SSN40-1FDAR-50	SSN40-1FVCL-50	SSN40-1FHAR-50
34	40	26.8	SSN40-1FDAR-40	SSN40-1FVCL-40	SSN40-1FHAR-40
46	30	22.8	SSN40-1FDAR-30	SSN40-1FVCL-30	SSN40-1FHAR-30
55	25	19.3	SSN40-1FDAR-25	SSN40-1FVCL-25	SSN40-1FHAR-25
69	20	17.5	SSN40-1FDAR-20	SSN40-1FVCL-20	SSN40-1FHAR-20
91	15	13.7	SSN40-1FDAR-15	SSN40-1FVCL-15	SSN40-1FHAR-15
137	10	10.2	SSN40-1FDAR-10	SSN40-1FVCL-10	SSN40-1FHAR-10
203	6.75	7.1	SSN40-1FDAR-6.75	SSN40-1FVCL-6.75	SSN40-1FHAR-6.75

270W	Motor type M63B2 2800 r/min; 0.76A @ 400V, 1.32A @ 230V; gearbox size 40				
Gearbox output speed r/min	Ratio i	Gearbox torque Nm	Foot mounting B3* gearbox type	Face mounting B14* gearbox type	Face mounting B14* Gearbox type
35	80	24.0+	SSN40-1FDAR-80	SSN40-1FVCL-80	SSN40-1FHAR-80
47	60	21.0	SSN40-1FDAR-60	SSN40-1FVCL-60	SSN40-1FHAR-60
56	50	24.9	SSN40-1FDAR-50	SSN40-1FVCL-50	SSN40-1FHAR-50
70	40	20.6	SSN40-1FDAR-40	SSN40-1FVCL-40	SSN40-1FHAR-40
93	30	17.1	SSN40-1FDAR-30	SSN40-1FVCL-30	SSN40-1FHAR-30
112	25	14.7	SSN40-1FDAR-25	SSN40-1FVCL-25	SSN40-1FHAR-25
140	20	13.1	SSN40-1FDAR-20	SSN40-1FVCL-20	SSN40-1FHAR-20
187	15	10.2	SSN40-1FDAR-15	SSN40-1FVCL-15	SSN40-1FHAR-15
280	10	7.5	SSN40-1FDAR-10	SSN40-1FVCL-10	SSN40-1FHAR-10
415	6.75	5.2	SSN40-1FDAR-6.75	SSN40-1FVCL-6.75	SSN40-1FHAR-6.75

\+ Limited by gearbox

N.B. Axial and radial forces on the gearbox output shafts must be limited to those shown on page 3

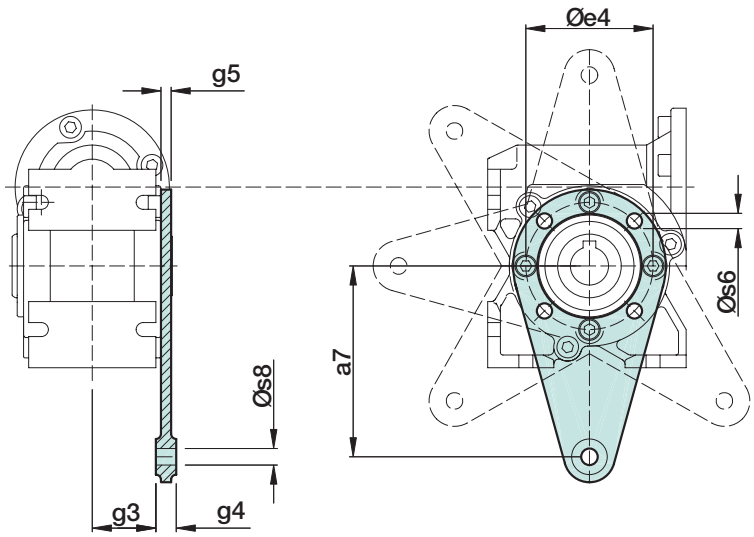
* Please make sure you state the required gearbox handing when ordering. See page 9

Torque arm

Optional torque arm for hollow shaft gearboxes. Supplied loose with fixing screws the torque arm can be fitted to either side of the hollow shaft gearbox in any of six positions.

Gearbox size	Type No.
31	TQARM31
40	TQARM40

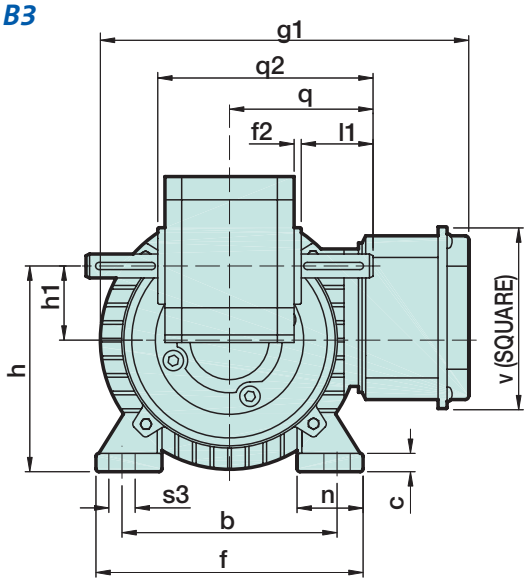
Gearbox size	a7	e4	g3	g4	g5	s6	s8
31	75	50	27	4	4	6	6.5
40	85	65	35	14	4	7	8

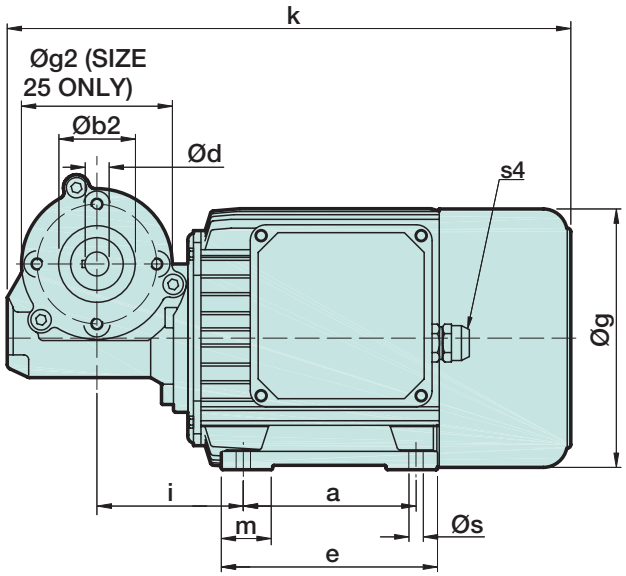


Single and three phase

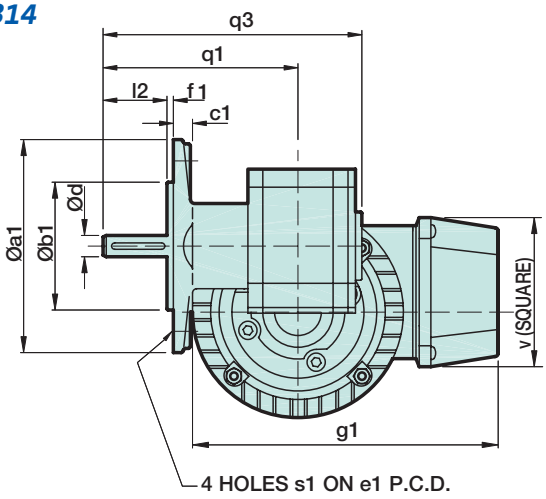
Alternate models with feet on the gearbox are available on six weeks delivery.

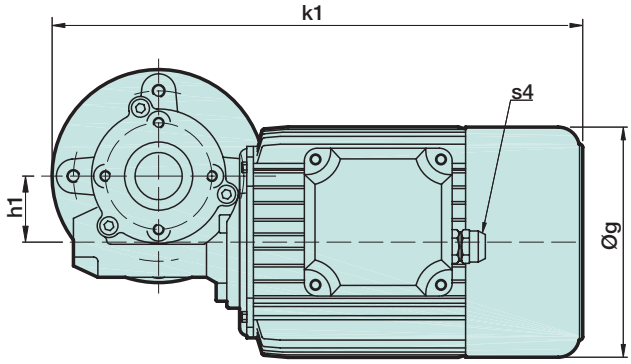
B3



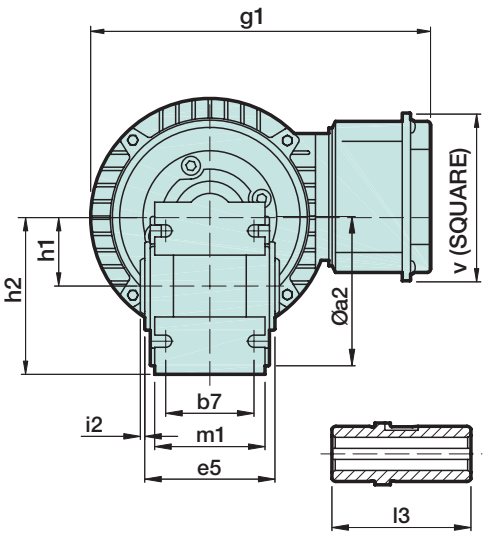


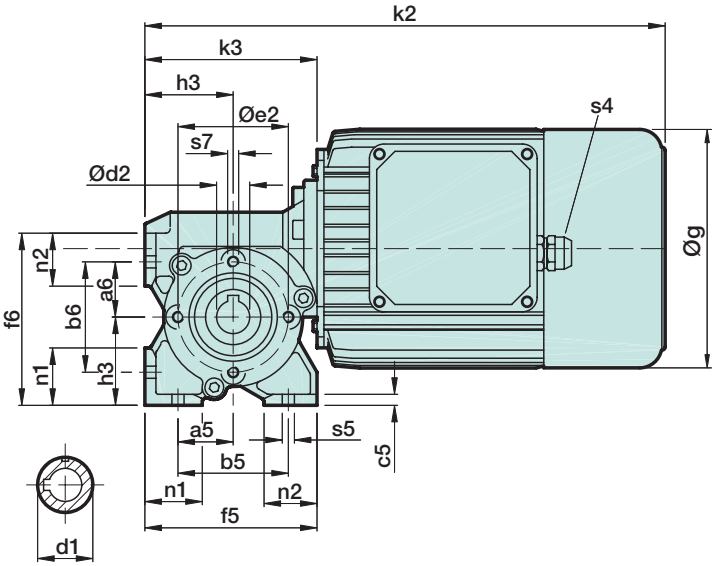
B14





Hollow shaft





B3

Model – Gearbox size	a	b	b_2	c	d h6	e	f	f_2	g	g_1*	g_2	h	h_1	i
MM50/M50-25	60	75	28 h11	2	9	78	94	7	98	125	62	75	25	48.5
MM56/M56-31	71	90	32 h8	9	10	90	112	3	110	148	–	87	31	61
MM63/M63-40	80	100	44 h10	10.8	15	105	125	3	123	162	–	103	40	70

Model – Gearbox size	k	l*	l_1	m	n	q	q_2	s	s_3	s_4	v*	Approx. weight kg
MM50/M50-25	205	–	27	19	19	50	73	6	6	Pg9	56	2.7
MM56/M56-31	235	20	30	22	26.5	60	90	6	11	Pg11	70	3.8
MM63/M63-40	258	27	43	26	30	83	123	7	12	Pg11	70	6.0

B14

Model – Gearbox size	a_1	b_1 j7	c_1	d h6	e_1	f_1	g	g_1*	h_1	k_1	l*	l_2	q_1	q_3	s_1	s_4	v*	Approx. Weight kg
MM50/M50-25	80	50	8	9	65	3	98	125	25	215	–	28	81	104	M5	Pg9	56	2.7
MM56/M56-31	100	60	9	10	80	3	110	148	31	246.5	20	30	91.5	121.5	M6	Pg11	70	3.8
MM63/M63-40	140	95	10	15	115	3	123	162	40	289.5	27	50	128	168	M8	Pg11	70	6.0

Hollow shaft

Model – Gearbox size	a_2	a_5	a_6	b_5	b_6	b_7	c_5	d_1	d_2 H7	e_2	e_5	f_5	f_6	g	g_1*	h_1
MM56/M56-31	–	25	25	50	50	40	5	25	15	50	54	78	78	110	148	31
MM63/M63-40	77	30	30	60	60	50	6	30	20	65	80	90	90	123	162	40

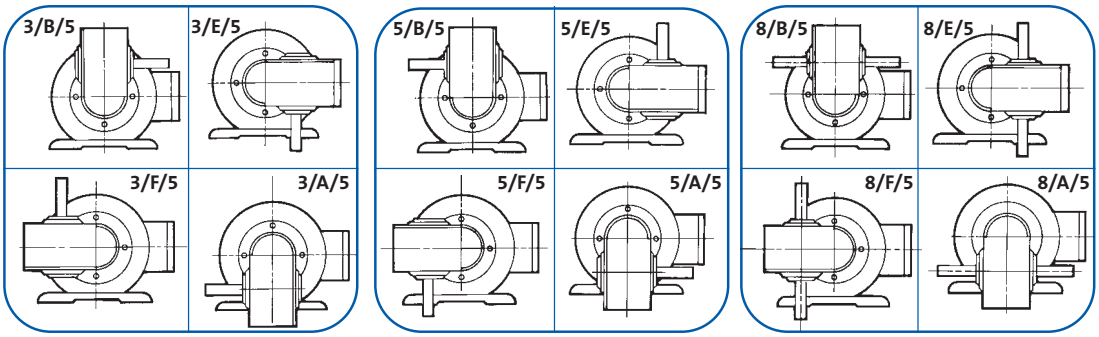
Model – Gearbox size	h_2	h_3	i_2	k_2	k_3	l_3	m_1	n_1	n_2	s_4	s_5	s_7	v*	Approx. Weight kg
MM56/M56-31	71	40	4.5	236.5	78	63	50	26	24	Pg11	5.5	M5	70	3.8
MM63/M63-40	88	48	1.5	267.5	96	83	59	30	24	Pg11	5.5	M6	70	6.0

* Brake motors – l is the extra length, dimension g_1 increases by 10mm and v becomes 92. Shaft keys and keyways to BS4235 (DIN 6885/1)

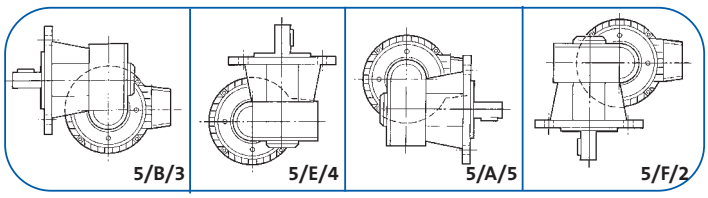
Gearbox designs and handings

When ordering specify the gearbox handing required from the tables below.

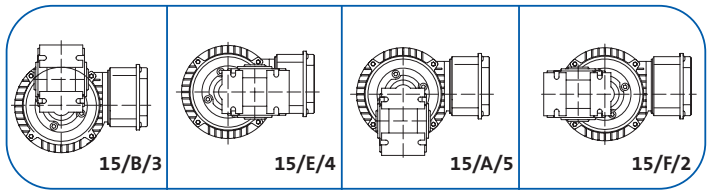
Foot mounting B3



Face mounting B14



Hollow shaft



Possible combinations of B14 geared motors depend on geared motor size and are shown below.

Size	Single phase 5/B/3	5/E/4	5/A/5	5/F/2	Three phase 5/B/3	5/E/4	5/A/5	5/F/2
25	✓	✓	✓	✓	✓	✓	✓	✓
31	✓	✗	✗	✓	✓	✓	✗	✓
40	✓	✗	✗	✓	✓	✓	✗	✓

B14 gearbox output shafts are keywayed to BS4235 (DIN 6885/1)

See also the torque arm on page 7

Small geared motors | Type SDS/SPL planetary

240 - 600W

This range combines the inverter optimised SDS flux vector motors with the SPL low cost planetary gearheads. It is ideal where compact and in-line variable speed drives are required. Those selections feature motors without feedback for open loop control. On request, motors with feedback can be substituted. Where low output backlash is required, ask for a gearhead with higher specification.

- Powers 240 to 600W
- Outputs 23 to 757 r/min, up to 120Nm
- Asynchronous motors inverter optimised for 2800 r/min, 100Hz
- 10:1 speed range with vector inverters
- Self-cooled without fan
- Compact smooth-bodied planetary gearboxes

For inverter use only

Motors

Lenze motors are designed for maximum performance with inverter drives such as the Lenze vector range. They can be connected to either a 225V or 390V supply. Rated speed is 100Hz and the V/F code on the inverter must be set accordingly.

- IP54 enclosed, insulation class F.
- ICOO cooling category, without a fan, low noise.
- Suits ambients –15 to +40°C.
- Temperature switch (Klixon) fitted as standard.
- Maximum voltage amplitude 1500V dv/dt ≥ 5kV/µs.

Motor rated currents at 225V (Delta connection):

240W - 1.3A 400W - 2.1A 600W - 3.0A

Further SDS motor information is available on request.

Inverters

Matched inverters for full torque operation over a 10:1 speed range without feedback are available from the Lenze vector range.

240W use vector 0.25kW
400W use vector 0.55kW
600W use vector 0.75kW

Further information is available on our inverter pages.

Gearboxes

The SPL gearheads are constructed in steel and they are lubricated for life with Kluber EASOFLAX grease. Gearbox efficiencies are:

1 stage 80%
2 stage 75%
3 stage 70%

Axial and radial loads

Maximum loads calculated at the mid point of the output shaft are:

Motor power		Axial force (N)	Radial force (N)
240W	1 stage	50	240
	2 stage	70	360
	3 stage	120	520
400 & 600W	1 stage	80	400
	2 stage	120	600
	3 stage	200	1000

Options

Other readily available options are:

- motors with encoder or resolver feedback
- motors with spring applied brakes for dynamic stopping and holding duties
- combinations of encoder/resolver and brake
- motor connection by plugs and sockets
- higher specification gearboxes for reduced backlash and reversing applications
- IP55 enclosure

Ordering example – single phase

Quantity
Output speed r/min
Power W
Type number

2 off
80r/min
400W
SPL81-2GVCR-063N22

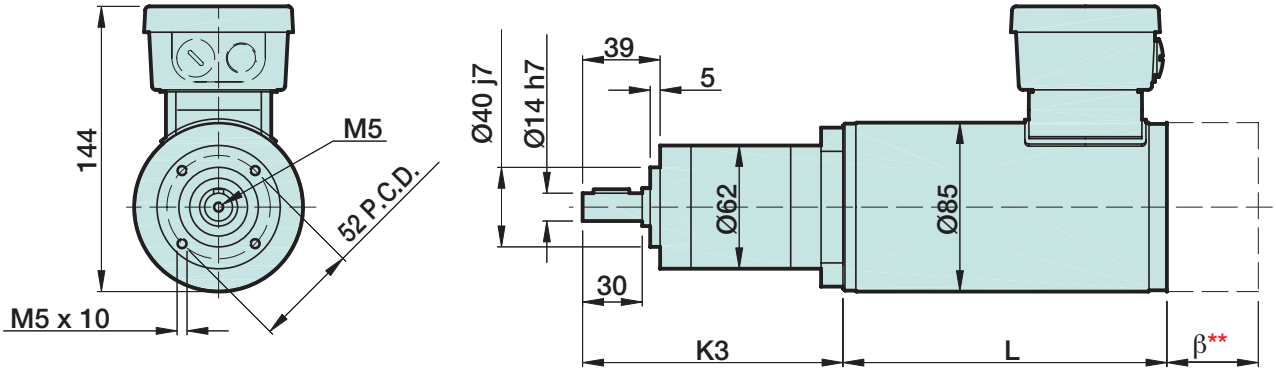
Small geared motors | Type SDS/SPL planetary

240 - 600W

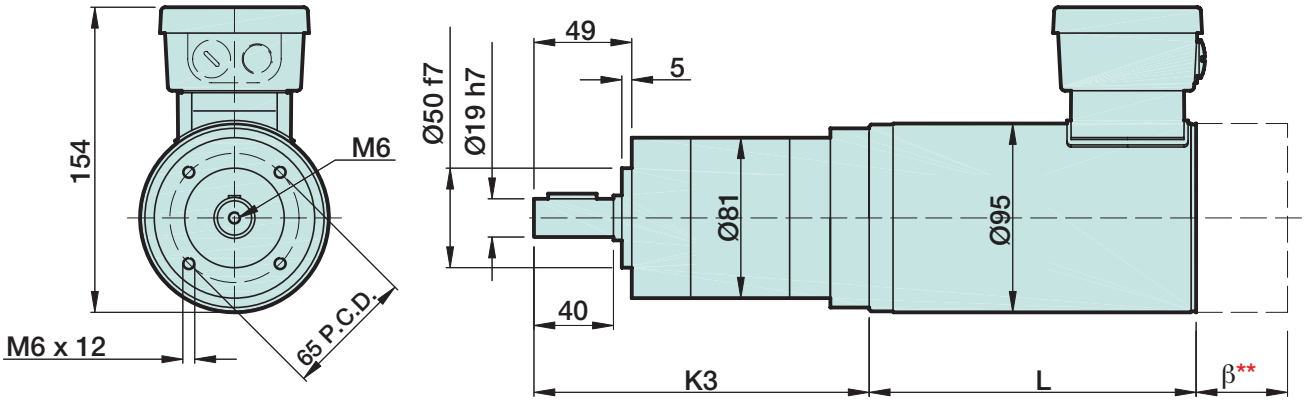
Output speed r/min	Gear ratio i	240W Output torque Nm	240W Type No.	400W Output torque Nm	400W Type No.	600W Output torque Nm	600W Type No.
23	123.97	50*		117		120*	
28	99.5	50*		94.0		120*	
39	71.16	40.3	SPL62-3GVCR-056N22	67.2	SPL81-3GVCR-063N22	94.6	SPL81-3GVCR-063N32
55	50.89	28.8		48.1		67.7	
61	45.56	25*		46.1		60*	
80	34.97	21.2		35.4		49.8	
112	25.01	15.1	SPL62-2GVCR-056N22	25.3	SPL81-2GVCR-063N22	35.6	SPL81-2GVCR-063N32
204	13.73	8.3		13.9		19.6	
757	3.7	2.4	SPL62-1GVCR-056N22	4.0	SPL81-1GVCR-063N22	5.6	SPL81-1GVCR-063N32

* Limited by gearbox capacity. On request the 240W motor can be fitted with a bigger gearbox.

240W



400 and 600W



** Extra length, if encoder, resolve or brake fitted ** = 46, if encoder/resolver and brake fitted ** = 98.

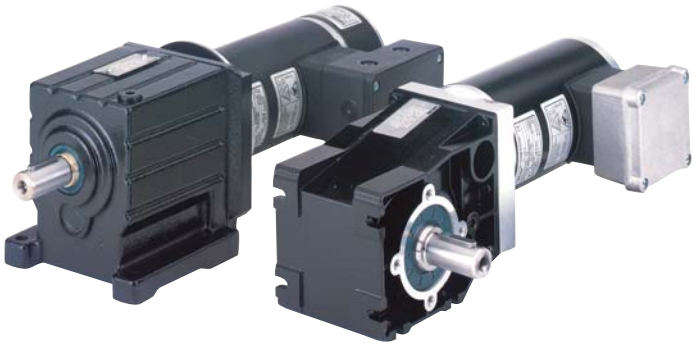
		240W	400W	600W
Dimension k3	1 stage 1GVCR	115	151	151
	2 stage 2GVCR	131	172	172
	3 stage 3GVCR	147	194	194
Dimension	L	163	168	208
Weight kg	1 stage 1GVCR	6.3	8.8	10.2
	2 stage 2GVCR	6.7	9.5	10.9
	3 stage 3GVCR	7.1	10.2	11.6

Small geared motors | Type SDS/G-motion

240 - 600W

The SDS motors are inverter optimised and offer a compact, smooth bodied design. They offer a solution between 3 phase synchronous motors and servo, both in terms of price and performance. These integrated models combine G-motion gearboxes with the first pinion as part of the motor.

- Compact dimensions
- Inverter optimised for variable speed
- Wide range of gearbox design and options
- Available with fast delivery
- Smooth bodied motors, easy to clean
- No fan, so low noise and suitable for dusty environments
- Low gear backlash



Motors

These motors are designed for maximum performance with inverter drives such as the Lenze vector range. They can be connected to either a 225V or 390V supply. Rated speed is 100Hz and the V/F code on the inverter must be set accordingly.

- IP54 enclosed, insulation class F.
- ICOO cooling category, without a fan, low noise.
- Suits ambients –15 to +40°C.
- Temperature switch (Klixon) fitted as standard.
- Maximum voltage amplitude 1500V/dv/dt ≥5kV/µs.

Motor rated currents at 225V (Delta connection):

240W - 1.3A 400W - 2.1A 600W - 3.0A

Further SDS motor information is available on request.

Inverters

Matched inverters for full torque operation over a 10:1 speed range without feedback are available from the Lenze vector range.

240W use vector 0.25kW

400W use vector 0.55kW

600W use vector 0.75kW

Further information is available on request.

Gearboxes

SDS motors can be combined with two ranges of Lenze G-motion gearboxes.

Gearbox Model	Type	Mountings	Features
GST	Helical inline, 1 & 2 stage	foot face or flange	Low cost and efficient, general purpose, new aluminium size 03 available
GKR	Aluminium bevel, right angle	hollow shaft, foot or flange	Aluminium gearboxes for ratios up to 60, high efficiency, hollow shaft mounting possible

See also the combinations of SDS motor with SPL planetary gearbox on page 10

Peak torques

When used with the 9300 series servo inverters, high peak torques up to 6 times rated can be delivered. In such cases the gearbox service factor may need to be increased. Our engineers can advise.

Service factors

Selections are based on the starting torque (standstill torque) of the motor which is typically 20% above rated torque. Approximate service factors can be obtained by comparing output torques with the gearbox rated torque.

Gearbox dimensions

Gearbox details can be taken from the E-catalogue on our website www.lenze.co.uk, or ask for a catalogue.

Options

Other readily available options are:

- motors fitted with motec terminal box inverter
- resolvers or encoders for closed loop feedback
- spring applied brakes for stopping and holding
- IP55 enclosure
- motor connection by plugs or terminal box
- KTY 83-110 temperature monitoring

Small geared motors | Type SDS/G-motion

Helical geared motor

SDS motor can be combined with G-motion GST helical gearboxes in sizes 03 to 05 for rated torques up to 150Nm and output speeds between 47 and 817r/min. Gearboxes are constructed in cast iron (size 03 has aluminium casing) and rated for 16000 hours life.

Efficiency is 96-97%.

Available gearboxes mountings are B3 foot, B5 flange and B14 face. On request food compatible oils are available.

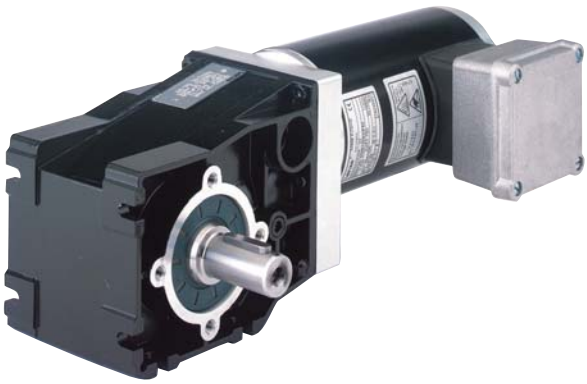
Gearbox Model – stages	Rated torque Nm	240W motor SDS056-22				400W motor SDS063-22				600W motor SDS063-32			
		Highest speed/ torque		Lowest speed/ torque		Highest speed/ torque		Lowest speed/ torque		Highest speed/ torque		Lowest speed/ torque	
		r/min	Nm	r/min	Nm	r/min	Nm	r/min	Nm	r/min	Nm	r/min	Nm
GST 03-2	45	817	2.68	47	45	–	–	–	–	–	–	–	–
GST 04-1	20	634	2.7	310	5.5	636	4.5	311	9.0	636	6.2	311	16.4
GST 04-2	66	144	13.7	62	35	145	22.8	62	52	145	32	89	58
GST 05-1	44	492	3.4	245	6.9	494	5.74	246	11.5	494	8.1	246	16.2
GST 05-2	150	194	8.9	49	45	195	14.9	49	74.5	195	20.1	49	104.8

Bevel geared motor

SDS motors with G-motion GKR bevel gearboxes provide efficient right angle drives ideal for precision motion. Rated output torques are up to 118Nm and output speeds between 37 and 516r/min.

Gearbox construction is aluminium and wear resisitant bevel teeth give an efficiency of 96% with long life.

Outputs can be hollow shaft for use with torque arms, single and double male shafts and output flange.



Gearbox Model – stages	Rated torque Nm	240W motor SDS056-22				400W motor SDS063-22				600W motor SDS063-32			
		Highest speed/ torque		Lowest speed/ torque		Highest speed/ torque		Lowest speed/ torque		Highest speed/ torque		Lowest speed/ torque	
		r/min	Nm	r/min	Nm	r/min	Nm	r/min	Nm	r/min	Nm	r/min	Nm
GKR 03	45	516	4.1	45	29	–	–	–	–	–	–	–	–
GKR 04	90	143	15.1	61	46.6	143	25.1	61	78	143	35.3	76.3	66
GKR 05	240	–	–	–	–	84	44	37	101	232	23.6	47	118

Torques and speeds

The tables give the highest possible speed with the rated torque speed, similarly the lowest possible speed with rated torque at that point. Intermediate ratios are available, details available on request.

Further information

Performance tables and dimensional data are given in catalogue ‘Small drives’ no. 13025583. This is available on request or can be downloaded from our website.

Small geared motors | SW aluminium worm

90 - 4.0kW

A range of worm gearboxes with optional outputs and mountings that accepts IEC standard motors with B14 mounting.

- 7 sizes of gearbox for torques up to 647Nm
- Output speeds from 15 to 280 r/min
- High torques from quality gearbox construction
- Long life design rating of 15000 hours
- Single phase models available
- Three phase with standard or braked motors

Other features

- smooth casing in aluminium minimises dirt traps
- maintenance-free, filled for life with synthetic oil AGIP TELIUM VSF (equivalent Shell TIVELA SC320)
- mount in any position (but see comment on page 15)
- hollow shaft mounting, optional torque arm, output flange, or feet (options supplied loose with fasteners)
- single- and double-ended shafts available, also hollow shaft end cover.

Motors

Motor details can vary. Photographs and dimensions are shown with Lenze 3 phase motors. Other motors with IEC frame dimensions can be used, for example 1 phase, brake motors and dc motors.

Service factors

- SW gearboxes are rated 15,000 hours operation with service factor = 1. On request we can calculate life for different loads.
- service factors to suit different applications can be calculated from tables below:

	hours running per day			
Type of load	<2	2-8	9-16	>16
Uniform	0.8	1	1.25	1.5
Medium shock	1	1.25	1.5	1.8
Heavy shock	1.25	1.5	2	2.4

number of starts per hours				
<10	10-30	31-60	61-120	>120
1	1.15	1.2	1.3	1.5

Inverter variable speed

SW geared motors can be supplied with matching inverters for operation over a speed range of about 3:1 (up to 10:1 if motor is fitted with a blower).

- smd inverters, simple and low cost, only needs 1 phase supply.
- motec terminal box inverter for a complete variable speed package.

Gearbox efficiency

- running efficiencies are achieved after a short period or running-in
- typical efficiency figures vary with the gear ratio

i = 5 - 10 $\eta \geq 80\%$
i = 15 - 40 $\eta = 60 - 80\%$
i = 50 - 60 $\eta = 50 - 70\%$
smaller sizes have efficiencies to the lower end of the bands.

More accurate data is available on request.

- starting efficiencies are lower by about 25%, i.e. 80% efficiency becomes 55%

Ordering specification and example

Quantity	5 off
Output speed r/min	47
Gearbox type	SW40/T/30/71-18
Gearbox options (feet, shafts, flanges, torque arm, cover)	feet double shaft
Motor type (3 phase, 1 phase, 3 phase braked, or other)	3 phase braked
Motor frame and mounting (see page 17 for B14 diameters)	M71a4B14
Motor power	0.25kW
Terminal bow position - see page 17	Position 1

Small geared motors | SW aluminium worm

90W					
Speed r/min	Torque Nm	Gearbox service factor	Ratio	Gearbox type	Motor type no
280	2.7	6.7	5	SW30/T/5/56-14	M56b4B14
187	3.9	4.6	7.5	SW30/T/7.5/56-14	M56b4B14
140	5.0	3.6	10	SW30/T/10/56-14	M56b4B14
94	7.1	2.5	15	SW30/T/15/56-14	M56b4B14
70	9.0	2.0	20	SW30/T/20/56-14	M56b4B14
56	10	2.0	25	SW30/T/25/56-14	M56b4B14
47	12	1.7	30	SW30/T/30/56-14	M56b4B14
35	14	1.2	40	SW30/T/40/56-14	M56b4B14
30	17	1.2	30	SW30/T/30/63-14	M63a6B14
30	17	1.2	30	SW40/T/30/63-18	M63a6B14
22	21	1.0	40	SW30/T/40/63-14	M63a6B14
22	24	1.9	40	SW40/T/40/63-18	M63a6B14
18	27	1.5	50	SW40/T50/63-18	M63a6B14
15	31	1.3	60	SW40/T/60/63-18	M63a6B14

130W					
Speed r/min	Torque Nm	Gearbox service factor	Ratio	Gearbox type	Motor type no
280	4	5.1	5	SW30/T/5/63-14	M63b4B14
187	5	3.4	7.5	SW30/T/7.5/63-14	M63b4B14
140	7	2.7	10	SW30/T/10/63-14	M63b4B14
94	9	1.9	15	SW30/T/15/63-14	M63b4B14
70	12	1.5	20	SW30/T/20/63-14	M63b4B14
56	14	1.5	25	SW30/T/35/63-14	M63b4B14
47	16	1.3	30	SW30/T/30/63-14	M63b4B14
47	17	2.6	30	SW40/T/30/63-18	M63b4B14
35	21	1.9	40	SW40/T/40/63-18	M63b4B14
28	25	1.5	50	SW40/T/50/63-18	M63b4B14
23	28	1.3	60	SW40/T/60/63-18	M63b4B14
23	29	2.3	60	SW50/T/60/63-25	M63b4B14
15	42	1.7	60	SW50/T/60/63-25	M63b6B14

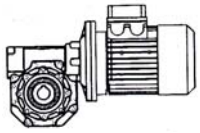
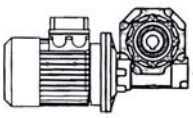
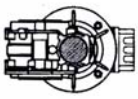
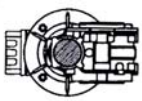
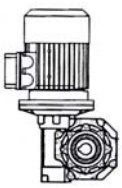
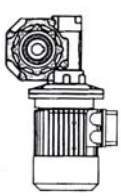
180W					
Speed r/min	Torque Nm	Gearbox service factor	Ratio	Gearbox type	Motor type no
280	5	3.4	5	SW30/T/5/63-14	M63b4B14
187	8	2.3	7.5	SW30/T/7.5/63-14	M63b4B14
140	10	1.8	10	SW30/T/10/63-14	M63b4B14
94	14	1.3	15	SW30/T/15/63-14	M63b4B14
70	18	1.0	20	SW30/T/20/63-14	M63b4B14
70	19	2.0	20	SW40/T/20/63-18	M63b4B14
56	21	1.0	25	SW30/T/25/63-14	M63b4B14
56	23	1.7	25	SW40/T/25/63-18	M63b4B14
47	26	1.7	30	SW40/T/30/63-14	M63b4B14
35	32	1.3	40	SW40/T/40/63-18	M63b4B14
28	38	1.0	50	SW40/T/50/63-18	M63b4B14
28	39	1.9	50	SW50/T/50/63-25	M63b4B14
24	43	1.6	60	SW50/T/60/63-25	M63b4B14
18	56	1.4	50	SW50/T/50/71-25	M71a6B14
15	56	1.1	60	SW50/T/60/71-25	M71a6B14

0.25kW					
Speed r/min	Torque Nm	Gearbox service factor	Ratio	Gearbox type	Motor type no
280	8	4.5	5	SW40/T/5/71-18	M71a4B14
187	11	3.6	7.5	SW40/T/7.5/71-18	M71a4B14
140	14	2.8	10	SW40/T/10/71-18	M71a4B14
94	21	1.9	15	SW40/T/15/71-18	M71a4B14
70	27	1.5	20	SW40/T/20/71-18	M71a4B14
56	32	1.2	25	SW40/T/25/71-18	M71a4B14
56	32	2.2	25	SW50/T/25/71-25	M71a4B14
47	36	1.3	30	SW40/T/30/71-18	M71a4B14
47	37	2.3	30	SW50/T/30/71-25	M71a4B14
35	46	1.7	40	SW50/T/40/71-25	M71a4B14
28	54	1.4	50	SW50/T/50/71-25	M71a4B14
24	60	1.1	60	SW50/T/60/71-25	M71a4B14
24	63	2.0	60	SW63/T/60/71-25	M71a4B14

0.37kW					
Speed r/min	Torque Nm	Gearbox service factor	Ratio	Gearbox type	Motor type no
280	11	3.0	5	SW40/T/5/71-18	M71b4B14
187	16	2.4	7.5	SW40/T/7.5/71-18	M71b4B14
140	21	1.9	10	SW40/T/10/71-18	M71b4B14
94	31	1.3	15	SW40/T/15/71-18	M71b4B14
94	31	2.4	15	SW50/T/15/71-25	M71b4B14
70	39	1.0	20	SW40/T/20/71-25	M71b4B14
70	40	1.8	20	SW50/T/20/71-25	M71b4B14
56	48	1.5	25	SW50/T/25/71-25	M71b4B14
47	55	1.5	30	SW50/T/30/71-25	M71b4B14
35	68	1.1	40	SW50/T/40/71-25	M71b4B14
35	71	2.1	40	SW63/T/40/71-25	M71b4B14
28	83	1.6	50	SW63/T/50/71-25	M71b4B14
24	94	1.4	60	SW63/T/60/71-25	M71b4B14
18	120	1.2	50	SW63/T/50/80-25	M80a6B14
15	137	1.0	60	SW63/T/60/80-25	M80a6B14
15	144	1.5	60	SW75/T/60/80-28	M80a6B14

0.55kW					
Speed r/min	Torque Nm	Gearbox service factor	Ratio	Gearbox type	Motor type no
280	17	3.7	5	SW50/T/5/80-25	M80a4B14
187	25	2.9	7.5	SW50/T/7.5/80-25	M80a4B14
140	32	2.2	10	SW50/T/10/80-25	M80a4B14
94	46	1.6	15	SW50/T/15/80-25	M80a4B14
70	59	1.2	20	SW50/T/20/80-25	M80a4B14
70	61	2.2	20	SW63/T/20/80-25	M80a4B14
56	71	1.0	25	SW50/T/25/80-25	M80a4B14
56	73	1.8	25	SW63/T/25/80-25	M80a4B14
47	81	1.0	30	SW50/T/30/80-25	M80a4B14
47	83	1.9	30	SW63/T/30/80-25	M80a4B14
35	105	1.4	40	SW63/T/40/80-25	M80a4B14
28	124	1.1	50	SW63/T/50/80-25	M80a4B14
28	129	1.6	50	SW75/T/50/80-28	M80a4B14
23	146	1.4	60	SW75/T/60/80-28	M80a4B14
15	224	1.6	60	SW90/T/60/80-35	M80b6B14

Mounting & lubrication

B3	B8	B6	B7	V5	V6
					

Gearboxes are filled and sealed for life suiting all mounting positions except sizes 90 & 105 in positions V5 and V6. In this case. Please discuss your requirements with our Engineers.

Small geared motors | SW aluminium worm

0.75 - 4.0kW

0.75kW					
Speed r/min	Torque Nm	Gearbox service factor	Ratio	Gearbox type	Motor type no
280	23	2.7	5	SW50/T/5/80-25	M80b4B14
187	34	2.1	7.5	SW50/T7.5/80-25	M80b4B14
140	44	1.6	10	SW50/T/10/80-25	M80b4B14
94	63	1.2	15	SW50/T/15/80-25	M80b4B14
94	64	2.2	15	SW63/T/15/80-25	M80b4B14
70	83	1.6	20	SW63/T/20/80-25	M80b4B14
56	100	1.3	25	SW63/T/25/80-25	M80b4B14
56	102	2.0	25	SW75/T/25/80-28	M80b4B14
47	114	1.4	30	SW63/T/30/80-25	M80b4B14
47	117	2.0	30	SW75/T/30/80-28	M80b4B14
35	143	1.0	40	SW63/T/40/80-25	M80b4B14
35	147	1.5	40	SW75/T/40/80-28	M80b4B14
28	177	1.2	50	SW75/T/50/80-28	M80b4B14
28	184	1.8	50	SW90/T/50/80-35	M80b4B14
23	200	1.0	60	SW75/T/60/80-28	M80b4B14
23	212	1.5	60	SW90/T/60/80-35	M80b4B14
15	306	1.1	60	SW90/T/60/90-35	M90s6B14

1.1kW					
Speed r/min	Torque Nm	Gearbox service factor	Ratio	Gearbox type	Motor type no
187	50	2.6	7.5	SW63/T/7.5/90-25	M90s4B14
140	65	2.0	10	SW63/T/10/90-25	M90s4B14
94	93	1.5	15	SW63/T/15/90-25	M90s4B14
70	122	1.1	20	SW63/T/20/90-25	M90s4B14
70	123	1.7	20	SW75/T/20/90-28	M90s4B14
56	150	1.3	25	SW75/T/25/90-28	M90s4B14
47	167	1.0	30	SW63/T/30/90-25	M90s4B14
47	171	1.3	30	SW75/T/30/90-28	M90s4B14
35	216	1.0	40	SW75/T/40/90-28	M90s4B14
35	225	1.6	40	SW90/T/40/90-35	M90s4B14
28	270	1.3	50	SW90/T/50/90-35	M90s4B14
23	311	1.0	60	SW90/T/60/90-35	M90s4B14
18	397	1.0	50	SW90/T/50/90-35	M90l6B14

1.5kW					
Speed r/min	Torque Nm	Gearbox service factor	Ratio	Gearbox type	Motor type no
187	68	1.9	7.5	SW63/T/7.5/90-25	M90l4B14
140	89	1.5	10	SW63/T/10/90-25	M90l4B14
94	127	1.1	15	SW63/T/15/90-25	M90l4B14
94	130	1.5	15	SW75/T/15/90-28	M90l4B14
70	168	1.3	20	SW75/T/20/90-28	M90l4B14
70	172	2.1	20	SW90/T/20/90-35	M90l4B14
56	205	1.0	25	SW75/T/25/90-28	M90l4B14
56	210	1.6	25	SW90/T/25/90-35	M90l4B14
47	233	1.0	30	SW75/T/30/90-28	M90l4B14
47	239	1.7	30	SW90/T/30/90-35	M90l4B14
35	307	1.2	40	SW90/T/40/90-35	M90l4B14
23	358	1.3	40	SW90/T/40/90-35	M100a6B14

1.8kW					
Speed r/min	Torque Nm	Gearbox service factor	Ratio	Gearbox type	Motor type no
187	81	1.6	7.5	SW63/T/7.5/90-25	M90l4B14
140	107	1.2	10	SW63/T/10/90-25	M90l4B14
140	108	1.8	10	SW75/T/10/90-28	M90l4B14
93	157	1.3	15	SW75/T/15/90-28	M90l4B14
70	201	1.0	20	SW75/T/20/90-28	M90l4B14
70	206	1.7	20	SW90/T/20/90-35	M90l4B14
56	252	1.4	25	SW90/T/25/90-35	M90l4B14
47	287	1.4	30	SW90/T/30/90-35	M90l4B14
35	368	1.0	40	SW90/T/40/90-35	M90l4B14

2.2kW					
Speed r/min	Torque Nm	Gearbox service factor	Ratio	Gearbox type	Motor type no
187	100	1.8	7.5	SW75/T/7.5/100-28	M100a4B14
140	132	1.5	10	SW75/T/10/100-28	M100a4B14
93	191	1.0	15	SW75/T/15/100-28	M100a4B14
93	194	1.9	15	SW90/T/15/100-35	M100a4B14
70	252	1.4	20	SW90/T/20/100-35	M100a4B14
56	308	1.1	25	SW90/T/25/100-35	M100a4B14
56	315	1.9	25	SW105/T/25/100-42	M100a4B14
47	351	1.2	30	SW90/T/30/100-35	M100a4B14
47	356	1.8	30	SW105/T/30/100-42	M100a4B14
35	468	1.3	40	SW105/T/40/100-42	M100a4B14
28	563	1.1	50	SW105/T/50/100-42	M100a4B14

3.0kW					
Speed r/min	Torque Nm	Gearbox service factor	Ratio	Gearbox type	Motor type no
187	137	1.4	7.5	SW75/T/7.5/100-28	M100b4B14
140	180	1.1	10	SW75/T/10/100-28	M100b4B14
140	182	1.7	10	SW75/T/10/100-28	M100b4B14
93	264	1.4	15	SW90/T/15/100-35	M100b4B14
70	344	1.0	20	SW90/T/20/100-35	M100b4B14
70	348	1.6	20	SW105/T/20/100-42	M100b4B14
56	430	1.4	25	SW105/T/25/100-42	M100b4B14
47	485	1.3	30	SW105/T/30/100-42	M100b4B14
35	638	1.0	40	SW105/T/40/100-42	M100b4B14

4.0kW					
Speed r/min	Torque Nm	Gearbox service factor	Ratio	Gearbox type	Motor type no
187	184	1.6	7.5	SW90/T/7.5/11-35	M112a4B14
140	243	1.3	10	SW90/T/10/11-35	M112a4B14
93	352	1.6	15	SW105/T/15/11-42	M112a4B14
70	464	1.2	20	SW105/T/20/11-42	M112a4B14
56	573	1.0	25	SW105/T/25/11-42	M112a4B14
47	647	1.0	30	SW105/T/30/11-42	M112a4B14

Radial loads

➤ Where belts, sprockets or gears are fitted to the optional gearbox output shafts, consideration of radial loads is required. This depends on the transmitted torque and the type/size of transmission element where:

$$\text{Radial load} = \frac{2000.\ M_2.fz}{dw}$$

where: M_2 = output torque in Nm

dw = effective diameter of sprocket gear

fz = factor for type of element

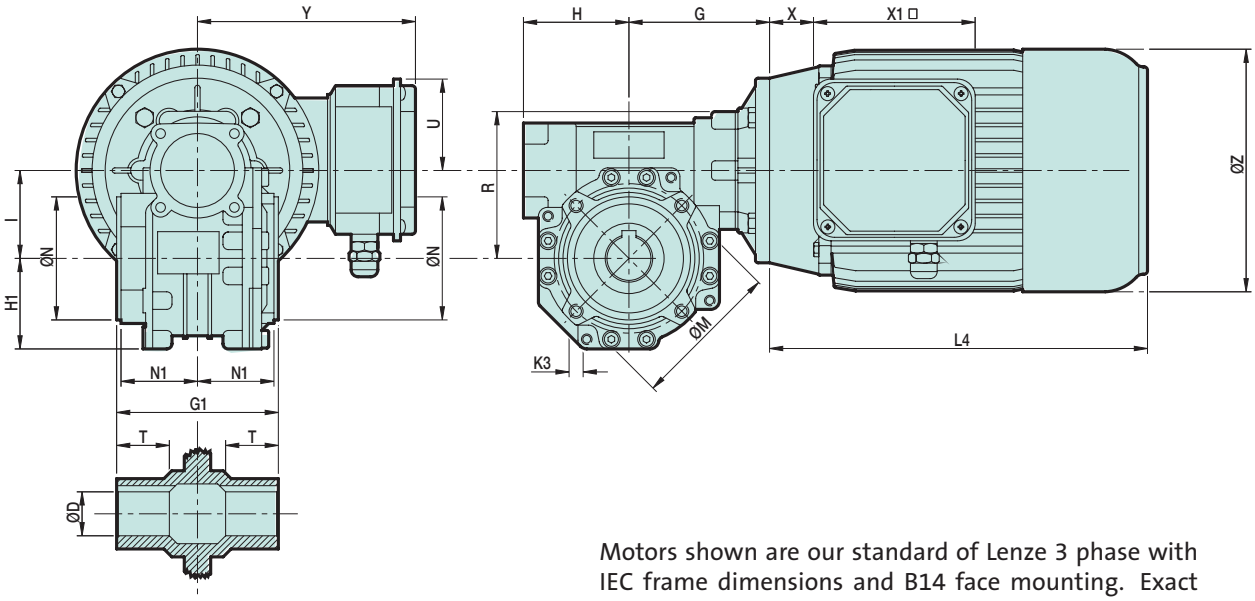
Gears	fz = 1.1	V-belts	fz =1.7
Chainwheels	fz = 1.4	Flat belts	fz = 2.5

Gear ratio	Gearbox size						
	30	40	50	63	75	90	105
5	597	1149	1577	-	-	-	-
10	752	1447	1987	2597	3065	3391	4285
20	752	1147	1987	2597	3065	3391	4285
30	1085	2087	2865	3745	4421	4891	6181
50	1286	2475	3397	4440	5241	5799	7328
60	1367	2630	3610	4719	5569	6163	7787

Gearbox radial load capacity in N based on input speed of 1400r/min. Higher speeds reduce load capacity.

➤ radial load capacities are rated for forces acting halfway along the output shaft. For other positions the capacities should be adjusted.

Small geared motors | SW aluminium worm



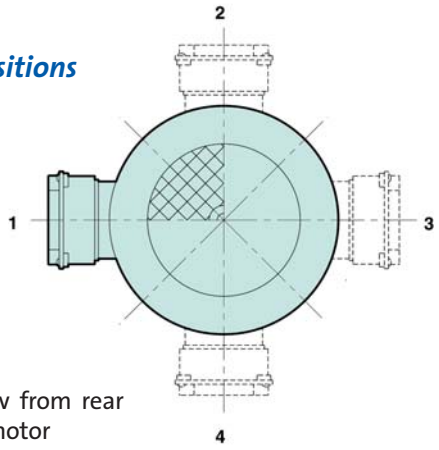
Motors shown are our standard of Lenze 3 phase with IEC frame dimensions and B14 face mounting. Exact dimensions around terminal boxes may vary. Other motors are possible on request, eg. 1 phase, braked, dc.

Gearbox size	D H8	G	G1	H	H1	I	K3	M	N h8	N1	R	T	Weight gearbox only
30	14	55	63	40	38	30	M6x11(4)**	65	55	29	57	21	1.1
40	18(19)*	70	78	50	42	40	M6x10(4)	75	60	36.5	70	26	2.1
50	25(24)*	80	92	60	52	50	M8x10(4)	85	70	43.5	84	30	3.0
63	25(28)*	95	112	72	66	63	M8x14(8)	95	80	53	102	36	5.6
75	28(35)*	112.5	120	86	80	75	M8x18(8)	115	95	57	117	40	8.1
90	35(38)*	129.5	140	103	97	90	M10x18(8)	130	110	67	133	45	11.7
105	42	160	155	127.5	115	110	M10x18(8)	165	130	74	166	50	26

* Alternative hollow shaft option, available on request. ** 4 off holes K3 are on vertical and horizontal axes.

Motor frame	L4	U	X	X1	Y	Z	Weight kg motor only
56	167	58	30	80	110	110	3.9
63	202	58	25	92	115	130	4.8
71	220	52	25	92	124	145	6.3
80	255	60	30	108	145	175	11.0
90S	265	60	33	108	155	195	12.0
90L	290	60	33	108	155	195	15.2
100	325	60	40	108	180	215	23.5
112	340	60	45	108	190	240	29.5

Motor terminal box positions



View from rear of motor

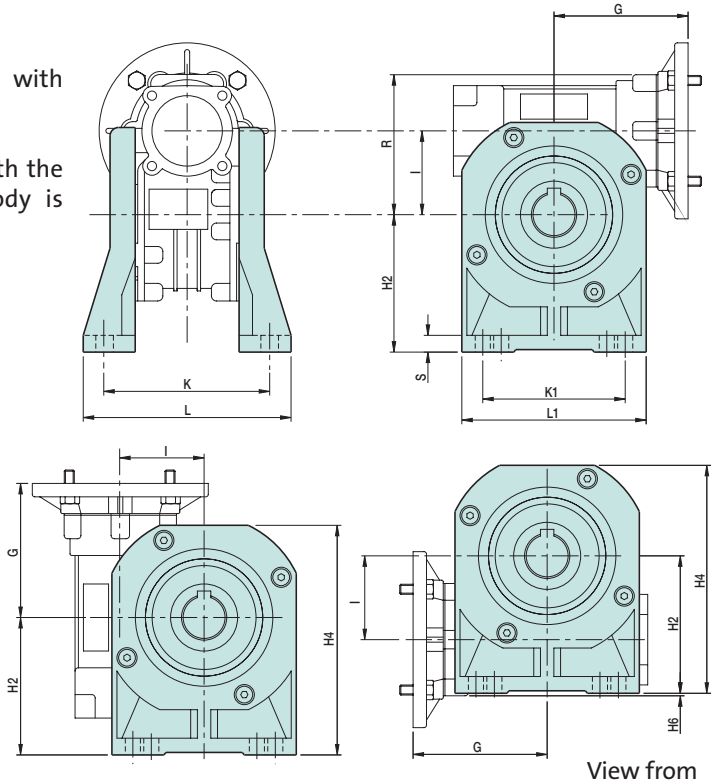
Motor power	Motor frame & mounting
90W	M56b4B14c80 M63a6B14c90
130W	M63b4B14c90 M63b6B14c90
180W	M63b4B14c90 M71a6B14c105
0.25kW	M71a4B14c105
0.37kW	M71b4B14c105 M80a6B14c120
0.55kW	M80a4B14c120 M80b6B14c120
0.75kW	M80b4B14c120 M90s6B14c140
1.1kW	M90s4B14c140 M90l6B14c140
1.5kW	M90l4B14c140 M100a6B14c160
1.8kW	M90l4B14c140
2.2kW	M100a4B14c160
3.0kW	M100b4B14c160
4.0kW	M112a4B14c160

SW aluminium worm geared motors | options

Feet

SW gearbox feet are supplied loose complete with fixing screws.

They can be fitted in any of three positions. With the wormshaft below, note that the gearbox body is sometimes below the feet.

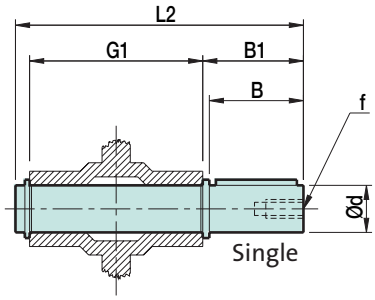


View from rear of motor

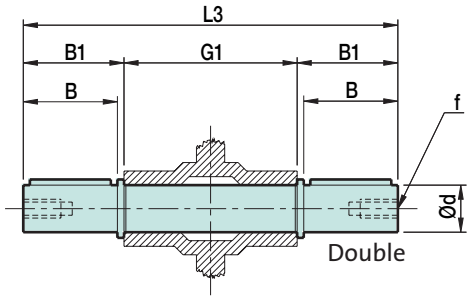
Gearbox size	G	H2	H4	H6	K	K1	I	L	L1	R	S
30	55	55	97	1.2	66	50xø6.5	30	80	80	57	7
40	70	72	117	-2	81	52xø8.5	40	98	90	70	9
50	80	82	137	2	98.5	63xø8.5	50	124	110	81	10
63	95	100	170	2	111	95xØ10.5	63	138	140	102	10
75	112.5	115	196	2	115	120xØ11	75	142	160	117	12
90	129.5	142	242	-9	146(140)	140xØ11	90	180	200	133	14
105	160	172	293.5	-6	181(160)	200xø13	110	208	250	166	20

Shafts

Single and double male shafts are supplied loose with keys, circlips and washers.

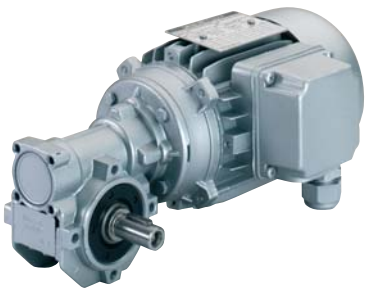


Single



Double

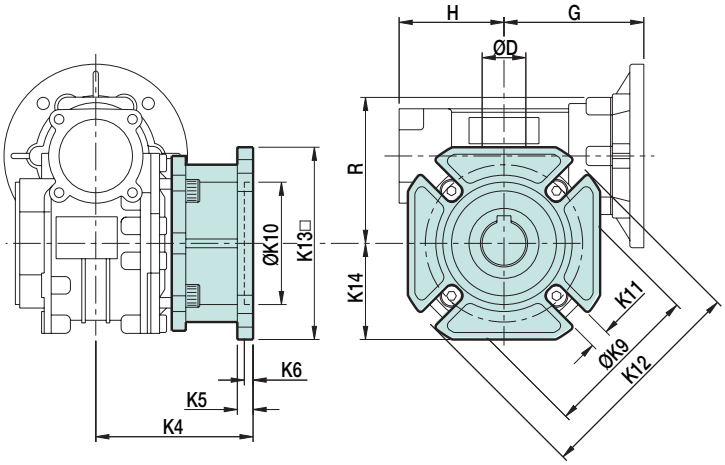
Gearbox size	d	B	B1	G1	f	Single L2	Double L3
30	14g6	30	32.5	63	M6	102	128
40	18h6	40	43	78	M6	128	164
50	25h6	50	53.5	92	M10	153	199
63	25h6	50	53.5	112	M10	173	219
75	28h6	60	63.5	120	M10	192	247
90	35h6	80	84.5	140	M12	234	309
105	42h6	80	84.5	155	M16	249	324



Options are supplied loose with fittings

Flanges

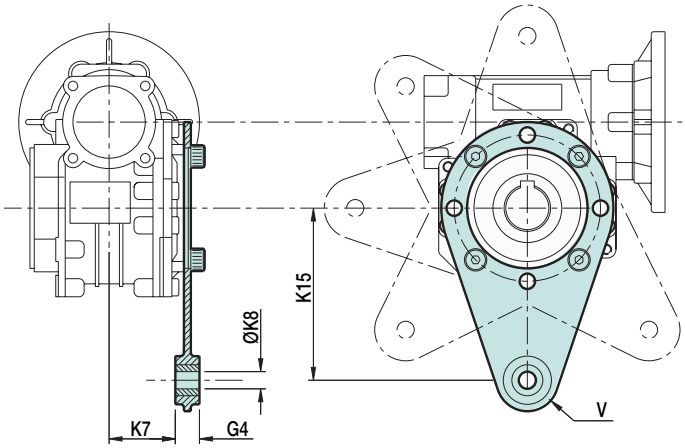
Flanges are supplied loose and can be fitted to either side. Two flange lengths, long and short, are available. See previous pages for additional dimensions.



Gearbox size	K5	K6	K9	K10 H8	K11 (4 off)	K12	K13	K14	Flange type short K4	Flange type long K4
30	6	4	68	50	6.5	80	70	35	54.5	-
40	7	4	75	60	9	110	95	47.5	67	97
50	9	5	85	70	11	125	110	55	90	120
63	10	6	150	115	11	180	142	71	82	112
75	13	6	165	130	14	200	170	85	111	-
90	13	6	175	152	14	210	200	100	111	-
105	15	6	230	170	ø14(8off)	230	260	130	131	-

Torque arms

Supplied loose with fixing bolts, the torque arm can be fitted to either side of the gearbox and in any of six positions.

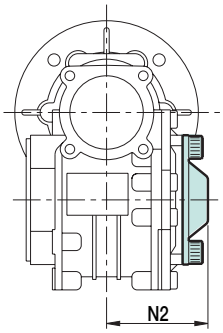


Gearbox size	G4	K7	K8	K15	V
30	14	24	8	85	15
40	14	31.5	10	100	18
50	14	38.5	10	100	18
63	14	49	10	150	18
75	25	47.5	20	200	30
90	25	57.5	20	200	30
105	30	62	25	250	35

Shaft covers

These covers fit either side of the gearbox.

Gearbox size	N2
30	38
40	50
50	58
63	69
75	74
90	86
105	94

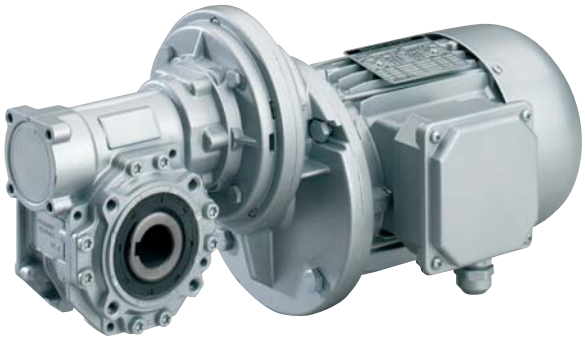


Small geared motors | Type PC-SW aluminium helical worm

90W to 0.75kW

Based on our SW worm gearboxes, this new PC-SW range adds a helical stage to achieve lower output speeds down to 3 r/min.

- Economic 3 phase geared motors with output speeds 3 to 19r/min
- Medium efficiency gearboxes with torque up to 516Nm
- High radial load capacity
- Comprehensive range of shaft/foot/flange options
- Long life, designed for 15000 hours with SF=1
- Delivery from stock



Other features

- Smooth casing in aluminium minimises dirt traps
- Maintenance-free, filled for life with symantec oil AGIP TELIUM VSF (equivalent Shell TIVELA SC320)
- Mount in any position (see comment on page 21)
- Geared motors supplied in silver grey metallic finish
- Hollow shaft mounting, optional torque arm, output flange, or feet (options supplied loose)
- Single and double ended shafts available, also hollow shaft end cover
- Special long life shaft seals

Motors

Lenze 3 phase motors are enclosed to IP55 with class F insulation.

Supply voltage range: 230/400V ±10%/3/50Hz
255/440V ±10%/3/60Hz

Operation at 60Hz is possible. Ask for details of changes to speed and torques.

Our selections feature 4 and 6 pole motors.

Other Motors

Many other types of motor are possible, mostly available from stock:

- Single phase 220-240V/1/50Hz
- Three phase brake motors
- dc motors
- Motors with encoders

Inverter variable speed

PC-SW geared motors can be supplied with matching Lenze inverters.

- 8200 vector - compact high performance inverters for panel mounting. Starting and overload torques up to 1.8xM_{rated}. Minimum speed 1.0Hz. Complete with integrated RFI filter and full serial communications. Available for single phase up to 2.2kW and three phase 0.55 to 90kW.
- 8200 motec - terminal box inverters with IP55 enclosure and all features of 8200 vector.
  Saves panel space, cabling and installation time.
  Supply 1 phase 180-264V, 0.25-0.37kW
  Supply 3 phase 320-550V, 0.55-7.5kW

Radial loads

- Where belts, sprockets or gears are fitted to the optional gearbox output shafts, consideration of radial loads is required. This depends on the transmitted torque and the type/size of transmission element where:

$$\text{Radial load} = \frac{2000.\ M_2.fz}{dw}$$

where: M_2 = output torque in Nm
dw = effective diameter of sprocket gear
fz = factor for type of element

Gears	fz = 1.1	V-belts	fz =1.7
Chainwheels	fz = 1.4	Flat belts	fz = 2.5

Gear ratio	Gearbox size 40	50	63	75	90
5	1149	1577	-	-	-
10	1447	1987	2597	3065	3391
20	1147	1987	2597	3065	3391
30	2087	2865	3745	4421	4891
50	2475	3397	4440	5241	5799
60	2630	3610	4719	5569	6163

Gearbox radial load capacity in N based on input speed of 1400r/min. Higher speeds reduce load capacity.

- radial load capacities are rated for forces acting halfway along the output shaft. For other positions the capacities should be adjusted.

Service factors

- SW gearboxes are rated 15,000 hours operation with service factor = 1. On request we can calculate life for different loads.
- service factors to suit different applications can be calculated from tables below:

Type of load	hours running per day <2	2-8	9-16	>16
Uniform	0.8	1	1.25	1.5
Medium shock	1	1.25	1.5	1.8
Heavy shock	1.25	1.5	2	2.4

number of starts per hours <10	10-30	31-60	61-120	>120
1	1.15	1.2	1.3	1.5

Gearbox efficiency

- running efficiencies are achieved after a short period or running-in
- typical efficiency figures vary with the gear ratio

i = 75 - 120 $\eta \geq$ 60 - 75%
i = 150 - 180 η = 50 - 70%
i = 240 - 300 η = 45 - 60%

smaller sizes have efficiencies to the lower end of the bands.

More accurate data is available on request.

- starting efficiencies are lower by about 25%, i.e. 80% efficiency becomes 55%

Ordering specification and example

Quantity	5 off
Output speed r/min	6 r/min
Gearbox type	PC63-SW40/T/150/63-18
Gearbox options - see pages 18-19 (feet, shafts, flanges, torque arm, cover)	Short flange in position 3 Shaft cover
Motor type (3 phase, 1 phase, 3 phase braked, or other)	3 phase
Motor frame and mounting (see page 23 for B14 diameters)	M63-6B14c90
Motor power	120W
Terminal bow position - see page 23	Position 2

Small geared motors | Type PC-SW aluminium helical worm

90W

Speed r/min	Torque Nm	Gearbox service factor	Ratio	Gearbox type	Motor type no
12	47	1.3	75	PC63-SW40/T/75/63-18	M63-6B14c90
10	51	1.4	90	PC63-SW40/T/90/63-18	M63-6B14c90
7.5	62	1.1	120	PC63-SW50/T/120/63-18	M63-6B14c90
6	73	1.6	150	PC63-SW50/T/150/63-18	M63-6B14c90
5	81	1.3	180	PC63-SW63/T/180/63-25	M63-6B14c90
3.8	99	1.7	240	PC63-SW63/T/240/63-25	M63-6B14c90
3	109	1.4	300	PC63-SW63/T/300/63-25	M63-6B14c90

120W

Speed r/min	Torque Nm	Gearbox service factor	Ratio	Gearbox type	Motor type no
18.7	42	1.2	75	PC63-SW40/T/75/63-18	M63-4B14c90
15.6	46	1.2	90	PC63-SW40/T/90/63-18	M63-4B14c90
12	62	1	75	PC63-SW40/T/75/63-18	M63-6B14c90
12	63	1.7	75	PC63-SW50/T/75/63-25	M63-6B14c90
10	68	1.1	90	PC63-SW40/T/90/63-18	M63-6B14c90
10	70	2.1	90	PC63-SW50/T/90/63-25	M63-6B14c90
9.3	68	1.3	150	PC63-SW50/T/150/63-25	M63-4B14c90
7.8	75	1.1	180	PC63-SW50/T/180/63-25	M63-4B14c90
7.5	84	1.5	120	PC63-SW50/T/120/63-25	M63-6B14c90
6	97	1.2	150	PC63-SW50/T/150/63-25	M63-6B14c90
6	101	2.1	150	PC63-SW63/T/150/63-25	M63-6B14c90
5.8	92	1.5	240	PC63-SW63/T/240/63-25	M63-4B14c90
5	112	1.8	180	PC63-SW63/T/180/63-25	M63-6B14c90
4.7	103	1.2	300	PC63-SW63/T/200/63-25	M63-4B14c90
3.8	131	1.3	240	PC63-SW63/T/240/63-25	M63-6B14c90
3	145	1	300	PC63-SW63/T/300/63-25	M63-6B14c90

180W

Speed r/min	Torque Nm	Gearbox service factor	Ratio	Gearbox type	Motor type no
18.7	64	1.4	75	PC63-SW50/T/75/63-25	M63-4B14c90
15.6	71	1.5	90	PC63-SW50/T/90/63-25	M63-4B14c90
12	95	1.2	75	PC63-SW50/T/75/71-25	M71-6B14c105
12	97	2.2	75	PC63-SW63/T/75/71-25	M71-6B14c105
11.7	87	1.1	120	PC63-SW50/T/120/63-25	M63-4B14c90
10	105	1.4	90	PC63-SW50/T/90/71-25	M71-6B14c105
10	107	2.4	90	PC63-SW63/T/90/71-25	M71-6B14c105
9.3	103	1.7	150	PC63-SW63/T/150/63-25	M63-4B14c90
7.8	117	1.4	180	PC63-SW63/T/180/63-25	M63-4B14c90
7.5	131	1.8	120	PC63-SW63/T/120/71-25	M71-6B14c105
6	152	1.4	150	PC63-SW63/T/150/71-25	M71-6B14c105
5	168	1.2	180	PC63-SW63/T/180/71-25	M71-6B14c105
5	179	1.7	180	PC63-SW75/T/180/71-28	M71-6B14c105
3.8	211	1.2	240	PC63-SW75/T/240/71-28	M71-6B14c105
3	235	1	300	PC63-SW75/T/300/71-28	M71-6B14c105

0.25kW

Speed r/min	Torque Nm	Gearbox service factor	Ratio	Gearbox type	Motor type no
18.7	88	1	75	PC71-SW50/T/75/71-25	M71-4B14c105
18.7	91	1.8	75	PC71-SW63/T/75/71-25	M71-4B14c105
15.6	98	1.1	90	PC71-SW50/T/90/71-25	M71-4B14c105
15.6	100	2	90	PC71-SW63/T/90/71-25	M71-4B14c105
12	135	1.6	75	PC71-SW63/T/75/71-25	M71-6B14c105
12	139	2.4	75	PC71-SW75/T/75/71-28	M71-6B14c105
11.7	125	1.5	120	PC71-SW63/T/120/71-25	M71-4B14c105
10	148	1.8	90	PC71-SW63/T/90/71-25	M71-6B14c105
10	155	2.5	90	PC71-SW75/T/90/71-28	M71-6B14c105

0.25W

Speed r/min	Torque Nm	Gearbox service factor	Ratio	Gearbox type	Motor type no
9.3	143	1.2	150	PC71-SW63/T/150/71/-25	M71-4B14c105
9.3	151	1.7	150	PC71-SW75/T150/71/-28	M71-4B14c105
7.8	163	1	180	PC71-SW63/T/180/71/-25	M71-4B14c105
7.8	172	1.4	180	PC71-SW75/T180/71/-28	M71-4B14c105
7.5	181	1.3	120	PC71-SW63/T/120/71/-25	M71-6B14c105
7.5	191	1.9	120	PC71-SW75/T/120/71/-28	M71-6B14c105
6	211	1	150	PC71-SW63/T/150/71/-25	M71-6B14c105
6	219	1.5	150	PC71-SW75/T/150/71/-28	M71-6B14c105
5.8	201	1.1	240	PC71-SW75/T/240/71/-28	M71-4B14c105
5	248	1.2	180	PC71-SW75/T/180/71/-28	M71-6B14c105
5	263	1.9	180	PC71-SW90/T/180/71/-35	M71-6B14c105
3.8	318	1.4	240	PC71-SW90/T/240/71/-35	M71-6B14c105
3	358	1.1	300	PC71-SW90/T/300/71/-35	M71-6B14c105

0.37W

Speed r/min	Torque Nm	Gearbox service factor	Ratio	Gearbox type	Motor type no
18.7	134	1.2	75	PC71-SW63/T/75/71-25	M71-4B14c105
18.7	138	1.8	75	PC71-SW75/T/75/71-28	M71-4B14c105
15.6	148	1.4	90	PC71-SW63/T/90/71-25	M71-4B14c105
15.6	154	1.9	90	PC71-SW75/T/90/71-28	M71-4B14c105
12	206	1.6	75	PC80-SW75/T/75/80-28	M80-6B14c120
11.7	191	1.5	120	PC71-SW75/T/120/71-28	M71-4B14c105
10	230	1.7	90	PC80-SW75/T/90/80-28	M80-6B14c120
9.3	223	1.1	150	PC71-SW75/T/150/71-28	M71-4B14c105
7.8	268	1.5	180	PC71-SW90/T/180/71-35	M71-4B14c105
7.5	283	1.3	120	PC80-SW75/T/120/80-28	M80-6B14c120
6	324	1	150	PC80-SW75/T/150/80-28	M80-6B14c120
6	347	1.6	150	PC80-SW90/T/150/80-35	M80-6B14c120
5.8	321	1.1	240	PC71-SW90/T/240/71-35	M71-4B14c105
5	389	1.3	180	PC80-SW90/T/180/80-35	M80-6B14c120
3.8	471	1	240	PC80-SW90/T/240/80-35	M80-6B14c120

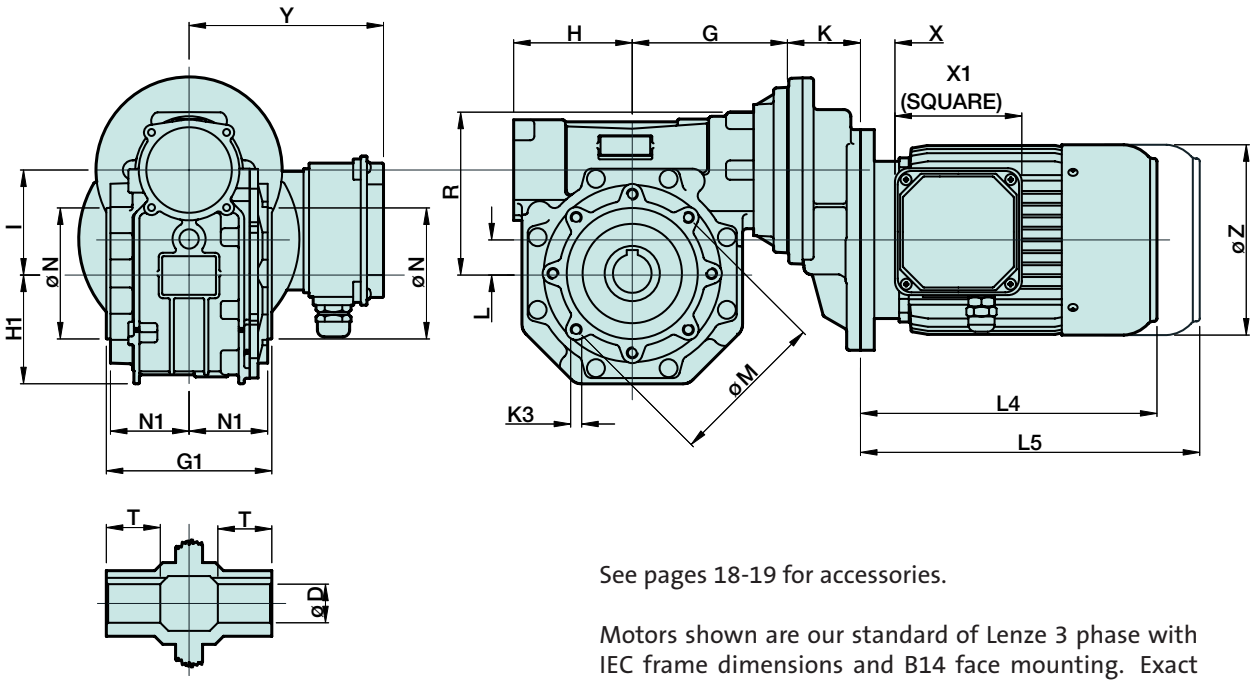
0.55W

Speed r/min	Torque Nm	Gearbox service factor	Ratio	Gearbox type	Motor type no
18.7	205	1.2	75	PC80-SW75/T/75/80-28	M80-4B14c120
15.6	230	1.3	90	PC80-SW75/T/90/80-28	M80-4B14c120
15.6	240	2.3	90	PC80-SW90/T/90/80-35	M80-4B14c120
12	306	1.1	75	PC80-SW75/T/75/80-28	M80-6B14c120
11.7	284	1	120	PC80-SW75/T/120/80-28	M80-4B14c120
11.7	297	1.6	120	PC80-SW90/T/120/80-35	M80-4B14c120
10	341	1.1	90	PC80-SW75/T/90/80-28	M80-6B14c120
10	357	2	90	PC80-SW90/T/90/80-35	M80-6B14c120
9.3	355	1.3	150	PC80-SW90/T/150/80-35	M80-4B14c120
7.8	398	1	180	PC80-SW90/T/180/80-35	M80-4B14c120
7.5	441	1.4	120	PC80-SW90/T/120/80-35	M80-6B14c120
6	516	1.1	150	PC80-SW90/T/150/80-35	M80-6B14c120

0.75W

Speed r/min	Torque Nm	Gearbox service factor	Ratio	Gearbox type	Motor type no
15.6	313	1	90	PC80-SW75/T/90/80-28	M80-4B14c120
15.6	327	1.7	90	PC80-SW90/T/90/80-35	M80-4B14c120
11.7	405	1.2	120	PC80-SW90/T/120/80-35	M80-4B14c120

Small geared motors | Type PC-SW aluminium helical worm



See pages 18-19 for accessories.

Motors shown are our standard of Lenze 3 phase with IEC frame dimensions and B14 face mounting. Exact dimensions around terminal boxes may vary. Other motors are possible on request, eg. 1 phase, braked, dc.

Gearbox size	D H8	G	G1	H	H1	I	K	K3	L	M h8	N	N1	R	T	Weight gearbox only
PC63-SW40	18	70	78	50	45	40	45	M6x10(4)	40	75	60	36.5	70	26	3.2
PC63-SW50	25	80	92	60	52	50	45	M8x10(4)	40	85	70	43.5	84	30	4.1
PC63-SW63	25	95	112	72	66	63	45	M8x14(8)	40	95	80	53	102	36	6.7
PC71-SW63	25	95	112	72	66	63	53	M8x14(8)	50	95	80	53	102	36	7.3
PC71-SW75	28	112.5	120	86	80	75	53	M8x16(8)	50	115	95	57	117	40	9.8
PC71-SW90	35	129.5	140	103	97	90	53	M10x18(8)	50	130	110	67	133	45	13.4
PC80-SW75	28	112.5	120	86	80	75	69.5	M8x16(8)	63	115	95	57	117	40	11.4
PC80-SW90	35	129.5	140	103	97	90	69.5	M10x18(8)	63	130	110	67	133	45	15.0

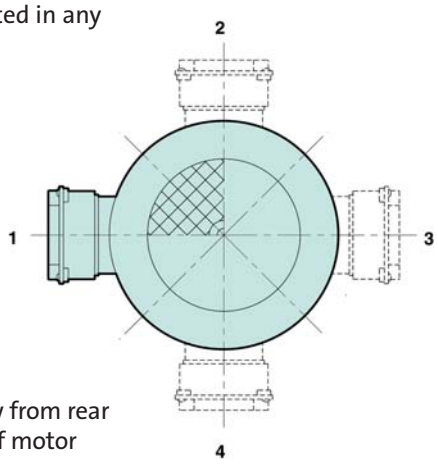
Motor frame	L4	L5*	u	x	x1	y	y1	z	Weight kg motor only
63	193	215	58	25	92	115	90	123	4.7
71	215	246	52	25	92	124	90	138	7.5
80	135	277	60	30	108	141	95	156	12.2

* L5 is length for brake motor

Motor terminal box positions

SW Helical worm geared motors are supplied lubricated for life with synthetic oil, AGIP TELIUM VSF320. They can be mounted in any position, except:

sizes 90 - 105 with motor vertical are factory built to order.



View from rear of motor

Motor power	Motor frame & mounting
90W	M63-6B14c90
120W	M63-4B14c90 M63-6B14c90
180W	M63-4B14c90 M71-6B14c105
0.25kW	M71-4B14c105 M71-6B14c105
0.37kW	M71-4B14c105 M80-6B14c120
0.55kW	M80-4B14c120 M80-6B14c120
0.75kW	M80-4B14c120

Small geared motors | Type 121 dc p.m worm

55 to 370W

- Rugged motors/gearboxes
- IP54 enclosure
- Sealed for life worm gearboxes
- Minimal maintenance
- Self-cooled - no fan
- Lightweight/high power
- Foot (B3), face (B14) and hollow shaft mounting
- 180V and 24V models
- Compact smooth casing

General description

The high quality, robust light alloy and steel casing requires no maintenance.

Armatures are finely balanced and mounted in substantial rolling bearings. Generously dimensioned commutators are connected to the armature windings by hot staking.

The steel worms and the bronze wheels of the gearboxes are accurately machined to run together with the minimum of noise and wear whilst transmitting high load torques.

The gearbox is filled with oil at assembly and requires no further attention during the life of the geared unit.

The motors are totally enclosed to IP 54 – cooling specification category IC00 – and are ideal for areas where cooling fan turbulence cannot be tolerated. Thermal cutout switches are fitted as standard. The brush gear and commutator can be inspected through removable inspection covers in the non-drive end casting.

Gearbox shaft loadings

Axial and radial forces on the gearbox output shafts must be limited to those shown below:

Gearbox size	Maximum force (N) Radial B3	Radial B14	Radial H/S	Axial
25	63	80	–	50
31	200*	200	300	300
40	300*	600	–	400

Note: Both axial and radial forces must not be applied together at their maximum values.

* Double shaft B3 models must have the load shared between the two shafts.

Other options

- Protection to IP55
- Tacho and brake
- Some 90V models available
- Terminal box (not 55W model)
- single- and double-ended shafts available, also hollow shaft end cover.

Small geared motors | Type 121 dc p.m worm

Ordering example – single phase

Quantity	3 off
Output speed r/min	60r/min
Gearbox type	SSN31-1FDAR-50
Motor power	200W
Motor type	13.121.55.3 180V
Gearbox handing (shaft position/gearbox handing/terminal box position)	8/B/2 (see page 29)
Optional accessories	-

Controllers

All the 180V d.c. motors on these pages can be used with the thyristor controller types 530.

For models above 110W, suitable measures must be taken to limit the armature current to Imax in order to prevent demagnetisation. This can be achieved by using a controller.

Controller details see page 33.

Form factors

The motor rated powers are stated for pure d.c. (form factor 1). The torques of the 180V are shown for form factors 1 and 1.4. When selecting the motor power or the torque, it must be considered that in continuous operation the rated power must be reduced according to the controller used so that the motor is not excessively heated.

Examples for form factors in practical operations:

FF	Current source
1.4 to 1.8	Thyristor controller
1.2 to 1.4	Thyristor controller with armature choke
1.3	20kHz chopper transistor controller
1.05 to 1.1	Chopper with d.c. link capacitor
1.05	Three phase rectifier bridge
1.0	Battery

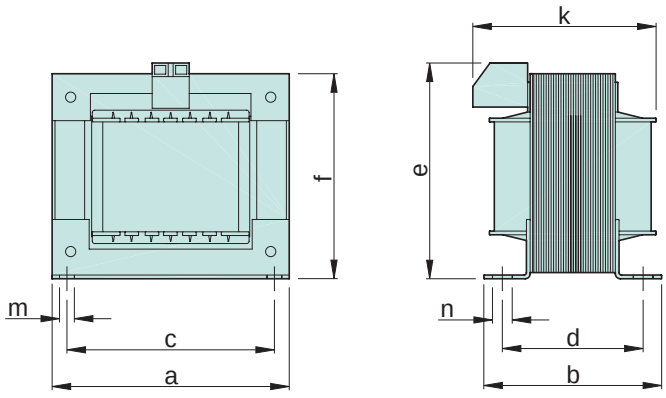
Armature chokes

This range of iron cored armature chokes for improving the form factor of any thyristor controller, thus reducing losses and increasing the effective output of the motor.

In order to obtain the rated capability from d.c. motors, they must be fed from d.c. In all cases where thyristor rectifier controllers fed from single phase supply are employed, the output is not pure d.c. The output in this situation contains a ripple component which reduces the effective value of current by a factor called the 'form factor'. In practical applications the range of values for form factor is between 1.6 and 1.1. For example if by calculation or measurement the FF of a particular arrangement is 1.35, and if the motor rating is 1.5kW the maximum available continuous power would be 1.5/1.35 = 1.1kW.

Insufficient armature inductance also causes an increase in brush sparking and increased brush wear.

Three-phase controllers do not usually need any additional armature chokes, due to the improved output of such a drive.



Current A	Inductance mH	a	b	c	d	e	f	k	m	n	Weight kg	Type No.
0.5/1.6	200/100	77	56	54	45	86	67	75	5	10	0.96	13012138
4.4	40	96	97	54	53	80	50	105	5	10	3	13012144
6	24	96	97	84	60	95	90	105	5	8	3	13012140

Small geared motors | type 121 dc p.m worm

55 - 370W, 24V

55W — Motor type 13.121.35.2 24V

3000 r/min; 24V - 4 A maximum pulse current 41A gearbox size 25

Gearbox output speed r/min	Ratio i	Output Torque Nm	Foot mounting Design 1, 2 or 3*	Face mounting Gearbox Design 2*	Hollow shaft gearbox Design 3*
50	60	3.5	SSN25-1FDAR-60	SSN25-1FVCL-60	-
60	50	3.2	SSN25-1FDAR-50	SSN25-1FVCL-50	-
75	40	3.0	SSN25-1FDAR-40	SSN25-1FVCL-40	-
100	30	2.5	SSN25-1FDAR-30	SSN25-1FVCL-30	-
150	20	2.0	SSN25-1FDAR-20	SSN25-1FVCL-20	-
200	15	1.7	SSN25-1FDAR-15	SSN25-1FVCL-15	-
300	10	1.3	SSN25-1FDAR-10	SSN25-1FVCL-10	-
375	8	1.1	SSN25-1FDAR-8	SSN25-1FVCL-8	-
600	5	0.7	SSN25-1FDAR-5	SSN25-1FVCL-5	-

110W — Motor type 13.121.45.3 24V

3000 r/min; 24V - 6.7 A maximum pulse current 44A gearbox size 31

Gearbox output speed r/min	Ratio i	Output Torque Nm	Foot mounting Design 1, 2 or 3*	Face mounting Gearbox Design 2*	Hollow shaft gearbox Design 3*
30	100	11.0+	SSN31-1FDAR-100	SSN31-1FVCL-100	-
40	75	9.5	SSN31-1FDAR-75	SSN31-1FVCL-75	-
55	55	10.0	SSN31-1FDAR-55	SSN31-1FVCL-55	-
60	50	8.1	SSN31-1FDAR-50	SSN31-1FVCL-50	-
79	38	7.6	SSN31-1FDAR-38	SSN31-1FVCL-38	-
100	30	6.2	SSN31-1FDAR-30	SSN31-1FVCL-30	-
120	25	5.3	SSN31-1FDAR-25	SSN31-1FVCL-25	-
150	20	4.8	SSN31-1FDAR-20	SSN31-1FVCL-20	-
200	15	3.9	SSN31-1FDAR-15	SSN31-1FVCL-15	-
300	10	2.7	SSN31-1FDAR-10	SSN31-1FVCL-10	-
429	7	2.0	SSN31-1FDAR-7	SSN31-1FVCL-7	-
600	5	1.5	SSN31-1FDAR-5	SSN31-1FVCL-5	-

200W — Motor type 13.121.55.3 24V

3000 r/min; 24V - 11.8 A maximum pulse current 71A gearbox size 31

Gearbox output speed r/min	Ratio i	Output Torque Nm	Foot mounting Design 1, 2 or 3*	Face mounting Gearbox Design 2*	Hollow shaft gearbox Design 3*
30	100	11.0+	SSN31-1FDAR-100	SSN31-1FVCL-100	SSN31-1FHAR-100
40	75	11.0+	SSN31-1FDAR-75	SSN31-1FVCL-75	SSN31-1FHAR-75
55	55	15.0+	SSN31-1FDAR-55	SSN31-1FVCL-55	SSN31-1FHAR-55
60	50	13.0+	SSN31-1FDAR-50	SSN31-1FVCL-50	SSN31-1FHAR-50
79	38	13.8	SSN31-1FDAR-38	SSN31-1FVCL-38	SSN31-1FHAR-38
100	30	11.3	SSN31-1FDAR-30	SSN31-1FVCL-30	SSN31-1FHAR-30
120	25	9.7	SSN31-1FDAR-25	SSN31-1FVCL-25	SSN31-1FHAR-25
150	20	8.8	SSN31-1FDAR-20	SSN31-1FVCL-20	SSN31-1FHAR-20
200	15	7.1	SSN31-1FDAR-15	SSN31-1FVCL-15	SSN31-1FHAR-15
300	10	4.9	SSN31-1FDAR-10	SSN31-1FVCL-10	SSN31-1FHAR-10
429	7	3.7	SSN31-1FDAR-7	SSN31-1FVCL-7	SSN31-1FHAR-7
600	5	2.7	SSN31-1FDAR-5	SSN31-1FVCL-5	SSN31-1FHAR-5

370W — Motor type 13.121.55.5 24V

3000 r/min; 24V - 20.2 A maximum pulse current 90A gearbox size 40

Gearbox output speed r/min	Ratio i	Output Torque Nm	Foot mounting Design 1, 2 or 3*	Face mounting Gearbox Design 2*	Hollow shaft gearbox Design 3*
38	80	24.0+	SSN40-1FDAR-80	SSN40-1FVCL-80	SSN40-1FHAR-80
50	60	23.0+	SSN40-1FDAR-60	SSN40-1FVCL-60	SSN40-1FHAR-60
60	50	31.8	SSN40-1FDAR-50	SSN40-1FVCL-50	SSN40-1FHAR-50
75	40	26.4	SSN40-1FDAR-40	SSN40-1FVCL-40	SSN40-1FHAR-40
100	30	21.9	SSN40-1FDAR-30	SSN40-1FVCL-30	SSN40-1FHAR-30
120	25	18.8	SSN40-1FDAR-25	SSN40-1FVCL-25	SSN40-1FHAR-25
150	20	16.7	SSN40-1FDAR-20	SSN40-1FVCL-20	SSN40-1FHAR-20
200	15	13.1	SSN40-1FDAR-15	SSN40-1FVCL-15	SSN40-1FHAR-15
300	10	9.5	SSN40-1FDAR-10	SSN40-1FVCL-10	SSN40-1FHAR-10
444	6.75	6.7	SSN40-1FDAR-6.75	SSN40-1FVCL-6.75	SSN40-1FHAR-6.75

\+ Limited by gearbox.

* Please state the required gearbox handing when ordering, see page 29.

55W	Motor type 13.121.35.2 180V 3000 r/min; 180V - 0.5 A maximum pulse current 5.5A gearbox size 25				Recommended choke 13072138
Gearbox output speed r/min	Ratio i	Output Torque Nm FF=1.0	Output Torque Nm FF=1.4**	Foot mounting Design 1, 2 or 3*	Face mounting Gearbox Design 2*	Hollow shaft gearbox Design 3*
50	60	3.5	2.5	SSN25-1FDAR-60	SSN25-1FVCL-60	SSN25-1FHAR-60
60	50	3.2	2.3	SSN25-1FDAR-50	SSN25-1FVCL-50	SSN25-1FHAR-50
75	40	3.0	2.1	SSN25-1FDAR-40	SSN25-1FVCL-40	SSN25-1FHAR-40
100	30	2.5	1.8	SSN25-1FDAR-30	SSN25-1FVCL-30	SSN25-1FHAR-30
150	20	2.0	1.4	SSN25-1FDAR-20	SSN25-1FVCL-20	SSN25-1FHAR-20
200	15	1.7	1.2	SSN25-1FDAR-15	SSN25-1FVCL-15	SSN25-1FHAR-15
300	10	1.3	0.9	SSN25-1FDAR-10	SSN25-1FVCL-10	SSN25-1FHAR-10
375	8	1.1	0.8	SSN25-1FDAR-8	SSN25-1FVCL-5	SSN25-1FHAR-8
600	5	0.7	0.5	SSN25-1FDAR-5	SSN25-1FVCL-5	SSN25-1FHAR-5

110W	Motor type 13.121.45.3 180V 3000 r/min; 180V - 0.86 A maximum pulse current 6A gearbox size 31				Recommended choke 13072138
Gearbox output speed r/min	Ratio i	Output Torque Nm FF=1.0	Output Torque Nm FF=1.4**	Foot mounting Design 1, 2 or 3*	Face mounting Gearbox Design 2*	Hollow shaft gearbox Design 3*
30	100	11.0+	9.5	SSN31-1FDAR-100	SSN31-1FVCL-100	SSN31-1FHAR-100
40	75	9.5	6.8	SSN31-1FDAR-75	SSN31-1FVCL-75	SSN31-1FHAR-75
55	55	10.0	7.2	SSN31-1FDAR-55	SSN31-1FVCL-55	SSN31-1FHAR-55
60	50	8.1	5.8	SSN31-1FDAR-50	SSN31-1FVCL-50	SSN31-1FHAR-50
79	38	7.6	5.4	SSN31-1FDAR-38	SSN31-1FVCL-38	SSN31-1FHAR-38
100	30	6.2	4.4	SSN31-1FDAR-30	SSN31-1FVCL-30	SSN31-1FHAR-30
120	25	5.3	3.8	SSN31-1FDAR-25	SSN31-1FVCL-25	SSN31-1FHAR-25
150	20	4.8	3.5	SSN31-1FDAR-20	SSN31-1FVCL-20	SSN31-1FHAR-20
200	15	3.9	2.8	SSN31-1FDAR-15	SSN31-1FVCL-15	SSN31-1FHAR-15
300	10	2.7	1.9	SSN31-1FDAR-10	SSN31-1FVCL-10	SSN31-1FHAR-10
429	7	2.0	1.5	SSN31-1FDAR-7	SSN31-1FVCL-7	SSN31-1FHAR-7
600	5	1.5	1.1	SSN31-1FDAR-5	SSN31-1FVCL-5	SSN31-1FHAR-5

200W	Motor type 13.121.55.3 180V 3000 r/min; 24V - 11.8 A maximum pulse current 71A gearbox size 31				Recommended choke 13072138
Gearbox output speed r/min	Ratio i	Output Torque Nm FF=1.0	Output Torque Nm FF=1.4**	Foot mounting Design 1, 2 or 3*	Face mounting Gearbox Design 2*	Hollow shaft gearbox Design 3*
30	100	11.0+	11.0+	SSN31-1FDAR-100	SSN31-1FVCL-100	SSN31-1FHAR-100
40	75	11.0+	11.0+	SSN31-1FDAR-75	SSN31-1FVCL-75	SSN31-1FHAR-75
55	55	15.0+	13.0	SSN31-1FDAR-55	SSN31-1FVCL-55	SSN31-1FHAR-55
60	50	13.0+	10.5	SSN31-1FDAR-50	SSN31-1FVCL-50	SSN31-1FHAR-50
79	38	13.8	9.9	SSN31-1FDAR-38	SSN31-1FVCL-38	SSN31-1FHAR-38
100	30	11.3	8.0	SSN31-1FDAR-30	SSN31-1FVCL-30	SSN31-1FHAR-30
120	25	9.7	6.9	SSN31-1FDAR-25	SSN31-1FVCL-25	SSN31-1FHAR-25
150	20	8.8	6.3	SSN31-1FDAR-20	SSN31-1FVCL-20	SSN31-1FHAR-20
200	15	7.1	5.0	SSN31-1FDAR-15	SSN31-1FVCL-15	SSN31-1FHAR-15
300	10	4.9	3.5	SSN31-1FDAR-10	SSN31-1FVCL-10	SSN31-1FHAR-10
429	7	3.7	2.6	SSN31-1FDAR-7	SSN31-1FVCL-7	SSN31-1FHAR-7
600	5	2.7	1.9	SSN31-1FDAR-5	SSN31-1FVCL-5	SSN31-1FHAR-5

370W	Motor type 13.121.55.5 180V 3000 r/min; 24V - 20.2 A maximum pulse current 90A gearbox size 40				Recommended choke 13072138
Gearbox output speed r/min	Ratio i	Output Torque Nm FF=1.0	Output Torque Nm FF=1.4**	Foot mounting Design 1, 2 or 3*	Face mounting Gearbox Design 2*	Hollow shaft gearbox Design 3*
38	80	24.0+	24.0+	SSN40-1FDAR-80	SSN40-1FVCL-80	SSN40-1FHAR-80
50	60	23.0+	19.2	SSN40-1FDAR-60	SSN40-1FVCL-60	SSN40-1FHAR-60
60	50	31.8	22.7	SSN40-1FDAR-50	SSN40-1FVCL-50	SSN40-1FHAR-50
75	40	26.4	18.8	SSN40-1FDAR-40	SSN40-1FVCL-40	SSN40-1FHAR-40
100	30	21.9	15.6	SSN40-1FDAR-30	SSN40-1FVCL-30	SSN40-1FHAR-30
120	25	18.8	13.5	SSN40-1FDAR-25	SSN40-1FVCL-25	SSN40-1FHAR-25
150	20	16.7	11.9	SSN40-1FDAR-20	SSN40-1FVCL-20	SSN40-1FHAR-20
200	15	13.1	9.3	SSN40-1FDAR-15	SSN40-1FVCL-15	SSN40-1FHAR-15
300	10	9.5	6.8	SSN40-1FDAR-10	SSN40-1FVCL-10	SSN40-1FHAR-10
444	6.75	6.7	4.8	SSN40-1FDAR-6.75	SSN40-1FVCL-6.75	SSN40-1FHAR-6.75

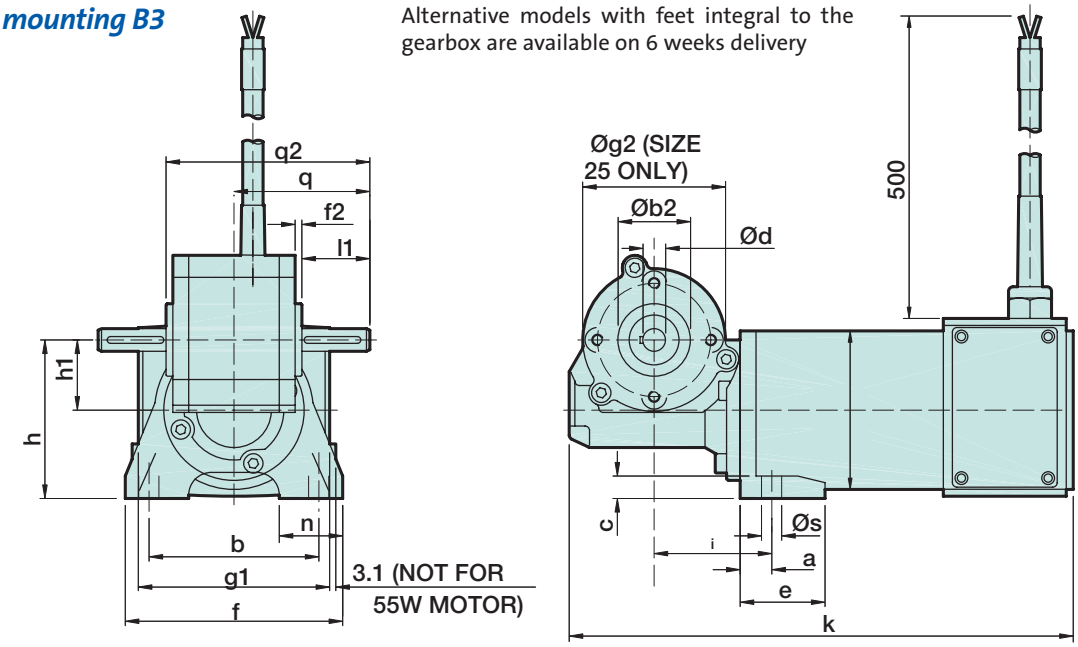
\+ Limited by gearbox. ** FF=1.4 when thyristor controller is used with a suitable armature choke.

* Please state the required gearbox handing when ordering, see page 29.

dc permanent magnet | Type 121pm worm

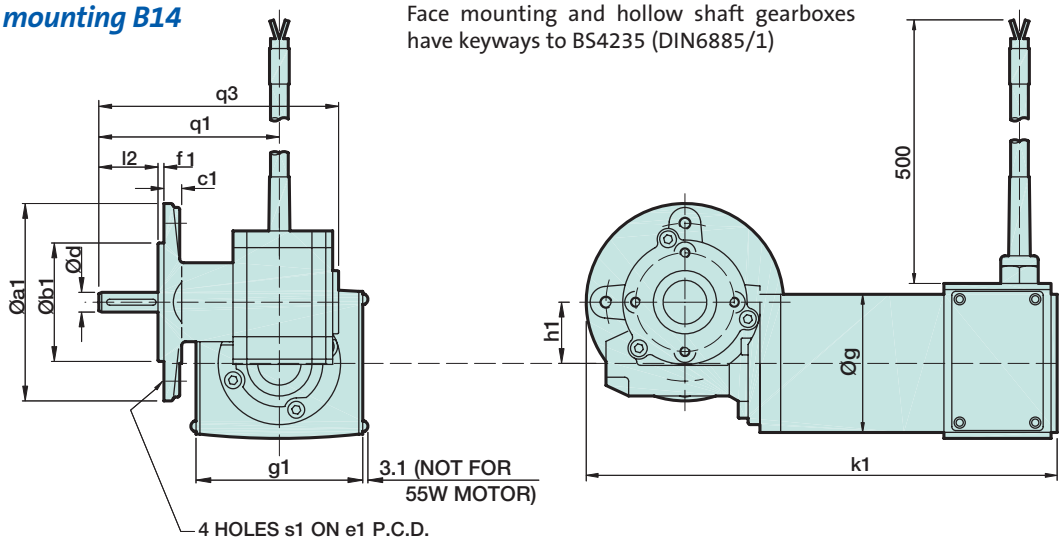
Foot mounting B3

Alternative models with feet integral to the gearbox are available on 6 weeks delivery



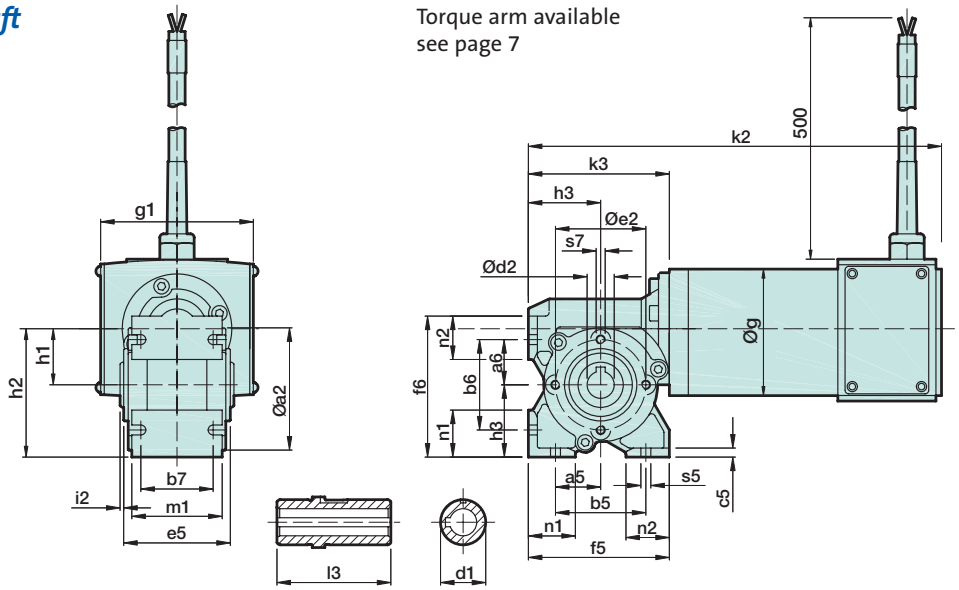
Face mounting B14

Face mounting and hollow shaft gearboxes have keyways to BS4235 (DIN6885/1)



Hollow shaft

Torque arm available see page 7



dc permanent magnet | Type 121pm worm

Foot mounting B3

Motor power W/ gearbox size	a	b	b_2	c	d h6	e	f	f_2	g	g_1	g_2	h	h_1	i	k	l_1	n	q	q_2	s	Approx weight kg
55/25	15.5	55	28h11	8	9	24.5	71	7	54	62	62	57	25	46.5	200	27	20	50	73	5.5	1.95
110/31	19.5	75	32h8	11	10	40.5	96	3	70	84.5	–	76	31	57.5	232	30	28	60	90	5.5	3.1
200/31	30	90	32h8	13	10	60.5	112	3	80	95	–	87	31	68	265	30	34	60	90	6.5	4.4
370/40	34	100	44h11	15	15	67.5	137	3	98	115	–	103	40	82	327	43	42	83	123	9	9.6

Face mounting B14

Motor power W/ gearbox size	a_1	b_1 j7	c_1	d* h6	e_1	f_1	g	g_1	h_1	k_1	l_2	q_1	q_3	s_1	Approx weight kg
55/25	80	50	8	9	65	3	54	62	25	209.5	28	81	104	M5	1.95
110/31	100	60	9	10	80	3	70	84.5	31	242	30	91.5	121.5	M6	3.2
200/31	100	60	9	10	80	3	80	95	31	275	30	91.5	121.5	M6	4.5
370/40	140	95	10	15	115	3	98	115	40	349	50	128	168	M8	9.8

* shaft key to BS 4235 (DIN 6885/1)

Hollow shaft

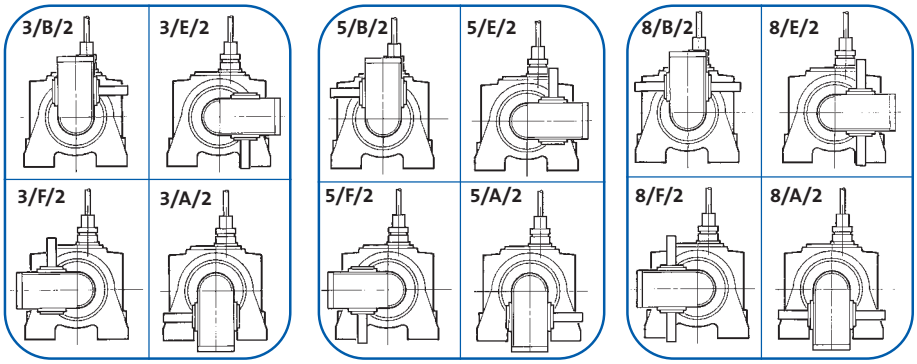
Motor power W/ Gearbox size	a2	a5	a6	b5	b6	b7	c5	d1	d2* H7	e2	e5	f5	f6	g	g1	h1	h2	h3
110/31	–	25	25	50	50	40	5	25	15	50	54	78	78	70	84.5	31	71	40
200/31	–	25	25	50	50	40	5	25	15	50	54	78	78	80	95	31	71	40
370/40	77	30	30	60	60	50	6	30	20	65	80	90	90	98	115	40	88	48

Motor power W/ Gearbox size	i2	k2	k3	l3	m1	n1	n2	S5	S7	Approx weight kg
110/31	4.5	232	78	63	50	26	24	5.5	M5	3.1
200/31	4.5	265	78	63	50	26	24	5.5	M5	4.4
370/40	1.5	327	96	83	59	30	24	5.5	M6	9.5

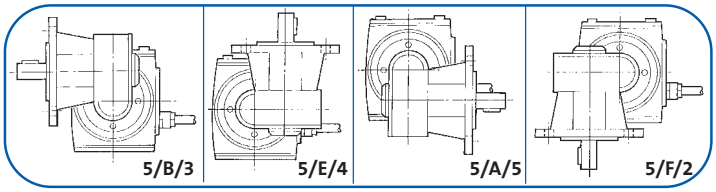
Gearbox designs and handings

When ordering specify the shaft position, gearbox handing and cable position from below.

Foot mounting B3

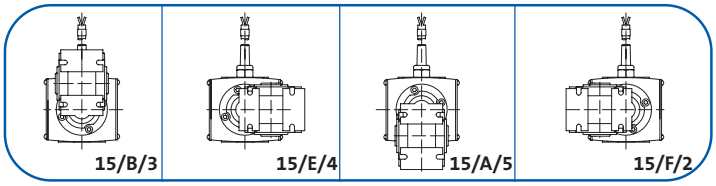


Face mounting B14



Face mounted gearboxes can be positioned in four ways relative to the motor cable.

Hollow shaft



Hollow shaft gearboxes can be assembled with the motor cable in four positions relative to the gearbox.

Small geared motors | Type LPM/SPL planetary

55 - 600W

These geared motors combine the Lenze 13.120 series permanent magnet smooth bodied motors with the SPL low cost planetary gearheads. They form a compact in-line unit well suited to dc variable speed drives.

- Powers 55 to 600W
- Outputs 10 to 811 r/min, up to 120Nm
- Reliable and efficient motor design
- Self-cooled without fan
- Compact smooth-bodied planetary gearhead

Motors

The motors are totally enclosed to IP54 – cooling specification category IC00 – and are ideal for areas where cooling fan turbulence cannot be tolerated. Thermal cut-out switches are fitted as standard. The brush gear and commutator can be inspected through removable inspection covers in the non-drive end casting.

The high quality, robust light alloy and steel casing requires no maintenance.

Armatures are finely balanced and mounted in substantial rolling bearings. Generously dimensioned commutators are connected to the armature windings by hot staking.

Form factors

The motor rated powers are stated for pure d.c. (form factor 1). The torques of the 180V motors are shown for form factors 1 and 1.4. When selecting the motor power or the torque, it must be considered that in continuous operation the rated power must be reduced according to the controller used so that the motor is not excessively heated.

Examples for form factors in practical operations:

FF	Current source
1.4 to 1.8	Thyristor controller
1.2 to 1.4	Thyristor controller with armature choke
1.3	20kHz chopper transistor controller
1.05 to 1.1	Chopper with d.c. link capacitor
1.05	Three phase rectifier bridge
1.0	Battery

Gearboxes

Lenze planetary gearboxes are constructed in steel. Efficiencies are:

1 stage 80% 2 stage 75% 3 stage 70%

For applications where the drive reverses we recommend you discuss details with our engineers. Higher precision planetary gearboxes with reduced backlash are available if required.

SPL gearboxes are lubricated for life with grease type Kluber Easoflax Topax MB52.

Axial and radial loads

Maximum forces calculated as the midpoint of the output shaft are:

Motor power		Axial force (N)	Radial force (N)
55W	1 stage	50	160
	2 stage	80	230
	3 stage	110	300
110W	1 stage	60	200
	2 stage	100	320
	3 stage	150	450
200W	1 stage	50	240
	2 stage	70	360
	3 stage	120	520
370W 540W 600W	1 stage 2 stage 3 stage	80 120 200	400 600 1000

Other options

- Motors enclosure to IP55
- Motors with brakes or tachos
- Selected motors with 90V armatures
- Motors with terminal box

Details on request

Ordering example – single phase

Quantity	1 off
Output speed r/min	66r/min
Power W	600W
Type number	SPL81-2PVCR-071N21
Motor voltage	180V

55W				24V rated 4A , max pulse current 41A	180V rated 0.5A, max pulse current 5.5A	
Output speed r/min	Gear ratio i	No. of stages	Type No.	Rated torque Nm	Rated torques Nm FF=1.0	FF=1.4
10	307.54	3	SPL42-3PVCR-035C21	15*	15	15
18	307.54			15*	15	14.8
32	92.7			11.4	11.4	8.1
59	50.89			6.2	6.2	4.4
66	45.56	2	SPL42-2PVCR-035C21	6.0	6.0	4.3
120	25.01			3.3	3.3	4.3
218	13.73			1.8	1.8	1.3
444	6.75	1	SPL42-1PVCR-035C21	0.95	0.95	0.68
811	3.7			0.52	0.52	0.37

110W				24V rated 6.9A , max pulse current 44A	180V rated 0.86A, max pulse current 6A	
Output speed r/min	Gear ratio i	No. of stages	Type No.	Rated torque Nm	Rated torques Nm FF=1.0	FF=1.4
18	168.84	3	SPL52-3PVCR-045C21	25*	25	25
32	92.7			22.7	22.7	16.2
59	50.89			12.5	12.5	8.9
66	45.56	2	SPL52-2PVCR-045C21	12.0	12.0	8.5
120	25.1			6.6	6.6	4.7
218	13.73			3.6	3.6	2.6
811	3.7	1	SPL52-1PVCR-045C21	1.0	1.0	0.74

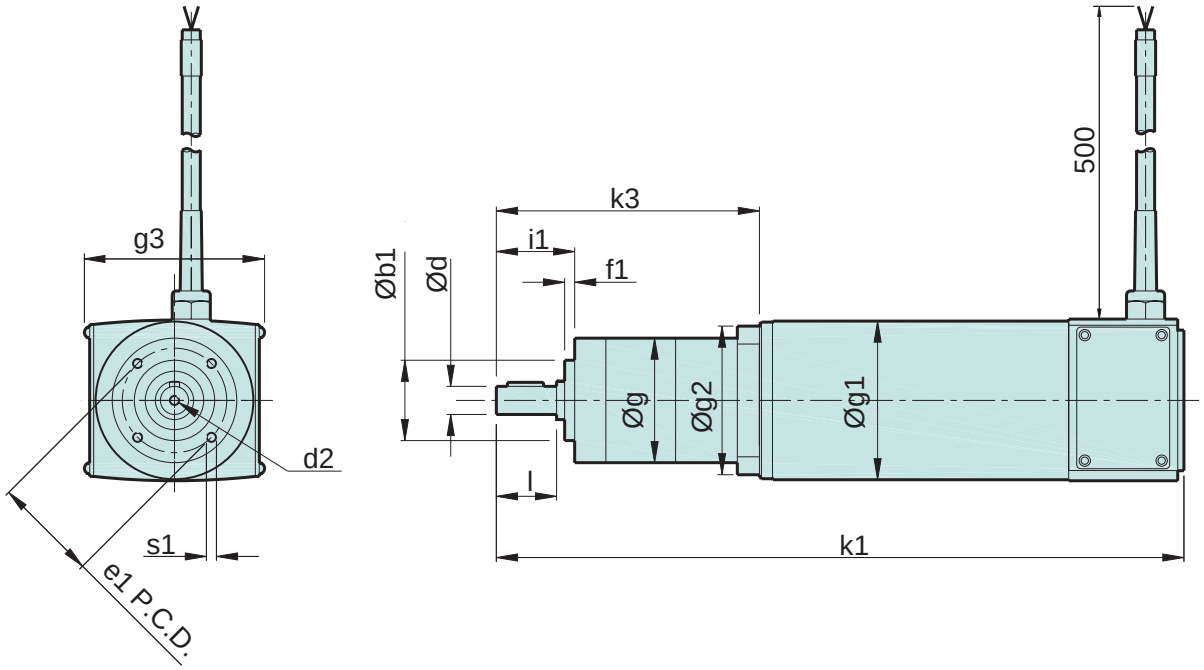
200W				24V rated 11.8A , max pulse current 71A	180V rated 1.4A, max pulse current 9A	
Output speed r/min	Gear ratio i	No. of stages	Type No.	Rated torque Nm	Rated torques Nm FF=1.0	FF=1.4
24	123.97	3	SPL62-3PVCR-056N21	50	50	39.5
30	99.5			44.5	44.5	31.8
42	71.16			31.8	31.8	22.7
59	50.89			22.8	22.8	16.3
66	45.56	2	SPL62-2PVCR-056N21	20.4	20.4	14.6
86	34.97			18.2	18.2	13
120	25.01			12	12	8.6
218	13.73			6.6	6.6	4.7
811	3.7	1	SPL62-1PVCR-056N21	1.9	1.9	1.36

370W				24V rated 20.2A , max pulse current 90A	180V rated 2.5A, max pulse current 11.2A	
Output speed r/min	Gear ratio i	No. of stages	Type No.	Rated torque Nm	Rated torques Nm FF=1.0	FF=1.4
24	123.97	3	SPL81-3PVCR-056N21	1.2	1.2	72.9
30	99.5			82.2	82.2	58.7
42	71.16			58.8	68.8	42.0
59	50.89			42.0	42.0	30.0
66	45.56	2	SPL81-2PVCR-056N21	40.3	40.3	28.8
86	34.97			30.9	30.9	22.1
120	25.01			22.1	22.1	15.8
218	13.73			12.1	12.1	8.7
811	3.7	1	SPL81-1PVCR-063N21	3.5	3.5	2.5

540W & 600W				540W 24V rated 27A , max pulse current 130A	600W 180V rated 4.5A, max pulse current 20A	
Output speed r/min	Gear ratio i	No. of stages	Type No.	Rated torque Nm	Rated torques Nm FF=1.0	FF=1.4
24	123.97	3	SPL81-3PVCR-071N21	120*	120	118
30	99.5			118	120	94
42	71.16			84.7	95	68
59	50.89	2	SPL81-2PVCR-071N21	60.6	68	48.6
66	45.56			58.1	60	46.4
86	34.97			44.6	50.1	35.6
120	25.01			31.9	35.8	25.4
218	13.73			17.5	19.7	14.0
811	3.7	1	SPL81-1PVCR-071N21	5.0	5.7	4.0

* Limited by gearbox torque capacity

Small geared motors | Type LPM/SPL planetary pm



Keyways to BS4235

Power	Gearbox stages	b_1 j7	d h7	d_2	e1	f_1	g	g_1	g_2	g_3	i1	k_1	k_3	l	s	Wt kg
55W	1	25 (h10)	8 (g6)	M3	32	2	42	54	52	62	25	223	84	22.2	M4 x10	1.8
	2											236	97			1.9
	3											249	110			2.1
110W	1	32	12	M4	40	3	52	70	80	91	25	257	99	20.8	M5 x10	3.4
	2											271	113			3.6
	3											285	127			3.8
200W	1	40	14	M5	52	5	62	80	80	101	39	308	115	30	M5 x10	4.6
	2											324	131			5.0
	3											340	147			5.4
370W	1	50	19	M6	65	5	81	98	90	121	49	381	144	40	M6 x12	10.1
	2											402	165			10.8
	3											424	187			11.5
540/ 600W	1	50	19	M6	65	5	81	110	105	138	49	409	151	40	M6 x12	12.6
	2											431	173			13.3
	3											452	194			14.0

Chokes

We recommend chokes to improve the form factor for 180V motors.

Motor power	Choke Type No.
55-200W	13012138
370W	13012144
600W	13012140

Choke details are shown on page 25.

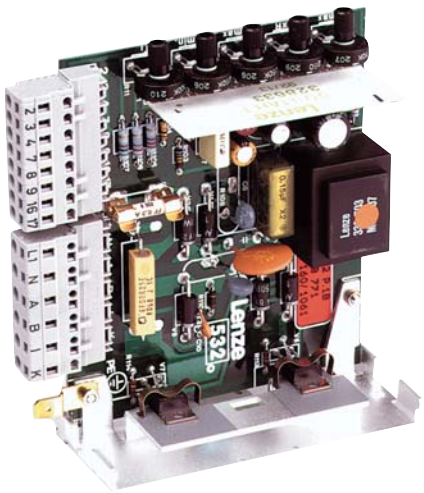
Controllers

Lenze controllers of the series 530 are suitable, see facing page.

Lenze 1Q thyristor controller | Type 530

0.36 - 2.0kW

- Space saving single board construction
- Din rail mountable
- Plug and socket connector system
- Armature voltage feedback with I x R compensation of tachogenerator feedback
- Surface mount technology on ceramic control circuit
- Mains supply condition surveillance
- Interference immunity by design
- 531P 'plu-in' compatitble with 431 type



The 530 series of 1Q D.C. motor controllers cover the power range 0.36kW to 2.0kW. Suitable for use with permanent magnet or shunt wound motors.

The 530 series provides an excellent low cost compact solution for multi-motor applications. Small footprint and din rail mounting kit means easy fixing in control panel applications. The 531P is a 'Plug-in' replacement for the 431 type but differs in that it uses the RFR (close to run) whereas the old 431 used RSP.

Technical data

Type	Output power P_{el}/kW	Output current P_A/A	Type No.
532	0.36	2	00386347
533	0.72	4	00386348
534	1.3/2.0	8/12	00386349
531P	0.36	2	00386346

Technical data

Mains supply voltage	190–265/110–132V a.c. L_1 – N
Armature output voltage	0 – 180 V d.c.
Field supply voltage	0.9 x L_1 – N
Master set value voltage	0 – 10 V d.c.
Tachogenerator voltage	10 – 120 V d.c.
Operating temperature range	0 – 45°C

Mains chokes are recommended, a quotation is available on request.

Accessories – DIN rail kit

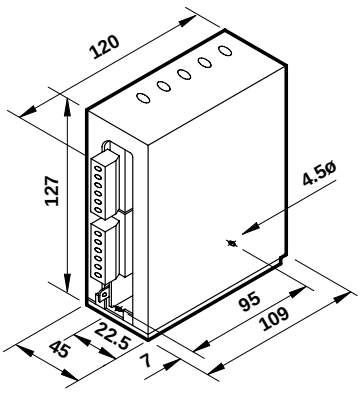
532/3	00329026
534	00329061
Connector system and guide rails	00304817

Ordering example

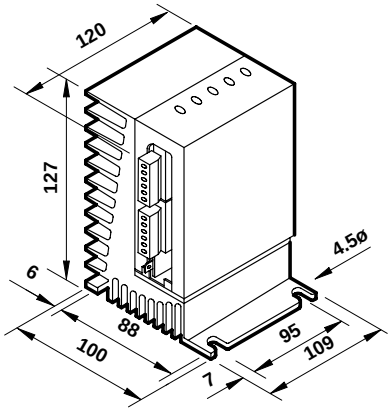
(1) off controller type 532	Type No. 00386347
(1) off Din rail clip	Type No. 00329026

Dimensions

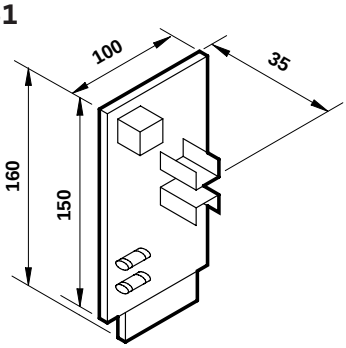
532, 533



534



531



Lenze UK | ideas in motion

With more than 35 years experience, Lenze Ltd are specialists in drive and automation equipment for the UK market. Today Lenze Ltd employ 120 people and operate with management systems approved to ISO9001:2000.

Lenze Group

Lenze are a leading international company in the area of design and manufacture of drive and automation products. With 3,000 employees worldwide, sales and technical expertise is in place in over 50 countries.

Experience and expertise

The engineering comes first. With almost 50% of our staff being qualified engineers, the technical solution to your problem is our goal. Area engineers and product specialists give technical advice. Application, automation and software engineers implement the solution as well as providing training and support. Service and commissioning engineers make it work.

Responsive customer service

Our Customer Service team can implement pro-active scheduling and planning to ensure all products are 'on time, every time'. Same day despatch is usually possible with next day delivery as standard.

The complete drive system

Lenze products fit together to make the complete machine drive and automation system. Hardware includes leading-edge servo drives, a truly modern integrated range of inverters and high-performance geared motors. These combine with operator interfaces, motion controllers, IPCs and powerful software tools.

Efficient product service

The Lenze Service Division deliver support when and wherever it is needed. Experienced engineers offer technical advice and satisfy any spares requirements.
Our mechanical and electrical repairs are fast and reliable and we offer on-site commissioning and operator training. We run a programme of drive training courses.
Lenze can also provide Service Contracts and Support Plans.

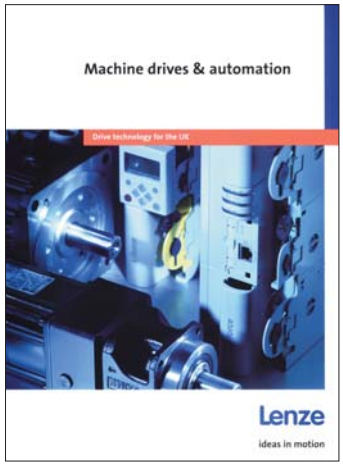
Contact Us

Expert advice is always available:

Phone: 01234 321321
Fax: 01234 261815
Email: sales@lenze.co.uk

Out-of-hours support line: 07899 921190

Lenze Ltd
Caxton Rd
Bedford MK41 0HT
England



Ask for our product range flyer

NQA
NATIONAL QUALITY ASSURANCE