



Enhanced range of
Super Performers!



Motors - Champion series

Frame size 63 - 132M

Answers for industry.

SIEMENS

TEFC

3 Phase Squirrel Cage Induction Motors

Siemens CHAMPION Series Cage Motors are suitable for the most diverse applications. The Motors are available in the wide range from frame sizes 63 to 355L. These Motors conform to **eff1** and **eff2** requirements for efficiency. These motors have a high efficiency and high uptime. Consequently the productivity is higher and energy consumption lower. The motors have low life cycle costs, hence great saving!!!

Range

These motors are available in Aluminium as well as cast iron motor housing depending on the customers requirement.

	Poles	Frame
New Aluminium housing (1LA0) eff2	2,4,6,8	63-112
CI housing (1LA0) eff2	2,4,6,8	63-132
New CI housing (1SE0) eff1	2,4,6	71-132

Voltage and Frequency

These motors are suitable for 415V $\pm 10\%$, 50Hz $\pm 5\%$, combined $\pm 10\%$, 3 phase AC supply.

Ambient Temperature

All motors in normal design are suitable for an ambient temperature up to 50°C.

Service Factor

All standard motors have a service factor of 1.1, when operating at rated supply conditions, ambient temperature up to 50°C and altitude up to 1000m, with temperature rise limited to class F limits.

Output

The rated output, as given in the selection and ordering data, is applicable for continuous operation as per IS:325 at 415V, 50Hz supply, ambient temperature up to 50°C and altitude upto 1000m above mean sea level.

The motors are provided with Class 'F' insulation, thermally utilised to Class 'B' limits, at rated output and rated voltage / frequency and with sinusoidal supply.

For use of standard motors at ambient temperatures exceeding 50°C and/or altitudes exceeding 1000m above mean sea level, the multiplication factors as listed in the table below must be applied on the rated output.

By utilising to Class 'F' limits, at rated voltage and frequency, the rated output can be derived from these motors even if the ambient temperature goes upto 55°C.

Overload Capacity

The motors are capable of withstanding 1.5 times the rated current at rated voltage and rated frequency for 2 minutes.

Insulation

Insulation system comprises dual coat enameled wires with a temperature class 200 and widely proven NOMEX based insulating material combined with alkyd-based varnish. The system ensures high thermal, mechanical and electrical strength and also long life for the motors.

The insulation system offers excellent protection for the windings against corrosive gases, vapours, dust, oil and high humidity, as well as excellent resistance to the normal stresses of vibration.

Standards

Performance conforms to IS:325 and dimensions conform to IS:1231, IS:8223.

Degree of Protection

Motors are designed for degree of protection IP 55 according to IS:4691

Frame design

In Cast Iron motors the housing are of Cast Iron and terminal boxes are of aluminium. For Aluminium body motors, both housing and terminal boxes are of Aluminium.

The motors can be offered in foot-mounted construction (IMB3, IMB6, IMB7, IMB8, IMV5, IMV6) or in flange mounted construction (IMB5, IMV1, IMV3). Foot cum flange construction B35, face-mounting construction with "C" type flange B14 and face mounting construction with "C" type flange along with foot B34 are also available.

All foot mounted motors in frames 63 to 132 are with integral mounting feet. The motors are suitable for horizontal as well as vertical mounting - universal type of construction.

In Aluminium motors, to be offered with B14 and B34 construction, the 'C' type DE endshield will be of cast iron.

Paint

The normal paint is in shade RAL 7037 (Dusty Grey). This paint is suitable for climate group 'worldwide' as per DIN IEC 60721 Part 2-1, and also for aggressive atmospheres upto 1% acid and alkali concentration or permanent dampness in sheltered rooms.

Operation with VFDs

Operation of the motors with 'MASTER DRIVES' - Variable voltage, Variable frequency drives - is possible at voltages $\leq 500V$. It is also possible to use these motors with PWM drive converters with voltage rise times of $t_s > 0.1\mu s$ at the motor terminals.

Rating Plate

The 50Hz data, and 'CE' marking are provided on the rating plate of all motors. A typical rating plate will be as shown on page no.3.

As the efficiency values meet minimum norms of energy efficient motors as per IS:12615-2004 for corresponding outputs. BEE logo will be provided on select ratings.

Winding Connection

The motors rated up to 1.5kW will be 'Star Connected for 415V / 50Hz supply, and 6 leads will be brought out to the terminal box.

The motors rated 2.2kW and above will have 6 leads of the windings brought out in the terminal box and have to be connected in 'Delta' for 415V / 50Hz supply.

Cooling Fan and Fan cover

The external cooling fan is of anti-static, thermo-plastic and is suitable for both directions of rotation. The fan cover is manufactured from corrosion resistant sheet steel.

Altitude above sea level in m	Ambient temperature in °C		
	< 30	30 - 50	55
1000	1.07	1.00	0.96
1500	1.04	0.97	0.93
2000	1.00	0.94	0.90
2500	0.96	0.90	0.86
3000	0.92	0.86	0.82
3500	0.88	0.82	0.79
4000	0.82	0.77	0.74

Terminal box

The terminal boxes for all the motors are mounted on top. The particulars are given in the table below :-

Table B

Frame Size	T.B. Type	Terminal screw in mm	Max. permissible cond. Ross-section area in mm ²	Max. Current capacity in A	Cable entry diameter
63, 71, 80, 90	1 x B0 096	M4	1 x 4	16	1 x 19 (3/4") BSC
100, 112, 132	1 x B0 132	M5	2 x 6	20	2 x 25.4 (1") BSC

Note - a. No. of terminals - 6

b. Terminal box rotatable in steps of 90°

SIEMENS 3~Ind. Mot. CE					
IEC 60034-1 IS:325 IS:12615 Amb.50°C					
%Eff 55.0% IP55 Duty S1 Ins.Cl. F					
1LA0 060-4YA80 Frame 63					
○ No. SDF/2000001 Wt. 5 kg ○					
Hz	V	kW	A	rpm	pf.
50	415Y	0.12	0.5	1340	0.6
± 5%	± 10%				
CHAMPION			MADE IN INDIA		

eff2 SIEMENS 3~Ind. Mot. CE					
1LA0 096-4YA80 Amb. 50°C					
IEC 60034-1 IS:325 IS:12615 Frame 90L					
%Eff 79.0% IP55 Duty Ins.Cl. F					
○ No. SDF/xxxxxxx MM/YYYY Wt. 20Kg ○					
Hz	V	kW	A	rpm	pf.
50	415	1.5	3.3	1415	0.81
± 5%	± 10%				
Parameters are at rated condition subject to tolerance as per IS:325					
CHAMPION			MADE IN INDIA		

Bearing Design

Deep groove ball bearings, series 62 shielded on both the sides (ZZ), with bearing clearance "Normal" are provided on motors up to and including 112M frame. Frame size 132 will be provided with C3 clearance.

The grease used is lithium complex soap based, Exxon Mobil, UNIREX N3, to NLGI Class 3.

References for the bearings are given in the following table: -

Frame size	Bearing reference	
	DE	NDE
63	6201 ZZ	6201 ZZ
71	6202 ZZ	6202 ZZ
80	6204 ZZ	6204 ZZ
90	6205 ZZ	6205 ZZ
100	6206 ZZ	6206 ZZ
112	6206 ZZ	6206 ZZ
132	6208 ZZ	6208 ZZ

Balance and vibration severity

Balancing of the rotors is done with half key; no-load vibration level of motor would be "Normal" as per IS:12075.

Noise Level

No-load noise level for motors will be in accordance with IS:12065.

Voltage Variation %	Frequency Variation %	Combined Voltage and Frequency Variation %	Permissible Output as % of Rated Value
± 6	± 3	± 9	100
± 10	± 5	± 10	100
± 12.5	± 5	± 12.5	95
± 15	± 5	± 15	90



Selection and Ordering data



eff1



Frame Size 71 to 132M, Degree of Protection IP55, Method of Cooling IC411, Insulation Class F, 415V ± 10%, 50Hz ± 5%, Combined V&F Variation ± 10%, Ambient temperature 50°C. Efficiency Class eff1 as per IS:12615-2004.

Rated Output	Frame Size	Order No. (for Order No. Supplement for Voltage and type of construction, see table below)	Operating data at rated output					Locked Rotor Current	Locked Rotor Torque	Pull Out Torque	GD ² of Rotor	Motor Weight
			Rated Current at 415V	Efficiency	Power Factor	Rated Speed	Rated Torque	For direct-on-line starting as multiple of rated				Type of constr. IMB3 approx.
kW			A	%		rev/min	kgf.m	Current	Torque	Torque	kgf.m ²	kg
3000 rev/min, 2-Pole, 50Hz												
0.37	71	* 1SE0 070-2YA..	0.88	70.2	0.83	2800	0.13	6.0	2.0	2.6	0.0010	8
0.55		* 1SE0 073-2YA..	1.25	74.0	0.83	2830	0.19	6.0	2.2	2.6	0.0014	9
0.75	80	* 1SE0 080-2YA..	1.58	77.0	0.86	2860	0.26	6.0	2.1	2.6	0.0049	14
1.1		* 1SE0 083-2YA..	2.10	82.8	0.88	2860	0.37	6.0	2.2	2.6	0.0059	15
1.5	90S	* 1SE0 090-2YA..	2.79	84.1	0.89	2860	0.51	6.3	2.7	3.1	0.0093	20
2.2	90L	1SE0 096-2YA..	4.02	85.6	0.89	2860	0.75	7.0	2.7	3.1	0.0103	23
3.7	100L	1SE0 107-2YA..	6.92	87.5	0.85	2890	1.3	7.0	2.5	3.0	0.0155	36
5.5	132S	1SE0 130-2YA..	10.04	88.6	0.86	2935	1.8	7.0	2.5	3.0	0.0583	58
7.5	132S	1SE0 131-2YA..	13.25	89.5	0.88	2935	2.5	7.0	2.6	3.0	0.0716	65
1500 rev/min, 4-Pole, 50Hz												
0.37	71	* 1SE0 073-4YA..	0.97	73.0	0.73	1400	0.26	5.5	2.0	2.4	0.0028	10
0.55	80	* 1SE0 080-4YA..	1.34	78.0	0.73	1420	0.38	5.5	2.3	2.6	0.0049	14
0.75		* 1SE0 083-4YA..	1.66	82.5	0.76	1420	0.51	5.5	2.4	2.7	0.0062	15
1.1	90S	* 1SE0 090-4YA..	2.25	83.8	0.81	1420	0.75	6.0	2.2	2.5	0.0093	20
1.5	90L	* 1SE0 096-4YA..	3.0	85.0	0.82	1425	1.0	6.0	2.2	2.5	0.0103	22
2.2	100L	1SE0 106-4YA..	4.2	86.4	0.84	1450	1.5	6.8	2.3	2.6	0.0237	36
3.7	112M	1SE0 113-4YA..	7.0	88.3	0.83	1450	2.5	6.8	2.3	2.6	0.0404	43
5.5	132S	1SE0 130-4YA..	10.2	89.2	0.84	1455	3.7	6.8	2.5	2.6	0.0811	60
7.5	132M	1SE0 133-4YA..	13.8	90.1	0.84	1460	5.0	6.8	2.5	2.6	0.1081	67
1000 rev/min, 6-Pole, 50Hz												
0.37	80	* 1SE0 080-6YA..	1.02	69.4	0.73	915	0.39	5.0	2.0	2.3	0.0049	12
0.55		* 1SE0 083-6YA..	1.5	72.0	0.73	920	0.58	5.0	2.0	2.3	0.0063	13
0.75	90S	* 1SE0 090-6YA..	2.0	74.6	0.70	925	0.79	5.0	2.1	2.4	0.0095	17
1.1	90L	* 1SE0 096-6YA..	2.8	77.3	0.70	935	1.2	5.0	2.1	2.4	0.0122	19
1.5	100L	* 1SE0 106-6YA..	3.3	79.6	0.79	950	1.5	5.5	2.1	2.4	0.0336	33
2.2	112M	1SE0 113-6YA..	4.7	82.2	0.79	955	2.2	6.0	2.2	2.5	0.0584	43
3.7	132S	1SE0 131-6YA..	7.6	85.1	0.80	950	3.8	6.5	2.2	2.5	0.0991	61
5.5	132M	1SE0 134-6YA..	11.0	86.8	0.80	955	5.6	6.5	2.4	2.7	0.1321	68

* 415V, Star connected

All values subject to tolerance as per IS:325 BEE approval on select motors

Order No. Suffixes

Motor Type	Last place but one: Figure denoting voltage		Last place: Figure denoting construction						
	415V, 50Hz Standard V and f variation	Other Voltage and/or Frequency and/or V and f variation [§]	IMB3	IMB5	IMV1 without canopy	IMV1 with canopy	IMB14	IMB35	IMB34
1SE0 070 to 1SE0 096	8	9	0	1	1	4	2	6	7
1SE0 106 to 1SE0 134	8	9	0	1	1	4	2	6	7

§ - details of voltage / frequency / V&f variation should be additionally given in the plain text.

Selection and Ordering data

Frame Size 63 to 132M, Degree of Protection IP55, Method of Cooling IC411, Insulation Class F, 415V ± 10%, 50Hz ± 5%, Combined V&F Variation ± 10%, Ambient temperature 50°C. Efficiency Class eff2 as per IS:12615-2004.

Rated Output	Frame Size	Order No. (for Order No. Supplement for Voltage and type of construction, see table below)	Rated Current 415V	Efficiency	Power Factor	Rated Speed	Rated Torque	Locked Rotor Current	Locked Rotor Torque	Pull Out Torque	GD ² of Rotor	Motor Weight	
								For direct-on-line starting as multiples of rated				Cast Iron Housing	Aluminium Housing
kW			A	%		rpm	kgfm	Current	Torque	Torque	kgf.m ²	kg	kg
3000 rev/min, 2-Pole, 50Hz													
0.18	63	* 1LA0 060-2YA..	0.47	63.0	0.84	2770	0.06	4.5	2.0	2.3	0.0010	5	3
0.25	63	* 1LA0 063-2YA...	0.67	63.0	0.82	2770	0.09	4.5	2.0	2.3	0.0010	6	4
0.37	71	* 1LA0 070-2YA...	0.91	67.0	0.84	2780	0.13	4.5	2.4	2.7	0.0016	8	5
0.55	71	* 1LA0 073-2YA...	1.3	72.0	0.83	2840	0.19	4.5	2.4	2.7	0.0022	9	6
0.75	80	* 1LA0 080-2YA...	1.7	73.0	0.85	2840	0.26	5.5	2.3	2.6	0.0038	13	8
1.1	80	* 1LA0 083-2YA...	2.3	77.0	0.87	2850	0.38	5.5	2.2	2.5	0.0049	14	9
1.5	90S	* 1LA0 090-2YA...	3.1	78.5	0.87	2860	0.51	6.0	2.7	3.0	0.0072	18	12
2.2	90L	1LA0 096-2YA...	4.3	81.0	0.88	2880	0.74	6.0	2.7	3.0	0.0093	21	15
3.7	100L	1LA0 107-2YA...	7.1	84.0	0.86	2900	1.2	5.5	2.1	2.3	0.0200	31	22
5.5	112M	1LA0 114-2YA...	10	85.7	0.89	2905	1.8	6.0	2.5	2.8	0.0373	41	30
7.5	132S	1LA0 131-2YA...	13.3	87.0	0.90	2910	2.5	6.0	2.0	2.3	0.0583	58	-
9.3	132M	1LA0 133-2YA...	16.4	87.7	0.90	2915	3.1	6.0	2.0	2.3	0.0716	65	-
1500 rev/min, 4-Pole, 50Hz													
0.12	63	* 1LA0 060-4YA...	0.51	55.0	0.60	1340	0.09	3.5	1.9	2.1	0.0008	5	3
0.18	63	* 1LA0 063-4YA...	0.57	60.0	0.73	1370	0.13	3.5	1.9	2.1	0.0010	6	4
0.25	71	* 1LA0 070-4YA..	0.76	62.0	0.74	1360	0.18	3.5	1.9	2.1	0.0016	8	5
0.37	71	* 1LA0 073-4YA..	1.05	66.0	0.74	1380	0.26	3.5	1.9	2.1	0.0022	9	6
0.55	80	* 1LA0 080-4YA..	1.4	73.0	0.73	1410	0.38	4.3	2.0	2.2	0.0038	13	8
0.75	80	* 1LA0 083-4YA..	1.8	74.0	0.80	1415	0.52	4.5	2.0	2.1	0.0049	14	9
1.1	90S	* 1LA0 090-4YA..	2.5	76.5	0.81	1415	0.76	4.7	2.2	2.5	0.0072	18	12
1.5	90L	* 1LA0 096-4YA..	3.3	79.0	0.81	1415	1.0	4.7	2.2	2.5	0.0093	20	14
2.2	100L	1LA0 106-4YA..	4.4	82.0	0.85	1435	1.5	5.5	2.4	2.6	0.0182	28	19
3	100L	1LA0 107-4YA..	6	82.6	0.84	1435	2.0	5.5	2.4	2.6	0.0237	32	23
3.7	112M	1LA0 113-4YA..	7	85.0	0.86	1440	2.5	5.5	2.2	2.5	0.0380	39	28
5.5	132S	1LA0 130-4YA..	10.5	87.5	0.83	1450	3.7	5.5	2.3	2.5	0.0676	57	-
7.5	132M	1LA0 133-4YA..	14	87.5	0.85	1450	5.0	5.5	2.3	2.5	0.0912	64	-
1000 rev/min, 6-Pole, 50Hz													
0.18	71	* 1LA0 070-6YA..	0.61	60.0	0.68	900	0.19	3.0	1.9	1.9	0.0033	8	5
0.25	71	* 1LA0 073-6YA..	0.8	64.0	0.68	900	0.27	3.0	1.9	1.9	0.0033	8	5
0.37	80	* 1LA0 080-6YA..	1.1	65.0	0.73	910	0.40	4.0	2.1	2.1	0.0049	12	7
0.55	80	* 1LA0 083-6YA..	1.5	69.0	0.74	915	0.59	4.0	2.1	2.1	0.0063	13	8
0.75	90S	* 1LA0 090-6YA..	2.0	71.0	0.72	920	0.79	5.0	2.3	2.3	0.0095	17	11
1.1	90L	* 1LA0 096-6YA..	2.9	75.0	0.71	930	1.2	5.0	2.5	2.5	0.0122	19	13
1.5	100L	* 1LA0 106-6YA..	3.5	76.0	0.78	950	1.5	4.0	2.0	2.3	0.0269	29	20
2.2	112M	1LA0 113-6YA..	4.9	79.5	0.78	940	2.3	5.0	2.0	2.3	0.0467	39	28
3.7	132S	1LA0 131-6YA..	7.6	82.5	0.82	950	3.8	4.5	1.9	2.2	0.0826	58	-
5.5	132M	1LA0 134-6YA..	10.9	84.5	0.83	945	5.7	5.0	2.0	2.3	0.1156	66	-
750 rev/min, 8-Pole, 50Hz													
0.12	71	* 1LA0 070-8YB..	0.65	50.0	0.51	665	0.18	2.5	1.5	1.7	0.0033	9	6
0.18	80	* 1LA0 080-8YB..	0.8	54.0	0.58	685	0.26	3.0	1.6	1.8	0.0049	12	7
0.25	80	* 1LA0 083-6YB..	1.1	57.0	0.58	690	0.35	3.0	1.6	1.8	0.0063	13	8
0.37	90S	* 1LA0 090-8YB..	1.3	64.0	0.62	690	0.52	3.5	1.7	1.9	0.0095	18	12
0.55	90L	* 1LA0 096-8YB..	1.8	67.0	0.62	690	0.78	3.5	1.7	1.9	0.0122	20	14
0.75	100L	* 1LA0 106-8YB..	2.1	72.0	0.69	700	1.0	4.0	1.8	2.0	0.0228	26	17
1.1	100L	* 1LA0 107-8YB..	3	74.0	0.69	700	1.5	4.0	1.8	2.0	0.0296	28.5	20
1.5	112M	* 1LA0 113-8YB..	3.9	77.0	0.69	705	2.1	4.0	1.9	2.1	0.0467	39	28
2.2	132S	1LA0 131-8YB..	5.2	79.0	0.75	710	3.0	5.0	2.2	2.4	0.0826	58	-
3.7	132M	1LA0 134-8YB..	8.6	81.0	0.74	710	5.1	5.0	2.2	2.4	0.1156	66	-

Motors including 0.37kW and above are eff2.

* 415V, Star connected

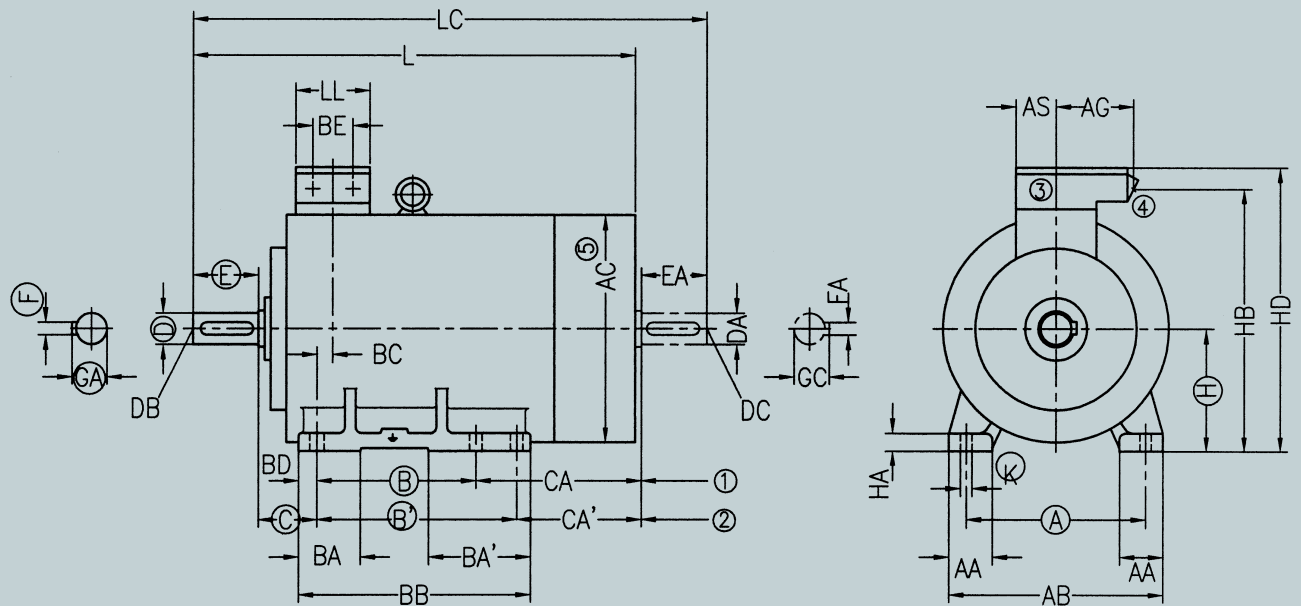
All values subject to tolerance as per IS 325 BEE label on select motors

Order No. Suffixes

Motor Type	Last place but two : Figure denoting frame material		Last place but one: Figure denoting voltage		Last place: Figure denoting construction						
	Cast Iron Housing	Aluminium Housing	415V, 50Hz Standard V and f variation	Other Voltage and/or Frequency and/or V and f variation) ⁵	Refer Price List for price implication						
					IMB3	IMB5	IMV1 without canopy	IMV1 with canopy	IMB14	IMB34	IMB35
1LA0 063 to 096	A/B	L	8	9	0	1	1	4	2	7	6
1LA0 106 to 134	A/B	L	8	9	0	1	1	4	2	7	6

5 - details of voltage / frequency / V&f variation should be additionally given in the plain text.

Dimensions in mm – 1LA0 / 1SE0 (without brake)



- ① B is valid in all frames
- ② B' & CA' are valid for 90 frame only 90S: B=100 & CA=128, 90L: B'=125 & CA'=103
- ③ Terminal box can be rotated in steps of 90°
- ④ Conduit entry 1x3/4" for frame size 63-90 & 2x1" for frame size 100-132, as per IS:1653
- ⑤ Measured over bolt heads
- ⑥ Shaft extension as per IS:1231

Mechanical Dimensions [Foot Mounted Motors (IMB3)]

Frame Size	A	AA	AB	AC	AG	AS	B	BA	BA'	BB	BC	BD	BE	C	CA	H	HA
63	100	27	122	132	44.5	44.5	80	26	26	102	19.5	11	–	40	70	63	6
71	112	28	134	148	44.5	44.5	90	26	26	112	15.5	11	–	45	77	71	7
80 ^s	125	29	150	168	44.5	44.5	100	30	30	124	15.5	12	–	50	96	80	9
90S/L #	140	32	168	190	44.5	44.5	②	32	57	149	23.5	12	–	56	②	90	10
100L	160	43	200	208	82	50	140	46	46	180	25.5	20	40	63	117	100	14
112M	190	52	230	233	82	50	140	47	47	180	19	20	40	70	134	112	15.5
132S	216	53	256	274	82	50	140	46	46	180	12	20	40	89	149	132	16
132M	216	53	256	274	82	50	178	46	46	218	12	20	40	89	149	132	16

Frame Size	HB	HD	K	L	LC	LL	Shaft Extension									
							Drive End					Non-drive End				
							D	DB	E	F	GA	DA	DC	EA	FA	GC
63	140.5	169	7	208	236	89	11	M4x9	23	4	12.5	11	M4x9	23	4	12.5
71	157	186	7	240	272	89	14	M5x12	30	5	16	14	M5x12	30	5	16
80 ^s	176	204	10	282	326	89	19	M6x16	40	6	21.5	19	M6x16	40	6	21.5
90S/L #	194.5	223	10	326	374	89	24	M8x20	50	8	27	19	M6x16	40	6	21.5
100L	224.5	256	12	373	430	112	28	M10x24	60	8	31	24	M8x20	50	8	27
112M	249.5	281	12	398	454	112	28	M10x24	60	8	31	24	M8x20	50	8	27
132S	289	320	12	452	538	112	38	M12x28	80	10	41	38	M12x28	80	10	41
132M	289	320	12	490	576	112	38	M12x28	80	10	41	38	M12x28	80	10	41

Definitive Dimensions:

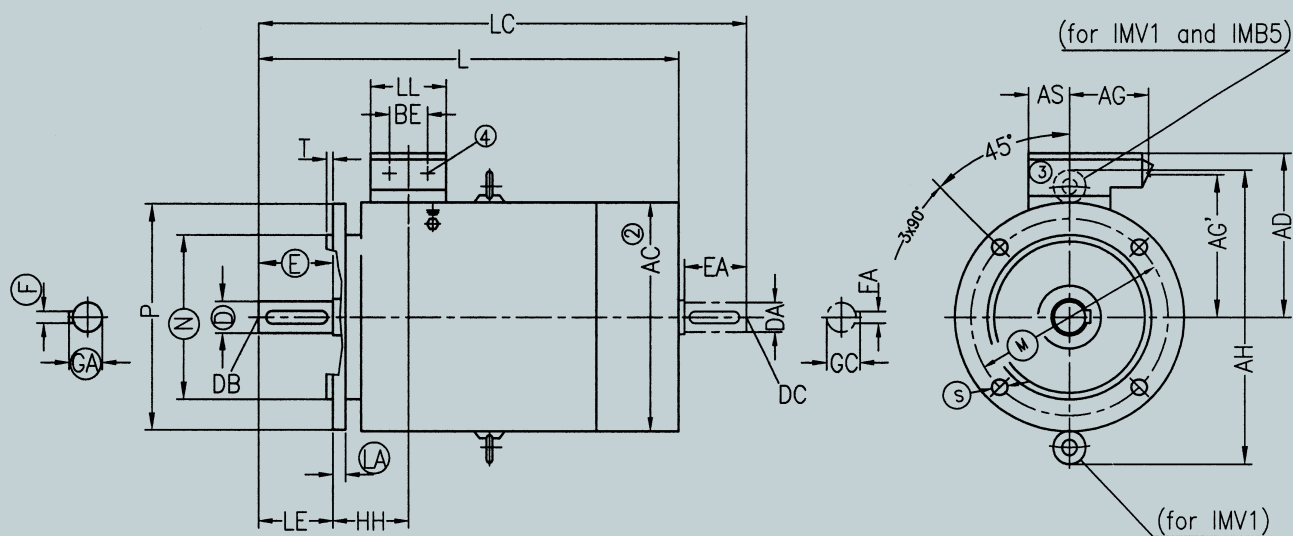
A, B, B', C, H, K, D, E, F, GA are binding dimensions for all standard motors.

All other dimensions are subject to change. For valid dimensions, please contact Regional Office in your region.

^s for 1SE0 80 frame, add 20mm on L & LC dimensions

for 1SE0 90 S/L frame, add 43mm on L & LC dimensions

Dimensions in mm – 1LA0 / 1SE0 (without brake)



- ① Shaft extension as per IS:1231
- ② Measured over bolt heads
- ③ Terminal box can be rotated in steps of 90°
- ④ Conduit entry 1x3/4" for frame 63-90 & 2x1" for frame size 100-132, as per IS:1653
- ⑤ Flange as per IS:2223

Mechanical Dimensions [Flange Mounted Motors (IMB5)]

Frame Size	AC	AD	AG	AG'	AH	AS	BE	HH	L	LC	LE	LL
63	132	106	44.5	77.5	–	44.5	–	59.5	208	236	23	89
71	148	115	44.5	86	–	44.5	–	60.5	240	272	30	89
80 ^s	168	124	44.5	96	–	44.5	–	65.5	282	326	40	89
90S/L [#]	190	133	44.5	105	246	44.5	–	79.5	326	374	50	89
100L	208	156	82	125	270	50	40	88.5	373	430	60	112
112M	233	169	82	138	306	50	40	89	398	454	60	112
132S	274	188	82	157	350	50	40	101	452	538	80	112
132M	274	188	82	157	350	50	40	101	490	576	80	112

Frame Size	Shaft Extension										Flange						
	Drive End					Non-drive End					Number	⑤					
	D	DB	E	F	GA	DA	DC	EA	FA	GC		LA	M	N	P	S	T
63	11	M4x9	23	4	12.5	11	M4x9	23	4	12.5	F115B	9	115	95	140	10	3
71	14	M5x12	30	5	16	14	M5x12	30	5	16	F130B	9	130	110	160	10	3.5
80 ^s	19	M6x16	40	6	21.5	19	M6x16	40	6	21.5	F165B	10	165	130	200	12	3.5
90S/L [#]	24	M8x20	50	8	27	19	M6x16	40	6	21.5	F165B	10	165	130	200	12	3.5
100L	28	M10x24	60	8	31	24	M8x20	50	8	27	F215B	11	215	180	250	15	4
112M	28	M10x24	60	8	31	24	M8x20	50	8	27	F215B	11	215	180	250	15	4
132S	38	M12x28	80	10	41	38	M12x28	80	10	41	F265B	12	265	230	300	15	4
132M	38	M12x28	80	10	41	38	M12x28	80	10	41	F265B	12	265	230	300	15	4

Definitive Dimensions:

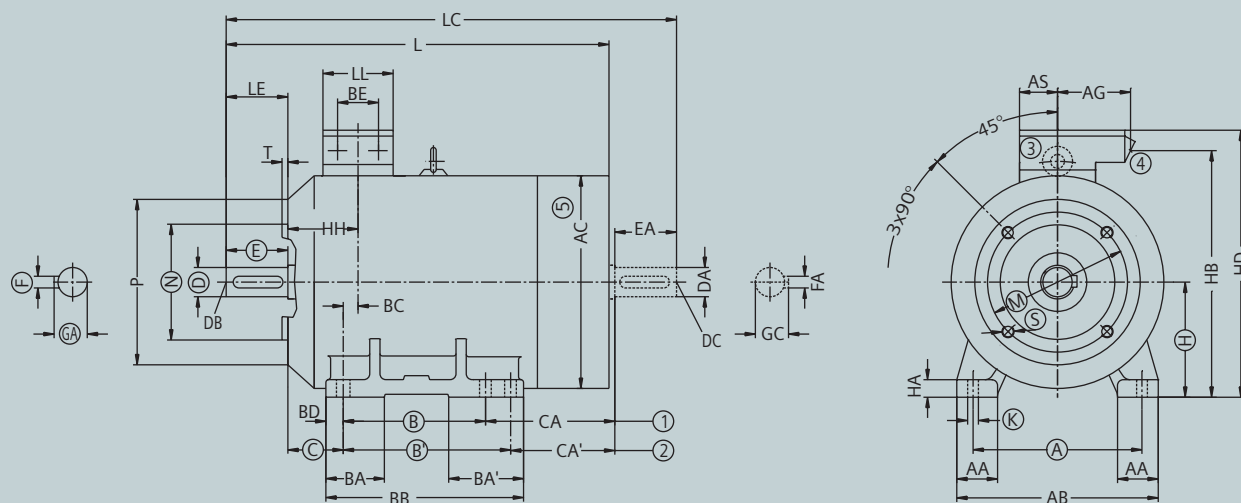
M, N, S, D, E, F, GA and LA are binding dimensions for all standard motors.

All other dimensions are subject to change. For valid dimensions, please contact Regional Office in your region.

^s for 1SE0 80 frame, add 20mm on L & LC dimensions

[#] for 1SE0 90 S/L frame, add 43mm on L & LC dimensions

Dimensions in mm – 1LA0 / 1SE0 (without brake)



- ① B is valid in all frames
- ② B' & C' are valid for 90 frame only 90S: B=100 & C=128, 90L: B'=125 & C'=103
- ③ Terminal box can be rotated in steps of 90°
- ④ Conduit entry 1x3/4" for frame size 63-90 & 2x1" for frame size 100-132, as per IS:1653
- ⑤ Measured over bolt heads
- ⑥ Shaft extension as per IS:1231
- ⑦ Flange as per IS:2223

Mechanical Dimensions [Foot cum "C" Type Flange Mounted Motors (IM-B34)]

Frame Size	A	AA	AB	AC	AG	AS	B	BA	BA'	BB	BC	BD	BE	C	CA	H	HA	HB	HD	HH
63	100	27	122	132	44.5	44.5	80	26	26	102	19.5	11	–	40	70	63	6	140.5	169	59.5
71	112	28	134	148	44.5	44.5	90	26	26	112	15.5	11	–	45	77	71	7	157	186	60.5
80 ^s	125	29	150	168	44.5	44.5	100	27	27	124	15.5	12	–	50	96	80	9	176	204	65.5
90S/L [#]	140	32	168	190	44.5	44.5	②	32	57	149	23.5	12	–	56	②	90	10	194.5	223	79.5
100L	160	43	200	208	82	50	140	46	46	180	25.5	20	40	63	117	100	14	224.5	256	88.5
112M	190	52	230	233	82	50	140	47	47	180	19	20	40	70	134	112	15.5	249.5	281	89
132S	216	53	256	274	82	50	140	46	46	180	12	20	40	89	149	132	16	289	320	101
132M	216	53	256	274	82	50	178	46	46	218	12	20	40	89	149	132	16	289	320	101

Frame Size	Shaft Extension															FLANGE					
	Drive End					Non-drive End															
	K	L	LC	LE	LL	D	DB	E	F	GA	DA	DC	EA	FA	GC	⑦ Number	M	N	P	S	T
63	7	208	236	23	89	11	M4x9	23	4	12.5	11	M4x9	23	4	12.5	F75C	75	60	90	M5x6	2.5
71	7	240	272	30	89	14	M5x12	30	5	16	14	M5x12	30	5	16	F85C	85	70	105	M6x8	2.5
80 ^s	10	282	326	40	89	19	M6x16	40	6	21.5	19	M6x16	40	6	21.5	F100C	100	80	120	M6x8	3
90S/L [#]	10	326	374	50	89	24	M8x20	50	8	27	19	M6x20	40	6	21.5	F115C	115	95	140	M8x10	3
100L	12	373	430	60	112	28	M10x24	60	8	31	24	M8x20	50	8	27	F130C	130	110	160	M8x10	3.5
112M	12	398	454	60	112	28	M10x24	60	8	31	24	M8x20	50	8	27	F130C	130	110	160	M8x10	3.5
132S	12	452	538	80	112	38	M12x28	80	10	41	38	M12x28	80	10	41	F165C	165	130	200	M10x12	3.5
132M	12	490	576	80	112	38	M12x28	80	10	41	38	M12x28	80	10	41	F165C	165	130	200	M10x12	3.5

Definitive Dimensions:

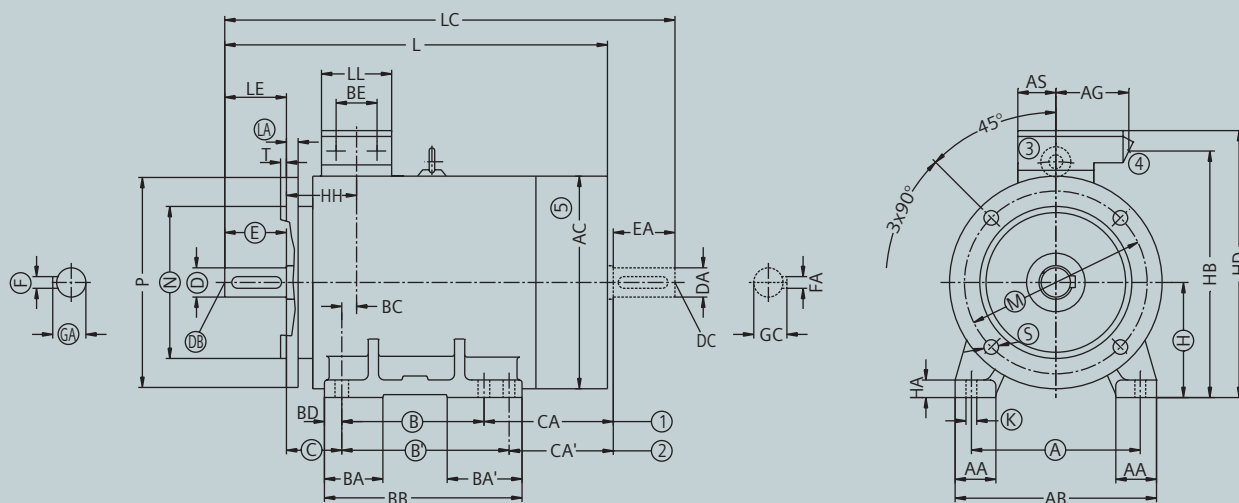
A, B, B', C, H, K, M, N, D, E, F, GA, S are binding dimensions for all standards motors.

All other dimensions are subject to change. For valid dimensions, please contact Regional office in your region.

^s for 1SE0 80 frame, add 20mm on L & LC dimensions

[#] for 1SE0 90 S/L frame, add 43mm on L & LC dimensions

Dimensions in mm – 1LA0 / 1SE0 (without brake)



- ① B is valid in all frames
- ② B' & C' are valid for 90 frame only 90S: B=100 & C=128, 90L: B'=125 & C'=103
- ③ Terminal box can be rotated in steps of 90°
- ④ Conduit entry 1x3/4" for frame size 63-90 & 2x1" for frame size 100-132, as per IS:1653
- ⑤ Measured over bolt heads
- ⑥ Shaft extension as per IS:1231
- ⑦ Flange as per IS:2223

Mechanical Dimensions [Foot cum Flange Mounted Motors (IM-B35)]

Frame Size	A	AA	AB	AC	AG	AS	B	BA	BA'	BB	BC	BD	BE	C	CA	H	HA	HB	HD	HH	K
63	100	27	122	132	44.5	44.5	80	26	26	102	19.5	11	-	40	70	63	6	140.5	169	59.5	7
71	112	28	134	148	44.5	44.5	90	26	26	112	15.5	11	-	45	77	71	7	157	186	60.5	7
80 ^s	125	29	150	168	44.5	44.5	100	27	27	124	15.5	12	-	50	96	80	9	176	204	65.5	10
90S/L [#]	140	32	168	190	44.5	44.5	②	32	57	149	23.5	12	-	56	②	90	10	194.5	223	79.5	10
100L	160	43	200	208	82	50	140	46	46	180	25.5	20	40	63	117	100	14	224.5	256	88.5	12
112M	190	52	230	233	82	50	140	47	47	180	19	20	40	70	134	112	15.5	249.5	281	89	12
132S	216	53	256	274	82	50	140	46	46	180	12	20	40	89	149	132	16	289	320	101	12
132M	216	53	256	274	82	50	178	46	46	218	12	20	40	89	149	132	16	289	320	101	12

Frame Size	Shaft Extension													FLANGE							
	Drive End						Non-drive End							FLANGE							
	L	LC	LL	D	DB	E	F	GA	DA	DC	EA	FA	GC	⑦ Number	LA	LE	M	N	P	S	T
63	208	236	89	11	M4x9	23	4	12.5	11	M4x9	23	4	12.5	F115B	9	23	115	95	140	10	3
71	240	272	89	14	M5x12	30	5	16	14	M5x12	30	5	16	F130B	9	30	130	110	160	10	3.5
80 ^s	282	326	89	19	M6x16	40	6	21.5	19	M6x16	40	6	21.5	F165B	10	40	165	130	200	12	3.5
90S/L [#]	326	374	89	24	M8x20	50	8	27	19	M6x20	40	6	21.5	F165B	10	50	165	130	200	12	3.5
100L	373	430	112	28	M10x24	60	8	31	24	M8x20	50	8	27	F215B	11	60	215	180	250	15	4
112M	398	454	112	28	M10x24	60	8	31	24	M8x20	50	8	27	F215B	11	60	215	180	250	15	4
132S	452	538	112	38	M12x28	80	10	41	38	M12x28	80	10	41	F265B	12	80	265	230	300	15	4
132M	490	576	112	38	M12x28	80	10	41	38	M12x28	80	10	41	F265B	12	80	265	230	300	15	4

Definitive Dimensions:

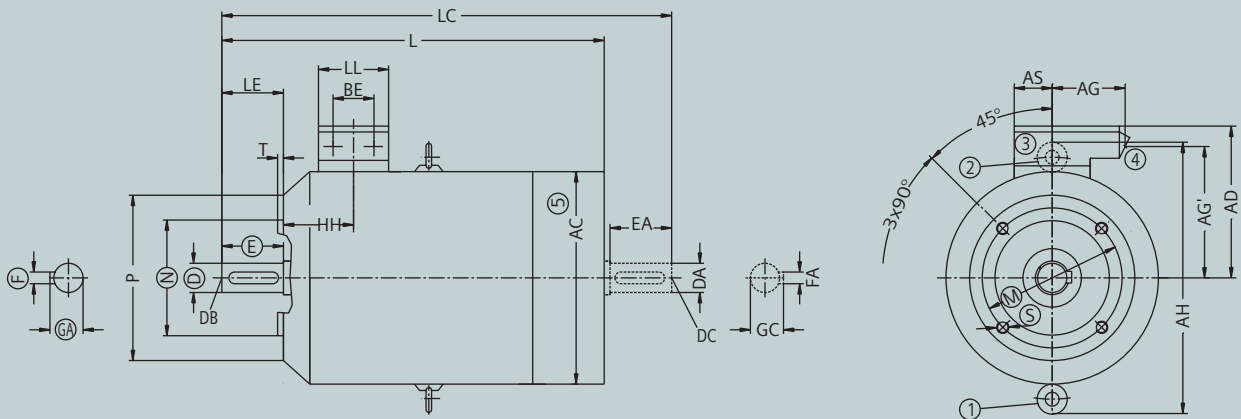
A, B, B', C, H, K, M, N, D, E, F, GA, LA are binding dimensions for all standards motors.

All other dimensions are subject to change. For valid dimensions, please contact Regional office in your region.

^s for 1SE0 80 frame, add 20mm on L & LC dimensions

[#] for 1SE0 90 S/L frame, add 43mm on L & LC dimensions

Dimensions in mm – 1LA0 / 1SE0 (without brake)



- ① Eye bolt position for V18 construction
- ② Eye bolt position for B14 construction
- ③ Terminal box can be rotated in steps of 90°
- ④ Conduit entry 1x3/4" for frame 63-90 & 2x1" for frame size 100-132, as per IS:1653
- ⑤ Measured over bolt heads
- ⑥ Shaft extension as per IS:1231
- ⑦ Flange as per IS:2223

Mechanical Dimensions ["C" Type Flange Mounted Motors (IMB14/V18)]

Frame Size	AC	AD	AG	AG'	AH	AS	BE	HH	L	LC	LE	LL
63	132	106	44.5	77.5	–	44.5	–	59.5	208	236	23	89
71	148	115	44.5	86	–	44.5	–	60.5	240	272	30	89
80 ^s	168	124	44.5	96	–	44.5	–	65.5	282	326	40	89
90S/L [#]	190	133	44.5	105	246	44.5	–	79.5	326	374	50	89
100L	208	156	82	125	270	50	40	88.5	373	430	60	112
112M	233	169	82	138	306	50	40	89	398	454	60	112
132S	274	188	82	157	350	50	40	101	452	538	80	112
132M	274	188	82	157	350	50	40	101	490	576	80	112

Frame Size	Shaft Extension										FLANGE					
	Drive End					Non-drive End					⑦ Number	M	N	P	S	T
	D	DB	E	F	GA	DA	DC	EA	FA	GC						
63	11	M4x9	23	4	12.5	11	M4x9	23	4	12.5	F75C	75	60	90	M5x6	2.5
71	14	M5x12	30	5	16	14	M5x12	30	5	16	F85C	85	70	105	M6x8	2.5
80 ^s	19	M6x16	40	6	21.5	19	M6x16	40	6	21.5	F100C	100	80	120	M6x8	3
90S/L [#]	24	M8x20	50	8	27	19	M6x20	40	6	21.5	F115C	115	95	140	M8x10	3
100L	28	M10x24	60	8	31	24	M8x20	50	8	27	F130C	130	110	160	M8x10	3.5
112M	28	M10x24	60	8	31	24	M8x20	50	8	27	F130C	130	110	160	M8x10	3.5
132S	38	M12x28	80	10	41	38	M12x28	80	10	41	F165C	165	130	200	M10x12	3.5
132M	38	M12x28	80	10	41	38	M12x28	80	10	41	F165C	165	130	200	M10x12	3.5

Definitive Dimensions:

M, N, D, E, F, GA, S are binding dimensions for all standards motors.

All other dimensions are subject to change. For valid dimensions, please contact Regional office in your region.

^s for 1SE0 80 frame, add 20mm on L & LC dimensions

[#] for 1SE0 90 S/L frame, add 43mm on L & LC dimensions

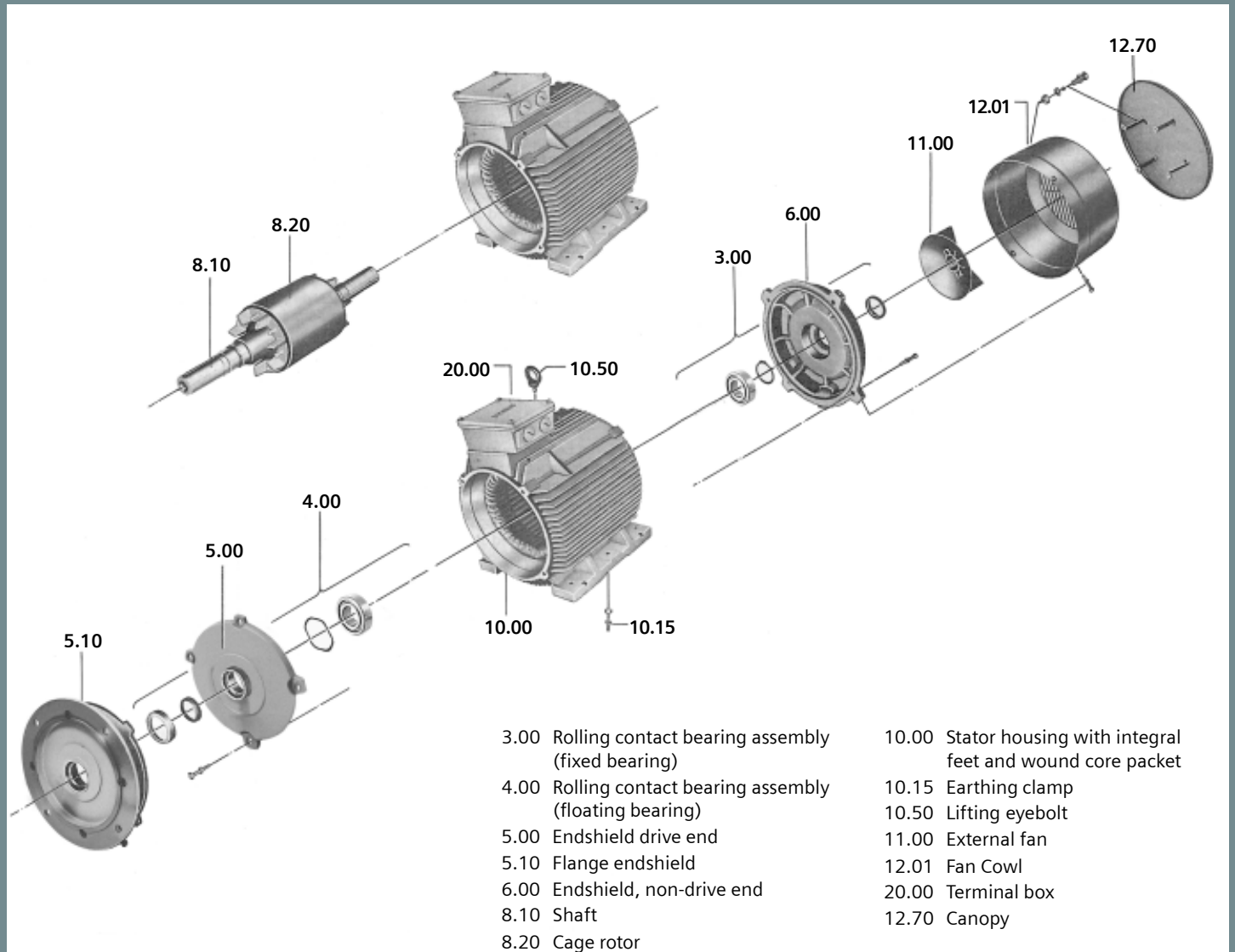
Special Designs

The following special features/accessories can be provided on the motors, on request-

- Non-standard output
- Non-Standard voltage and/or frequency
- 3 numbers PTC thermistors for trip
- Anticondensation heaters - Frame 112 and 132 only
- Epoxy coating on winding overhangs
- Non-standard paint shade
- Epoxy based paint
- Unpainted, only with primer
- Variable speed drive motors
- Encoder mounted motors (Factory fitted)
- Standard double shaft extension
- Side mounted terminal box - Frames 90, 100, 112 and 132 only
- Non-standard ambient - upto 55°C
- Additional name plate
- Cast Iron external fan
- Fan cowl with Canopy
- Fan cowl without screen and with Canopy
- Oil tight shaft
- IP 56
- Motors for crane applications (S3/S4 duty)

New

New



Note: The graphic displayed here is solely for the purpose of explanation. The actual product may be different in appearance.

TEFC – 3 Phase Squirrel Cage Brake Motors

Siemens introduces a new series of brake motors ranging from 63 frames to 225 frames. Siemens Brake Motors employ internationally used and proven Spring Operated Disk Brake designs. The DC brake system in the new series provides a faster response time in comparison to the conventional brakes. These Brakes work on a principle similar to the concept of "Dead Man's Pedal" Braking system, as used in Railways thereby ensuring enhanced safety.

Generally the motors surpass the efficiency level eff_2 specified in IS: 12615- 2004, therefore help reduce the energy demand. The brakes used in this new range use non-asbestos material which makes it truly an environment friendly motor.

With an output range from 0.12kW to 45kW, the new low-voltage brake motors are available in all duty classes and ideal for the applications like cranes, hoists, machine tools, rolling mills, and conveyers etc. For converter operations, motors can be suitably redesigned with the inverter grade insulation scheme making it suitable for operation with converters.

The brake motors have a high efficiency, safety and high uptime. Consequently the productivity is higher and energy consumption lower. The motors have low life cycle costs, hence great saving!!!

Range

The datasheet covers motors from frame sizes 63 to 132M in 2 and 4 pole, and 71 to 132M in 6 and 8 poles.

The Brake Motors are available in Cast Iron body. For further details on motor part, please refer page no.2 to 5.

Applications

The brake motors are uniquely designed to cater various applications in almost all industries. Some of the applications and industries are listed below:

1. Cranes and hoists
2. Machine tools
3. Printing machines
4. Weirs and sluices
5. Rolling mills
6. Cable reeling drums
7. Geared Motors
8. Conveyers
9. Leather Processing machines

Industry

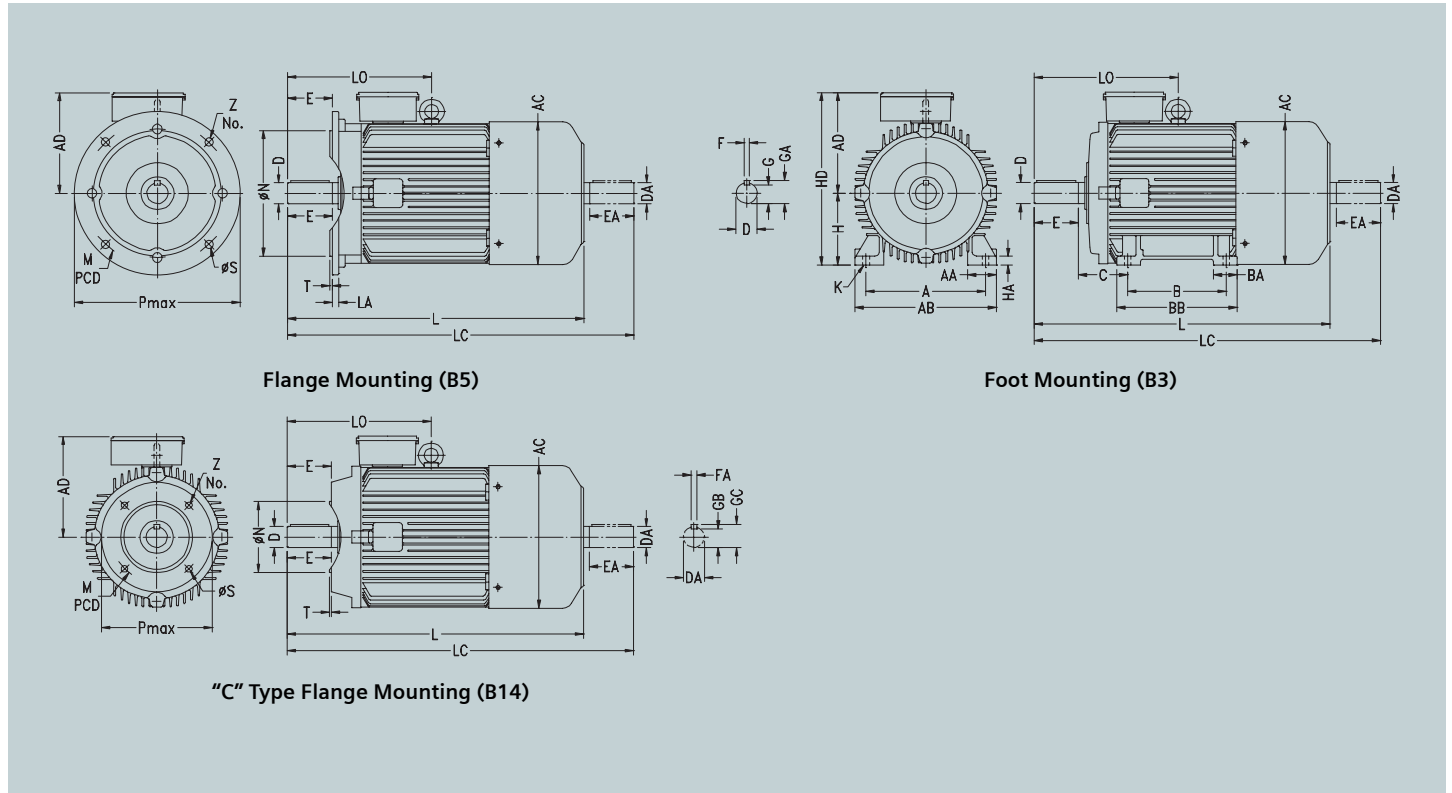
1. Power Plants
2. Food & Beverages
3. Cement Plant
4. Paper Plants
5. Steel Plants
6. Pharmaceuticals
7. Textile Industry
8. Material Handling



Brake Selection Chart

KW	HP	Pole	Frame	Brake Size	Braking Torque (Nm)	Brake Release Time (ms)
0.18	0.25	2	63	6	4	35
0.25	0.33	2	63	6	4	35
0.37	0.5	2	71	6	4	35
0.55	0.75	2	71	6	4	35
0.75	1	2	80	8	8	65
1.1	1.5	2	80	8	8	65
1.5	2	2	90S	12	32	120
2.2	3	2	90L	12	32	120
3.7	5	2	100L	14	60	150
5.5	7.5	2	112M	14	60	150
7.5	10	2	132S	18	150	300
9.3	12.5	2	132M	18	150	300
0.12	0.16	4	63	6	4	35
0.18	0.25	4	63	6	4	35
0.25	0.33	4	71	6	4	35
0.37	0.5	4	71	8	8	65
0.55	0.75	4	80	8	8	65
0.75	1	4	80	10	16	90
1.1	1.5	4	90S	12	32	120
1.5	2	4	90L	12	32	120
2.2	3	4	100L	14	60	150
3	4	4	100L	14	60	150
3.7	5	4	112M	14	60	150
5.5	7.5	4	132S	18	150	300
7.5	10	4	132M	18	150	300
0.18	0.25	6	71	6	4	35
0.25	0.33	6	71	8	8	65
0.37	0.5	6	80	8	8	65
0.55	0.75	6	80	10	16	90
0.75	1	6	90S	12	32	120
1.1	1.5	6	90L	12	32	120
1.5	2	6	100L	14	60	150
2.2	3	6	112M	14	60	150
3.7	5	6	132S	18	150	300
5.5	7.5	6	132M	18	150	300
0.12	0.16	8	71	6	4	35
0.18	0.25	8	80	8	8	65
0.25	0.33	8	80	8	8	65
0.37	0.5	8	90S	12	32	120
0.55	0.75	8	90L	12	32	120
0.75	1	8	100L	14	60	150
1.1	1.5	8	100L	14	60	150
1.5	2	8	112M	14	60	150
2.2	3	8	132S	18	150	300
3.7	5	8	132M	18	150	300

Dimensions in mm – (Brake Motors)



Mechanical Dimensions

Frame Size	Brake Size	L	LC	LO	AC	AD	D, DA	E, EA	F, FA	GA, GC	For flange mounted motors (B5)						
											P max	M PCD	øN	øS	Z No.	T	LA
63	6	270	300	–	124	100	11	23	4	12.5	140	115	95	10	4	3	9
71	6	310	346	–	140	105	14	30	5	16	160	130	110	10	4	3.5	9
	8																
80	8	355	402	–	158	122	19	40	6	21.5	200	165	130	12	4	3.5	10
	10	365	412														
90S	12	415	472	–	180	129	24	50	8	27	200	165	130	12	4	3.5	10
90L	12	440	497														
100L	14	475	542	–	198	152	28	60	8	31	250	215	180	15	4	4	11
112M	14	495	562	230	222	165	28	60	8	31	250	215	180	15	4	4	11
132S	18	595	682	257	262	185	38	80	10	41	300	265	230	15	4	4	12
132M	18	633	720	260													

Frame Size	Brake Size	For foot mounted motors (B3)											For face mounted motors (B14)					
		A	B	C	H	K	AA	AB	BB	BA	HA	HD	P max	M PCD	øN	øS	Z No.	T
63	6	100	80	40	63	7	27	122	102	27	7	163	90	75	60	M5	4	2.5
71	6	112	90	45	71	7	31	134	112	31	8	176	105	85	70	M6	4	2.5
	8																	
80	8	125	100	50	80	10	32	150	125	32	9	202	120	100	80	M6	4	3
	10																	
90S	12	140	100	56	90	10	33	168	124	32	10	219	140	115	95	M8	4	3
90L	12		125						149									
100L	14	160	140	63	100	12	43	200	180	46	14	252	160	130	110	M8	4	3.5
112M	14	190	140	70	112	12	49	230	180	47	15	277	160	130	110	M8	4	3.5
132S	18	216	140	89	132	12	52	256	180	48	16	317	200	165	130	M12	4	3.5
132M	18		178						218									

Make a wise move



Ministry of power has mandated the minimum efficiency level on limited products. The day is not far when everybody looks up to Super Energy Efficient Motors to meet their energy saving requirements. Please calculate your saving potential through the details given below. For any further assistance, please contact nearest sales office.

Saving through 1SE0 eff1 motors over eff2 as per IS 12615

kW	Pole	Unit saved per hour (U)	Qty (Q)	Total Units saved per hour (U x Q)
0.37	2	0.03		
0.55	2	0.04		
0.75	2	0.05		
1.1	2	0.12		
1.5	2	0.13		
2.2	2	0.15		
3.7	2	0.17		
5.5	2	0.21		
7.5	2	0.24		
0.37	4	0.05		
0.55	4	0.08		
0.75	4	0.12		
1.1	4	0.13		
1.5	4	0.15		

kW	Pole	Unit saved per hour (U)	Qty (Q)	Total Units saved per hour (U x Q)
2.2	4	0.17		
3.7	4	0.20		
5.5	4	0.25		
7.5	4	0.30		
0.37	6	0.04		
0.55	6	0.04		
0.75	6	0.05		
1.1	6	0.06		
1.5	6	0.09		
2.2	6	0.11		
3.7	6	0.16		
5.5	6	0.17		
Grand total (Σ) →				

Unit saved in one year (Y) = Annual Running Hours x Σ (U x Q) x Load factor

Money Saved in one Year = Y x Electricity tariff

Parameters are subject to tolerance as per IS 325

Speed correction is recommended for the variable torque applications where P ∝ N³ like pumps, blowers etc.

Your partners

Sales offices:

Ahmedabad
3rd Floor, Prerna Arbour
Girish Cold Drinks Cross Roads, Off. C. G. Road
Ahmedabad - 380009
☎ : +91 79 40207600
Fax: +91 79 40207699

Bangalore
1st Floor, Jyothimahal, #49, St. Marks Road
Bangalore - 560001
☎ : +91 80 22042000
Fax: +91 80 22224131

Chandigarh
SCO 189 - 191, 3rd Floor, Sector 17C
Chandigarh - 160017
☎ : +91 172 4690300
Fax: +91 172 4690399

Territory managers:

Aurangabad
A9, Yogeshwari Vrundavan, Nr. Malhar Chowk
Garkheda Parisar, Prema Nagar
Aurangabad - 431210, Maharashtra
Mobile: +91 9766316446
E-mail: santosh.rajhans@siemens.com

Bareilly
Bareilly - 243001, Uttar Pradesh
Mobile: +91 9415012500
E-mail: saket.dwivedi@siemens.com
Mobile: +91 9897070133
E-mail: ankur.singh@siemens.com

Baroda
1st Floor, Vaniya Bhavan, Race Course Road
Baroda - 390007, Gujarat
☎ : +91 265 2325810/12, 6692110
Mobile: +91 98255 06963
Email: ankur.chokshi@siemens.com
Mobile: +91 98255 06962
Email: bhushan.sawant@siemens.com

Belgaum
H.No.713, Narvekar Lane, Shahpur
Belgaum - 590003, Karnataka
☎ & Fax: +91 831 2495156
Mobile: +91 9740277991
E-mail: anand.gawade@siemens.com

Bhilai
Clo Mr. S.H Siddiqui
Sector-1, Street-9, Quarter No 1A
Bhilai - 490001, Chhattisgarh
Mobile: +91 9826127525
E-mail: sandeep.barde@siemens.com

Bhubaneswar
Flat No.109, Hara Priya Aparment
Vivekananda Marg, Bhubaneswar - 751002, Orissa
☎ : +91 674 2430734
Mobile: +91 9937009749
E-mail: anirban.aditya@siemens.com
Mobile: +91 9937097504
E-mail: sumit.sengupta@siemens.com

Calicut
Kozhikode, Calicut - 673001, Kerala
Mobile: +91 9895052944
E-mail: sreekanth.p@siemens.com

Cochin
KG Oxford Business Centre, 39/4609, Third Floor
Sreekanath Road, Ravipuram
Cochin - 682016, Kerala
☎ : +91 484 4028611, 22
Fax: +91 484 2380201
Mobile: Sajeen +91 9744511109
E-mail: sajeen.s@siemens.com
Mobile: Sudheer +91 9387384848
E-mail: sudheer.ts@siemens.com

Deharadun
B 76, Kumar Gali, Ajabpurkalan
Deharadun - 248001, Uttarakhnad
Mobile: +91 9760033117
E-mail: manish.bajpai@siemens.com

Durgapur
Durgapur - 713216, West Bengal
Mobile: +91 9830610022
E-mail: chattopadhyay.suman@siemens.com

Chennai
4, Mahatma Gandhi Road, Chennai - 600034
☎ : +91 44 28334000
Fax: +91 44 28334088

Coimbatore
7th Floor, East Wing, Global Towers
1057, Avinashi Road, Coimbatore - 641018
☎ : +91 422 4336300
Fax: +91 422 4336310

Hyderabad
5-9-19, Lakshmi Narsinh Estate, 4th Floor
Secretariat Road, Opp. Secretariat, Saifabad
Hyderabad - 500004
☎ : +91 40 23482500
Fax: +91 40 23243145

Faridabad
House No 237, Sector-8
Faridabad - 122001, Haryana
Mobile: +91 987396350
E-mail: ramit.mehra@siemens.com

Gurgaon
House No-38, Second Floor, Sector-30
Gurgaon - 122001, Haryana
Mobile: +91 9971091588
E-mail: manjeet.mor@siemens.com

Guwahati
G1, Hill View Apartment, Navagrah Path
Chenikuthi Hill Side, Guwahati - 781003, Assam
☎ : +91 361 2663988
Mobile: +91 9864037562
E-mail: sourav.bhattacharya@siemens.com
Mobile: +91 9864110684
E-mail: biplab.datta@siemens.com

Hardwar
6, Nand Puri, Near Arya Nagar Chowk, Jwalapur
Hardwar - 249407, Uttarakhnad
Mobile: +91 9897070133
Fax: +91 1334 265491
E-mail: ankur.singh@siemens.com

Indore
Flat No. 102, Panchvati Apartment
40 Chandralok Colony, Khajrana Road
Indore - 452001, Madhya Pradesh
Mobile: +91 9926939993
E-mail: prashant.joshi@siemens.com

Jaipur
6, Park Street, Opp Pink City Petrol Pump, M.I.Road
Jaipur - 302006, Rajasthan
☎ : +91 141 2370274 / 2377956
Fax: +91 141 2370482
Mobile: +91 9829244313
E-mail: peesh.gupta@siemens.com

Jalandar
H.No 448R, First Floor, Pushpa Niwas
Near Geeta Mandir, Model Town
Jalandar - 144001, Punjab
Mobile: +91 9779194445
E-mail: sunil.singla@siemens.com

Jamshedpur
823, Udaigiri, Vijaya Heritage, Uliyan, Kadma
Jamshedpur - 831005, Jharkhand
☎ : +91 657 6451637
Mobile: +91 9934311352
E-mail: shaibal.parijal@siemens.com

Jodhpur
371, Gauri House, Kamala Nehru Nagar
Near SBI Bank, Jodhpur - 342008, Rajasthan
Mobile: +91 9828327200
E-mail: naveen.sahariya@siemens.com

Kanpur
106, Agarwal Aparment
Near Hari Har Dham Mandir, Shyam Nagar
Kanpur - 208013, Uttar Pradesh
☎ & Fax: +91 512 2423348
Mobile: +91 9839102434
E-mail: atul.shukla@siemens.com

Kolkata
43 Shanti Palli, R B Connector
Eastern Metropolitan Bypass, Kolkata - 700042
☎ : +91 33 24449000, 24428641-47
Fax: +91 33 24449010 / 13

Lucknow
28/45, Ashok Marg, Opposite Indira Bhawan
Lucknow - 226001
☎ : +91 522 4031022, 4031000
Fax: +91 522 4031019

Mumbai
R&D and Technology Centre
Thane Belapur Road, Thane - 400 601
☎ : +91 22 27645005 / 06
Fax: +91 22 27645866 / 67

Kolhapur
Flat No. 101, Shrushti Mahabharat Apartment
Mahavir Garden To Mahavir College Road
Nagala Park, Kolhapur - 416003, Maharashtra
☎ : +91 231 2663330
Mobile: +91 9881465421
E-mail: sachin.chavan@siemens.com

Ludhiana
H.No 3746, First Floor, Sector 32-A
Chandigarh Road, Ludhiana - 141010, Punjab
Mobile: +91 9872317702
E-mail: rajeev.kapoor@siemens.com

Ludhiana
H.No 92, Lajpat Nagar, Near Bus Stand
Ludhiana - 141010, Punjab
☎ : +91 161 2770574
Mobile: +91 9815502480
E-mail: rohit.jagga@siemens.com

Madurai
8/12, Ground Floor, Sakhti Vellammal Street
SS Colony, Madurai - 625010, Tamilnadu
Mobile: +91 9894617780
E-mail: mahendiran.murugan@siemens.com

Nashik
"Aditya Avenue", Flat No. 27, 4th Floor
B Wing, Near Chandak Circle, Tidke Colony
Nashik - 422001, Maharashtra
Mobile: +91 9822193204
E-mail: kiran.kanhurkar@siemens.com

Pondicherry
32, Second Floor, St. Theresa Street
Pondicherry - 605001
☎ : +91 413 4500101
Mobile: +91 9840472727
E-mail: elankumar.pandian@siemens.com

Raipur
Flat No.103, First Floor, Block B, Shiip Enclave
Near LAS Colony, Shankar Nagar
Raipur - 492007, Chhattisgarh
Mobile: +91 9425057945
E-mail: brajesh.rathor@siemens.com

Rajkot
"Vrujraj", 4 Chandanpark Society
Opp. Gyanganga Vidhyapith, Nr. Raiya Circle
Rajkot - 360005, Gujarat
Mobile: +91 9825021026
E-mail: hiren.raythatha@siemens.com

Ranchi
H-1/187, Harmu Housing Colony, Harmu
Ranchi - 834002, Jharkhand
Mobile: +91 9234610953
E-mail: sourav.dasgupta@siemens.com

Renukoot
Above ICICI Prudentail Office, Patel Nagar
Murdhawa, Dist-Sonebhada
Renukoot - 231217, Uttar Pradesh
Mobile: +91 9838007897
E-mail: bhav.srivastava@siemens.com

Rourkela
T-15, Civil Town, Rourkela - 769004, Orissa
☎ : +91 661 2400880
Mobile: +91 9437041724
E-mail: sanjoy.ganguly@siemens.com

Fax: +91 22 24987312

Nagpur
5th Floor, Landmark Building, Ramdas Peth
Nagpur - 440010
☎ : +91 712 6633000
Fax: +91 712 6633111

New Delhi
4A, Ring Road, I.P. Estate, New Delhi - 110002
☎ : +91 11 42995000-09
Fax: +91 11 42995030

Pune
Tower B / 701 - 705, ICC Trade Tower
403A, Senapati Bapat Road, Pune - 411016
☎ : +91 20 2570 6000
Fax: +91 20 2570 6060

Rudrapur
Rudrapur - 263153, Uttarakhand
Mobile: +91 9838913707
E-mail: singh.ajay@siemens.com

Salem
3/25 Santosh Nagar, PACB Backside
Chinnathirupathi, Salem - 636008, Tamilnadu
Mobile: +91 9894617772
E-mail: rubengerald@siemens.com

Sambalpur
Pradhan Para, Near Jamkani Mandir
Beside LIC Div Off, Ainthapalli
Sambalpur - 768004, Orissa
☎ : +91 663 2541258
Mobile: +91 9438529778
E-mail: samir.chaintak@siemens.com

Surat
Flat No. 202, D-1, Suryam Residence
Cause Way Road, Opp. Hari Darshan
Shingarnor - Dabholi Road, Katargam
Surat - 395004, Gujarat
Mobile: +91 9925001779
E-mail: chandrakant.keshrani@siemens.com

Tiruchirappalli
Door No. 106, Ground Floor, 5th Cross Street
Vidhyasalai Road, Ganapathy Nagar
Thiruvanaikoil, Trichy
Tiruchirappalli - 620017, Tamilnadu
☎ & Fax: +91 431 4345621
Mobile: +91 9840843121
E-mail: k.saravananakumar@siemens.com

Trivendrum
Sonu, TCS/2082, 5, Thamarakulam Lane
Sathamangalam, Trivendrum - 695010, Kerala
Mobile: +91 9895979604
E-mail: jonsa_82@yahoo.com

Udaipur
303, Oasis Park, PP Singhal Marg, Ambavgarh
Udaipur - 313001, Rajasthan
☎ & Fax: +91 294 2430345
Mobile: +91 9829039120
E-mail: ajit.parashar@siemens.com

Vapi
Flat No. 302, Samrajya IV, Royal Residency
Gokul Vihar Township, Charwada Road
Vapi - 396195, Gujarat
☎ : +91 260 6451156
Mobile: +91 9825147957
E-mail: sachin.paradkar@siemens.com

Vijayawada
G-2, Shreya Tower, Moghalrajapuram
Near Jammichettu Centre
Vijayawada - 520010, Andhra Pradesh
☎ : +91 866 6629933
Mobile: +91 9866463639
E-mail: santosh.p@siemens.com

Visakhapatanam
Flat No. 401, Door No. 9-19-36
Vinayagar West Avenue, CBM compound
Visakhapatanam - 530003, Andhra Pradesh
☎ : +91 891 2712535
Mobile: +91 9849212555
E-mail: ksv.prasad@siemens.com

Siemens Limited
I DT Division
R&D and Technology Centre
Thane Belapur Road
Thane - 400601
Fax: +91 22 27645504
E-mail: motors.in@siemens.com
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Email: adscls.india@siemens.com

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