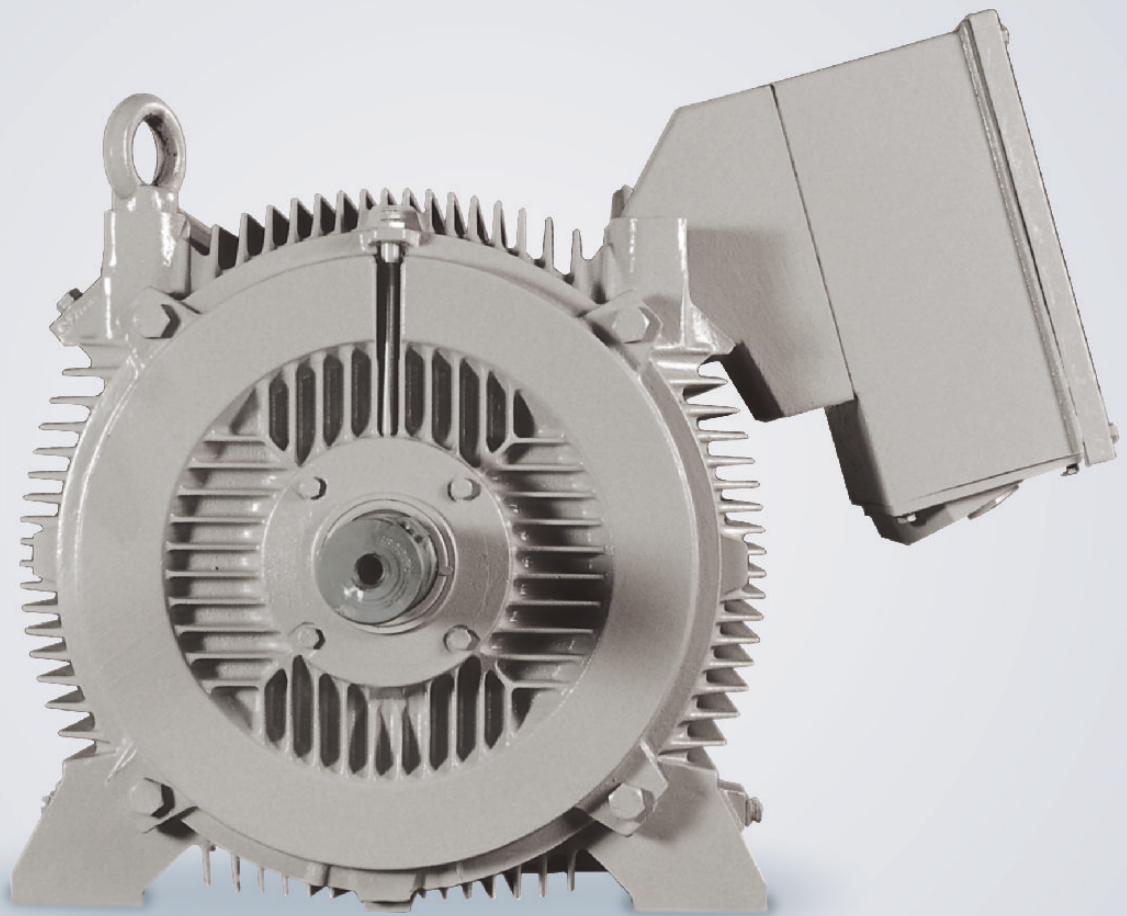


Reliability with higher efficiency

Large LV Motors Type 1LA8 / 1PQ8 - (250kW to 1250kW)

Technical datasheet • August 2008



Motors

www.siemens.com/industry

SIEMENS

1LA8 / 1PQ8 Series Motors

General:

Higher output from the same frame size; this is the concept of the new 1LA8 series motors introduced in India by SIEMENS after achieving a great success in Europe. These state-of-the-art generation of motors have outputs as much as 60% higher than 1SE0 motors for the same frame size. Compactness and high efficiency are the special features of the new 1LA8 / 1PQ8 Series Motors.

Altitude above mean sea level (in m)	Ambient temperature in °C					
	< 30	30 - 40	45	50	55	60
1000	1.07	1.00	0.96	0.92	0.87	0.82
1500	1.04	0.97	0.93	0.89	0.84	0.79
2000	1.00	0.94	0.90	0.86	0.82	0.77
2500	0.96	0.90	0.86	0.83	0.78	0.74
3000	0.92	0.86	0.82	0.79	0.75	0.70
3500	0.88	0.82	0.79	0.75	0.71	0.67
4000	0.82	0.77	0.74	0.71	0.67	0.63

Voltage and frequency:

All the motors upto 630 kW are suitable for 415V supply. Ratings beyond 710 kW are suitable for 690V supply. Frequency in both the cases is 50 Hz.

Output:

The motors are suitable for continuous operation at the rated outputs, for the voltage and frequency conditions at an ambient of 40°C. While delivering the rated outputs, the motors will have temperature rise beyond class B limits but well within class F limits. Utilising to class F limits, the rated outputs can be offered for an ambient of 50°C with the standard supply variation. For ambient temperatures other than 40°C and/or altitudes exceeding 1000 m above mean sea level, the multiplying factors as per the table above should be applied on the rated output.

It makes Economic Sense to invest in SIEMENS Motors.

Equipment Name / Tag number	Compressor		
		Make X	1LA8
Type of Motor		710kW / 4P	
Motor Rating		710kW / 4P	
Rated output of the motor	kW	710	710
Type Ref.		Make X	1LA8 407-4
How much is the motor loaded as a % of the rated?		80%	80%
Efficiency		96.8%	97.0%
Power Tariff	Rs./kWh	4.5	4.5
Operation of the motor per annum	hours	8,000	8,000
Energy consumption per annum	kWh	4,694,215	4,684,536
Energy Saved per annum over standard motor	kWh	—	9,679
Annual Energy Bill	Rs.	21,123,967	21,080,412
Savings towards energy bill per annum	Rs.	—	43,555
Savings towards energy bill per month	Rs.	—	3630
Purchase price of a new motor [exclusive of taxes and duties]	Rs.	895,740	942,884
"Incremental" investment over a standard motor	Rs.		47,144
Payback of incremental investment (Premium)	months		13.0

Construction:

The motors can be offered in IMB3, IMV1 and IMB35 construction as per IS:2253.

Winding:

Winding wires with dual coat enamel with temperature class 200 are used. These wires have superior electrical, mechanical and thermal properties. The insulating materials are Nomex (aramide paper) based. The stator winding is subjected to Vacuum Pressure Impregnation using thixotropic unsaturated polyesterimide resin of temperature class 180. This process of VPI together with thixotropic resin ensures a winding with no voids and air pockets, which in turn results in better heat transfer and higher dielectric strength. The better electrical properties also make motors suitable for

withstanding higher electrical stresses due to high dv/dt rate in supply from the inverters employing IGBT devices.

Cooling:

1LA8 motors are provided with a very efficient cooling system. This system combines the advantages of the cooling systems of conventional TEFC motors and conventional CACA motors, while retaining the simplicity of the TEFC motors in construction.

In this system, 4 canals are provided in the housing and cooling holes are provided in the rotor packet for the internal air circuit. The air circulated by the internal fan inside the motor carries the heat from the rotor to the stator housing and gets cooled by the external air while flowing through the canals in the housing. This air also partly carries the heat from the overhangs of the stator winding.

The stator winding gets cooled by heat conduction from the stator packet to the housing whose fins get cooled by external air just like a conventional TEFC motor. Since the rotor is cooled by internal air, (and not through the stator packet like in conventional TEFC motors), the temperature of the stator winding does not rise additionally.

The terminal box of 1LA8 motors does not block any air flow through any of the cooling fins, thus utilising the entire air flow for efficient cooling.

The method of cooling is IC411 as per IS:6362:1995 (IC4A1A1 as per IEC 34-6:1991).

1LA8 TEFC Squirrel Cage Motors for Grid supply

Degree of protection IP55, Insulation Class F, 415 V / 690 V, 50Hz, Ambient 40°C, Temp Rise 90°C design

Selection and Ordering data

Output kW	Frame	Motor Type	Supply Voltage V	Rated Current Amp	Efficiency %	Power Factor	Rated Speed rpm	Rated Torque Nm	Locked Rotor Current/ Rated Torque	Locked Rotor Torque/ Rated Torque	Max Torque/ Rated Torque	Rotor Class	Moment of Inertia kgm ²	Motor Weight kg
3000 rpm, 2 pole, 50 Hz														
250	315	1LA8 315-2AC..	415	406	96.2%	0.89	2979	801	7.0	1.8	2.8	KL10	2.7	1300
315	315	1LA8 317-2AC..	415	504	96.6%	0.90	2979	1010	7.0	1.8	2.8	KL10	3.3	1500
355	355	**1LA8 353-2AC..	415	574	96.6%	0.89	2980	1138	6.5	1.7	2.5	KL10	4.8	1900
400	355	**1LA8 355-2AC..	415	639	96.7%	0.90	2980	1282	6.5	1.7	2.5	KL10	5.3	2000
500	355	**1LA8 357-2AC..	415	797	97.0%	0.90	2982	1601	6.5	1.8	2.6	KL10	6.4	2200
1500 rpm, 4 pole, 50 Hz														
250	315	1LA8 315-4AB..	415	416	96.0%	0.87	1486	1607	6.5	1.8	2.8	KL13	3.6	1300
315	315	1LA8 317-4AB..	415	517	96.3%	0.88	1488	2022	6.8	1.8	2.8	KL13	4.4	1500
355	355	1LA8 353-4AB..	415	589	96.3%	0.87	1488	2279	6.5	2.1	2.6	KL13	6.1	1900
400	355	1LA8 355-4AB..	415	674	96.4%	0.86	1488	2568	6.5	2.1	2.6	KL13	6.8	2000
500	355	1LA8 357-4AB..	415	817	96.8%	0.88	1488	3210	6.5	2.1	2.4	KL13	8.5	2200
560	400	1LA8 403-4YB..	415	925	96.8%	0.87	1492	3586	6.8	1.9	2.7	KL13	14.0	2980
630	400	1LA8 405-4AB..	415	1039	97.0%	0.87	1492	4034	6.8	1.9	2.7	KL13	14.0	3000
710	400	1LA8 407-4AB..	690	688	97.0%	0.89	1492	4546	6.8	1.9	2.7	KL13	16.0	3200
800	450	1LA8 453-4AD..	690	796	96.7%	0.87	1492	5123	6.8	0.9	2.5	KL 7	27.0	4100
900	450	1LA8 455-4AD..	690	895	96.7%	0.87	1492	5763	6.8	0.9	2.5	KL 7	30.0	4300
1000	450	1LA8 457-4AD..	690	981	96.9%	0.88	1492	6404	6.8	0.9	2.5	KL 7	33.0	4500
1125	500	1LA8 458-4AD..	690	1103	97.0%	0.88	1492	7204	6.8	0.9	2.5	KL 7	33.0	5650
1250	500	1LA8 459-4AD..	690	1224	97.1%	0.88	1493	7999	6.8	0.9	2.5	KL 7	44.0	5800
1000 rpm, 6 pole, 50 Hz														
200	315	1LA8 315-6AB..	415	338	95.7%	0.86	989	1932	6.5	2.0	2.5	KL13	6.0	1300
250	315	1LA8 317-6AB..	415	422	95.9%	0.86	989	2415	6.5	2.0	2.5	KL13	7.3	1500
315	355	1LA8 355-6YB..	415	536	96.2%	0.85	993	3031	6.5	2.0	2.8	KL13	16.0	2190
400	355	1LA8 357-6AB..	415	678	96.5%	0.85	993	3848	6.5	2.0	2.8	KL13	16.0	2200
450	400	1LA8 403-6AD..	415	772	96.5%	0.84	991	4338	7.0	1.3	2.7	KL 7	25.0	2900
500	400	1LA8 405-6AD..	415	858	96.5%	0.84	992	4815	7.0	1.3	2.7	KL 7	28.0	3100
560	400	1LA8 407-6AD..	415	961	96.5%	0.84	992	5393	7.0	1.3	2.7	KL 7	31.0	3300
630	450	1LA8 453-6AD..	415	1080	96.6%	0.84	992	6068	6.5	1.2	2.5	KL 7	40.0	4100
710	450	1LA8 455-6AD..	690	731	96.7%	0.84	992	6838	6.5	1.2	2.5	KL 7	45.0	4300
800	450	1LA8 457-6AD..	690	823	96.8%	0.84	993	7697	6.5	1.2	2.5	KL 7	50.0	4400
900	500	1LA8 458-6AD..	690	935	97.0%	0.83	993	8660	7.0	1.2	2.7	KL 7	59.0	5600
1000	500	1LA8 459-6AD..	690	1027	97.0%	0.84	993	9622	7.0	1.2	2.7	KL 7	65.0	5800
750 rpm, 8 pole, 50 Hz														
160	315	1LA8 315-8AB..	415	293	94.9%	0.80	739	2068	6.0	2.1	2.3	KL13	6.0	1300
200	315	1LA8 317-8AB..	415	365	95.2%	0.80	739	2585	6.0	2.1	2.3	KL13	7.3	1500
250	355	1LA8 355-8YB..	415	449	95.7%	0.81	741	3223	6.1	2.1	2.4	KL13	16.0	2190
315	355	1LA8 357-8AB..	415	564	96.0%	0.81	741	4061	6.1	2.1	2.4	KL13	16.0	2200
355	400	1LA8 403-8AD..	415	644	95.9%	0.80	742	4571	6.5	0.9	2.6	KL 7	25.0	2900
400	400	1LA8 405-8AD..	415	725	95.9%	0.80	742	5150	6.5	0.9	2.6	KL 7	28.0	3100
450	400	1LA8 407-8AD..	415	805	96.0%	0.81	742	5794	6.5	0.9	2.6	KL 7	31.0	3300
500	450	1LA8 453-8AD..	415	892	96.3%	0.81	744	6421	7.0	1.2	2.7	KL 7	40.0	4100
560	450	1LA8 455-8AD..	415	999	96.3%	0.81	744	7191	7.0	1.2	2.7	KL 7	44.0	4300
630	450	1LA8 457-8AD..	415	1121	96.5%	0.81	744	8090	7.0	1.4	2.9	KL 7	48.0	4600
710	500	1LA8 458-8AD..	690	760	96.5%	0.81	744	9118	6.5	1.0	2.6	KL 7	57.0	5600
790	500	1LA8 459-8AD..	690	856	96.5%	0.80	745	10132	6.5	1.0	2.6	KL 7	65.0	5800

Order No Suffixes

Motor Type	Last but one place : Figure denoting supply#				Last place : Figure denoting construction			
	400VΔ, 50Hz / 690V Y, 50Hz	415VΔ, 50Hz	500VΔ, 50Hz	690VΔ, 50Hz	At additional price			
					IMB3	IMV1 without canopy	IMV1 with canopy	IMB35
1LA8 31 - 45	6	7	5	0	0	8	4	6
1LA8 40 - 45	NA	NA	NA	0	0	8	4	6

All values subject to tolerance as per IS 325 / IEC 60 034-1

**Unidirectional fan (Std Clockwise).

#Supply code "9" for other voltage and/or frequency; Details should be additionally given in plain text

Derating Factors for 1LA8 / 1PQ8 Motors with V V V F Drives

For basic output of 1LA8 & 1PQ8 , please refer Data Sheet

Derating Factors

Motor Type	Load curve of driven Machine				
	M \propto N ²	M = constant Speed Range			
		1:2	1:5	1:10	>1:10
1LA8*	1	0.92	0.74	0.68	0.62
1PQ8*	1	0.97	0.91	0.88	0.85

* Outputs to be further reduced by 5% after applying the deration factors when operated from >500 to 690V.

- Notes :
1. Temp. rise to class F limits. For class B limits, reduce output by a factor 0.9
 2. At NDE insulated bearing will be provided for 1LA8 / 1PQ8 motors operated with VVVF drives.
 3. The above derating factors are valid for motors with standard insulation offered for voltages upto 500V.

Bearings for Non-VFD applications.

1LA8 Motors

Bearing Arrangement - with Standard forces. These bearings are valid only for Non-VFD applications.

Motor Type	IMB3 construction		IMV1 construction	
	DE	NDE	DE	NDE
1LA8 31 -2	NU215E+6215C3	NU215E	6215 C3	7215B
1LA8 31 -4..8	NU218E+6218C3	NU218E	6218C3	7218 B
1LA8 35 -2	NU217E+6217C3	NU217E	6217C3	7217 B
1LA8 35 -4..8	NU220E+6220C3	NU220E	6220C3	7220B
1LA8 40 -4..8	6326C3	6326C3	On request	On request
1LA8 45 -4..8	6326C3	6326C3	On request	On request.

For Non-VFD applications, the Non Drive End (NDE) bearings are Standard (Un-insulated).

Bearings for VFD applications.

1LA8 / 1PQ8 Motors

Bearing Arrangement - with Standard forces. These bearings are valid only for VFD applications.

	IMB3 construction		IMV1 construction	
	DE	NDE	DE	NDE
1LA8 31 -2	NU215E+6215C3	NU215C4E	6218C3	6218C3
1LA8 31 -4..8	NU218E+6218C3	NU218C3E	7218B+6218C3	6218C3
1LA8 35 -2	NU217E+6217C3	NU217E	7217B+6217C3	6217C3
1LA8 35 -4..8	NU220E+6220C3	6322C3	7220B+6220C3	6220C3
1LA8 40 -4..8	6326C3	6326C3	On request	On request
1LA8 45 -4..8	6326C3	6326C3	On request	On request

For VFD applications, the Non Drive End (NDE) bearings are Insulated.

1PQ8 TEFC Squirrel Cage Motors for constant torque application

Degree of protection IP55, Insulation Class F, 415 V / 690 V, 50Hz, Ambient 40°C, Temp Rise Class F design
Standard Insulation upto 500 V and special insulation scheme for 690V with V V V F drive.

Selection and Ordering data

Output kW	Frame	Motor Type	Supply Voltage V	Rated Current Amp	Efficiency %	Power Factor	Rated Speed rpm	Rated Torque Nm	Locked Rotor Current/ Rated Torque	Locked Rotor Torque/ Rated Torque	Max Torque/ Rated Torque	Rotor Class	Moment of Inertia kgm ²	Motor Weight kg
3000 rpm, 2 pole, 50 Hz														
250	315	1PQ8 315-2PC..	415	406	96.2%	0.89	2979	801	7.0	1.8	2.8	KL10	2.7	1400
315	315	1PQ8 317-2PC..	415	504	96.6%	0.90	2979	1010	7.0	1.8	2.8	KL10	3.3	1600
355	355	1PQ8 353-2PC..	415	574	96.6%	0.89	2980	1138	6.5	1.7	2.5	KL10	4.8	2050
400	355	1PQ8 355-2PC..	415	639	96.7%	0.90	2980	1282	6.5	1.7	2.5	KL10	5.3	2150
500	355	1PQ8 357-2PC..	415	797	97.0%	0.90	2982	1602	6.5	1.8	2.6	KL10	6.4	2350
1500 rpm, 4 pole, 50 Hz														
250	315	1PQ8 315-4PB..	415	416	96.0%	0.87	1486	1607	6.5	1.8	2.8	KL13	3.6	1400
315	315	1PQ8 317-4PB..	415	517	96.3%	0.88	1488	2022	6.8	1.8	2.8	KL13	4.4	1600
355	355	1PQ8 353-4PB..	415	589	96.3%	0.87	1488	2279	6.5	2.1	2.6	KL13	6.1	2050
400	355	1PQ8 355-4PB..	415	674	96.4%	0.86	1488	2568	6.5	2.1	2.6	KL13	6.8	2150
500	355	1PQ8 357-4PB..	415	817	96.8%	0.88	1488	3210	6.5	2.1	2.4	KL13	8.5	2350
560	400	1PQ8 403-4YB..	415	925	96.8%	0.87	1492	3586	6.8	1.9	2.7	KL13	14.0	3180
630	400	1PQ8 405-4PB..	415	1039	97.0%	0.87	1492	4034	6.8	1.9	2.7	KL13	14.0	3200
675	400	1PQ8 407-4PB..	690	654	97.0%	0.89	1492	4322	6.8	1.9	2.7	KL13	16.0	3400
760	450	1PQ8 453-4PD..	690	755	96.7%	0.87	1492	4867	6.8	0.9	2.5	KL 7	27.0	4300
850	450	1PQ8 455-4PD..	690	845	96.7%	0.87	1492	5443	6.8	0.9	2.5	KL 7	30.0	4500
950	450	1PQ8 457-4PD..	690	932	96.9%	0.88	1492	6083	6.8	0.9	2.5	KL 7	33.0	4700
1060	500	1PQ8 458-4PD..	690	1039	97.0%	0.88	1492	6788	6.8	0.9	2.5	KL 7	33.0	5750
1180	500	1PQ8 459-4PD..	690	1155	97.1%	0.88	1493	7551	6.8	0.9	2.5	KL 7	44.0	6000
1000 rpm, 6 pole, 50 Hz														
200	315	1PQ8 315-6PB..	415	338	95.7%	0.86	989	1932	6.5	2.0	2.5	KL13	6.0	1400
250	315	1PQ8 317-6PB..	415	422	95.9%	0.86	989	2415	6.5	2.0	2.5	KL13	7.3	1600
315	355	1PQ8 355-6YB..	415	536	96.2%	0.85	993	3031	6.5	2.0	2.8	KL13	16.0	2340
400	355	1PQ8 357-6PB..	415	678	96.5%	0.85	993	3848	6.5	2.0	2.8	KL13	16.0	2350
450	400	1PQ8 403-6PD..	415	772	96.5%	0.84	991	4338	7.0	1.3	2.7	KL 7	25.0	3100
500	400	1PQ8 405-6PD..	415	858	96.5%	0.84	992	4815	7.0	1.3	2.7	KL 7	28.0	3300
560	400	1PQ8 407-6PD..	415	961	96.5%	0.84	992	5393	7.0	1.3	2.7	KL 7	31.0	3500
630	450	1PQ8 453-6PD..	415	1080	96.6%	0.84	992	6068	6.5	1.2	2.5	KL 7	40.0	4300
670	450	1PQ8 455-6PD..	690	690	96.7%	0.84	992	6453	6.5	1.2	2.5	KL 7	45.0	4500
760	450	1PQ8 457-6PD..	690	782	96.8%	0.84	993	7312	6.5	1.2	2.5	KL 7	50.0	4600
850	500	1PQ8 458-6PD..	690	883	97.0%	0.83	993	8178	7.0	1.2	2.7	KL 7	59.0	5800
950	500	1PQ8 459-6PD..	690	975	97.0%	0.84	993	9141	7.0	1.2	2.7	KL 7	65.0	6000
750 RPM, 8 POLE, 50Hz														
160	315	1PQ8 315-8PB..	415	293	94.9%	0.80	739	2068	6.0	2.1	2.3	KL13	6.0	1400
200	315	1PQ8 317-8PB..	415	365	95.2%	0.80	739	2585	6.0	2.1	2.3	KL13	7.3	1600
250	355	1PQ8 355-8YB..	415	449	95.7%	0.81	741	3223	6.1	2.1	2.4	KL13	16.0	2340
315	355	1PQ8 357-8PB..	415	564	96.0%	0.81	741	4061	6.1	2.1	2.4	KL13	16.0	2350
355	400	1PQ8 403-8PD..	415	644	95.9%	0.80	742	4571	6.5	0.9	2.6	KL 7	25.0	3100
400	400	1PQ8 405-8PD..	415	725	95.9%	0.80	742	5150	6.5	0.9	2.6	KL 7	28.0	3300
450	400	1PQ8 407-8PD..	415	805	96.0%	0.81	742	5794	6.5	0.9	2.6	KL 7	31.0	3500
500	450	1PQ8 453-8PD..	415	892	96.3%	0.81	744	6421	7.0	1.2	2.7	KL 7	40.0	4300
560	450	1PQ8 455-8PD..	415	999	96.3%	0.81	744	7191	7.0	1.2	2.7	KL 7	44.0	4500
630	450	1PQ8 457-8PD..	415	1121	96.5%	0.81	744	8090	7.0	1.4	2.9	KL 7	48.0	4700
670	500	1PQ8 458-8PD..	690	717	96.5%	0.81	744	8604	6.5	1.0	2.6	KL 7	57.0	5800
750	500	1PQ8 459-8PD..	690	812	96.5%	0.80	745	9619	6.5	1.0	2.6	KL 7	65.0	6000

Order No Suffixes

Motor Type	Last but one place : Figure denoting supply#				Last place : Figure denoting construction			
	400VA, 50Hz / 690V Y, 50Hz	415VA, 50Hz	500VA, 50Hz	690VA, 50Hz	At additional price			
					IMB3	IMV1 without canopy	IMV1 with canopy	IMB35
1PQ8 31 - 45	6	7	5	0	0	NA	NA	NA
1PQ8 40 - 45	NA	NA	NA	0	0	NA	NA	NA

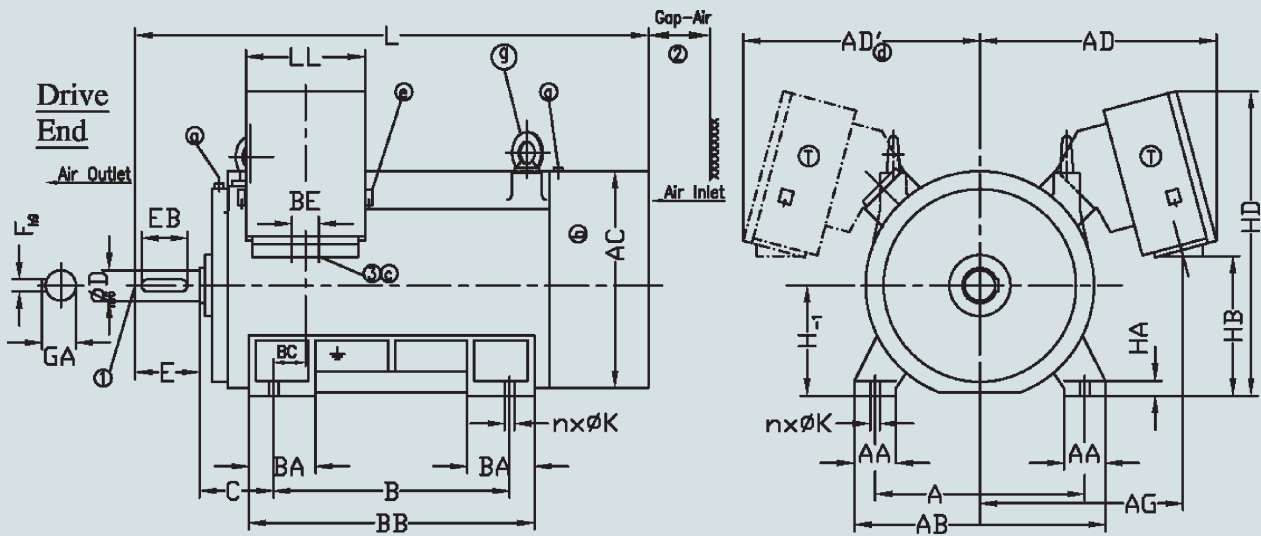
All value subject to tolerance as per IS 325 / IEC 60 034-1.

External forced cooled motors. Method of cooling IC 416 as per IS : 6362 .

The 2 pole motors can be used upto 50 Hz only.

Supply code "9" for other voltage and / or frequency, details should be additionally given in plain text.

Dimension drawing for 1LA8



Notes:

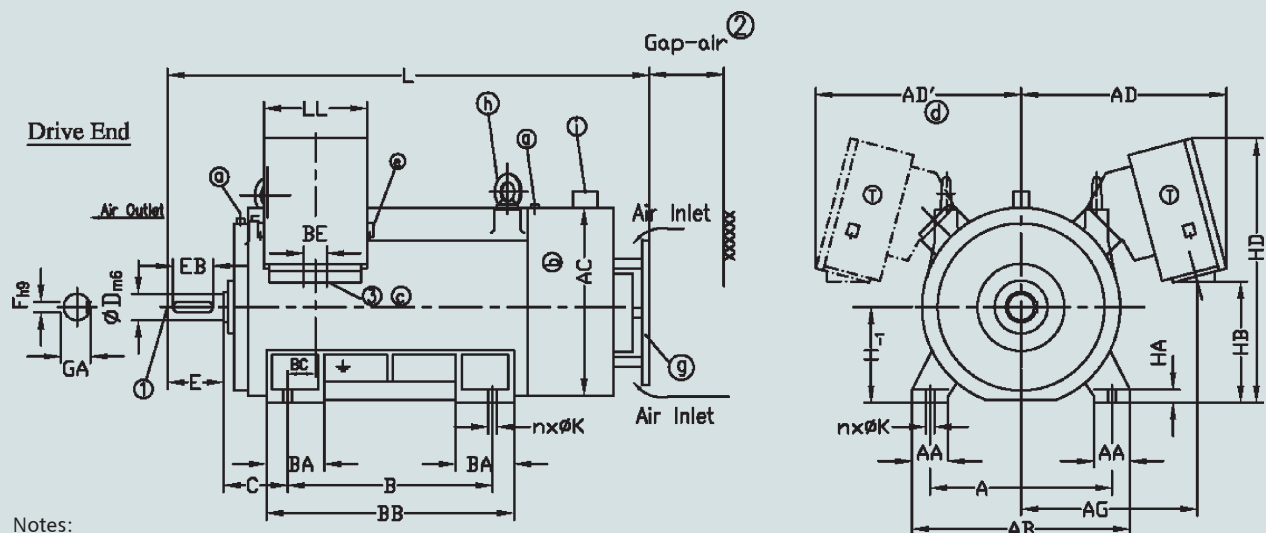
- a) Online Regreasing points
- b) Measured over bolt heads.
- c) Max. cable size 400 mm sq. for 1XB7622 & 1XB1631 Terminal Boxes.
- d) For terminal Box on LHS view is mirror image. Only one Main Terminal Box can be provided.
- e) Standard auxiliaries : AC.heater & 6x- PTCs are provided outside the Main Terminal Box -MTB, by default.
- f) Other auxiliaries, if any, are also provided outside the Main Terminal Box, by default.
- g) 2x lifting hooks placed diagonally opp. and away from Main terminal box.

Type of Construction IM B3

Frame Size	Force STD/ Increased Cantilever (IC)	All Dimensions are as per IS: 8223 & IEC-60072-2.															
		A	AA	AB	ØAC	AD	AG	B	BA	BB	BC	BE	C	H	HA	HB	HD
31.2	STD	560	120	680	710	680	560	630	180	780	195	135	180	315	28	330	835
31..4..8	STD	560	120	680	710	680	560	630	180	780	195	135	180	315	28	330	835
	IC	560	120	680	710	680	560	630	180	780	195	135	200	315	28	330	835
353/5..2	STD	630	150	780	790	710	585	800	220	980	185	135	200	355	35	400	905
357..2	STD	630	150	780	790	840	740	800	220	980	185	100	200	355	35	360	945
353/5..4..8 & 357-6..8	STD	630	150	780	790	710	585	800	220	980	185	135	200	355	35	400	905
	IC	630	150	780	790	710	585	800	220	980	185	135	224	355	35	400	905
357..4	STD	630	150	780	790	840	740	800	220	980	185	100	200	355	35	360	945
	IC	630	150	780	790	840	740	800	220	980	185	100	224	355	35	360	945
40..4..8	STD	710	150	860	880	875	775	900	220	1080	186	100	224	400	35	440	1025
453/5/7-4..8	STD	800	180	980	970	910	810	1000	260	1220	170	100	250	450	42	525	1110
458/9..4..8	STD(H=500)	1000	305	1200	970	800	690	1500	420	1650	445	100	200	500	42	535	1045

	STD/IC	Holes (n)	ØK	LL	L	Mtrl.-Hsg.	2Gap-air	ØD	E	EB	F	GA	T.bx	1Shaft hole	3Cable Entry
31..2	STD	4x	28	330	1370	C.I.	130	65	140	125	18	69	1XB7 622	M20x42	2x-M72
31..4..8	STD	4x	28	330	1400	C.I.	130	85	170	140	22	90	1XB7 622	M20x42	2x-M72
		4x	28	330	1420	C.I.	130	95	170	140	25	100	1XB7 622	M24x50	2x-M72
353/5..2	STD	4x	35	330	1595	C.I.	140	75	140	125	20	79.5	1XB7 622	M20x42	2x-M72
357..2	STD	4x	35	550	1595	C.I.	140	75	140	125	20	79.5	1XB1 631	M20x42	4x-Ø80
353/5..4..8 & 357-6..8	STD	4x	35	330	1625	C.I.	140	95	170	140	25	100	1XB7 622	M24x50	2x-M72
		4x	35	330	1690	C.I.	140	100	210	180	28	106	1XB7 622	M24x50	2x-M72
357..4	STD	4x	35	550	1625	C.I.	140	95	170	140	25	100	1XB1 631	M24x50	4x-Ø80
		4x	35	550	1690	C.I.	140	100	210	180	28	106	1XB1 631	M24x50	4x-Ø80
40..4..8	STD	4x	35	550	1825	C.I.	150	110	210	180	28	116	1XB1 631	M24x50	4x-Ø80
453/5/7-4..8	STD	4x	42	550	2000	C.I.	250	120	210	180	32	127	1XB1 631	M24x50	4x-Ø80
458/9..4..8	STD	4x	42	550	2360	Fabr.	300	120	210	180	32	127	1XB1 631	M24x50	4x-Ø80

Dimension drawing for 1PQ8



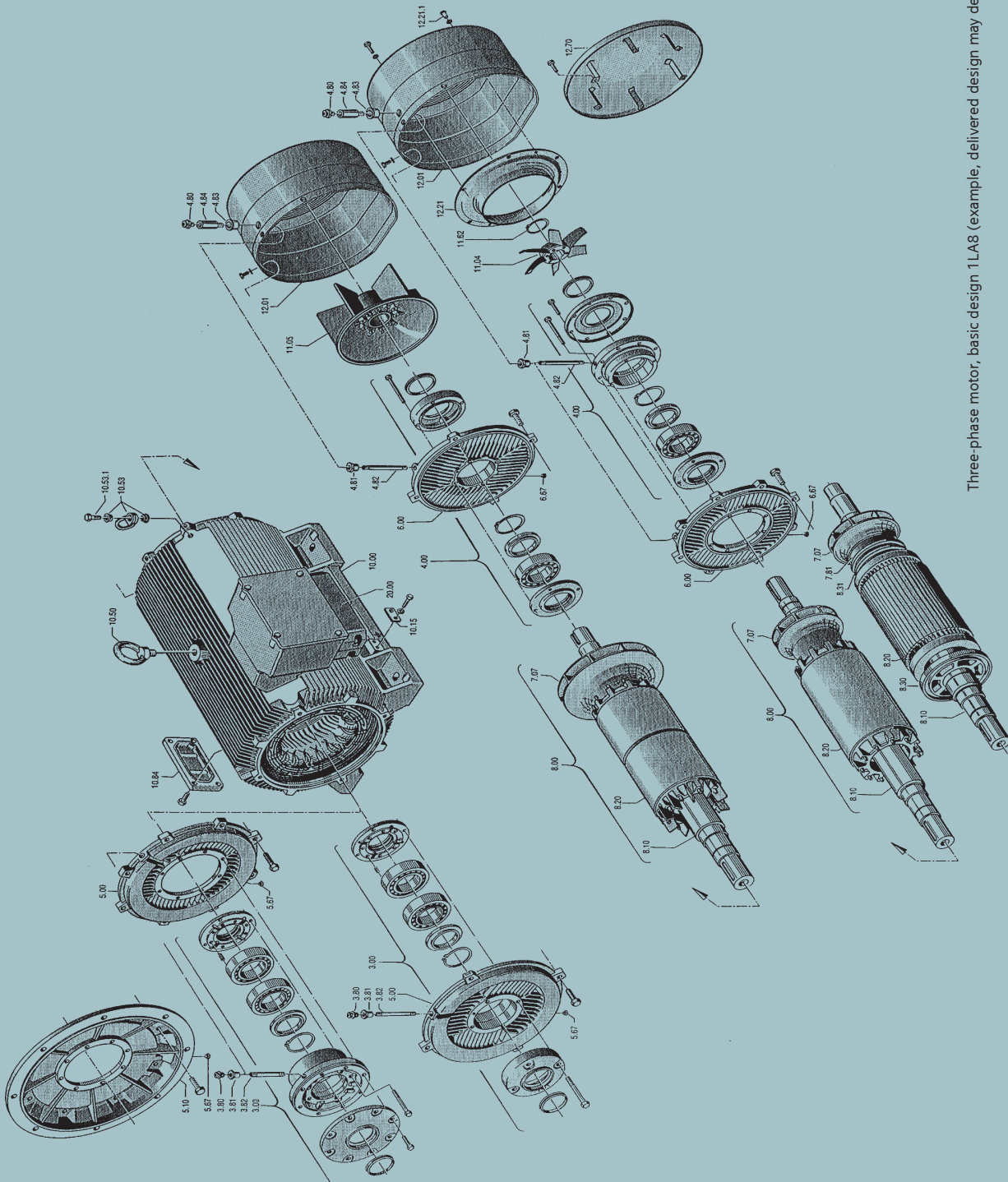
Notes:

- a) Online Regreasing points
- b) Measured over bolt heads.
- c) Max. cable size 400 mm sq. for 1XB7622 & 1XB1631 Terminal Boxes.
- d) For terminal Box on LHS view is mirror image. Only one Main Terminal Box can be provided.
- e) Standard auxiliaries : AC.heater & 6x- PTCs are provided outside the Main Terminal Box -MTB, by default.
- f) Other auxiliaries, if any, are also provided outside the Main Terminal Box, by default.
- g) Canopy for protection of Blower Motor. (Motor details are given in individual drawing).
- h) 2x Lifting Eyebolts at diagonally opposite points away from Main terminal box.
- i) Terminal box for Blower motor connection

Type of Construction IM B3

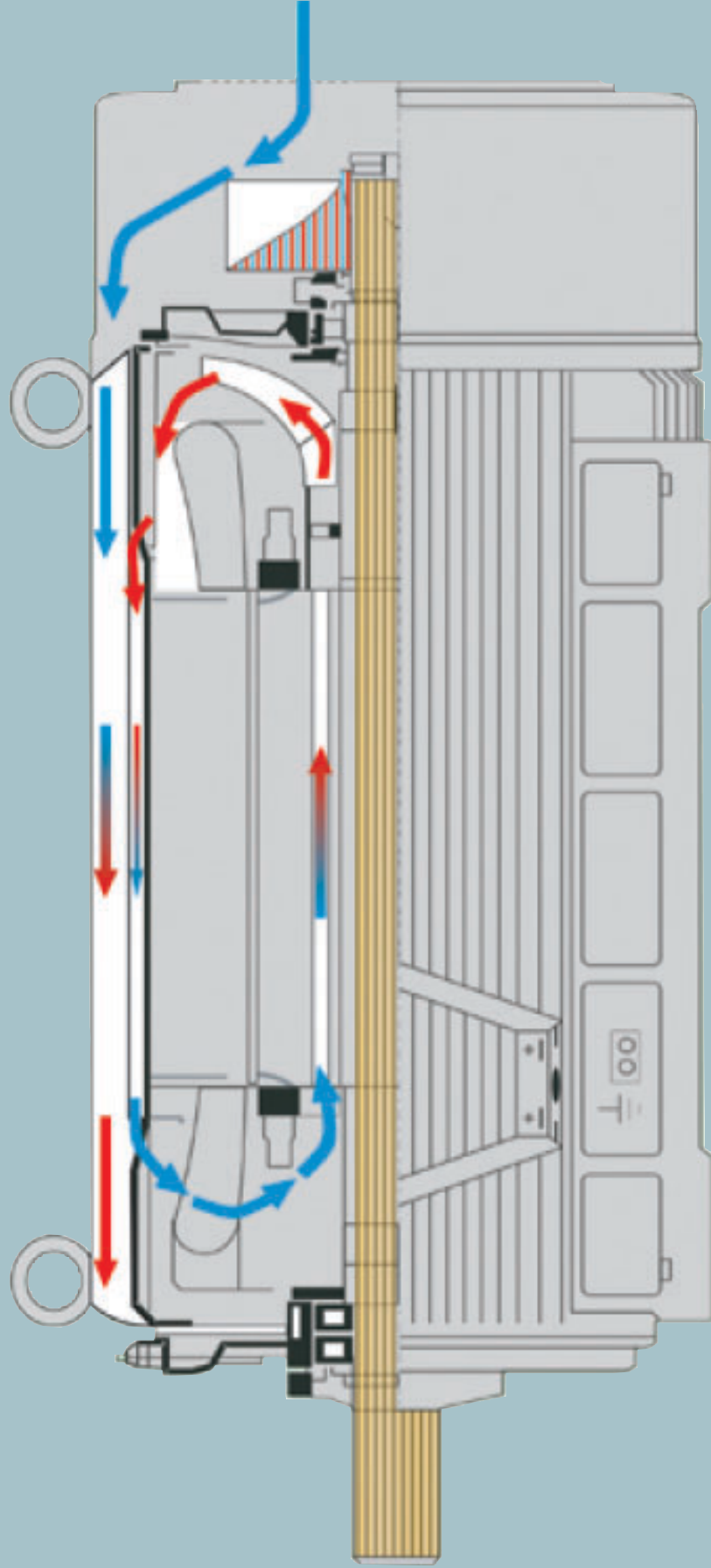
Frame Size	Force STD/ Increased Cantilever (IC)	All Dimensions are as per IEC-72, & in mm.															
		A	AA	AB	AC	AD	AG	B	BA	BB	BC	BE	C	H	HA	HB	HD
31.-4..8	STD	560	120	680	710	680	560	630	180	780	195	135	180	315	28	330	835
	IC	560	120	680	710	680	560	630	180	780	195	135	200	315	28	330	835
353/355-4 & 35.-6..8	STD	630	150	780	790	710	585	800	220	980	185	135	200	355	35	400	905
	IC	630	150	780	790	710	585	800	220	980	185	135	224	355	35	400	905
357-4	STD	630	150	780	790	840	740	800	220	980	185	100	200	355	35	360	945
	IC	630	150	780	790	840	740	800	220	980	185	100	224	355	35	360	945
40.-4	STD	710	150	860	880	875	775	900	220	1080	186	100	224	400	35	440	1025
455/7-4..8	STD	800	180	980	970	910	810	1000	260	1220	170	100	250	450	42	525	1110
458/9-4..8	STD	1000	305	1200	970	800	690	1500	420	1650	435	100	200	500	32	435	1045

	STD/IC	Holes (n)	ØK	LL	L	②Gap-air	ØD	E	EB	F	GA	(T.bx)	①Shaft hole	③Cable Entry
31..4..8	STD	4x	28	330	1880	130	85	170	140	22	90	1XB7 622	M20x42	2x-M72
	IC	4x	28	330	1900	130	95	170	140	25	100	1XB7 622	M24x50	2x-M72
353/355-4 & 35.-6..8	STD	4x	35	330	2150	140	95	170	140	25	100	1XB7 622	M24x50	2x-M72
	IC	4x	35	330	2215	140	100	210	180	28	106	1XB7 622	M24x50	2x-M72
35..4..8	STD	4x	35	550	2150	140	95	170	140	25	100	1XB1 631	M24x50	4x-Ø80
	IC	4x	35	550	2215	140	100	210	180	28	106	1XB1 631	M24x50	4x-Ø80
40..4	STD	4x	35	550	2435	150	110	210	180	28	116	1XB1 631	M24x50	4x-Ø80
455/7-4..8	STD	4x	42	550	2515	160	120	210	180	32	127	1XB1 631	M24x50	4x-Ø80
458/9-4..8	STD	4x	42	550	2950	160	120	210	180	32	127	1XB1 631	M24x50	4x-Ø80



Three-phase motor, basic design 1L8 (example, delivered design may deviate in details)

**Dual Cooling system
N compact motors 1LA8 / 1PQ8**



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