

COOLING TOWER MOTOR



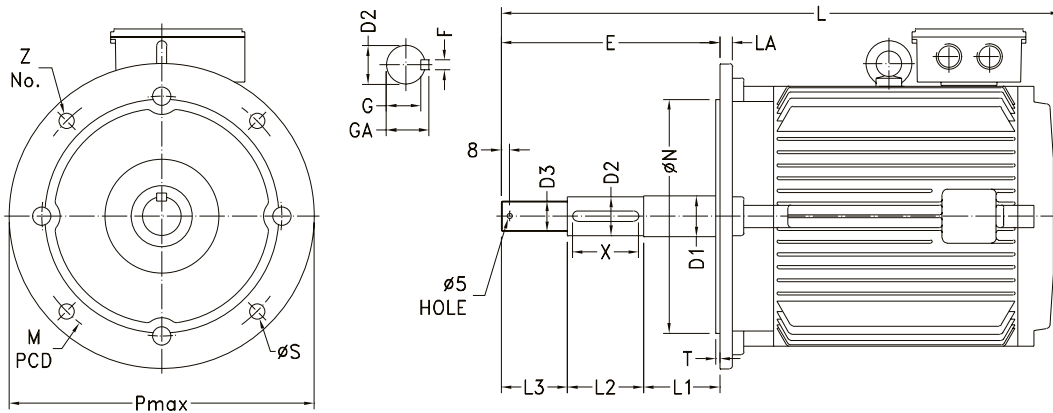
INTRODUCTION

Cooling tower motors are specially designed flange mounted motors in totally enclosed construction to suit air conditioning & refrigeration industries. They are provided with special long shaft construction with external threaded end to directly mount the fan blades. This also helps in the better cooling of the motor. Motors are compact in design & less in weight to facilitate easy maintenance. They are available as standard catalogue designs or as custom built.

RANGE

Power	: 0.37 to 37.0 kW
Polarity	: 4P, 6P, 8P, 10P & 12P
Mounting	: B5 flange mounted
Frame size	: 71 to 315
Voltage	: 415V ± 10% or as required
Frequency	: 50Hz ± 5% or as required
Ambient	: 45°C
Altitude	: up to 1000m above msl
Enclosure	: Totally Enclosed Non Ventilated (TENV) / TEFC
Protection	: IP55
Ins. class	: Class F with temp. rise limited to class B.
Duty	: S1

MECHANICAL DIMENSIONS



Frame	D1	D2	D3	F	GA	G	L1	L2	L3	E	P max	M PCD	øN	øS	Z No.	T	LA	X	L		
71	15	14	M12	5	16	11	50	40	65	155	160	130	110	10	4	3.5	9	35	331		
80	20	19	M16	6	21.5	15.5	50	55		170	200	165	130	12		4	4	11	45	65	368
90S	25	24		8	27	20															432
90L			405																		
100L	30	28	M24	8	31	24	75	75	220	250	215	180	15	4	4	12	13	65	446		
112M																			520		
132S	40	38	M30	10	41	33	100	120	70	290	300	265	230	19	5	15	15	110	558		
132M				619																	
160M	45	42	M36	12	45	37	120	85	305	400	350	300	350	8	6	16	18	154	663		
160L				732																	
180M	50	48	M36	14	51.5	42.5	170	85	375	450	400	350	350	8	6	18	154	1250	770		
180L				851																	
200L	60	55	M36	16	59	49	120	85	375	450	400	350	350	8	6	18	154	1250	851		
225SX	65	60		18	64	53													940		
225MX			855																		
250MX	75	65	M36	18	64	53	120	85	305	550	500	450	8	6	18	154	1250	940			
280SX	85	75		20	79.5	67.5												1045			
280MX			1045																		
315SX	95	80	M36	22	85	71	120	170	375	660	600	550	24	8	6	23	154	1250	1045		
315MX				1250																	

Note: 1) Suffix "X" denotes motors other than 2 pole motors. 2) All flange dimensions are conforming to IS: 2223.

ELECTRICAL PERFORMANCE - COOLING TOWER MOTOR

Output		Frame Size	Type Designation	Speed (rpm)	Current (A)	Torque (kgm)	Efficiency %			Power Factor			I _{ST} /I _N	T _{ST} /T _N	T _{PO} /T _N	GD ² (kgm ²)
KW	HP						FL	3/4L	1/2L	FL	3/4L	1/2L				
4 POLE																
0.37	0.50	71	2HL1 073-04	1380	1.05	0.26	66.0	65.0	58.0	0.74	0.64	0.53	3.5	1.9	2.1	0.0022
0.75	1.0	80	2HL1 083-04	1415	1.75	0.52	74.0	73.0	68.0	0.81	0.70	0.55	4.5	2.0	2.3	0.0049
1.1	1.5	90S	2HL1 090-04	1415	2.5	0.76	76.5	76.0	74.0	0.80	0.70	0.55	5.0	2.2	2.5	0.0072
1.5	2.0	90L	2HL1 096-04	1420	3.3	1.03	79.0	79.0	77.0	0.80	0.70	0.55	5.0	2.2	2.5	0.0093
6 POLE																
0.75	1.0	90S	2HL1 090-06	925	2.0	0.79	72.0	71.0	66.0	0.72	0.64	0.52	5.0	2.2	2.4	0.0095
1.1	1.5	90L	2HL1 096-06	930	2.9	1.15	75.0	74.0	69.0	0.70	0.58	0.42	5.0	2.2	2.4	0.0122
1.5	2.0	100L	2HL1 106-06	940	3.5	1.55	76.0	75.0	71.0	0.78	0.73	0.60	5.0	2.0	2.3	0.0269
2.2	3.0	112M	2HL1 123-06	945	4.9	2.27	80.0	79.5	75.5	0.78	0.70	0.55	5.0	2.0	2.3	0.0047
3.7	5.0	132S	2HL1 130-06	950	7.5	3.79	82.5	82.5	81.5	0.83	0.73	0.64	5.0	2.0	2.3	0.0826
5.5	7.5	132M	2HL1 133-06	950	11.0	5.64	85.0	85.0	83.5	0.82	0.77	0.67	5.0	2.0	2.3	0.1156
7.5	10.0	160M	2HL1 164-06	960	15.0	7.61	87.0	87.0	84.5	0.80	0.76	0.68	5.5	2.0	2.3	0.2625
9.3	12.5	160L	2HL1 166-06	965	17.5	9.39	88.0	88.0	85.0	0.84	0.81	0.70	5.5	2.0	2.3	0.3440
11.0	15.0	160L	2HL1 167-06	970	20.5	11.05	88.5	88.5	87.5	0.84	0.81	0.70	5.5	2.0	2.3	0.3440
8 POLE																
1.1	1.5	100L	2HL1 106-08	700	3.0	1.53	74.0	73.0	71.0	0.69	0.60	0.48	4.0	1.8	2.0	0.0296
1.5	2.0	112M	2HL1 123-08	705	3.9	2.07	77.0	77.0	74.0	0.69	0.64	0.51	4.0	1.9	2.1	0.0467
2.2	3.0	132S	2HL1 130-08	710	5.2	3.02	79.0	79.0	76.0	0.75	0.65	0.52	5.0	2.2	2.4	0.0826
3.7	5.0	132M	2HL1 133-08	710	8.6	5.08	81.0	81.0	79.0	0.74	0.65	0.52	5.0	2.2	2.4	0.1156
5.5	7.5	160M	2HL1 164-08	720	12.0	7.44	86.0	86.0	83.0	0.74	0.68	0.58	5.0	2.0	2.2	0.2565
7.5	10.0	160L	2HL1 166-08	720	15.7	10.15	87.0	87.0	85.0	0.76	0.71	0.58	5.0	2.0	2.2	0.3440
9.3	12.5	180M	2HL1 183-08	725	20.0	12.49	87.5	87.5	85.0	0.74	0.70	0.57	5.0	2.0	2.2	0.5057
11.0	15.0	180L	2HL1 186-08	725	24.0	14.78	88.0	88.0	85.0	0.72	0.68	0.55	5.0	2.0	2.2	0.5949
15.0	20.0	200L	2HL1 206-08	725	31.0	20.15	88.5	88.0	86.0	0.76	0.72	0.60	5.0	2.0	2.2	1.0123
10 POLE																
1.5	2.0	132S	2HL1 130-10	555	4.5	2.63	74.0	74.0	71.0	0.63	0.55	0.43	4.5	2.0	2.2	0.0826
2.2	3.0	132M	2HL1 133-10	555	5.7	3.86	78.0	78.0	76.0	0.69	0.61	0.49	4.5	2.0	2.2	0.1198
3.7	5.0	160M	2HL1 164-10	560	9.0	6.44	81.0	81.0	79.0	0.71	0.62	0.50	5.0	2.1	2.3	0.2072
5.5	7.5	180M	2HL1 183-10	560	14.0	9.57	82.0	81.5	80.0	0.67	0.58	0.45	5.0	2.0	2.2	0.5057
7.5	10.0	180L	2HL1 186-10	565	18.0	12.93	83.0	82.5	80.0	0.70	0.62	0.48	5.0	2.0	2.2	0.5949
9.3	12.5	180L	2HL1 187-10	570	22.0	15.89	84.0	83.5	81.0	0.70	0.62	0.49	5.0	2.0	2.2	0.6544
11.0	15.0	180L	2HL1 188-10	570	25.0	18.80	85.0	85.0	83.0	0.72	0.64	0.50	5.0	2.0	2.2	0.7734
15.0	20.0	200L	2HL1 206-10	575	34.0	25.41	86.5	86.0	84.0	0.71	0.63	0.52	4.5	2.0	2.2	1.2654
18.5	25.0	225MX	2HL1 223-10	575	43.0	31.34	89.0	89.0	87.0	0.67	0.60	0.50	4.0	2.0	2.2	1.8378
12 POLE																
1.1	1.5	132S	2HL1 130-12	460	3.8	2.33	70.0	68.0	64.0	0.58	0.50	0.40	3.5	1.7	1.9	0.0826
1.5	2.0	132M	2HL1 133-12	460	4.9	3.18	71.0	70.0	66.0	0.60	0.52	0.42	3.5	1.7	1.9	0.1198
2.2	3.0	160M	2HL1 164-12	465	6.0	4.61	79.0	79.0	75.0	0.65	0.54	0.45	4.5	2.0	2.2	0.2072
3.7	5.0	160L	2HL1 166-12	465	10.0	7.75	80.0	80.0	77.0	0.64	0.55	0.42	4.5	2.0	2.2	0.2857
5.5	7.5	180M	2HL1 183-12	470	15.0	11.40	82.0	82.0	80.0	0.62	0.54	0.42	4.5	1.9	2.1	0.5949
7.5	10.0	180L	2HL1 186-12	470	20.0	15.54	82.0	82.0	80.0	0.64	0.55	0.43	4.5	1.9	2.1	0.6544
9.3	12.5	180L	2HL1 187-12	470	23.0	19.27	84.0	84.0	82.0	0.67	0.59	0.46	4.5	1.9	2.1	0.7734
11.0	15.0	200L	2HL1 206-12	485	33.0	22.09	84.5	84.0	81.0	0.55	0.47	0.38	4.5	1.9	2.1	1.2654
15.0	20.0	225MX	2HL1 223-12	480	40.0	30.44	85.5	85.5	83.5	0.61	0.54	0.43	4.0	1.8	2.0	1.8378
18.5	25.0	250MX	2HL1 253-12	485	54.0	37.15	86.5	86.0	82.0	0.55	0.48	0.37	4.0	1.9	2.1	2.5127
22.0	30.0	280SX	2HL1 280-12	485	56.0	44.18	89.0	89.0	87.0	0.61	0.54	0.44	4.0	1.8	2.0	4.8613
30.0	40.0	280MX	2HL1 283-12	485	77.0	60.25	89.3	89.3	87.2	0.61	0.55	0.44	4.0	1.9	2.1	5.8335
37.0	50.0	315SX	2HL1 310-12	488	103.0	73.85	89.3	89.3	86.0	0.56	0.49	0.39	4.0	2.0	2.1	7.2611
45.0	60.0	315MX	2HL1 314-12	488	125.0	89.82	90.0	90.0	87.0	0.56	0.49	0.39	4.0	2.0	2.1	10.3731

- Note :
- 1) All figures are subject to applicable tolerances.
 - 2) All the above ratings can be offered in flameproof enclosure wherever applicable.
 - 3) All the above ratings can be offered in totally enclosed fan cooled (TEFC) construction as well.