



TGA-ZIM-02-06-00

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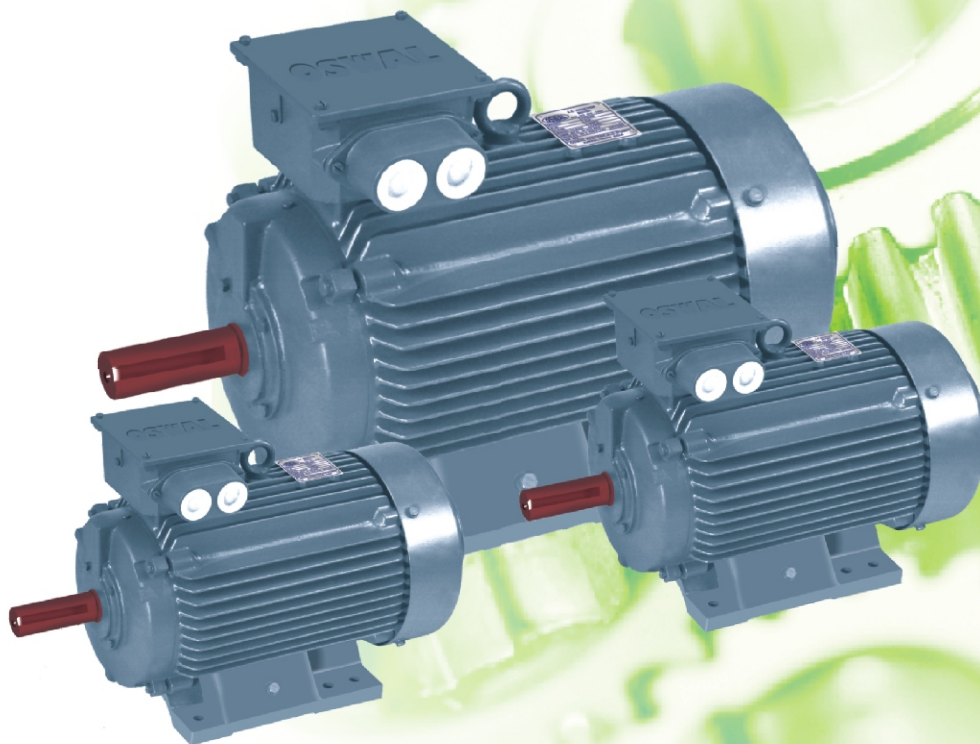
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OSWAL

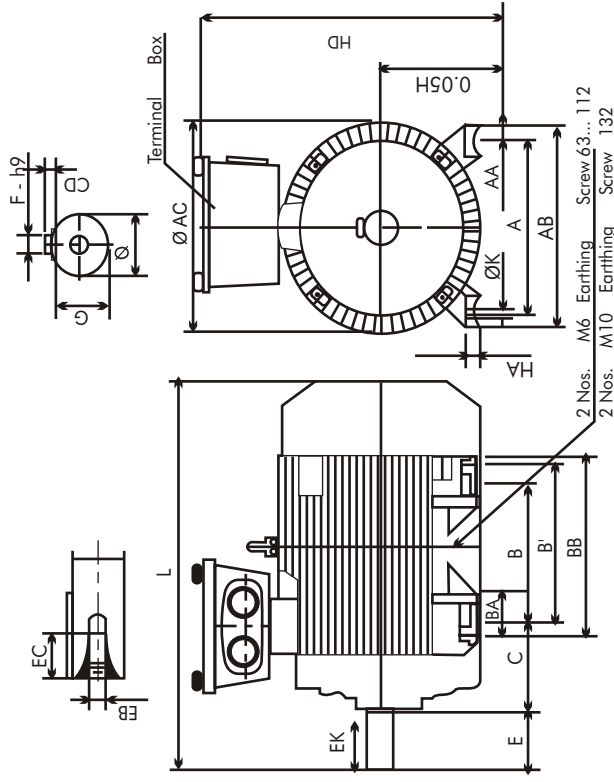
Ushering in Prosperity

Industrial Range.....



SQUIRRAL CAGE ELECTRIC MOTORS

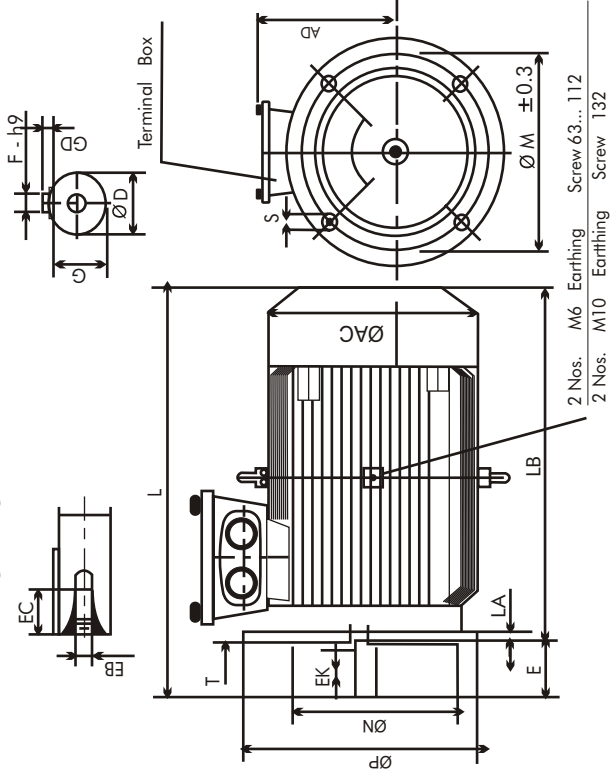
Dimension drawing Foot 63... 160
Mounting Designation B3, B6, B8, V5, V6



Frame	A	AA	AB	AC	B	B'	BA	BB	C	D-TOL.	E	EB	EC	EK
63	100	25	125	127	80	-	23	102	40	11- $\dot{6}$	23	M4	9	11
71	112	25	130	136	90	-	26	110	45	14- $\dot{6}$	30	M5	12	16
80	125	25	147	152	100	-	30	126	50	19- $\dot{6}$	40	M6	17	24
90SL	140	27	162	174	100	125	30	151	56	24- $\dot{6}$	50	M8	19	32
100L	160	42	200	200	140	-	47	180	63	28- $\dot{6}$	60	M10	22	42
112M	190	48	230	221	140	-	47	180	70	28- $\dot{6}$	60	M10	22	42
132SM	216	48	256	258	140	178	47	218	89	38- $\dot{6}$	80	M12	28	60
160ML	254	60	310	305	210	254	65	310	108	42- $\dot{6}$	110	M16	36	90

Frame	F	G	GD	H	HA	HD	K	L	Bearing	
									DS	NDS
63	4	8.5	4	63	8	175	7	225	6202ZZ C3	6200ZZ C3
71	5	11	5	71	9	185	7	253	6203ZZ C3	6202ZZ C3
80	6	15.5	6	80	10	200	10	290	6204ZZ C3	6204ZZ C3
90SL	8	20	7	90	13	236	10	332	6205ZZ C3	6205ZZ C3
100L	8	24	7	100	15	261	12	387	6206ZZ C3	6206ZZ C3
112M	8	24	7	112	18	283	12	392	6206ZZ C3	6206ZZ C3
132SM	10	33	8	132	20	323	12	468	6208ZZ C3	6307ZZ C3
160ML	12	37	8	160	22	415	15	675	6209ZZ C3	6308ZZ C3

Dimension drawing Foot 63... 160
Mounting Designation B5, V1



Frame	AC	AD	D-TOL.	E	EB	EC	EK	F	G	GD	L	LA	LB
63	123	110	11- $\dot{6}$	23	M4	9	11	4	8.5	4	225	9	202
71	136	114	14- $\dot{6}$	30	M5	12	16	5	11	5	253	9	223
80	152	120	19- $\dot{6}$	40	M6	17	24	6	15.5	6	290	10	250
90SL	174	146	24- $\dot{6}$	50	M8	19	32	8	20	7	332	10	282
100L	200	161	28- $\dot{6}$	60	M10	22	42	8	24	7	387	11	327
112M	221	171	28- $\dot{6}$	60	M10	22	42	8	24	7	392	11	332
132SM	258	191	38- $\dot{6}$	80	M12	28	60	10	33	8	468	12	388
160SM	305	255	42- $\dot{6}$	110	M16	36	90	12	37	8	675	16	565

Frame	N-TOL.	P	S	T	Bearing	
					DS	NDS
63	95- $\dot{6}$	140	10	3	6202ZZ C3	6200ZZ C3
71	110- $\dot{6}$	160	10	3.5	6203ZZ C3	6202ZZ C3
80	130- $\dot{6}$	200	12	3.5	6204ZZ C3	6203ZZ C3
90SL	130- $\dot{6}$	200	12	3.5	6205ZZ C3	6205ZZ C3
100L	180- $\dot{6}$	250	15	4	6306ZZ C3	6206ZZ C3
112M	180- $\dot{6}$	250	15	4	6307ZZ C3	6206ZZ C3
132SM	230- $\dot{6}$	300	15	4	6308ZZ C3	6307ZZ C3
160ML	250- $\dot{6}$	350	19	5	6309ZZ C3	6308ZZ C3

All Dimensions are in mm

TEFCM SI Duty
415A 10% V, 50 HzA 5%
Combined Variation of (absolute sum 10%)

Insulation Class F
Temperature rise Class B (75 BC)

2 Pole Ambinet 45°C

Output		Frame Size	Rated Speed (rpm)	In (A)	Efficiency %			Power Factor			I _s /I _n	Torque		T _n Nm	T _{hot} (Sec)	T _{cold} (Sec)	Weight Kg	G ² D Kgm ²
KW	HP				FL	3/4FL	2/2FL	FL	3/4FL	1/2FL		T _s /T _n	T _{max} /T _n					
0.18	0.25	71	2725	0.5	61.0	59.0	47.0	0.79	0.72	0.60	4.1	2.0	2.2	1.0	5	12	8	0.001
0.37	0.50	71	2790	1.0	63.0	59.0	46.0	0.80	0.73	0.60	4.2	2.0	2.4	1.3	5	12	10	0.001
0.55	0.75	71	2790	1.4	68.0	64.0	57.0	0.81	0.74	0.63	4.3	1.8	2.3	1.9	5	12	14	0.002
0.75	1.00	80	2780	1.8	73.0	72.0	68.0	0.82	0.76	0.66	4.8	2.0	2.3	2.6	7	16	10	0.002
1.10	1.50	80	2780	2.5	74.0	73.0	70.0	0.81	0.74	0.63	4.8	2.1	2.3	3.8	7	16	14	0.003
1.50	2.00	90SL	2840	3.2	77.5	76.0	74.0	0.82	0.76	0.66	5.7	2.1	2.7	5.0	6	14	22	0.007
2.20	3.00	90SL	2840	4.5	79.5	79.0	77.0	0.86	0.76	0.66	5.8	2.0	2.8	7.4	5	10	24	0.008
3.70	5.00	100L	2830	7.2	80.0	79.5	77.5	0.87	0.84	0.74	6.0	2.2	2.7	12.5	5	10	35	0.026
5.50	7.50	132SM	2875	10.5	84.2	83.5	81.0	0.85	0.81	0.72	6.0	2.3	3.0	18.3	9	20	55	0.044
7.50	10.0	132SM	2870	13.4	86.0	86.0	85.0	0.91	0.88	0.80	6.4	2.4	3.0	25.0	9	20	70	0.072
9.30	12.5	132SM	2860	16.5	86.0	85.5	85.0	0.89	0.87	0.81	6.0	2.5	3.5	31.1	9	20	70	0.072
11.0	15.0	160ML	2900	20.0	88.5	88.0	87.0	0.86	0.81	0.72	6.2	2.2	2.8	36.2	12	28	120	0.128
15.0	20.0	160ML	2900	26.0	90.0	90.0	88.0	0.87	0.84	0.76	6.4	2.2	3.0	49.5	12	28	130	0.152
18.5	25.0	160ML	2900	32.5	91.0	90.5	88.5	0.90	0.84	0.76	6.0	2.5	2.9	60.9	12	28	130	0.152

4 Pole Ambinet 45°C

Output		Frame Size	Rated Speed (rpm)	In (A)	Efficiency %			Power Factor			I _s /I _n	Torque		T _n Nm	T _{hot} (Sec)	T _{cold} (Sec)	Weight Kg	G ² D Kgm ²
KW	HP				FL	3/4FL	1/2FL	FL	3/4FL	1/2FL		T _s /T _n	T _{max} /T _n					
0.18	0.25	63	1350	0.7	63.0	60.0	50.0	0.70	0.67	0.50	3.0	1.8	2.1	1.3	5	12	10	0.001
0.25	0.33	71	1385	0.8	63.0	61.0	55.0	0.80	0.64	0.51	3.5	1.9	2.2	1.7	7	16	13	0.002
0.37	0.50	71	1370	1.1	63.0	61.0	55.0	0.70	0.58	0.46	3.5	2.0	2.5	2.6	7	16	13	0.003
0.55	0.75	80	1400	1.5	65.0	64.0	58.0	0.80	0.67	0.51	3.5	1.8	2.3	3.8	6	14	13	0.008
1.75	1.00	80	1380	2.0	68.0	67.0	62.0	0.80	0.69	0.55	4.5	1.8	2.3	5.8	4	9	15	0.007
1.10	1.50	90SL	1420	2.6	74.0	73.5	71.0	0.80	0.72	0.57	5.0	1.9	2.6	7.4	5	10	23	0.012
1.50	2.00	90SL	1415	3.4	76.0	75.5	72.5	0.80	0.75	0.62	5.0	1.9	2.6	10.1	5	10	25	0.015
2.20	3.00	100L	1415	4.8	78.0	77.5	75.0	0.80	0.73	0.60	5.0	2.1	2.7	14.9	5	12	35	0.020
3.70	5.00	112SM	1425	7.6	83.0	83.0	82.0	0.80	0.76	0.65	6.0	2.2	2.8	24.8	5	12	45	0.044
5.50	7.5	132SM	1440	11.2	84.5	84.5	82.0	0.80	0.71	0.58	6.0	2.2	3.0	36.5	7	16	60	0.060
7.50	10.0	132SM	1440	14.8	86.0	86.0	84.5	0.80	0.74	0.63	6.0	2.1	3.0	49.7	7	16	70	0.088
9.3	12.5	160ML	1450	19.0	88.0	88.0	87.0	0.80	0.73	0.60	6.0	2.1	2.7	61.3	7	16	105	0.167
11.0	15.0	160ML	1455	22.0	89.0	89.0	88.0	0.80	0.74	0.63	6.0	2.2	2.8	72.2	8	18	125	0.208
15.0	20.0	160ML	1455	29.5	88.5	87.5	86.5	0.80	0.74	0.66	6.0	2.1	2.8	99.1	12	28	145	0.252

6 Pole Ambinet 45°C

Output		Frame Size	Rated Speed (rpm)	In (A)	Efficiency %			Power Factor			I _s /I _n	Torque		T _n Nm	T _{hot} (Sec)	T _{cold} (Sec)	Weight Kg	G ² D Kgm ²
KW	HP				FL	3/4FL	1/2FL	FL	3/4FL	1/2FL		T _s /T _n	T _{max} /T _n					
0.25	0.33	80	895	0.8	63.0	59.0	53.0	0.70	0.59	0.47	3.5	1.9	2.2	2.7	10	24	13	0.006
0.37	0.50	80	895	1.2	63.5	61.0	55.0	0.70	0.59	0.47	3.5	1.9	2.2	4.0	10	24	13	0.006
0.55	0.75	80	900	1.6	66.0	64.0	60.0	0.73	0.65	0.50	3.5	1.9	2.2	5.8	10	24	15	0.008
0.75	1.00	90SL	910	2.1	68.0	66.5	63.0	0.70	0.66	0.52	3.5	1.7	2.0	7.9	10	24	22	0.011
1.10	1.50	90SL	915	2.9	72.0	70.5	66.0	0.70	0.66	0.52	3.5	1.8	2.1	11.5	10	24	25	0.015
1.50	2.00	100L	935	4.0	75.5	74.0	71.0	0.70	0.61	0.48	4.5	2.2	2.5	15.3	9	20	35	0.026
2.20	3.00	112M	940	5.7	78.5	78.0	75.0	0.70	0.56	0.47	5.0	2.0	2.5	22.4	8	19	45	0.044
3.70	5.00	132SM	960	8.3	83.0	83.0	81.0	0.70	0.66	0.53	5.5	2.2	2.6	36.8	8	19	70	0.088
5.50	7.50	132SM	955	12.2	83.5	83.0	80.0	0.70	0.65	0.52	5.5	2.3	2.8	55.0	7	16	75	0.108
7.50	10.0	160ML	965	15.5	87.5	87.5	86.5	0.80	0.71	0.58	5.5	2.1	2.4	74.2	9	20	125	0.288
9.30	12.5	160ML	965	19.5	88.0	88.0	87.0	0.80	0.71	0.58	6.0	2.1	2.6	92.0	8	18	155	0.372
11.0	15.0	160ML	960	23.0	88.0	87.0	86.0	0.80	0.72	0.59	5.5	2.0	2.4	109.0	9	20	155	0.372

8 Pole Ambinet 45°C

Output		Frame Size	Rated Speed (rpm)	In (A)	Efficiency %			Power Factor			I _s /I _n	Torque		T _n Nm	T _{hot} (Sec)	T _{cold} (Sec)	Weight Kg	G ² D Kgm ²
KW	HP				FL	3/4FL	1/2FL	FL	3/4FL	1/2FL		T _s /T _n	T _{max} /T _n					
0.37	0.50	90SL	680	1.4	58.0	55.0	48.0	0.65	0.55	0.40	2.8	1.6	1.9	5.2	10	24	22	0.012
0.55	0.75	90SL	680	1.9	63.0	60.0	54.0	0.63	0.55	0.40	3.2	1.8	2.1	7.7	10	24	25	0.015
0.75	1.00	100L	695	3.1	63.0	62.0	57.0	0.56	0.50	0.37	3.0	1.8	2.1	10.3	10	24	35	0.020
1.10	1.50	100L	695	3.9	62.5	62.0	57.0	0.59	0.51	0.38	3.0	1.8	2.3	15.1	10	24	35	0.026
1.50	2.00	112SM	700	4.8	69.0	67.0	62.0	0.60	0.51	0.41	3.5	1.8	2.3	20.5	9	20	45	0.044
2.20	3.00	132SM	710	6.3	77.0	75.0	72.0	0.65	0.55	0.42	4.1	1.9	2.4	29.6	8	19	60	0.060
3.70	5.00	160ML	715	8.4	82.0	81.0	77.0	0.77	0.69	0.55	5.1	1.8	2.5	49.4	8	19	110	0.240
5.50	7.50	160ML	715	12.0	84.0	83.0	80.0	0.79	0.72	0.59	5.1	1.8	2.5	73.5	9	20	125	0.288
7.50	10.00	160ML	715	16.0	85.0	84.0	82.0	0.79	0.72	0.59	5.1	1.8	2.5	100.0	13	29	140	0.372

I_n = Nominal or rated current

T_{max} = Maximum torque

I_s = Starting current

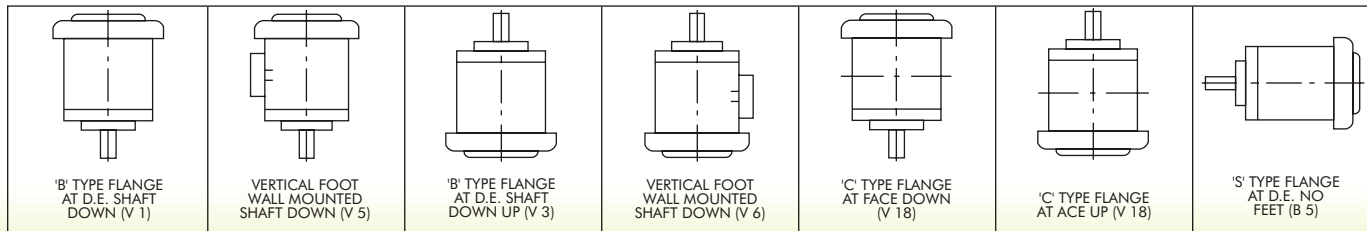
T_s = Starting torque

T_n = Nominal or rated torque in Nm

T_{cold} = Cold withstand time

T_{hot} = Hot withstand time

Note : All performance figures are subject to IS to tolerances.



2 Pole Ambinet 45°C

Output		Frame Size	Rated Speed (rpm)	In (A)	Efficiency %			Power Factor			I _s /I _n	Torque		T _n Nm	T _{hot} (Sec)	T _{cold} (Sec)	Weight Kg	G ² D Kgm ²
KW	HP				FL	3/4FL	1/2FL	FL	3/4FL	1/2FL		T _s /T _n	T _{max} /T _n					
22	30	180ML	2925	37.5	92.1	92.1	91.1	0.89	0.87	0.81	6.0	2.3	3.0	72	20	46	170	0.25
30	40	200ML	2940	51.0	92.6	92.6	91.0	0.88	0.86	0.81	6.0	2.3	3.0	97	20	46	240	0.72
37	50	200ML	2940	62.0	93.1	93.1	92.1	0.89	0.87	0.81	6.0	2.4	2.7	120	20	46	260	0.78
45	60	225SM	2955	75.0	93.5	93.5	92.5	0.89	0.87	0.81	6.0	2.6	3.0	145	20	46	330	1.28
55	75	250M	2960	91.5	94.0	94.0	93.0	0.89	0.87	0.81	6.0	2.4	3.0	177	20	46	440	1.92

4 Pole Ambinet 45°C

Output		Frame Size	Rated Speed (rpm)	In (A)	Efficiency %			Power Factor			I _s /I _n	Torque		T _n Nm	T _{hot} (Sec)	T _{cold} (Sec)	Weight Kg	G ² D Kgm ²
KW	HP				FL	3/4FL	1/2FL	FL	3/4FL	1/2FL		T _s /T _n	T _{max} /T _n					
18.5	25	180ML	1455	34.5	90.6	90.6	89.6	0.82	0.76	0.66	6.0	2.4	2.7	121	15	34	175	0.48
22	30	180ML	1460	40.5	91.5	91.5	90.5	0.83	0.78	0.70	6.0	2.6	2.7	144	15	34	185	0.54
30	40	200ML	1470	54.5	92.6	92.6	91.6	0.83	0.78	0.70	6.0	2.6	2.7	195	15	34	245	1.20
37	50	225SM	1470	67.0	92.8	92.8	91.8	0.83	0.78	0.70	6.0	2.2	2.7	240	20	46	310	1.40
45	60	225SM	1470	81.0	93.3	93.3	92.3	0.83	0.78	0.70	6.0	2.2	2.7	292	20	46	340	1.52
55	75	250M	1475	98.5	93.8	93.8	92.8	0.83	0.78	0.70	6.0	2.4	2.7	356	20	46	435	2.80

6 Pole Ambinet 45°C

Output		Frame Size	Rated Speed (rpm)	In (A)	Efficiency %			Power Factor			I _s /I _n	Torque		T _n Nm	T _{hot} (Sec)	T _{cold} (Sec)	Weight Kg	G ² D Kgm ²
KW	HP				FL	3/4FL	1/2FL	FL	3/4FL	1/2FL		T _s /T _n	T _{max} /T _n					
15	20	180ML	965	30.0	89.0	89.0	87.0	0.79	0.72	0.59	6.0	2.4	3.0	148	15	34	185	0.68
18.5	25	200ML	985	36.0	90.5	90.5	88.5	0.79	0.72	0.59	6.0	2.3	3.0	179	15	34	230	1.60
22	30	200ML	985	42.0	91.7	91.7	89.7	0.79	0.72	0.59	6.0	2.4	3.0	213	15	34	300	1.80
30	40	225SM	985	55.5	92.1	92.1	90.1	0.82	0.76	0.66	6.0	2.4	2.8	291	20	46	320	2.98
37	50	250M	985	66.0	92.8	92.8	90.8	0.84	0.80	0.71	6.0	2.4	2.8	359	20	46	420	4.80

8 Pole Ambinet 45°C

Output		Frame Size	Rated Speed (rpm)	In (A)	Efficiency %			Power Factor			I _s /I _n	Torque		T _n Nm	T _{hot} (Sec)	T _{cold} (Sec)	Weight Kg	G ² D Kgm ²
KW	HP				FL	3/4FL	1/2FL	FL	3/4FL	1/2FL		T _s /T _n	T _{max} /T _n					
9.3	12.5	180ML	725	20.0	87.0	87.0	85.0	0.75	0.67	0.53	6.0	1.8	2.6	123	13	29	160	0.64
11	15	180ML	725	23.5	87.0	87.0	85.0	0.75	0.67	0.53	6.0	2.0	2.5	145	13	29	170	0.72
15	20	200ML	735	31.5	88.0	88.0	86.0	0.75	0.67	0.53	6.0	2.2	2.5	195	15	34	240	1.98
18.5	25	225SM	735	38.5	90.0	90.0	89.0	0.74	0.66	0.52	6.0	2.2	2.3	240	18	40	320	3.32
22	30	225SM	735	45.5	91.0	91.0	89.0	0.74	0.66	0.52	6.0	2.1	2.3	286	18	40	340	3.50
30	40	250M	740	60.0	91.5	91.5	89.5	0.76	0.68	0.54	6.0	2.1	2.3	387	18	40	520	4.54

I_n = Nominal or rated current

T_s = Starting torque

T_{hot} = Hot withstand time

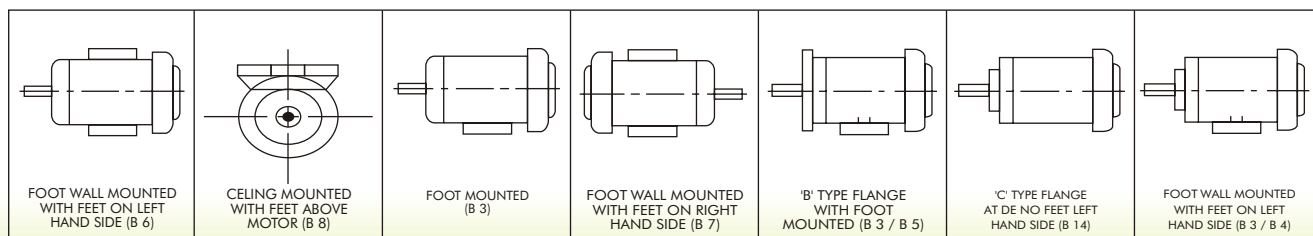
Note : All performance figures are subject to IS to tolerances.

T_{max} = Maximum torque

T_n = Nominal or rated torque in Nm

I_s = Starting current

T_{cold} = Cold withstand time





TGA-ZM-02-06-00

TGA TRÄGERGESELLSCHAFT FÜR AKKREDITIERUNG
GERMAN ASSOCIATION FOR ACCREDITATION (GMAH)

An ISO 9001, 14001 Certified Company












ELECTRIC MOTORS

OSWAL Industries is an ISO 9001-2000 Company and one of the leading manufacturers of Induction Motors for various industrial application like Machine tools, Textiles, Air Conditioning, Dairy Equipments, Crane & Hoist, Pollution control, Aquaculture & agriculture, Fertilizers, Mines & Chemicals Industry.

The Range of products are standard motors, energy efficient motors, dual speed motors, cooling tower motors and other special motors designed as per customers specifications. The qualities of motors are excellent as it is manufactured under the supervision of a team of highly qualified, experienced & dedicated people of the organisation.

SALIENT FEATURES OF THESE MOTORS ARE :

Type	:	Three phase squirrel cage induction motor
Enclosure	:	Totally enclosed fan cooled / IC 41
Frame	:	63 to 280 M
Output	:	0.18 to 90 kw
Ambient temperature / temperature rise	:	45°C / 75°C, Class - B by resistance method
Insulation class	:	'F'
Voltage	:	415 ± 10%V
Frequency	:	50 ± 5% Hz
Combined variation	:	10% (absolute sum)
Connection	:	Star up to 2 HP / Delta above 2 HP
No. Of leads	:	3 for star / 6 for delta
Altitude	:	up to 1000m above MSL
Duty	:	S 1
Degree of protection	:	IP 55
Terminal Box	:	Top / 360° in steps of 90°
Bearing	:	Anti friction ball bearing
Grease	:	High temperature Lithium complex grease (155°C)
Main Dimensions	:	Foot mounted according to IS : 1231 Flange mounted according to IS : 2223 Foot cum flange mounted Face mounted

-  All motor shafts are of 40 C8 /EN-8 material. Motor shaft of AISI304,316,431,410 & other material can be supplied onrequest. Shaft are having threaded centre hole for locking of pulley / gear from driving end. Motors are supplied with keys duly fitted on the shaft.
-  All standard motors are capable of service factor 1.1 at rated voltage & frequency / or continuous duty.
-  Rotors are of squirrel cage, aluminium die cast & are dynamically balanced with a half key to keep the vibration levels low. Motors with very low vibration level requirement for machine tool application can be given on request. Core material is low loss high grade silicon steel.
-  All motors can withstand momentary overload of 1.6 times of rated torque, for 15 seconds without stalling.
-  All standard motors are having deep groove radial ball bearings '(Single row)'. Deep groove ball bearings are capable of taking axial loads in both the direction in addition to the radial loads at high speed.
-  Oil seals are provided to ensure IP - 55 protections. /The rubbing action on sealing surface prevents penetration of solid contaminants / moisture into the motor. The rubbing surfaces are with appropriate surface finish. Hence rise in temperature is minimum.
-  Noise levels of the motors are maintained as per specification in IS : 12065.
-  Motors are tested for vibration level of normal class as per IS : 12075. Precision levels of vibration can also be given on request.
-  Motors can withstand for starting up time 5 to 7 seconds for two starts from cold condition. For any other condition customer shall specify GD2 speed, period of acceleration. Duty cycle, speed torque curve of driven equipment & method of starting.

Specification :

Details	Three Phase
Range	0.25 HP to 120 HP.
RPM	3000/1500/1000/750/600/500/375
Frames	63 - 280 M
Insulation Class	'F'
Rating	Continuous

Exclusively manufactured by :

Oswal Pumps Ltd.

Oswal Estate, NH-1, Kutail Road, P.O. Kutail-132 037,
Distt. KARNAL (Haryana) INDIA
Ph.No. : +91-184-6616600(30 Lines) +91-1748-257701-04
Fax : +91-1748-257700

E-mail : contact@oswalpumps.com

URL : <http://oswalpumps.com>, www.oswalpumps.co.in

Other Ranges :

