marathon® electric

Globetrotter® Plus IEC MOTORS

EFF1 HIGH EFFICIENCY MOTOR

MEPS 2 Compliant Motors to AS/NZS 1359.5.2004

IEC Frame 112 to 355
Output up to 315KW

energy ENERGY STAR PARTNER

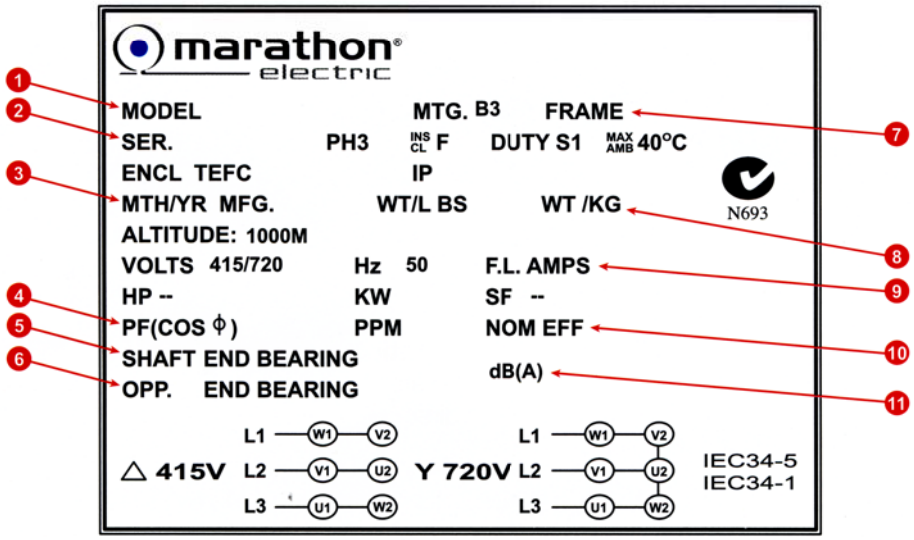
Motors for the Long Run!

Since 1913, Marathon Electric's name has been recognised for engineering excellence, custom-designed products and an extensive product line of industrial quality motors. Globetrotter 2 is MEPS 2 compliant efficiency low voltage TEFC squirrel cage induction motor. Designed and Manufactured to AS/NZS 1359, IEC34 & IEC72. IP55 , IC411 cooling system and fitted with quality ball bearing (SKF or NSK) as standard

Marathon Electric Nameplate Information

HOW TO READ A MARATHON ELECTRIC NAMEPLATE

The nameplate is the key to selecting the proper replacement motor



1. **Model** - Model Number
2. **SER** - Serial Number
3. **MTH/YR MFG** - Month and year motor was manufactured
4. **PF (COSf)** - Full Load Power Factor
5. **SHAFT END BEARING** - Manufacturer drive end bearing number
6. **OPP. END BEARING** - Non drive end bearing number
7. **FRAME** - IEC Frame Size
8. **WT/KG** - Motor Weight in kgs
9. **F.L. AMPS** - Full Load Current
10. **NOM EFF** - Full Load Efficiency
11. **dB(A)** - Sound Pressure at 1 meter

HOW TO READ A MODEL NUMBER

Example	**200L**	**T**	**F**	**C**	**0304**	**F**	**-**	**AU**
	1	2	3	4	5	6		7

1 IEC Frame Size

2 Electrical Type
- **T** = Three Phase

3 Enclosure
- **D** = Dripproof
- **F** = Totally enclosed, fan cooled
- **O** = Open
- **T** = Totally enclosed, non-ventilated

4 Frame Construction
- **B** = Rolled Steel -Sourced
- **C** = Cast Iron - Sourced
- **H** = Aluminum - Sourced

5 Sequence Number

6 F = B35 Mounting
- **H** = Other Code

7 Manufacturing Code

Three Phase Induction Motors - Cast Iron TEFC Construction
General Technical Information

Standards
Designed and Manufactured to AS/NZS 1359, IEC34 & IEC72

Motor Type - SCIM Enclosure : TEFC

Voltage and Frequency - 415V 50Hz

Other Voltage / Frequency Operating Parameters

V/Hz	Rated Speed	Rated Power	Rated Current	Rated Torque	LRT	BDT
380/50	0.90	0.90	1.00	0.90	0.83	0.83
415/50	1.00	1.00	1.00	1.00	1.00	1.00
440/50	1.00	1.00	1.00	1.00	1.00	1.00
415/60	1.20	1.00	1.00	0.83	0.69	0.69
440/60	1.20	1.05	1.00	0.87	0.77	0.77
460/60	1.20	1.10	1.00	0.97	0.85	0.85

Standard Terminal Connections
- 415V / 719V for 4Kw and above

Duty Rating
- Motor are all continuously maximum rated Type – S1

Cooling Method
- IC0411

Degree of Protection
- Enclosure protection is IP55

Noise - Noise levels comply limits set by AS 1359.109-1998 / IEC 60034.9-1997

Vibration
Motor meets limits of vibration severity set out by AS 1359.114-1997 Level N (normal) values related to rotating machinery measured in soft suspension.
Efficiency - Meets MEPS 2 AS/NZS 1359.5-2004

Construction
- Cast Iron Frame
- Cast Iron Endshields
- Cast Iron Terminal Box
- Steel Fan cowl
- Cooling Fan – Plastic Anti - Static

Stator and Windings
High grade insulated cold rolled electro magnetic steel laminations (0.5mm Thickness) Windings are random wound double enmelled copper wire and Vacuum Pressure impregnated with a solvent less resin

Insulation Class / Temperature Rise
- Class F insulation
- B Class Limit Temperature Rise

Winding Protection
- 11KW and higher are fitted with PTC thermistor protection within the windings (one per phase) operate at 160°C for tripping.

Cable Entries
- Suit metric glands
- Terminal boxes Top mount

Altitude - Maximum 1000 metres above sea level

Rotor Balancing
- Rotors have been dynamically balanced to According to Class N AS1359.50
- Squirrel Cage Rotor - Pressure Aluminum Die Cast and balanced

Rotation
All standard motors are suitable for operation in either direction of rotation.

Bearings
- Make - SKF or NSK
- Motor rated up to including 7.5KW will be fitted with grease-lubricated deep-groove ball bearing
- 11KW and above have Regreasing Nipples.
- Bearings - B10 basic rating life

Nameplate
- Nameplate is manufactured from stainless Steel with marking according to AS1359, Part 4

Surface Finish
- Surface preparation to grade SA 2.5
- One coat of synthetic alkyd Primer
- One coat of synthetic alkyd enamel
- Colour - Blue

Optional Features
IP66 using Inpro / Seal Bearing Isolator
Shaft Grounding using AEGIS SGR
Insulated Bearings
Thrust Bearings
Anti- condensation Heater
Vibration monitoring - SPM Studs @ DE / NDE

Note : Design, data and dimensions are subject to change without notification

Application Information

TERMINOLOGY

Ambient Temperature - Temperature of the medium, such as air, water into which the equipment is dissipated

Ampere (Amp) - A measure of the rate of current through the motor

Breakaway Torque - The torque to start a machine from standstill

Breakdown Torque (BDT) - The maximum torque that an AC motor will develop with rated voltage applied at rated frequency while rotating

Cogging - A condition in which a motor does not rotate smoothly but "steps" or "jerks" from one position to another during shaft revolution.

Continuous Duty - S1 - Operation at constant load of sufficient duration for thermal equlibrium to be reach.

Efficiency - Ratio of power output to power input indicated as a percentage. In motors, it is the effectiveness with which a motor converts electrical power into mechanical power.

Frequency - Number of cycles per second of alternating current.

Full Load Torque - the torque necessary to produce rated output Power (KW) at full load speed.

Locked Rotor Current - Steady state current taken from the line with the rotor standstill, at rated voltage and frequency. This is the current when starting the motor and load across the line.

Locked Rotor Torque (LRT) - The minimum torque that a motor will develop at rest for all angular positions pf the rotor, with rated voltage and rated frequency

No Load (conditions) - The state of a machine rotating at normal speed under rated conditions, but when no output is requried from it.

Power Factor - Power factor is the ratio of real power (kW) to total kVA.

PTC thermistor - Thermovariable resistors with positive co-efficient.

Rotor - The rotating member of a machine with a shaft

Slip - The difference between the speed of the rotating magnetic field (synchronous speed) and mechanical rotational speed (rotor speed) of AC induction motors. Usually expressed as a percentage of synchronous speed.

Starting Torque - The torque exerted by the motor during the starting period.

Stator - the stationary portion of the magnetic circuit and the associated windings and leads of a rotating machine.

Synchronous Speed - The speed of an AC induction motor's rotating magnetic field. It is determined by the frequency applied to the stator and the number of magnetic poles present in each phase of the stator windings. Mathematically, it is expressed as :

$$\text{Sync. speed (RPM)} = \frac{120 \times \text{Applied Frequency (Hz)}}{\text{Number of Poles}}$$

Torque - A turning force applied to a shaft, tending to cause rotation. Torque is normally measured in N.m and is equal to the force applied times the radius through which it acts.

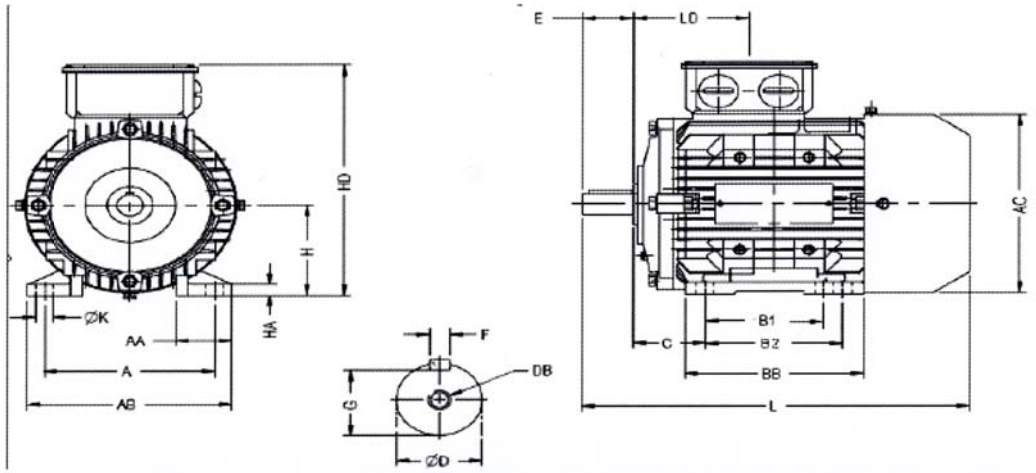
Globetrotter IEC MOTORS

Performance Data at 415V 50Hz

Model	Frame	Rated Output KW	Rated Output HP	Rated Current - Amps	Full Load Power Factor	Full Load Eff	Speed - rpm	Net Wt - Kgs	Gross Wt -Kgs	Packaging Size (W x L x H)(cm)
2 Pole										
112MTFC0402-AU	112M	4	5	7.30	0.87	87.6	2890	41	44	32*50*48
132STFC0552-AU	132S	5.5	7.5	9.8	0.88	89.1	2900	71	76	38*59*51
132STFC0752-AU	132S	7.5	10	13.1	0.88	90.3	2900	67	71	38*59*51
160MTFC0112-AU	160M	11	15	19	0.89	90.6	2940	112	132	45*77*54
160MTFC0152-AU	160M	15	20	25.9	0.89	91.3	2940	122	142	45*77*54
160LTFC1852-AU	160L	18.5	25	31.2	0.89	91.8	2940	142	162	45*77*54
180MTFC0222-AU	180M	22	30	37.2	0.90	92.2	2950	170	195	49*82*58
200LTFC0302-AU	200L	30	40	50.2	0.89	92.9	2965	235	265	54*88*64
200LTFC0372-AU	200L	37	50	61.9	0.89	93.3	2965	254	284	54*88*64
225MTFC0452-AU	225M	45	60	75.2	0.90	93.7	2965	328	363	57*95*71
250MTFC0552-AU	250M	55	75	91.4	0.89	94.0	2970	390	430	66*104*80
280STFC0752-AU	280S	75	100	122.6	0.90	94.6	2975	504	549	71*113*82
280MTFC0902-AU	280M	90	120	147.2	0.90	94.8	2975	563	605	71*113*82
315STFC1102-AU	315S	110	150	178.5	0.91	95.0	2975	910	960	77*135*102
315MTFC1322-AU	315M	132	175	213.1	0.91	95.4	2975	1010	1060	77*149*102
315LTFC1602-AU	315L	160	215	256.9	0.91	95.4	2975	1070	1120	77*149*102
315LTFC 2002-AU	315L	200	270	320	0.91	95.4	2970	1120	1170	77*149*102
355MTFC 2502-AU	355M	250	335	397	0.92	95.3	2980	1438	1493	84*169*108
355LTFC 2802-AU	355L	280	375	443	0.92	95.6	2980	1726	1781	84*169*108
355LTFC3152-AU	355L	315	425	498	0.92	95.6	2980	1726	1781	84*169*108
4 Pole										
112MTFC0404-AU	112M	4	5	8.00	0.82	88.3	1440	44	47	32*50*48
132STFC0554-AU	132S	5.5	7.5	10.2	0.85	89.2	1460	77	82	38*59*51
132MTFC0754-AU	132M	7.5	10	13.6	0.85	90.1	1460	81	85	38*59*51
160MTFC0114-AU	160M	11	15	20	0.85	91	1470	116	145	45*77*54
160LTFC0154-AU	160L	15	20	26.7	0.86	91.8	1470	137	157	45*77*54
180MTFC1854-AU	180M	18.5	25	32.2	0.86	92.2	1470	170	195	49*82*58
180LTFC0224-AU	180L	22	30	38.4	0.86	92.6	1470	186	211	49*82*58
200LTFC0304-AU	200L	30	40	52	0.86	93.2	1475	254	284	54*88*64
225STFC0374-AU	225S	37	50	63.2	0.87	93.6	1480	308	343	57*95*71
225MTFC0454-AU	225M	45	60	76.5	0.87	93.9	1480	335	370	57*95*71
250MTFC0554-AU	250M	55	75	93	0.87	94.2	1480	450	490	66*104*80
280STFC0754-AU	280S	75	100	126.6	0.88	94.7	1485	534	579	71*113*82
280MTFC0904-AU	280M	90	120	151.5	0.88	95	1485	592	637	71*113*82
315STFC1104-AU	315S	110	150	182.3	0.88	95.4	1485	930	980	77*135*102
315MTFC1324-AU	315M	132	175	218.7	0.88	95.4	1485	1546	1596	77*149*102
315LTFC1604-AU	315L	160	215	262	0.88	95.4	1485	1050	1100	77*149*102
315LTFC 2004-AU	315L	200	270	327	0.88	95.7	1485	1100	1150	77*149*102
355MTFC 2204-AU	355M	220	300	365	0.9	95.3	1480	1546	1601	84*169*108
355MTFC 2504-AU	355M	250	335	415	0.88	95.3	1480	1546	1601	84*169*108
355LTFC 2804-AU	355L	280	375	458	0.89	95.6	1480	1821	1876	84*169*108
355LTFC3154-AU	355L	315	425	515	0.89	95.6	1480	1821	1876	84*169*108
6 Pole										
132STFC0306-AU	132S	3	4	6.4	0.76	84.9	965	59	63	38*59*51
132MTFC0406-AU	132M	4	5	8.5	0.76	86.1	970	69	73	38*59*51
132MTFC0556-AU	132M	5.5	7.5	11.3	0.77	87.4	970	79	83	38*59*51
160MTFC0756-AU	160M	7.5	10	15.1	0.78	88.5	975	119	139	45*77*54
160LTFC0116-AU	160L	11	15	21.8	0.78	89.8	975	149	169	45*77*54
180LTFC0156-AU	180L	15	20	28	0.81	90.7	980	180	205	49*82*58
200LTFC1856-AU	200L	18.5	25	34.6	0.81	91.3	980	231	261	54*88*64
200LTFC0226-AU	200L	22	30	40	0.83	91.8	980	254	284	54*88*64
225MTFC0306-AU	225M	30	40	53.2	0.84	92.5	985	308	343	57*95*71
250MTFC0376-AU	250M	37	50	64.5	0.85	93	985	382	422	66*104*80
280STFC0456-AU	280S	45	60	77.4	0.86	93.5	990	482	527	71*113*82
280MTFC0556-AU	280M	55	75	94.3	0.86	93.9	990	532	577	71*113*82
315STFC0756-AU	315S	75	100	128.5	0.86	94.4	990	920	970	77*135*102
315MTFC0906-AU	315M	90	120	153.6	0.86	94.8	990	1010	1060	77*149*102
315LTFC1106-AU	315L	110	150	187.1	0.86	95.1	990	1060	1110	77*149*102
315LTFC1326-AU	315L	132	175	221	0.86	95.4	990	1120	1170	77*149*102
355MTFC1606-AU	355M	160	215	266.3	0.88	94.9	990	1360	1415	84*169*108
355MTFC2006-AU	355M	200	270	364	0.88	94.9	990	1561	1616	84*169*108
355LTFC2206-AU	355L	220	300	397	0.88	94.9	990	2057	2112	84*169*108
355LTFC2506-AU	355L	250	335	454	0.88	94.9	990	2057	2112	84*169*108
8 Pole										
132STFC0228-AU	132S	2.2	3	5.20	0.71	80.9	710	72	77	38*59*51
132MTFC0308-AU	132M	3	4	7.1	0.71	82.7	710	109	113	38*59*51
160MTFC0408-AU	160M	4	5	8.9	0.73	84.2	715	105	125	45*77*54
160MTFC0558-AU	160M	5.5	7.5	11.9	0.74	85.8	715	125	145	45*77*54
160LTFC0758-AU	160L	7.5	10	16.1	0.74	87.2	720	142	162	45*77*54
180LTFC0118-AU	180L	11	15	22.7	0.75	88.8	730	176	201	49*82*58
200LTFC0158-AU	200L	15	20	30.3	0.76	90	730	235	265	54*88*64
225STFC1858-AU	225S	18.5	25	36.8	0.76	90.7	735	290	325	57*95*71
225MTFC0228-AU	225M	22	30	42.5	0.78	91.2	735	302	337	57*95*71
250MTFC0308-AU	250M	30	40	56.6	0.79	92.1	735	392	432	66*104*80
280STFC0378-AU	280S	37	50	69.7	0.79	92.7	740	488	533	71*113*82
280MTFC0458-AU	280M	45	60	84.5	0.79	93.2	740	548	593	71*113*82
315STFC0558-AU	315S	55	75	102.1	0.8	93.7	740	930	980	77*135*102
315LTFC0908-AU	315L	90	120	163.2	0.81	94.7	740	1070	1120	77*149*102
315LTFC1108-AU	315L	110	150	196.2	0.82	95.1	740	1140	1190	77*149*102
355MTFC1328-AU	355M	132	175	231.9	0.83	95.4	740	1010	1065	84*169*108
355MTFC1608-AU	355M	160	215	276.9	0.84	95.7	740	1010	1065	84*169*108
355LTFC2008-AU	355L	200	270	346.1	0.84	95.7	740	1065	1120	84*169*108

Note : Design, data and dimensions are subject to change without notification

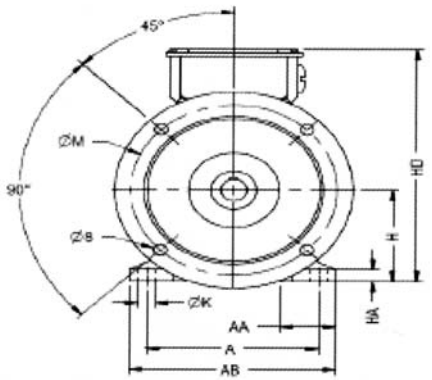
Foot Mounted Motor B3 Mounting - (IM1001)



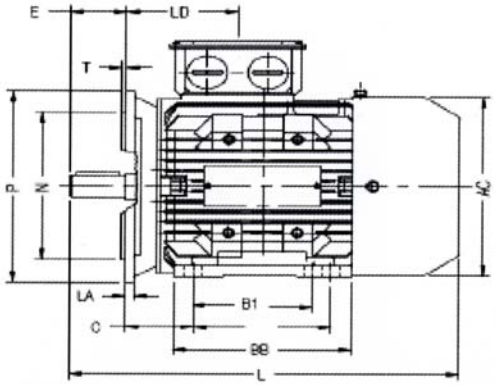
Frame	Poles	A	B1	B2	C	D	DB	E	F	G	H	K	AB	AC (max)	HD (Max)	BB (Max)	LD	HA	AA	L (MAX)
112M	2,4,6	190	140	-	70	28	M10	60	8	24	112	12	230	224	300	180	88	14	60	400
132S	2,4,6,8	216	140	-	89	38	M12	80	10	33	132	12	270	264	345	230	99	18	55	510
132M	4,6,8	216	178	-	89	38	M12	80	10	33.0	132	12	270	264	345	230	99	18	55	510
160M	2,4,6,8	254	210	-	108	42	M16	110	12	37	160	15	320	320	435	304	149	20	65	655
160L	2,4,6,8	254	254	-	108	42	M16	110	12	37	160	15	320	320	435	304	149	20	65	655
180M	2,4	279	241	-	121	48	M16	110	14	42.5	180	15	355	360	465	349	161	22	70	720
180L	4,6,8	279	279	-	121	48	M16	110	14	42.5	180	15	355	360	465	349	161	22	70	720
200L	2,4,6,8	318	305	-	133	55	M20	110	16	49	200	19	395	400	525	375	186	25	70	780
225S	4,8	356	286	-	149	60	M20	140	18	53.0	225	18.5	435	450	570	375	189	28	75	820
225M	2	356	311	-	149	55	M20	110	16	49	225	18.5	435	450	570	400	189	28	75	815
225M	4,6,8	356	311	-	149	60	M20	140	18	53.0	225	18.5	435	450	570	400	189	28	75	845
250M	2	406	349	-	168	60	M20	140	18	53	250	24	490	500	635	450	207	30	80	920
250M	4,6,8	406	349	-	168	65	M20	140	18	58.0	250	24	490	500	635	450	207	30	80	920
280S	2	457	368	-	190	65	M20	140	18	58	280	24	550	560	698	485	215.5	35	85	980
280S	4,6,8	457	368	-	190	75	M20	140	20	67.5	280	24	550	560	698	485	215.5	35	85	980
280M	2	457	419	-	190	65	M20	140	18	58	280	24	550	560	698	536	207	35	85	1032
280M	4,6,8	457	419	-	190	75	M20	140	20	67.5	280	24	550	560	698	536	207	35	85	1032
315S	2	508	406	-	216	65	M20	140	18	58	315	28	630	630	885	570	257	45	120	1200
315S	4,6,8	508	406	-	216	80	M20	170	22	71.0	315	28	630	630	885	570	257	45	120	1235
315M	2	508	457	-	216	65	M20	140	18	58	315	28	630	630	885	680	257	45	120	1295
315M	4,6	508	457	-	216	80	M20	170	22	71.0	315	28	630	630	885	680	257	45	120	1350
315L	2	508	508	-	216	65	M20	140	18	58	315	28	630	630	885	680	257	45	120	1295
315L	4,6,8	508	508	-	216	80	M20	170	22	71.0	315	28	630	630	885	680	257	45	120	1345
355M	2	610	560	630	254	75	M24	140	20	67.5	355	35	730	710	1065	760	272	52	120	1495
355M	4,6,8	610	560	630	254	95	M24	170	25	86.0	355	35	730	710	1065	760	272	52	120	1525
355L	2	610	560	630	254	75	M24	140	20	67.5	355	35	730	710	1065	760	272	52	120	1495
355L	4,6,8	610	560	630	254	95	M24	170	25	86.0	355	35	730	710	1065	760	272	52	120	1525

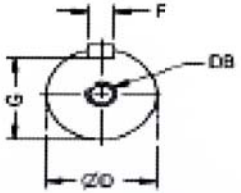
Note : Design, data and dimensions are subject to change without notification

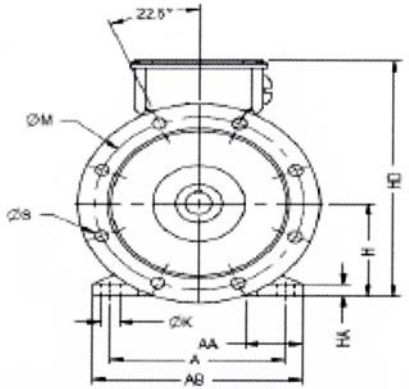
Foot & Flange Mounted Motor B35 (IM2001)



FRAME 80-200







FRAME 225-355

Frame	Poles	A	B1	B2	C	D	DB	E	F	G	H	K	LA	M	N	P	S	T	AB	AC (max)	HD (Max)	BB (Max)	LD	HA	AA	L (MAX)
112M	2,4,6	190	140	-	70	28	M10	60	8	24	112	12	12	215	180	250	15	4	230	224	300	180	88	14	60	400
132S	2,4,6,8	216	140	-	89	38	M12	80	10	33	132	12	14	265	230	300	15	4	270	264	345	230	99	18	55	510
132M	4,6,8	216	178	-	89	38	M12	80	10	33.0	132	12	14	265	230	300	15	4	270	264	345	230	99	18	55	510
160M	2,4,6,8	254	210	-	108	42	M16	110	12	37	160	15	15	300	250	350	19	5	320	320	435	304	149	20	65	655
160L	2,4,6,8	254	254	-	108	42	M16	110	12	37	160	15	15	300	250	350	19	5	320	320	435	304	149	20	65	655
180M	2,4	279	241	-	121	48	M16	110	14	42.5	180	15	15	300	250	350	19	5	355	360	465	349	161	22	70	720
180L	4,6,8	279	279	-	121	48	M16	110	14	42.5	180	15	15	300	250	350	19	5	355	360	465	349	161	22	70	720
200L	2,4,6,8	318	305	-	133	55	M20	110	16	49	200	19	17	350	300	400	19	5	395	400	525	375	186	25	70	780
225S	4,8	356	286	-	149	60	M20	140	18	53.0	225	18.5	20	400	350	450	18.5	5	435	450	570	375	189	28	75	820
225M	2	356	311	-	149	55	M20	110	16	49	225	18.5	20	400	350	450	18.5	5	435	450	570	400	189	28	75	815
225M	4,6,8	356	311	-	149	60	M20	140	18	53.0	225	18.5	20	400	350	450	18.5	5	435	450	570	400	189	28	75	845
250M	2	406	349	-	168	60	M20	140	18	53	250	24	22	500	450	550	19	5	490	500	635	450	207	30	80	920
250M	4,6,8	406	349	-	168	65	M20	140	18	58.0	250	24	22	500	450	550	19	5	490	500	635	450	207	30	80	920
280S	2	457	368	-	190	65	M20	140	18	58	280	24	22	500	450	550	19	5	550	560	698	485	215.5	35	85	980
280S	4,6,8	457	368	-	190	75	M20	140	20	67.5	280	24	22	500	450	550	19	5	550	560	698	485	215.5	35	85	980
280M	2	457	419	-	190	65	M20	140	18	58	280	24	22	500	450	550	19	5	550	560	698	536	207	35	85	1032
280M	4,6,8	457	419	-	190	75	M20	140	20	67.5	280	24	22	500	450	550	19	5	550	560	698	536	207	35	85	1032
315S	2	508	406	-	216	65	M20	140	18	58	315	28	22	600	550	660	24	5	630	630	885	570	257	45	120	1200
315S	4,6,8	508	406	-	216	80	M20	170	22	71.0	315	28	22	600	550	660	24	5	630	630	885	570	257	45	120	1235
315M	2	508	457	-	216	65	M20	140	18	58	315	28	25	740	680	800	24	6	630	630	885	680	257	45	120	1295
315M	4,6	508	457	-	216	80	M20	170	22	71.0	315	28	22	600	550	660	24	5	630	630	885	680	257	45	120	1350
315L	2	508	508	-	216	65	M20	140	18	58	315	28	22	600	550	660	24	5	630	630	885	680	257	45	120	1295
315L	4,6,8	508	508	-	216	80	M20	170	22	71.0	315	28	22	600	550	660	24	5	630	630	885	680	257	45	120	1345
355M	2	610	560	630	254	75	M24	140	20	67.5	355	35	25	740	680	800	24	6	730	710	1065	760	272	52	120	1495
355M	4,6,8	610	560	630	254	95	M24	170	25	86.0	355	35	25	740	680	800	24	6	730	710	1065	760	272	52	120	1525
355L	2	610	560	630	254	75	M24	140	20	67.5	355	35	25	740	680	800	24	6	730	710	1065	760	272	52	120	1495
355L	4,6,8	610	560	630	254	95	M24	170	25	86.0	355	35	25	740	680	800	24	6	730	710	1065	760	272	52	120	1525

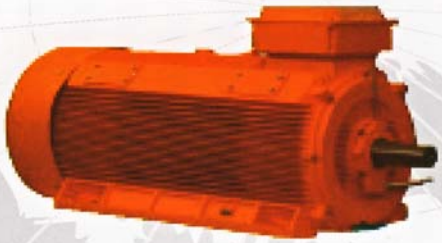
Note : Design, data and dimensions are subject to change without notification

Globetrotter IEC MOTORS

marathon® electric

Other Marathon Electric Motor Available

Low Voltage (690V, 1000V) and High Voltage (Up to 11kV)Motor - IEC / NEMA Frame



Mining Spec Motor
185Kw to 1200Kw

Explosion Proof
56-449T Frame

NEMA Frame Blue Chips Severe Duty

Up to 5000Kw, TEFC, CACA, CACW, Ball bearing or Sleeving (RENK Type)

ODP Motor up to 710KW

Up to 2000KW, TEFC

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