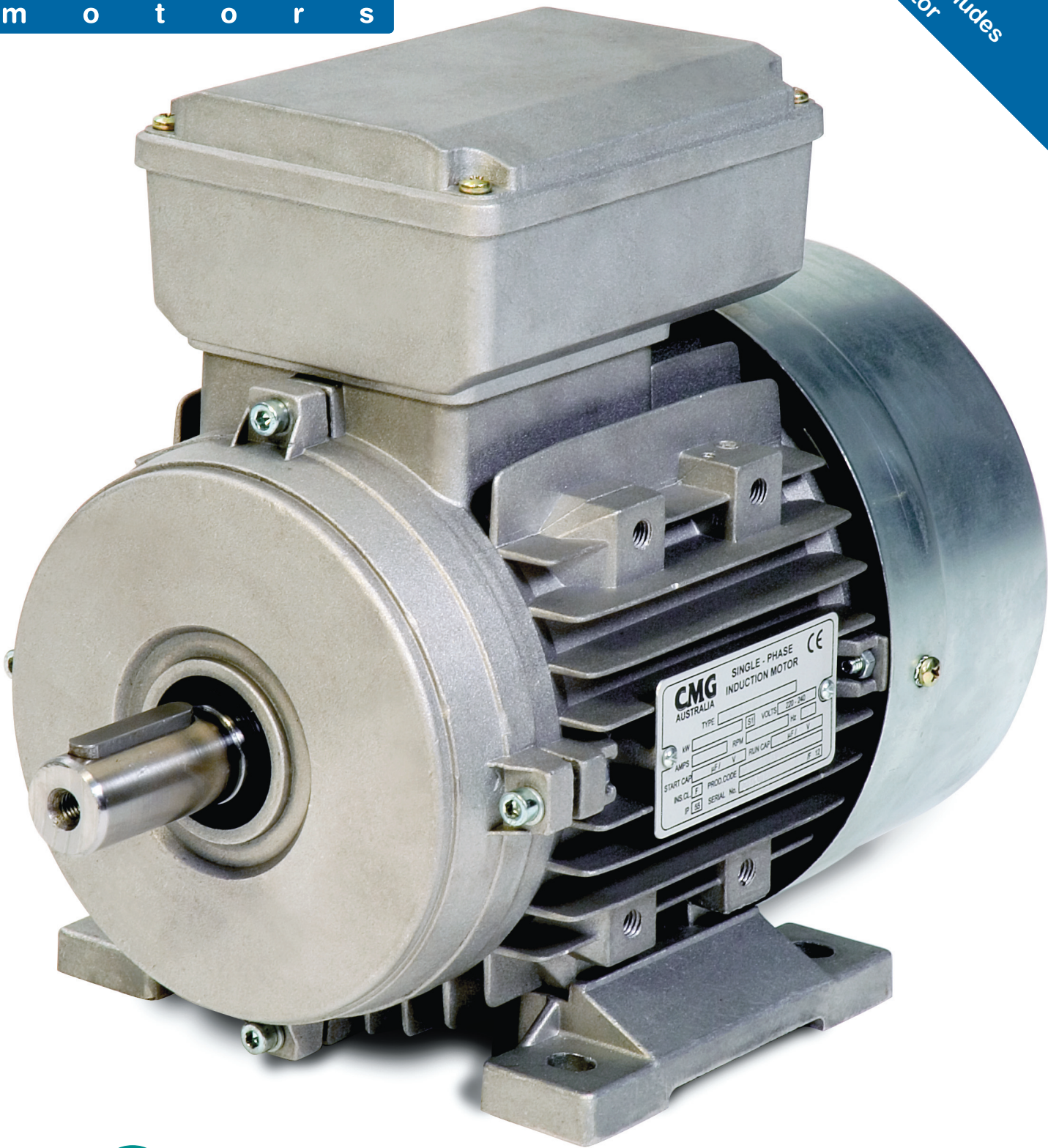


CMG

m o t o r s

3rd Edition
Extended range now includes
MTTB Brake Motor



60
Years

Proudly manufacturing since 1948

MT series motors

Cast aluminium single & three phase units



“Solutions, not just products.”

Specialists in Electric Motors, Geared Motors & AC Drives

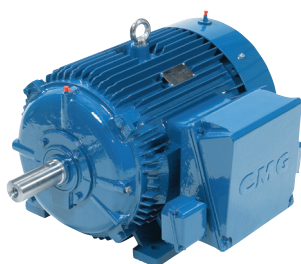
At CMG we offer customised packages to the most demanding industrial markets. Our success is built on a strong commitment to our customers’ needs and a willingness to find the best solution possible. We have been in business since 1948 so you can be confident our expertise and experience is second to none.

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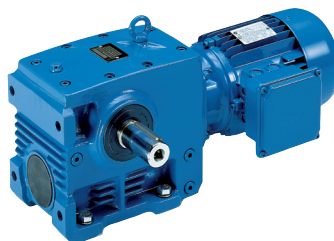
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➤ Electric Motors



➤ Geared Motors



➤ AC Drives

MT cast aluminium general purpose motors

Sizes 56 to 112, 0.06 to 3.7 kW, single & three phase

CMG's MT series are an ideal general purpose motor range in permanent split capacitor (MTS), cap start-cap run (MTC), three phase (MTT), and three phase brake (MTTB/MTTBHR) configurations.

Motor design

The motors are low weight cast aluminium and boast options which are unequalled by any other range of small frame electric motor on the market today.

Multi-mount feature

The standard MT motor is supplied with the terminal box top mounted, and has detachable feet. The unique multi-mount design allows the motor feet to be removed and the motor mounted from any of the eight mounting pads. This feature means that for axial flow fans there is no need for a motor mount in the fan case, which enables quicker assembly times, lower cost, and less restrictions to air flow. Alternatively, the MTS & MTT series both allow the feet to be relocated to either side, for a wall mounted motor or side mounted terminal box.

Standards and specifications

The main dimensions and rated outputs of the MT series generally conform to Australian Standard AS/NZS1359 (CENELEC kW-frame size allocation table) and International Standards IEC 60034 and IEC 60072.

Operating parameters

Standard MT series motors are designed with the following parameters:

- Continuous duty (S1)
- Single phase: 220-240 Volt 50Hz power supply
Three phase: 380-415 Volt 50Hz power supply
- Ambient temperatures up to 40°C
- Installation at altitudes up to 1000 metres

Performance data is based on these parameters and may need adjustment for different conditions.

F class insulation, B class temperature rise

MT motors have F class insulation and B class temperature rise, ensuring cool running of the motor.

Degree of protection

Level of enclosure protection for the MT series is IP55 (increased IP ratings available). Shafts are fitted with an oil seal as standard.

Air movement application

Low weight design and the standard drilled and tapped hole in the shaft makes the MT series ideally suited for all air movement applications.

Brake motors

MTTB brake motors are fail to safe design, as the brake will engage when power is interrupted. They are fitted with

a Lenze DC brake and half wave rectifier mounted in the terminal box enabling direct connection of the brake to the AC supply, and come standard with a manual hand release. They are available in all mounting arrangements.

Gearbox fitment

The MT series small frame and unpainted design makes it ideal for fitting to smaller aluminium gearboxes.

Finish

Standard surface finish is unpainted clean sandblasted aluminium. Paint coatings in any colour are available on request.

Bearings

Bearings fitted are deep groove ball type and are the same size both ends.

Motor frame	Bearing Size
56	6201-2RS
63	6201-2RS
71	6202-2RS
80	6204-2RS
90	6205-2RS
100	6206-2RS
112	6206-2RS

Top mounted terminal box

The standard position of the terminal box is on top of the motor, allowing for ease of connection to supply. The terminal box is separate from the body of the motor allowing it to be rotated for additional convenience when connecting to supply.

Product code specification

When placing an order the motor product code should be specified. The product code of the motor is composed in accordance with the following example:

M	2	4	0	0	1	5	0	3	M	T	S	1
1	2	3	4-8					9	10-12		13-15	

Position 1
M = metric frame size

Position 2
Phase
2 = PSC or
Cap start-cap run
3 = Three phase

Position 3
Number of poles
2 = 2 poles
4 = 4 poles

Positions 4 to 8
Rated power output
(kW x 100)

Position 9
Mounting arrangements
1 = V1 3 = B3
4 = B3/B5 5 = B5
6 = B3/B14A 7 = B14A
0 = B0 multi-mount

Positions 10 to 12
Series
MTS = MT PSC series
MTC = MT CS/CR series
MTT = Three phase

Positions 13 to 15
Variation suffix
Blank = no thermal overload
1 = in winding auto reset
thermal overload
2 = manual reset current
overload
3 = auto reset current
overload
B = Three phase brake
motor
BHR = Three phase brake
motor with hand
release (standard)

Performance data

MTS series, single phase PSC connection, 220-240V 50Hz
IP55, F class insulation , B class temperature rise

kW	Motor frame	Speed [r/min]	230V 50Hz							220V 50Hz		240V 50Hz		Weight of foot mount motor [kg]	Capacitor Run Cap. [μ F/volts]
			Efficiency [%]	Power factor	Current		Torque			Current I_N [A]	Current I_N [A]				
					Full load I_N [A]	Locked rotor I_L/I_N	Full load T_N [Nm]	Locked rotor T_L/T_N	Break down T_B/T_N						
3000 r/min = 2 poles															
0.09	56A -9	2760	54	0.92	0.79	3.8	0.3	0.65	1.6	0.83	0.76	2.9	4/450		
0.12	56B -9	2770	58	0.92	0.98	4.1	0.4	0.65	1.6	1.00	0.94	3.2	6/450		
0.18	63A -11	2780	62	0.95	1.33	3.8	0.6	0.60	1.7	1.40	1.30	4.0	10/450		
0.25	63B -11	2780	65	0.95	1.76	4.0	0.9	0.60	1.7	1.80	1.70	4.5	12/450		
0.37	71A -14	2800	67	0.95	2.5	4.0	1.3	0.60	1.7	2.6	2.4	5.1	16/450		
0.55	71B -14	2810	70	0.98	3.5	4.3	1.9	0.55	1.7	3.6	3.3	7.2	24/450		
0.75	80A -19	2810	72	0.98	4.6	4.3	2.5	0.35	1.7	4.8	4.4	9.6	25/450		
1.1	80B -19	2820	75	0.98	6.5	4.3	3.7	0.33	1.7	6.8	6.2	11.0	35/450		
1.5	90S -24	2820	76	0.98	8.8	4.6	5.1	0.30	1.8	8.8	8.1	14.0	45/450		
2.2	90L -24	2820	77	0.98	12.7	4.7	7.5	0.30	1.8	13.3	12.2	16.5	60/450		
1500 r/min = 4 poles															
0.06	56A -9	1360	48	0.92	0.59	4.2	0.4	0.75	1.6	0.62	0.57	3.5	4/450		
0.09	56B -9	1370	51	0.92	0.83	3.6	0.6	0.75	1.6	0.87	0.80	3.8	6/450		
0.12	63A -11	1380	55	0.92	1.03	3.4	0.8	0.65	1.6	1.10	0.99	4.0	10/450		
0.18	63B -11	1390	57	0.92	1.49	3.7	1.2	0.65	1.5	1.60	1.40	4.6	10/450		
0.25	71A -14	1400	61	0.94	1.90	4.2	1.7	0.50	1.5	2.0	1.80	5.7	14/450		
0.37	71B -14	1400	62	0.94	2.8	3.6	2.5	0.50	1.5	2.6	2.4	6.7	16/450		
0.55	80A -19	1400	64	0.95	3.9	3.8	3.8	0.35	1.7	4.1	3.8	8.2	20/450		
0.75	80B -19	1410	68	0.95	5.1	4.0	5.1	0.33	1.7	5.3	4.8	9.0	25/450		
1.1	90S -24	1410	71	0.98	6.9	4.4	7.5	0.33	1.8	7.2	6.6	14.5	40/450		
1.5	90L -24	1420	73	0.98	9.1	4.4	10.1	0.30	1.8	9.5	8.7	16.2	45/450		

This data is provided for guidance only, guaranteed only when confirmed by CMG.

MTS motors up to 0.75kW are normally supplied as MTS1 series (fitted with in-winding auto reset thermal overload).

Performance data

MTC series, single phase CS/CR connection, 220-240V 50Hz

IP55, F class insulation, B class temperature rise

kW	Motor frame	Speed [r/min]	230V 50Hz				220V 50Hz			240V 50Hz		Weight of foot mount motor [kg]	Capacitor	
			Efficiency [%]	Power factor	Current		Torque			Current I _N [A]	Current I _N [A]		Run Cap. [μF/volts]	Start Cap. [μF/volts]
					Full load	Full load	Full load I _N [A]	Locked rotor I _L /I _N	Full load T _N [Nm]					

3000 r/min = 2 poles

0.37	71A	-14	2780	70	0.95	2.4	6.2	1.3	2.5	1.7	2.5	2.3	5.3	12/450	75/250
0.55	71B	-14	2790	73	0.95	3.5	5.8	1.9	2.5	1.7	3.6	3.3	7.4	16/450	100/250
0.75	80A	-19	2800	74	0.97	4.5	6.6	2.6	2.5	1.7	4.7	4.4	9.5	20/450	100/250
1.1	80B	-19	2810	76	0.97	6.5	6.2	3.7	2.5	1.7	6.7	6.2	11.2	30/450	150/250
1.5	90S	-24	2810	78	0.97	8.6	6.4	5.1	2.5	1.8	9.0	8.3	14.0	40/450	200/300
2.2	90L	-24	2810	79	0.97	12.5	6.0	7.5	2.2	1.8	13.1	12.0	17.0	50/450	250/300
3	100L	-28	2830	80	0.98	16.6	5.7	10.1	2.2	2.0	17.4	15.9	25	60/450	350/300

1500 r/min = 4 poles

0.18	63A	-11	1320	55	0.99	1.42	4.7	1.3	2.5	1.5	1.48	1.41	4.9	12/450	40/450
0.25	71A	-14	1380	61	0.92	1.94	5.2	1.7	2.5	1.6	2.0	1.90	5.9	14/450	50/250
0.37	71B	-14	1380	63	0.92	2.8	5.4	2.6	2.5	1.5	2.9	2.7	6.9	16/450	75/250
0.55	80A	-19	1400	67	0.94	3.8	5.3	3.8	2.5	1.7	4.0	3.6	9.6	20/450	100/250
0.75	80B	-19	1410	73	0.94	4.8	6.3	5.1	2.5	1.7	4.9	4.5	10.8	25/450	120/250
1.1	90S	-24	1410	75	0.95	6.8	5.9	7.5	2.2	1.8	7.1	6.5	13.5	35/450	150/250
1.5	90L	-24	1420	76	0.95	9.0	6.1	10.1	2.2	1.8	9.4	8.7	16.5	40/450	200/300
2.2	100LA-28	-28	1430	78	0.97	12.6	6.0	14.7	2.2	1.8	13.2	12.1	24	50/450	350/300
3	100LB-28	-28	1440	79	0.97	17.0	5.6	19.9	2.2	1.8	17.8	16.3	30	60/450	500/300
3.7	112M	-28	1440	80	0.97	20.7	5.8	24.5	2.0	2.0	21.6	19.8	36	60/450	500/300

MTTB brake series, three phase connection, 380-415V 50Hz

IP55, F class insulation, B class temperature rise

kW	Motor frame	Speed [r/min]	400V 50Hz				380V 50Hz			415V 50Hz		Weight of foot mount motor [kg]	Brake torque [Nm]
			Efficiency [%]	Power factor	Current		Torque			Current I _N [A]	Current I _N [A]		
					Full load	Full load	Full load I _N [A]	Locked rotor I _L /I _N	Full load T _N [Nm]				

1500 r/min = 4 poles

0.18	63B	-11	1350	59	0.65	0.68	6	1.3	2.2	2.4	0.71	0.65	4.3	4
0.37	71B	-14	1370	65	0.74	1.11	6	2.6	2.2	2.4	1.17	1.07	6.2	4
0.55	80A	-19	1370	67	0.75	1.58	6	3.8	2.2	2.4	1.66	1.52	9.0	8
0.72	80B	-19	1380	72	0.78	1.93	6	5.2	2.2	2.4	2.03	1.86	10.0	8

1000 r/min = 6 poles

0.37	71B	-14	890	61	0.69	1.27	4	4	2.1	2.3	1.34	1.22	6	4
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This data is provided for guidance only, guaranteed only when confirmed by CMG

This data also applies to MTTBHR (hand release) brake motors.

Performance data

MTT series, three phase connection, 380-415V 50Hz

IP55, F class insulation, B class temperature rise

kW	Motor frame	Speed [r/min]	400V 50Hz							380V 50Hz		415V 50Hz		Weight of foot mount motor [kg]
			Efficiency [%]	Power factor	Current		Torque			Current [A]	Current [A]			
					Full load	Locked rotor	Full load	Locked rotor	Break down					
				Full load	Locked rotor	Full load	Locked rotor	Break down	Full load	Full load				
				I_N [A]	I_L/I_N	T_N [Nm]	T_L/T_N	T_B/T_N	I_N [A]	I_N [A]				
3000 r/min = 2 poles														
0.09	56A -9	2670	57	0.65	0.35	6	0.3	2.2	2.4	0.37	0.34	2.8		
0.12	56B -9	2730	62	0.69	0.40	6	0.4	2.2	2.4	0.43	0.39	3.2		
0.18	63A -11	2710	63	0.75	0.55	6	0.6	2.2	2.4	0.58	0.53	4.0		
0.25	63B -11	2710	65	0.78	0.71	6	0.9	2.2	2.4	0.75	0.69	4.4		
0.37	71A -14	2730	70	0.79	0.97	6	1.3	2.2	2.4	1.02	0.93	5.6		
0.55	71B -14	2760	71	0.79	1.42	6	1.9	2.2	2.4	1.49	1.36	6.1		
0.72	80A -19	2770	73	0.84	1.77	6	2.6	2.2	2.4	1.86	1.70	9.1		
1500 r/min = 4 poles														
0.06	56A -9	1320	49	0.59	0.30	6	0.4	2.3	2.4	0.32	0.29	3.0		
0.09	56B -9	1320	50	0.61	0.43	6	0.7	2.3	2.4	0.45	0.41	3.3		
0.12	63A -11	1350	57	0.64	0.47	6	0.9	2.2	2.4	0.50	0.46	3.9		
0.18	63B -11	1350	59	0.65	0.68	6	1.3	2.2	2.4	0.71	0.65	4.3		
0.25	71A -14	1350	60	0.72	0.84	6	1.8	2.2	2.4	0.88	0.81	5.4		
0.37	71B -14	1370	65	0.74	1.11	6	2.6	2.2	2.4	1.17	1.07	6.2		
0.55	80A -19	1370	67	0.75	1.58	6	3.8	2.2	2.4	1.66	1.52	9.0		
0.72	80B -19	1380	72	0.78	1.93	6	5.2	2.2	2.4	2.03	1.86	10.0		

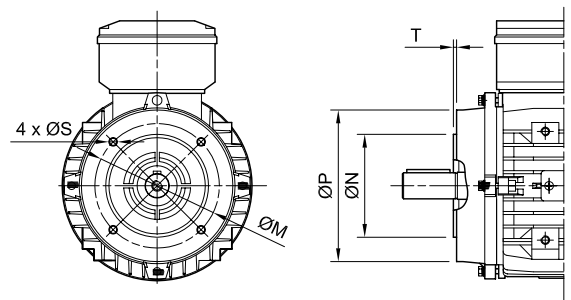
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Dimensional drawings

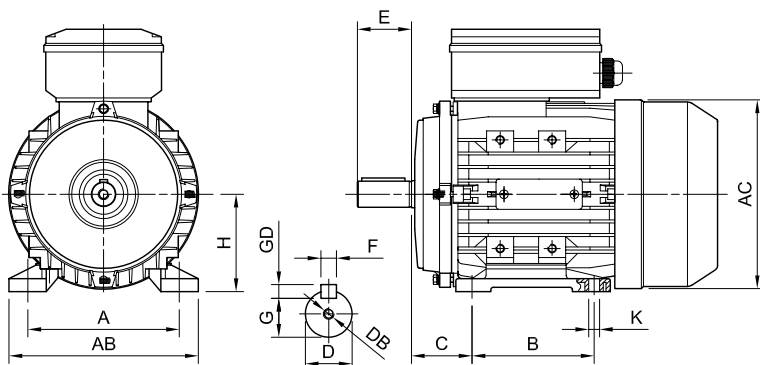
MTS available in frame sizes 56A to 90L
MTC available in frame sizes 63A to 112M
MTT available in frame sizes 56A to 80B
MTTBH available in frame sizes 63B to 80B

* MTS terminal box shown.

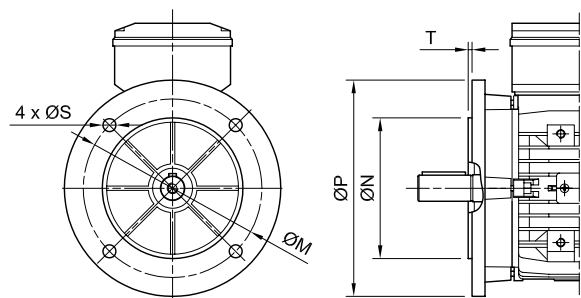
Face mount B14 (IM3601)*



Foot mount B3 (IM1001)*



Flange mount B5 (IM3001)*



Dimensional drawings

Variations between ranges

Motor frame		Foot				L	Flange / Face	HB
		B33	HD	KK	L33			
MTS								
56	-9	85	156	-	107	192	100	
63	-11	95	180	M20	118	212	117	
71	-14	95	194	M20	118	240	123	
80	-19	112	222	M20	141	290	142	
90S	-24	112	240	M20	141	310	150	
90L	-24	112	240	M20	141	335	150	
MTC								
63	-11	144	174	M16	104	212	111	
71	-14	144	188	M20	104	255	117	
80	-19	176	222	M20	150	290	142	
90S	-24	176	238	M20	150	335	148	
90L	-24	176	238	M20	150	365	148	
100L	-28	176	262	M20	150	427	162	
112M	-28	193	286	M25	150	453	174	
MTT								
56	-9	88	156	M16	88	192	100	
63	-11	94	173	M16	94	212	110	
71	-14	94	188	M20	94	240	117	
80	-19	105	217	M20	105	290	137	
MTTB								
63	-11	94	173	M16	94	252	110	
71	-14	94	188	M20	94	297	117	
80	-19	105	217	M20	105	332	137	

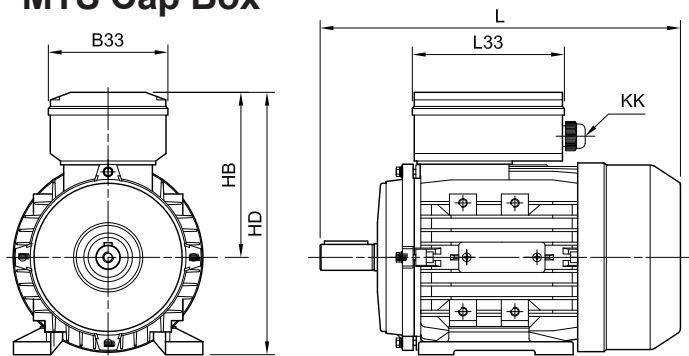
Face mount B14A (IM3601)

Motor frame		ØM	ØN	ØP	S	T
56	-9	65	50	80	M5	2.5
63	-11	75	60	90	M5	2.5
71	-14	85	70	105	M6	2.5
80	-19	100	80	120	M6	3.0
90S	-24	115	95	140	M8	3.0
90L	-24	115	95	140	M8	3.0
100L	-28	130	110	160	M8	3.5
112M	-28	130	110	160	M8	3.5

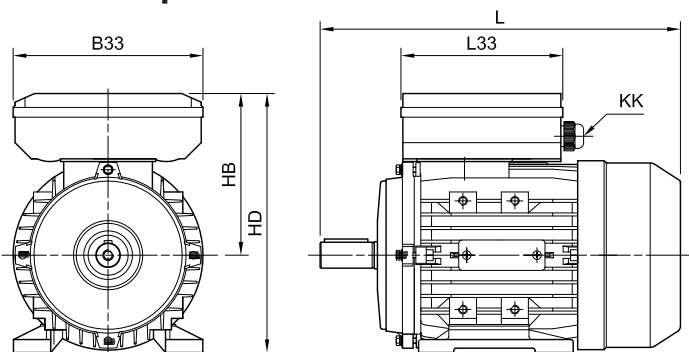
Foot mount B3 (IM1001)

Motor frame		A	AB	AC	B	C	D	DB	E	F	GD	G	H	K
56	-9	90	110	120	71	36	9	M3	20	3	3	7.2	56	5.8X8.8
63	-11	100	120	130	80	40	11	M4	23	4	4	8.5	63	7X10
71	-14	112	132	145	90	45	14	M5	30	5	5	11	71	7X10
80	-19	125	160	165	100	50	19	M6	40	6	6	15.5	80	10X13
90S	-24	140	175	185	100	56	24	M8	50	8	7	20	90	10X13
90L	-24	140	175	185	125	56	24	M8	50	8	7	20	90	10X13
100L	-28	160	196	205	140	63	28	M10	60	8	7	24	100	12X16
112M	-28	190	220	230	140	70	28	M10	60	8	7	24	112	12X16

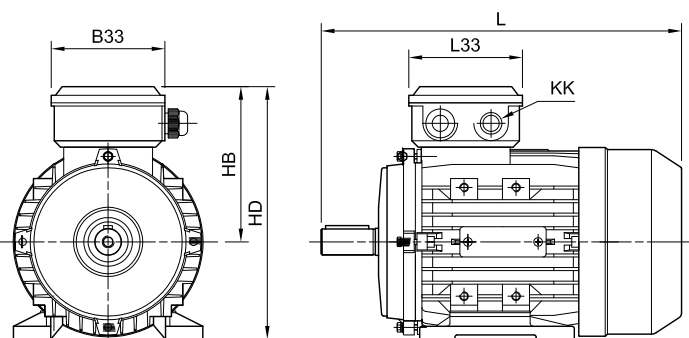
MTS Cap Box



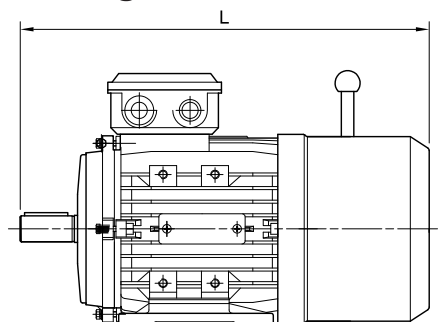
MTC Cap Box



MTT Terminal Box



MTTB Brake Motor Length



Flange mount B5 (IM3001)

Motor frame		ØM	ØN	ØP	ØS	T
56	-9	100	80	120	7	3.0
63	-11	115	95	140	10	3.0
71	-14	130	110	160	10	3.5
80	-19	165	130	200	12	3.5
90S	-24	165	130	200	12	3.5
90L	-24	165	130	200	12	3.5
100L	-28	215	180	250	15	4.0
112M	-28	215	180	250	15	4.0

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