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REGAL

MT SERIES
CAST ALUMINIUM SINGLE & THREE PHASE
EXTENDED RANGE NOW INCLUDES
MTTB BRAKE MOTOR

MOTORS

CMG

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We convert power into motion to make the world run more efficiently

REGAL

industrial motors & generators | motors starters & control | single phase & dc motors | gearboxes | couplings, brakes & clutches | insulators & conductors | air systems | die casting | rewind, service & repair

Facts about Regal

100 YEARS RUNNING STRONG

Our Heritage

- Established in Wisconsin, USA in 1955. Officially listed on the NY Stock Exchange in 2005.
- Born in 1913, Marathon have gained over 100 years experience in design and manufacture of electric motors and generators.

  Marathon has built their legacy on innovation combining magnetics and motors into a single leading technology. Their use of Magnology™ has led to the motor industry's first axial & radial flux motors used in pumping applications.
- Unico has been providing innovative motion control solutions since 1967. With operations in 10 countries, Unico drives incorporate application specific features & functions not found in general purpose drives.

Product Range

Broad product range covering the complete offering from motors, motor control & drives, gearboxes, brakes and couplings through to winding wire, insulation material, cables and varnishes. A one stop shop for complete electro mechanical, power transmission and speed control solutions.

Local Expertise

Our Local Presence

- National company with 8 branches Australia wide
- 5 modifications centres; VIC, NSW, QLD, SA & WA
- Local engineering & R&D support teams
- Providing local expertise, support and product customisation to you and your customers

NATIONAL SALES
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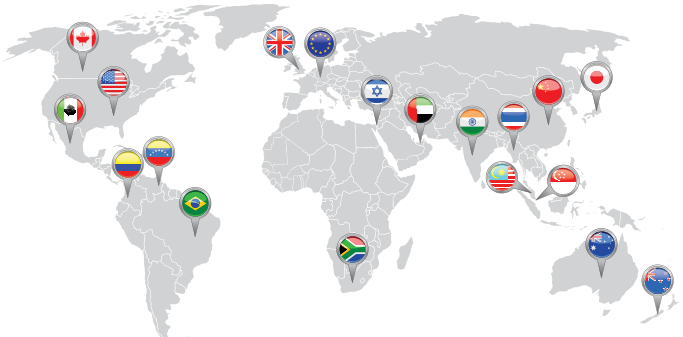


Worldwide Presence

The ability to meet our customers' needs around the world.

- 25,000 employees
- 63 manufacturing locations
- 16 design centres
- All accessible to our 'Regal' customers.

Our Regal brands:

marathon™ Motors | marathon™ Generators | marathon™ Drives | HUBCITY

CMG | DURST | GROVE GEAR

FASCO | FOOTE-JONES | MASTERGEAR WORLDWIDE

UNICO

MT cast aluminium general purpose motors
Sizes 56 to 112, 0.06 to 3.7 kW, single & three phase

Regal Australia'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

			230V 50Hz							**220V 50Hz**	**240V 50Hz**		
			Efficiency	Power factor	Current		Torque			Current	Current	Weight of foot mount motor	Capacitor
kW	Motor frame	Speed [r/min]	Full load [%]	Full load	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	Full load I_N [A]	Full load I_N [A]	[kg]	Run Cap. [µF/volts]
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 Regal Australia.
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 Efficiency Full load [%]	Power factor Full load	Current Full load I_N [A]	Current Locked rotor I_L/I_N	Torque Full load T_N [Nm]	Torque Locked rotor T_L/T_N	Torque Break down T_B/T_N	220V 50Hz Current Full load I_N [A]	240V 50Hz Current Full load I_N [A]	Weight of foot mount motor [kg]	Capacitor Run Cap. [µF/volts]	Capacitor Start Cap. [µF/volts]
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	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	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 Efficiency Full load [%]	Power factor Full load	Current Full load I_N [A]	Current Locked rotor I_L/I_N	Torque Full load T_N [Nm]	Torque Locked rotor T_L/T_N	Torque Break down T_B/T_N	380V 50Hz Current Full load I_N [A]	415V 50Hz Current Full load I_N [A]	Weight of foot mount motor [kg]	Brake torque [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

This data is provided for guidance only, guaranteed only when confirmed by Regal Australia
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

			400V 50Hz							380V 50Hz	415V 50Hz	
			Efficiency	Power factor	Current		Torque			Current	Current	Weight of foot mount motor
kW	Motor frame	Speed [r/min]	Full load [%]	Full load	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	Full load I_N [A]	Full load I_N [A]	[kg]
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

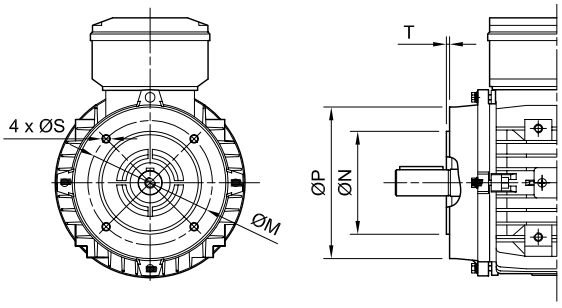
This data is provided for guidance only, guaranteed only when confirmed by Regal Australia.

Dimensional drawings

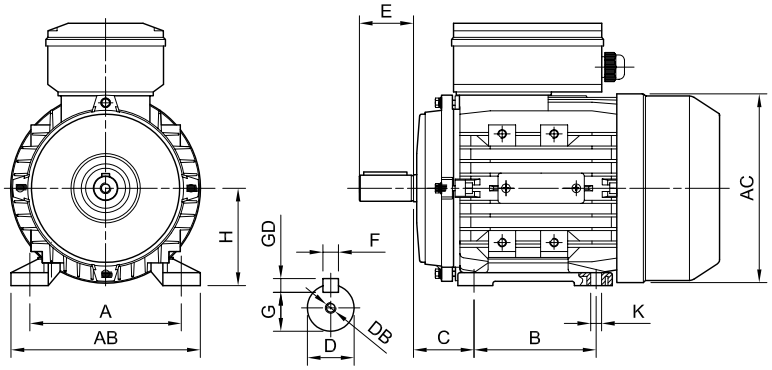
MTS available in frame sizes 56A to 90L
MTC available in frame sizes 63A to 112M
MTT available in frame sizes 56A to 80B
MTTBH available in frame sizes 63B to 80B

* MTS terminal box shown.

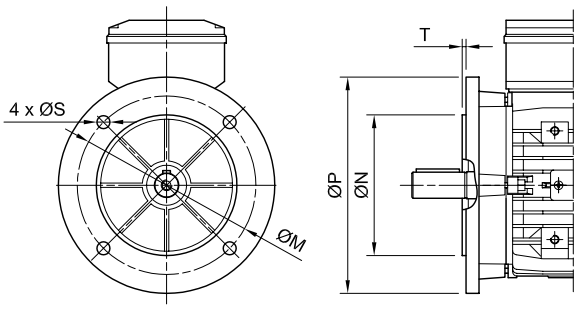
Face mount B14 (IM3601)*



Foot mount B3 (IM1001)*

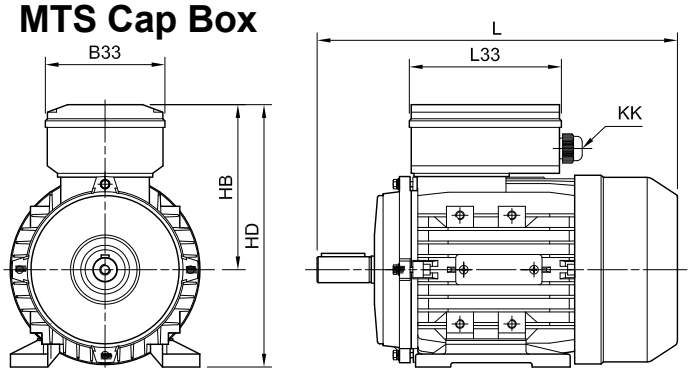


Flange mount B5 (IM3001)*

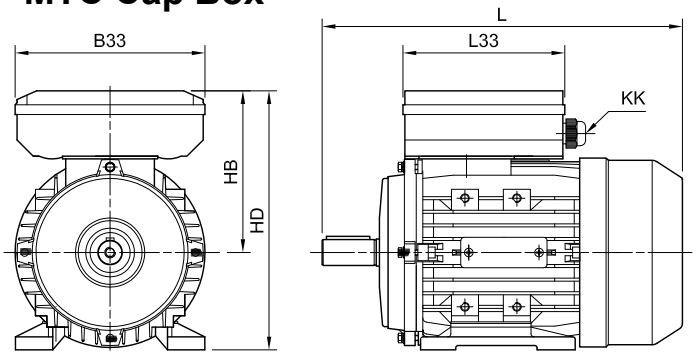


Dimensional drawings

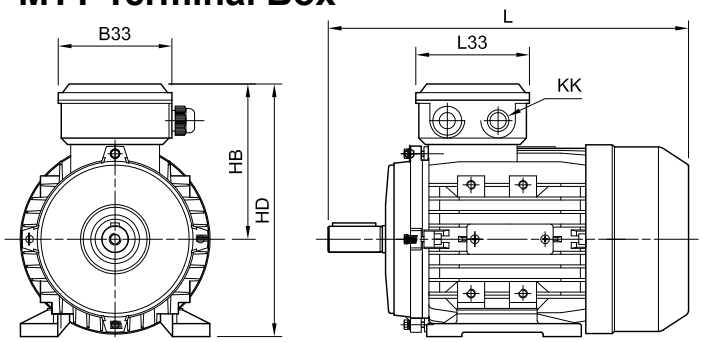
MTS Cap Box



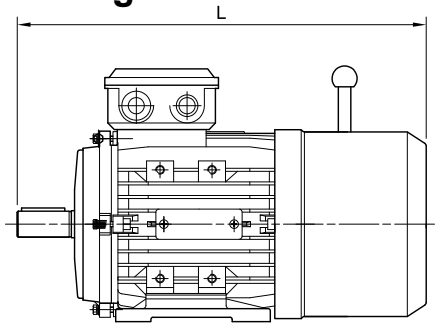
MTC Cap Box



MTT Terminal Box



MTTB Brake Motor Length



Variances between ranges

		Foot					Flange / Face
Motor frame		B33	HD	KK	L33	L	HB
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

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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