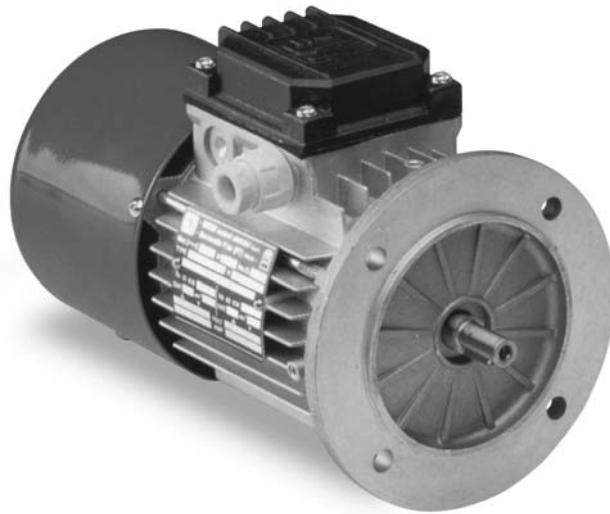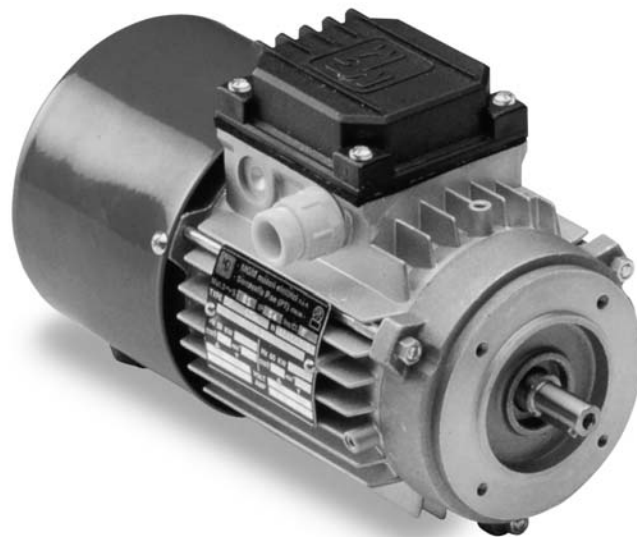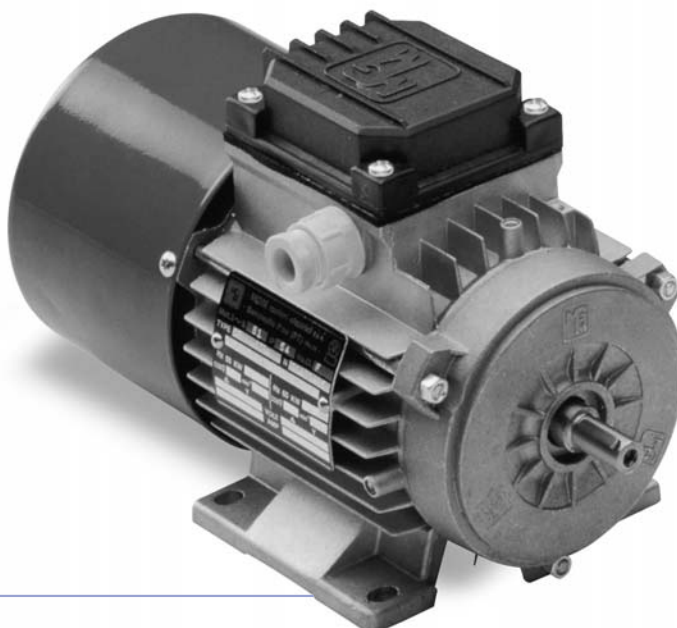**B5**

B14

B3

BM series consists of three phase, asynchronous brake motors totally enclosed fan cooled. BM series range starts from 56 up to 160 frame size. The motor brakes in case of power supply failure. The brake torque remains the same in both directions of rotation and the motor brakes without shaft axial sliding. As standard the brake is DC voltage supply with a built-in rectifier fitted inside the terminal box. The rectifier is provided with over-voltage and radio frequencies emission protection devices. Two different types of rectifier wiring can be chosen according to two different brake intervention time.

BM series is designed in order to have a braking action as quiet as possible. BM series motors tolerate a high overloading rate and are capable to withstand overheating so to guarantee best reliability also under tough operating conditions.

All MGM motors have been designed to be controlled by inverters. The motor winding insulation is class F, while class H is available on request. Motor construction type is totally enclosed externally cooled and IP54 enclosure (IP55 and IP56 available on request).

Motors up to 132 frame size are fitted as standard with a hexagonal hole on the shaft at non drive end to allow manual rotation, even if power is off. On request, BM series motors can be provided with side manual brake release lever. The brake disc lining material is asbestos free and the lining mixture is formulated to have a high friction coefficient and long lasting.

BM series motor frame is made of die cast, light metal on motors up to 132 size and the terminal board box, provided with cable glands and plugs, is positioned 180° above the motor support feet. The frame is made of cast iron starting from 160 frame size and the terminal box is located on the right side (drive-end view). Shields and flanges are made of aluminium on motors up to 90 frame size, and of cast iron on motors of 100 frame size and above. On IM B3 mounting (foot mounted) feet are frame integrated (they are not simply attached to the frame) as standard and it makes the motor very sturdy. This feature is very important for those applications where the motor is much stressed during the starts and stops. BM series main features are the low braking noise, gradual acceleration during the motor start and stop and reduced overall dimensions.
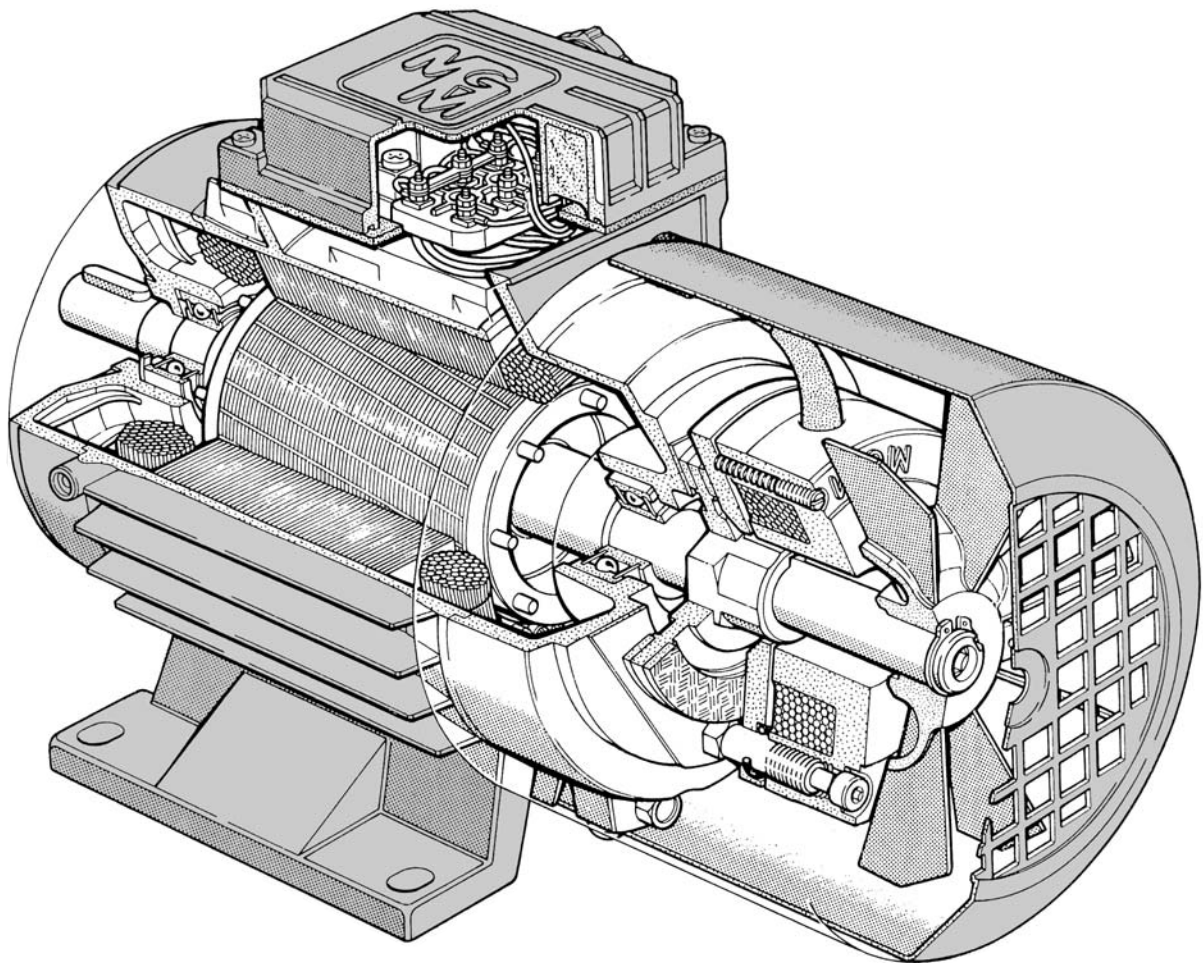
BM series brake group

General description

BM series motors are equipped with DC brake coil. DC brake coil is supplied through a rectifier located in the terminal box (standard voltage supply is 230V 50/60 Hz). The rectifier is provided with over-voltage and radio frequencies emission protection devices. The brake torque remains the same in both directions of rotation and the motor brakes without shaft axial sliding. Brake torque can be set loosening or tightening the adjustable springs (78) where available or removing the central springs or replacing the fixed ones.
Never set the brake torque to a higher value than the one indicated on the motor nameplate.
BM series motors are fitted as a standard with a hexagonal hole on the shaft at non drive end to allow manual rotation. On request BM series motors can be provided with brake release return lever located on the motor side.

Air gap adjustment

The air gap (60), that is the distance between the two magnetic cores, the brake coil (75) and brake moving element (74), must stay within the value expressed in the chart below. It is advisable to check periodically the air gap because it increases as a consequence of the brake disc wear. In order to restore the air gap within the proper value release the connecting screws (77), move the brake coil (75) towards the brake moving element (74) operating on the fixing screws (79). Once this operation has been settled be sure to tighten clockwise the connecting screws (77) so to fasten again the brake coil.
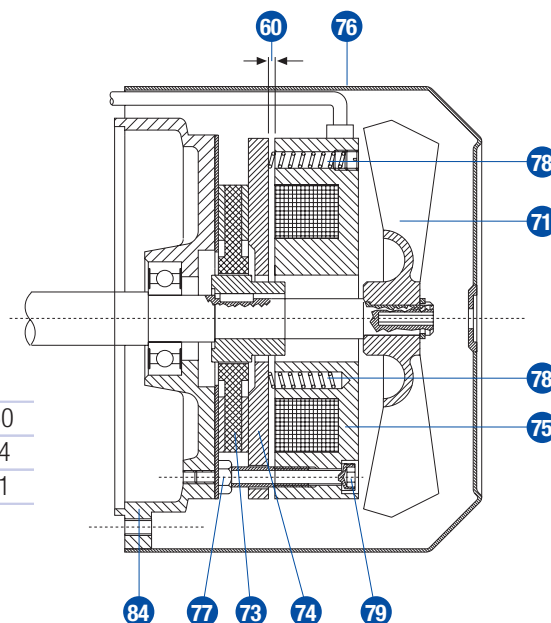
Frame Size	63/71	80	90	100	112	132	160
Min Air Gap[mm]	0,2	0,2	0,3	0,3	0,3	0,4	0,4
Max Air Gap[mm]	0,6	0,7	0,8	0,9	1,0	1,1	1,1

Permissible start frequency with load

The technical data tables provide the ideal no-load start frequency (Z_0). The permissible start frequency when an external load is applied (Z_{load}) can be calculated as follows:

$$Z_{load} = Z_0 \cdot K \cdot R$$
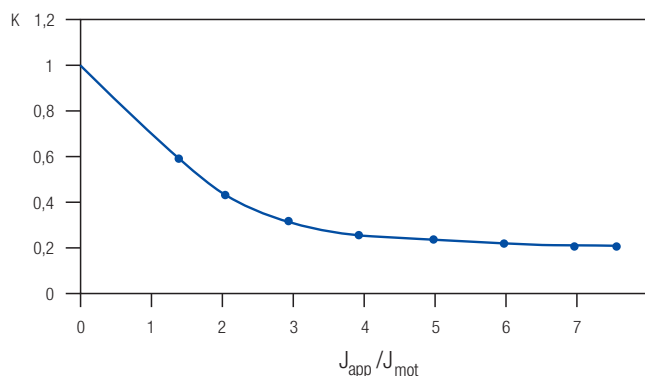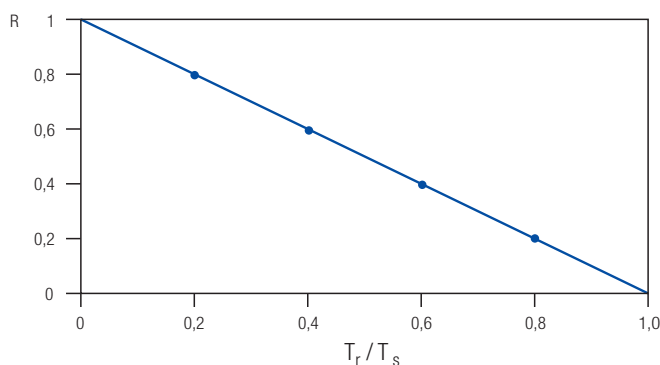
where "Z_0" is the table-value for the selected motor and "K" and "R" are factors determined by the curves on the side; the factor "K" refers to the calculated ratio between the moment of inertia of the applied load (J_{app}) and that of the motor (J_{mot}) while the factor "R" is the calculated ratio between the resisting torque (T_r) and the starting torque (T_s). This calculation gives an approximative indication only. If the required starting frequency is close to Z_{load}, it is advisable to use a motor equipped with thermal protectors. It is necessary to check the maximum energy dissipation limit of the brake group and the maximum motor RPM on those application where high moment of inertia is involved. Please contact MGM technical staff for additional information.

BM series brake motors can be connect as diagram A or B according to the needed braking time. MGM motors are always provided with DC brake coil connected as diagram A. The DC brake coil has to be connected according to diagram B in order to have a quicker brake action. Here below brake intervention times and brake release time are provided.

$\sim$ White
$\sim$ White
$+$ Red
Grey or Brown
$-$ Black

Brake coil

Diagram A

$\sim$ White
$\sim$ White
$+$ Red
Grey or Brown
$-$ Black

Brake coil
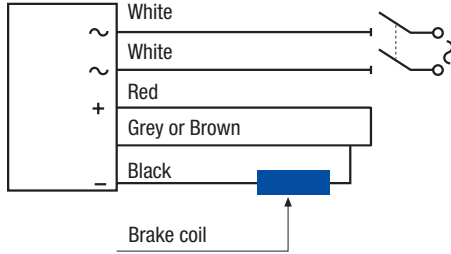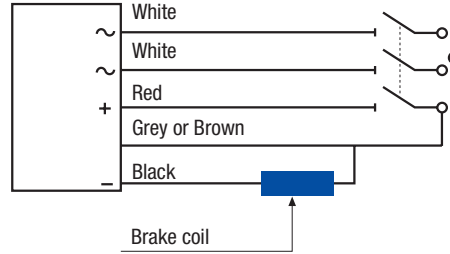
Diagram B

The chart here below describes the trend of the braking torque as a function of time, during the start (on the left) and stop (on the right). The table below also show times for each type of motor and the values of Er (MJ) to calculate the number of braking actions between two consecutive air gap adjustment. (See page 33).
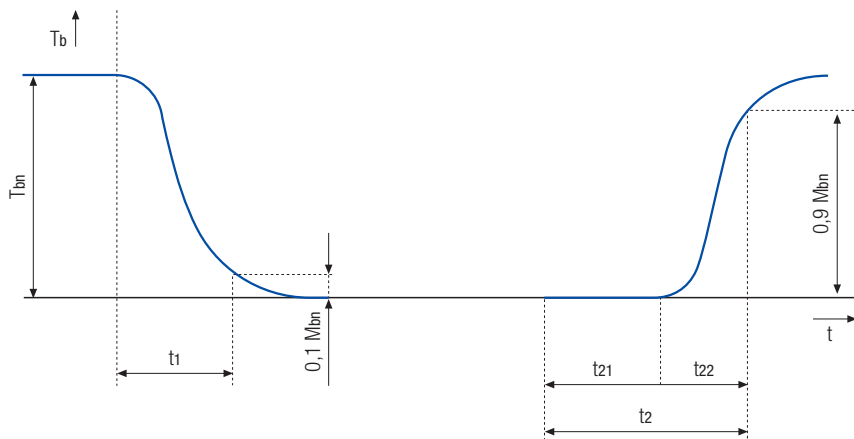
T_b Brake Torque
T_{bn} Nominal Brake Torque
t_1 Switch-on time
t_{21} Delay Time
t_{22} Rise Time
t_2 Reaction Time

Frame size	t_1 (ms)	t_{21} quick (ms)	t_{22} quick (ms)	t_2 quick (ms)	t_{21} standard (ms)	t_{22} standard (ms)	t_2 standard (ms)	E_{rBM} (MJ)
56	30	10	15	25	35	25	60	7*
63	35	10	15	25	40	30	70	15
71	35	10	15	25	40	30	70	15
80	45	15	30	45	50	45	95	23
90	60	20	40	60	80	60	140	29
100	80	25	50	75	100	75	175	33
112	120	30	60	90	120	90	210	36
132	160	40	80	120	160	120	280	39
160	200	50	100	150	200	150	350	44

*Note: The air gap can't be restored on BM56 motors. The brake disc have to be replaced when the air gap exceed the stated value.

The braking time t_f (s) can be calculated as follows:

$$t_f = \frac{J_{tot} \cdot n}{9.55\,(T_b \pm T_{load})} + \frac{t_2}{1000}$$

Where: J_{tot} total moment of inertia at the motor shaft (Kgm^2)
n motor RPM (min^{-1})
T_b brake torque (Nm)
T_{load} resisting load torque (Nm) with + sign if matches the brake torque, or − sign if opposite
t_2 brake electrical reaction time (ms)

This calculation gives an approximative indication. Please contact MGM staff for more information.

Technical Data Single Speed Motor – Single Winding

Motor type	Power (kW)	RPM	In (A) 400 V	Power factor Cos φ	Ts/Tn	Is/In	DC brake In (mA)	Z_0 (starts/ hour)	Moment of inertia Jx 10^{-4} Kgm^2	Max Brake torque (Nm)	A-Sound pressure dB(A)	Weight (Kg)
2 Poles												3000 RPM
BM 56 A2	0.09	2820	0.38	0.60	3.0	3.8	130	10000	1.85	2	58	4.0
BM 56 B2	0.12	2760	0.40	0.69	3.0	3.8	130	10000	1.85	2	58	4.0
BM 63 A2	0.18	2800	0.60	0.71	3.0	3.5	200	9000	1.93	5	59	4.5
BM 63 B2	0.25	2800	0.75	0.76	3.5	5.0	200	7500	1.93	5	59	5.0
BM 63 C2*	0.37	2760	1.00	0.80	2.5	3.8	200	6000	2.30	5	59	5.5
BM 71 A2	0.37	2810	0.90	0.78	2.6	4.5	200	4150	3.35	5	59	7
BM 71 B2	0.55	2810	1.40	0.78	2.6	4.5	200	4150	3.95	5	59	8
BM 71 C2*	0.75	2810	1.80	0.80	2.5	4.5	200	3100	4.62	5	59	9
BM 80 A2	0.75	2800	1.70	0.86	3.1	5.3	160	3100	7.29	10	65	12
BM 80 B2	1.1	2800	2.40	0.86	3.1	5.3	160	3100	8.61	10	65	13
BM 90 SA2	1.5	2850	3.20	0.86	3.0	6.9	190	2550	14.54	20	72	17
BM 90 LA2	2.2	2840	4.50	0.86	3.0	6.9	190	2550	17.43	20	72	19
BM 100 LA2	3.0	2860	6.20	0.84	3.2	8.1	250	1850	33.18	40	74	23
BM 112 MB2	4.0	2880	8.10	0.84	2.5	7.4	470	1100	67.89	60	75	38
BM 112 MC2*	5.5	2880	11.40	0.85	2.5	7.4	470	900	83.70	60	75	40
BM 132 SA2	5.5	2890	10.8	0.86	2.8	7.4	600	350	150.90	100	75	59
BM 132 SB2	7.5	2890	14.6	0.85	2.8	7.4	600	350	189.90	100	75	65
BM 132 MA2*	9.2	2890	17.9	0.85	2.8	7.4	600	300	229.70	100	75	71
BM 132 MB2*	11.0	2890	21.4	0.85	2.8	7.4	600	300	267.70	100	75	78
BM 160 MA2	11.0	2920	19.5	0.94	3.0	8.8	700	250	461.00	150	77	142
BM 160 MB2	15.0	2930	26.3	0.93	3.1	8.8	700	250	461.00	150	77	142
BM 160 LA2	18.5	2930	32.4	0.93	3.1	8.8	700	250	540.00	150	77	153
4 Poles												1500 RPM
BM 56 A4	0.06	1390	0.40	0.48	3.0	2.2	130	12000	1.85	2	41	4.0
BM 56 B4*	0.09	1320	0.41	0.61	3.0	2.2	130	12000	1.85	2	41	4.0
BM 56 C4	0.12	1320	0.55	0.61	3.0	2.2	130	12000	1.85	2	41	4.0
BM 63 A4	0.12	1330	0.45	0.70	2.0	2.4	200	12000	2.47	5	42	4.5
BM 63 B4	0.18	1350	0.60	0.71	3.0	2.8	200	12000	3.08	5	42	5.0
BM 63 C4*	0.22	1350	0.75	0.66	2.8	3.1	200	12000	3.55	5	42	5.5
BM 63 D4*	0.30	1350	1.05	0.64	2.8	3.0	200	12000	3.83	5	42	6.0
BM 71 A4	0.25	1400	0.80	0.65	2.5	3.7	200	10300	5.67	5	45	7.0
BM 71 B4	0.37	1400	1.10	0.68	2.7	3.9	200	10300	6.57	5	45	8.0
BM 71 C4*	0.55	1360	1.65	0.70	2.4	3.7	200	8150	7.90	5	45	9.0
BM 71 D4*	0.65	1350	2.00	0.69	2.1	3.7	200	8150	8.39	5	45	9.5
BM 80 A4	0.55	1400	1.70	0.69	2.1	4.0	160	8150	10.62	10	47	12.0
BM 80 B4	0.75	1400	2.20	0.67	2.5	4.3	160	7250	12.84	10	47	13.0
BM 80 C4*	0.90	1390	2.60	0.68	2.8	4.5	160	5150	13.95	10	47	14.0
BM 90 SA4	1.10	1400	2.70	0.77	2.3	4.6	190	5150	21.74	20	55	16.5
BM 90 LA4	1.50	1400	3.60	0.75	2.7	4.8	190	4100	26.12	20	55	19.0
BM 90 LB4*	1.85	1400	4.30	0.77	2.7	5.8	190	4100	30.16	20	55	21.5
BM 90 LC4*	2.2	1390	5.40	0.75	2.7	5.0	190	4100	30.16	20	55	21.5
BM 100 LA4	2.2	1410	5.00	0.78	2.5	5.4	250	3300	44.50	40	57	25
BM 100 LB4	3.0	1410	6.50	0.80	2.8	6.4	250	3300	53.43	40	57	29
BM 112 MB4	4.0	1415	8.10	0.84	2.6	6.4	470	1600	133.50	60	61	39
BM 112 MC4*	5.5	1420	11.50	0.83	2.8	6.9	470	1100	155.00	60	61	44
BM 132 SB4	5.5	1430	11.30	0.82	2.4	6.0	600	500	235.90	100	62	66
BM 132 MA4	7.5	1435	14.80	0.84	2.4	6.0	600	400	310.90	100	62	75
BM 132 MB4*	9.2	1445	18.30	0.85	2.5	6.3	600	400	391.30	100	62	88
BM 132 MBX4*	11.0	1440	21.70	0.86	2.5	6.0	600	400	391.30	100	62	88
BM 160 MA4	9.2	1460	18.60	0.84	3.0	7.0	700	370	531.00	150	63	130
BM 160 MB4	11.0	1460	21.20	0.85	2.9	7.0	700	370	607.00	150	63	136
BM 160 LA4	15.0	1460	28.50	0.87	2.7	7.0	700	370	782.00	150	63	153

* Non Standard Power

Technical Data Single Speed Motor – Single Winding

Motor type	Power (kW)	RPM	In (A) 400 V	Power factor Cos φ	Ts/Tn	Is/In	DC brake In (mA)	Z_0 (starts/hour)	Moment of inertia Jx 10^{-4} Kgm^2	Max Brake torque (Nm)	A-Sound pressure dB(A)	Weight (Kg)
6 Poles												**1000 RPM**
BM 56 B6	0.06	850	0.45	0.71	1.9	1.5	130	12000	1.85	2	41	4.0
BM 63 C6	0.09	890	0.50	0.56	2.4	1.9	200	12000	3.55	5	42	5.5
BM 63 D6	0.12	870	0.60	0.64	2.7	1.9	200	12000	3.83	5	42	6.0
BM 71 A6	0.18	875	0.60	0.71	2.0	2.6	200	11500	8.55	5	45	7.5
BM 71 B6	0.25	900	0.80	0.71	2.0	2.8	200	11500	10.01	5	45	8.0
BM 80 A6	0.37	910	1.25	0.67	2.6	3.4	160	9700	19.05	10	47	12.0
BM 80 B6	0.55	900	1.80	0.68	2.2	2.8	160	9250	22.86	10	47	13.0
BM 90 SA6	0.75	910	2.30	0.68	2.1	3.5	190	7300	31.52	20	54	16.0
BM 90 LA6	1.10	910	3.20	0.68	2.2	3.6	190	5400	41.67	20	54	18.5
BM 90 LB6*	1.30	910	3.50	0.68	2.5	4.0	190	4300	48.10	20	54	20.5
BM 100 LA6	1.50	930	3.90	0.71	2.3	4.3	250	3650	80.76	40	56	26
BM 100 LB6	1.85	920	5.00	0.68	2.6	4.5	250	3200	92.55	40	56	28
BM 112 MB6	2.20	945	5.20	0.79	2.0	5.3	470	2100	200.60	60	58	39
BM 132 SB6	3.00	960	7.20	0.72	2.5	6.5	600	650	304.90	100	58	66
BM 132 MA6	4.00	960	9.50	0.72	2.3	6.5	600	550	360.70	100	58	71
BM 132 MB6	5.50	960	12.30	0.75	2.3	6.5	600	550	467.70	100	58	82
BM 160 MB6	7.50	965	15.90	0.79	2.2	7.1	700	550	867.00	150	59	138
BM 160 LA6*	9.20	970	18.30	0.81	2.2	7.1	700	500	1160.00	150	59	156
BM 160 LB6	11.00	970	22.70	0.80	2.5	7.5	700	440	1160.00	150	59	156
8 Poles												**750 RPM**
BM 63 D8	0.07	650	0.45	0.62	2.2	1.55	200	15000	3.83	5	42	6.0
BM 71 A8	0.08	660	0.60	0.53	2.0	2.0	200	8750	5.67	5	43	7.5
BM 71 B8	0.11	660	0.80	0.55	2.0	2.0	200	8750	6.57	5	43	8.0
BM 80 A8	0.18	675	0.95	0.59	2.0	2.2	160	8150	19.05	10	45	12.0
BM 80 B8	0.25	675	1.25	0.62	2.0	2.2	160	7250	22.86	10	45	13.0
BM 90 SA8	0.37	690	1.50	0.60	2.1	2.9	190	7000	31.52	20	46	16.5
BM 90 LA8	0.55	690	2.20	0.56	2.1	2.8	190	5400	41.67	20	46	19
BM 90 LB8*	0.65	690	2.70	0.56	2.1	2.8	190	4400	48.00	20	46	21
BM 100 LA8	0.75	700	2.75	0.58	2.1	3.0	250	3850	80.76	40	49	26
BM 100 LB8	1.1	700	4.10	0.59	2.5	4.0	250	3600	92.55	40	49	28
BM 112 MB8	1.5	705	4.90	0.60	2.0	4.5	470	2500	200.60	60	52	39
BM 132 SB8	2.2	700	5.20	0.75	2.1	4.7	600	700	283.90	100	55	61
BM 132 MB8	3.0	700	7.10	0.75	2.1	4.7	600	700	372.70	100	55	68
BM 160 MA8	4.0	725	9.60	0.72	2.3	6.5	700	630	959.00	150	58	138
BM 160 MB8	5.5	725	13.60	0.70	2.3	6.1	700	630	959.00	150	58	138
BM 160 LA8	7.5	725	18.60	0.70	2.3	6.1	700	630	1280.00	150	58	156

* Non Standard Power

1. Motor characteristic values reported in the tables refer to continuous duty (S1), 50 Hz frequency, ambient temperature max. 40 °C, altitude up to 1000 m. above sea level operating condition.

2. The expressed brake torque is the max admissible one.

Brake current consumption values refer to a rated voltage of 230V AC single-phase.

3. The table shows the sound pressure noise level, measured at one metre range from the motor according to the Acurve (ISO 1680). The shown noise levels refer to motor no-load

operating condition and should be regarded with a tolerance of ± 3dB.

4. The rated torque Tn (Nm) for motors can be calculated as follow: $Tn\ (Nm) = \dfrac{9,55 \times Pn\ (W)}{RPM}$

Technical Data Two Speed Motor – Single Winding

Motor type	Power (kW)	RPM	In (A) 400 V	Power factor Cos φ	Ts/Tn	Is/In	DC brake In (mA)	Z_0 (starts/hour)	Moment of inertia Jx 10^{-4} Kgm^2	Max Brake torque (Nm)	A-Sound pressure dB(A)	Weight (Kg)
2 / 4 Poles											3000 / 1500 RPM	
BMD 63 B2/4	0.22 0.15	2800 1400	0.80 0.75	0.68 0.56	3.00 3.00	4.5 3.2	200	5500 7000	3.08	5	55 42	5.0
BMD 63 C2/4	0.26 0.17	2800 1400	0.90 0.85	0.76 0.61	2.90 3.00	4.2 3.3	200	5000 6000	3.55	5	55 42	5.5
BMD 71 A2/4	0.25 0.18	2820 1415	0.75 0.70	0.73 0.66	2.2 2.4	3.8 3.1	200	2850 5500	5.67	5	59 45	7.0
BMD 71 B2/4	0.37 0.25	2820 1415	1.00 0.85	0.77 0.63	2.3 2.8	4.7 4.2	200	2850 5500	6.47	5	59 45	8.0
BMD 80 A2/4	0.65 0.45	2790 1400	1.80 1.35	0.81 0.72	2.0 2.1	4.1 4.0	160	2500 4400	10.62	10	65 47	12.0
BMD 80 B2/4	0.88 0.62	2800 1390	2.20 1.70	0.80 0.74	2.5 2.2	4.9 4.5	160	2500 4400	12.84	10	65 47	13.0
BMD 90 SB2/4	1.3 0.9	2800 1420	3.20 2.30	0.85 0.73	2.3 2.5	5.2 5.0	190	1650 2900	21.74	20	72 55	16.5
BMD 90 LA2/4	1.8 1.2	2800 1420	4.40 3.10	0.83 0.71	2.6 3.0	5.6 6.0	190	1200 2100	26.12	20	72 55	19.5
BMD 90 LB2/4	2.2 1.5	2860 1430	5.40 3.80	0.82 0.73	2.5 3.0	5.9 6.0	190	1050 1750	30.16	20	72 55	20.5
BMD 100 LA2/4	2.2 1.5	2875 1425	5.00 3.80	0.85 0.81	2.3 2.5	6.0 5.6	250	1050 1750	44.5	40	74 57	25
BMD 100 LB2/4	3.1 2.3	2875 1425	6.70 5.20	0.85 0.82	2.3 2.4	7.0 6.5	250	850 1400	53.4	40	74 57	29
BMD 112 MB2/4	4.5 3.3	2880 1400	9.20 6.90	0.88 0.86	2.4 2.6	7.0 6.5	470	350 1400	133.5	60	75 61	39
BMD 132 SB2/4	5.0 4.5	2940 1450	10.90 9.30	0.81 0.84	2.8 2.6	8.0 7.5	600	150 350	235.9	100	75 62	66
BMD 132 MA2/4	6.0 5.0	2940 1450	11.70 10.00	0.88 0.85	2.1 2.5	8.0 7.5	600	150 320	310.9	100	75 62	75
BMD 132 MB2/4	7.5 6.0	2940 1450	16.00 12.20	0.82 0.83	2.4 2.5	8.0 7.5	600	150 320	310.9	100	75 62	75
BMD 160 MA2/4	9.5 8.0	2870 1420	20.00 16.60	0.89 0.85	2.8 2.6	7.5 6.0	700	120 320	607.0	150	77 63	136
BMD 160 MB2/4	11.0 9.0	2870 1420	23.30 18.70	0.88 0.85	2.8 2.6	6.8 6.0	700	120 320	607.0	150	77 63	136
BMD 160 LA2/4	13.0 11.0	2890 1420	26.10 21.20	0.91 0.87	2.8 2.6	7.0 6.3	700	100 300	782.0	150	77 63	153
4 / 8 Poles											1500 / 750 RPM	
BMD 71 A4/8	0.13 0.07	1385 700	0.35 0.45	0.82 0.60	1.6 1.8	3.0 2.0	200	4300 7300	8.55	5	45 43	8.0
BMD 71 B4/8	0.18 0.09	1370 685	0.50 0.60	0.83 0.59	1.8 2.0	3.2 2.0	200	4100 6900	10.01	5	45 43	8.5
BMD 71 C4/8	0.22 0.12	1370 685	0.60 0.75	0.83 0.59	1.6 1.8	3.0 2.0	200	3850 6700	10.82	5	45 43	9.0
BMD 80 A4/8	0.25 0.18	1405 675	0.70 0.90	0.86 0.65	2.2 2.0	4.1 2.4	160	4300 7300	19.05	10	47 45	12.0
BMD 80 B4/8	0.37 0.25	1405 675	0.85 1.15	0.86 0.65	2.2 2.0	4.1 2.4	160	3250 5500	22.86	10	47 45	13.0
BMD 90 SA4/8	0.75 0.37	1350 695	1.70 1.80	0.85 0.53	1.8 2.3	3.9 2.7	190	3200 5500	31.52	20	55 46	16.5
BMD 90 LB4/8	1.1 0.6	1390 695	2.70 3.00	0.82 0.53	2.0 2.5	4.5 2.7	190	2900 4900	48.21	20	55 46	20.5
BMD 100 LB4/8	1.6 0.9	1395 700	3.60 3.50	0.87 0.58	2.0 2.2	5.0 3.5	250	1850 3100	92.55	40	57 49	28
BMD 112 MB4/8	2.2 1.2	1400 720	4.80 4.60	0.86 0.57	2.5 3.1	5.5 4.1	470	1400 3000	200.60	60	61 52	39
BMD 132 SB4/8	3.0 2.0	1440 720	6.60 5.80	0.85 0.64	2.2 2.5	6.0 5.0	600	380 750	283.90	100	62 55	61
BMD 132 MA4/8	4.0 2.7	1440 720	8.80 7.80	0.85 0.64	2.2 2.5	6.0 5.0	600	380 750	372.70	100	62 55	68
BMD 132 MB4/8	6.0 4.0	1440 720	13.00 11.60	0.85 0.64	2.2 2.5	6.0 5.0	600	380 750	533.70	100	62 55	106
BMD 160 MB4/8	6.5 4.5	1470 730	15.10 13.30	0.80 0.62	2.6 2.5	2.4 5.0	700	320 580	959.00	150	63 58	138
BMD 160 LA4/8	9.5 6.0	1470 730	21.50 17.60	0.82 0.62	2.6 2.4	8.0 6.5	700	300 560	1280.00	150	63 58	156

Motor type	Power (kW)	RPM	In (A) 400 V	Power factor Cos φ	Ts/Tn	Is/In	DC brake In (mA)	Z_0 (starts/ hour)	Moment of inertia Jx 10^{-4} Kgm²	Max Brake torque (Nm)	A-Sound pressure dB(A)	Weight (Kg)
2 / 6 Poles											3000/1000 RPM	
BMDA 71 B2/6	0.25 0.08	2880 940	0.85 0.60	0.74 0.64	2.6 2.2	4.3 2.0	200	7300 14400	6.57	5	59 45	8.5
BMDA 71 C2/6	0.35 0.10	2880 940	1.05 0.60	0.75 0.59	2.6 2.2	5.0 2.3	200	6850 13500	7.90	5	59 45	9.5
BMDA 80 A2/6	0.37 0.12	2885 945	1.35 0.80	0.67 0.57	2.6 1.9	5.0 2.5	160	4150 11000	10.62	10	65 47	12.0
BMDA 80 B2/6	0.55 0.18	2885 945	1.75 1.05	0.67 0.57	2.6 1.9	5.0 2.5	160	3100 9200	12.84	10	65 47	13.0
BMDA 90 SA2/6	0.9 0.3	2875 950	2.10 1.15	0.86 0.65	2.5 2.2	5.0 2.5	190	2300 6850	21.74	20	72 54	16.5
BMDA 90 LA2/6	1.2 0.4	2875 950	2.80 1.55	0.86 0.65	2.5 2.2	5.0 2.5	190	2000 5450	26.12	20	72 54	19.5
BMDA 90 LB2/6	1.4 0.5	2890 940	3.20 1.80	0.86 0.55	2.7 2.5	5.0 3.0	190	1650 4100	30.16	20	72 54	20.5
BMDA 100 LA2/6	1.6 0.6	2810 900	3.70 1.90	0.85 0.68	2.6 2.3	5.4 3.4	250	1650 4100	44.50	40	74 56	25
BMDA 100 LB2/6	2.2 0.8	2800 910	4.80 2.50	0.90 0.67	2.6 2.3	5.4 3.4	250	1550 3650	53.43	40	74 56	28
BMDA 112 MB2/6	3.0 1.0	2870 950	6.40 3.20	0.86 0.61	3.0 3.2	7.0 4.5	470	450 3250	133.50	60	75 58	26
BMDA 132 SB2/6	4.0 1.3	2880 940	8.90 3.70	0.85 0.69	3.0 2.8	7.0 4.5	600	150 650	235.90	100	75 58	66
BMDA 132 MA2/6	5.5 1.8	2870 940	11.50 5.10	0.88 0.69	3.0 2.8	7.5 4.5	600	150 550	310.90	100	75 58	75
BMDA 132 MB2/6	7.0 2.2	2870 940	14.90 6.30	0.88 0.69	3.0 2.8	7.5 4.5	600	150 450	391.30	100	75 58	76
BMDA 160 MB2/6	8.0 2.5	2890 950	15.90 6.90	0.92 0.74	3.0 2.0	8.0 4.3	700	100 400	607.00	150	77 59	136
BMDA 160 LA2/6	11.0 3.6	2890 950	21.40 9.30	0.92 0.74	3.0 2.0	8.0 4.3	700	100 360	782.00	150	77 59	153
2 / 8 Poles											300/750 RPM	
BMDA 63 C2/8	0.18 0.04	2700 630	0.60 0.40	0.80 0.58	2.2 1.9	5.0 2.1	200	2500 1800	3.55	5	55 42	5.5
BMDA 71 B2/8	0.25 0.06	2900 700	0.85 0.55	0.69 0.54	2.5 1.8	4.0 1.5	200	7300 17500	6.57	5	59 43	8.5
BMDA 71 C2/8	0.35 0.07	2900 700	1.05 0.75	0.70 0.52	2.5 2.2	4.3 1.6	200	6150 14400	7.90	5	59 43	9.5
BMDA 80 A2/8	0.37 0.09	2885 690	1.35 0.70	0.67 0.54	2.3 1.8	5.0 1.7	160	4100 13500	10.62	10	65 45	12.0
BMDA 80 B2/8	0.55 0.12	2885 690	1.75 0.90	0.67 0.54	2.3 2.0	5.0 1.7	160	3100 12750	12.84	10	65 45	13.0
BMDA 90 SB2/8	0.75 0.18	2800 610	1.90 1.05	0.77 0.65	3.0 2.1	5.1 1.9	190	1950 9250	21.74	20	72 46	16.5
BMDA 90 LA2/8	1.10 0.25	2800 640	2.70 1.45	0.80 0.64	3.0 2.1	5.1 1.9	190	1750 7750	26.12	20	72 46	19.5
BMDA 90 LB2/8	1.3 0.3	2820 640	3.10 1.75	0.81 0.58	3.2 2.4	5.7 2.0	190	1650 7250	30.16	20	72 46	20.5
BMDA 100 LA2/8	1.6 0.4	2810 660	3.70 2.00	0.85 0.58	2.7 2.0	5.3 2.2	250	1650 5750	44.50	40	73 49	25
BMDA 100 LB2/8	2.2 0.5	2800 660	4.80 2.50	0.90 0.59	2.8 2.3	5.7 2.3	250	1550 5100	53.43	40	73 49	29
BMDA 112 MB2/8	3.0 0.8	2860 690	6.30 3.50	0.87 0.63	3.3 2.6	7.5 3.2	470	650 4200	133.50	60	75 61	39
BMDA 132 SB2/8	4.0 1.1	2880 680	8.90 4.00	0.85 0.60	3.0 1.9	7.0 3.3	600	260 1100	235.90	100	75 62	66
BMDA 132 MA2/8	5.5 1.5	2870 680	11.50 5.60	0.88 0.59	3.0 2.0	7.5 3.0	600	250 1100	310.90	100	75 62	75
BMDA 132MB2/8	7.0 1.8	2870 680	14.90 7.30	0.88 0.59	3.0 2.0	7.5 3.0	600	250 1100	391.30	100	75 62	86
BMDA 160 MB2/8	8.0 2.2	2880 705	16.70 7.60	0.91 0.65	3.0 1.9	8.0 3.3	700	180 900	607.00	150	77 58	136
BMDA 160 LA2/8	11.0 3.0	2880 710	21.50 10.20	0.92 0.95	3.0 1.9	8.0 3.3	700	180 900	782.00	150	77 58	153

1. Motor characteristic values reported in the tables refer to continuous duty (S1), 50 Hz frequency, ambient temperature max. 40 °C, altitude up to 1000 m. above sea level operating condition.

2. The expressed brake torque is the max admissible one.

Brake current consumption values refer to a rated voltage of 230V AC single-phase.

3. The table shows the sound pressure noise level, measured at one metre range from the motor according to the Acurve (ISO 1680). The shown noise levels refer to motor no-load

operating condition and should be regarded with a tolerance of ± 3dB.

4. The rated torque Tn (Nm) for motors can be calculated as follow: $Tn\ (Nm) = \dfrac{9,55 \times Pn\ (W)}{RPM}$

Technical Data Two Speed Motor – Two Windings

Motor type	Power (kW)	RPM	In (A) 400 V	Power factor Cos φ	Ts/Tn	Is/In	DC brake In (mA)	Z₀ (starts/ hour)	Moment of inertia Jx 10⁻⁴ Kgm²	Max Brake torque (Nm)	A-Sound pressure dB(A)	Weight (Kg)
4 / 6 Poles											1500 / 1000 RPM	
BMDA 71 C4/6	0.18 / 0.11	1415 / 930	0.60 / 0.50	0.76 / 0.66	1.9 / 2.0	3.0 / 2.3	200	14500 / 19500	10.82	5	45 / 45	8.5
BMDA 80 A4/6	0.25 / 0.18	1430 / 930	0.85 / 0.80	0.79 / 0.71	2.2 / 1.8	4.3 / 3.0	160	8250 / 11500	19.05	10	47 / 47	12.0
BMDA 80 B4/6	0.37 / 0.25	1430 / 930	1.05 / 0.95	0.79 / 0.71	2.2 / 1.8	4.3 / 3.0	160	1300 / 10300	22.86	10	47 / 47	13.0
BMDA 90 SA4/6	0.55 / 0.37	1420 / 950	1.60 / 1.45	0.78 / 0.62	1.9 / 2.1	3.8 / 3.3	190	6900 / 9750	31.52	20	55 / 54	16.5
BMDA 90 LB4/6	0.75 / 0.55	1420 / 950	2.20 / 1.90	0.78 / 0.62	2.0 / 2.1	3.8 / 3.3	190	5700 / 8200	41.67	20	55 / 54	19.5
BMDA 100 LA4/6	1.1 / 0.8	1445 / 955	3.00 / 2.40	0.76 / 0.71	2.0 / 2.1	5.3 / 4.4	250	3100 / 4400	80.76	40	57 / 56	26
BMDA 100 LB4/6	1.5 / 1.1	1440 / 950	3.90 / 3.30	0.75 / 0.68	2.0 / 2.1	5.2 / 4.4	250	3000 / 4200	92.55	40	57 / 56	28
BMDA 112 MB4/6	2.0 / 1.3	1385 / 930	4.40 / 3.50	0.88 / 0.75	2.6 / 2.1	5.3 / 4.4	470	1550 / 3300	200.60	60	75 / 61	39
BMDA 132 SB4/6	2.2 / 1.5	1440 / 950	5.10 / 4.40	0.78 / 0.69	2.9 / 2.6	7.0 / 5.5	600	360 / 600	304.90	100	75 / 62	66
BMDA 132 MA4/6	3.0 / 2.2	1440 / 950	6.40 / 6.00	0.81 / 0.71	2.7 / 2.4	7.0 / 5.0	600	360 / 600	360.70	100	75 / 62	71
BMDA 132 MB4/6	3.7 / 2.5	1440 / 950	8.20 / 7.00	0.78 / 0.69	2.9 / 2.6	7.0 / 5.5	600	300 / 550	467.70	100	75 / 62	82
BMDA 160 MB4/6	5.5 / 3.7	1390 / 940	11.10 / 8.90	0.93 / 0.81	2.5 / 2.3	5.8 / 5.2	700	240 / 420	867.00	150	63 / 59	138
BMDA 160 LB4/6	7.5 / 5.0	1390 / 940	15.20 / 12.20	0.93 / 0.81	2.5 / 2.3	6.0 / 5.2	700	240 / 420	1160.00	150	63 / 59	156
4 / 12 Poles					**S3 40%**						1500 / 500 RPM	
BMDA 80 A4/12	0.25 / 0.05	1425 / 435	0.85 / 0.60	0.77 / 0.663	1.8 / 1.9	3.7 / 1.6	160	4300 / 8000	19.05	10	47 / 43	12.0
BMDA 80B4/12	0.37 / 0.07	1425 / 435	1.05 / 0.75	0.77 / 0.63	1.8 / 1.9	3.7 / 1.6	160	4200 / 8000	22.86	10	47 / 43	13.0
BMDA 90 SA4/12	0.40 / 0.13	1360 / 380	1.25 / 1.05	0.73 / 0.59	2.5 / 2.0	3.5 / 1.6	190	3200 / 6100	31.52	20	55 / 44	16.5
BMDA 90 LA4/12	0.55 / 0.18	1400 / 400	1.65 / 1.20	0.76 / 0.64	2.5 / 1.8	3.5 / 1.6	190	3000 / 5900	41.67	20	55 / 44	19.5
BMDA 90 LB4/12	0.75 / 0.22	1370 / 400	2.05 / 1.60	0.76 / 0.65	2.5 / 2.0	3.5 / 1.6	190	2850 / 5700	48.21	20	55 / 44	20.5
BMDA 100 LA4/12	0.90 / 0.25	1440 / 450	2.30 / 2.10	0.76 / 0.50	2.2 / 1.8	5.3 / 1.7	250	1950 / 4700	80.76	40	57 / 47	26
BMDA 100 LB4/12	1.10 / 0.35	1440 / 450	2.80 / 2.60	0.76 / 0.50	2.2 / 1.8	5.3 / 1.7	250	1850 / 4500	92.55	40	57 / 47	28
BMDA 112 MB4/12	1.50 / 0.45	1420 / 440	3.40 / 2.40	0.84 / 0.55	2.2 / 2.0	6.0 / 2.2	470	780 / 4300	200.60	60	75 / 61	39
BMDA 132 SA4/12	2.50 / 0.80	1440 / 440	5.40 / 3.80	0.81 / 0.53	2.7 / 1.6	7.0 / 2.4	600	400 / 1100	304.90	100	75 / 62	67
BMDA 132 MA4/12	3.00 / 1.00	1440 / 440	6.40 / 4.50	0.81 / 0.53	2.7 / 1.6	7.0 / 2.4	600	400 / 1100	360.70	100	75 / 62	71
BMDA 132 MB4/12	4.00 / 1.30	1140 / 440	8.50 / 5.90	0.81 / 0.55	2.7 / 1.6	7.0 / 2.4	600	400 / 1100	467.70	100	75 / 62	82
BMDA 160 MB4/12	4.80 / 1.60	1425 / 455	10.00 / 7.20	0.89 / 0.57	2.8 / 2.0	7.5 / 3.0	700	300 / 850	867.00	150	63 / 61	138
BMDA 160 LB4/12	7.30 / 2.40	1410 / 445	15.20 / 10.10	0.90 / 0.61	2.8 / 2.0	7.0 / 3.0	700	300 / 850	1160.00	150	63 / 61	156

1. Motor characteristic values reported in the tables refer to continuous duty (S1), 50 Hz frequency, ambient temperature max. 40 °C, altitude up to 1000 m. above sea level operating condition.

2. The expressed brake torque is the max admissible one.

Brake current consumption values refer to a rated voltage of 230V AC single-phase.

3. The table shows the sound pressure noise level, measured at one metre range from the motor according to the Acurve (ISO 1680). The shown noise levels refer to motor no-load

operating condition and should be regarded with a tolerance of ± 3dB.

4. The rated torque Tn (Nm) for motors can be calculated as follow: $Tn (Nm) = \dfrac{9,55 \times Pn (W)}{RPM}$

BM series dimension

MGM — BM series

| Type	56	63	71	80	90S	90L	100L	112M	132S	132M	160M	160L
A	90	100	112	125	140	140	160	190	216	216	254	254
B	71	80	90	100	100	125	140	140	140	178	210	254
C	36	40	45	50	56	56	63	70	89	89	108	108
D	9	11	14	19	24	24	28	28	38	38	42	42
d	M3	M4	M5	M6	M8	M8	M10	M10	M12	M12	M16	M16
E	20	23	30	40	50	50	60	60	80	80	110	110
Fa	6.6	9.5	9.5	11.5	11.5	11.5	14	14	14	14	18	18
Fb	M5	M5	M6	M6	M8	M8	M8	M8	M10	M10		
f	3	4	5	6	8	8	8	8	10	10	12	12
g	7.2	8.5	11	15.5	20	20	24	24	33	33	37	37
H	56	63	71	80	90	90	100	112	132	132	160	160
h	3	4	5	6	7	7	7	7	8	8	8	8
I	6	7	7	10	10	10	12	12	12	12	14.5	14.5
K	11	10.5	10.5	14	14	14	16	16	22	22	24	24
L	119	130	145	162	171	196	217	229	255	293		
L 1		166	182	194	207	232	254	262	294	339	373	395
Ma	100	115	130	165	165	165	215	215	265	265	300	300
Mb	65	75	85	100	115	115	130	130	165	165		
Na	80	95	110	130	130	130	180	180	230	230	250	250
Nb	50	60	70	80	95	95	110	110	130	130		
Oa	3	3	3.5	3.5	3.5	3.5	4	4	4	4	5	5
Ob	2.5	2.5	2.5	3	3	3	3.5	3.5	3.5	3.5		
Pa	120	140	160	200	200	200	250	250	300	300	350	350
Pb	80	90	105	120	140	140	160	160	200	200		
Q	230	260	295	334	360	385	435	470	565	604	690	734
R	75	80	80	80	98.5	98.5	98.5	98.5	108	108		
R1		135	135	135	170	170	170	170	199	199	268	268
S	8	10	10	12	12	12	14	14	15	15	15	15
V	7	7	8	9.5	10.5	10.5	12.5	13.5	16	16	21	21
W	93	97	105	113	127	127	138	158	198	198	155	155
W 1		111	121	130	148	148	162	176	210	210	246	246
Y	110	121	136	153	178	178	198	219,5	255	255	293	293
Z	75	75	75	75	98.5	98.5	98.5	98.5	108	108		
Z 1		86	86	86	112	112	112	112	151	151	167	167

B3 (Foot Mounting)
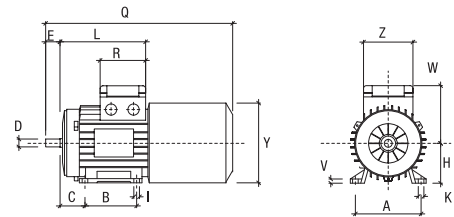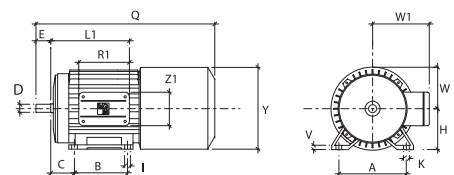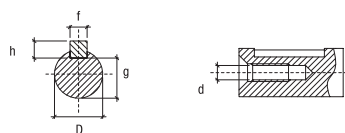
B5 (Flange Mounting)
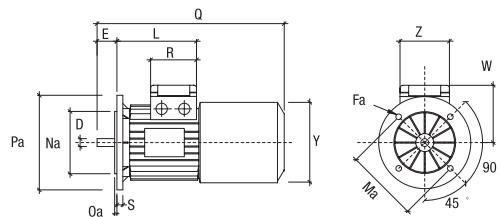
B14 (Face Mounting)
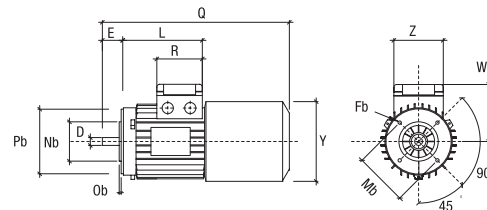
Double Terminal Board Box
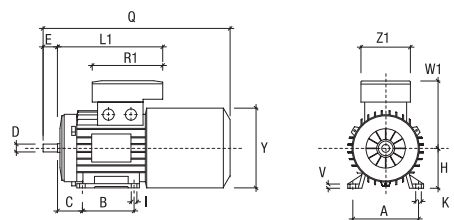
Size 160 B3 (Foot Mounting)

Shaft End

Note	Cable glands are	M 16 on size 56 up to 63
		M 20 on size 71 up to 80
		M 25 on size 90 up to 112
		M 32 on size 132
		PG 29 on size 160