

# M2QA Series IEC Low-voltage Three-Phase Induction Motors

Power and productivity  
for a better world™



We provide motors, generators and mechanical power transmission products, services and expertise to save energy and improve customers' processes over the total life cycle of our products, and beyond.



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# Outstanding Features of M2QA Motors

High efficiency and energy saving in combination with high reliability reduces the operation costs.

Advanced production technology assures accurate products.

Motors are equipped with NSK or SKF bearings.

Flexible design with choice of additional accessories fulfills most customers' requirements.

## ABB Motors Features

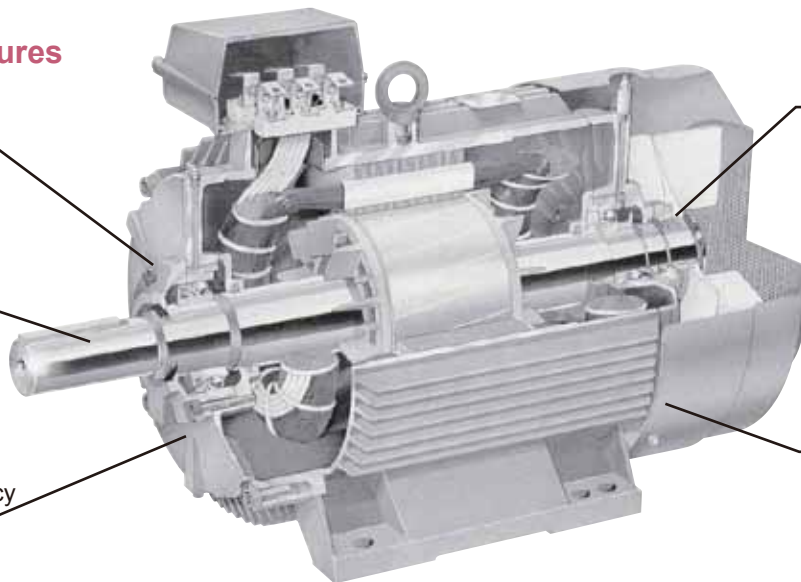
High Reliability

High Efficiency

Excellent Consistency

Low Noise

High Flexibility





## Summary

# M2QA Series Low-voltage Three-phase Induction Motors (H71-H355)

As the standard series of ABB M2000 family, High efficiency assures energy savings, and high reliability reduces the faulty time and the maintenance costs. The motors are designed and manufactured according to European technology, including features such as low noise level and long life cycle. M2QA motors are suitable for various environments and operate in a wide range of different industrial areas.



## Standards

- ❖ **Voltage ranges of extra versatility**  
A wide range of voltages can be up to max. 690 V, for 50 Hz and 60 Hz is available.
- ❖ **Reliable windings**  
To ensure long lifetime, the windings are made of the latest available materials in class F protection and temperature rise limited to class B(80K) in standard motors.
- ❖ **Strong corrosion protection**  
The motors are made to withstand aggressive environment as standard and they are designed for long lifetime. For motors with regreasable elements, they have strong and effective protection against corrosion.
- ❖ **Bearings with high load capacity**  
All motors are provided with deep-groove ball bearings, the lifetime is extended. Cast iron motors in sizes 71-225 are greased for life, and those in sizes 250-355 have a regreasing device as a standard.
- ❖ **Low noise level**  
The M2QA range has been designed to minimize motors noise levels by means of improving magnetic and electrical design, ventilating condition, structural assembling size and technology.
- ❖ **Additional winding protection**  
PTC thermistors, thermal switches and anticondensation on request.

## Insulation and Insulation Classes

According to IEC 60085, insulating materials are divided into insulation classes. Each class has a designation corresponding to the temperature that is the upper limit of the range of application of the insulating material under normal operating condition.

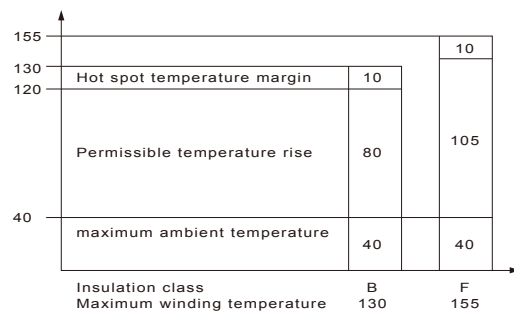
The winding insulation of a motor is determined on the basis of the temperature rise in the motor and the ambient temperature. The insulation is normally dimensioned for the hottest point in the motor at its normal rated output and at ambient temperature of 40°C. Motors subjected to ambient temperatures above 40°C will generally have to be derated. In most cases, the standard rated outputs of motors from ABB uses class F insulation systems, which, with temperature rise B, is the most common requirement among industry today.

However, all the motors are designed with class F insulation, which permits a higher temperature rise than class B(\*The mark is excluded). The motors, therefore, have a generous over-load margin. If temperature rise to class F is allowed, the outputs given in the tables can generally be increased by about 12%.

Temperature limits are according to standards. The extra thermal margin when using class F insulation with class B temperature rise makes the motors more reliable.

## Mechanical Design

- ❖ **Totally enclosed fan cooled IP55 as standard, IP56 or IP65 as option**  
Heavy duty design, manufactured from extra corrosion resistant cast iron materials to be used in all kind of environment. The motor is mechanically very strong and robust.
- ❖ **Flexible cable entry direction**  
Terminal boxes are mounted on the top of the motors, right or left. Terminal boxes of motor size 71-132 can rotate 4×90°, and those of 160-355 can rotate 2×180°. All are easy to refit.
- ❖ **Powerful refit available**  
The motors satisfy the requirements of a wide range of environments and applications, such as improving protection, insulation level, regreasing facilities, dust-proof, sealing rings, protective roof are available.



## Motors for Other Voltages

Motors wound for a given voltage at 50Hz can also be used for other voltage. Recalculation factors for current and torque are given below, efficiency, power factor and speed remain. Approximately the same.

Guaranteed values available on request.

Motor wound for	230V		400V		500V		690V	
Connected to 50Hz	220V	230V	380V	415V	500V	550V	660V	690V
% of values at 400V. 50Hz								
Output	100	100	100	100	100	100	100	100
IN	182	174	105	98	80	75	61	58
Is/IN	90	100	90	106	100	119	90	100
Ts/TN	90	100	90	106	100	119	90	100
Tmax/TN	90	100	90	106	100	119	90	100

Motors wound for a given voltage at 60Hz can also be used for other voltages. Approximate recalculation factors for current and torque given are beside; efficiency, power factor and speed remain approximately the same.

Guaranteed values available on request.

Motor wound for	460V		575V
Connected to 60Hz	440V	480V	575V
% of values at 460V. 60Hz			
Output	100	100	100
IN	105	96	80
Is/IN	90	109	100
Ts/TN	90	109	100
Tmax/TN	90	109	100

## Bearings and Terminal Boxes

The motors are normally fitted with single-row deep groove ball bearings as listed in the table below. Close-type bearing is provided as standard for 71-255, open-type bearing for 250-355. Terminal boxes are mounted on top of the motor. The terminal box of motor sizes 71 to 132 can be turned 4 x 90° and in motors sizes 160 to 355 rotated 2 x 180°. Degree of protection of the standard terminal box is IP55. The motors are supplied with 2 cable entries as a standard according to the table below.

Type	Poles	Standard D-end	bearing type	Standard N-end	bearing type	Cable entry mm	Type	Poles	Standard D-end	bearing type	Standard N-end	bearing type	Cable entry mm
71M	2, 4, 6	6202	C3	6202	C3	2-M16 X 1.5	250M	2	6314	C3	6214	C3	2-M63 X 1.5
80M	2, 4, 6, 8	6204	C3	6204	C3	2-M25 X 1.5	250M	4, 6, 8	6314	C3	6214	C3	2-M63 X 1.5
90S	2, 4, 6, 8	6205	C3	6205	C3	2-M25 X 1.5	280S	2	6316	C4	6316	C4	2-M63 X 1.5
90L	2, 4, 6	6205	C3	6205	C3	2-M25 X 1.5	280S	4, 6, 8	6316	C3	6316	C3	2-M63 X 1.5
100L	2, 4, 6, 8	6206	C3	6206	C3	2-M32 X 1.5	280M	2	6316	C4	6316	C4	2-M63 X 1.5
112M	2, 4, 6, 8	6207	C3	6206	C3	2-M32 X 1.5	280M	4, 6, 8	6316	C3	6316	C3	2-M63 X 1.5
132S	2, 4, 6, 8	6208	C3	6207	C3	2-M32 X 1.5	315S	2	6316	C4	6316	C4	2-M63 X 1.5
132M	2, 4, 6, 8	6208	C3	6207	C3	2-M32 X 1.5	315S	4, 6, 8	6319	C3	6319	C3	2-M63 X 1.5
160M	2, 4, 6, 8	6309	C3	6209	C3	2-M40 X 1.5	315M	2	6316	C4	6316	C4	2-M63 X 1.5
160L	2, 4, 6, 8	6309	C3	6209	C3	2-M40 X 1.5	315M	4, 6, 8	6319	C3	6319	C3	2-M63 X 1.5
180M	2, 4, 6, 8	6310	C3	6210	C3	2-M40 X 1.5	315L	2	6316	C4	6316	C4	2-M63 X 1.5
180L	2, 4, 6, 8	6310	C3	6210	C3	2-M40 X 1.5	315L	4, 6, 8	6319	C3	6319	C3	2-M63 X 1.5
200L	2, 4, 6, 8	6312	C3	6212	C3	2-M50 X 1.5	355M	2	6319M	C4	6319M	C4	2-M63 X 1.5
225S	4, 6, 8	6313	C3	6213	C3	2-M50 X 1.5	355M	4, 6, 8	6322	C3	6319	C3	2-M63 X 1.5
225M	2	6313	C3	6213	C3	2-M50 X 1.5	355L	2	6319M	C4	6319M	C4	2-M63 X 1.5
225M	4, 6, 8	6313	C3	6213	C3	2-M50 X 1.5	355L	4, 6, 8	6322	C3	6319	C3	2-M63 X 1.5

\*Note: see page 22-23 for detail.

## Rating Plate

For motor sizes 71 to 132 the rating plate gives one current value for the voltage area. That is the highest current that can occur within the voltage area with the given output.

<b>ABB</b>		ABB Motors				
		3~Mot. M2QA132S4A			IEC60034-1	
		3GQA132101-BSA			Cl. F IP 55	
6208 DDU/C3		6207 DDU/C3		Date 2012.2		
V	Hz	r/min	kW	cosφ	A	
220-240 Δ	50	1435	5.5	0.82	20.1	
380-420 Y	50	1435	5.5	0.82	11.6	
440-480 Y	60	1735	6.33	0.82	11.4	kg
No. 3GC11500123456						

<b>ABB</b>		ABB Motors				
		3~Mot. M2QA132S4A			IEC60034-1	
		3GQA132101-BDA			Cl. F IP 55	
6208 DDU/C3		6207 DDU/C3		Date 2012.2		
V	Hz	r/min	kW	cosφ	A	
380-420 Δ	50	1435	5.5	0.82	11.6	
660-690 Y	50	1435	5.5	0.82	6.68	
440-480 Δ	60	1735	6.33	0.82	11.4	kg
No. 3GC11500123456						

M2QA71-132

For motor size 160 to 355 the rating plate is in table form giving values for speed, current and power factor for six voltages.

<b>ABB</b>		ABB Motors				
		3 motor M2QA250M4A			IEC 250M65	
S1		No. 3GC11500123456				
Cert.no.		Ins.cl. F			IP 55	
V	Hz	kW	r/min	A	cosφ	IA/IN tE/s
690 Y	50	55	1475	56.0	0.88	
400 Δ	50	55	1475	96.6	0.88	
660 Y	50	55	1475	57.9	0.89	
380 Δ	50	55	1475	101	0.89	
415 Δ	50	55	1480	94.1	0.87	
440 Δ	60	63	1775	99.3	0.89	
Cat.no. 3GQA252301-ADA						
6314/C3		6214/C3		kg		
Date 2012.2		IEC 60034-1				

M2QA160-355

## Pulley Diameter

When the desired bearing life has been determined, the minimum permissible pulley diameter can be calculated using

$F_R$ , as follows;

$$D = \frac{1.9 \cdot 10^7 \cdot K \cdot P}{n \cdot F_R}$$

where:

D=diameter of pulley, mm

P=power requirement, kW

n=motor speed, r/min

K=belt tension factor, dependent on belt type and type of duty.

A common value for V-belts is 2.5.

$F_R$ =permissible radial force

## Permissible Loadings on the Shaft End

The tables below give the permissible radial force in newton, assuming zero axial force. The values are based on normal conditions at 50 Hz and calculated bearing lives for motor size 71 to 355 of 20000 hours and 40000 hours.

Motors are foot-mounted IM B3 version with force directed sideways.

In some cases the strength of the shaft affects the permissible forces. At 60Hz the values must be reduced by 10%. For two-speed motors, the values must be based on the higher speed.

Permissible loads of simultaneous radial and axial forces will be supplied on request.



## Permissible Radial Forces

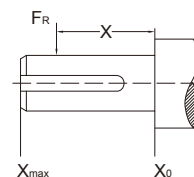
Motors sizes 71 to 355

Motor size	20000 hours Ball bearings								40000 hours Ball bearings							
	2-pole		4-pole		6-pole		8-pole		2-pole		4-pole		6-pole		8-pole	
	X <sub>0</sub>	X <sub>max</sub>	X <sub>0</sub>	X <sub>max</sub>	X <sub>0</sub>	X <sub>max</sub>	X <sub>0</sub>	X <sub>max</sub>	X <sub>0</sub>	X <sub>max</sub>	X <sub>0</sub>	X <sub>max</sub>	X <sub>0</sub>	X <sub>max</sub>	X <sub>0</sub>	X <sub>max</sub>
N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
71M	381.1	322.2	479.6	405.4	555.1	469.2	-	-	302.5	255.7	380.7	321.8	440.5	372.4	-	-
80M	624.2	509.4	788.3	643.3	906.7	739.9	996.7	813.4	495.4	404.3	625.7	510.6	719.6	587.3	791.1	645.6
90S	686.0	542.2	869.5	687.2	1000.1	790.4	1095.4	865.8	544.5	430.4	690.1	545.4	793.8	627.3	869.5	687.2
90L	696.4	564.2	884.7	716.8	1015.1	822.5	1112.0	901.0	552.7	447.8	702.2	568.9	805.7	652.8	882.6	715.1
100L	979.4	784.8	1233.9	988.8	1419.1	1137.2	1565.7	1254.6	777.3	622.9	979.4	784.8	1126.4	902.6	1242.7	995.8
112M	1257.8	1014.4	1592.1	1283.9	1831.1	1476.7	2020.1	1629.1	998.3	805.1	1263.6	1019.1	1453.3	1172.0	1603.4	1293.1
132S	1435.0	1121.7	1820.5	1423.1	2079.1	1625.3	2299.1	1797.2	1138.9	890.3	1444.9	1129.5	1650.2	1290.0	1824.8	1426.5
132M	-	-	1840.2	1476.3	2106.5	1689.9	2329.4	1868.7	-	-	1460.6	1171.7	1672.0	1341.3	1848.8	1483.2
160M	2597.8	2018.8	3276.8	2546.4	3755.3	2918.2	4147.5	3223.0	2061.9	1602.3	2600.8	2021.1	2980.5	2316.2	3291.9	2558.1
160L	2629.4	2091.3	3316.6	2637.8	3800.9	3023.0	4197.9	3338.8	2086.9	1659.8	2632.4	2093.7	3016.8	2399.4	3331.9	2650.0
180M	2983.6	2371.3	3759.1	2987.7	-	-	-	-	2368.1	1882.1	2983.6	2371.3	-	-	-	-
180L	-	-	3801.5	3073.0	4351.6	3517.7	4800.4	3880.5	-	-	3017.2	2439.0	3453.9	2792.0	3810.1	3080.0
200L	4089.8	3376.8	5161.5	4261.7	5908.5	4878.5	6517.9	5381.7	3246.1	2680.2	4096.7	3382.6	4689.6	3872.1	5173.3	4271.5
225S	-	-	5762.8	4526.4	-	-	7260.7	5702.9	-	-	4574.0	3592.6	-	-	5762.8	4526.4
225M	4591.0	3811.1	5790.9	4594.2	6643.9	5271.0	7260.7	5788.4	3643.9	3024.9	4596.2	3646.4	5273.3	4183.6	5790.9	4594.2
250M	5111.6	4170.0	6439.9	5253.6	7388.1	6027.2	8113.0	6618.5	4057.0	3309.7	5111.1	4169.6	5863.7	4783.5	6438.9	5252.8
280S	6000.2	4956.7	7570.1	6253.5	8679.2	7169.8	9573.5	7878.8	4761.8	3933.7	6007.7	4962.9	6888.0	5690.1	7569.1	6252.7
280M	6048.5	5059.3	7631.5	6383.4	8750.0	7318.9	9615.4	8042.8	4799.8	4014.8	6056.1	5065.6	6943.7	5808.1	7630.5	6382.5
315S	6602.4	5627.1	9533.5	7882.0	10916.1	9025.1	12028.5	9944.8	5239.0	4465.1	7565.3	6254.8	8662.6	7162.0	9545.4	7891.8
315M	6677.1	5793.3	9647.8	8145.0	11047.2	9326.4	12173.2	10277.0	5297.9	4596.7	7655.6	6463.1	8766.3	7400.7	9659.38	8155.1
315L	6675.9	5792.3	9648.0	8145.1	11045.3	9324.7	12171.2	10275.3	5296.6	4595.6	7655.4	6462.9	8764.6	7399.1	9657.9	8153.5
355M	8280.0	6790.0	14060.0	11529.0	16089.0	13193.0	-	-	5612.0	4602.0	11100.0	9102.0	12741.0	10448.0	-	-
355L	8372.0	6865.0	14136.0	11592.0	16175.0	13264.0	-	-	5612.0	4652.0	11100.0	9213.0	12741.0	10575.0	-	-

If the radial force is applied between points X<sub>0</sub> and X<sub>max</sub>, the permissible force F<sub>R</sub> can be calculated from the following formula:

$$F_R = F_{X_0} - X/E(F_{X_0} - F_{X_{max}})$$

E=length of shaft extension in basic version

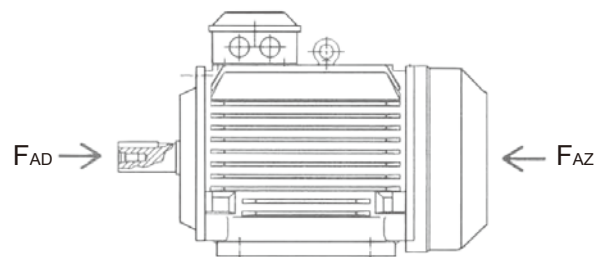


## Permissible Axial Forces

The following tables give the permissible axial forces in Newton, assuming zero radial force. The values are based on normal conditions at 50Hz with standard bearings and calculated bearing life time of 20000 and 40000 hours.

At 60Hz the values are to be reduced by 10%. For two-speed motors, the values are to be based on the higher speed. The permissible loads of simultaneous radial and axial forces will be supplied on request.

Given axial forces F<sub>AD</sub>, assumes D-bearing locked by means of locking ring.



## Mounting Arrangement IMB3

Motor size	20000 hours Ball bearings								40000 hours Ball bearings							
	2-pole		4-pole		6-pole		8-pole		2-pole		4-pole		6-pole		8-pole	
	F <sub>AD</sub> N	F <sub>AZ</sub> N	F <sub>AD</sub> N	F <sub>AZ</sub> N	F <sub>AD</sub> N	F <sub>AZ</sub> N	F <sub>AD</sub> N	F <sub>AZ</sub> N	F <sub>AD</sub> N	F <sub>AZ</sub> N	F <sub>AD</sub> N	F <sub>AZ</sub> N	F <sub>AD</sub> N	F <sub>AZ</sub> N	F <sub>AD</sub> N	F <sub>AZ</sub> N
71M	268.3	268.3	362.9	362.9	438.6	438.6	-	-	198.6	198.6	267.8	267.8	325.0	325.0	-	-
80M	434.8	434.8	592.9	592.9	712.6	712.6	804.0	804.0	320.6	320.6	436.1	436.1	528.4	528.4	595.6	595.6
90S	471.8	471.8	647.0	647.0	778.2	778.2	873.0	873.0	347.1	347.1	475.4	475.4	576.4	576.4	647.0	647.0
90L	471.8	471.8	648.9	648.9	778.2	778.2	873.0	873.0	347.7	347.7	477.0	477.0	576.4	576.4	647.0	647.0
100L	648.3	648.3	883.7	883.7	1058.3	1058.3	1202.6	1202.6	475.6	475.6	648.3	648.3	781.5	781.5	891.5	891.5
112M	843.0	843.0	1157.0	1157.0	1382.8	1382.8	1574.2	1574.2	617.1	617.1	848.0	848.0	1019.4	1019.4	1167.3	1167.3
132S	947.2	947.2	1302.3	1302.3	1542.7	1542.7	1764.0	1764.0	692.5	692.5	955.5	955.5	1135.8	1135.8	1306.7	1306.7
132M	-	-	1297.9	1297.9	1542.7	1542.7	1764.0	1764.0	-	-	952.6	952.6	1135.8	1135.8	1306.7	1306.7
160M	1669.1	1669.1	2272.0	2272.0	2721.6	2721.6	3090.1	3090.1	1238.2	1238.2	1671.8	1671.8	2003.5	2003.5	2286.2	2286.2
160L	1669.1	1669.1	2272.0	2272.0	2721.6	2721.6	3090.1	3090.1	1238.2	1238.2	1671.8	1671.8	2003.5	2003.5	2286.2	2286.2
180M	1972.9	1972.9	2665.0	2665.0	-	-	-	-	1441.7	1441.7	1972.9	1972.9	-	-	-	-
180L	-	-	2665.0	2665.0	3197.1	3197.1	3626.4	3626.4	-	-	1972.9	1972.9	2346.4	2346.4	2673.2	2673.2
200L	2569.6	2569.6	3489.1	3489.1	4197.9	4197.9	4754.7	4754.7	1882	1882	2575.9	2575.9	3077.9	3077.9	3499.8	3499.8
225S	-	-	3904.5	3904.5	-	-	5309.0	5309.0	-	-	2878.0	2878.0	-	-	3904.5	3904.5
225M	2873.4	2873.4	3904.5	3904.5	4718.4	4718.4	5309.0	5309.0	2117.4	2117.4	2878.0	2878.0	3457.5	3457.5	3904.5	3904.5
250M	3225.3	3225.3	4378.4	4378.4	5293.1	5293.1	5955.9	5955.9	2379.2	2379.2	3225.3	3225.3	3879.3	3879.3	4378.4	4378.4
280S	3714.9	3714.9	5007.7	5007.7	6087.7	6087.7	6924.2	6924.2	2766.7	2766.7	3721.9	3721.9	4509.5	4509.5	5077.7	5077.7
280M	3714.9	3714.9	5077.7	5077.7	6087.7	6087.7	6924.2	6924.2	2766.7	2766.7	3721.9	3721.9	4509.5	4509.5	5077.7	5077.7
315S	3963.9	3963.9	6141.0	6141.0	7292.2	7292.2	8300.9	8300.9	2965.5	2965.5	4478.5	4478.5	5357.8	5357.8	6153.3	6153.3
315M	3963.9	3963.9	6141.0	6141.0	7292.2	7292.2	8300.9	8300.9	2965.5	2965.5	4478.5	4478.5	5357.8	5357.8	6153.3	6153.3
315L	3964.7	3964.7	6143.0	6143.0	7292.2	7292.2	8300.9	8300.9	2965.8	2965.8	4479.5	4479.5	5357.8	5357.8	6153.3	6153.3
355	5775	2310	8100	4050	9484	5160	10080	8420	4675	1460	5770	2030	6411	2611	7106	3366

## Ordering Information

### Sample order

When placing an order, the motor type, size and product code must be specified. The product code of the motor is composed in various ways, in accordance with the following examples.

A	B	C					-	D, E, F, G			
M2QA	100L2A	3GQA	10	1	501	-	A	S	A	X	
		1-4	5-6	7	8-10	11	12	13	14	15	

A	Motor type
B	Motor size
C	Product code
D	Mounting arrangement code
E	Voltage and frequency code
F	Generation code

## Explanation of the Product Code

### Positions 1 and 4

M2QA=Totally enclosed fan cooled squirrel cage motor with cast iron frame

### Positions 5 and 6

IEC frame

07 = 71	13 = 132	25 = 250
08 = 80	16 = 160	28 = 280
09 = 90	18 = 180	31 = 315
10 = 100	20 = 200	35 = 355
11 = 112	22 = 225	

### Positions 7

Speed(pole pairs)

1=2poles	6=12poles
2=4poles	
3=6poles	
4=8poles	
5=10poles	

### Positions 8 to 10

Running number series

### Positions 11

-(dash)

### Positions 12

#### Mounting arrangement

A=Foot-mounted, top-mounted terminal box  
 R=Foot-mounted, terminal box on RHS, seen from D-end(80-355)  
 L=Foot-mounted, terminal box on LHS, seen from D-end(80-355)  
 B=Flange-mounted, large flange  
 C=Flange-mounted, small flange size(71-160)  
 H=Foot and flange-mounted

### Positions 13

Voltage and frequency code

See tables on appropriate page

### Positions 14

Generation code

A

### Positions 15

VC Identifying Code

X

Technical Data Table

IP55 IC411

Insulation class F  
Temperature rise class B

400V 50Hz												
Output kW	Type designation	Product code	Speed n r/min	Efficiency		Power factor cos φ	Current		Torque			
				Full load	3/4 load		I <sub>N</sub> /A	I <sub>s</sub> /I <sub>N</sub>	T <sub>N</sub> /Nm	T <sub>s</sub> /T <sub>N</sub>	T <sub>MAX</sub> /T <sub>N</sub>	
				100% η	75% η							
3000r/min=2poles Basic design												
0.37	<b>M2QA</b> 71M2A	<b>3GQA</b> 071301-**A	2780	72.0	73.5	0.82	0.90	6.0	1.27	2.2	2.4	
0.55	71M2B	071302-**A	2785	75.5	77.7	0.83	1.27	5.5	1.89	2.2	2.4	
0.75	80M2A	081301-**A	2840	74.2	74.8	0.85	1.72	6.1	2.52	2.2	2.2	
1.1	80M2B	081302-**A	2855	76.9	78.3	0.86	2.40	7.0	3.68	2.2	2.2	
1.5	90S2A	091101-**A	2850	78.3	79.4	0.87	3.18	7.0	5.03	2.2	2.2	
2.2	90L2A	091501-**A	2850	80.7	81.5	0.86	4.58	7.0	7.37	2.2	2.2	
3	100L2A	101501-**A	2860	82.4	83.7	0.87	6.04	7.0	10.0	2.2	2.2	
4	112M2A	111301-**A	2875	83.9	85.0	0.90	7.65	7.0	13.3	2.2	2.2	
5.5	132S2A	131101-**A	2905	85.5	86.1	0.89	10.4	7.0	18.1	2.2	2.2	
7.5	132S2B	131102-**A	2910	86.7	88.0	0.895	14.0	7.0	24.6	2.2	2.2	
11	160M2A	161301-**A	2920	88.2	88.7	0.875	20.6	6.5	36.0	2.5	3.0	
15	160M2B	161302-**A	2920	89.3	90.0	0.885	27.4	6.5	49.1	2.5	3.2	
18.5	160L2A	161501-**A	2920	89.8	90.9	0.895	33.2	6.5	60.5	2.5	3.2	
22	180M2A	181301-**A	2940	90.4	91.7	0.90	39.0	6.5	71.5	2.3	2.8	
30	200L2A	201501-**A	2955	91.2	91.0	0.90	52.8	6.5	97.0	2.2	2.7	
37	200L2B	201502-**A	2955	91.6	91.6	0.905	64.4	6.5	120	2.3	2.7	
45	225M2A	221301-**A	2970	92.1	91.3	0.89	79.2	7.0	145	2.5	2.8	
55	250M2A	251301-**A	2965	92.5	92.8	0.90	95.4	7.5	177	2.4	3.0	
75	280S2A	281101-**A	2970	93.1	93.1	0.91	128	7.5	241	2.5	3.3	
90	280M2A	281301-**A	2970	93.4	93.6	0.92	151	7.5	289	2.3	3.2	
110	315S2A	311101-**A	2980	93.6	93.4	0.90	188	7.1	352	1.8	2.2	
132	315M2A	311301-**A	2980	94.2	93.8	0.90	225	7.1	423	1.8	2.2	
160	315L2A	311501-**A	2975	94.2	94.0	0.90	272	7.2	514	1.8	2.2	
*200	315L2B	311502-**A	2975	94.4	94.5	0.91	336	7.2	642	1.8	2.2	
*250	355M2A	351301-**A	2980	94.5	94.5	0.90	424	7.1	801	2.3	2.8	
*315	355L2A	351501-**A	2980	94.8	94.6	0.90	533	6.9	1009	2	2.8	

400V 50Hz												
Output kW	Type designation	Product code	Speed n r/min	Efficiency		Power factor cos φ	Current		Torque			
				Full load	3/4 load		I <sub>N</sub> /A	I <sub>s</sub> /I <sub>N</sub>	T <sub>N</sub> /Nm	T <sub>s</sub> /T <sub>N</sub>	T <sub>MAX</sub> /T <sub>N</sub>	
				100% η	75% η							
1500r/min=4poles Basic design												
0.25	<b>M2QA</b> 71M4A	<b>3GQA</b> 072301-**A	1395	69.0	71.2	0.70	0.75	4.5	1.71	2.1	2.4	
0.37	71M4B	072302-**A	1395	69.0	70.7	0.72	1.07	4.5	2.53	2.1	2.4	
0.55	80M4A	082301-**A	1410	72.0	72.5	0.73	1.51	5.2	3.73	2.4	2.0	
0.75	80M4B	082302-**A	1415	74.2	75.6	0.755	1.93	6.0	5.06	2.4	2.2	
1.1	90S4A	092101-**A	1395	76.3	76.8	0.765	2.72	6.0	7.53	2.3	2.2	
1.5	90L4A	092501-**A	1400	78.3	80.6	0.78	3.54	6.0	10.2	2.3	2.2	
2.2	100L4A	102501-**A	1430	80.7	81.3	0.79	4.98	6.0	14.7	2.3	2.2	
3	100L4B	102502-**A	1425	82.4	83.6	0.81	6.49	6.5	20.1	2.3	2.2	
4	112M4A	112301-**A	1435	83.9	84.1	0.775	8.88	6.5	26.6	2.3	2.2	
5.5	132S4A	132101-**A	1435	85.5	86.2	0.82	11.3	6.5	36.6	2.3	2.2	
7.5	132M4A	132301-**A	1440	86.7	87.6	0.83	15.0	6.5	49.7	2.3	2.2	
11	160M4A	162301-**A	1460	88.2	89.1	0.85	21.2	6.5	72.0	2.4	2.8	
15	160L4A	162501-**A	1455	89.3	90.8	0.86	28.2	6.5	98.5	2.3	2.4	
18.5	180M4A	182301-**A	1470	89.8	90.4	0.86	34.6	6.5	120	2.3	3.0	
22	180L4A	182501-**A	1470	90.4	90.1	0.875	40.1	6.5	143	2.4	3.1	
30	200L4A	202501-**A	1475	91.2	91.8	0.87	54.6	6.5	194	2.2	2.8	
37	225S4A	222101-**A	1480	91.6	92.1	0.86	67.8	7.0	239	2.2	2.8	
45	225M4A	222301-**A	1480	92.1	92.3	0.86	82.0	7.0	290	2.2	2.8	
55	250M4A	252301-**A	1475	92.5	92.8	0.88	97.5	7.0	356	2.4	3.0	
75	280S4A	282101-**A	1480	93.1	93.7	0.88	132	6.5	484	2.4	2.6	
90	280M4A	282301-**A	1480	93.6	93.8	0.89	156	7.2	581	2.3	2.8	
110	315S4A	312101-**A	1485	93.6	93.7	0.87	195	6.9	707	2.1	2.2	
132	315M4A	312301-**A	1480	93.8	93.8	0.875	232	6.9	852	2.1	2.2	
160	315L4A	312501-**A	1485	94.0	94.0	0.875	281	6.9	1029	2.1	2.2	
200	315L4B	312502-**A	1480	94.2	94.2	0.875	350	6.9	1291	2.1	2.2	
*250	355M4A	352301-**A	1485	94.4	94.4	0.90	425	6.9	1608	2.1	2.6	
*315	355L4A	352501-**A	1485	94.8	94.8	0.90	533	7.0	2026	2.1	2.3	

Code letters For supplementing the product code  
Code letters For voltage and-frequency(product code position 13)

\*Insulation Class F Temperature rise Class F

D	S	
380~420VΔ50Hz	220~240VΔ50Hz	Other rated voltage connection or frequency(Max,690V)can be used with VC002 or VC209.(The meaning of Variant code can be referred to Variant Code List on Page 25 )
660~690VY50Hz	380~420VY50Hz	
440~480 <sup>1)</sup> VΔ60Hz	440~480VY60Hz	

Efficiency values are giving according to IEC 60034-2-1:2007

<sup>1)</sup>480V not stamped on sizes 160 to 355

Please note that the values are not comparable without knowing the testing method.

ABB has calculated the efficiency values according to indirect method,stray load losses(additional losses)determined from measuring.

IE-class concerns motors from 0.75kW to 375kW and 2,4,6 poles.

Technical Data Table

IP55 IC411

Insulation class F  
Temperature rise class B

380V 50Hz						415V 50Hz						
Output kW	Type designation	Speed n r/min	Efficiency η %	Power factor cos φ	Current A	Speed n r/min	Efficiency η %	Power factor cos φ	Current A	Moment of inertia J=GD <sup>2</sup> /4 kgm <sup>2</sup>	Weight kg	Sound pressure level Lp dB(A)
3000r/min=2poles Basic design												
0.37	M2QA 71M2A	2765	71.0	0.85	0.93	2790	72.0	0.80	0.89	0.00030	10	56
0.55	71M2B	2780	73.5	0.85	1.34	2800	75.5	0.81	1.25	0.00037	11	56
0.75	80M2A	2825	73.7	0.86	1.80	2855	74.7	0.84	1.66	0.00091	16	57
1.1	80M2B	2840	76.2	0.87	2.52	2870	77.4	0.845	2.34	0.00107	17	58
1.5	90S2A	2835	77.8	0.885	3.31	2865	78.8	0.86	3.08	0.00135	21	61
2.2	90L2A	2835	80.2	0.88	4.74	2865	81.0	0.83	4.55	0.00163	24	61
3	100L2A	2845	82.0	0.88	6.32	2870	82.8	0.845	5.97	0.00402	33	65
4	112M2A	2860	83.1	0.915	7.99	2890	84.4	0.88	7.49	0.00671	42	67
5.5	132S2A	2890	84.8	0.90	10.9	2910	86.0	0.875	10.2	0.01241	58	70
7.5	132S2B	2900	86.0	0.90	14.7	2920	87.2	0.89	13.4	0.01491	63	70
11	160M2A	2910	87.6	0.885	21.6	2930	88.2	0.85	20.4	0.0436	112	72
15	160M2B	2910	89.3	0.895	28.5	2930	89.8	0.875	26.6	0.0551	122	72
18.5	160L2A	2910	89.8	0.905	34.6	2930	90.3	0.885	32.2	0.06549	142	72
22	180M2A	2935	90.4	0.91	40.6	2950	90.4	0.88	38.5	0.08805	170	75
30	200L2A	2950	91.2	0.91	54.9	2960	91.2	0.89	51.4	0.14821	235	81
37	200L2B	2950	91.6	0.915	67.1	2960	91.6	0.895	62.8	0.16822	254	81
45	225M2A	2965	92.1	0.90	82.5	2970	92.1	0.875	77.7	0.29345	328	81
55	250M2A	2960	92.3	0.905	100	2965	92.5	0.89	92.9	0.3784	400	84
75	280S2A	2965	92.8	0.92	133	2970	93.1	0.905	124	0.587	498	85
90	280M2A	2965	93.1	0.925	159	2970	93.4	0.915	147	0.615	554	85
110	315S2A	2975	93.6	0.905	197	2980	93.6	0.89	184	1.4083	869	88
132	315M2A	2975	94.2	0.905	235	2980	94.2	0.89	219	1.5584	962	88
160	315L2A	2975	94.2	0.91	284	2980	94.2	0.89	266	1.7256	1014	88
*200	315L2B	2970	94.4	0.915	352	2975	94.4	0.90	327	1.9405	1166	88
*250	355M2A	2980	94.5	0.905	444	2980	94.5	0.895	411	3.05	1658	89
*315	355L2A	2980	94.8	0.905	558	2980	94.8	0.895	517	3.6	1815	89

380V 50Hz						415V 50Hz						
Output kW	Type designation	Speed n r/min	Efficiency η %	Power factor cos φ	Current A	Speed n r/min	Efficiency η %	Power factor cos φ	Current A	Moment of inertia J=GD <sup>2</sup> /4 kgm <sup>2</sup>	Weight kg	Sound pressure level Lp dB(A)
1500r/min=4poles Basic design												
0.25	M2QA 71M4A	1385	68.0	0.73	0.77	1405	69.0	0.67	0.75	0.00053	11	43
0.37	71M4B	1385	68.0	0.745	1.11	1405	69.0	0.69	1.08	0.00066	11	45
0.55	80M4A	1400	71.5	0.75	1.56	1420	72.0	0.70	1.52	0.00145	16	46
0.75	80M4B	1405	73.2	0.78	2.00	1425	74.7	0.735	1.90	0.00174	17	46
1.1	90S4A	1385	75.7	0.785	2.81	1405	76.5	0.735	2.72	0.00254	21	52
1.5	90L4A	1390	77.8	0.795	3.68	1410	78.8	0.755	3.51	0.00317	25	52
2.2	100L4A	1420	80.2	0.81	5.15	1435	81.0	0.765	4.94	0.00679	33	53
3	100L4B	1415	81.7	0.83	6.72	1430	82.8	0.785	6.42	0.00862	36	53
4	112M4A	1430	83.6	0.805	9.03	1440	84.1	0.75	8.82	0.01306	45	56
5.5	132S4A	1425	84.7	0.84	11.7	1440	85.6	0.79	11.3	0.02673	60	59
7.5	132M4A	1430	86.1	0.84	15.8	1450	87.1	0.80	15.0	0.03432	73	59
11	160M4A	1450	88.2	0.87	21.8	1460	88.2	0.83	20.9	0.06543	116	66
15	160L4A	1450	89.3	0.88	29.0	1460	89.3	0.85	27.5	0.09349	137	66
18.5	180M4A	1465	89.8	0.88	35.6	1470	89.8	0.85	33.7	0.16049	170	66
22	180L4A	1465	90.4	0.89	41.5	1470	90.4	0.86	39.4	0.18046	186	66
30	200L4A	1470	91.2	0.885	56.5	1475	91.2	0.855	53.5	0.2819	254	71
37	225S4A	1475	91.6	0.875	70.1	1480	91.6	0.84	66.9	0.37	308	73
45	225M4A	1475	92.1	0.865	85.8	1480	92.1	0.835	81.4	0.42	335	73
55	250M4A	1475	92.3	0.89	102	1480	92.6	0.87	95.0	0.78	433	76
75	280S4A	1480	92.9	0.89	138	1480	93.1	0.875	128	1.10	510	78
90	280M4A	1480	93.4	0.90	163	1485	93.6	0.885	151	1.35	583	78
110	315S4A	1480	93.6	0.875	204	1485	93.6	0.855	191	2.8596	904	80
132	315M4A	1480	93.8	0.885	242	1485	93.8	0.865	226	3.1848	1003	80
160	315L4A	1480	94.0	0.885	292	1485	94.0	0.86	275	3.6765	1095	86
200	315L4B	1480	94.2	0.885	364	1485	94.2	0.865	341	4.2516	1204	86
*250	355M4A	1485	94.3	0.905	445	1490	94.4	0.895	412	6.77	1668	87
*315	355L4A	1485	94.7	0.905	558	1490	94.8	0.895	517	8.2	1871	87

Code letters For supplementing the product code  
Code letters For voltage and-frequency(product code position 13)

\*Insulation Class F Temperature rise Class F

D	S	
380~420V△50Hz	220~240V△50Hz	Other rated voltage connection or frequency(Max,690V)can be used with VC002 or VC209.(The meaning of Variant code can be referred to Variant Code List on Page 25 )
660~690VY50Hz	380~420VY50Hz	
440~480 <sup>1)</sup> V△60Hz	440~480VY60Hz	

Efficiency values are giving according to IEC 60034-2-1:2007

<sup>1)</sup>480V not stamped on sizes 160 to 355

Please note that the values are not comparable without knowing the testing method.

ABB has calculated the efficiency values according to indirect method,stray load losses(additional losses)determined from measuring.

IE-class concerns motors from 0.75kW to 375kW and 2,4,6 poles.



Technical Data Table

IP55 IC411

Insulation class F  
Temperature rise class B

400V 50Hz											
Output kW	Type designation	Product code	Speed n r/min	Efficiency		Power factor cos φ	Current		Torque		
				Full load 100% η	3/4 load 75% η		IN A	Is/IN	TN Nm	Ts/TN	TMAX/TN
1000r/min=6poles Basic design											
0.18	<b>M2QA</b> 71M6A	<b>3GQA</b> 073301-**A	885	55.0	54.0	0.67	0.71	3.5	1.94	2.1	2.3
0.25	71M6B	073302-**A	885	58.0	59.6	0.67	0.93	3.5	2.70	2.1	2.3
0.37	80M6A	083301-**A	930	63.5	63.9	0.66	1.27	5.0	3.80	1.9	1.8
0.55	80M6B	083302-**A	925	65.7	66.9	0.675	1.79	5.0	5.68	1.9	1.8
0.75	90S6A	093101-**A	920	71.5	72.6	0.72	2.10	5.0	7.79	2.0	2.2
1.1	90L6A	093501-**A	920	74.3	75.5	0.74	2.89	5.0	11.4	2.0	2.2
1.5	100L6A	103501-**A	940	76.4	76.2	0.74	3.83	5.5	15.2	2.0	2.2
2.2	112M6A	113301-**A	940	78.8	79.8	0.73	5.52	5.5	22.4	2.0	2.2
3	132S6A	133101-**A	945	80.7	81.6	0.77	6.97	6.5	30.3	2.0	2.2
4	132M6A	133301-**A	950	82.3	82.9	0.77	9.11	6.5	40.2	2.0	2.2
5.5	132M6B	133302-**A	950	83.9	85.8	0.78	12.1	6.5	55.3	2.0	2.2
7.5	160M6A	163301-**A	960	85.5	86.4	0.78	16.2	6.0	74.6	2.0	2.3
11	160L6A	163501-**A	970	87.1	88.0	0.78	23.4	6.0	108	2.2	2.3
15	180L6A	183501-**A	975	88.3	88.7	0.82	29.9	6.0	147	2.3	2.8
18.5	200L6A	203501-**A	980	89.2	90.2	0.82	36.5	6.0	180	2.2	2.8
22	200L6B	203502-**A	980	89.7	90.4	0.83	42.7	6.0	214	2.1	2.8
30	225M6A	223301-**A	985	90.7	91.1	0.815	58.6	6.6	291	2.2	2.8
37	250M6A	253301-**A	975	91.3	91.6	0.87	67.2	6.8	362	2.3	2.8
45	280S6A	283101-**A	985	91.8	92.0	0.875	80.9	6.2	436	2.3	2.4
55	280M6A	283301-**A	985	92.3	92.4	0.875	98.3	7.0	533	2.3	2.5
75	315S6A	313101-**A	985	93.0	93.2	0.86	135	7.4	727	2.0	2.0
90	315M6A	313301-**A	985	93.3	93.5	0.86	162	7.4	872	2.0	2.0
110	315L6A	313501-**A	985	93.6	93.8	0.875	194	6.8	1066	2.0	2.0
132	315L6B	313502-**A	985	93.8	94.0	0.875	232	6.8	1280	2.0	2.0
*160	355M6A	353301-**A	990	94.0	94.2	0.88	279	6.8	1543	2.1	2.4
*200	355M6B	353302-**A	990	94.2	94.3	0.88	348	6.7	1929	2.0	2.3
*250	355L6A	353501-**A	990	94.4	94.5	0.88	434	6.7	2412	2.0	2.3

400V 50Hz											
Output kW	Type designation	Product code	Speed n r/min	Efficiency		Power factor cos φ	Current		Torque		
				Full load 100% η	3/4 load 75% η		IN A	Is/IN	TN Nm	Ts/TN	TMAX/TN
750r/min=8poles Basic design											
0.18	<b>M2QA</b> 80M8A	<b>3GQA</b> 084301-**A	700	51.0	50.1	0.60	0.85	3.3	2.46	1.8	1.9
0.25	80M8B	084302-**A	700	54.5	53.2	0.60	1.10	3.6	3.41	1.8	1.9
0.37	90S8A	094101-**A	700	62.5	62.1	0.605	1.41	4.4	5.05	1.8	1.9
0.55	90L8A	094501-**A	700	63.5	63.3	0.615	2.03	4.7	7.50	1.8	2.0
0.75	100L8A	104501-**A	690	68.5	68.6	0.64	2.47	5.0	10.4	1.8	2.0
1.1	100L8B	104502-**A	675	71.3	70.1	0.645	3.45	5.0	15.6	1.8	2.0
1.5	112M8A	114301-**A	695	74.2	74.6	0.675	4.32	5.0	20.6	1.8	2.0
2.2	132S8A	134101-**A	710	79.8	80.6	0.70	5.68	5.5	29.6	1.8	2.0
3	132M8A	134301-**A	710	80.0	80.4	0.75	7.22	5.5	40.4	1.8	2.0
4	160M8A	164301-**A	720	83.0	83.0	0.73	9.53	5.5	53.1	2.1	2.5
5.5	160M8B	164302-**A	720	84.5	94.6	0.74	12.7	5.5	73.0	2.1	2.5
7.5	160L8A	164501-**A	720	85.2	84.5	0.74	17.2	5.5	99.5	2.1	2.5
11	180L8A	184501-**A	730	87.5	86.8	0.77	23.6	5.4	144	2.0	2.8
15	200L8A	204501-**A	730	89.0	89.4	0.775	31.4	5.5	196	2.3	2.8
18.5	225S8A	224101-**A	735	89.5	88.6	0.73	40.9	5.5	240	2.1	2.8
22	225M8A	224301-**A	735	89.7	88.8	0.74	47.8	6.0	286	2.2	2.8
30	250M8A	254301-**A	730	91.3	89.3	0.79	60.0	6.5	392	2.3	2.6
37	280S8A	284101-**A	735	91.2	91.0	0.80	73.2	6.0	481	2.1	2.6
45	280M8A	284301-**A	735	92.0	90.6	0.80	88.2	6.0	585	2.1	2.7
55	315S8A	314101-**A	740	92.5	91.2	0.82	105	6.9	710	1.8	2.0
75	315M8A	314301-**A	740	93.0	91.9	0.82	142	7.0	968	1.8	2.0
90	315L8A	314501-**A	740	93.5	92.9	0.82	169	7.1	1161	1.8	2.0
110	315L8B	314502-**A	740	94.0	92.4	0.825	205	6.4	1420	1.8	2.0
*132	355M8A	354301-**A	740	94.2	93.9	0.815	248	6.2	1704	1.8	2.0
*160	355M8B	354302-**A	740	94.5	94.1	0.82	298	6.2	2065	1.8	2.0
*200	355L8A	354501-**A	740	94.7	94.5	0.82	372	6.2	2581	1.8	2.0

Code letters For supplementing the product code  
Code letters For voltage and-frequency(product code position 13)

\*Insulation Class F Temperature rise Class F

D	S	
380~420VΔ50Hz	220~240VΔ50Hz	Other rated voltage connection or frequency(Max,690V)can be used with VC002 or VC209.(The meaning of Variant code can be referred to Variant Code List on Page 25 )
660~690VY50Hz	380~420VY50Hz	
440~480 <sup>1)</sup> VΔ60Hz	440~480VY60Hz	

Efficiency values are giving according to IEC 60034-2-1:2007

Please note that the values are not comparable without knowing the testing method.

ABB has calculated the efficiency values according to indirect method,stray load losses(additional losses)determined from measuring.

<sup>1)</sup>480V not stamped on sizes 160 to 355

IE-class concerns motors from 0.75kW to 375kW and 2,4,6 poles.

Technical Data Table

IP55 IC411

Insulation class F  
Temperature rise class B

380V 50Hz						415V 50Hz						
Output kW	Type designation	Speed n r/min	Efficiency $\eta$ %	Power factor $\cos \phi$	Current A	Speed n r/min	Efficiency $\eta$ %	Power factor $\cos \phi$	Current A	Moment of inertia $J=GD^2/4$ kgm <sup>2</sup>	Weight kg	Sound pressure level Lp dB(A)
1000r/min=6poles Basic design												
0.18	<b>M2QA</b> 71M6A	880	52.0	0.69	0.76	890	55.0	0.63	0.72	0.00056	10	42
0.25	71M6B	880	56.0	0.69	0.98	890	58.0	0.66	0.91	0.00074	11	42
0.37	80M6A	925	63.0	0.685	1.30	935	63.0	0.63	1.30	0.00159	17	45
0.55	80M6B	920	65.0	0.705	1.82	930	65.5	0.635	1.84	0.00196	18	45
0.75	90S6A	915	70.5	0.755	2.14	930	71.7	0.70	2.08	0.00292	21	48
1.1	90L6A	915	73.3	0.77	2.96	925	74.5	0.72	2.85	0.00379	25	48
1.5	100L6A	930	75.6	0.76	3.97	945	76.8	0.715	3.80	0.00999	32	51
2.2	112M6A	935	78.2	0.75	5.70	945	79.2	0.71	5.44	0.01559	40	54
3	132S6A	940	80.1	0.78	7.30	950	81.1	0.75	6.86	0.03116	55	56
4	132M6A	945	81.4	0.78	9.57	955	82.8	0.75	8.96	0.04074	65	56
5.5	132M6B	940	83.3	0.79	12.7	955	84.3	0.765	11.9	0.05332	75	56
7.5	160M6A	950	85.5	0.79	16.9	970	85.5	0.75	16.3	0.09231	119	61
11	160L6A	965	87.1	0.80	24.0	975	87.1	0.76	23.1	0.12970	140	62
15	180L6A	975	88.3	0.84	30.7	980	88.3	0.80	29.5	0.2418	180	63
18.5	200L6A	975	89.2	0.84	37.5	980	89.2	0.80	36.1	0.34174	231	64
22	200L6B	975	89.7	0.84	44.4	980	89.7	0.81	42.1	0.46837	254	64
30	225M6A	980	90.7	0.835	60.2	985	90.7	0.79	58.2	0.62691	308	66
37	250M6A	975	90.9	0.88	70.3	980	91.5	0.86	65.4	0.97	385	68
45	280S6A	980	91.6	0.885	84.3	985	91.8	0.865	78.8	1.25	467	69
55	280M6A	980	92.0	0.885	103	985	92.3	0.865	95.8	1.485	520	70
75	315S6A	985	92.8	0.87	141	985	93.0	0.85	132	3.1942	809	70
90	315M6A	985	93.2	0.87	169	985	93.3	0.85	158	3.723	918	70
110	315L6A	985	93.5	0.88	203	985	93.6	0.87	188	4.2564	1003	70
132	315L6B	985	93.6	0.88	243	985	93.8	0.87	225	5.1577	1076	70
*160	355M6A	990	94.0	0.89	291	990	94.0	0.86	275	7.8	1605	75
*200	355M6B	990	94.1	0.895	361	990	94.2	0.875	338	9.1	1778	75
*250	355L6A	990	94.3	0.895	450	990	94.4	0.87	423	11.4	1990	75

380V 50Hz						415V 50Hz						
Output kW	Type designation	Speed n r/min	Efficiency $\eta$ %	Power factor $\cos \phi$	Current A	Speed n r/min	Efficiency $\eta$ %	Power factor $\cos \phi$	Current A	Moment of inertia $J=GD^2/4$ kgm <sup>2</sup>	Weight kg	Sound pressure level Lp dB(A)
750r/min=8poles Basic design												
0.18	<b>M2QA</b> 80M8A	695	48.0	0.63	0.90	705	52.5	0.57	0.84	0.00111	16	42
0.25	80M8B	695	52.3	0.63	1.15	705	55.0	0.57	1.11	0.00326	17	42
0.37	90S8A	695	62.0	0.62	1.46	705	62.5	0.59	1.40	0.00541	21	46
0.55	90L8A	695	63.0	0.63	2.11	705	63.5	0.60	2.01	0.00756	24	46
0.75	100L8A	680	67.0	0.65	2.62	695	69.0	0.62	2.44	0.00971	31	53
1.1	100L8B	665	68.8	0.68	3.57	685	71.8	0.625	3.41	0.01186	34	53
1.5	112M8A	690	73.2	0.68	4.58	700	74.4	0.64	4.38	0.01559	42	55
2.2	132S8A	705	79.3	0.745	5.66	715	79.8	0.685	5.60	0.03625	56	55
3	132M8A	705	79.5	0.78	7.35	715	80.0	0.725	7.20	0.04141	64	56
4	160M8A	715	83.0	0.76	9.63	725	83.0	0.70	9.58	0.0676	105	58
5.5	160M8B	715	84.5	0.76	13.0	720	84.5	0.72	12.6	0.09524	125	58
7.5	160L8A	715	85.2	0.77	17.4	720	85.2	0.72	17.0	0.12122	142	58
11	180L8A	725	87.5	0.79	24.2	730	87.5	0.75	23.3	0.23645	176	62
15	200L8B	725	89.0	0.80	32.0	730	89.0	0.75	31.3	0.37103	235	63
18.5	225S8A	735	89.5	0.75	41.9	740	89.3	0.69	41.8	0.53287	290	65
22	225M8A	735	89.7	0.76	49.0	740	89.5	0.70	48.9	0.65825	302	65
30	250M8A	730	91.2	0.81	61.7	735	91.4	0.77	59.3	0.975	390	67
37	280S8A	735	91.1	0.81	76.2	735	91.2	0.785	71.9	1.25	471	68
45	280M8A	735	91.9	0.81	91.8	735	92.0	0.79	86.1	1.485	537	68
55	315S8A	735	92.3	0.83	109	740	92.6	0.805	103	3.6842	779	65
75	315M8A	735	92.8	0.83	148	740	93.1	0.805	139	4.9591	941	68
90	315L8A	740	93.3	0.83	177	740	93.6	0.805	166	5.8205	1022	68
110	315L8B	735	93.8	0.84	212	740	94.1	0.81	201	6.7537	1104	68
*132	355M8A	740	94.1	0.83	257	740	94.3	0.80	243	8.6	1585	71
*160	355M8B	740	94.4	0.835	308	740	94.6	0.805	292	10.01	1740	71
*200	355L8A	740	94.6	0.835	385	740	94.8	0.805	365	12.5	1946	71

Code letters For supplementing the product code  
Code letters For voltage and-frequency(product code position 13)

\*Insulation Class F Temperature rise Class F

D	S	
380~420V $\Delta$ 50Hz	220~240V $\Delta$ 50Hz	Other rated voltage connection or frequency(Max,690V)can be used with VC002 or VC209.(The meaning of Variant code can be referred to Variant Code List on Page 25 )
660~690VY50Hz	380~420VY50Hz	
440~480 <sup>1)</sup> V $\Delta$ 60Hz	440~480VY60Hz	

<sup>1)</sup>480V not stamped on sizes 160 to 355

Efficiency values are giving according to IEC 60034-2-1:2007

Please note that the values are not comparable without knowing the testing method.

ABB has calculated the efficiency values according to indirect method,stray load losses(additional losses)determined from measuring.

IE-class concerns motors from 0.75kW to 375kW and 2,4,6 poles.

# Technical Data Table

IP55 IC411

Insulation class F  
Temperature rise class B

460V 60Hz													
Output kW	Type designation	Product code	Speed n r/min	Efficiency		Current		Torque			Moment of inertia J=GD <sup>2</sup> /4 kgm <sup>2</sup>	Weight kg	Sound pressure level Lp dB(A)
				Full load	Power factor cos φ	IN A	Is/IN	TN Nm	Ts/TN	TMAX/TN			
3600r/min=2poles Basic design													
0.43	<b>M2QA</b> 71M2A	<b>3GQA</b> 071301-**A	3350	75.0	0.825	0.87	5.5	1.23	2.2	2.4	0.00030	10	59
0.63	71M2B	071302-**A	3350	79.0	0.83	1.21	5.5	1.80	2.2	2.4	0.00037	11	59
0.86	80M2A	081301-**A	3420	77.0	0.875	1.60	6.1	2.40	2.2	2.2	0.00091	16	60
1.27	80M2B	081302-**A	3430	78.5	0.87	2.33	7.0	3.54	2.2	2.2	0.00107	17	61
1.73	90S2A	091101-**A	3420	81.0	0.87	3.08	7.0	4.83	2.2	2.2	0.00135	21	64
2.53	90L2A	091501-**A	3440	81.5	0.86	4.53	7.0	7.02	2.2	2.2	0.00163	24	64
3.45	100L2A	101501-**A	3450	84.5	0.87	5.89	7.0	9.55	2.2	2.2	0.00402	33	68
4.60	112M2A	111301-**A	3475	86.0	0.91	7.38	7.0	12.6	2.2	2.2	0.00671	42	70
6.33	132S2A	131101-**A	3500	86.0	0.89	10.4	7.0	17.3	2.2	2.2	0.01241	58	73
8.6	132S2B	131102-**A	3510	87.5	0.895	13.8	7.0	23.4	2.2	2.2	0.01491	63	73
12.7	160M2A	161301-**A	3515	87.5	0.875	20.8	6.5	34.5	2.5	3.0	0.0436	112	75
17.3	160M2B	161302-**A	3515	89.5	0.895	27.1	6.5	47.0	2.5	3.2	0.0551	122	75
21.3	160L2A	161501-**A	3520	89.5	0.90	33.2	6.5	57.8	2.5	3.2	0.06549	142	75
25.3	180M2A	181301-**A	3540	89.5	0.90	39.4	6.5	68.3	2.3	2.8	0.08805	170	78
34.5	200L2A	201501-**A	3550	91.5	0.905	52.3	6.5	92.8	2.2	2.7	0.14821	235	84
42.6	200L2B	201502-**A	3550	91.7	0.91	64.1	6.5	115	2.3	2.7	0.16822	254	84
51.8	225M2A	221301-**A	3570	92.4	0.895	78.6	7.0	139	2.5	2.8	0.29345	328	84
63	250M2A	251301-**A	3565	92.4	0.90	95.1	7.5	169	2.4	3.0	0.3784	400	87
86	280S2A	281101-**A	3570	93.0	0.92	126	7.5	230	2.5	3.3	0.587	498	88
104	280M2A	281301-**A	3570	93.0	0.925	152	7.5	278	2.3	3.2	0.615	554	88
127	315S2A	311101-**A	3575	93.0	0.90	190	7.1	339	1.8	2.2	1.4083	869	91
152	315M2A	311301-**A	3575	94.1	0.905	224	7.1	406	1.8	2.2	1.5584	962	91
184	315L2A	311501-**A	3575	94.1	0.905	271	7.2	492	1.8	2.2	1.7256	1014	91
*230	315L2B	311502-**A	3570	94.1	0.91	337	7.2	615	1.8	2.2	1.9405	1166	91
*287.5	355M2A	351301-**A	3580	94.1	0.905	424	7.1	767	2.3	2.8	3.05	1658	92
*362.5	355L2A	351501-**A	3580	94.1	0.905	534	6.9	967	2.0	2.8	3.6	1815	92

460V 60Hz													
Output kW	Type designation	Product code	Speed n r/min	Efficiency		Current		Torque			Moment of inertia J=GD <sup>2</sup> /4 kgm <sup>2</sup>	Weight kg	Sound pressure level Lp dB(A)
				Full load	Power factor cos φ	IN A	Is/IN	TN Nm	Ts/TN	TMAX/TN			
1800r/min=4poles Basic design													
0.29	<b>M2QA</b> 71M4A	<b>3GQA</b> 072301-**A	1665	73.0	0.71	0.70	4.5	1.66	2.1	2.4	0.00053	11	46
0.43	71M4B	072302-**A	1670	73.0	0.73	1.01	4.5	2.46	2.1	2.4	0.00066	11	48
0.63	80M4A	082301-**A	1695	73.5	0.73	1.47	5.2	3.55	2.4	2.0	0.00145	16	49
0.86	80M4B	082302-**A	1690	78.0	0.75	1.85	6.0	4.86	2.4	2.2	0.00174	17	49
1.27	90S4A	092101-**A	1695	79.0	0.765	2.64	6.0	7.16	2.3	2.2	0.00254	21	55
1.73	90L4A	092501-**A	1700	81.5	0.785	3.39	6.0	9.70	2.3	2.2	0.00317	25	55
2.53	100L4A	102501-**A	1730	83.0	0.795	4.81	6.0	14.0	2.3	2.2	0.00679	32	56
3.45	100L4B	102502-**A	1725	85.0	0.815	6.25	6.5	19.1	2.3	2.2	0.00862	36	56
4.60	112M4A	112301-**A	1735	87.0	0.785	8.45	6.5	25.3	2.3	2.2	0.01306	45	59
6.33	132S4A	132101-**A	1735	87.0	0.82	11.1	6.5	34.8	2.3	2.2	0.02673	60	62
8.6	132M4A	132301-**A	1735	87.5	0.83	14.9	6.5	47.3	2.3	2.2	0.03432	73	62
12.7	160M4A	162301-**A	1755	88.5	0.87	20.7	6.5	69.1	2.4	2.8	0.06543	116	69
17.3	160L4A	162501-**A	1750	90.5	0.88	27.3	6.5	94.4	2.3	2.4	0.09349	137	69
21.3	180M4A	182301-**A	1770	91.0	0.865	34.0	6.5	115	2.3	3.0	0.16049	170	69
25.3	180L4A	182501-**A	1770	91.0	0.88	39.7	6.5	137	2.4	3.1	0.18046	186	69
34.5	200L4A	202501-**A	1775	92.4	0.875	53.6	6.5	186	2.2	2.8	0.2819	254	74
42.6	225S4A	222101-**A	1780	93.0	0.87	66.1	7.0	229	2.2	2.8	0.37	308	76
51.8	225M4A	222301-**A	1780	93.0	0.86	81.3	7.0	278	2.2	2.8	0.42	335	76
63	250M4A	252301-**A	1775	93.0	0.885	96.1	7.0	339	2.4	3.0	0.78	433	79
86	280S4A	282101-**A	1780	93.2	0.885	131	6.5	461	2.4	2.6	1.10	510	81
104	280M4A	282301-**A	1780	93.5	0.895	156	7.2	558	2.3	2.8	1.35	583	81
127	315S4A	312101-**A	1780	93.5	0.875	195	6.9	681	2.1	2.2	2.8596	904	83
152	315M4A	312301-**A	1780	94.5	0.88	229	6.9	816	2.1	2.2	3.1848	1003	83
184	315L4A	312501-**A	1780	94.5	0.875	279	6.9	987	2.1	2.2	3.6765	1095	89
230	315L4B	312502-**A	1780	94.5	0.885	345	6.9	1234	2.1	2.2	4.2516	1204	89
*287.5	355M4A	352301-**A	1785	94.5	0.905	422	6.9	1538	2.1	2.6	6.77	1668	90
*362.5	355L4A	352501-**A	1785	94.5	0.905	532	7.0	1939	2.1	2.3	8.20	1871	90

Code letters for supplementing the product code  
Code letters for voltage and-frequency(product code position 13)

\*Insulation Class F Temperature rise Class F

D	S	
380~420V△50Hz	220~240V△50Hz	Other rated voltage connection or frequency(Max,690V)can be used with VC002 or VC209.(The meaning of Variant code can be referred to Variant Code List on Page 25 )
660~690VY50Hz	380~420VY50Hz	
440~480 <sup>1)</sup> V△60Hz	440~480VY60Hz	

<sup>1)</sup>480V not stamped on sizes 160 to 355

# Technical Data Table

IP55 IC411

Insulation class F  
Temperature rise class B

460V 60Hz													
Output kW	Type designation	Product code	Speed n r/min	Efficiency Full load 100% $\eta$	Power factor $\cos \phi$	Current		Torque			Moment of inertia $J=GD^2/4$ kgm <sup>2</sup>	Weight kg	Sound pressure level Lp dB(A)
						IN A	Is/IN	TN Nm	Ts/TN	TMAX/TN			
1200r/min=6poles Basic design													
0.21	M2QA 71M6A 3GQA	073301-***A	1060	59.0	0.68	0.66	3.5	1.89	2.1	2.3	0.00056	10	45
0.29	71M6B	073302-***A	1060	63.0	0.68	0.85	3.5	2.61	2.1	2.3	0.00074	11	45
0.43	80M6A	083301-***A	1105	66.3	0.66	1.23	5.0	3.72	1.9	1.9	0.00159	17	48
0.63	80M6B	083302-***A	1115	68.0	0.665	1.75	5.0	5.40	1.9	1.9	0.00196	18	48
0.86	90S6A	093101-***A	1115	73.0	0.72	2.05	5.0	7.37	2.0	2.2	0.00292	21	51
1.27	90L6A	093501-***A	1110	75.0	0.72	2.95	5.0	10.9	2.0	2.2	0.00379	25	51
1.73	100L6A	103501-***A	1135	77.0	0.745	3.79	5.5	14.6	2.0	2.2	0.00999	32	54
2.53	112M6A	113301-***A	1140	78.5	0.735	5.50	5.5	21.2	2.0	2.2	0.01559	40	57
3.45	132S6A	133101-***A	1145	83.5	0.77	6.73	6.5	28.8	2.0	2.2	0.03116	55	59
4.60	132M6A	133301-***A	1150	85.0	0.77	8.82	6.5	38.2	2.0	2.2	0.04074	65	59
6.33	132M6B	133302-***A	1150	85.0	0.78	12.0	6.58	52.6	2.0	2.2	0.05332	75	59
8.6	160M6A	163301-***A	1165	86.0	0.78	16.1	6.0	70.5	2.0	2.3	0.09231	119	64
12.7	160L6A	163501-***A	1165	89.0	0.785	22.8	6.0	104	2.2	2.3	0.12970	140	65
17.3	180L6A	183501-***A	1175	90.2	0.83	29.0	6.0	141	2.3	2.8	0.2418	180	66
21.3	200L6A	203501-***A	1175	91.0	0.83	35.4	6.0	173	2.2	2.8	0.34174	231	67
25.3	200L6B	203502-***A	1175	91.0	0.84	41.5	6.0	206	2.1	2.8	0.46837	254	67
34.5	225M6A	223301-***A	1185	91.7	0.825	57.2	6.6	278	2.2	2.8	0.62691	308	69
42.6	250M6A	253301-***A	1175	91.7	0.88	66.3	6.8	346	2.3	2.8	0.97	385	71
51.8	280S6A	283101-***A	1185	92.1	0.88	80.2	6.2	417	2.3	2.4	1.25	467	72
63	280M6A	283301-***A	1185	92.1	0.88	97.6	7.0	508	2.3	2.5	1.485	520	73
86	315S6A	313101-***A	1185	93.0	0.865	134	7.4	693	2.0	2.0	3.1942	809	73
104	315M6A	313301-***A	1185	94.1	0.865	160	7.4	838	2.0	2.0	3.723	918	73
127	315L6A	313501-***A	1185	94.1	0.875	194	6.8	1024	2.0	2.0	4.2564	1003	73
152	315L6B	313502-***A	1185	94.1	0.88	230	6.8	1225	2.0	2.0	5.1577	1076	73
*184	355M6A	353301-***A	1190	94.1	0.88	279	6.8	1477	2.1	2.4	7.8	1605	78
*230	355M6B	353302-***A	1190	94.1	0.885	347	6.7	1846	2.0	2.3	9.1	1778	78
*287.5	355L6A	353501-***A	1190	94.1	0.885	433	6.7	2307	2.0	2.3	11.4	1990	78
460V 60Hz													
Output kW	Type designation	Product code	Speed n r/min	Efficiency Full load 100% $\eta$	Power factor $\cos \phi$	Current		Torque			Moment of inertia $J=GD^2/4$ kgm <sup>2</sup>	Weight kg	Sound pressure level Lp dB(A)
						IN A	Is/IN	TN Nm	Ts/TN	TMAX/TN			
900r/min=8poles Basic design													
0.21	M2QA 80M8A 3GQA	084301-***A	825	55.5	0.56	0.85	3.3	2.43	1.8	1.9	0.00111	16	45
0.29	80M8B	084302-***A	825	58.5	0.56	1.11	3.6	3.36	1.8	1.9	0.00326	17	45
0.43	90S8A	094101-***A	835	63.0	0.60	1.43	4.4	4.92	1.8	1.9	0.00541	21	49
0.63	90L8A	094501-***A	835	64.3	0.605	2.03	4.7	7.21	1.8	2.0	0.00756	24	49
0.86	100L8A	104501-***A	840	72.0	0.640	2.34	5.0	9.78	1.8	2.0	0.00971	31	56
1.27	100L8B	104502-***A	830	72.8	0.645	3.39	5.0	14.6	1.8	2.0	0.01186	34	56
1.73	112M8A	114301-***A	845	76.4	0.675	4.21	5.0	19.6	1.8	2.0	0.1559	42	58
2.53	132S8A	134101-***A	860	80.7	0.73	5.39	5.5	28.1	1.8	2.0	0.03625	56	58
3.45	132M8A	134301-***A	855	81.8	0.755	7.01	5.5	38.5	1.8	2.0	0.04141	64	59
4.60	160M8A	164301-***A	865	84.0	0.75	9.16	5.5	50.8	2.1	2.5	0.0676	105	61
6.33	160M8B	164302-***A	865	84.9	0.76	12.3	5.5	69.9	2.1	2.5	0.09524	125	61
8.6	160L8A	164501-***A	865	85.2	0.77	16.5	5.5	94.9	2.1	2.5	0.12122	142	61
12.7	180L8A	184501-***A	880	88.8	0.775	23.2	5.4	138	2.0	2.8	0.23645	176	65
17.3	200L8A	204501-***A	880	89.7	0.785	30.8	5.5	188	2.3	2.8	0.37103	235	66
21.3	225S8A	224101-***A	885	90.2	0.745	39.8	5.5	230	2.1	2.8	0.53287	290	68
25.3	225M8A	224301-***A	885	90.4	0.75	46.8	6.0	273	2.2	2.8	0.65825	302	68
34.5	250M8A	254301-***A	880	91.6	0.80	59.1	6.5	374	2.3	2.6	0.975	390	70
42.6	280S8A	284101-***A	885	91.2	0.805	72.8	6.0	460	2.1	2.6	1.25	471	71
51.8	280M8A	284301-***A	885	92.0	0.805	87.8	6.0	559	2.1	2.7	1.485	537	71
63	315S8A	314101-***A	885	92.6	0.825	104	6.9	680	1.8	2.0	3.6842	779	68
86	315M8A	314301-***A	890	93.1	0.825	141	7.0	922	1.8	2.0	4.9591	941	71
104	315L8A	314501-***A	890	93.7	0.825	169	7.1	1116	1.8	2.0	5.8205	1022	71
127	315L8B	314502-***A	885	94.2	0.83	204	6.4	1370	1.8	2.0	6.7537	1104	71
*152	355M8A	354301-***A	890	94.4	0.825	245	6.2	1631	1.8	2.0	8.6	1585	71
*184	355M8B	354302-***A	890	94.7	0.83	294	6.2	1974	1.8	2.0	10.01	1740	71
*230	355L8A	354501-***A	890	94.8	0.83	367	6.2	2468	1.8	2.0	12.5	1946	71

Code letters for supplementing the product code  
Code letters for voltage and-frequency(product code position 13)

\*Insulation Class F Temperature rise Class F

D	S	
380~420V $\Delta$ 50Hz	220~240V $\Delta$ 50Hz	Other rated voltage connection or frequency(Max,690V)can be used with VC002 or VC209.(The meaning of Variant code can be referred to Variant Code List on Page 25 )
660~690VY50Hz	380~420VY50Hz	
440~480 <sup>1)</sup> V $\Delta$ 60Hz	440~480VY60Hz	

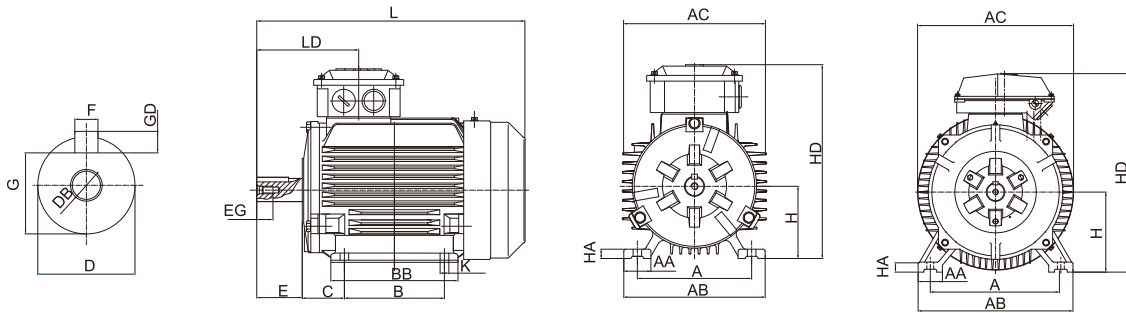
<sup>1)</sup>480V not stamped on sizes 160 to 355

# Dimension Drawing

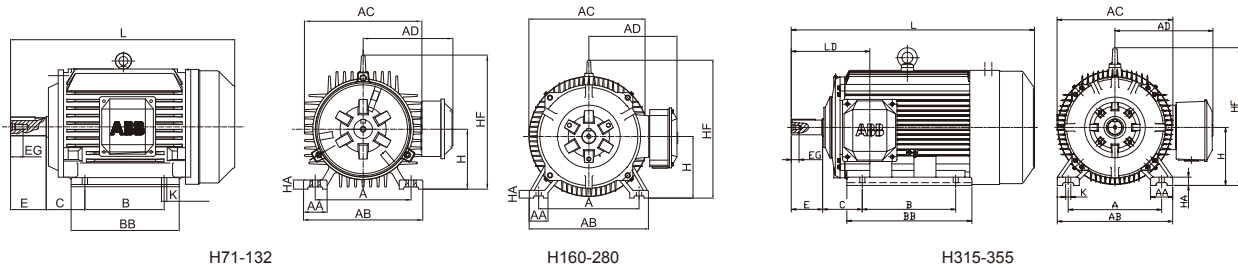
Foot-mounted motor designation IM B3, IM B6, IM B7, IM B8, IM V5, IM V6

Cast iron motor  
Type M2QA71-355

three-phase motor, foot-mounted, terminal box top-mounted



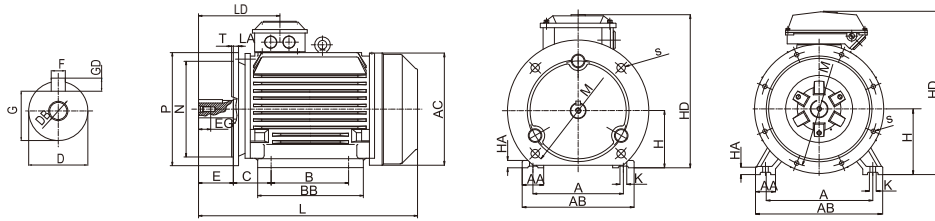
three-phase motor, foot-mounted, terminal box on right hand side



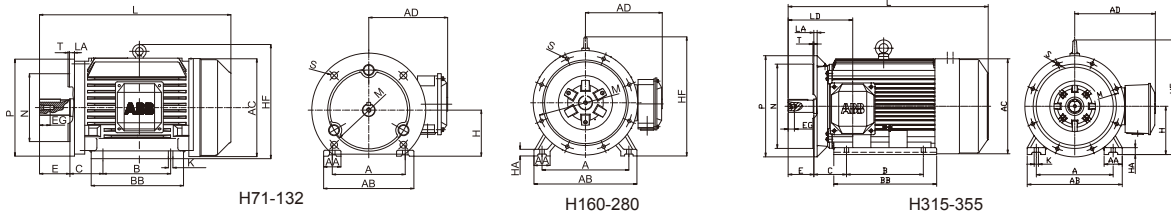
Type M2QA	Poles	A	AA	AB	AC	B	BB	C	D	E	F	G	GD	DB	EG
71M	2-6	112	30	145	145	90	120	45	14 - j6	30	5	11	5	M5	12.5
80M	2-8	125	35	160	165	100	135	50	19 - j6	40	6	15.5	6	M6	16
90S	2-8	140	35	175	180	100	140	56	24 - j6	50	8	20	7	M8	19
90L	2-8	140	35	175	180	125	165	56	24 - j6	50	8	20	7	M8	19
100L	2-8	160	40	200	205	140	180	63	28 - j6	60	8	24	7	M10	22
112M	2-8	190	50	240	225	140	190	70	28 - j6	60	8	24	7	M10	22
132S	2-8	216	55	270	265	140	205	89	38 - k6	80	10	33	8	M12	28
132M	2-8	216	55	270	265	178	240	89	38 - k6	80	10	33	8	M12	28
160M	2-8	254	60	325	330	210	265	108	42 - k6	110	12	37	8	M16	36
160L	2-8	254	60	325	330	254	310	108	42 - k6	110	12	37	8	M16	36
180M	2-4	279	70	350	355	241	315	121	48 - k6	110	14	42.5	9	M16	36
180L	4-8	279	70	350	355	279	350	121	48 - k6	110	14	42.5	9	M16	36
200L	2-8	318	70	390	395	305	380	133	55 - m6	110	16	49	10	M20	39
225S	4-8	356	75	435	440	286	380	149	60 - m6	140	18	53	11	M20	39
225M	2	356	75	435	440	311	405	149	55 - m6	110	16	49	10	M20	39
225M	4-8	356	75	435	440	311	405	149	60 - m6	140	18	53	11	M20	39
250M	2	406	80	484	495	349	445	168	60 - m6	140	18	53	11	M20	39
250M	4-8	406	80	484	495	349	445	168	65 - m6	140	18	58	11	M20	39
280S	2	457	85	542	550	368	485	190	65 - m6	140	18	58	11	M20	39
280S	4-8	457	85	542	550	368	485	190	75 - m6	140	20	67.5	12	M20	39
280M	2	457	85	542	550	419	536	190	65 - m6	140	18	58	11	M20	39
280M	4-8	457	85	542	550	419	536	190	75 - m6	140	20	67.5	12	M20	39
315S	2	508	120	628	635	406	570	216	65 - m6	140	18	58	11	M20	39
315S	4-8	508	120	628	635	406	570	216	80 - m6	170	22	71	14	M20	39
315M	2	508	120	628	635	457	680	216	65 - m6	140	18	58	11	M20	39
315M	4-8	508	120	628	635	457	680	216	80 - m6	170	22	71	14	M20	39
315L	2	508	120	628	635	508	680	216	65 - m6	140	18	58	11	M20	39
315L	4-8	508	120	628	635	508	680	216	80 - m6	170	22	71	14	M20	39
355M	2	610	116	726	725	560	750	250	70 - m6	140	20	62.5	12	M20	39
355M	4-8	610	116	726	725	560	750	250	100 - m6	210	28	90	16	M24	47
355L	2	610	116	726	725	630	750	250	70 - m6	140	20	62.5	12	M20	39
355L	4-8	610	116	726	725	630	750	250	100 - m6	210	28	90	16	M24	47



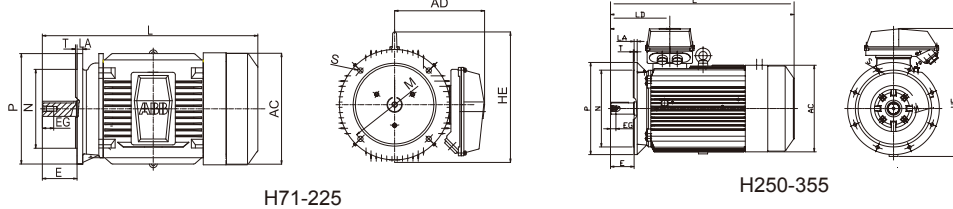
three-phase motor, foot and flange mounted, terminal box top-mounted



three-phase motor, foot and flange mounted, terminal box on right hand side



three-phase motor, flange mounted



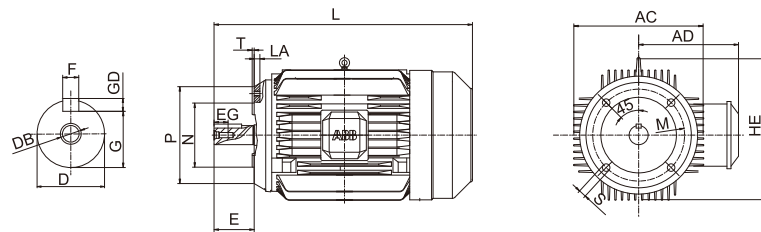
Type M2QA	Poles	H	HA	HD	HF	K	L	LD	AD	LA	M	N	P	S	T	HE
71M	2-6	71	10	200	---	ø7	255	100	120	10	ø130	ø110	ø160	4-ø10	3.5	165
80M	2-8	80	12	225	170	ø10	285	116	145	10	ø165	ø130	ø200	4-ø12	3.5	200
90S	2-8	90	12	240	185	ø10	310	128	150	10	ø165	ø130	ø200	4-ø12	3.5	200
90L	2-8	90	12	240	185	ø10	335	128	150	10	ø165	ø130	ø200	4-ø12	3.5	200
100L	2-8	100	14	275	245	ø12	380	138	175	11	ø215	ø180	ø250	4-ø15	4	270
112M	2-8	112	15	290	265	ø12	395	144	185	11	ø215	ø180	ø250	4-ø15	4	278
132S	2-8	132	18	335	300	ø12	465	169	205	12	ø265	ø230	ø300	4-ø15	4	320
132M	2-8	132	18	335	300	ø12	505	169	205	12	ø265	ø230	ø300	4-ø15	4	320
160M	2-8	160	22	420	380	ø15	600	250	260	15	ø300	ø250	ø350	4-ø19	5	400
160L	2-8	160	22	420	380	ø15	645	250	260	15	ø300	ø250	ø350	4-ø19	5	400
180M	2-4	180	22	455	420	ø15	670	270	275	18	ø300	ø250	ø350	4-ø19	5	420
180L	4-8	180	22	455	420	ø15	710	270	275	18	ø300	ø250	ø350	4-ø19	5	420
200L	2-8	200	25	530	470	ø19	770	285	325	20	ø350	ø300	ø400	4-ø19	5	470
225S	4-8	225	28	580	520	ø19	820	340	355	20	ø400	ø350	ø450	8-ø19	5	520
225M	2	225	28	580	520	ø19	815	310	355	20	ø400	ø350	ø450	8-ø19	5	520
225M	4-8	225	28	580	520	ø19	840	340	355	20	ø400	ø350	ø450	8-ø19	5	520
250M	2	250	30	630	570	ø24	930	347	380	22	ø500	ø450	ø550	8-ø19	5	625
250M	4-8	250	30	630	570	ø24	930	347	380	22	ø500	ø450	ø550	8-ø19	5	625
280S	2	280	35	690	645	ø24	985	356	410	22	ø500	ø450	ø550	8-ø19	5	685
280S	4-8	280	35	690	645	ø24	985	356	410	22	ø500	ø450	ø550	8-ø19	5	685
280M	2	280	35	690	645	ø24	1035	356	410	22	ø500	ø450	ø550	8-ø19	5	685
280M	4-8	280	35	690	645	ø24	1035	356	410	22	ø500	ø450	ø550	8-ø19	5	685
315S	2	315	45	855	750	ø28	1185	397	535	22	ø600	ø550	ø660	8-ø24	6	865
315S	4-8	315	45	855	750	ø28	1215	427	535	22	ø600	ø550	ø660	8-ø24	6	865
315M	2	315	45	865	750	ø28	1295	397	535	22	ø600	ø550	ø660	8-ø24	6	875
315M	4-8	315	45	865	750	ø28	1325	427	535	22	ø600	ø550	ø660	8-ø24	6	875
315L	2	315	45	865	750	ø28	1295	397	535	22	ø600	ø550	ø660	8-ø24	6	875
315L	4-8	315	45	865	750	ø28	1325	427	535	22	ø600	ø550	ø660	8-ø24	6	875
355M	2P顶	355	52	945	850	ø35	1490	403	640	25	ø740	ø680	ø800	8-ø24	6	955
355M	2P旁	355	52	945	850	ø35	1490	424	640	25	ø740	ø680	ø800	8-ø24	6	955
355M	4-8顶	355	52	945	850	ø35	1520	473	640	25	ø740	ø680	ø800	8-ø24	6	955
355M	4-8旁	355	52	945	850	ø35	1520	494	640	25	ø740	ø680	ø800	8-ø24	6	955
355L	2P顶	355	52	945	850	ø35	1490	403	640	25	ø740	ø680	ø800	8-ø24	6	955
355L	2P旁	355	52	945	850	ø35	1490	424	640	25	ø740	ø680	ø800	8-ø24	6	955
355L	4-8顶	355	52	945	850	ø35	1460	473	640	25	ø740	ø680	ø800	8-ø24	6	955
355L	4-8旁	355	52	945	850	ø35	1560	494	640	25	ø740	ø680	ø800	8-ø24	6	955

## Dimension Drawing

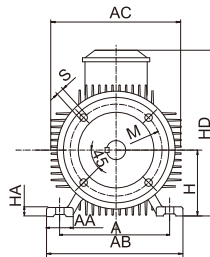
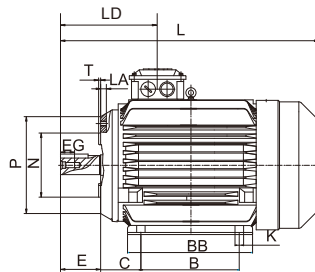
Flange-mount, IM B14, IM V18, IM V19  
Foot-and flange-mounted, IM B34

Cast iron motor  
Type M2QA71-160

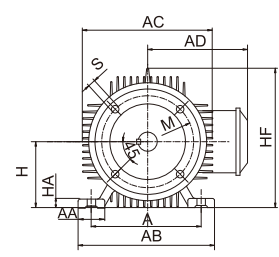
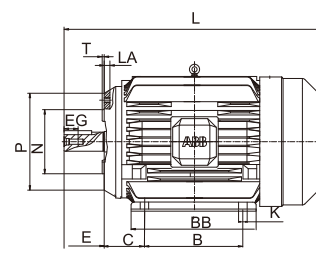
Flange-mounted motor, small flange IM B14



Terminal box top-mounted IM B34

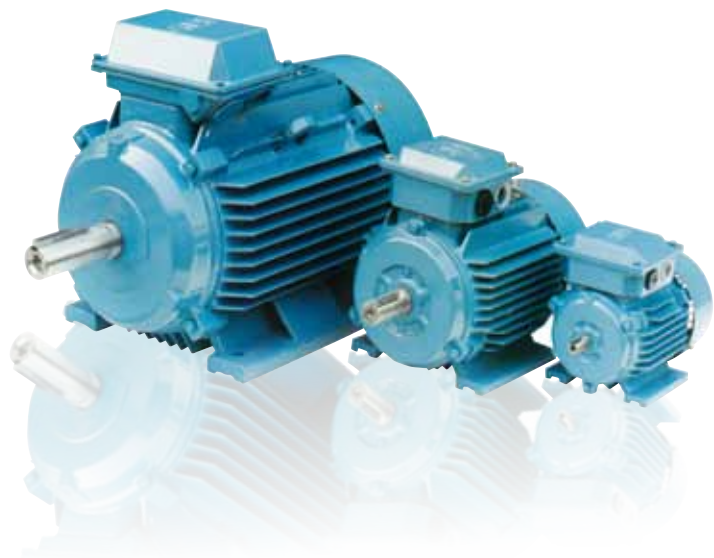


Terminal box side-mounted IM B34



Type	Pole	A	AA	AB	AC	B	BB	C	D	E	F	G	GD	DB	EG	H	HA	HD	K	L	LD	AD	LA	HE	HF
M2QA 71M	2-6	112	30	145	145	90	120	45	14	30	5	11	5	M5	12.5	71	10	200	7	255	100	120	10	145	-
80M	2-8	125	35	165	165	100	135	50	19	40	6	15.5	6	M6	16	80	12	225	10	285	116	145	10	200	185
90S	2-8	140	35	175	180	100	140	56	24	50	8	20	7	M8	19	90	12	240	10	310	128	150	10	200	195
90L	2-8	140	35	175	180	125	165	56	24	50	8	20	7	M8	19	90	12	240	10	335	128	150	10	200	195
100L	2-8	160	40	200	205	140	180	63	28	60	8	24	7	M10	22	100	14	275	12	380	138	175	11	270	245
112M	2-8	190	50	240	225	140	190	70	28	60	8	24	7	M10	22	112	15	290	12	395	144	185	11	278	265
132S	2-8	216	55	270	265	140	205	89	38	80	10	33	8	M12	28	132	18	335	12	465	169	205	15	320	300
132M	2-8	216	55	270	265	178	240	89	38	80	10	33	8	M12	28	132	18	335	12	505	169	205	15	320	300
160M	2-8	254	60	325	330	210	265	108	42	110	12	37	8	M16	36	160	22	415	15	600	250	255	18	400	380
160L	2-8	254	60	325	330	254	310	108	42	110	12	37	8	M16	36	160	22	415	15	645	250	255	18	400	380

Type	Pole	Size	P	M	N	S	T
M2QA 71M	2-6	C105	105	85	70	M6	2.5
71M	2-6	C140	140	115	95	M8	3.0
80M	2-8	C120	120	100	80	M6	3.0
80M	2-8	C160	160	130	110	M8	3.5
90S	2-8	C140	140	115	95	M8	3.0
90S	2-8	C160	160	130	110	M8	3.5
90L	2-8	C140	140	115	95	M8	3.0
90L	2-8	C160	160	130	110	M8	3.5
100L	2-8	C160	160	130	110	M8	3.5
100L	2-8	C200	200	165	130	M10	3.5
112M	2-8	C160	160	130	110	M8	3.5
112M	2-8	C200	200	165	130	M10	3.5
132S	2-8	C200	200	165	130	M10	3.5
132M	2-8	C200	200	165	130	M10	3.5
160M	2-8	C250	250	215	180	M12	4
160L	2-8	C250	250	215	180	M12	4

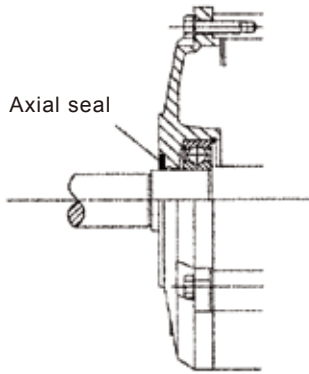


## Bearing Seals

The size and type of seals are in accordance with the table below.

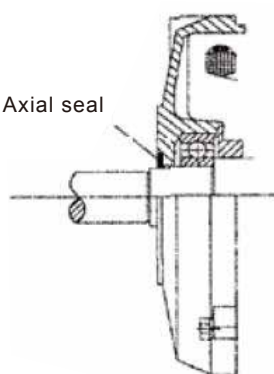
Motor size	Description D-end	Standard design Axial seal D-end	Standard design Radial seal (DIN 3760) Variant code 072		
71	Sealed bearings (2RS) and axial seal, gamma ring, at D-end	RB15 x 30 x 4			
80		RB20 x 35 x 4			
90		RB25 x 40 x 4			
100		RB30 x 47 x 4.5			
112		RB35 x 52 x 4.5			
132		RB40 x 57 x 4.5			
160	Axial seal, gamma ring, at D-end	RB45 x 62 x 4.5			
180		RB50 x 70 x 5.5			
200		RB60 x 80 x 5.5			
225		RB65 x 85 x 5.5			
250	Radial seal, at both-ends (Standard)		TC70 x 85 x 10		
280			TC80 x 100 x 10		
315			2p	TC80 x 100 x 10	
			4-8p	TC95 x 120 x 12	
355			2p	TC95 x 120 x 12	
			4-8p	TC110 x 130 x 13 TC95 x 120 x 12	

Motor sizes  
71-180



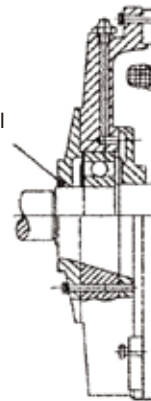
Axial seal

Motor sizes  
200-225



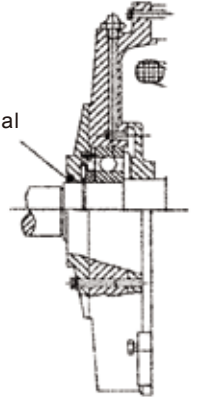
Axial seal

Motor sizes  
250-280



Radial seal

Motor sizes  
315-355



Radial seal

## Select Cable Entry

Type	Germany Standard Screw (metric)	DIN Standard Pg Screw
71	2-M16x1.5	2-Pg11
80-90	2-M25x1.5	2-Pg16
100-132	2-M32x1.5	2-Pg21
160-180	2-M40x1.5	2-Pg29
200-225	2-M50x1.5	2-Pg36
250-280	2-M63x1.5	2-Pg42
315-355	2-M63x1.5	2-Pg48

## M2QA Cast Iron Motors in Brief, Basic Design

Motor size		71	80	90	100	112	132	160
Stator	Material	Cast iron HT150 GB/T9439						
	Paint colour shade	Blue, Munsell 8B 4.5/3.25/NCS 4822 B05G						
	Paint thickness	Two-pack 821 Acid Polyurethane Enamel, thickness $\geq$ 60 $\mu$ m						
Bearing end shields	Material	Cast iron HT150 GB/T9439						
	Paint colour shade	Blue, Munsell 8B 4.5/3.25/NCS 4822 B05G						
	Paint thickness	Two-pack 821 Acid Polyurethane Enamel, thickness $\geq$ 60 $\mu$ m						
Bearings	D-end	6202	6204	6205	6206	6207	6208	6309
	Radial internal clearance	C3	C3	C3	C3	C3	C3	C3
	N-end	6202	6204	6205	6206	6206	6207	6209
	Radial internal clearance	C3	C3	C3	C3	C3	C3	C3
Axially-locked bearings	Spring ring	As standard, locked at D-end						
Lubrication		Greased for life						
Rating plate	Material	Stainless steel						
Terminal box	Frame material	Cast iron HT150 GB/T9439						
	Cover material	Cast iron HT150 GB/T9439						
Connections	Cable entries	2-M16x1.5 2-M16x1.5	2-M16x1.5 2-M25x1.5	2-M16x1.5 2-M25x1.5	2-M16x1.5 2-M32x1.5	2-M16x1.5 2-M32x1.5	2-M16x1.5 2-M32x1.5	2-M16x1.5 2-M40x1.5
	Terminals	6 terminals for connection						
Fan	Material	Reinforced glass fiber						
Fan cover		Steel						
	Material	Blue, Munsell 8B 4.5/ 3.25/NCS 4822 B05G						
	Paint colour	Two-pack 821 Acid Polyurethane Enamel, thickness $\geq$ 60 $\mu$ m						
Stator winding	Material	Copper						
	Insulation	Insulation class F						
	Winding	On request						
Rotor winding	Material	Pressure die-cast aluminium						
Balancing method		Half key balancing as standard						
Key ways		Open key way						
Enclosure		IP 55						
Cooling method		IC 411						

\*) For vertical-mounted motors, pls see the specification on the rating plate.

## M2QA Cast Iron Motors in Brief, Basic Design

Motor size		180	200	225	250	280	315	355	
Stator	Material	Cast iron HT150 GB/T9439			Cast iron HT200 GB/T9439 except vertical-mounted				
	Paint colour shade	Blue, Munsell 8B 4.5/3.25/NCS 4822 B05G							
	Paint thickness	Two-pack 821 Acid Polyurethane Enamel, thickness≥60µm							
Bearing end shields	Material	Cast iron HT150 GB/T9439			Cast iron HT200 GB/T9439 except vertical-mounted				
	Paint colour shade	Blue, Munsell 8B 4.5/3.25/NCS 4822 B05G							
	Paint thickness	Two-pack 821 Acid Polyurethane Enamel, thickness≥60µm							
Bearings	D-end	6310	6312	6313	6314 *	6316 *	6316(2P) * 6319(4/6/8P)	6319M(2P) * 6322(4/6/8P)	
	Radial internal clearance	C3	C3	C3	C3	C4(2P) C3(4/6/8P)	C4(2P) C3(4/6/8P)	C4(2P) C3(4/6/8P)	
	N-end	6210	6212	6213	6214 *	6316 *	6316(2P) * 6319(4/6/8P)	6319M(2P) * 6319(4/6/8P)	
	Radial internal clearance	C3	C3	C3	C3	C4(2P) C3(4/6/8P)	C4(2P) C3(4/6/8P)	C4(2P) C3(4/6/8P)	
Axially-locked bearings	Spring ring	Spring ring Locked at D-end	As standard locked at D-end		As standard locked at ND-end				
Lubrication		Greased for life or regreasable			Regreasable bearings				
Rating plate	Material	Stainless steel							
Terminal box	Frame material	Cast iron HT150 GB/T9439			Cast iron HT200 GB/T9439				
	Cover material	Cast iron HT150 GB/T9439			Cast iron HT200 GB/T9439				
Connections	Cable entries	2-M16x1.5 2-M40x1.5	2-M16x1.5 2-M50x1.5	2-M16x1.5 2-M50x1.5	2-M20x1.5 2-M63x1.5	2-M20x1.5 2-M63x1.5	2-M20x1.5 2-M63x1.5		
	Terminals	6 terminals for connection							
Fan	Material	Reinforced glass fiber				Reinforced glass fiber or aluminium			
Fan cover		Steel							
	Material	Blue, Munsell 8B 4.5/ 3.25/NCS 4822 B05G							
	Paint colour	Two-pack 821 Acid Polyurethane Enamel, thickness≥60µm							
Stator winding	Material	Copper							
	Insulation	Insulation class F							
	Winding	On request							
Rotor winding	Material	Pressure die-cast aluminium							
Balancing method		Half key balancing as standard							
Key ways		Open key way							
Enclosure		IP 55							
Cooling method		IC 411							

\*) For vertical-mounted motors, pls see the specification on the rating plate.



## M2QA Variant Code

Code	Variant	Frame Size													
		71	80	90	100	112	132	160	180	200	225	250	280	315	355
Administration															
531	Sea freight packing	NA	NA	NA	NA	NA	NA	P	P	P	P	P	P	P	P
Balancing															
423	Balanced without key.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
424	Full key balancing.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Bearings and Lubrication															
036	Transport lock for bearings.	NA	NA	NA	NA	NA	P	P	P	P	P	P	P	P	P
037	Roller bearing at D-end.	NA	NA	NA	NA	NA	P	P	P	P	P	P	P	P	P
039	Cold resistant grease.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
040	Heat resistant grease.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
041	Bearings regreasable via grease nipples.	NA	NA	NA	NA	R	P	P	P	P	P	S	S	S	S
058	Angular contact bearing at D-end,shaft force away from bearing.	NA	NA	NA	NA	NA	NA	R	R	R	R	R	R	R	R
059	Angular contact bearing at N-end,shaft force towards bearing.	NA	NA	NA	NA	NA	NA	R	R	R	R	R	R	R	R
060	Angular contact bearing at D-end,shaft force towards bearing.	NA	NA	NA	NA	NA	NA	R	R	R	R	R	R	R	R
061	Angular contact bearing at N-end,shaft force away from bearing.	NA	NA	NA	NA	NA	NA	R	R	R	R	R	R	R	R
043	SPM compatible nipples for vibration measurement	NA	NA	NA	NA	R	P	P	P	P	P	P	P	P	P
130	Pt100 3-wire in bearing.	NA	NA	NA	NA	NA	NA	R	R	R	R	R	R	R	R
195	Bearings greased for life.	S	S	S	S	S	S	S	S	S	S	NA	NA	NA	NA
798	Stainless steel grease nipples.	NA	NA	NA	NA	P	P	P	P	P	P	P	P	P	P
Branch standard designs															
209	Non-standard voltage or frequency (special winding).	R	R	R	R	R	R	R	R	R	R	R	R	R	R
168	Primer paint only.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
178	Stainless steel/acid proof bolts.	R	R	R	R	R	R	R	R	R	R	R	R	R	R
396	Motor designed for ambient temperature -20°C~-40°C,with space heaters(code 450/451 must be added).	P	P	P	P	P	P	P	P	P	P	P	P	P	P
425	Corrosion protected stator and rotor core.	P	P	P	P	P	P	P	P	P	P	R	R	R	R
Cooling system															
068	Light alloy metal fan.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
075	Cooling method IC418(without fan).	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Documentation															
141	Binding dimension drawing.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Drain holes															
065	Plugged existing drain holes.	S	S	S	S	S	S	S	S	S	S	P	P	P	P
Earthing Bolt															
067	External earthing blot.	P	P	P	P	P	P	P	P	P	P	S	S	S	S
Heating elements															
450	Heating elements,100-120V	P	P	P	P	P	P	P	P	P	P	P	P	P	P
451	Heating elements,200-240V	P	P	P	P	P	P	P	P	P	P	P	P	P	P

S=Included as standard  
R=On request  
NA=Not applicable  
P=Applicable

## M2QA Variant Code

Code	Variant	Frame Size													
		71	80	90	100	112	132	160	180	200	225	250	280	315	355
Insulation system															
014	Winding insulation class H.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Mounting arrangements															
008	IM2101 foot/flange mounted, IEC flange, from IM1001(B34 from B3)	P	P	P	P	P	P	P	NA	NA	NA	NA	NA	NA	NA
009	IM2001 foot/flange mounted, IEC flange, from IM1001(B35 from B3)	P	P	P	P	P	P	P	P	P	P	P	P	P	P
047	IM3601 flange mounted, IEC flange, from IM3001(B14 from B5)	P	P	P	P	P	P	P	NA	NA	NA	NA	NA	NA	NA
066*	Modified for specified mounting position differing from IM B3 (1001), IM B5(3001), B14(3601), IM B35 (2001)&IM B34))	P	P	P	P	P	P	P	P	P	P	R	R	R	R
999	Modified for specified mounting position differing from IM B3 (1001), IM B5(3001), B14(3601), IM B35(2001)&IM B34(2101), strengthen the casting)	NA	NA	NA	NA	NA	NA	NA	P	P	P	P	P	P	P
999	B14 big flange	P	P	P	P	P	NA	NA	NA	NA	NA	NA	NA	NA	NA
Painting															
114	Special paint colour, standard grade.	R	R	R	R	R	R	R	R	R	R	R	R	R	R
106	Paint thickness =80µm.	R	R	R	R	R	R	R	R	R	R	R	R	R	R
109	Paint thickness =120µm.	R	R	R	R	R	R	R	R	R	R	R	R	R	R
110	Paint thickness =160µm.	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Protection															
005	Metal protective roof, vertical motor, shaft down.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
072	Radial seal at D-end.	P	P	P	P	P	P	P	P	P	P	S	S	S	S
158	Degree of protection IP65	P	P	P	P	P	P	P	P	P	P	P	P	P	P
403	Degree of protection IP56	P	P	P	P	P	P	P	P	P	P	P	P	P	P
784	Gamma-seal at D-end.	S	S	S	S	S	S	S	S	S	S	NA	NA	NA	NA
Rating & instuction plates															
002	Restamping voltage, frequency and output, continuous duty.	R	R	R	R	R	R	R	R	R	R	R	R	R	R
095	Restamping output (maintained voltage, frequency), intermittent duty.	R	R	R	R	R	R	R	R	R	R	R	R	R	R
135	Mounting of additional identification plate, stainless.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Shaft & rotor															
070	Special shaft extension at D-end, shandard shaft material	R	R	R	R	R	R	R	R	R	R	R	R	R	R
069	Two shaft extension as per basic catalogue	P	P	P	P	P	P	P	P	P	P	P	P	P	NA
164	Shaft extension with closed key-way.	R	R	R	R	R	R	R	R	R	R	R	R	R	R
165	Shaft extension with open key-way.	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Standards and Regulations															
331	IE1 motor not for sale for use in EU.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
115	Painting system C4M acc.To ISO 12944-5:2007	R	R	R	R	R	R	R	R	R	R	R	R	R	R
754	Painting system C5M acc.To ISO 12944-5:2007	R	R	R	R	R	R	R	R	R	R	R	R	R	R

\*Mounting arrangements: B6, B7, B8, V1, V15, V3, V35, V5, V6 (only V1, V15 for H250 and above)

S=Included as standard  
R=On request  
NA=Not applicable  
P=Applicable

## M2QA Variant Code

Code	Variant	Frame Size													
		71	80	90	100	112	132	160	180	200	225	250	280	315	355
Stator winding temperature sensors															
120	KTY 84=130(1 per phase) in stator winding.	R	R	R	R	R	R	R	R	R	R	R	R	R	R
121	Bimetal detectors,break type (NCC),(3 in series),130°C,in stator winding.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
122	Bimetal detectors,break type (NCC),(3 in series),150°C,in stator winding.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
123	Bimetal detectors,break type (NCC),(3 in series),170°C,in stator winding.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
124	Bimetal detectors,break type (NCC),(3 in series),140°C,in stator winding.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
125	Bimetal detectors,break type (NCC),(2×3 in series),150°C,in stator winding.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
127	Bimetal detectors,break type (NCC),(3 in series 130°C&3 in series 150°C),in stator winding.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
435	PTC-thermistors(3 in series), 130°C in stator winding.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
436	PTC-thermistors(3 in series), 150°C in stator winding.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
437	PTC-thermistors(3 in series), 170°C in stator winding.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
439	PTC-thermistors(2×3 in series), 150°C,in stator winding.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
440	PTC-thermistors(3 in series 110°C & 3 in series 130°C),in stator winding.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
441	PTC-thermistors(3 in series 130°C & 3 in series 150°C),in stator winding.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
442	PTC-thermistors(3 in series 150°C & 3 in series 170°C),in stator winding.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
445	PT100 2-wire in stator winding, 1 per phase.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
446	PT100 2-wire in stator winding, 2 per phase.	NA	NA	NA	P	P	P	P	P	P	P	P	P	P	P
502	PT100 3-wire in stator winding, 1 per phase.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
503	PT100 3-wire in stator winding, 2 per phase.	NA	NA	NA	NA	NA	NA	NA	NA	P	P	P	P	P	P
Terminal box															
021	Terminal box LHS(see from D-end).	NA	P	P	P	P	P	P	P	P	P	P	P	P	P
022	Cable entry LHS(see from D-end).	P	P	P	P	P	P	P	P	P	P	P	P	P	P
157	Terminal box degree of protection IP65	P	P	P	P	P	P	P	P	P	P	P	P	P	P
180	Terminal box RHS(see from D-end).	NA	P	P	P	P	P	P	P	P	P	P	P	P	P
376	Two standard plastic cable glands.	P	P	P	P	P	P	P	P	P	P	P	P	P	P

S=Included as standard  
R=On request  
NA=Not applicable  
P=Applicable

## M2QA Variant Code

Code	Variant	Frame Size													
		71	80	90	100	112	132	160	180	200	225	250	280	315	355
<b>Terminal box</b>															
400	4×90 degr turnable terminal box.	S	S	S	S	S	S	P	P	P	P	P	P	P	P
418	Separate terminal box for auxiliaries ,standard material.	NA	NA	NA	NA	NA	NA	R	R	R	R	R	R	R	R
468	Cable entry from D-end.	NA	P	P	P	P	P	P	P	P	P	P	P	P	P
469	Cable entry from N-end.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
704	EMC cable gland.	R	R	R	R	R	R	R	R	R	R	R	R	R	R
731	Two standard metal cable glands.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
738	Prepared for metric cable glands.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
740	Prepared for PG cable glands.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
016	9 terminals in terminal box.	P	P	P	P	P	P	NA	NA	NA	NA	NA	NA	NA	NA
142	Manilla connection.	NA	NA	NA	NA	P	P	P	P	P	P	P	P	P	P
137	Extended cable connected,low terminal box,"Flying leads", factory standard.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
<b>Testing</b>															
145	Type test report from a catalogue motor,400V 50HZ	P	P	P	P	P	P	P	P	P	P	P	P	P	P
146	Type test with report for one motor from special delivery batch.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
147	Type test with report for motor from special delivery bach, customer witnessed.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
148	Routine test report.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
221	Tyoe test and multi-point load test with report for one motor from specific delivery batch.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
222	Tyoe test and multi-point load test with report for one motor from specific delivery batch.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
760	Vibration level test.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
762	Noise level test for one motor from specific delivery batch.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Remark:VC 701 and VC 405 are suitable export market.															
405	Special winding insulation for frequency converter supply.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
701	Insulated bearing at N-end.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	P	P	P

S=Included as standard  
R=On request  
NA=Not applicable  
P=Applicable

# Low Voltage Motors

Manufacturing sites (\*) and some of the larger sales companies.

## Australia

ABB Australia Pty Ltd  
601 Blackburn Road  
Notting Hill VIC 3168  
Tel: +61 (0) 8544 0000  
Fax: +61 (0) 8544 0001

## Austria

ABB AG  
Clemens Holzmeisterstrasse 4  
A-1109 Wien  
Tel: +43 (0) 1 601 090  
Fax: +43 (0) 1 601 09 8305

## Belgium

Asea Brown Boveri S.A.-N.V.  
Hoge Wei 27  
BE-1930 Zaventem  
Tel: +32 (0) 2 718 6311  
Fax: +32 (0) 2 718 6657

## Canada

ABB Inc., BA Electrical Machines  
10300 Henri-Bourassa Blvd, West,  
Saint-Laurent, Quebec  
Canada H4S 1N6  
Tel: +1 514 832-6583  
Fax: +1 514 332-0609

## China\*

ABB Shanghai Motors Co., Ltd.  
88 Tianning Road  
Minhang(Economical and  
Technological Development Zone)  
200245 Shanghai  
Tel: +86 21 5472 3133  
Fax: +86 21 5472 5025

## Chile

Asea Brown Boveri S.A.  
P.O.Box 581-3  
Santiago  
Tel: +56 (0) 2 5447 100  
Fax: +56 (0) 2 5447 405

## Denmark

ABB A/S  
Automation Products  
Emil Neckelmanns Vej 14  
DK-5220 Odense SØ  
Tel: +45 65 47 70 70  
Fax: +45 65 47 77 13

## Finland\*

ABB Oy  
Motors  
P.O.Box 633  
FI-65101 Vaasa  
Tel: +358 (0) 10 22 11  
Fax: +358 (0) 10 22 47372

## France

ABB Entelec  
ZA La Boisse BP 90145  
300 Rue des Prés-Seigneurs  
FR-01124 Montluel Cedex  
Tel: +33 4 37 40 40 00  
Fax: +33 4 37 40 40 72

## Germany

ABB Automation Products GmbH  
Motors & Drives  
Wallstaedter Strasse 59  
DE-68526 Ladenburg  
Tel: +49 (0) 6203 717 717  
Fax: +49 (0) 6203 717 600

## Hong Kong

ABB (Hong Kong) Ltd.  
Tai Po Industrial Estate,  
3 Dai Hei Street,  
Tai Po, New Territories,  
Hong Kong  
Tel: +852 2929 3838  
Fax: +852 2929 3505

## India\*

ABB Ltd.  
32, Industrial Area, N.I.T  
Faridabad 121 001  
Tel: +91 (0) 129 502 3001  
Fax: +91 (0) 129 502 3006

## Indonesia

PT. ABB Sakti Industri  
JL. Gajah Tunggal Km.1  
Jatiuwung, Tangerang 15136  
Banten, Indonesia  
Tel: +62 21 590 9955  
Fax: +62 21 590 0115 - 6

## Ireland

Asea Brown Boveri Ltd  
Components Division  
Belgard Road  
Tallaght, Dublin 24  
Tel: +353 (0) 1 405 7300  
Fax: +353 (0) 1 405 7327

## Italy\*

ABB SACE SpA  
LV Motors  
Via dell' Industria 18  
IT-20010 Vittuone, Milano  
Tel: +39 02 90341  
Fax: +39 02 9034 7289

## Japan

ABB K.K.  
26-1 Cerulean Tower  
Sakuragaoka-cho, Shibuya-ku  
Tokyo 150-8512  
Tel: +81 (0) 3 578 46251  
Fax: +81 (0) 3 578 46260

## Korea

ABB Korea Ltd.  
7-9fl, Oksan Bldg., 157-33  
Sungshung-dong, Kangnam-ku Seoul  
Tel: +82 2 528 2329  
Fax: +82 2 528 2338

## Malaysia

ABB Malaysia Sdn. Bhd.  
Lot 608, Jalan SS 13/1K  
47500 Subang Jaya, Selangor  
Tel: +60 3 5628 4888  
Fax: +60 3 5631 2926

## Mexico

ABB México, S.A. de C.V.  
Apartado Postal 111  
CP 54000 Tlalnepantla  
Edo. de México, México  
Tel: +52 5 328 1400  
Fax: +52 5 390 3720

## The Netherlands

ABB B.V.  
Dept. LV motors (APP2R)  
P.O.Box 301  
NL-3000 AH Rotterdam  
Tel: +31 (0)10 4078 879  
Fax: +31 (0)10 4078 345

## Norway

ABB AS  
P.O.Box 154 Vollebakk  
NO-0520 Oslo  
Tel: +47 22 872 000  
Fax: +47 22 872 541

## Russia

ABB Industrial & Building  
Systems Ltd.  
Business Centre "Krugozor"  
Obrucheva 30/1, Building 2  
Moscow 117861  
Tel: +7 495 960 2200, 956 93 93  
Fax: +7 495 960 2209, 230 63 46

## Singapore

ABB Industry Pte Ltd  
2 Ayer Rajah Crescent  
Singapore 139935  
Tel: +65 6776 5711  
Fax: +65 6778 0222

## Spain\*

Asea Brown Boveri S.A.  
Automation Products -  
Fábrica Motores  
P.O.Box 81  
ES-08200 Sabadell  
Tel: +34 93 728 8500  
Fax: +34 93 728 8741

## Sweden\*

ABB AB  
LV Motors  
SE-721 70 Västerås  
Tel: +46 (0) 21 329 000  
Fax: +46 (0) 21 329 140

## Switzerland

ABB Schweiz AG  
Normelec/CMC Components  
Motors&Drives  
Badenerstrasse 790  
Postfach  
CH-8048 Zürich  
Tel: +41 (0) 58 586 0000  
Fax: +41 (0) 58 586 0603

## Taiwan

ABB Ltd.  
6F, No. 126, Nanking East Road,  
Section 4i  
Taipei, 105 Taiwan, R.O.C.  
Tel: +886 (0) 2 2577 6090  
Fax: +886 (0) 2 2577 9467

## Thailand

ABB Limited (Thailand)  
161/1 SG Tower,  
Soi Mahadlekluang 3,  
Rajdamri, Bangkok 10330  
Tel: +66 2 665 1000  
Fax: +66 2 665 1042

## The United Kingdom

ABB Ltd  
Drives, Motors and Machines  
Daresbury Park  
Daresbury, Warrington  
Cheshire, WA4 4BT  
Tel: +44 (0) 1925 741 111  
Fax: +44 (0) 1925 741 212

## USA

ABB Inc.  
Low Voltage Motors  
16250 W. Glendale Drive  
New Berlin, WI 53151  
Tel: +1 262 785 3200  
Fax: +1 262 780 8888



ABB Shanghai Motors Co., LTD.

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