

Totally enclosed squirrel cage three phase motors, aluminium frame IP 55 IC 411

400 V 50 Hz

Output kW	Motor type M2AA	Product code 3GAA	Speed r/min	Effi- ciency %	Power factor cos φ	Current		Torque		
						I_N A	$\frac{I_s}{I_N}$	T_N Nm	$\frac{T_s}{T_N}$	$\frac{T_{max}}{T_N}$
1000 r/min = 6 poles						Basic design				
0.12	71	073 001-●	930	55.4	0.56	0.59	2.5	1.2	2.3	2.7
0.18	71 A	073 002-●	920	57.8	0.62	0.75	2.5	1.9	2.0	2.4
0.25	71 B	073 003-●	920	62	0.64	0.92	3.0	2.6	2.0	2.4
0.37	80 A	083 001-●	920	68	0.66	1.25	3.5	3.8	2.1	2.5
0.55	80 B	083 002-●	930	69.8	0.67	1.78	3.5	5.7	2.1	2.5
0.75	90 S	093 001-●	930	71.5	0.67	2.36	4.0	7.5	1.9	2.3
1.1	90 L	093 002-●	930	74.4	0.69	3.25	4.0	11.0	1.9	2.3
1.5	100 L	103 001-●	950	78.2	0.69	4.1	4.5	15.0	1.9	2.3
2.2	112 M	113 001-●	940	80.5	0.74	5.4	5.6	22.3	2.1	2.7
3	132 S	133 001-●	960	84.5	0.75	6.9	6.1	29.8	2.4	2.6
4	132 MA	133 002-●	960	85.5	0.78	8.7	7.1	39.7	2.6	2.8
5.5	132 MB	133 003-●	955	86.0	0.78	11.9	6.9	55	2.8	2.8
7.5	160 M	163 101-●	970	89.3	0.79	15.4	6.7	74	2.0	2.8
11	160 L	163 102-●	970	89.8	0.78	23.0	7.1	109	2.2	2.9
15	180 L	183 101-●	970	90.8	0.78	31.0	7.0	148	2.1	3.0
18.5	200 MLA	203 001-●	985	91.1	0.81	36	7.0	179	2.5	2.7
22	200 MLB	203 002-●	980	91.7	0.81	43	7.2	214	2.5	2.7
30	225 SMB	223 001-●	985	92.8	0.83	56	6.6	291	2.5	2.7
37	250 SMA	253 001-●	985	93.7	0.83	69	7.3	359	2.8	2.8

1000 r/min = 6 poles						High-output design ²⁾				
0.37 ³⁾	71 C	073 004-●	890	63	0.70	1.27	3.0	3.8	1.7	1.9
0.75 ³⁾	80 C	083 003-●	910	71.5	0.70	2.27	3.5	7.5	1.9	2.2
1.3 ¹⁾³⁾	90 LB	093 003-●	910	72.4	0.71	3.85	4.0	13.5	1.9	2.2
2.2 ³⁾	100 LC	103 002-●	940	79	0.71	5.8	4.5	22.0	1.9	2.3
3 ³⁾	112 MB	113 002-●	935	80.0	0.76	7.2	5.5	30.6	2.4	2.7
6.5 ^{1) 3)}	132 MC	133 004-●	960	85.0	0.75	14.8	6.6	64.7	2.3	2.7
14 ¹⁾³⁾	160 LB	163 103-●	960	89.1	0.77	29.5	7.6	139	2.7	3.1
18.5 ³⁾	180 LB	183 102-●	965	90.6	0.79	37.5	6.2	183	2.0	2.6
30	200 MLC	203 003-●	980	91.7	0.81	56	7.5	292	3.3	3.0
37	225 SMC	223 002-●	985	93.2	0.83	69	7.7	359	3.1	3.0
45	250 SMB	253 002-●	985	94.1	0.84	82	7.3	436	2.8	2.8

¹⁾ Lower than CENELEC +1.

²⁾ **High-output design**

The output of these motors is one step higher than the basic design with rated outputs in accordance with CENELEC. Motor sizes 112 to 132 are somewhat longer than the basic design.

³⁾ Temperature rise class F.

The bullet indicates a 3-letter product code supplement for choice of mounting arrangement (page 11, pos. 12), voltage and frequency (below) and generation code (page 11, pos. 14).

Code letters for supplementing the product code

Motor size	Code letter for voltage and frequency									
	S		D		H	E	F	T	U	X
	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz	
63-100	220-240 VΔ 380-420 VY	440-480 VY	380-420 VΔ 660-690 VY	440-480 VΔ	-	500 VΔ	500 VY	660 VΔ ¹⁾	690 VΔ ¹⁾	Other rated voltage, connection or frequency, 690 V maximum
112-132	220-240 VΔ 380-420 VY	- 440-480 VY	380-420 VΔ 660-690 VY	440-480 VΔ	415 VΔ	500 VΔ		660 VΔ	690 VΔ	
160-250	220, 230 VΔ 380,400,415 VY	- 440 VY	380,400,415VΔ 660, 690 VY	440 VΔ	415 VΔ	500 VΔ		660 VΔ	690 VΔ	

¹⁾ On request.

380 V 50 Hz

415 V 50 Hz

Output kW	Speed r/min	Efficiency %	Power factor cos φ	Current I _N A	Speed r/min	Efficiency %	Power factor cos φ	Current I _N A	Moment of inertia J = 1/4 GD ² kgm ²	Weight Foot-mounted motor kg	Sound pressure level Lp dB(A)
1000 r/min = 6 poles Basic design											
0.12	920	58.2	0.60	0.56	940	53.5	0.54	0.61	0.0007	5.0	36
0.18	910	59.2	0.66	0.72	930	56.2	0.59	0.77	0.0007	5.5	36
0.25	910	62.6	0.68	0.9	930	61.1	0.61	0.95	0.0009	6.5	36
0.37	910	68.4	0.69	1.22	930	67.3	0.62	1.28	0.0017	8.5	43
0.55	920	69.8	0.72	1.72	930	69.2	0.64	1.78	0.0021	9.5	43
0.75	920	70.6	0.72	2.3	930	70.6	0.64	2.36	0.0032	13	44
1.1	920	73.9	0.73	3.2	930	74.2	0.66	3.25	0.0043	16	44
1.5	940	77.8	0.74	4.1	960	78.4	0.67	4.1	0.0082	23	49
2.2	930	80.0	0.78	5.4	950	80.5	0.71	5.4	0.015	27	54
3	955	84.0	0.77	7.1	965	84.0	0.72	6.9	0.031	39	61
4	955	85.0	0.81	8.9	965	85.5	0.76	8.6	0.038	46	61
5.5	950	85.5	0.81	12.2	960	86.0	0.76	11.8	0.045	54	61
7.5	960	88.7	0.80	16.1	970	89.6	0.77	15.1	0.089	88	59
11	960	89.4	0.80	23.5	970	90.0	0.76	22.4	0.107	102	59
15	970	90.9	0.79	32	975	91.1	0.74	31.0	0.217	151	59
18.5	980	90.8	0.81	38	985	91.1	0.78	36	0.37	165	63
22	980	91.6	0.81	45	985	91.8	0.79	42	0.43	185	63
30	985	92.6	0.83	59	985	92.9	0.82	55	0.64	225	63
37	985	93.5	0.84	72	990	93.8	0.81	67	1.16	280	63

1000 r/min = 6 poles High-output design ²⁾

0.37³⁾	870	62.5	0.74	1.25	900	62.5	0.66	1.3	0.0012	7.5	36
0.75³⁾	900	71.4	0.74	2.21	920	71.6	0.66	2.3	0.0024	11	43
1.3³⁾	900	71.5	0.75	3.8	920	72.4	0.67	3.8	0.0048	18	44
2.2³⁾	930	77.9	0.75	5.85	940	78.8	0.67	5.9	0.009	26	49
3¹⁾³⁾	925	79.5	0.79	7.3	940	80.0	0.73	7.2	0.018	33	54
6.5¹⁾³⁾	955	85.0	0.79	14.8	965	84.5	0.71	15.1	0.049	59	61
14¹⁾³⁾	955	88.7	0.79	30.5	965	89.2	0.75	29.2	0.127	117	62
18.5³⁾	965	90.0	0.81	39	965	90.8	0.78	36.5	0.237	160	59
30	980	91.5	0.83	57	985	91.9	0.83	53	0.49	200	63
37	980	93.0	0.83	72	985	93.2	0.81	68	0.75	252	63
45	985	93.8	0.86	85	985	94.2	0.83	80	1.49	320	63

¹⁾ Lower than CENELEC +1.

³⁾ Temperature rise class F.

Recalculation factors

Recalculation factors for current at rated voltages other than 400 V 50 Hz

Rated voltage at 50 Hz and motor wound for	Recalculation factor
220 V	1.82
230 V	1.74
415 V	0.96
500 V	0.80
660 V	0.61
690 V	0.58