

Technical data – Increased safety motors

EEx e II T3, Aluminium frame, sizes 112 to 250

IP 55, IC 411; Insulation class F, temperature rise class B

Output kW	Type designation	Product code	Speed r/min	Effi- ciency	Power	Current		Torque			Time tE sec	Moment of inertia		Weight kg	Sound pressure level LP dB(A)
				FL 100%	factor cos φ	I _N A	I _s A	T _N Nm	T _s Nm	T _{max} Nm		J=1/4 GD ² kgm ²	GD ² kg		
1000 r/min = 6 poles															
400 V 50 Hz															
2.2	¹⁾ M2AA 112 M	3GAA 113 001-••A	940	80.5	0.76	5.3	5.7	22	2.1	2.7	15	0.015	27	54	
3	M2AA 132 S	3GAA 133 001-••A	960	84.5	0.76	6.9	7.0	30	2.4	2.6	14	0.031	39	61	
4	¹⁾ M2AA 132 MA	3GAA 133 002-••A	960	85.5	0.79	8.9	6.7	40	2.6	2.8	11	0.038	46	61	
5.5	¹⁾ M2AA 132 MB	3GAA 133 003-••A	960	86.0	0.81	11.5	7.1	55	2.8	2.8	9.5	0.045	54	61	
7.5	M2AA 160 M	3GAA 163 101-••A	970	89.3	0.79	15.4	6.6	74	2.0	2.8	17	0.089	88	59	
11	¹⁾ M2AA 160 L	3GAA 163 102-••A	970	89.8	0.78	23	7.3	108	2.2	2.9	11.5	0.107	102	59	
14	¹⁾ M2AA 160 LB	3GAA 163 103-••A	980	89.1	0.74	30	8.4	136	2.7	3.1	7	0.127	117	62	
15	M2AA 180 L	3GAA 183 101-••A	970	90.8	0.78	31	7.1	148	2.1	3.0	17	0.217	151	59	
18.5	¹⁾ M2AA 180 LB	3GAA 183 102-••A	965	90.6	0.79	37.5	6.3	183	2.0	2.6	8.5	0.237	160	59	
18.5	M2AA 200 MLA	3GAA 203 001-••A	980	91.9	0.83	35	6.9	180	2.5	2.7	15	0.37	165	63	
22	M2AA 200 MLB	3GAA 203 002-••A	980	91.1	0.83	42	7.3	214	2.5	2.7	13.5	0.43	185	63	
30	M2AA 225 SMB	3GAA 223 001-••A	985	92.2	0.81	58	7.4	291	2.5	2.7	6.5	0.64	225	63	
37	M2AA 250 SMA	3GAA 253 001-••A	990	93.0	0.82	70	6.9	357	2.8	2.8	9	1.16	280	63	
45	M2AA 250 SMB	3GAA 253 002-••A	985	93.2	0.84	83	7.0	436	2.8	2.8	8.5	1.49	320	63	
750 r/min = 8 poles															
400 V 50 Hz															
4	M2AA 160 MA	3GAA 164 101-••A	715	84.1	0.69	10	5.0	53	2.1	2.4	20	0.072	75	59	
5.5	¹⁾ M2AA 160 M	3GAA 164 102-••A	710	84.7	0.70	13.4	5.1	74	2.4	2.6	19	0.091	88	59	
7.5	¹⁾ M2AA 160 L	3GAA 164 103-••A	715	86.3	0.70	18.1	5.2	100	2.4	2.8	20	0.131	118	59	
8.5	¹⁾ M2AA 160 LB	3GAA 164 104-••A	700	83.5	0.70	21	5.2	116	2.4	2.5	16	0.131	118	45	
11	M2AA 180 L	3GAA 184 101-••A	720	88.7	0.76	23.5	5.3	146	2.4	2.6	30	0.224	147	59	
13	M2AA 180 LB	3GAA 184 102-••A	725	88.0	0.74	28	6.1	171	2.9	3.0	14	0.24	155	62	
15	M2AA 200 MLA	3GAA 204 001-••A	735	90.2	0.80	30	7.2	195	1.8	3.0	17	0.45	175	60	
18.5	M2AA 225 SMA	3GAA 224 001-••A	735	89.0	0.75	40	6.5	240	1.6	2.5	17	0.61	210	63	
22	M2AA 225 SMB	3GAA 224 002-••A	735	90.1	0.75	47	6.1	286	1.9	2.7	19	0.68	225	63	
30	¹⁾ M2AA 250 SMA	3GAA 254 001-••A	740	92.2	0.77	61	7.1	387	1.9	2.9	15	1.25	280	63	
37	M2AA 250 SMB	3GAA 254 002-••A	735	91.4	0.80	73	7.4	481	2.0	2.9	15	1.52	320	63	

¹⁾ Temperature rise class F.

Note: M2AA stocked motors cannot be restamped for 440 V 60 Hz; available during new production. Stocked motors with voltage code S and D can be restamped for 460 VY and voltage code D for 460 VD; except 2-pole type M2AA 132 SB and 2- and 4-pole M2AA 200-250 motors which need special winding.

When placing orders for frame sizes 90-100, the variant code +273 should be added.

ATEX certification process ongoing for frame sizes 112-250.

The two bullets in the product code indicate choice of mounting arrangement (see ordering information), voltage and frequency (below).

Motor size	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	
90-100	230 VΔ 400 VY	–	400 VΔ 690 VY	–	415 VΔ ^{a)}	500 VΔ	500 VY	660 VΔ ^{a)}	690 VΔ ^{a)}	Other rated voltage, connection or frequency,
112-250	230 VΔ 400 VY	460 VY	400 VΔ 690 VY	460 VΔ	415 VΔ	500 VΔ	–	660 VΔ	690 VΔ	690 V maximum

^{a)} On request

Technical data – Increased safety motors

Ex e II T3, Cast iron frame, sizes 80 to 400



IP 55, IC 411; Insulation class F, temperature rise class B - acc. to EN

Output kW	Type designation	Product code	Speed r/min	Efficiency FL 100%	Power factor cos φ	Current		Torque			Time tE ²⁾ sec	Moment of inertia		Sound pressure level LP dB(A)	
						I _N ²⁾ A	I _s A	T _N Nm	T _s Nm	T _{max} Nm		J=1/4 GD ² kgm ²	Weight kg		
750 r/min = 8 poles				400 V 50 Hz											
0.25 ³⁾⁴⁾	M2BA 80 M8 AR	3GTA 084 310-••A	625	62.0	0.64	0.91	2.7	3.5	2.0	2.2	90	0.002	9.5	44	
0.37 ³⁾⁴⁾	M2BA 80 M8 BR	3GTA 084 320-••A	690	62.0	0.57	1.5	3.1	5.1	2.7	2.9	90	0.0026	11	44	
0.55 ³⁾⁴⁾	M2BA 90 L8 AR	3GTA 094 510-••A	680	63.0	0.68	1.7	3.1	7.7	1.8	2.0	90	0.0055	17	47	
0.65 ³⁾⁴⁾	M2BA 100 L8 AR	3GTA 104 510-••A	705	70.0	0.64	2.1	3.6	8.8	2.0	2.2	35	0.008	22	54	
0.95 ³⁾⁴⁾	M2BA 100 L8 BR	3GTA 104 520-••A	705	73.0	0.65	2.9	3.8	12.7	2.0	2.2	26	0.0105	26	54	
1.3 ³⁾⁴⁾	M2BA 112 M8 AR	3GTA 114 310-••A	715	79.0	0.64	3.7	4.7	17.4	2.5	2.8	34	0.018	45	54	
1.9 ³⁾⁴⁾	M2BA 132 S8 AR	3GTA 134 110-••A	705	80.0	0.78	4.4	4.3	25.7	1.8	2.0	35	0.03	64	54	
2.6 ³⁾⁴⁾	M2BA 132 M8 AR	3GTA 134 310-••A	710	83.0	0.78	6.1	4.8	35	2.2	2.4	32	0.04	77	52	
3.5	M3HP 160 MLA	3GHP 164 410-••G	719	82.3	0.65	9.5	5.1	46	1.8	2.9	21	0.071	146	59	
4.8	M3HP 160 MLB	3GHP 164 420-••G	719	84.9	0.69	12	5.5	64	1.8	2.9	20	0.09	160	53	
6.6	M3HP 160 MLC	3GHP 164 430-••G	716	85.7	0.70	16.2	5.6	88	1.8	3.0	16	0.121	188	55	
9.7	M3HP 180 MLB	3GHP 184 420-••G	727	90.1	0.74	21	5.9	127	1.7	2.8	17	0.239	227	63	
15	M3HP 200 MLB	3GHP 204 420-••G	736	90.8	0.79	30.5	7.0	195	2.2	3.4	20	0.54	300	64	
22	M3HP 225 SMC	3GHP 224 230-••G	734	91.5	0.80	43.5	6.9	286	2.1	3.3	22	0.75	375	65	
27	M3HP 250 SMA	3GHP 254 210-••G	736	91.9	0.82	51	6.6	350	1.9	2.8	21	1.25	420	65	
32	M3HP 250 SMB	3GHP 254 220-••G	737	92.4	0.82	61	7.0	415	2.0	2.9	13	1.52	465	65	
37	M3HP 280 SMA	3GHP 284 210-••G	741	93.0	0.80	72	6.7	477	1.5	2.6	10	1.85	605	65	
45	M3HP 280 SMB	3GHP 284 220-••G	741	93.4	0.79	88	7.3	580	1.7	2.9	7	2.2	645	65	
55	M3HP 280 SMC	3GHP 284 230-••G	741	94.0	0.80	105	7.8	709	1.8	3.0	5	2.85	725	65	
55	M3HP 315 SMA	3GHP 314 210-••G	743	94.3	0.80	105	6.2	707	1.2	2.2	12	3.2	830	62	
75	M3HP 315 SMB	3GHP 314 220-••G	743	94.8	0.80	142	6.5	964	1.3	2.2	7	4.1	930	62	
90	M3HP 315 SMC	3GHP 314 230-••G	743	95.0	0.81	173	6.4	1157	1.4	2.2	7	4.9	1000	64	
105	M3HP 315 MLA	3GHP 314 410-••G	742	95.3	0.81	197	6.5	1351	1.4	2.2	5	5.8	1150	72	
120 ³⁾	M2BA 355 S	3GBA 354 100-••A	743	95.0	0.79	230	6.2	1542	1.4	2.2	10	10.4	1550	75	
145 ³⁾	M2BA 355 SMA	3GBA 354 210-••A	743	95.4	0.80	275	6.5	1863	1.5	2.2	6	12.5	1800	75	
180 ³⁾	M2BA 355 MLA	3GBA 354 410-••A	744	95.7	0.77	350	6.5	2310	1.4	2.4	6	14.6	2150	75	
180 ³⁾	M2BA 400 M	3GBA 404 300-••A	744	95.7	0.77	350	6.5	2310	1.4	2.4	6	14.6	2150	75	
230 ³⁾	M2BA 400 LKA	3GBA 404 510-••A	745	96.1	0.80	430	6.5	2948	1.4	2.7	6	16.5	2800	80	
280 ³⁾	M2BA 400 LKB	3GBA 404 520-••A	745	96.2	0.81	520	6.1	3589	1.3	2.6	6	19	3050	80	

¹⁾ On request.

²⁾ Value may differ by different voltage codes.

³⁾ ATEX certification process ongoing.

⁴⁾ Temperature rise class F.

Notes:

- When ordering sizes 160-200 with lifetime lubrication, variant code 194 'ZZ-bearings at both ends' has to be added

Data for other voltages and frequencies, on request.

The two bullets in the product code indicate choice of mounting arrangement (see ordering information), voltage and frequency (below).

S ^{a) b)}	D ^{a) b)}	A ^{a)}	B ^{a)}	E	F	G	H	T	U	X
400VY 50Hz	400VΔ50Hz	380VY 50Hz	380VΔ50Hz	500VΔ50 Hz	500VY 50Hz	415VY 50Hz	415VΔ50Hz	660VΔ50Hz	690VΔ50Hz	Other rated volt. conn. or freq. max. 690 V
230VD 50Hz	690VY 50Hz	220VD 50Hz	660VY 60Hz							

^{a)} Motor sizes 80-250: For wide range voltage acc. to IEC 38 please apply variant code 002: Restamping of voltage. Data for wide range voltage can be taken from page 61-62.

^{b)} Motor sizes 80-250: For fixed voltages 230 VΔ and 400 VΔ please apply variant code 002: Restamping of voltage.

Technical data – Increased safety motors

EEx e II T3, Cast iron frame, sizes 80 to 400

IP 55, IC 411; Insulation class F, temperature rise class B - acc. to VIK

Output kW	Type designation	Product code	Speed r/min	Efficiency FL 100%	Power factor cos φ	Current		Torque			Time tE ²⁾ sec	Moment of inertia J=1/4 GD ² kgm ²	Weight kg	Sound pressure level LP dB(A)	
						I _N ²⁾ A	I _s / I _N	T _N Nm	T _s / T _N	T _{max} / T _N					
750 r/min = 8 poles															
380...420 V 50 Hz															
0.25 ³⁾⁴⁾	M2BA 80 M8 AR	3GTA 084 310-••A	685	62.0	0.64	0.71	2.7	3.5	2.0	2.2	90	0.002	9.5	44	
0.37 ³⁾⁴⁾	M2BA 80 M8 BR	3GTA 084 320-••A	690	62.0	0.57	1.5	3.1	5.1	2.7	2.9	90	0.0026	11	44	
0.55 ³⁾⁴⁾	M2BA 90 L8 AR	3GTA 094 510-••A	680	63.0	0.68	1.7	3.1	7.7	1.8	2.0	90	0.0055	17	47	
0.65 ³⁾⁴⁾	M2BA 100 L8 AR	3GTA 104 510-••A	705	70.0	0.64	2.1	3.6	8.8	2.0	2.2	35	0.008	22	54	
0.95 ³⁾⁴⁾	M2BA 100 L8 BR	3GTA 104 520-••A	705	73.0	0.65	2.9	3.8	12.7	2.0	2.2	26	0.0105	26	54	
1.3 ³⁾⁴⁾	M2BA 112 M8 AR	3GTA 114 310-••A	715	79.0	0.68	3.7	4.7	17.4	2.5	2.8	34	0.018	45	54	
1.9 ³⁾⁴⁾	M2BA 132 S8 AR	3GTA 134 110-••A	705	80.0	0.78	4.4	4.3	25.7	1.8	2.0	35	0.03	64	54	
2.6 ³⁾⁴⁾	M2BA 132 M8 AR	3GTA 134 310-••A	710	83.0	0.78	6.1	4.8	35	2.2	2.4	32	0.04	77	52	
3.5	M3HP 160 MLA	3GHP 164 410-••G	719	82.3	0.65	9.5	5.1	46	1.8	2.9	23	0.071	146	59	
4.8	M3HP 160 MLB	3GHP 164 420-••G	719	84.9	0.69	12.1	5.5	64	1.8	2.9	21	0.09	160	53	
6.6	M3HP 160 MLC	3GHP 164 430-••G	716	85.7	0.70	16.7	5.5	88	1.8	3.0	16	0.121	188	55	
9.7	M3HP 180 MLB	3GHP 184 420-••G	727	90.1	0.74	22	5.7	127	1.7	2.8	14	0.239	227	63	
13.2	M3HP 200 MLB	3GHP 204 420-••G	734	90.4	0.82	27	6.0	172	1.8	3.0	23	0.54	300	64	
16.5	M3HP 225 SMB	3GHP 224 220-••G	736	91.1	0.79	34	6.6	214	2.0	3.0	25	0.68	350	65	
20	M3HP 225 SMC	3GHP 224 230-••G	735	91.4	0.80	41	6.7	260	2.1	3.3	25	0.75	375	65	
27	M3HP 250 SMA	3GHP 254 210-••G	736	91.9	0.82	54	6.3	350	1.9	2.8	16	1.25	420	65	
750 r/min = 8 poles															
400 V 50 Hz¹⁾															
33	M3HP 280 SMA	3GHP 284 210-••G	740	93.2	0.80	64	6.9	426	1.7	2.8	17	1.85	605	65	
40	M3HP 280 SMB	3GHP 284 220-••G	739	93.7	0.81	78	6.8	517	1.6	2.8	18	2.2	645	65	
50	M3HP 315 SMA	3GHP 314 210-••G	744	94.3	0.79	98	6.7	642	1.3	2.4	15	3.2	830	62	
68	M3HP 315 SMB	3GHP 314 220-••G	744	94.9	0.79	132	7.0	873	1.4	2.4	10	4.1	930	62	
80	M3HP 315 SMC	3GHP 314 230-••G	744	95.1	0.80	154	7.2	1027	1.5	2.5	10	4.9	1000	64	
95	M3HP 315 MLA	3GHP 314 410-••G	743	95.3	0.80	182	7.0	1221	1.5	2.4	7	5.8	1150	72	
110 ³⁾	M2BA 355 S	3GBA 354 100-••A	745	95.0	0.79	210	6.7	1410	1.5	2.4	10	10.4	1550	75	
132 ³⁾	M2BA 355 SMA	3GBA 354 210-••A	744	95.4	0.79	255	7.1	1694	1.6	2.4	8	12.5	1800	75	
160 ³⁾	M2BA 355 MLA	3GBA 354 410-••A	745	95.6	0.75	320	7.2	2051	1.6	2.7	8	14.6	2100	75	
160 ³⁾	M2BA 400 M	3GBA 404 300-••A	745	95.6	0.75	320	7.2	2051	1.6	2.7	8	14.6	2150	75	
200 ³⁾	M2BA 400 LKA	3GBA 404 510-••A	746	96.0	0.78	385	7.2	2560	1.6	3.0	8	16.5	2800	80	
250 ³⁾	M2BA 400 LKB	3GBA 404 520-••A	746	96.2	0.79	475	6.7	3200	1.5	2.9	9	19	3050	80	

¹⁾ Voltage tolerance ± 5%; voltage range 380...420 V on request.

²⁾ Sizes 80-250: The max. current is indicated at the nominal voltage range 380-420 V.

³⁾ ATEX certification process ongoing.

⁴⁾ Temperature rise class F.

Technical data for corresponding EEx e T2 VIK available on request.

Notes:

- Variant code 421 'VIK design' has to be added when ordering
- When ordering sizes 160-200 with lifetime lubrication, variant code 194 'ZZ-bearings at both ends' has to be added

Data for other voltages and frequencies, on request.

The two bullets in the product code indicate choice of mounting arrangement (see ordering information), voltage and frequency (below).

Motor	S ^{a) b)}	D ^{a) b)}	A ^{a)}	B ^{a)}	E	F	G	H	T	U	X
80-250	218..242VΔ 380..420VY	380..420VΔ 655..725VY	380VY50Hz 220VΔ50Hz 660VY60Hz	380VΔ50Hz 220VΔ50Hz 660VY60Hz	500VΔ50 Hz	500VY50Hz	415VY50Hz	415VΔ50Hz	660VΔ50Hz	690VΔ50Hz	Other voltage, coupl. or freq.
280-400	400VY50Hz 230VΔ50Hz	400VΔ50Hz 690VY50Hz	380VY50Hz 220VΔ50Hz	380VΔ50Hz 660VY60Hz	500VΔ50 Hz	500VY50Hz	415VY50Hz	415VΔ50Hz	660VΔ50Hz	690VΔ50Hz	max. 690 V

^{a)} Motor sizes 80-132: Only one voltage will be stamped on rating plate.

^{b)} Motor sizes 80-132: For fixed voltages 230 V Δ and 400 V Δ please apply variant code 002: Restamping of voltage.