

# SIMOTICS XP 1MA Explosion-Proof Motors

## Motors for Zone 1 in type of protection Ex e

Self-ventilated motors with Standard Efficiency IE1  
Cast-iron series 1MA6

# IE1

### Selection and ordering data (continued)

P <sub>rated</sub> 50 Hz kW	Tempera- ture class	Frame size	Operating values at rated output											Cast-iron series 1MA6 – IE1 version for Zone 1 in type of protection Ex e	m <sub>M</sub> B3 J	Torque class				
			n <sub>rated</sub> 50 Hz rpm	T <sub>rated</sub> 50 Hz Nm	IE class	η <sub>rated</sub> 50 Hz, 4/4	η <sub>rated</sub> 50 Hz, 3/4	η <sub>rated</sub> 50 Hz, 2/4	COS- φ <sub>rated</sub> 50 Hz, 4/4	I <sub>rated</sub> 50 Hz, 400 V	T <sub>LR</sub> / I <sub>rated</sub>	I <sub>LR</sub> / I <sub>rated</sub>	T <sub>B</sub> / I <sub>rated</sub>				t <sub>E</sub> 50 Hz, T1/T2	t <sub>E</sub> 50 Hz, T3	Order No.	kg
2-pole: 3000 rpm at 50 Hz, temperature classes T1 to T3																				
2.5	T1,T2,T3	100 L	2865	8.3	IE1	80.5	80.5	79.5	0.87	5.3	2.6	7.4	2.8	9	8	1MA6106-2BA	34	0.0038	16	
3.3	T1,T2,T3	112 M	2875	11	IE1	82.1	82.1	81.1	0.89	6.7	2.1	6.6	2.3	10	9	1MA6113-2BB	43	0.0055	13	
4.6	T1,T2,T3	132 S	2920	15	IE1	83.8	83.8	82.8	0.90	9.2	1.9	6.8	2.5	15	13	1MA6130-2BB	53	0.016	13	
5.5	T3	132 S	2925	18	IE1	84.7	84.7	83.7	0.92	10.6	2.2	7.7	2.7	15	13	1MA6131-2BB	58	0.021	13	
7.5	T3	160 M	2945	24	IE1	86.0	86.0	85.0	0.90	14.3	2.2	7.6	3.1	29	18	1MA6163-2BB	96	0.034	13	
10	T3	160 M	2940	32	IE1	87.2	87.2	86.2	0.92	18.6	2.1	7.6	2.9	23	12	1MA6164-2BB	105	0.040	13	
12.5	T3	160 L	2940	41	IE1	88.0	88.0	87.0	0.93	23	2.3	7.6	3.0	21	9	1MA6166-2BB	115	0.052	13	
15	T3	180 M	2955	49	IE1	88.7	91.0	90.0	0.87	29	2.0	6.9	3.3	30	14	1MA6183-2BC	170	0.077	10	
20	T3	200 L	2960	64	IE1	89.6	90.0	89.0	0.86	39	1.9	6.0	2.9	35	14	1MA6206-2BC	245	0.14	10	
24	T3	200 L	2965	77	IE1	90.1	91.0	90.0	0.87	46	2.0	6.4	3.0	35	10	1MA6207-2BC	246	0.16	10	
28	T3	225 M	2970	90	IE1	90.5	90.4	89.5	0.90	51	1.8	6.4	2.7	30	13	1MA6223-2BC	310	0.24	10	
38	T1,T2	225 M	2970	122	IE1	91.3	91.2	90.7	0.89	69 <sup>3)</sup>	1.8	7.0	2.7	16	–	1MA6223-2AC	310	0.24	10	
36	T3	250 M	2975	116	IE1	91.2	90.9	89.6	0.91	64	1.5	6.6	2.7	30	11	1MA6253-2BC	415	0.45	10	
47	T1,T2	250 M	2975	151	IE1	91.8	91.7	90.1	0.90	85	1.5	6.5	2.7	18	–	1MA6253-2AC	415	0.45	10	
47	T3	280 S	2983	150	IE1	91.8	91.3	89.8	0.90	84	1.5	7.1	2.9	30	23	1MA6280-2BD	570	0.79	7	
64	T1,T2	280 S	2980	205	IE1	92.4	92.0	90.5	0.89	115	1.5	7.8	2.9	19	–	1MA6280-2AD	570	0.79	7	
58	T3	280 M	2982	186	IE1	92.2	91.9	90.7	0.91	104	1.5	7.2	2.8	27	11	1MA6283-2BD	610	0.92	7	
76	T1,T2	280 M	2978	244	IE1	92.7	92.6	91.6	0.90	134	1.5	7.5	2.8	15	–	1MA6283-2AD	610	0.92	7	
68	T3	315 S	2985	218	IE1	92.5	91.8	90.0	0.91	120	1.4	7.1	2.8	50	21	1MA6310-2BD	790	1.3	7	
95	T1,T2	315 S	2985	304	IE1	93.1	92.6	91.1	0.90	169	1.5	7.3	2.9	30	–	1MA6310-2AD	790	1.3	7	
80	T3	315 M	2985	256	IE1	92.8	92.4	90.9	0.91	142	1.6	7.0	2.8	40	19	1MA6313-2BD	850	1.5	7	
112	T1,T2	315 M	2985	358	IE1	93.3	93.0	91.8	0.91	198 <sup>3)</sup>	1.4	7.5	2.7	21	–	1MA6313-2AD	850	1.5	7	
100	T3	315 L	2984	320	IE1	93.1	92.7	91.5	0.92	174	1.4	6.8	2.8	40	11	1MA6316-2BD	990	1.8	7	
135	T1,T2	315 L	2984	432	IE1	93.6	93.5	92.4	0.91	234	1.6	7.4	2.9	17	–	1MA6316-2AD	990	1.8	7	
125	T3	315 L	2985	400	IE1	93.5	93.2	92.2	0.91	214	1.5	7.3	2.8	30	7	1MA6317-2BD	1100	2.3	7	
165	T1,T2	315 L	2986	528	IE1	93.8	93.5	92.7	0.91	280	1.8	9.3	2.9	7	–	1MA6317-2AD	1100	2.3	7	
<b>Voltagess</b>										No. of poles	Motor type	Version					Order code(s)			
50 Hz			230 VΔ/400 VY							2	1MA6106 ... 313	Standard					1	–		
			400 VΔ/690 VY							2	1MA6106 ... 317	Standard					6	–		
			500 VY							2	1MA6106 ... 317	Without additional charge					3	–		
			500 VΔ							2	1MA6106 ... 317	Without additional charge					5	–		
Further voltages <sup>1)</sup>			For add. charges, voltage codes, order codes and descr., see suppl. and special versions.															9	...	
Note: For delta connection, overload protection with phase-failure protection must be provided.																				
<b>Types of construction</b>										No. of poles	Motor type	Version					Order code(s)			
Without flange			IM B3/6/7/8 <sup>5) 6)</sup>							2	1MA6106 ... 317	Standard					0	–		
			IM V6 <sup>5) 6)</sup>							2	1MA6106 ... 313	With additional charge					1	–		
										2	1MA6316 ... 317	With additional charge					9	M1E		
With flange			IM B5 <sup>5) 7)</sup>							2	1MA6106 ... 313	With additional charge					1	–		
			IM V3 <sup>5) 7)</sup>							2	1MA6106 ... 166	With additional charge					1	–		
										2	1MA6183 ... 313	With additional charge					9	M1G		
			IM V1 with protective cover <sup>5) 7) 8)</sup>							2	1MA6106 ... 317 <sup>9)</sup>	With additional charge					4	–		
			IM B35							2	1MA6106 ... 317	With additional charge					6	–		
With standard flange			IM B14, IM V19 <sup>5)</sup>							2	1MA6106 ... 166	With additional charge					2	–		
			IM B34							2	1MA6106 ... 166	With additional charge					7	–		
With special flange			IM B14, IM V19 <sup>5)</sup>							2	1MA6106 ... 166	With additional charge					3	–		
Further types of construction			For additional charges, type of construction codes and descriptions, see supplements and special versions.															9	...	
<b>Special versions</b>																		Order code(s)		
Options			For additional charges, order codes and descriptions, see supplements and special versions.												1MA6 ... - ...		-Z ...+...+...+...			

# SIMOTICS XP 1MA Explosion-Proof Motors

## Motors for Zone 1 in type of protection Ex e

# IE1

### Self-ventilated motors with Standard Efficiency IE1 Cast-iron series 1MA6

#### Selection and ordering data (continued)

P <sub>rated</sub> 50 Hz	Tempera- ture class	Frame size	Operating values at rated output											Cast-iron series 1MA6 – IE1 version for Zone 1 in type of protection Ex e	m <sub>IM B3</sub> J	Torque class											
			n <sub>rated</sub> , 50 Hz	T <sub>rated</sub> , 50 Hz	IE class	η <sub>rated</sub> , 50 Hz, 4/4	η <sub>rated</sub> , 50 Hz, 3/4	η <sub>rated</sub> , 50 Hz, 2/4	COS- φ <sub>rated</sub> , 50 Hz, 4/4	I <sub>rated</sub> , 50 Hz, 400 V	T <sub>L/R</sub> / I <sub>rated</sub>	I <sub>L/R</sub> / I <sub>rated</sub>	T <sub>B</sub> / I <sub>rated</sub>				t <sub>E</sub> , 50 Hz, T1/T2	t <sub>E</sub> , 50 Hz, T3									
kW	FS	rpm	Nm	%	%	%	%	A	s	s	Order No.	kg	kgm <sup>2</sup>	CL													
<ul style="list-style-type: none"> <li>Cooling: Self-ventilated (IC 411)</li> <li>Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30</li> <li>Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) <sup>1)</sup></li> </ul>																											
2-pole: 3000 rpm at 50 Hz, temperature classes T1 and T2 with double rating plate (T1/T2 and T3)																											
6.5	T1,T2	132 S	2900	21	IE1	85.4	85.4	84.4	0.93	12.5	1.9	6.5	2.3	12	7	1MA6131-2BB ■■■ <sup>2)</sup>	58	0.021	13								
9.5	T1,T2	160 M	2920	31	IE1	87.0	87.0	86.0	0.91	18.1	1.7	6.0	2.4	24	–	1MA6163-2BB ■■■ <sup>2)</sup>	96	0.034	13								
13	T1,T2	160 M	2910	43	IE1	88.2	88.2	87.2	0.92	24.5	1.6	5.8	2.2	16	–	1MA6164-2BB ■■■ <sup>2)</sup>	105	0.040	13								
16	T1,T2	160 L	2910	53	IE1	88.9	88.9	87.9	0.93	30	1.8	5.8	2.3	15	–	1MA6166-2BB ■■■ <sup>2)</sup>	115	0.052	13								
19	T1,T2	180 M	2935	62	IE1	89.4	90.0	89.0	0.88	36.5	1.6	5.5	2.6	24	–	1MA6183-2BC ■■■	170	0.077	10								
25	T1,T2	200 L	2950	81	IE1	90.2	90.0	89.0	0.87	49	1.5	4.8	2.3	28	–	1MA6206-2BC ■■■	245	0.14	10								
31	T1,T2	200 L	2950	100	IE1	90.8	90.0	89.0	0.88	60	1.5	4.9	2.3	26	–	1MA6207-2BC ■■■	246	0.16	10								
<b>Voltagess</b>																											
50 Hz		230 VΔ/400 VY	No. of poles		Motor type		Version		Order code(s)																		
		400 VΔ/690 VY	2		1MA6106 ... 313		Standard		1		–																
		500 VY	2		1MA6106 ... 317		Standard		6		–																
		500 VΔ	2		1MA6106 ... 317		Without additional charge		3		–																
			2		1MA6106 ... 317		Without additional charge		5		–																
Further voltages <sup>1)</sup>		For add. charges, voltage codes, order codes and descr., see suppl. and special versions.																									
		Note: For delta connection, overload protection with phase-failure protection must be provided.																									
<b>Types of construction</b>																											
		No. of poles		Motor type		Version		Order code(s)																			
Without flange		IM B3/6/7/8 <sup>5) 6)</sup>		2		1MA6106 ... 317		Standard		0		–															
		IM V6 <sup>5) 6)</sup>		2		1MA6106 ... 313		With additional charge		1		–															
				2		1MA6316 ... 317		With additional charge		9		M1E															
With flange		IM B5 <sup>5) 7)</sup>		2		1MA6106 ... 313		With additional charge		1		–															
		IM V3 <sup>5) 7)</sup>		2		1MA6106 ... 166		With additional charge		1		–															
				2		1MA6183 ... 313		With additional charge		9		M1G															
		IM V1 with protective cover <sup>5) 7) 8)</sup>		2		1MA6106 ... 317 <sup>9)</sup>		With additional charge		4		–															
With standard flange		IM B35		2		1MA6106 ... 317		With additional charge		6		–															
		IM B14, IM V19 <sup>5)</sup>		2		1MA6106 ... 166		With additional charge		2		–															
		IM B34		2		1MA6106 ... 166		With additional charge		7		–															
With special flange		IM B14, IM V19 <sup>5)</sup>		2		1MA6106 ... 166		With additional charge		3		–															
Further types of construction		For additional charges, type of construction codes and descriptions, see supplements and special versions.																									
		9 ...																									
<b>Special versions</b>																											
Options		For additional charges, order codes and descriptions, see supplements and special versions.										1MA6 ... - ... ■■■ -Z		...+...+...+...													
Motor type 1MA6, 2-pole																											
		106-2	113-2	130-2	131-2	163-2	164-2	166-2	183-2	206-2	207-2	223-2BC	223-2AC	253-2BC	253-2AC	280-2BD	280-2AD	283-2BD	283-2AD	310-2BD	310-2AD	313-2BD	313-2AD	316-2BD	316-2AD	317-2BD	317-2AD
Noise at rated output and 50 Hz – measuring-surface sound pressure level L <sub>pfA</sub> , 50 Hz and sound power level L <sub>WA</sub> , 50 Hz																											
L <sub>pfA</sub> , 50 Hz	dB(A)	62	63	68	68	70	70	70	71	71	71	71	75	75	77	77	77	77	77	79	79	79	79	79	79	79	79
L <sub>WA</sub> , 50 Hz	dB(A)	74	75	80	80	82	82	82	83	84	84	84	84	89	89	91	91	91	91	91	93	93	93	93	93	93	93

<sup>1)</sup> For motors 1MA6164-... to 1MA6207-... with double rating plate, utilization in accordance with thermal class 155 (temperature class F).

<sup>2)</sup> In the following versions, the T3 output is stamped on the rating plate as standard:  
– Order code A11/A12  
– Voltage code "9"  
Alternatively: order code C30 "T1/T2 output on the rating plate"

<sup>3)</sup> For connection to 230 V, parallel feeders are necessary (see the "Introduction" section, "Connection, circuit and connection boxes").

<sup>4)</sup> Technical data and dimensions are available for VIK version (order code K30) on request (additional charge).

<sup>5)</sup> The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

<sup>6)</sup> If motors 1MA6183-... to 1MA6317-... (motor series 1MA6 frame sizes 180 M to 315 L) in types of construction with feet IM B6, IM B7 or IM V6 are fixed to the wall, it is recommended that the motor feet are supported.

<sup>7)</sup> 1MA6220-... to 1MA6317-... motors (motor series 1MA6 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

<sup>8)</sup> The "Second shaft extension" option, order code K16 is not possible.

<sup>9)</sup> 2-pole motors 1MA6316-... to 1MA6317-... (motor series 1MA6 frame size 315 L) in 60 Hz version available on request.

# SIMOTICS XP 1MA Explosion-Proof Motors

## Motors for Zone 1 in type of protection Ex e

Self-ventilated motors with Standard Efficiency IE1  
Cast-iron series 1MA6

# IE1

### Selection and ordering data (continued)

P <sub>rated</sub> 50 Hz	Tempera- ture class	Frame size	Operating values at rated output											Cast-iron series 1MA6 – IE1 version for Zone 1 in type of protection Ex e	m <sub>IM B3</sub> J	Torque class			
			n <sub>rated</sub> , 50 Hz	T <sub>rated</sub> , 50 Hz	IE class	η <sub>rated</sub> , 50 Hz, 4/4	η <sub>rated</sub> , 50 Hz, 3/4	η <sub>rated</sub> , 50 Hz, 2/4	cos- φ <sub>rated</sub> , 50 Hz, 4/4	I <sub>rated</sub> , 50 Hz, 400 V	T <sub>LR</sub> / T <sub>rated</sub>	I <sub>LR</sub> / I <sub>rated</sub>	T <sub>B</sub> / T <sub>rated</sub>				t <sub>E</sub> , 50 Hz, T1/T2	t <sub>E</sub> , 50 Hz, T3	Order No.
kW	FS	rpm	Nm	%	%	%	A					s	s						
<ul style="list-style-type: none"> <li>Cooling: Self-ventilated (IC 411)</li> <li>Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30</li> <li>Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) <sup>1)</sup></li> </ul>																			
4-pole: 1500 rpm at 50 Hz, temperature classes T1 to T3																			
2	T1,T2,T3	100 L	1420	14	IE1	79.1	79.6	77.1	0.82	4.5	2.5	6.4	2.7	13	11	1MA6106-4BA	33	0.0048	16
2.5	T1,T2,T3	100 L	1415	17	IE1	80.5	80.5	79.5	0.83	5.5	2.6	6.4	2.7	12	10	1MA6107-4BA	36	0.0058	16
3.6	T1,T2,T3	112 M	1435	24	IE1	82.5	82.5	81.5	0.83	7.5	2.6	7.2	2.9	10	9	1MA6113-4BA	45	0.011	16
5	T1,T2,T3	132 S	1455	33	IE1	84.2	84.2	83.2	0.82	10.4	2.7	6.6	3.2	10	9	1MA6130-4BA	55	0.021	16
6.8	T1,T2,T3	132 M	1460	44	IE1	85.6	85.6	84.6	0.82	14	3.0	7.7	3.6	11	9	1MA6133-4BA	62	0.027	16
10	T1,T2,T3	160 M	1460	65	IE1	87.2	87.2	86.2	0.87	19.7	2.3	6.5	2.7	17	10	1MA6163-4BB	100	0.052	13
13.5	T1,T2,T3	160 L	1460	88	IE1	88.3	88.3	87.3	0.84	27	2.4	6.9	3.0	18	9	1MA6166-4BB	114	0.057	13
15	T3	180 M	1465	97	IE1	88.7	89.0	88.0	0.80	31	1.8	6.1	2.9	18	11	1MA6183-4BC	165	0.13	10
17.5	T3	180 L	1475	114	IE1	89.1	90.0	89.0	0.80	36	1.8	6.4	3.0	16	11	1MA6186-4BC	177	0.15	10
24	T3	200 L	1480	155	IE1	90.1	91.0	90.0	0.82	47.5	2.2	7.9	3.1	20	11	1MA6207-4BC	280	0.32	10
30	T3	225 S	1481	193	IE1	90.7	90.6	89.9	0.83	59	1.6	6.7	2.7	13	13	1MA6220-4BC	300	0.44	10
36	T3	225 M	1484	232	IE1	91.2	91.3	91.0	0.84	70 <sup>2)</sup>	1.7	6.9	2.8	12	12	1MA6223-4BC	330	0.52	10
44	T3	250 M	1485	283	IE1	91.6	91.4	90.4	0.85	83	1.7	7.3	2.5	18	11	1MA6253-4BC	435	0.79	10
58	T3	280 S	1488	372	IE1	92.2	92.1	91.4	0.84	111	1.7	6.3	2.5	30	7	1MA6280-4BC	640	1.4	10
70	T3	280 M	1488	449	IE1	92.6	92.1	92.1	0.85	130	1.7	7.0	2.5	26	6	1MA6283-4BC	660	1.6	10
84	T3	315 S	1492	538	IE1	92.9	92.8	91.8	0.84	158	1.7	7.7	2.8	28	8	1MA6310-4BD	830	2.2	7
100	T3	315 M	1492	640	IE1	93.1	93.0	92.3	0.85	185	1.6	7.2	2.5	29	7	1MA6313-4BD	910	2.7	7
115	T3	315 L	1490	740	IE1	93.3	93.2	92.3	0.86	214	1.7	7.5	2.5	28	5	1MA6316-4BD	1060	3.2	7
135	T3	315 L	1482	868	IE1	93.6	93.5	92.6	0.86	245	1.7	7.8	2.8	26	7	1MA6317-4BD	1200	4.2	7
<b>Voltagess</b>																			
50 Hz		230 VΔ/400 VY	No. of poles		Motor type		Version		Order code(s)										
		400 VΔ/690 VY	4	1MA6106 ... 313	Standard		1	-											
		500 VY	4	1MA6106 ... 317	Standard		6	-											
		500 VΔ	4	1MA6106 ... 317	Without additional charge		3	-											
			4	1MA6106 ... 317	Without additional charge		5	-											
Further voltages		For additional charges, voltage codes, order codes and descriptions, see supplements and special versions						9	...										
Note: For delta connection, overload protection with phase-failure protection must be provided.																			
<b>Types of construction</b>																			
		No. of poles		Motor type		Version		Order code(s)											
Without flange		IM B3/6/7/8 <sup>4) 5)</sup>		4 1MA6106 ... 317		Standard		0 -											
		IM V6 <sup>4) 5)</sup>		4 1MA6106 ... 313		With additional charge		1 -											
				4 1MA6316 ... 317		With additional charge		9 M1E											
With flange		IM B5 <sup>4) 6)</sup>		4 1MA6106 ... 313		With additional charge		1 -											
		IM V3 <sup>4) 6)</sup>		4 1MA6106 ... 166		With additional charge		1 -											
				4 1MA6183 ... 313		With additional charge		9 M1G											
		IM V1 with protective cover <sup>4) 6) 7)</sup>		4 1MA6106 ... 317		With additional charge		4 -											
		IM B35		4 1MA6106 ... 317		With additional charge		6 -											
With standard flange		IM B14, IM V19 <sup>4)</sup>		4 1MA6106 ... 166		With additional charge		2 -											
				4 1MA6106 ... 166		With additional charge		7 -											
With special flange		IM B14, IM V19 <sup>4)</sup>		4 1MA6106 ... 166		With additional charge		3 -											
Further types of construction		For additional charges, type of construction codes and descriptions, see supplements and special versions.						9	...										
<b>Special versions</b>																			
Options		For additional charges, order codes and descriptions, see supplements and special versions.						1MA6 ... - ... -Z		...+...+...+...									

For noise values, see next Page.

- For motors 1MA6183 and 1MA6186-... with double rating plate, utilization in accordance with thermal class 155 (temperature class F).
- For connection to 230 V, parallel feeders are necessary (see the "Introduction" section, "Connection, circuit and connection boxes").
- Technical data and dimensions are available for VIK version (order code K30) on request (additional charge).
- The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.
- If motors 1MA6183-... to 1MA6317-... (motor series 1MA6 frame sizes 180 M to 315 L) in types of construction with feet IM B6, IM B7 or IM V6 are fixed to the wall, it is recommended that the motor feet are supported.
- 1MA6220-... to 1MA6317-... motors (motor series 1MA6 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.
- The "Second shaft extension" option, order code K16 is not possible.

# SIMOTICS XP 1MA Explosion-Proof Motors

## Motors for Zone 1 in type of protection Ex e

# IE1

### Self-ventilated motors with Standard Efficiency IE1 Cast-iron series 1MA6

#### Selection and ordering data (continued)

P <sub>rated</sub> 50 Hz kW	Temperature class	Frame size	Operating values at rated output											Cast-iron series		m <sub>IM B3</sub> J	Torque class		
			n <sub>rated</sub> 50 Hz rpm	T <sub>rated</sub> 50 Hz Nm	IE class	η <sub>rated</sub> 50 Hz, 4/4	η <sub>rated</sub> 50 Hz, 3/4	η <sub>rated</sub> 50 Hz, 2/4	COS- φ <sub>rated</sub> 50 Hz, 4/4	I <sub>rated</sub> 50 Hz, 400 V	T <sub>L/R</sub> I <sub>rated</sub>	I <sub>L/R</sub> I <sub>rated</sub>	T <sub>B</sub> I <sub>rated</sub>	t <sub>E</sub> 50 Hz, T1/T2	t <sub>E</sub> 50 Hz, T3			1MA6 – IE1 version for Zone 1 in type of protection Ex e	Order No.
<ul style="list-style-type: none"> <li>Cooling: Self-ventilated (IC 411)</li> <li>Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30</li> <li>Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) <sup>1)</sup></li> </ul>																			
4-pole: 1500 rpm at 50 Hz, temperature classes T1 and T2 with double rating plate (T1/T2 and T3)																			
17	T1,T2	180 M	1460	111	IE1	89.0	89.0	88.0	0.82	35.5	1.6	5.3	2.4	13	–	1MA6183-4BC	165	0.13	10
20	T1,T2	180 L	1465	130	IE1	89.6	89.0	88.0	0.82	41 <sup>2)</sup>	1.6	5.6	2.6	13	–	1MA6186-4BC	177	0.15	10
27	T1,T2	200 L	1475	175	IE1	90.4	91.0	90.0	0.84	53	1.9	7.1	2.7	19	–	1MA6207-4BC	280	0.32	10
33	T1,T2	225 S	1480	213	IE1	91.0	91.2	90.5	0.84	64 <sup>2)</sup>	1.4	6.2	2.5	11	–	1MA6220-4BC	300	0.44	10
40	T1,T2	225 M	1485	258	IE1	91.4	91.7	91.5	0.85	77 <sup>2)</sup>	1.5	6.2	2.5	10	–	1MA6223-4BC	330	0.52	10
50	T1,T2	250 M	1485	322	IE1	91.9	91.8	91.2	0.86	94	1.5	6.4	2.1	15	–	1MA6253-4BC	435	0.79	10
68	T1,T2	280 S	1485	437	IE1	92.5	92.7	92.3	0.85	131	1.5	5.3	2.1	23	–	1MA6280-4BC	640	1.4	10
80	T1,T2	280 M	1490	514	IE1	92.8	92.9	92.5	0.87	150 <sup>2)</sup>	1.5	6.0	2.2	20	–	1MA6283-4BC	660	1.6	10
100	T1,T2	315 S	1488	641	IE1	93.1	93.2	92.6	0.85	188	1.4	6.5	2.4	24	–	1MA6310-4BD	830	2.2	7
120	T1,T2	315 M	1488	770	IE1	93.4	93.5	93.1	0.86	222 <sup>2)</sup>	1.3	6.0	2.1	24	–	1MA6313-4BD	910	2.7	7
135	T1,T2	315 L	1485	868	IE1	93.6	93.7	93.2	0.86	248	1.4	6.4	2.1	21	–	1MA6316-4BD	1060	3.2	7
165	T1,T2	315 L	987	1061	IE1	93.8	93.9	93.5	0.87	305	1.5	6.3	2.3	17	–	1MA6317-4BD	1200	4.2	7

Voltages		No. of poles	Motor type	Version	Order code(s)
50 Hz	230 VΔ/400 VY	4	1MA6106 ... 313	Standard	1 –
	400 VΔ/690 VY	4	1MA6106 ... 317	Standard	6 –
	500 VY	4	1MA6106 ... 317	Without additional charge	3 –
	500 VΔ	4	1MA6106 ... 317	Without additional charge	5 –
Further voltages	For additional charges, voltage codes, order codes and descriptions, see supplements and special versions.			9	...

Note: For delta connection, overload protection with phase-failure protection must be provided.

Types of construction		No. of poles	Motor type	Version	Order code(s)
Without flange	IM B3/6/7/8 <sup>4) 5)</sup>	4	1MA6106 ... 317	Standard	0 –
	IM V6 <sup>4) 5)</sup>	4	1MA6106 ... 313	With additional charge	1 –
With flange	IM B5 <sup>4) 6)</sup>	4	1MA6316 ... 317	With additional charge	9 M1E
	IM V3 <sup>4) 6)</sup>	4	1MA6106 ... 166	With additional charge	1 –
		4	1MA6183 ... 313	With additional charge	1 –
		4	1MA6106 ... 313	With additional charge	9 M1G
		4	1MA6106 ... 317	With additional charge	4 –
With standard flange	IM B35	4	1MA6106 ... 317	With additional charge	6 –
	IM B14, IM V19 <sup>4)</sup>	4	1MA6106 ... 166	With additional charge	2 –
With special flange	IM B34	4	1MA6106 ... 166	With additional charge	7 –
	IM B14, IM V19 <sup>4)</sup>	4	1MA6106 ... 166	With additional charge	3 –
Further types of construction	For additional charges, type of construction codes and descriptions, see supplements and special versions.			9	...

Special versions		Order code(s)
Options	For additional charges, order codes and descriptions, see supplements and special versions.	1MA6 ... - ... ■■-Z ...+...+...+...

Motor type 1MA6, 4-pole																		
106-4 107-4 113-4 130-4 133-4 163-4 166-4 183-4 186-4 207-4 220-4 223-4 253-4 280-4 283-4 310-4 313-4 316-4 317-4																		

Noise at rated output and 50 Hz – measuring-surface sound pressure level L <sub>pfA, 50 Hz</sub> and sound power level L <sub>WA, 50 Hz</sub>																			
L <sub>pfA, 50 Hz</sub>	dB(A)	53	53	53	62	62	66	66	63	63	65	65	65	65	67	67	69	69	69
L <sub>WA, 50 Hz</sub>	dB(A)	65	65	65	74	74	78	78	76	76	78	78	78	78	79	81	81	83	83

1) For motors 1MA6183 and 1MA6186-... with double rating plate, utilization in accordance with thermal class 155 (temperature class F).

2) For connection to 230 V, parallel feeders are necessary (see the "Introduction" section, "Connection, circuit and connection boxes").

3) Technical data and dimensions are available for VIK version (order code K30) on request (additional charge).

4) The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

5) If motors 1MA6183-... to 1MA6317-... (motor series 1MA6 frame sizes 180 M to 315 L) in types of construction with feet IM B6, IM B7 or IM V6 are fixed to the wall, it is recommended that the motor feet are supported.

6) 1MA6220-... to 1MA6317-... motors (motor series 1MA6 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

7) The "Second shaft extension" option, order code K16 is not possible.

# SIMOTICS XP 1MA Explosion-Proof Motors

## Motors for Zone 1 in type of protection Ex e

Self-ventilated motors with Standard Efficiency IE1  
Cast-iron series 1MA6

# IE1

### Selection and ordering data (continued)

P <sub>rated</sub> , 50 Hz	Tempera- ture class	Frame size	Operating values at rated output											Cast-iron series 1MA6 – IE1 version for Zone 1 in type of protection Ex e	m <sub>IM B3</sub> J	Torque class			
			n <sub>rated</sub> , 50 Hz	T <sub>rated</sub> , 50 Hz	IE class	η <sub>rated</sub> , 50 Hz, 4/4	η <sub>rated</sub> , 50 Hz, 3/4	η <sub>rated</sub> , 50 Hz, 2/4	COS- φ <sub>rated</sub> , 50 Hz, 4/4	I <sub>rated</sub> , 50 Hz, 400 V	T <sub>LR</sub> / I <sub>rated</sub>	I <sub>LR</sub> / I <sub>rated</sub>	T <sub>B</sub> / I <sub>rated</sub>				t <sub>E</sub> , 50 Hz, T1/T2	t <sub>E</sub> , 50 Hz, T3	Order No.
kW	FS	rpm	Nm	%	%	%	A				s	s							
<ul style="list-style-type: none"> <li>Cooling: Self-ventilated (IC 411)</li> <li>Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30</li> <li>Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) <sup>1)</sup></li> </ul>																			
6-pole: 1000 rpm at 50 Hz, temperature classes T1 to T3																			
1.3	T1,T2,T3	100 L	935	13	IE1	74.2	74.2	71.2	0.73	3.35	2.4	4.8	2.5	26	26	1MA6106-6BA	33	0.0063	16
1.9	T1,T2,T3	112 M	940	19	IE1	76.8	77.3	73.8	0.76	4.7	2.3	5.0	2.5	19	16	1MA6113-6BB	40	0.011	13
2.6	T1,T2,T3	132 S	945	26	IE1	78.8	79.3	76.8	0.75	6.5	1.8	4.4	2.4	21	18	1MA6130-6BB	50	0.015	13
3.5	T1,T2,T3	132 M	955	35	IE1	80.6	80.6	79.6	0.72	9.0	2.3	5.1	2.8	16	13	1MA6133-6BB	57	0.019	13
4.8	T1,T2,T3	132 M	950	48	IE1	82.4	82.4	81.4	0.76	11.4	2.4	5.6	2.8	13	11	1MA6134-6BB	66	0.025	13
6.6	T1,T2,T3	160 M	960	65	IE1	84.0	84.0	83.0	0.75	14.9	2.7	6.4	3.1	18	9	1MA6163-6BB	103	0.041	13
9.7	T1,T2,T3	160 L	965	96	IE1	85.9	85.9	84.9	0.76	21	2.8	7.7	2.2	15	8	1MA6166-6BB	122	0.055	13
13.2	T1,T2,T3	180 L	975	129	IE1	87.2	88.0	87.0	0.78	28.5	1.6	5.4	2.5	22	18	1MA6186-6BC	177	0.20	10
16.5	T1,T2,T3	200 L	980	161	IE1	88.1	89.0	88.0	0.81	34.5	1.7	5.4	2.6	23	19	1MA6206-6BC	220	0.29	10
20	T1,T2,T3	200 L	980	195	IE1	90.2	89.0	88.0	0.82	41	1.7	5.6	2.6	22	17	1MA6207-6BC	235	0.33	10
27	T1,T2,T3	225 M	975	263	IE1	89.9	90.6	90.3	0.82	54	1.6	5.6	2.5	15	15	1MA6223-6BC	305	0.57	10
33	T1,T2,T3	250 M	985	320	IE1	90.5	91.1	90.7	0.83	66	1.6	5.3	2.4	16	16	1MA6253-6BC	410	0.89	10
40	T1,T2,T3	280 S	990	386	IE1	91.1	91.3	90.8	0.85	77	1.5	6.2	2.6	13	13	1MA6280-6BC	540	1.3	10
46	T3	280 M	988	445	IE1	91.4	91.4	90.9	0.86	86	1.6	6.5	2.5	–	12	1MA6283-6BC	580	1.5	10
64	T3	315 S	991	617	IE1	92.2	92.2	91.5	0.84	124	1.7	6.2	2.5	–	14	1MA6310-6BC	770	2.4	10
76	T3	315 M	991	732	IE1	92.6	92.6	92.0	0.84	146	1.7	6.4	2.5	–	8	1MA6313-6BC	830	2.9	10
92	T3	315 L	991	887	IE1	93.0	93.1	92.6	0.85	172	1.7	6.5	2.5	–	9	1MA6316-6BC	970	3.5	10
110	T3	315 L	991	1060	IE1	93.3	93.5	92.9	0.84	210	1.7	6.8	2.5	–	6	1MA6317-6BC	1060	4.3	10
125	T3	315 L	991	1210	IE1	93.5	93.7	93.2	0.86	220	1.6	7.0	2.5	–	6	1MA6318-6BC	1100	4.9	10
<b>Voltages</b>					No. of poles	Motor type		Version						Order code(s)					
50 Hz	230 VΔ/400 VY				6	1MA6106 ... 313		Standard				1		–					
	400 VΔ/690 VY				6	1MA6106 ... 318		Standard				6		–					
	500 VY				6	1MA6106 ... 318		Without additional charge				3		–					
	500 VΔ				6	1MA6106 ... 318		Without additional charge				5		–					
Further voltages			For add. charges, voltage codes, order codes and descr., see suppl. and special versions.																
Note: For delta connection, overload protection with phase-failure protection must be provided.																			
<b>Types of construction</b>					No. of poles	Motor type		Version						Order code(s)					
Without flange			IM B3/6/7/8 <sup>2) 3)</sup>		6	1MA6106 ... 317		Standard				0		–					
			IM V6 <sup>2) 3)</sup>		6	1MA6106 ... 313		With additional charge				1		–					
With flange			IM B5 <sup>2) 4)</sup>		6	1MA6106 ... 313		With additional charge				9		M1E					
			IM V3 <sup>2) 4)</sup>		6	1MA6106 ... 166		With additional charge				1		–					
					6	1MA6186 ... 313		With additional charge				9		M1G					
			IM V1 with protective cover <sup>2) 4) 5)</sup>		6	1MA6106 ... 318		With additional charge				4		–					
With standard flange			IM B35		6	1MA6106 ... 318		With additional charge				6		–					
			IM B14, IM V19 <sup>2)</sup>		6	1MA6106 ... 166		With additional charge				2		–					
With special flange			IM B34		6	1MA6106 ... 166		With additional charge				7		–					
			IM B14, IM V19 <sup>2)</sup>		6	1MA6106 ... 166		With additional charge				3		–					
Further types of construction			For additional charges, type of construction codes and descriptions, see supplements and special versions.																
<b>Special versions</b>															Order code(s)				
Options			For additional charges, order codes and descriptions, see supplements and special versions.										1MA6 ... -...-Z		...+...+...+...				

For noise values, see next Page.

1) Technical data and dimensions are available for VIK version (order code K30) on request (additional charge).

2) The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

3) If motors 1MA6183-... to 1MA6318-... (motor series 1MA6 frame sizes 180 M to 315 L) in types of construction with feet IM B6, IM B7 or IM V6 are fixed to the wall, it is recommended that the motor feet are supported.

4) 1MA6220-... to 1MA6318-... motors (motor series 1MA6 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

5) The "Second shaft extension" option, order code K16 is not possible.

# SIMOTICS XP 1MA Explosion-Proof Motors

## Motors for Zone 1 in type of protection Ex e

# IE1

### Self-ventilated motors with Standard Efficiency IE1 Cast-iron series 1MA6

#### Selection and ordering data (continued)

Operating values at rated output															Cast-iron series						
$P_{rated}$ 50 Hz	Tempera- ture class	Frame size	$n_{rated}$ 50 Hz	$T_{rated}$ 50 Hz	IE class	$\eta_{rated}$ 50 Hz, 4/4	$\eta_{rated}$ 50 Hz, 3/4	$\eta_{rated}$ 50 Hz, 2/4	COS- $\phi_{rated}$ 50 Hz, 4/4	$I_{rated}$ 50 Hz, 400 V	$T_{LR}/$ $T_{rated}$	$I_{LR}/$ $I_{rated}$	$T_B/$ $T_{rated}$	$t_E$ 50 Hz, T1/T2	$t_{E3}$ 50 Hz, T3	1MA6 – IE1 version for Zone 1 in type of protection Ex e	$m_{IM B3}$	J	Torque class		
kW	FS		rpm	Nm	%	%	%	%	A					s	s	Order No.	kg	kgm <sup>2</sup>	CL		
<ul style="list-style-type: none"> <li>Cooling: Self-ventilated (IC 411)</li> <li>Efficiency: Standard Efficiency IE1 in accordance with IEC 60034-30</li> <li>Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 130 (temperature class B) <sup>1)</sup></li> </ul>																					
6-pole: 1000 rpm at 50 Hz, temperature classes T1 and T2 with double rating plate (T1/T2 and T3)																					
50	T1,T2	280 M	990	484	IE1	91.7	92.3	92.2	0.86	96	1.5	5.8	2.3	14	–	1MA6283-6BC ■■	580	1.5	10		
68	T1,T2	315 S	990	656	IE1	92.4	92.6	92.0	0.85	131	1.6	5.9	2.3	22	–	1MA6310-6BC ■■	770	2.4	10		
82	T1,T2	315 M	990	791	IE1	92.8	93.0	92.5	0.84	158	1.6	5.9	2.3	18	–	1MA6313-6BC ■■	830	2.9	10		
98	T1,T2	315 L	990	945	IE1	93.1	93.4	93.0	0.85	185	1.6	6.1	2.3	20	–	1MA6316-6BC ■■	970	3.5	10		
120	T1,T2	315 L	990	1160	IE1	93.4	93.7	93.4	0.85	230	1.6	6.2	2.3	16	–	1MA6317-6BC ■■ <sup>1)</sup>	1060	4.3	10		
135	T1,T2	315 L	990	1300	IE1	93.6	94.5	94.4	0.86	240	1.5	6.5	2.3	17	–	1MA6318-6BC ■■ <sup>1)</sup>	1100	4.9	10		
Voltages					No. of poles	Motor type		Version						Order code(s)							
50 Hz	230 VΔ/400 VY				6	1MA6106 ... 313		Standard				1		–							
	400 VΔ/690 VY				6	1MA6106 ... 318		Standard				6		–							
	500 VY				6	1MA6106 ... 318		Without additional charge				3		–							
	500 VΔ				6	1MA6106 ... 318		Without additional charge				5		–							
Further voltages			For add. charges, voltage codes, order codes and descr., see suppl. and special versions.													9		...			
Note: For delta connection, overload protection with phase-failure protection must be provided.																					
Types of construction					No. of poles	Motor type		Version						Order code(s)							
Without flange			IM B3/6/7/8 <sup>2) 3)</sup>		6	1MA6106 ... 317		Standard				0		–							
			IM V6 <sup>2) 3)</sup>		6	1MA6106 ... 313		With additional charge				1		–							
					6	1MA6316 ... 318		With additional charge				9		M1E							
With flange			IM B5 <sup>2) 4)</sup>		6	1MA6106 ... 313		With additional charge				1		–							
			IM V3 <sup>2) 4)</sup>		6	1MA6106 ... 166		With additional charge				1		–							
					6	1MA6186 ... 313		With additional charge				9		M1G							
			IM V1 with protective cover <sup>2) 4) 5)</sup>		6	1MA6106 ... 318		With additional charge				4		–							
			IM B35		6	1MA6106 ... 318		With additional charge				6		–							
With standard flange			IM B14, IM V19 <sup>2)</sup>		6	1MA6106 ... 166		With additional charge				2		–							
			IM B34		6	1MA6106 ... 166		With additional charge				7		–							
With special flange			IM B14, IM V19 <sup>2)</sup>		6	1MA6106 ... 166		With additional charge				3		–							
Further types of construction			For additional charges, type of construction codes and descriptions, see supplements and special versions.													9		...			
Special versions																Order code(s)					
Options			For additional charges, order codes and descriptions, see supplements and special versions.													1MA6 ... - ... ■■-Z		...+...+...+...			
Motor type 1MA6, 6-pole																					
			106-6	113-6	130-6	133-6	134-6	163-6	166-6	186-6	206-6	207-6	223-6	253-6	280-6	283-6	310-6	313-6	316-6	317-6	318-6
Noise at rated output and 50 Hz – measuring-surface sound pressure level $L_{p(A), 50 Hz}$ and sound power level $L_{WA, 50 Hz}$																					
$L_{p(A), 50 Hz}$	dB(A)	47	52	63	63	63	66	66	66	66	66	66	60	60	60	63	63	63	63	63	
$L_{WA, 50 Hz}$	dB(A)	59	64	75	75	75	78	78	78	78	78	78	74	74	74	77	77	77	77	77	

<sup>1)</sup> Technical data and dimensions are available for VIK version (order code K30) on request (additional charge).

<sup>2)</sup> The following applies for explosion-proof motors: In the case of the types of construction with shaft extension down, the version "with protective cover" is required. For types of construction with shaft extension pointing upwards, a suitable cover must be implemented to prevent small parts from falling into the fan cover (see the standard IEC/EN 60079-0). The cover must not block the cooling air flow.

<sup>3)</sup> If motors 1MA6183-... to 1MA6318-... (motor series 1MA6 frame sizes 180 M to 315 L) in types of construction with feet IM B6, IM B7 or IM V6 are fixed to the wall, it is recommended that the motor feet are supported.

<sup>4)</sup> 1MA6220-... to 1MA6318-... motors (motor series 1MA6 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be repositioned in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

<sup>5)</sup> The "Second shaft extension" option, order code K16 is not possible.