

Rated output at 50 Hz	Frame size	Operating characteristics at rated output						Starting torque	Starting current	Break-down torque	Torque class	Moment of inertia	Order-No.	Price	Weight					
		Rated speed at 50 Hz	Rated torque at 50 Hz	Relevant for IE changeover												with direct starting as multiple of rated torque	current	torque	For Order No. supplements for voltage and type of construction, see table below	Con-struction type IM B3 approx.
				Efficiency Class according to IEC 60034-30 standard	Efficiency at 50 Hz 100 %-load	Power factor at 50 Hz 100 %-load	Rated current at 50 Hz 400 V													
P_{rated} kW	FS	n_{rated} rpm	M_{rated} Nm		η_{rated} %	$\cos\varphi_{\text{rated}}$	I_{rated} A	$T_{\text{LR}}/T_{\text{rated}}$	$I_{\text{LR}}/I_{\text{rated}}$	$T_{\text{B}}/T_{\text{rated}}$	CL	J kg m ²		m kg						
2-pole, 3000 rpm at 50 Hz, temperature class 155 (F), IP55 degree of protection																				
22	180 M	2945	71	IE1	89.9	0.86	41.0	2.5	6.4	3.4	16	0.068	1PP4 183-2FA□□		140					
30	200 L	2950	97	IE1	90.7	0.88	54	2.3	6.5	3.0	16	0.129	1PP4 206-2FA□□		195					
37	200 L	2955	120	IE1	91.4	0.89	66	2.5	7.2	3.3	16	0.153	1PP4 207-2FA□□		215					
45	225 M	2960	145	IE1	91.9	0.88	80	2.4	6.7	3.1	16	0.217	1PP4 223-2FA□□		275					
55	250 M	2970	177	IE1	92.2	0.88	98	2.1	6.7	3.1	13	0.403	1PP4 253-2FB□□		360					
75	280 S	2975	241	IE1	92.6	0.88	133	2.5	7.5	3.1	13	0.715	1PP4 280-2FB□□		480					
90	280 M	2975	289	IE1	93.0	0.89	157	2.6	7.2	3.1	13	0.832	1PP4 283-2FB□□		520					
110	315 S	2982	352	IE1	92.6	0.88	193	2.4	7.2	3.1	13	1.19	1PP4 310-2FB□□		700					
132	315 M	2982	423	IE1	93.2	0.90	225	2.4	6.9	3.0	13	1.39	1PP4 313-2FB□□		755					
160	315 L	2982	512	IE1	93.7	0.91	270	2.4	7.0	3.0	13	1.62	1PP4 316-2FB□□		880					
200	315 L	2982	641	IE1	94.0	0.92	330	2.3	6.7	2.9	13	2.09	1PP4 317-2FB□□		995					

Order No. supplements

Motor type	Penultimate position: Voltage code				Final position: Type of construction code							
	50 Hz				Without flange		With flange		With standard flange		With special flange	
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	IM B3/6/7/8, IM V6/5 without protective cover 1)	IM B5, IM V1 without protec-tive cover 2)	IM V1 without protec-tive cover 2)	IM B35	IM B14, IM V19 IM V18 without protective cover	IM B34	IM B14 IM V19 IM V18 without protective cover	
	1	6	3	5	0	1	8	6	2	7	3	
1PP4 18 □□	○	○	○	○	□	✓	–	✓	–	–	–	
1PP4 20 □□	○	○	○	○	□	✓	–	✓	–	–	–	
1PP4 22 □□	○	○	○	○	□	✓	–	✓	–	–	–	
1PP4 25 □□	○	○	○	○	□	✓	–	✓	–	–	–	
1PP4 28 □□	○	○	○	○	□	✓	–	✓	–	–	–	
1PP4 310 □□	○	○	○	○	□	✓	–	✓	–	–	–	
1PP4 313 □□	○	○	○	○	□	✓	–	✓	–	–	–	
1PP4 316 □□	–	○	–	○	□ ³⁾	–	✓	✓	–	–	–	
1PP4 317 □□												

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see “Special versions” in the “Options” under “Voltages”).

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see “Special versions” in the “Options” under “Types of construction”).

1) If motors 1PP4 183-... to 1PP4 317-... (motor series 1PP4 frame sizes 180 M to 315 L) in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

2) Motors 1PP4 220-... to 1PP4 317-... (motor series 1PP4 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be relocated in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

3) Type of construction IM V6 and IM V5 without protective cover is only possible using type of construction code **9** and order code **M1E** or **M1D**.

Rated output at 50 Hz	Frame size	Operating characteristics at rated output						Starting torque	Starting current	Break-down torque	Torque class	Moment of inertia	Order-No.	Price	Weight
		Rated speed at 50 Hz	Rated torque at 50 Hz	Relevant for IE changeover											
				Efficiency Class according to IEC 60034-30 standard	Efficiency at 50 Hz 100 %-load	Power factor at 50 Hz 100 %-load	Rated current at 50 Hz 400 V								
								with direct starting as multiple of rated torque	current	torque			For Order No. supplements for voltage and type of construction, see table below		Con-struction type IM B3 approx.
P_{rated} kW	FS	n_{rated} rpm	M_{rated} Nm		η_{rated} %	$\cos\varphi_{rated}$	I_{rated} A	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}		J kg m ²			m kg
4-pole, 1500 rpm at 50 Hz, temperature class 155 (F), IP55 degree of protection															
18.5	180 M	1465	121	IE1	89.3	0.84	35.5	2.4	6.7	3.1	16	0.099	1PP4 183-4FA□□		135
22	180 L	1465	143	IE1	89.9	0.84	42.0	2.5	6.9	3.2	16	0.117	1PP4 186-4FA□□		150
30	200 L	1465	196	IE1	90.7	0.85	56	2.5	6.7	3.4	16	0.191	1PP4 207-4FA□□		195
37	225 S	1475	240	IE1	91.2	0.85	69	2.5	6.7	3.1	16	0.374	1PP4 220-4FA□□		255
45	225 M	1475	291	IE1	91.7	0.86	82	2.7	7.2	3.2	16	0.447	1PP4 223-4FA□□		290
55	250 M	1480	355	IE1	92.1	0.85	101	2.4	6.1	2.8	16	0.688	1PP4 253-4FA□□		375
75	280 S	1485	482	IE1	92.7	0.85	137	2.5	7.1	3.0	16	1.19	1PP4 280-4FA□□		515
90	280 M	1485	579	IE1	93.0	0.86	162	2.5	7.4	3.0	16	1.39	1PP4 283-4FA□□		560
110	315 S	1488	706	IE1	93.3	0.85	200	2.5	6.4	2.8	16	1.94	1PP4 310-4FA□□		710
132	315 M	1488	847	IE1	93.5	0.85	240	2.7	6.8	2.9	16	2.31	1PP4 313-4FA□□		790
160	315 L	1486	1028	IE1	93.8	0.86	285	2.7	6.8	2.8	16	2.88	1PP4 316-4FA□□		935
200	315 L	1486	1285	IE1	94.0	0.88	350	2.6	6.5	2.8	16	3.46	1PP4 317-4FA□□		1040

Order No. supplements

Motor type For Order No. supplements for voltage and type of construction, see table below	Penultimate position: Voltage code				Final position: Type of construction code							
	50 Hz				Without flange	With flange			With standard flange			With special flange
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	IM B3/6/7/8, IM V6/5 without protective cover ¹⁾	IM B5, IM V1 without protective cover ²⁾	IM V1 without protective cover ²⁾	IM B35	IM B14, IM V19 IM V18 without protective cover	IM B34		IM B14 IM V19 IM V18 without protective cover
	1	6	3	5	0	1	8	6	2	7	3	
1PP4 18 □□	○	○	○	○	□	✓	–	✓	–	–	–	–
1PP4 20 □□	○	○	○	○	□	✓	–	✓	–	–	–	–
1PP4 22 □□	○	○	○	○	□	✓	–	✓	–	–	–	–
1PP4 25 □□	○	○	○	○	□	✓	–	✓	–	–	–	–
1PP4 28 □□	○	○	○	○	□	✓	–	✓	–	–	–	–
1PP4 310 □□ 1PP4 313 □□	○	○	○	○	□	✓	–	✓	–	–	–	–
1PP4 316 □□ 1PP4 317 □□	–	○	–	○	□ ³⁾	–	✓	✓	–	–	–	–

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see “Special versions” in the “Options” under “Voltages”).

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see “Special versions” in the “Options” under “Types of construction”).

1) If motors 1PP4 183-... to 1PP4 317-... (motor series 1PP4 frame sizes 180 M to 315 L) in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

2) Motors 1PP4 220-... to 1PP4 317-... (motor series 1PP4 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be relocated in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

3) Type of construction IM V6 and IM V5 without protective cover is only possible using type of construction code **9** and order code **M1E** or **M1D**.

Rated output at 50 Hz	Frame size	Operating characteristics at rated output						Starting torque	Starting current	Break-down torque	Torque class	Moment of inertia	Order-No.	Price	Weight
		Rated speed at 50 Hz	Rated torque at 50 Hz	Relevant for IE changeover											
				Efficiency Class according to IEC 60034-30 standard	Efficiency at 50 Hz 100 %-load	Power factor at 50 Hz 100 %-load	Rated current at 50 Hz 400 V	with direct starting as multiple of rated torque	current	torque			For Order No. supplements for voltage and type of construction, see table below		Con-struction type IM B3 approx.
P_{rated} kW	FS	n_{rated} rpm	M_{rated} Nm		η_{rated} %	$\cos\varphi_{rated}$	I_{rated} A	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}	CL	J kg m ²		m kg	
6-pole, 1000 rpm at 50 Hz, temperature class 155 (F), IP55 degree of protection															
15	180 L	965	148	IE1	87.7	0.83	29.5	2.3	5.3	2.5	16	0.175	1PP4 186-6FA□□		145
18.5	200 L	975	181	IE1	88.6	0.81	37.0	2.5	5.6	2.5	16	0.238	1PP4 206-6FA□□		185
22	200 L	975	215	IE1	89.2	0.81	44.0	2.6	5.7	2.5	16	0.287	1PP4 207-6FA□□		195
30	225 M	978	293	IE1	90.2	0.83	58	2.7	5.6	2.5	16	0.492	1PP4 223-6FA□□		270
37	250 M	980	361	IE1	90.8	0.83	71	2.7	6.0	2.3	16	0.762	1PP4 253-6FA□□		355
45	280 S	985	436	IE1	91.4	0.85	84	2.4	6.1	2.4	16	1.12	1PP4 280-6FA□□		455
55	280 M	985	533	IE1	91.9	0.86	100	2.5	6.3	2.5	16	1.37	1PP4 283-6FA□□		490
75	315 S	988	725	IE1	92.6	0.84	139	2.5	6.5	2.8	16	2.10	1PP4 310-6FA□□		665
90	315 M	988	870	IE1	92.9	0.84	167	2.6	6.8	2.9	16	2.50	1PP4 313-6FA□□		730
110	315 L	988	1063	IE1	93.3	0.86	198	2.5	6.8	2.9	16	3.20	1PP4 316-6FA□□		870
132	315 L	988	1276	IE1	93.5	0.86	235	3.1	7.3	3.0	16	4.02	1PP4 317-6FA□□		960

Order No. supplements

Motor type	Penultimate position: Voltage code				Final position: Type of construction code							
	50 Hz				Without flange	With flange		With standard flange		With spe- cial flange		
	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	IM B3/6/7/8, IM V6/5 without protective cover ¹⁾	IM B5, IM V1 without protec- tive cover ²⁾	IM V1 without protec- tive cover ²⁾	IM B35	IM B14, IM V19 IM V18 without protective cover	IM B34	IM B14 IM V19 IM V18 without protective cover	
	1	6	3	5	0	1	8	6	2	7	3	
1PP4 18 QQ	○	○	○	○	□	✓	–	✓	–	–	–	
1PP4 20 QQ	○	○	○	○	□	✓	–	✓	–	–	–	
1PP4 22 QQ	○	○	○	○	□	✓	–	✓	–	–	–	
1PP4 25 QQ	○	○	○	○	□	✓	–	✓	–	–	–	
1PP4 28 QQ	○	○	○	○	□	✓	–	✓	–	–	–	
1PP4 310 QQ	○	○	○	○	□	✓	–	✓	–	–	–	
1PP4 313 QQ												
1PP4 316 QQ	–	○	–	○	□ ³⁾	–	✓	✓	–	–	–	
1PP4 317 QQ												

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate po-
sition and the corresponding order code (see “Special versions”
in the “Options” under “Voltages”).

Order other types of construction with type of construction code
9 in the final position and the corresponding order code (see
“Special versions” in the “Options” under
“Types of construction”).

1) If motors 1PP4 183-... to 1PP4 317-... (motor series 1PP4 frame sizes 180 M to 315 L) in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

2) Motors 1PP4 220-... to 1PP4 317-... (motor series 1PP4 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be relocated in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

3) Type of construction IM V6 and IM V5 without protective cover is only pos-
sible using type of construction code **9** and order code **M1E** or **M1D**.

Rated output at 50 Hz	Frame size	Operating characteristics at rated output						Starting torque	Starting current	Break-down torque	Torque class	Moment of inertia	Order-No.	Price	Weight
		Rated speed at 50 Hz	Rated torque at 50 Hz	Relevant for IE changeover											
				Efficiency Class according to IEC 60034-30 standard	Efficiency at 50 Hz 100 %-load	Power factor at 50 Hz 100 %-load	Rated current at 50 Hz 400 V	with direct starting as multiple of rated torque					For Order No. supplements for voltage and type of construction, see table below		Con-struction type IM B3 approx.
P_{rated} kW	FS	n_{rated} rpm	M_{rated} Nm		η_{rated} %	$\cos\varphi_{rated}$	I_{rated} A	T_{LR}/T_{rated}	I_{LR}/I_{rated}	T_B/T_{rated}		J kg m ²			m kg
8-pole, 750 rpm at 50 Hz, temperature class 155 (F), IP55 degree of protection															
11	180 L	725	145		87.7	0.73	25	1.7	4.2	2.1	13	0.169	1PP4 186-8FBQQ		145
15	200 L	725	198		87.9	0.76	32.5	2.2	4.9	2.6	13	0.290	1PP4 207-8FBQQ		195
18.5	225 S	730	242		89.5	0.78	38.5	2.3	5.5	2.7	13	0.482	1PP4 220-8FBQQ		260
22	225 M	730	288		89.8	0.79	45	2.3	5.6	2.8	13	0.551	1PP4 223-8FBQQ		280
30	250 M	730	392		91.6	0.81	58	2.3	5.5	2.6	13	0.837	1PP4 253-8FBQQ		370
37	280 S	735	481		92.2	0.81	72	2.2	5.0	2.1	13	1.11	1PP4 280-8FBQQ		455
45	280 M	735	585		92.6	0.81	87	2.2	5.1	2.1	13	1.35	1PP4 283-8FBQQ		495
55	315 S	740	710		93.2	0.81	106	2.2	5.8	2.6	13	2.08	1PP4 310-8FBQQ		660
75	315 M	738	971		93.4	0.83	140	2.2	5.7	2.6	13	2.48	1PP4 313-8FBQQ		725
90	315 L	738	1165		93.5	0.83	168	2.2	5.8	2.7	13	3.14	1PP4 316-8FBQQ		845
110	315 L	738	1423		94.1	0.83	205	2.4	6.1	2.8	13	3.95	1PP4 317-8FBQQ		1000

Order No. supplements

Motor type	Penultimate position: Voltage code				Final position: Type of construction code							
	50 Hz				Without flange	With flange			With standard flange			With special flange
For Order No. supplements for voltage and type of construction, see table below	230 VΔ/400 VY	400 VΔ/690 VY	500 VY	500 VΔ	IM B3/6/7/8, IM V6/5 without protective cover ¹⁾	IM B5, IM V1 without protective cover ²⁾	IM V1 without protective cover ²⁾	IM B35	IM B14, IM V19 IM V18 without protective cover	IM B34		IM B14 IM V19 IM V18 without protective cover
	1	6	3	5	0	1	8	6	2	7		3
1PP4 18 QQ	○	○	○	○	□	✓	–	✓	–	–		–
1PP4 20 QQ	○	○	○	○	□	✓	–	✓	–	–		–
1PP4 22 QQ	○	○	○	○	□	✓	–	✓	–	–		–
1PP4 25 QQ	○	○	○	○	□	✓	–	✓	–	–		–
1PP4 28 QQ	○	○	○	○	□	✓	–	✓	–	–		–
1PP4 310 QQ	○	○	○	○	□	✓	–	✓	–	–		–
1PP4 313 QQ												
1PP4 316 QQ	–	○	–	○	□ ³⁾	–	✓	✓	–	–		–
1PP4 317 QQ												

- Standard version
- Without additional charge
- ✓ With additional charge
- Not possible

Order other voltages with voltage code **9** in the penultimate position and the corresponding order code (see “Special versions” in the “Options” under “Voltages”).

Order other types of construction with type of construction code **9** in the final position and the corresponding order code (see “Special versions” in the “Options” under “Types of construction”).

¹⁾ If motors 1PP4 183-... to 1PP4 317-... (motor series 1PP4 frame sizes 180 M to 315 L) in types of construction with feet IM B6, IM B7, IM V6 or IM V5 without protective cover are fixed to the wall, it is recommended that the motor feet are supported.

²⁾ Motors 1PP4 220-... to 1PP4 317-... (motor series 1PP4 frame sizes 225 S to 315 L) are supplied with two screw-in eyebolts in accordance with IM B5, whereby one can be relocated in accordance with IM V1 or IM V3. It is important to note that stress must not be applied perpendicular to the ring plane.

³⁾ Type of construction IM V6 and IM V5 without protective cover is only possible using type of construction code **9** and order code **M1E** or **M1D**.