

Forced-air cooled motors with mounted separately driven fan
Cast-iron series 1PQ8 with special insulation for > 500 to 690 V

P_{rated} , 50 Hz	P_{rated} , 60 Hz 1)	Frame size	Operating values at rated output with sinusoidal infeed									1PQ8 – with special insulation	$m_{\text{IM B3}}$	J	Torque class
			n_{rated} , 50 Hz	T_{rated} , 50 Hz	η_{rated} , 50 Hz, 4/4	η_{rated} , 50 Hz, 3/4	$\cos \phi_{\text{rated}}$, 50 Hz, 4/4	I_{rated} , 50 Hz, 690 V	$T_{\text{p}}/T_{\text{rated}}$	L_{pA} , 50Hz, tolerance +3 dB(A)	L_{WA} , 50Hz, tolerance +3 dB(A)				
kW	kW	FS	rpm	Nm	%	%		A		dB(A)	dB(A)	Order No.	kg	kgm ²	CL
• Cooling: Forced-air cooled with mounted separately driven fan (IC 416) – for tech. specific, see section SIMOTICS N-compact Non-Standard Motor															
• Converter-fed operation: Specially for operation on SINAMICS or SIMOVERT MASTERDRIVES with special insulation for voltages of > 500 to 690 V															
• Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 155 (temperature class F)															
2-pole: 3000 rpm at 50 Hz, 3600 rpm at 60 Hz 1)															
240	270	315	2978	770	95.5	95.6	0.90	230	3.0	79	94	1PQ8315-2PM	1400	2.7	10
300	335	315	2978	962	95.7	95.7	0.91	285	3.0	79	94	1PQ8317-2PM	1600	3.3	10
345	385	355	2981	1105	95.7	95.7	0.90	335	2.6	81	96	1PQ8353-2PM	2000	4.8	10
390	435	355	2981	1249	96.1	96.2	0.91	370	2.6	81	96	1PQ8355-2PM	2100	5.3	10
485	545	355	2982	1553	96.5	96.6	0.91	460	2.6	81	96	1PQ8357-2PM	2300	6.4	10
545	600	400	2986	1743	96.6	96.7	0.91	520	3.0	83	98	1PQ8403-2PM	2900	8.6	10
610	670	400	2986	1951	96.6	96.7	0.91	580	3.1	83	98	1PQ8405-2PM	3100	9.6	10
680	750	400	2986	2175	96.7	96.8	0.92	640	3.0	83	98	1PQ8407-2PM	3300	11	10
775	–	450	2987	2478	96.7	96.8	0.92	730	2.8	86	101	1PQ8453-2PM	4100	19	5
875	–	450	2987	2798	96.8	96.9	0.92	820	2.8	86	101	1PQ8455-2PM	4300	21	5
970	–	450	2987	3101	96.9	97.0	0.93	900	2.8	86	101	1PQ8457-2PM	4500	23	5
4-pole: 1500 rpm at 50 Hz, 1800 rpm at 60 Hz 1)															
235	270	315	1485	1511	95.3	95.4	0.87	235	2.8	79	93	1PQ8315-4PM	1400	3.6	13
290	335	315	1485	1865	95.4	95.5	0.87	285	2.8	79	93	1PQ8317-4PM	1600	4.4	13
340	390	355	1488	2182	95.5	95.6	0.87	340	2.6	81	96	1PQ8353-4PM	2000	6.1	13
385	445	355	1488	2471	95.7	95.8	0.87	385	2.6	81	96	1PQ8355-4PM	2100	6.8	13
480	550	355	1488	3081	95.9	96.0	0.87	480	2.5	81	96	1PQ8357-4PM	2300	8.5	13
545	625	400	1491	3491	96.0	96.1	0.88	540	2.6	83	98	1PQ8403-4PM	2900	13	13
615	710	400	1491	3939	96.2	96.3	0.88	600	2.7	83	98	1PQ8405-4PM	3100	14	13
690															

1) Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code.

2) Not for 1PQ8353 to 457 2-pole, 60 Hz.

3) Not for 1PQ8453 to 457 2-pole, 60 Hz.

SIMOTICS N-compact Non-Standard Motors

Motors specially designed for converter-fed operation

Forced-air cooled motors with mounted separately driven fan

Cast-iron series 1PQ8 with special insulation for > 500 to 690 V

Selection and ordering data (continued)

Operating values at rated output with sinusoidal infeed												Cast-iron series 1PQ8 – with special insulation Order No.		m _{IM} B3	J	Torque class					
P _{rated} , 50 Hz	P _{rated} , 60 Hz 1)	Frame size	n _{rated} , 50 Hz	T _{rated} , 50 Hz	η _{rated} , 50 Hz, 4/4	η _{rated} , 50 Hz, 3/4	cos φ _{rated} , 50 Hz, 4/4	I _{rated} , 50 Hz, 690 V	T _B / I _{rated}	L _{pfA} , 50Hz, tolerance +3 dB(A)	L _{WA} , 50Hz, tolerance +3 dB(A)										
kW	kW	FS	rpm	Nm	%	%		A		dB(A)	dB(A)	▲ New	kg	kgm ²	CL						
• Cooling: Forced-air cooled with mounted separately driven fan (IC 416) – for tech. specific, see section SIMOTICS N-compact Non-Standard Motors																					
• Converter-fed operation: Specially for operation on SINAMICS or SIMOVERT MASTERDRIVES with special insulation for voltages of > 500 to 690 V																					
• Insulation: Thermal class 155 (temperature class F), IP55 degree of protection, utilization in accordance with thermal class 155 (temperature class F)																					
6-pole: 1000 rpm at 50 Hz, 1200 rpm at 60 Hz ¹⁾																					
190	220	315	990	1833	95.0	95.2	0.85	196	2.7	80	94	1PQ8315-6PM	1400	6.0	13						
235	270	315	990	2267	95.2	95.4	0.86	240	2.7	80	94	1PQ8317-6PM	1600	7.3	13						
300	345	355	992	2888	95.7	95.7	0.86	305	2.8	82	97	1PQ8355-6PM	2100	13	13						
340	390	355	992	3273	95.6	95.7	0.86	345	3.1	82	97	▲ 1PQ8356-6PM	2200	15	13						
380	435	355	992	3658	95.9	96.0	0.86	385	2.9	82	97	1PQ8357-6PM	2300	16	13						
435	500	400	993	4184	95.9	96.0	0.85	445	2.8	84	99	1PQ8403-6PM	2900	21	13						
485	560	400	993	4664	96.0	96.1	0.86	490	2.8	84	99	1PQ8405-6PM	3100	24	13						
545	625	400	993	5241	96.1	96.2	0.86	550	2.7	84	99	1PQ8407-6PM	3300	27	13						
615	705	450	993	5915	96.3	96.4	0.84	630	2.7	87	102	1PQ8453-6PM	4100	35	13						
690	795	450	993	6636	96.3	96.4	0.85	700	2.5	87	102	1PQ8455-6PM	4300	39	13						
780	895	450	993	7502	96.4	96.6	0.85	790	2.6	87	102	1PQ8457-6PM	4600	44	13						
8-pole: 750 rpm at 50 Hz, 900 rpm at 60 Hz ¹⁾																					
145	165	315	740	1871	94.1	94.2	0.79	162	2.5	79	93	1PQ8315-8PM	1400	6.0	13						
180	205	315	740	2323	94.4	94.5	0.80	198	2.5	79	93	1PQ8317-8PM	1600	7.3	13						
230	265	355	743	2956	95.0	95.1	0.80	250	2.4	81	96	1PQ8355-8PM	2100	13	13						
290	335	355	743	3727	95.2	95.3	0.81	315	2.4	81	96	1PQ8357-8PM	2300	16	13						
335	385	400	743	4306	95.5	95.6	0.80	365	2.6	83	98	1PQ8403-8PM	2900	21	13						
375	430	400	743	4820	95.6	95.7	0.80	410	2.7	83	98	1PQ8405-8PM	3100	24	13						
425	490	400	743	5463	95.7	95.8	0.79	470	2.7	83	98	1PQ8407-8PM	3300	27	13						
485	560	450	745	6217	96.0	96.1	0.78	540	2.5	86	101	1PQ8453-8PM	4100	35	13						
545	625	450	745	6986	96.1	96.2	0.78	610	2.5	86	101	1PQ8455-8PM	4300	39	13						
600	690	450	745	7691	96.2	96.3	0.79	660	2.5	86	101	1PQ8457-8PM	4600	44	13						
Voltages			No. of poles		Motor type		Version						8		Order code(s)						
50 Hz	400 VΔ/690 VY	6			1PQ8315 ... 453		Standard						8		–						
					1PQ8315 ... 457		Standard				8		–								
					1PQ8455 ... 457		Standard				7		–								
Further voltages ¹⁾			For additional charges, code numbers, order codes and descriptions, see supplements and special versions.													9		...			
For types of construction see suppl.					Motor type		Version								Order code(s)						
Without flange	IM B3				1PQ8315 ... 457		Standard						0		–						
	IM V5, IM V6				1PQ8315 ... 457		With additional charge						0		–						
With flange	IM V1				1PQ8315 ... 457		With additional charge		Not for explosion-proof motors.				8		–						
	without protective cover				1PQ8315 ... 457		With additional charge		The "Second shaft extension" option (K16) is not possible.				4		–						
	IM V1 with protective cover				1PQ8315 ... 457		With additional charge						6		–						
	IM B35				1PQ8315 ... 457		With additional charge														
Special versions													Order code(s)								
Options			For additional charges, order codes and descriptions, see supplements and special versions.										1PQ8 ... -Z		...+...+...+...						
Motor type 1PQ8																					
315-6 317-6 355-6 356-6 357-6 403-6 405-6 407-6 453-6 455-6 457-6 315-8 317-8 355-8 357-8 403-8 405-8 407-8 453-8 455-8 457-8																					
Parallel feeders required																					
400 V	–	Yes	Yes	Yes	Yes	–	Yes	Yes	Yes	–	–	–	–	–	Yes	–	–	Yes	Yes	Yes	Yes
500 V	–	–	–	–	Yes	Yes	–	–	–	Yes	Yes	–	–	–	–	–	–	–	–	Yes	Yes
690 V	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Mechanical limit speed n _{max} in rpm (limit speeds for reinforced bearings, order code K20, for 6-pole and 8-pole motors on request.)																					
Standard	2950	2950	2500	2500	2500	2200	2200	2200	2100	2100	2100	2950	2950	2500	2500	2200	2200	2200	2100	2100	2100
IM V1	–	–	–	–	–	2100	2100	2100	1800	1800	1800	–	–	–	–	2100	2100	2100	1800	1800	1800
Ex protection	2350	2350	2100	2100	2100	1900	1900	1900	1700	1700	1700	2350	2350	2100	2100	1900	1900	1900	1700	1700	1700
Mechanical limit frequency f _{max} in Hz (limit frequencies for reinforced bearings, order code K20, for 6-pole and 8-pole motors on request.)																					
Standard	147	147	125	125	125	110	110	110	105	105	105	196	196	166	166	146	146	146	140	140	140
IM V1	–	–	–	–	–	105	105	105	90	90	90	–	–	–	–	140	140	140	120	120	120
Ex protection	117	117	105	105	105	95	95	95	85	85	85	156	156	140	140	126	126	126	113	113	113

1) Voltages for 60 Hz can be ordered with voltage code 9 and the appropriate order code.