

**THREE-PHASE SYNCHRONOUS GENERATOR**  
**MJB 400 MB 4**

**4 POLES**

**50 Hz-1500 min<sup>-1</sup> / 60 Hz-1800 min<sup>-1</sup>**

CONTINUOUS DUTY

AMBIENT TEMPERATURE		40°C	WINDING DATA						
TEMPERATURE RISE		H	Winding code		80				
INSULATION CLASS		H	Number of leads		6				
POWER FACTOR		0,8	Winding pitch		2/3				
FREQUENCY	Hz	50			60				
VOLTAGE	Star	V	380	400	415	416	440	460	480
	Delta	V	220	230	240	240	254	265	277
RATING		kVA	1020	1050	1050	1200	1250	1250	1320
		kW	816	840	840	960	1000	1000	1056
EFFICIENCY (%) @ 0,8 p.f.	4/4		95,1	95,3	95,4	95,3	95,5	95,6	95,7
	3/4		95,5	95,5	95,5	95,6	95,7	95,8	95,9
	2/4		95,6	95,6	95,6	95,7	95,7	95,8	95,9
EFFICIENCY (%) @ 1,0 p.f.	4/4		96,2	96,3	96,3	96,3	96,4	96,5	96,6
	3/4		96,5	96,5	96,5	96,5	96,6	96,7	96,8
	2/4		96,6	96,5	96,5	96,6	96,6	96,7	96,8
SHORT CIRCUIT RATIO			0,40	0,43	0,46	0,34	0,36	0,40	0,44
REACTANCES (%)									
Direct axis synchronous	xd		300	280	260	355	330	300	275
Quadrature axis synchronous	xq		165	155	145	195	185	165	150
Direct axis transient	x'd		26,4	24,5	22,8	31,1	28,9	26,5	23,8
Direct axis subtransient	x" d		12,7	11,8	11,0	15,0	13,9	12,7	11,5
Quadrature axis subtransient	x" q		13,5	12,5	11,6	15,8	14,8	13,5	12,2
Negative sequence	x <sub>2</sub>		13,0	12,1	11,2	15,3	14,3	13,1	11,8
Zero sequence	x <sub>0</sub>		3,0	2,8	2,6	3,6	3,3	3,0	2,7

**TIME CONSTANTS [s]**

Open circuit (T'do)	2,40	Subtransient (T" d)	0,018
Transient (T'd)	0,18	Armature (Ta)	0,025

**MECHANICAL CHARACTERISTICS**

D-end bearing/Lubrication	6324 C3 / With grease nipple
N-end bearing/Lubrication	6318 Z C3 / Prelubricated
Weight (IM B34) [kg]	2300
Inertia (J) (IM B34) [kgm <sup>2</sup> ]	17,0
Overspeed [min <sup>-1</sup> ]	2250
Method of cooling	IC 01
Cooling air required [m <sup>3</sup> /s] @ 50/60 Hz	1,30 / 1,55
Degree of protection	IP 23
Type of construction available	B2 - SAE / IM B34 (IM 2101) / IM B20 (IM 1101)
Direction of rotation	CW

**OTHER DATA**

Phase resistance [mΩ] @ 20 °C (per phase)	2,4
Overloads	10% for 1 hour
3-phase short circuit current	>= 300% (3 I <sub>n</sub> )
Voltage regulation accuracy	+/- 0,5% (in steady state condition, speed from -2% to +5%, p.f. from 0,8 to 1)
Radio interference	EN 55011 Class B Group 1
Wave form THF	< 2%
Total harmonic content	< 2% (at no load)

**STANDARDS**

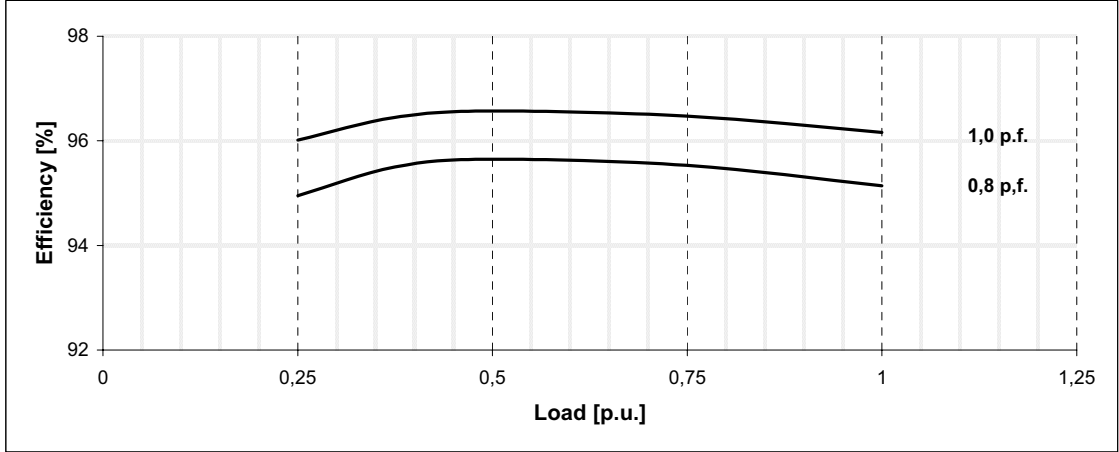
IEC 60034-1; CEI 2-3; BS 4999-5000; VDE 0530; NF 51-100,111; OVE M-10, NEMA MG 1.22.

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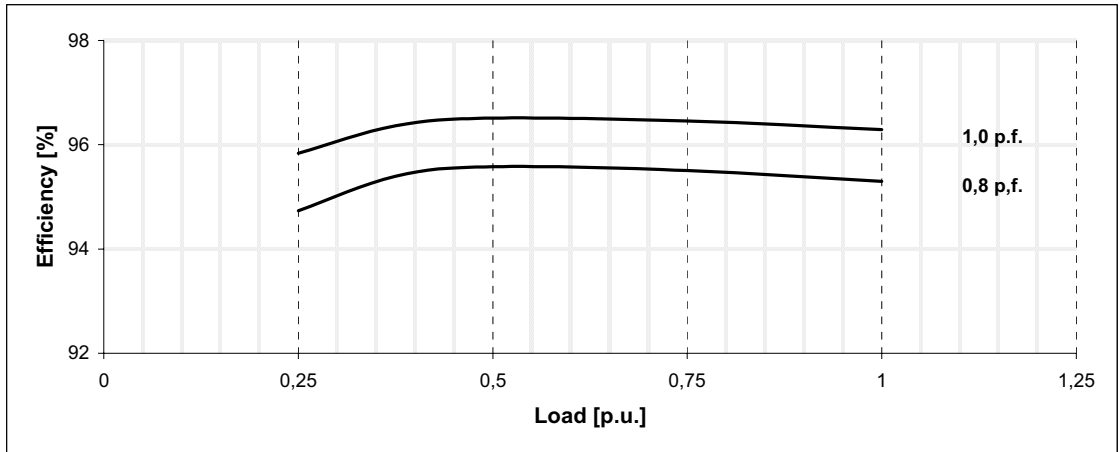
Typical efficiency curves

50 Hz - 1500 min<sup>-1</sup>

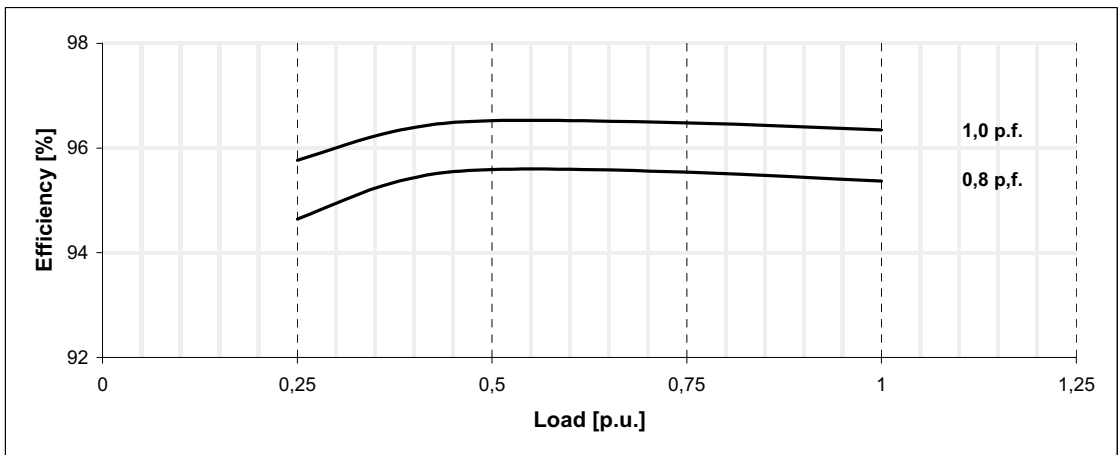
**380 V**



**400 V**



**415 V**

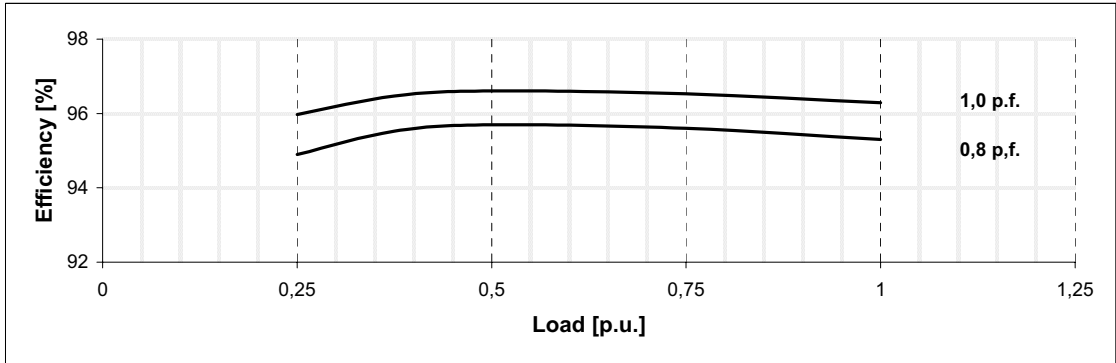


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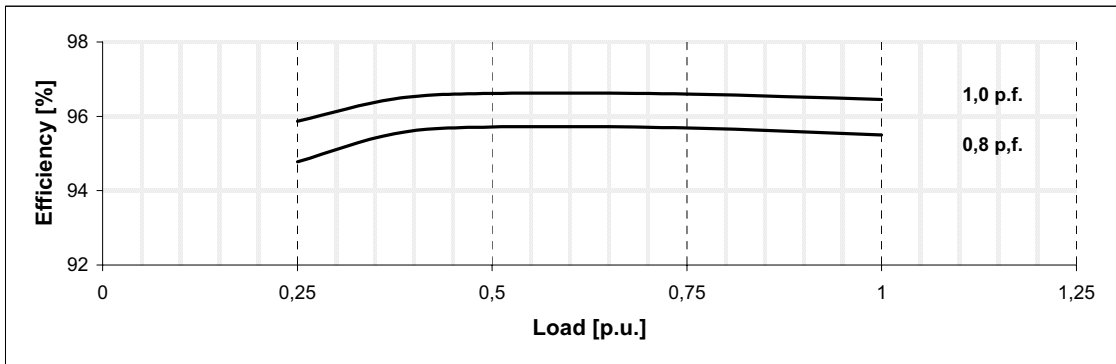
Typical efficiency curves

60 Hz - 1800 min<sup>-1</sup>

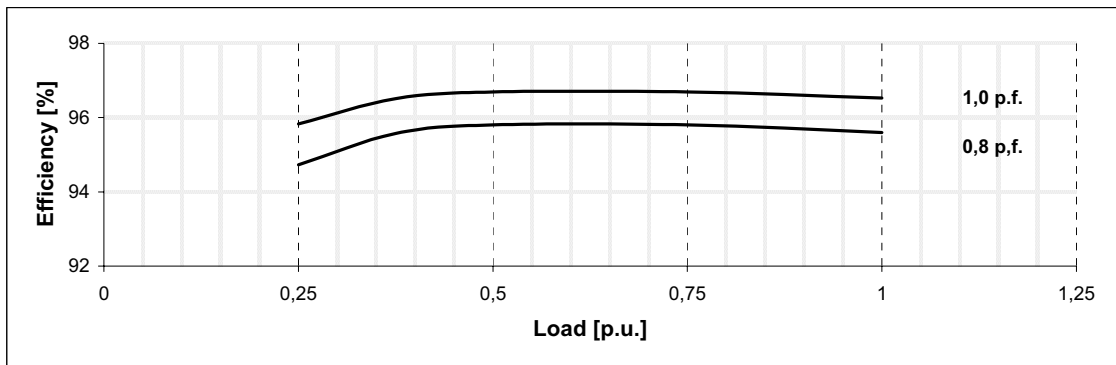
**416 V**



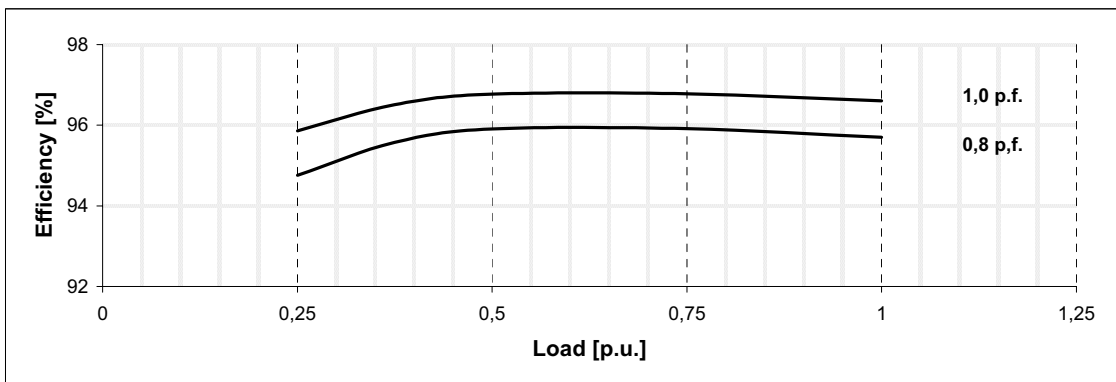
**440 V**



**460 V**



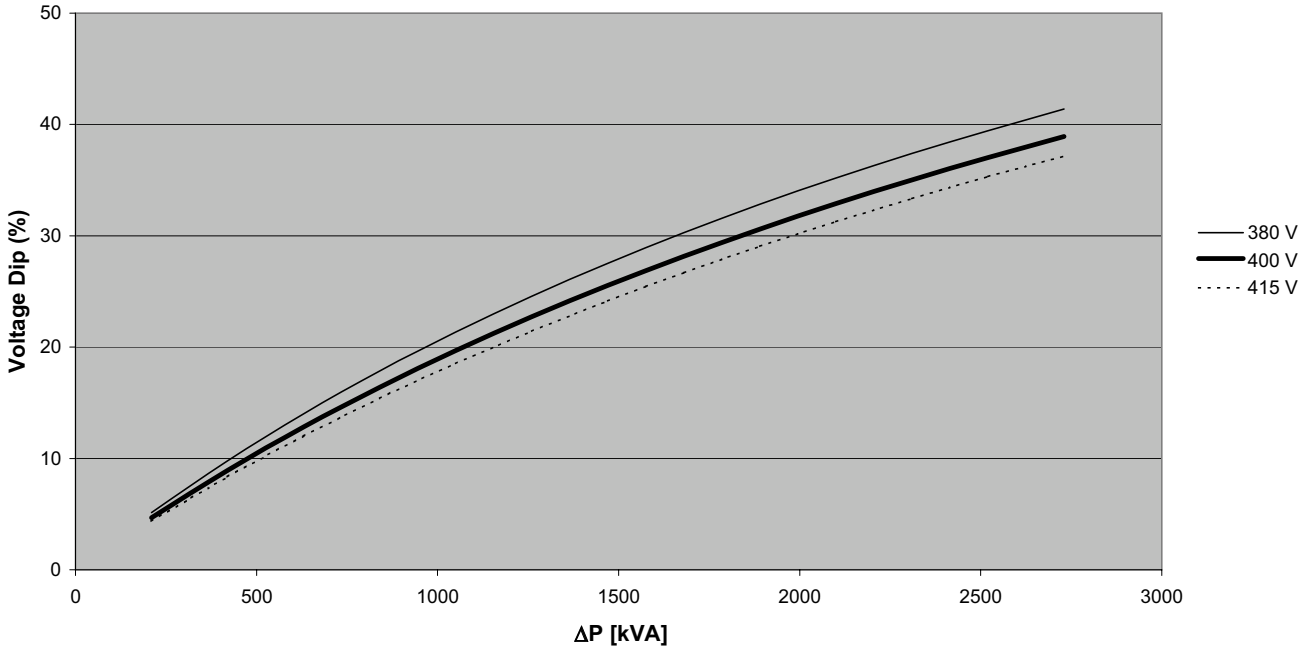
**480 V**



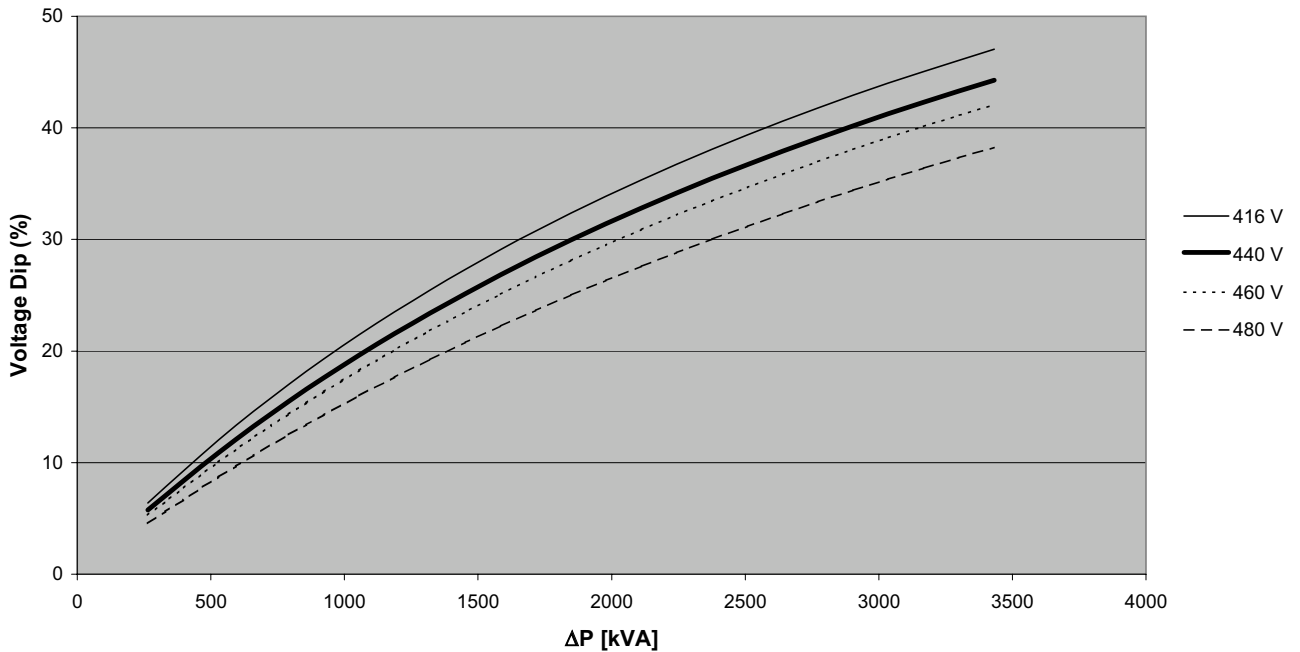
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**Locked rotor motor starting curves (\*)**

**50 Hz - 1500 min<sup>-1</sup>**



**60 Hz - 1800 min<sup>-1</sup>**



$$\Delta P = P_n \times (I_s / I_n) / (\cos\phi_n \times \eta_n)$$

(\*): A coefficient of 0,85 must be applied to the voltage dip if the load has a power factor equal or greater than 0,8.

Data and Technical Specification are subject to change in order to update or improve the products, without prior notice