

## THREE-PHASE SYNCHRONOUS GENERATOR MJB 355 SA 4

**4 POLES**

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

CONTINUOUS DUTY

<b>AMBIENT TEMPERATURE</b>	<b>40°C</b>	<b>WINDING DATA</b>	
<b>TEMPERATURE RISE</b>	<b>H</b>	Winding code	<b>M0</b>
<b>INSULATION CLASS</b>	<b>H</b>	Number of leads	<b>12</b>
<b>POWER FACTOR</b>	<b>0,8</b>	Winding pitch	<b>2/3</b>

FREQUENCY	Hz	50				60					
<b>VOLTAGE</b>	Star series	V	380	400	415	440	380	416	440	460	480
	Star parallel		190	200	208	220	190	208	220	230	240
<b>RATING</b>		kVA	490	510	510	510	510	540	570	610	625
		kW	392	408	408	408	408	432	456	488	500
<b>EFFICIENCY (%) @ 0,8 p.f.</b>	4/4		93,5	94,0	94,1	94,2	93,0	93,4	93,7	94,0	94,5
	3/4		94,4	94,6	94,7	94,7	93,9	94,0	94,4	94,6	94,9
	2/4		94,9	94,9	94,9	94,9	94,3	94,4	94,7	94,9	95,1
<b>EFFICIENCY (%) @ 0,8 p.f.</b>	4/4		94,8	95,3	95,3	95,4	94,5	94,7	95,0	95,3	95,7
	3/4		95,6	95,7	95,8	95,8	95,2	95,3	95,6	95,7	96,0
	2/4		96,0	96,0	96,0	96,0	95,5	95,6	95,8	96,0	96,1
<b>SHORT CIRCUIT RATIO</b>			0,33	0,35	0,38	0,42	0,26	0,30	0,32	0,32	0,34
<b>REACTANCES (%)</b>											
Direct axis synchronous	xd		350	330	305	275	440	390	365	360	335
Quadrature axis synchronous	xq		200	190	175	155	255	225	210	205	195
Direct axis transient	x'd		28,7	27,0	25,1	22,3	35,9	31,7	29,9	29,3	27,6
Direct axis subtransient	x''d		16,4	15,4	14,3	12,7	20,5	18,1	17,1	16,7	15,7
Quadrature axis subtransient	x''q		18,6	17,5	16,3	14,5	23,3	20,6	19,4	19,0	17,9
Negative sequence	x <sub>2</sub>		17,5	16,4	15,2	13,6	21,8	19,3	18,2	17,8	16,7
Zero sequence	x <sub>0</sub>		4,4	4,1	3,8	3,4	5,5	4,8	4,5	4,4	4,2

### TIME CONSTANTS [s]

Open circuit (T <sup>do</sup> )	1,65	Subtransient (T <sup>d</sup> )	0,015
Transient (T <sup>d</sup> )	0,135	Armature (T <sub>a</sub> )	0,021

### MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication	6322 2RS C3 / Prelubricated
N-end bearing/Lubrication	6317 2RS C3 / Prelubricated
Weight (IM B34) [kg]	1250
Inertia (J) (IM B34) [kgm <sup>2</sup> ]	7,97
Overspeed [min <sup>-1</sup> ]	2250
Method of cooling	IC 01
Cooling air required [m <sup>3</sup> /s] @ 50/60 Hz	0,93 / 1,12
Degree of protection	IP 23
Type of construction available	B2 - SAE / IM B34
Direction of rotation	CW

### OTHER DATA

Phase resistance [mΩ] @ 20 °C - Star series	8,6
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.

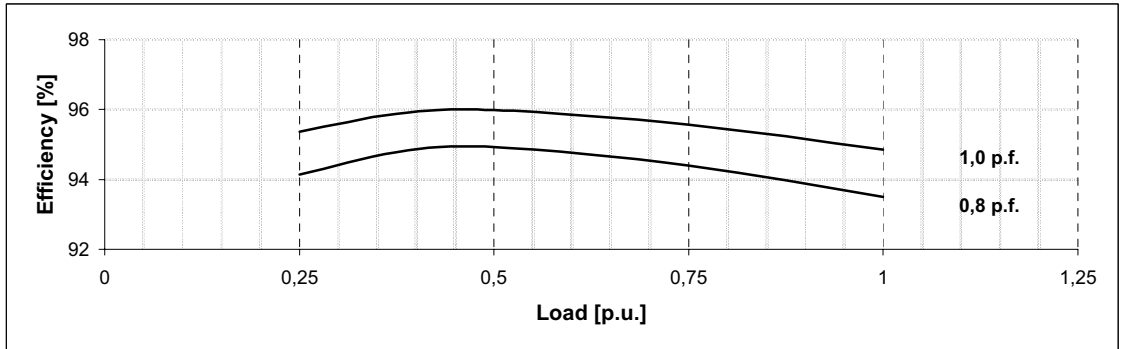
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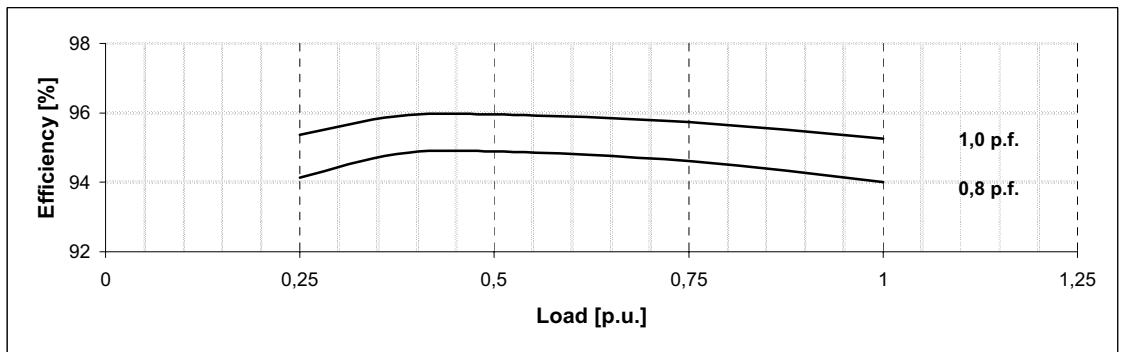
**Typical efficiency curves**

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

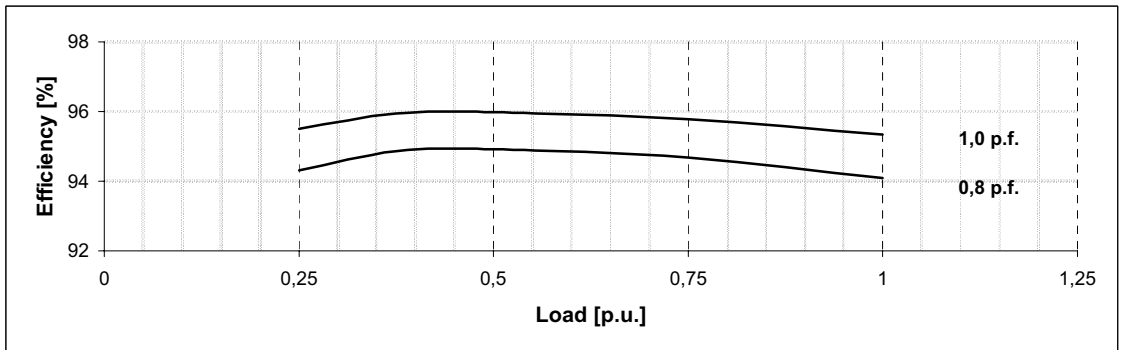
**380 V**



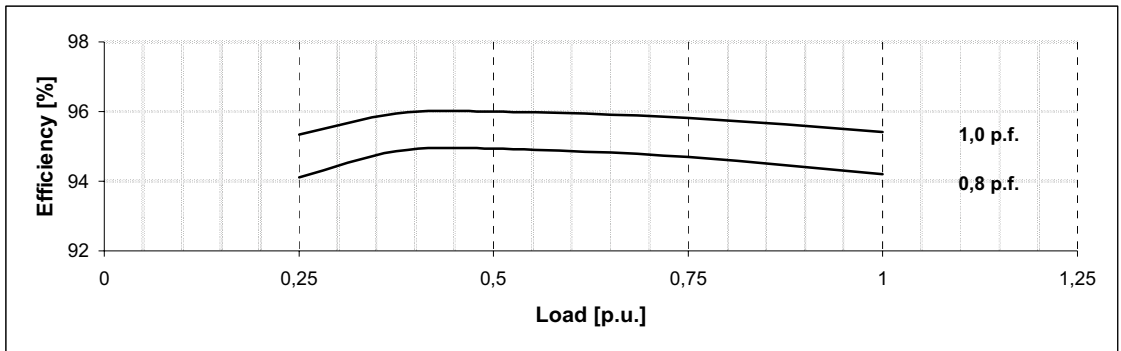
**400 V**



**415 V**



**440 V**



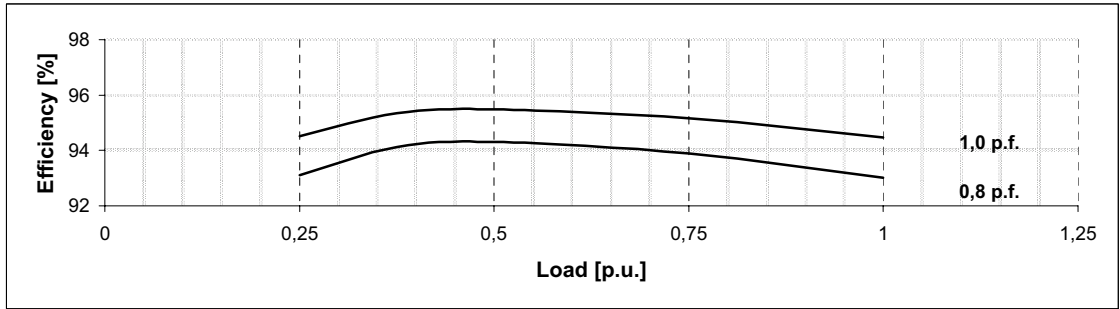
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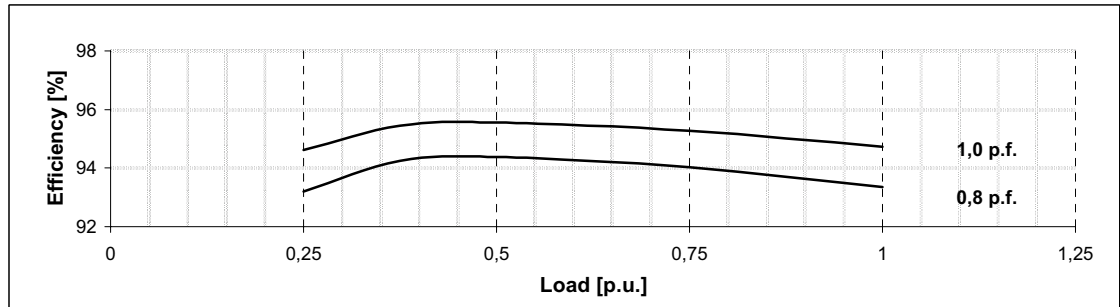
**Typical efficiency curves**

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

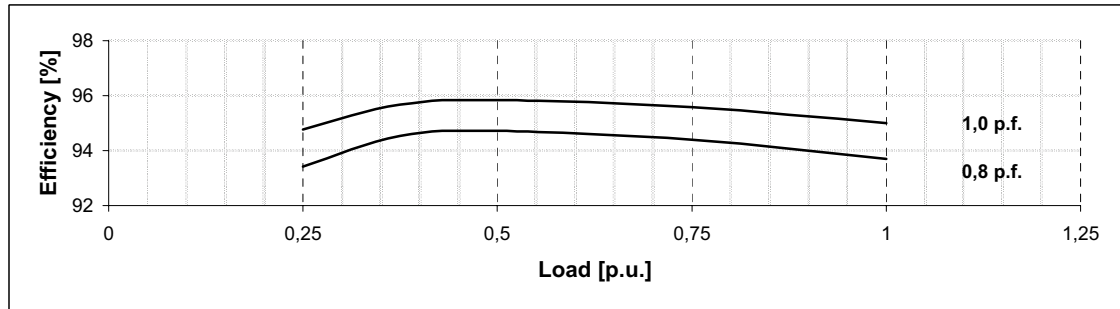
**380 V**



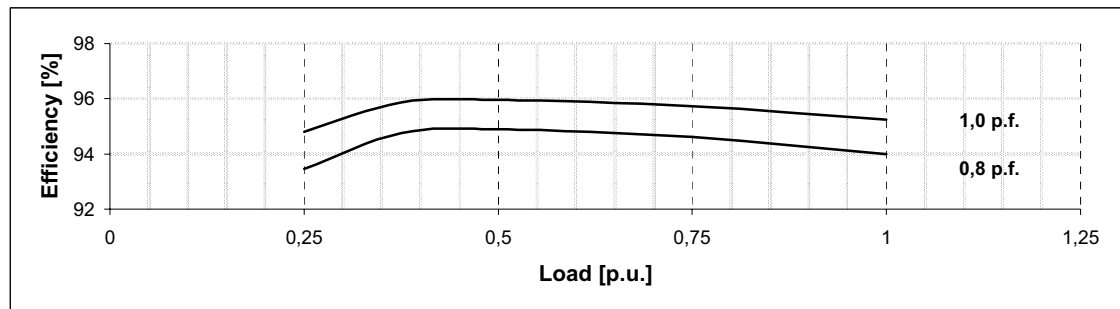
**416 V**



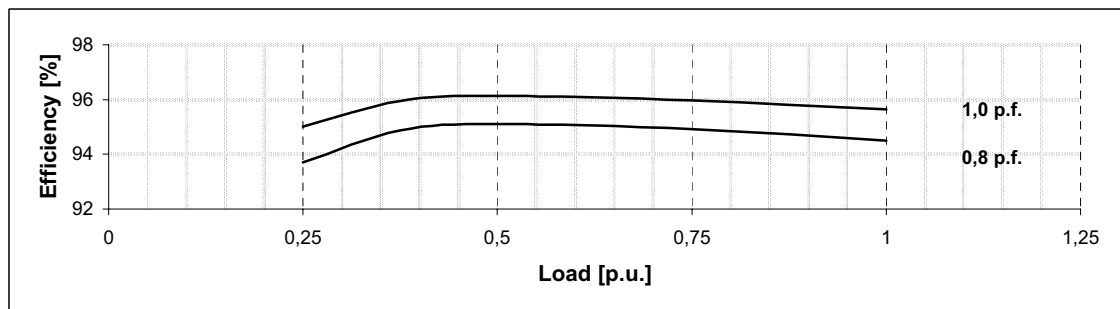
**440 V**



**460 V**



**480 V**

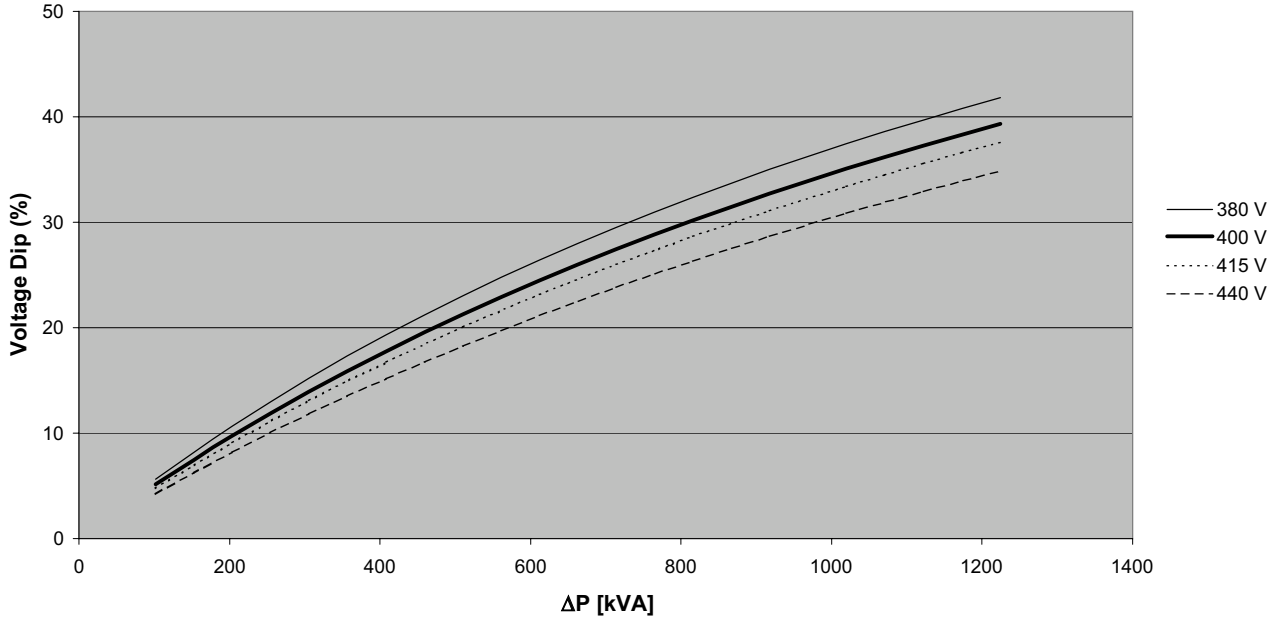


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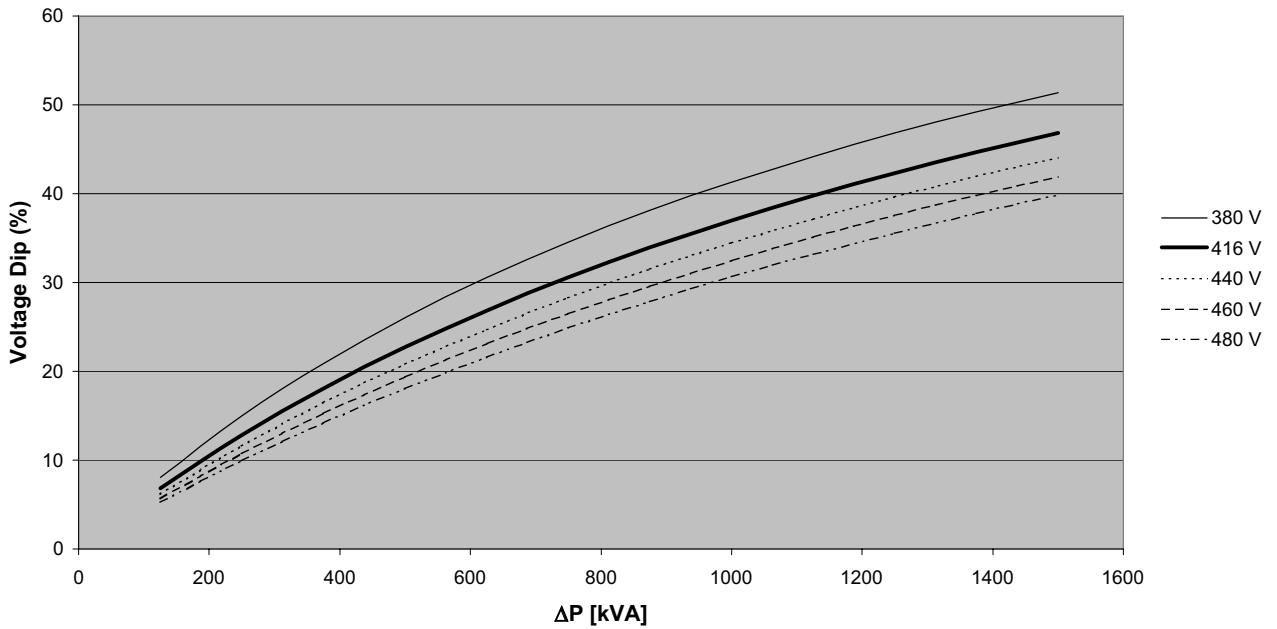
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**Locked rotor motor starting curves (\*)**

**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 0,9

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