FKI Energy Technology

THREE-PHASE SYNCHRONOUS GENERATOR

MJB 355 MA 4

4 POLES

CONTINUOUS DUTY

50 Hz-1500 min^{-1} / 60 Hz-1800 min^{-1}

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

FREQUENCY		Hz	50				60				
VOLTAGE	Star series	V	380	400	415	440	380	416	440	460	480
	Star parallel		190	200	208	220	190	208	220	230	240
RATING		kVA	680	680	680	680	700	740	775	805	825
		kW	*544*	*544*	*544*	*544*	*560*	*592*	*620*	*644*	*660*
EFFICIENCY (%) @ 0,8 p.f.		4/4	94,4	94,7	94,8	94,8	94,3	94,6	94,9	95,0	95,1
		3/4	95,2	95,3	95,3	95,2	94,8	95,1	95,3	95,4	95,4
		2/4	95,5	95,4	95,4	95,4	95,0	95,2	95,4	95,5	95,5
EFFICIENCY (%) @ 1,0 p.f.		4/4	95,6	95,8	95,9	95,9	95,5	95,7	96,0	96,1	96,1
		3/4	96,2	96,3	96,3	96,2	95,9	96,1	96,3	96,3	96,4
		2/4	96,4	96,4	96,4	96,3	96,1	96,2	96,4	96,4	96,4
SHORT CIRCUIT RATIO			0,32	0,35	0,38	0,42	0,26	0,29	0,31	0,33	0,35
REACTANCES (%)											
Direct axis synchronous		xd	320	290	270	240	395	350	330	310	295
Quadrature axis synchronous		xq	175	160	150	130	220	195	180	170	160
Direct axis transient		x'd	26,6	24,0	22,3	19,8	32,8	29,0	27,1	25,8	24,3
Direct axis subtransient		x"d	13,5	12,2	11,3	10,1	16,7	14,7	13,8	13,1	12,3
Quadrature axis subtransient		x"q	16,1	14,5	13,5	12,0	19,8	17,5	16,4	15,6	14,7
Negative sequence		x_2	14,8	13,4	12,4	11,1	18,3	16,2	15,1	14,4	13,5
Zero sequence		x_0	3,9	3,5	3,3	2,9	4,8	4,2	4,0	3,8	3,5

TIME CONSTANTS [s]

Open circuit (T'do)	1,95	Subtransient (T"d)	0,016
Transient (T'd)	0,16	Armature (Ta)	0,022

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication	6322 2RS C3 / Prelubricated
N-end bearing/Lubrication	6317 2RS C3 / Prelubricated
Weight (IM B34) [kg]	1800
Inertia (J) (IM B34) [kgm^2]	11,69
Overspeed [min^{-1}]	2250
Method of cooling	IC 01
Cooling air required [m^3/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	4,0
Overloads	10% for 1 hour
3-phase short circuit current	>= 300% (3 I_n)
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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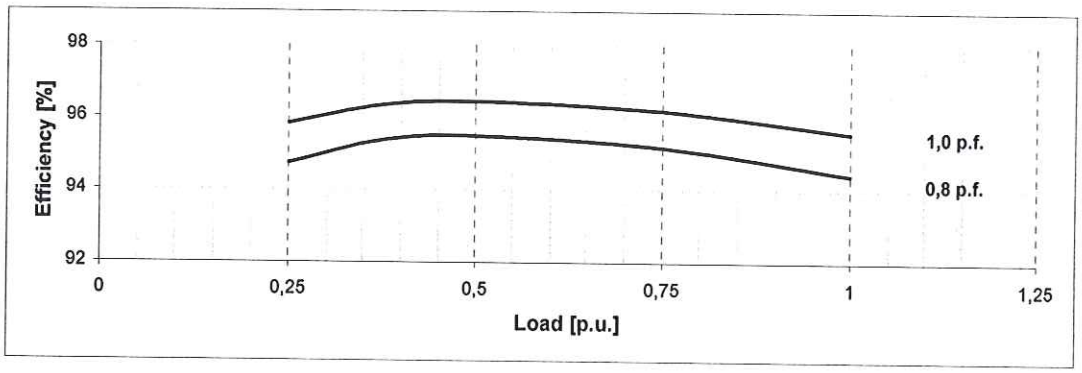
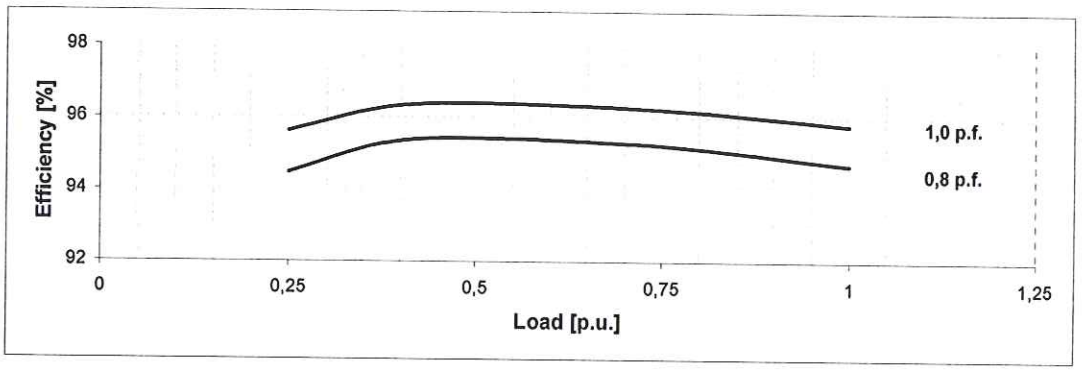
Typical efficiency curves

50 Hz - 1500 min^{-1}

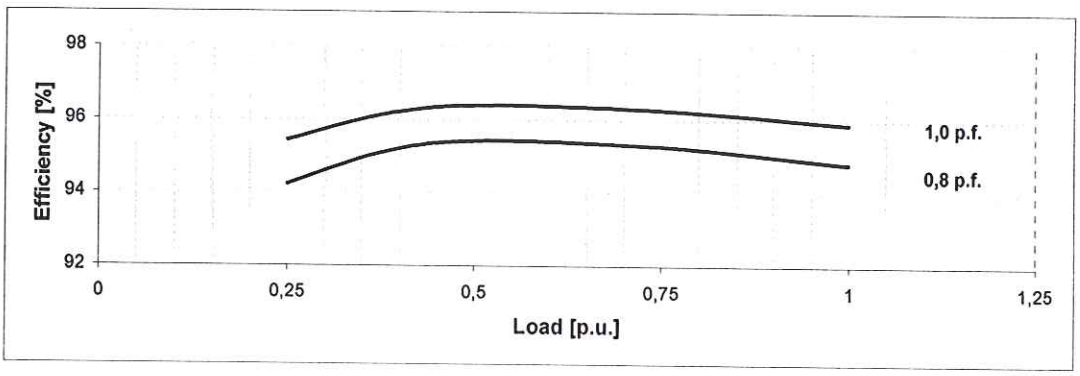
380 V



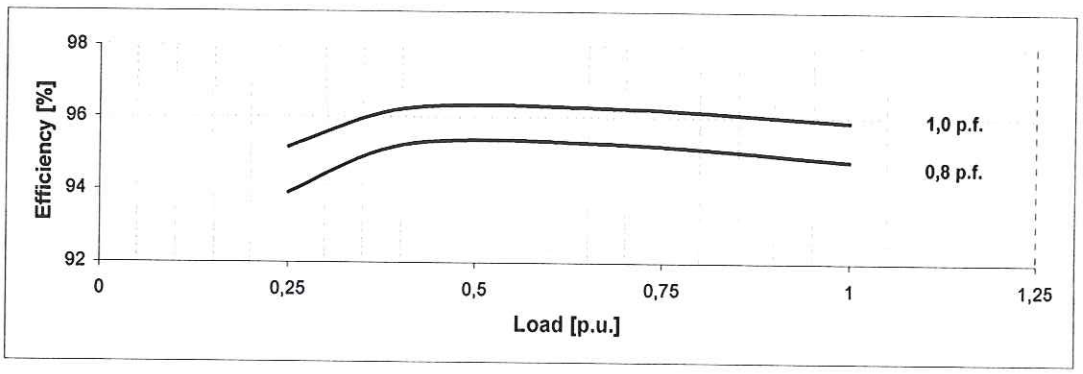
400 V



415 V



440 V



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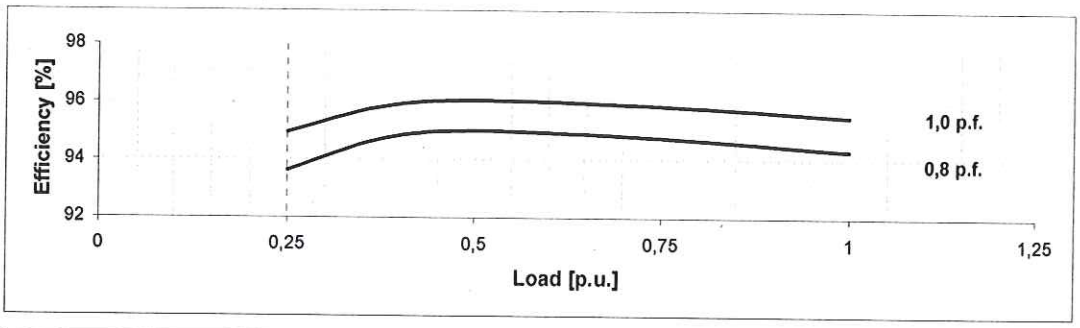
MJB 355 MA 4

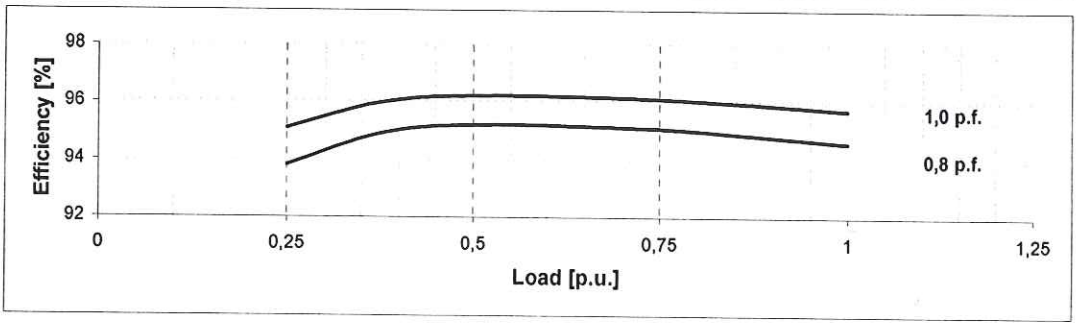
Typical efficiency curves

60 Hz - 1800 min^{-1}

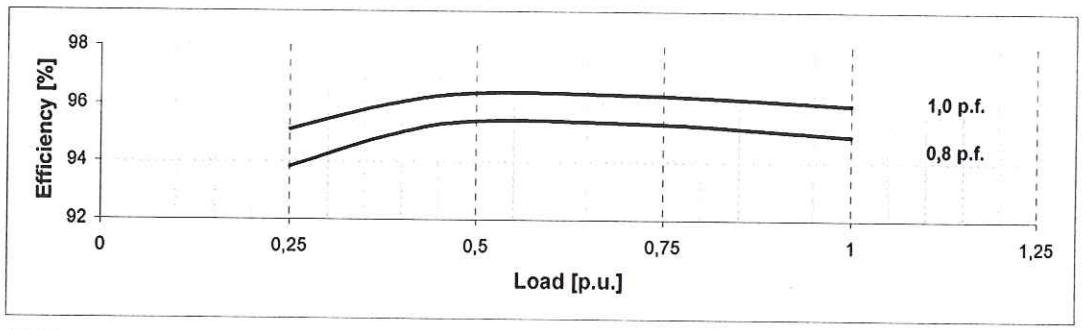
380 V



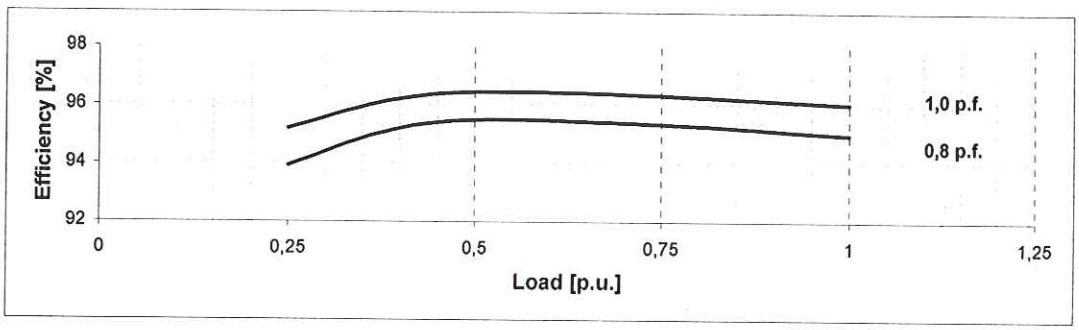
416 V



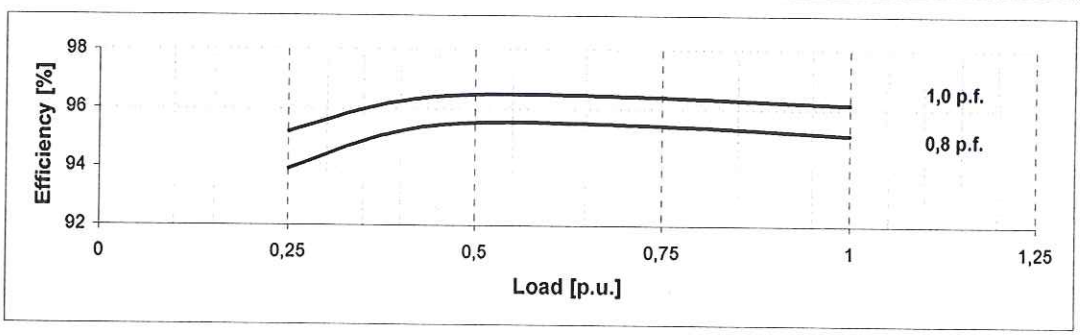
440 V



460 V

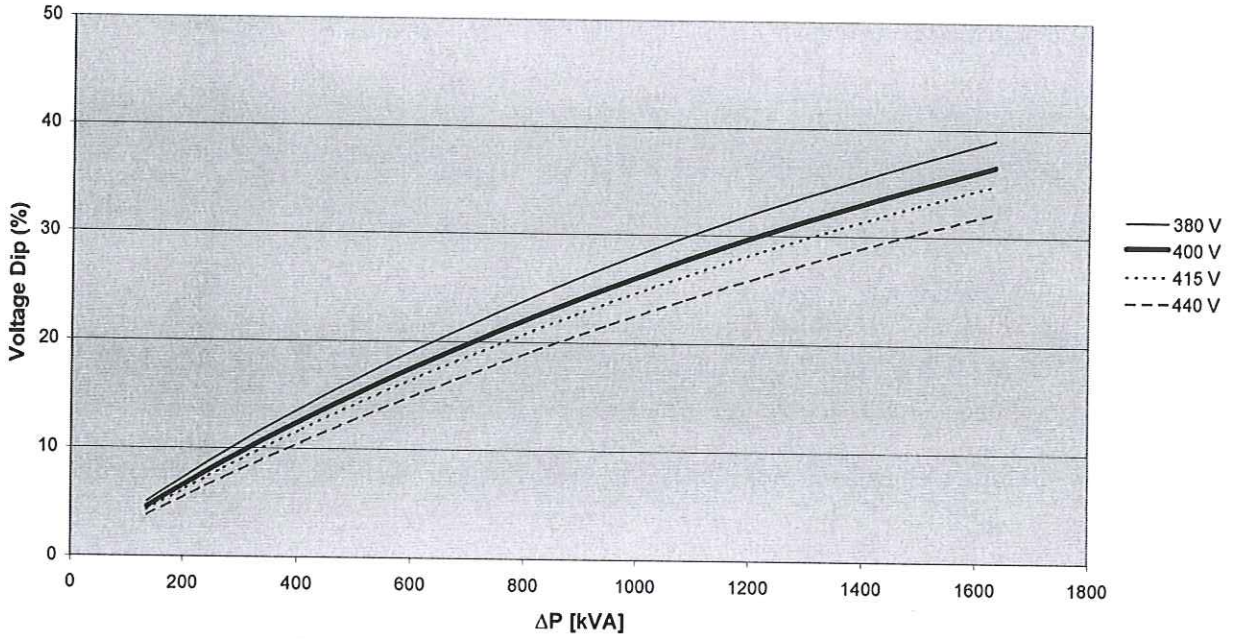


480 V

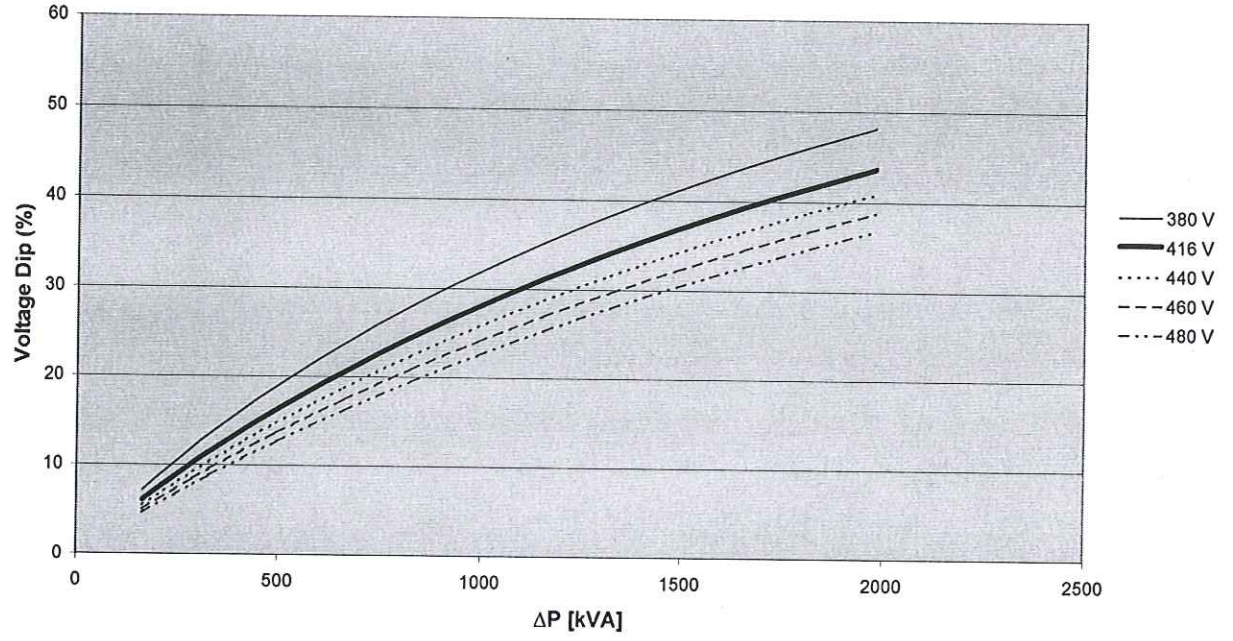


Locked rotor motor starting curves (*)

50 Hz - 1500 min^{-1}



60 Hz - 1800 min^{-1}



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

(*): 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.