MarelliGenerators®

THREE PHASE SYNCRONOUS GENERATOR

MJB 250 MB4

CONTINUOUS DUTY

4 poles
50 Hz - 1500 rpm / 60 Hz - 1800 rpm

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

FREQUENCY			**Hz**	**50 Hz**				**60 Hz**				
VOLTAGE	Connections	Star series	**V**	**380**	**400**	**415**	**440**	**380**	**416**	**440**	**460**	**480**
		Star parallel		**190**	**200**	**208**	**220**	**190**	**208**	**220**	**230**	**240**
RATING POWER			**kVA**	**185**	**185**	**185**	**185**	**195**	**205**	**215**	**220**	**230**
			kW	***148***	***148***	***148***	***148***	***156***	***164***	***172***	***176***	***184***
EFFICIENCY [%] @ 0,8 p.f.			**4/4**	92,6	93,0	92,9	92,9	92,0	92,4	92,6	92,8	93,6
			3/4	93,1	93,2	93,1	93,1	93,0	93,4	93,4	93,6	93,9
			2/4	93,3	93,2	93,1	93,0	93,5	93,7	93,7	93,6	93,9
EFFICIENCY [%] @ 1 p.f.			**4/4**	94,1	94,4	94,4	94,4	93,6	94,0	94,1	94,3	94,9
			3/4	94,5	94,6	94,6	94,5	94,4	94,8	94,8	94,9	95,2
			2/4	94,7	94,6	94,5	94,5	94,8	95,0	95,0	95,0	95,1
SHORT CIRCUIT RATIO			SCR	0,41	0,45	0,48	0,54	0,32	0,37	0,39	0,42	0,43
REACTANCES [%]												
Direct axis synchronous			Xd	372	336	312	278	348	413	387	363	348
Quadrature axis synchronous			Xq	207	187	174	155	262	230	216	202	194
Direct axis transient			X'd	31,8	28,7	26,7	23,7	40,2	35,3	33,1	31,0	29,7
Direct axis subtransient			X"d	12,7	11,5	10,7	9,5	16,1	14,1	13,3	12,4	11,9
Quadrature axis subtransient			X"q	15,1	13,6	12,6	11,2	19,1	16,7	15,7	14,7	14,1
Negative sequence			X_2	14,0	12,6	11,7	10,4	17,7	15,5	14,5	13,6	13,1
Zero sequence			X_0	3,0	2,7	2,5	2,2	3,8	3,3	3,1	2,9	2,8
TIME CONSTANTS [s]												
Open circuit			T'do	0,95								
Transient			T'd	0,09								
Subtransient			T"d	0,011								
Armature			T_a	0,013								

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication		6218 2RS C3 / Prelubricated
N-end bearing/Lubrication		6313 2Z C3 / Prelubricated
Overspeed [r.p.m.]		2250
Inertia (J) [kgm2]	Refer to B34 construction	1,66
Weight [kg]	Refer to B34 construction	590
Method of cooling		IC01
Cooling air required [m3/s] @ 50/60 Hz		0,42 / 0,52
Degree of protection		IP23
Types of construction available		B2 (SAE) - IM B34
Direction of rotation (Standard)		CW

OTHER DATA

Phase resistance [Ω] @ 20 °C - Star series	0,027
Overloads	10% for 1 hour every 12 hours
3-phase short circuit sustained current	-
Voltage regulation accuracy	± 0,5 % In steady state condition
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.

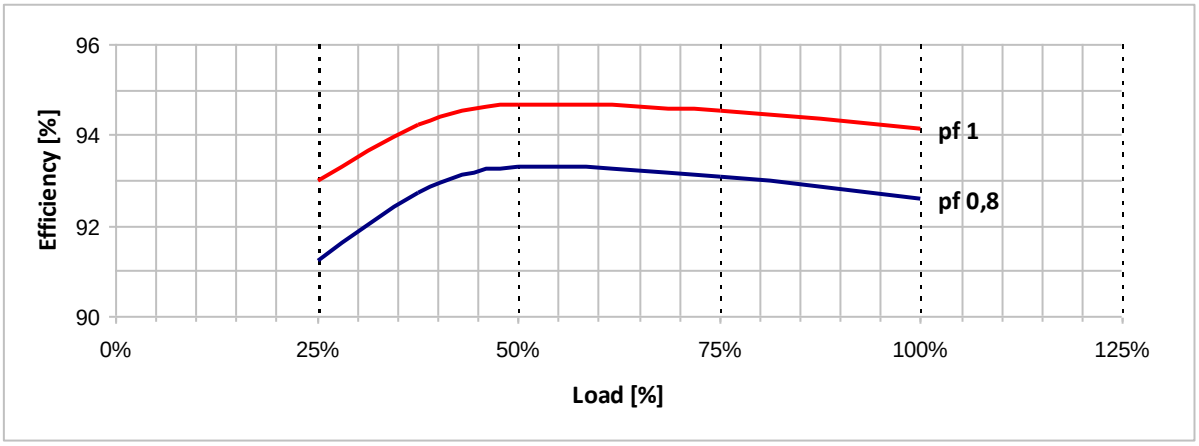
THREE PHASE SYNCRONOUS GENERATOR

MJB 250 MB4

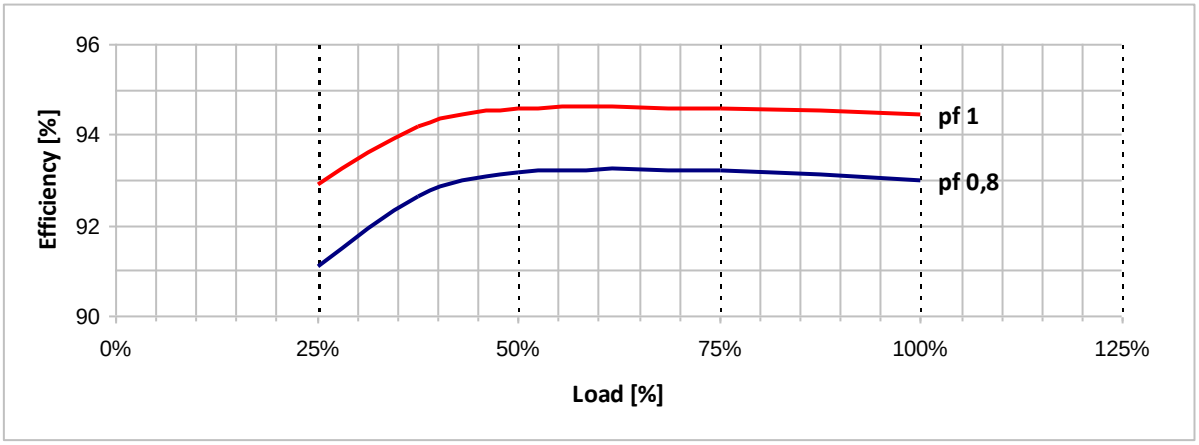
Typical efficiency curves

50 Hz - 1500 rpm

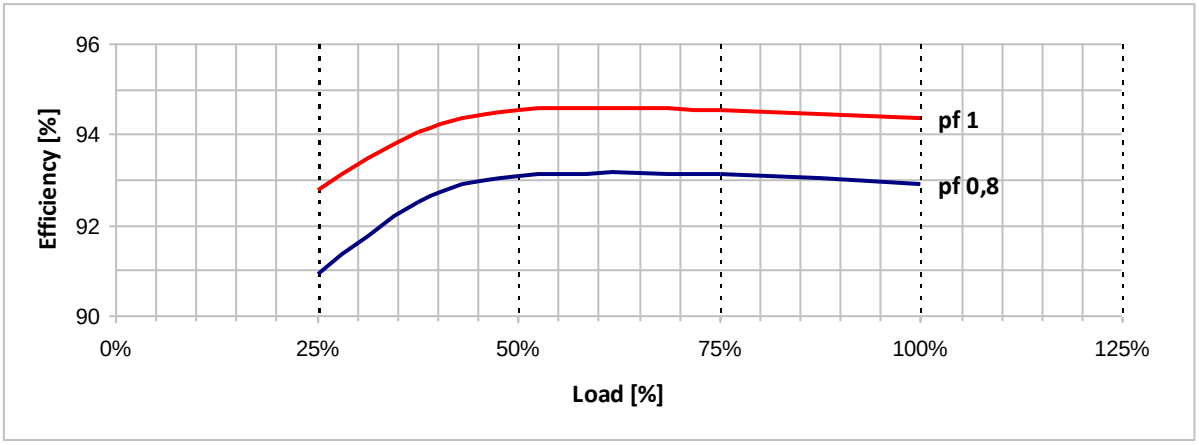
380 V



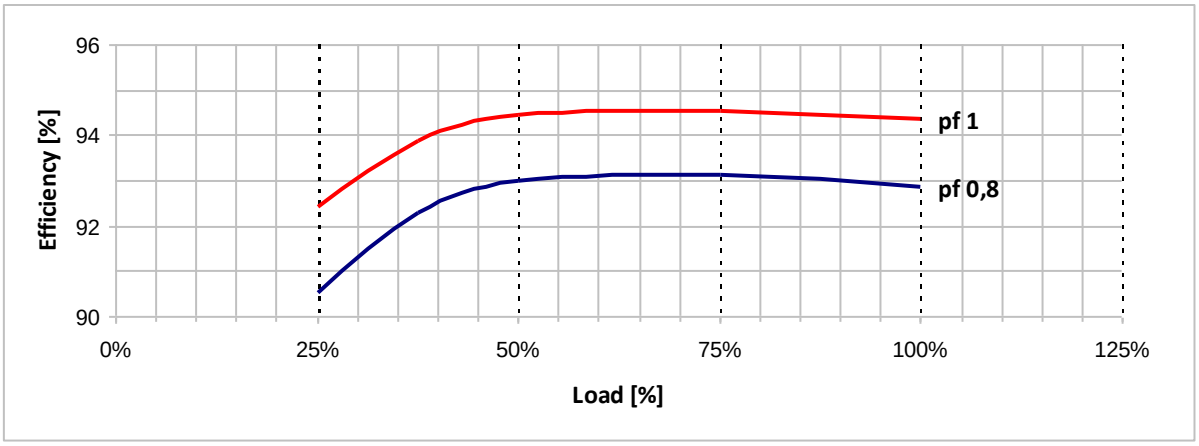
400 V



415 V



440 V



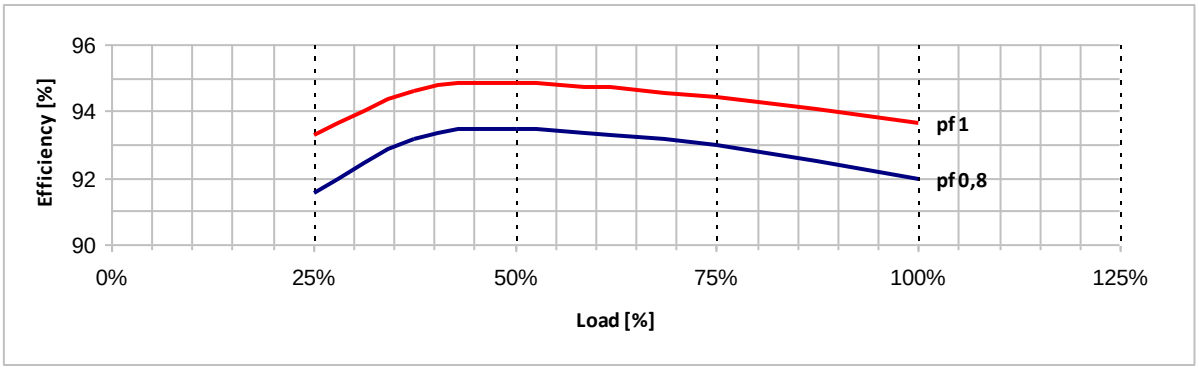
THREE PHASE SYNCRONOUS GENERATOR

MJB 250 MB4

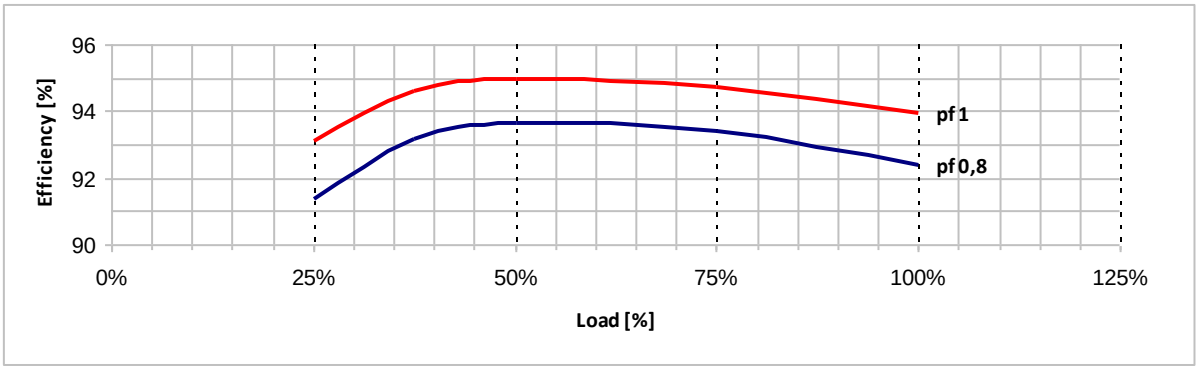
Typical efficiency curves

60 Hz - 1800 rpm

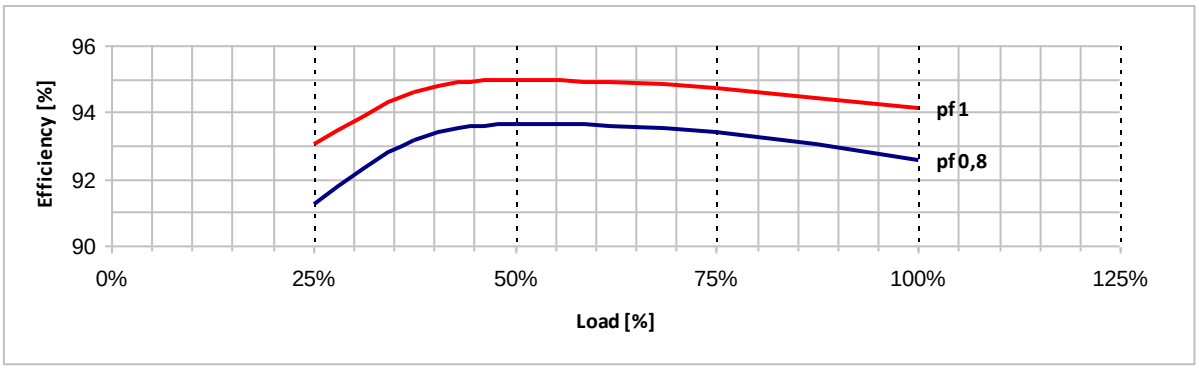
380 V



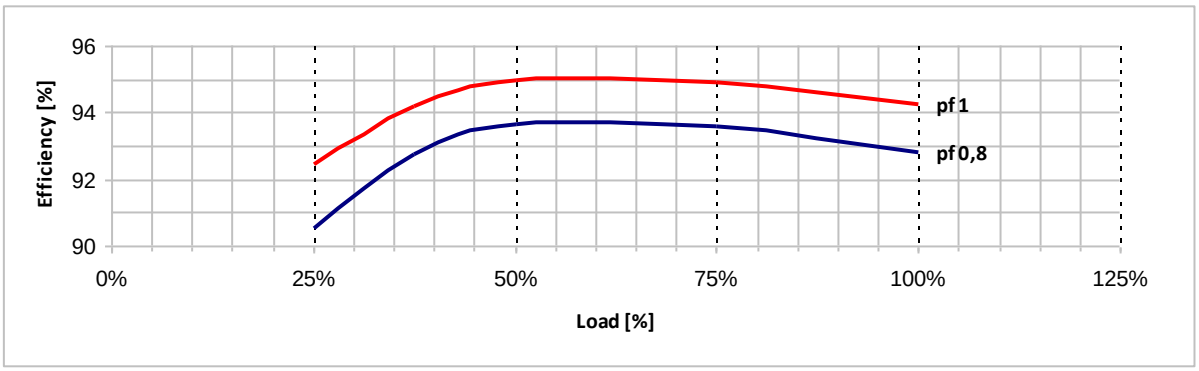
416 V



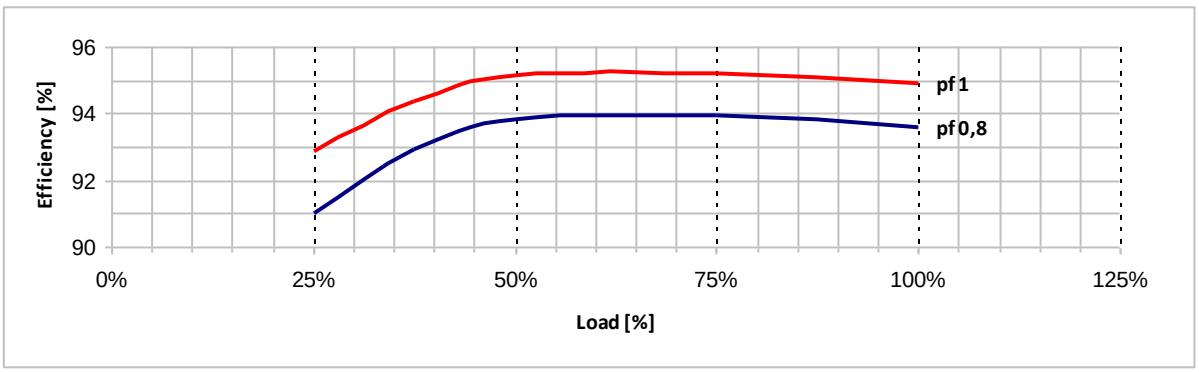
440 V



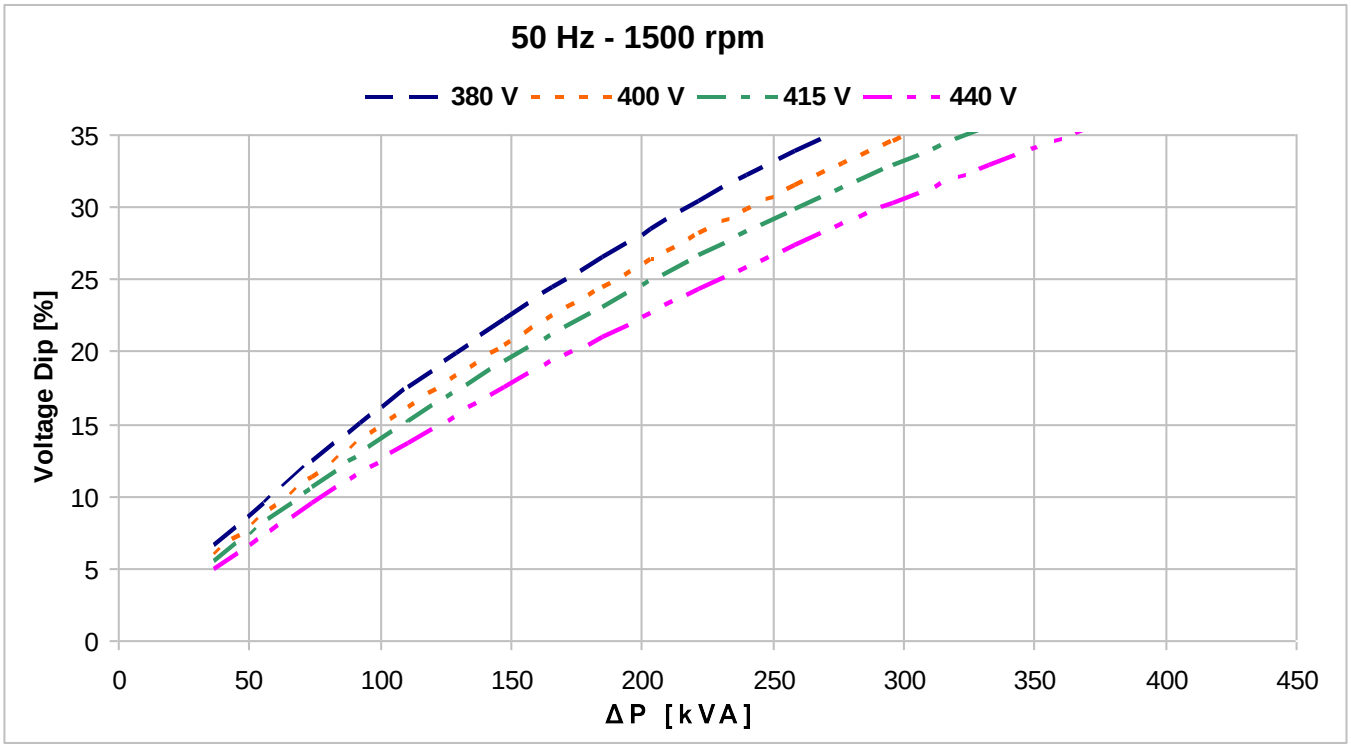
460 V

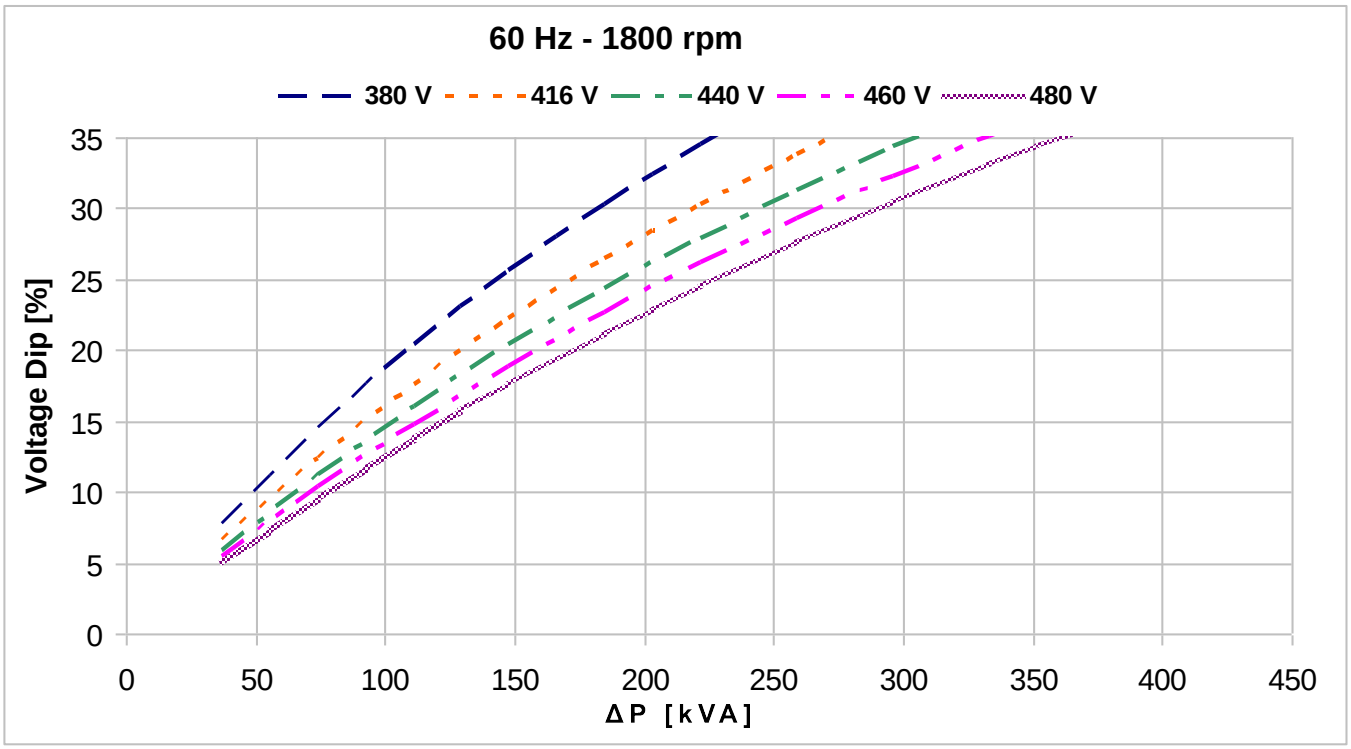


480 V



Locked rotor motor starting curves (*)





$$\Delta P = P_n \times \frac{I_s/I_n}{\cos\varphi_n \times \eta_n}$$

(*): 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.

MarelliGenerators®

THREE-PHASE SYNCHRONOUS GENERATOR

MJB 250 MB 4

4 POLES

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

STAND BY DUTY (163/27)

AMBIENT TEMPERATURE	**27℃**	**WINDING DATA**	
TEMPERATURE RISE	**163K**	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**	**205**	**205**	**205**	**205**	**215**	**225**	**235**	**240**	**255**
		kW	***164***	***164***	***164***	***164***	***172***	***180***	***188***	***192***	***204***
EFFICIENCY (%) @ 0,8 p.f.		4/4	92,3	92,8	92,6	92,6	91,6	91,8	92,2	92,3	93,2
EFFICIENCY (%) @ 1,0 p.f.		4/4	93,9	94,3	94,1	94,1	93,3	93,5	93,8	93,9	94,6
SHORT CIRCUIT RATIO			0,37	0,41	0,44	0,49	0,29	0,33	0,36	0,38	0,39
REACTANCES (%)											
Direct axis synchronous		xd	415	370	345	310	520	455	425	395	385
Quadrature axis synchronous		xq	230	205	195	170	290	250	235	220	215
Direct axis transient		x'd	35,2	31,8	29,5	26,3	44,3	38,7	36,2	33,8	33,0
Direct axis subtransient		x"d	14,1	12,7	11,8	10,5	17,8	15,5	14,5	13,5	13,2
Quadrature axis subtransient		x"q	16,7	15,1	14,0	12,5	21,0	18,4	17,1	16,0	15,6
Negative sequence		x_2	15,5	14,0	13,0	11,5	19,5	17,0	15,9	14,8	14,5
Zero sequence		x_0	3,3	3,0	2,8	2,5	4,2	3,6	3,4	3,2	3,1

TIME CONSTANTS [s]

Open circuit (T'do)	0,95	Subtransient (T"d)	0,011
Transient (T'd)	0,09	Armature (Ta)	0,013

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication	6218 2RS C3 / Prelubricated
N-end bearing/Lubrication	6313 2Z C3 / Prelubricated
Weight (IM B34) [kg]	590
Inertia (J) (IM B34) [kgm^2]	1,66
Overspeed [min $^{-1}$]	2250
Method of cooling	IC 01
Cooling air required [m ^{3}/s] @ 50/60 Hz	0,42 / 0,52
Degree of protection	IP23
Type of construction available	B2 - SAE / IM B34
Direction of rotation	CW

OTHER DATA

Phase resistance [Ω] @ 20 ℃ - Star series	0,027
Overloads	-
3-phase short circuit current	-
Voltage regulation accuracy	+/- 0,5 % (in steady state condition)
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.