

CONTINUOUS DUTY

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

AMBIENT TEMPERATURE 40°C TEMPERATURE RISE H INSULATION CLASS H POWER FACTOR 0,8		WINDING DATA Winding code M0 Number of leads 12 Winding pitch 2/3										
FREQUENCY	Hz	50 Hz				60 Hz						
VOLTAGE	Connections Star series Star parallel	V	380	400	415	440	380	416	440	460	480	
			190	200	208	220	190	208	220	230	240	
RATING POWER		kVA	48,5	50,0	50,0	50,0	47,5	52,6	55,4	60,0	60,0	
		kW	38,8	40,0	40,0	40,0	38,0	42,1	44,3	48,0	48,0	
EFFICIENCY [%] @ 0,8 p.f.		4/4	87,9	88,7	88,7	88,2	87,1	88,3	88,7	89,1	89,3	
		3/4	89,8	90,0	90,0	89,5	88,9	89,4	89,8	90,0	90,0	
		2/4	90,6	90,6	90,5	90,1	89,9	90,1	90,3	90,5	90,6	
EFFICIENCY [%] @ 1 p.f.		4/4	90,3	90,9	90,9	90,5	89,6	90,6	90,9	91,3	91,4	
		3/4	91,9	92,0	92,0	91,6	91,1	91,5	91,8	92,0	92,0	
		2/4	92,5	92,5	92,4	92,1	91,9	92,1	92,3	92,4	92,5	
SHORT CIRCUIT RATIO	SCR	0,33	0,35	0,38	0,42	0,28	0,30	0,32	0,32	0,35		
REACTANCES [%]												
Direct axis synchronous	X _d	407	379	352	313	379	442	416	413	379		
Quadrature axis synchronous	X _q	228	212	197	175	268	247	233	231	212		
Direct axis transient	X' _d	36,8	34,2	31,8	28,3	43,2	39,9	37,6	37,2	34,2		
Direct axis subtransient	X'' _d	15,6	14,5	13,5	12,0	18,3	16,9	15,9	15,8	14,5		
Quadrature axis subtransient	X'' _q	19,9	18,5	17,2	15,3	23,4	21,6	20,3	20,1	18,5		
Negative sequence	X ₂	17,7	16,5	15,3	13,6	20,8	19,3	18,1	18,0	16,5		
Zero sequence	X ₀	3,7	3,4	3,2	2,8	4,3	4,0	3,7	3,7	3,4		
TIME CONSTANTS [s]												
Open circuit	T' _{do}	0,7										
Transient	T' _d	0,06										
Subtransient	T'' _d	0,01										
Armature	T _a	0,007										

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication	6313 2RS C3 / Prelubricated
N-end bearing/Lubrication	6309 2RS C3 / Prelubricated
Overspeed [r.p.m.]	2250
Inertia (J) [kgm ²]	Refer to B34 construction 0,301
Weight [kg]	Refer to B34 construction 225
Method of cooling	IC01
Cooling air required [m ³ /s] @ 50/60 Hz	0,21 / 0,25
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	0,2
Overloads	10% for 1 hour every 12 hours
3-phase short circuit sustained current	-
Voltage regulation accuracy	± 1 % In steady state condition
Radio interference	EN 55011 - Class B Group 1
Wave form THF	< 2%
Total harmonic content	< 2% - At no load

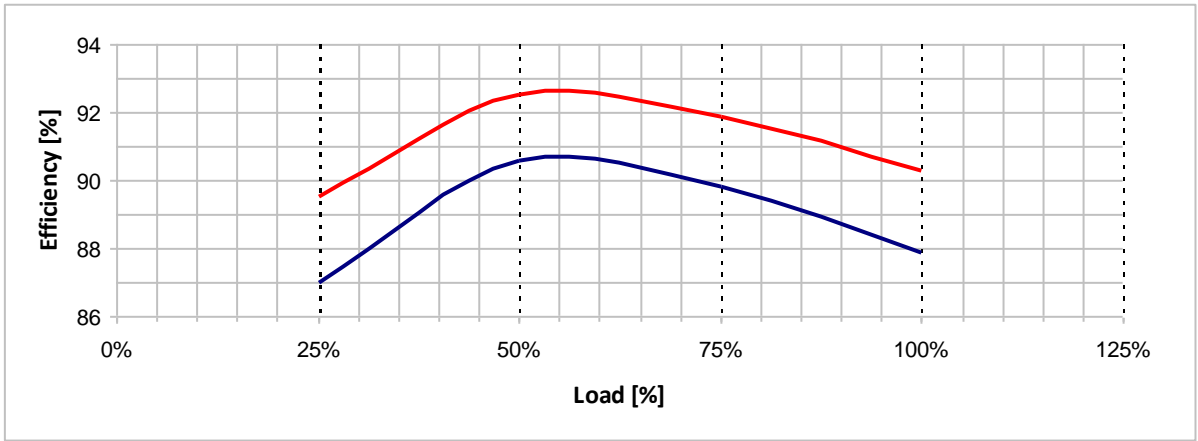
STANDARDS

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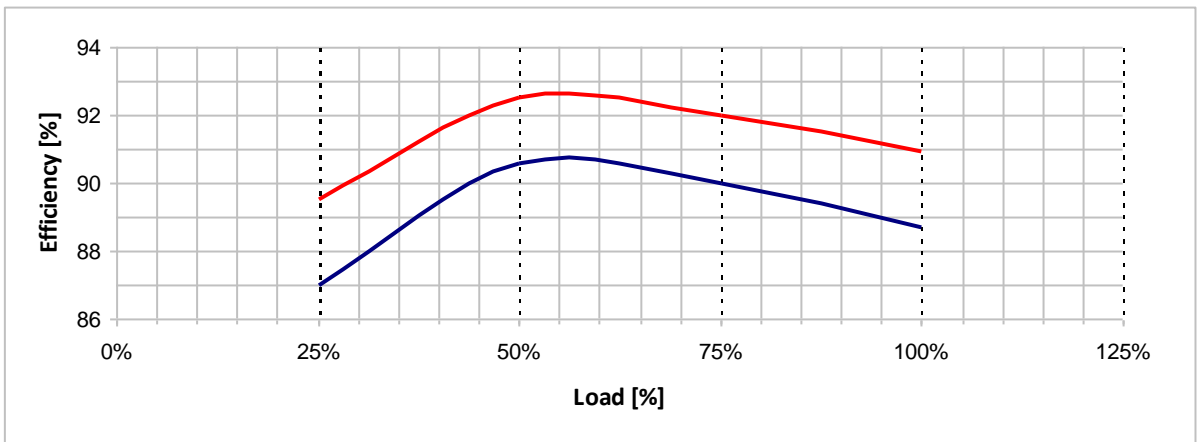
Typical efficiency curves

50 Hz - 1500 rpm

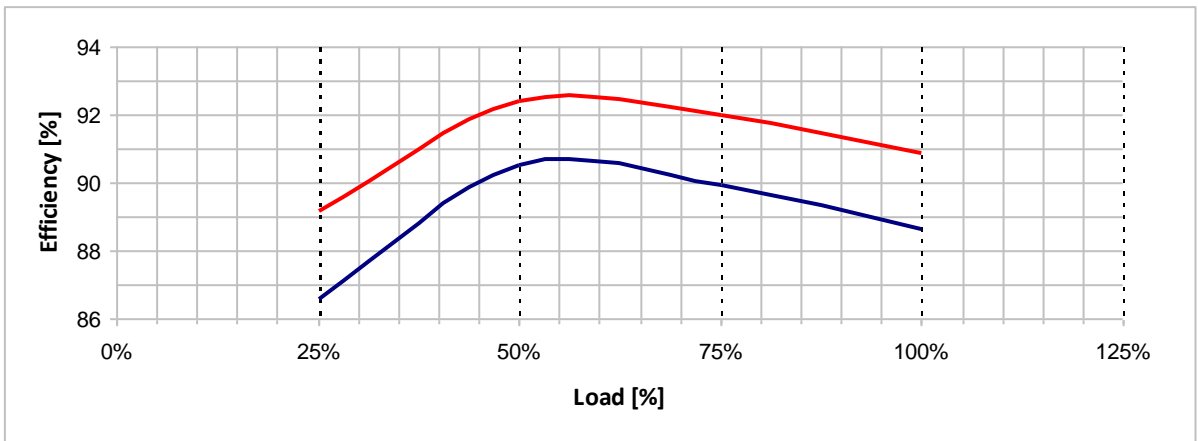
380 V



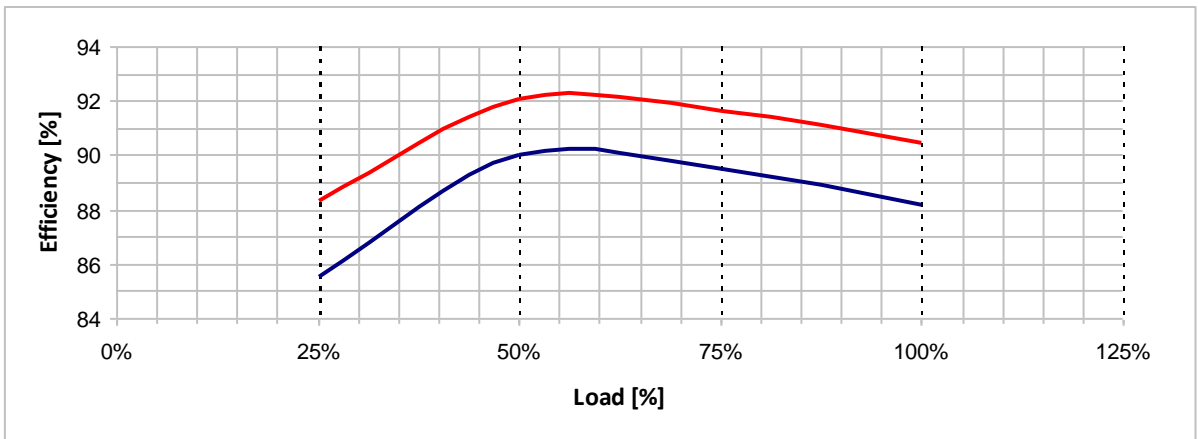
400 V



415 V

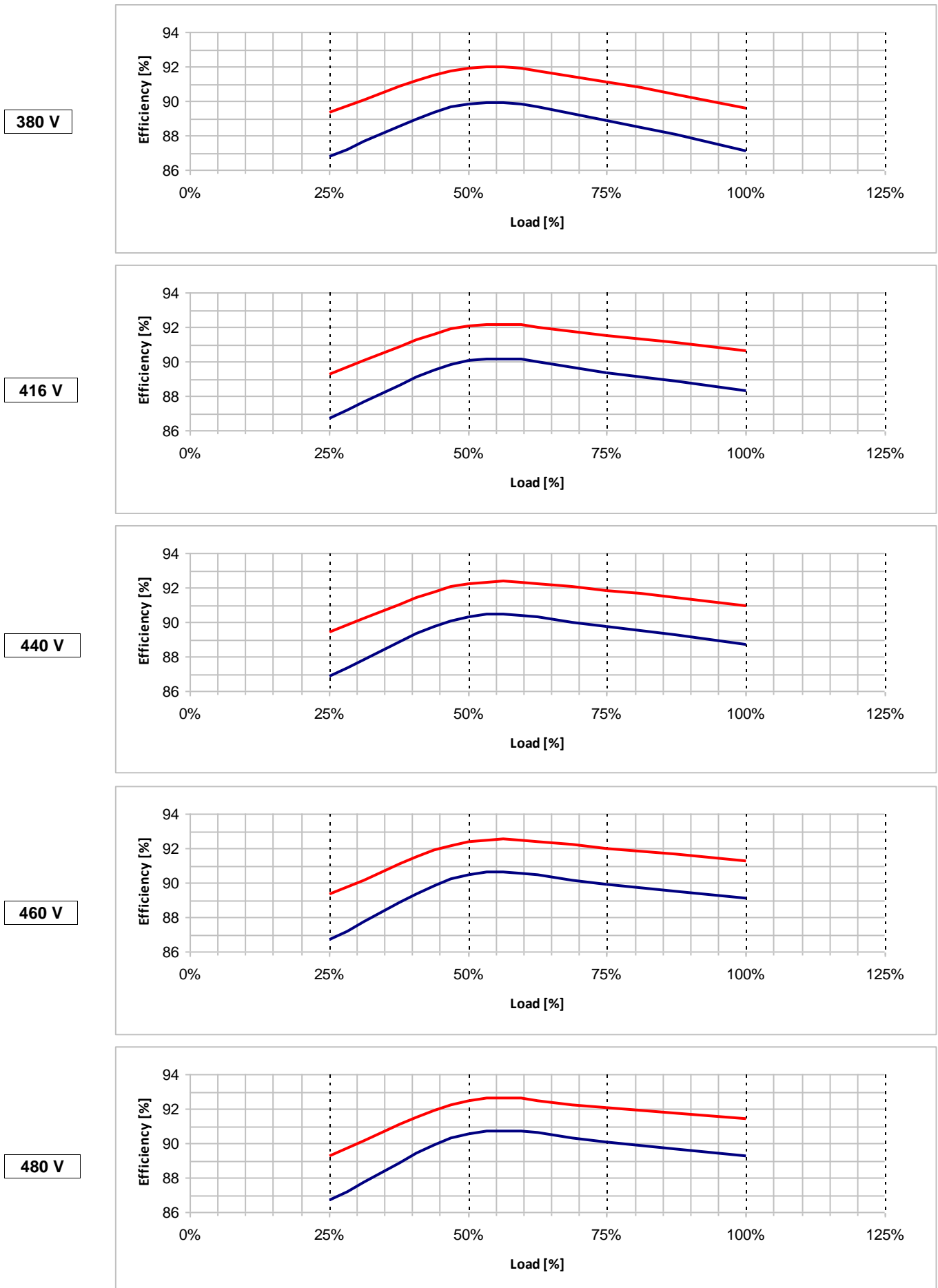


440 V

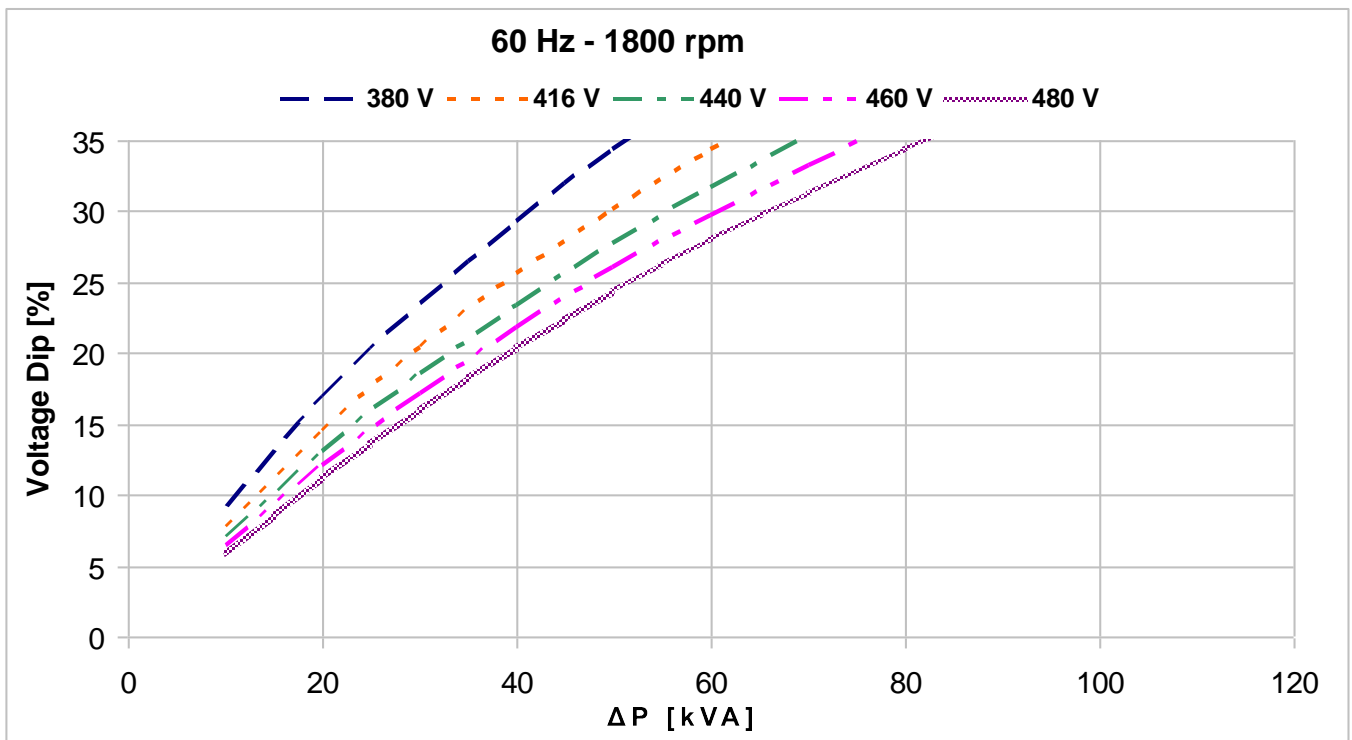
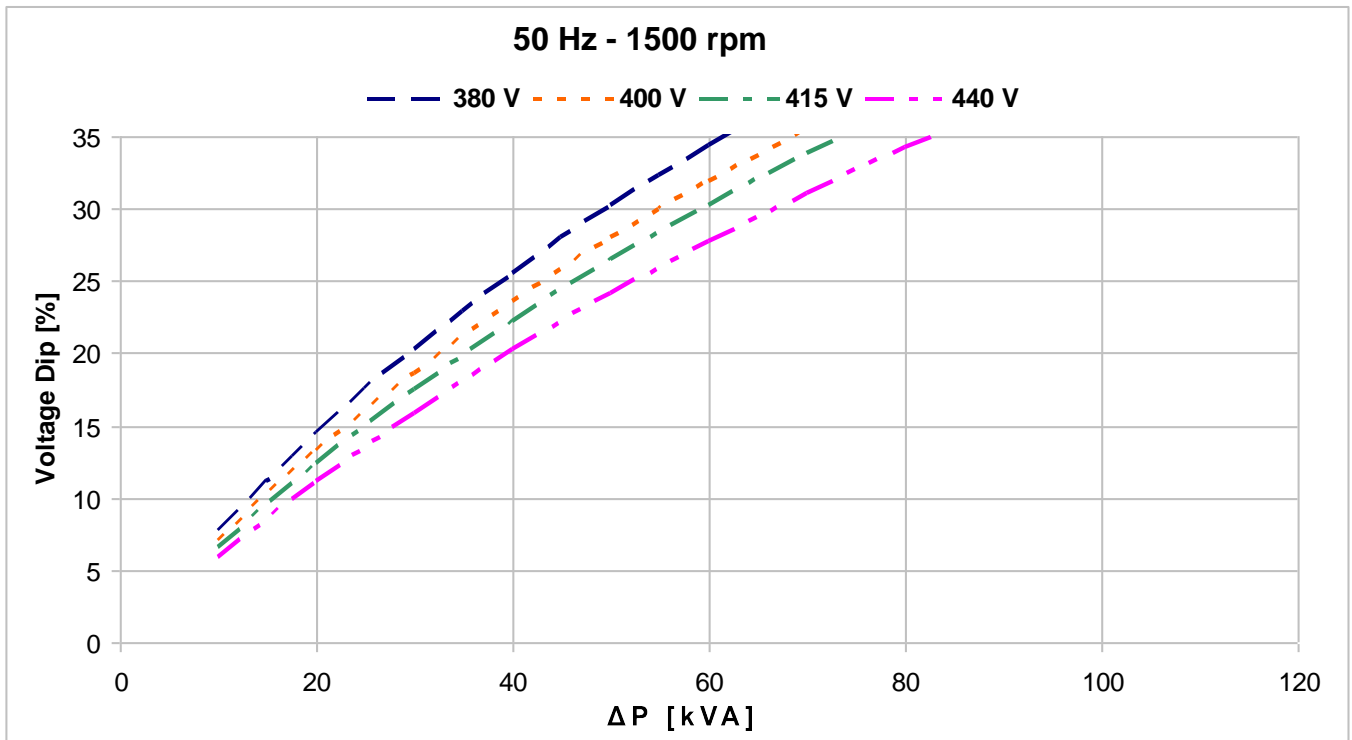


Typical efficiency curves

60 Hz - 1800 rpm



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.

AMBIENT TEMPERATURE	27°C	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	V	190	200	208	220	190	208	220	230	240
RATING		kVA	53,0	55,0	55,0	55,0	52,3	57,8	60,8	66,0	66,0
		kW	42,4	44,0	44,0	44,0	41,8	46,2	48,6	52,8	52,8
EFFICIENCY (%) @ 0,8 p.f.	4/4		87,0	88,0	88,0	87,5	86,4	88,0	88,2	88,6	89,0
EFFICIENCY (%) @ 1,0 p.f.	4/4		89,5	90,4	90,4	90,0	89,0	90,4	90,5	90,9	91,2
SHORT CIRCUIT RATIO			0,30	0,32	0,34	0,39	0,25	0,27	0,29	0,29	0,32
REACTANCES (%)											
Direct axis synchronous	x _d		445	415	385	345	525	485	455	455	415
Quadrature axis synchronous	x _q		250	235	215	195	295	270	255	255	235
Direct axis transient	x' _d		40,2	37,6	34,9	31,1	47,6	43,9	41,2	41,0	37,6
Direct axis subtransient	x'' _d		17,0	16,0	14,8	13,2	20,2	18,6	17,5	17,4	16,0
Quadrature axis subtransient	x'' _q		21,7	20,4	18,9	16,8	25,7	23,7	22,3	22,2	20,4
Negative sequence	x ₂		19,4	18,2	16,9	15,0	22,9	21,2	19,9	19,8	18,2
Zero sequence	x ₀		4,0	3,7	3,5	3,1	4,7	4,4	4,1	4,1	3,7

TIME CONSTANTS [s]

Open circuit (T' _{do})	0,7	Subtransient (T'' _d)	0,010
Transient (T' _d)	0,06	Armature (T _a)	0,007

MECHANICAL CHARACTERISTICS

D-end bearing/Lubrication	6313 2RS C3 / Prelubricated
N-end bearing/Lubrication	6309 2RS C3 / Prelubricated
Weight (IM B34) [kg]	225
Inertia (J) (IM B34) [kgm ²]	0,301
Overspeed [min ⁻¹]	2250
Method of cooling	IC 01
Cooling air required [m ³ /s] @ 50/60 Hz	0,21 / 0,25
Degree of protection	IP 23
Type of construction available	B2 - SAE / IM B34
Direction of rotation	CW

OTHER DATA

Phase resistance [Ω] @ 20 °C - Star series	0,2
Overloads	-
3-phase short circuit current	-
Voltage regulation accuracy	+/- 1 % (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.