

ALTERNATORS

LSA 37 - 2 Pole - Three phase

Electrical and mechanical data

TYPICAL DATA

Insulation class	H	Excitation system	Shunt
Winding pitch - Code	2/3 - (N 6)	A.V.R. model	R 250
Wires	12	Voltage regulation (steady state)	± 0,5 %
Drip proof	IP 23	Sustained short-circuit current	-
Altitude	≤ 1000 m	Total harmonic (*) TGH / THC	< 5 %
Overspeed	4320 min ⁻¹	Wave form : NEMA = TIF - (*)	< 50
Air flow	0,26 m ³ /s	Wave form : I.E.C. = THF - (*)	< 4 %

(*) Total harmonic content line to line, at no load or full rated linear and balanced load

RATINGS : kVA / kW - Power factor = 0,8

Duty/Ambiant T	Continuous / 40 C								Stand-by / 40 C				Stand-by / 27 C												
	H / 125 K				F / 105 K				H / 150 K				H / 163 K												
	3 ph.		1 ph.		3 ph.		1 ph.		3 ph.		1 ph.		3 ph.		1 ph.										
Class/T rise	380V		400V		415V		Δ Δ		380V		400V		415V		Δ Δ		380V		400V		415V		Δ Δ		
Phase	Y	220V	230V	240V	230V	220V	230V	240V	230V	220V	230V	240V	230V	220V	230V	240V	230V	220V	230V	240V	230V	220V	230V	240V	230V
37 M7	kVA	15		10		14		9		16		10,5		16,5		11									
	kW	12		8		11,2		7,2		12,8		8,4		13,2		8,8									
37 M8	kVA	18		11,5		17		11		19		12,5		20		13									
	kW	14,4		9,2		13,6		8,8		15,2		10		16		10,4									
37 L6	kVA	25		16		23		15		26,5		17		27,5		18									
	kW	20		12,8		18,4		12		21,2		13,6		22		14,4									
37 VL11	kVA	30		19		28		17,5		32		20		33		21									
	kW	24		15,2		22,4		14		25,6		16		26,4		16,8									

EFFICIENCIES (%) : Class H . 40 C

	Three phase : 400 V										Single phase : 230 V									
	P.F. = 0,8					P.F. = 1					P.F. = 0,8					P.F. = 1				
	1/4	2/4	3/4	4/4	St.by	1/4	2/4	3/4	4/4	St.by	1/4	2/4	3/4	4/4	St.by	1/4	2/4	3/4	4/4	St.by
37 M7	75,2	80	79,6	77,9	76,8	77,5	83,9	84,8	84,2	83,7	59,2	63,4	60,9	57,1	55,6	61,8	68,8	68,5	66,1	65
37 M8	77,9	82,6	82,5	81,1	80,3	79,8	85,8	86,8	86,4	86	62,1	66,4	64,3	60,7	59,3	64,5	71,5	71,3	69,2	68,1
37 L6	79,4	84,2	84,3	83,2	82,5	81,2	87,2	88,3	88	87,8	65,7	69,5	67,3	63,8	62,3	68,1	74,4	74,1	72	71
37 VL11	81,3	85,8	85,9	84,9	84,4	82,9	88,4	89,4	89,2	89	67,8	71,2	68,9	65,3	63,9	70,2	76	75,5	73,3	72,3

REACTANCES (%) - TIME CONSTANTS (ms) : CLASS : H / 400 V

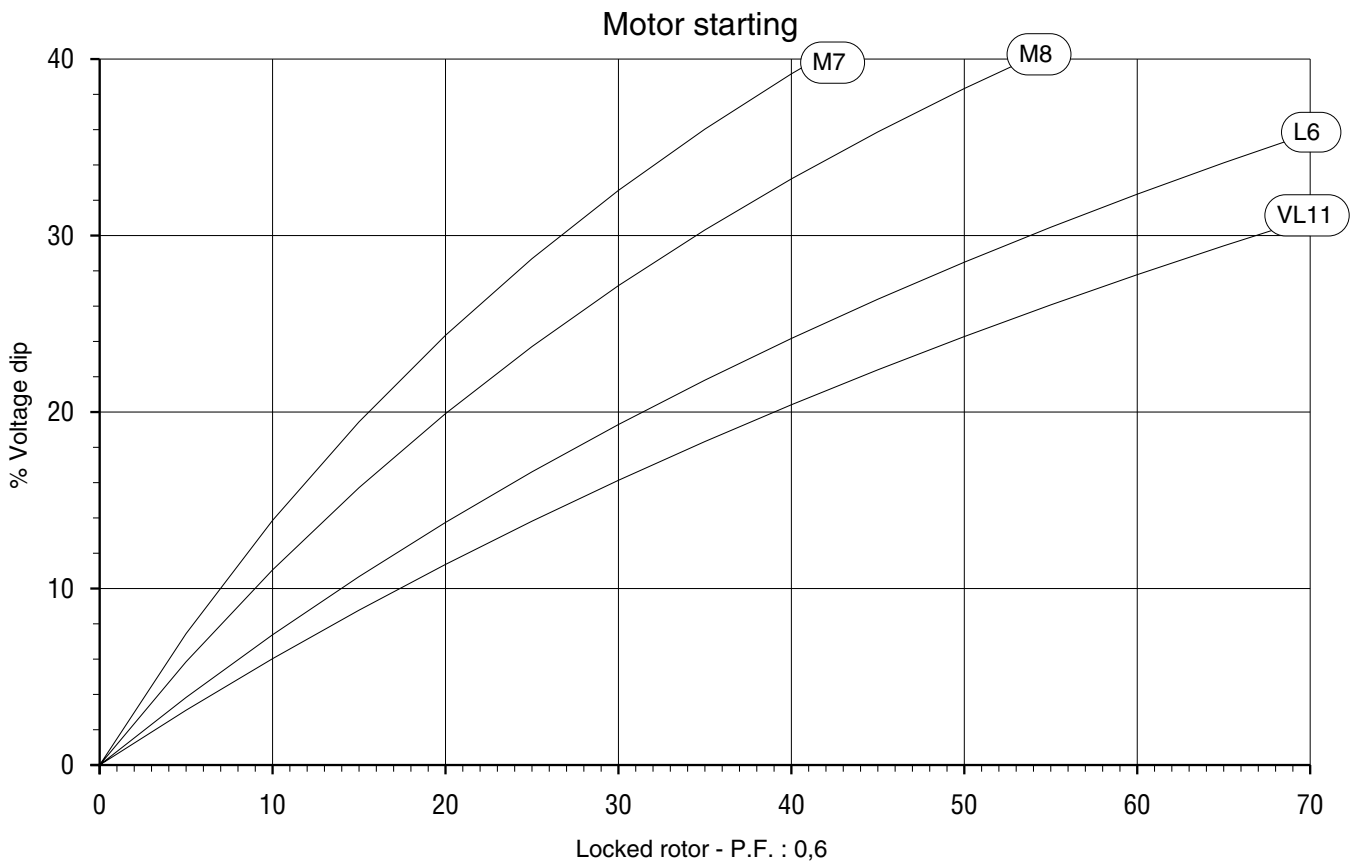
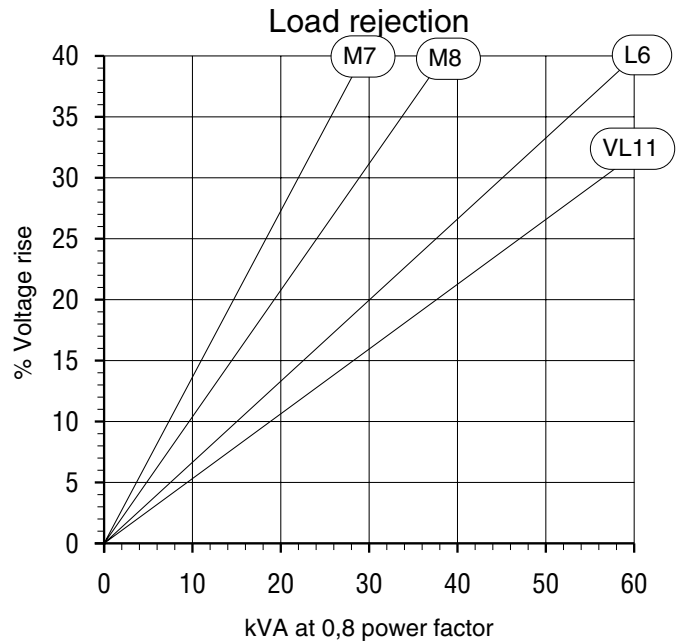
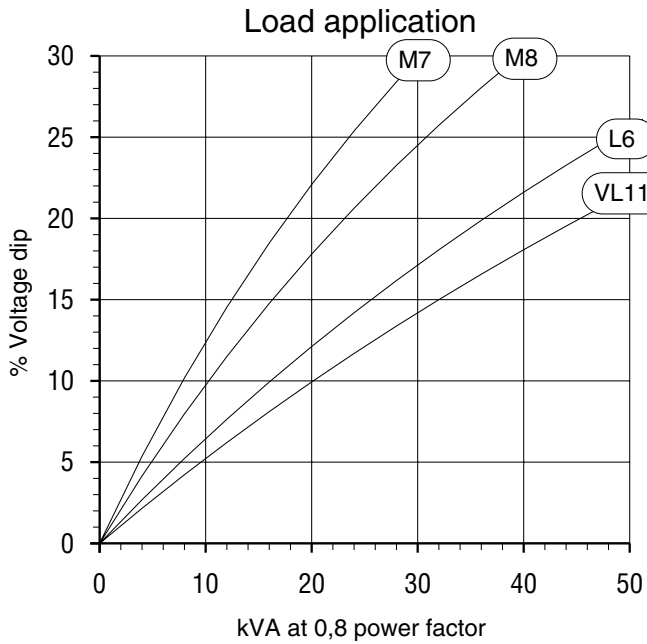
		37 M7	37 M8	37 L6	37 VL11
Kcc	Short-circuit ratio	0,38	0,37	0,44	0,41
Xd	Direct axis synchronous reactance unsaturated	324	318	292	292
Xq	Quadrature axis synchronous reactance unsaturated	162	159	146	146
T'do	Open circuit time constant	922	964	991	1010
X'd	Direct axis transient reactance saturated	13	12,2	10,9	10,7
T'd	Short circuit transient time constant	42	42	42	42
X''d	Direct axis subtransient reactance saturated	6,5	6,1	5,5	5,3
T''d	Subtransient time constant	4	4	4	4
X''q	Quadrature axis subtransient reactance saturated	10,1	9,3	8,2	8
Xo	Zero sequence reactance unsaturated	0,1	0,4	0,8	0,7
X2	Negative sequence reactance saturated	8,3	7,7	6,8	6,7
Ta	Armature time constant	6	6	6,0	6

OTHER DATA - CLASS : H / 400 V -

		37 M7	37 M8	37 L6	37 VL11
io	No load excitation current (A)	0,6	0,6	0,7	0,6
ic	Full load excitation current (A)	2,5	2,2	2,5	2,2
uc	Full load excitation voltage (V)	41	37	40	37
ms	Recovery time(ΔU =20 % trans.)	500	500	500	500
kVA	Motor start. (ΔU = 20% sust.) or (ΔU = 50% Transient)	24	31	42	52
%	Transient dip (rated step load) - PF : 0,8 LAG	17,6	16,4	14,8	14,3
W	No load losses	801	854	1090	1170
W	Heat rejection	3410	3370	4050	4220

According to : I.E.C. 34.1/34.2 - U.T.E. : NF C 51.111 - V.D.E. 0530 - B.S. 4999 & 5000 - NEMA : MG 1.22 - ISO 8528 . 3 - CSA (C22.2+UL 2200).
Products and materials shown in this catalogue may, at any time, be modified in order to follow the latest technological developments, improve the design or change conditions of utilization.
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TRANSIENT VOLTAGE VARIATION - 400V



- 1) For a starting P.F. differing from 0,6 the starting kVA have to be multiplied by $(\text{Sine } \varnothing / 0,8)$
- 2) If voltage is not 400V(Y) , 230V(Δ) at 50 Hz then kVA must be multiplied by $(400/U)^2$ or $(230/U)^2$.

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TYPICAL DATA

Insulation class	H	Excitation system	Shunt
Winding pitch - Code	2/3 - (N 6)	A.V.R. model	R 250
Wires	12	Voltage regulation (steady state)	± 0,5 %
Drip proof	IP 23	Sustained short-circuit current	-
Altitude	≤ 1000 m	Total harmonic (*) TGH / THC	< 5 %
Overspeed	4320 min⁻¹	Wave form : NEMA = TIF - (*)	< 50
Air flow	0,31 m³/s	Wave form : I.E.C. = THF - (*)	< 4 %

(*) Total harmonic content line to line, at no load or full rated linear and balanced load

RATINGS : kVA / kW - Power factor = 0,8

Duty/Ambiant T	Continuous / 40 C										Stand-by / 40 C					Stand-by / 27 C					
	H / 125 K					F / 105 K					H / 150 K					H / 163 K					
	3 ph.		1 ph.			3 ph.		1 ph.			3 ph.		1 ph.			3 ph.		1 ph.			
Class/T rise	380V 416V 440V 480V		Δ Δ Δ Δ Δ			380V 416V 440V 480V		Δ Δ Δ Δ Δ			380V 416V 440V 480V		Δ Δ Δ Δ Δ			380V 416V 440V 480V		Δ Δ Δ Δ Δ			
Phase	Y		Δ			Y		Δ			Y		Δ			Y		Δ			
	380V	416V	440V	480V	Δ Δ	380V	416V	440V	480V	Δ Δ	380V	416V	440V	480V	Δ Δ	380V	416V	440V	480V	Δ Δ	
	240V	240V	240V	240V	240V	240V	240V	240V	240V	240V	240V	240V	240V	240V	240V	240V	240V	240V	240V	240V	
	208V	220V	240V	240V	240V	208V	220V	240V	240V	240V	208V	220V	240V	240V	240V	208V	220V	240V	240V	240V	
37 M7	kVA	15,5	16,5	17,5	19	10,5	14	15	16	17,5	10	16,5	17,5	18,5	20	11	17	18	19	21	11,5
	kW	12,4	13,2	14	15,2	8,4	11,2	12	12,8	14	8	13,2	14	14,8	16	8,8	13,6	14,4	15,2	16,8	9,2
37 M8	kVA	18,5	19,5	20,5	22	12,5	17	18	19	21	11,5	19,5	21	22	24	13	20	21,5	22,5	25	13,5
	kW	14,8	15,6	16,4	17,6	10	13,6	14,4	15,2	16,8	9,2	15,6	16,8	17,6	19,2	10,4	16	17,2	18	20	10,8
37 L6	kVA	25,5	27	28,5	30,5	17	23,5	25	26,5	28,5	15,5	27	29	30,5	33	18	28	30	31,5	34	19
	kW	20,4	21,6	22,8	24,4	13,6	18,8	20	21,2	22,8	12,4	21,6	23,2	24,4	26,4	14,4	22,4	24	25,2	27,2	15,2
37 VL11	kVA	30,5	32,5	34	36,5	20	28	30	31,5	34	18,5	32,5	34,5	36	39,5	21,5	33,5	36	38	41	22,5
	kW	24,4	26	27,2	29,2	16	22,4	24	25,2	27,2	14,8	26	27,6	28,8	31,6	17,2	26,8	28,8	30,4	32,8	18

EFFICIENCIES (%) : Class H . 40 C

	Three phase : 480 V										Single phase : 240 V									
	P.F. = 0,8					P.F. = 1					P.F. = 0,8					P.F. = 1				
	1/4	2/4	3/4	4/4	St.by	1/4	2/4	3/4	4/4	St.by	1/4	2/4	3/4	4/4	St.by	1/4	2/4	3/4	4/4	St.by
37 M7	72,2	78,9	79,5	78,5	77,8	74	82,2	84	84	83,8	59,9	63,9	61,3	57,5	55,9	62,6	69,5	69	66,6	65,5
37 M8	74,9	81,4	82,2	81,5	80,9	76,4	84,1	86	86,1	85,9	62,7	66,9	64,7	61,2	59,7	65,2	72	71,8	69,6	68,6
37 L6	76,8	83,2	84,1	83,5	83,1	78,3	85,7	87,6	87,8	87,7	66,1	69,9	67,7	64,2	62,8	68,5	74,8	74,5	72,4	71,4
37 VL11	78,9	84,8	85,7	85,2	84,8	80,2	87	88,7	88,9	88,8	68,2	71,6	69,3	65,8	64,3	70,5	76,3	75,9	73,7	72,7

REACTANCES (%) - TIME CONSTANTS (ms) : CLASS : H / 480 V

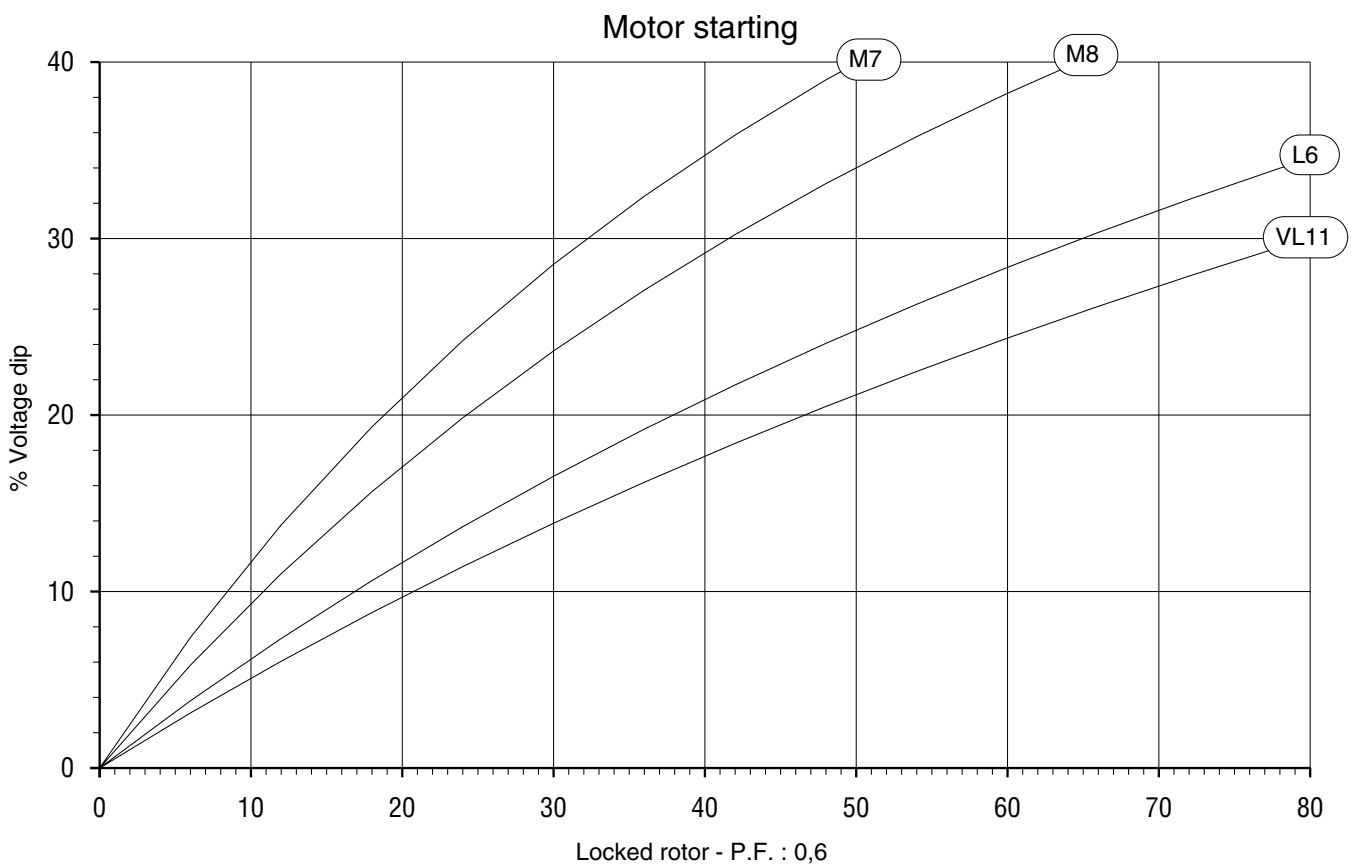
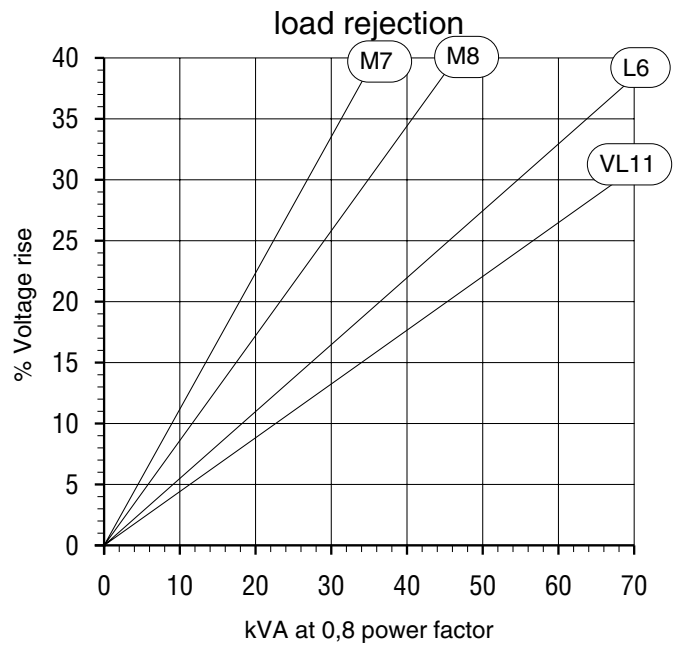
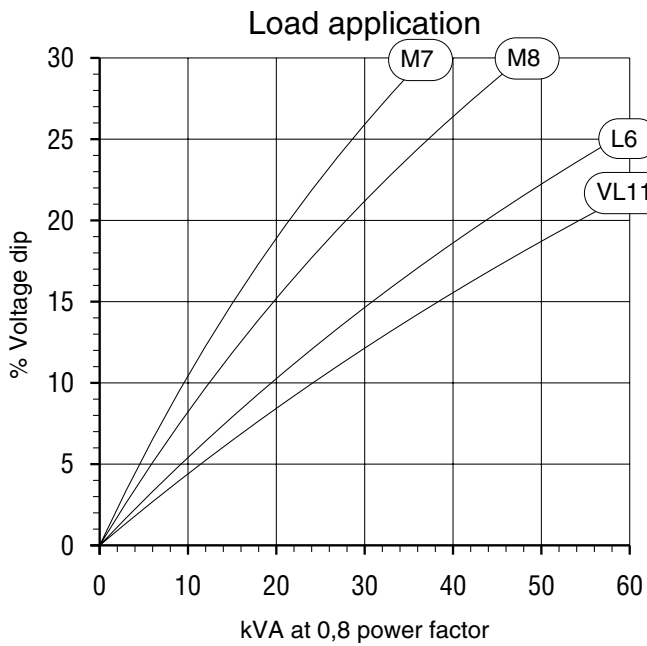
		37 M7	37 M8	37 L6	37 VL11
Kcc	Short-circuit ratio	0,37	0,36	0,43	0,4
Xd	Direct axis synchronous reactance unsaturated	333	326	297	299
Xq	Quadrature axis synchronous reactance unsaturated	167	163	149	150
T'do	Open circuit time constant	926	965	990	1010
X'd	Direct axis transient reactance saturated	13,3	12,5	11,1	10,9
T'd	Short circuit transient time constant	42	42	42	42
X''d	Direct axis subtransient reactance saturated	6,7	6,3	5,5	5,5
T''d	Subtransient time constant	4	4	4	4
X''q	Quadrature axis subtransient reactance saturated	10,3	9,6	8,4	8,2
Xo	Zero sequence reactance unsaturated	0,5	0,6	0,3	0,6
X2	Negative sequence reactance saturated	8,5	7,9	7	6,8
Ta	Armature time constant	6	6	6	6

OTHER DATA - CLASS : H / 480 V -

		37 M7	37 M8	37 L6	37 VL11
io	No load excitation current (A)	0,6	0,6	0,7	0,6
ic	Full load excitation current (A)	2,5	2,2	2,4	2,2
uc	Full load excitation voltage (V)	41	37	40	37
ms	Recovery time(ΔU =20 % trans.)	500	500	500	500
kVA	Motor start. (ΔU = 20% sust.) or (ΔU = 50% Transient)	30	38	52	64
%	Transient dip (rated step load) - PF : 0,8 LAG	17,9	16,6	14,9	14,5
W	No load losses	1250	1320	1650	1770
W	Heat rejection	4050	4030	4810	5090

According to : I.E.C. 34.1/34.2 - U.T.E. : NF C 51.111 - V.D.E. 0530 - B.S. 4999 & 5000 - NEMA : MG 1.22 - ISO 8528 . 3 - CSA(C22.2+UL 2200) . Products and materials shown in this catalogue may, at any time, be modified in order to follow the latest technological developments, improve the design or change conditions of utilization. Their description cannot, in any case, engage Leroy-Somer liability. The values indicated are typical values .

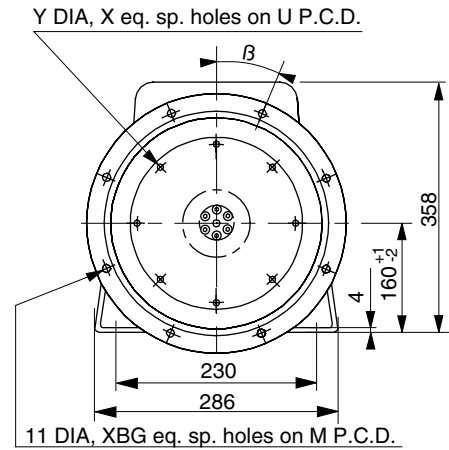
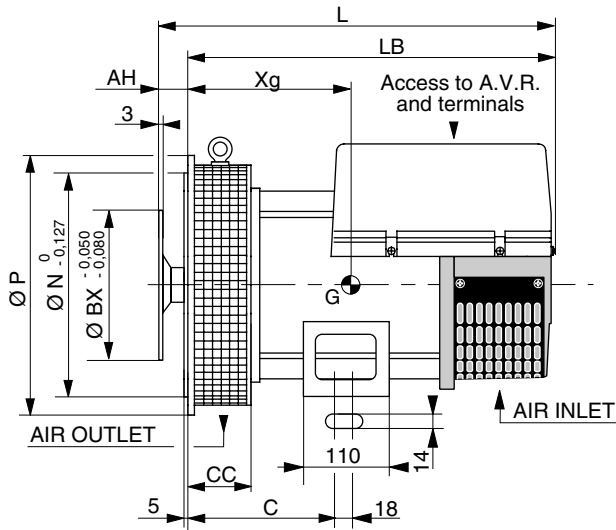
TRANSIENT VOLTAGE VARIATION - 480 V



1) For a starting P.F. differing from 0,6 the starting kVA have to be multiplied by $(\text{Sine } \varnothing / 0,8)$
 If voltage is not 480V(Y), 277V(Δ), 240V(Υ) at 60 Hz then kVA must be multiplied by $(480/U)^2$ or $(277/U)^2$ or $(240/U)^2$.

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DIMENSIONS



FRAME DIMENSIONS : S.A.E. 5 (without hand space) 2 POLE

TYPE	L	LB	C	CC	Xg	Weight	J (kg.m ²)
LSA 37 M7	492	430	216	95	220	90	0,066
LSA 37 M8	532	470	216	95	235	105	0,075
LSA 37 L6	567	505	216	95	260	115	0,087

LSA 37 VL11 not available in single bearing version

S.A.E. 3 - 4 - 5 (with hand space) 2 POLE

TYPE	L	LB	C	CC	Xg	Weight	J (kg.m ²)
LSA 37 M7	517	455	241	115	255	95	0,066
LSA 37 M8	557	495	241	115	275	110	0,075
LSA 37 L6	592	530	241	115	295	120	0,087

LSA 37 VL11 not available in single bearing version

With no specific mention the LSA 37 single bearing SAE 5 is supplied with flange without hand space.

FLANGE DIMENSIONS (without hand space)

S.A.E.	P	N	M	XBG	B
5	364	314,325	333,375	8	22 30'
S.A.E. 3 - 4 - 5 (with hand space)					
3	465	409,575	428,625	12	15
4	406	361,95	381	12	15
5	406	314,325	333,375	8	22 30'

FLEX PLATE DIMENSIONS Coupling

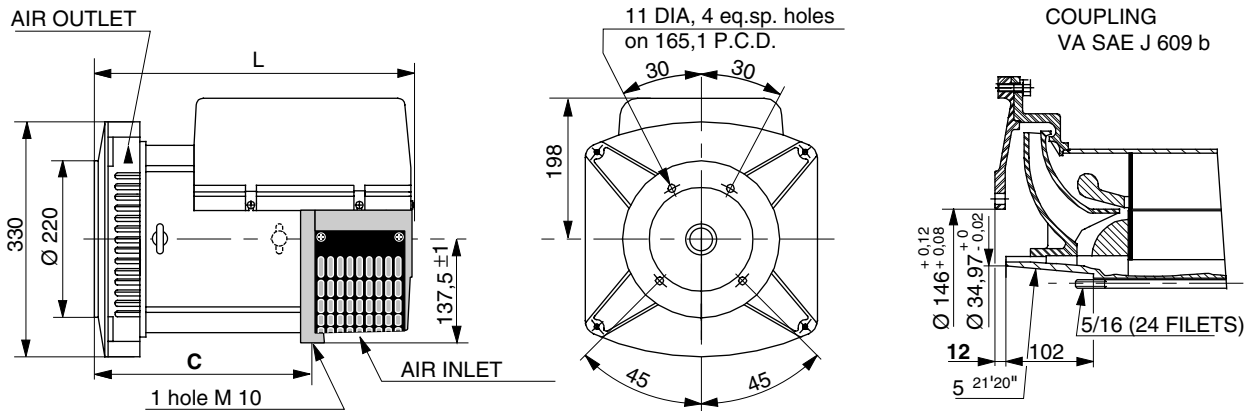
S.A.E.	BX	U	X	Y	AH	S.A.E.	3	4	5
11 1/2	352,42	333,38	8	11	39,6	11 1/2	•		
10	314,32	295,28	8	11	53,8	10	•	•	
8	263,52	244,48	6	11	62	8		•	•
7 1/2	241,3	222,25	8	9	30,2	7 1/2		•	•
6 1/2	215,9	200,02	6	9	30,2	6 1/2		•	•

Dimension : mm - Weight : kg - J : kgm² . 4J = MD²

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LSA 37 - 2P SAE J609 single bearing/two bearing

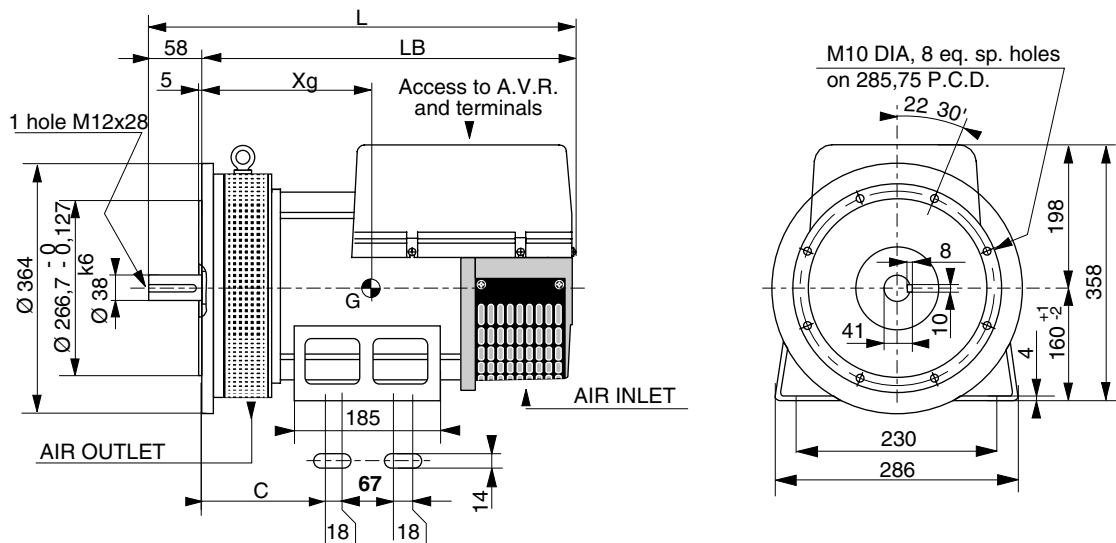
VA SAE J 609 SINGLE BEARING DIMENSIONS



FRAME DIMENSIONS (mm)

TYPE	L	C	Weight	J (kg.m ²)	2 POLE
LSA 37 M7	400	299	75	0,0595	
LSA 37 M8	440	339	90	0,065	

TWO BEARING DIMENSIONS

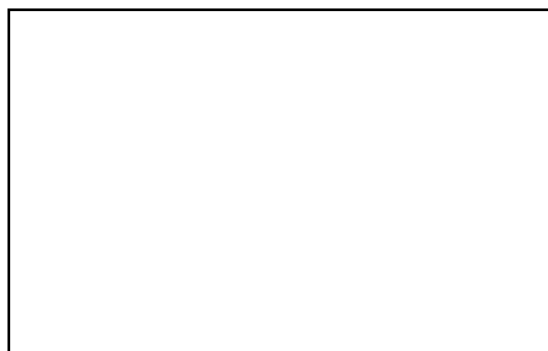


FRAME DIMENSIONS (mm)

TYPE	L	LB	C	Xg	Weight	J (kg.m ²)	2 POLE
LSA 37 M7	508	450	171	220	90	0,05	
LSA 37 M8	548	490	171	240	105	0,07	
LSA 37 L6	583	525	171	257	115	0,08	
LSA37 VL11	623	565	171	285	135	0,12	

Dimension : mm - Weight : kg - J: kgm² . 4J = MD²

Les produits et matériels présentés dans ce document sont à tout moment susceptibles d'évolution ou de modifications tant aux plans technique et d'aspect que d'utilisation. Leur description ne peut en aucun cas revêtir un aspect contractuel. Les valeurs indiquées sont des valeurs typiques



MOTEURS LEROY-SOMER 16015 ANGOULÊME CEDEX - FRANCE

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