EMERSON
Industrial Automation

4802 en - 2011.06 / a

LEROY SOMER

PARTNER ALTERNATORS

LSA 42.3 - 4 Pole

Electrical and mechanical data

SPECIALLY ADAPTED TO APPLICATIONS

The LSA 42.3 alternator is designed to be suitable for typical generator applications, such as: backup, marine applications, rental, telecommunications, etc.

COMPLIANT WITH INTERNATIONAL STANDARDS

The LSA 42.3 alternator conforms to the main international standards and regulations:

- IEC 60034, NEMA MG 1.22, ISO 8528/3, CSA / UL on request, marine regulations, etc.

It can be integrated into a CE marked generator.
The LSA 42.3 is designed, manufactured and marketed in an ISO 9001 environment and ISO 14001.

TOP OF THE RANGE ELECTRICAL PERFORMANCE

- Class H insulation.
- Standard 12 wire re-connectable winding, 2/3 pitch, type no. 6.
- Voltage range:
  - 50 Hz: 220 V - 240 V and 380 V - 415 V (440 V)
  - 60 Hz: 208 V - 240 V and 380 V - 480 V
- High efficiency and motor starting capacity.
- Other voltages are possible with optional adapted windings:
  - 50 Hz: 440 V (no. 7), 500 V (no. 9), 690 V (n°10 or 52)
  - 60 Hz: 380 V and 416 V (no. 8), 600 V (no. 9)
- THD Total harmonic distortion < 2% (full load).
- R 791 interference suppression conforming to standard EN 55011 group 1 class B standard for European zone (CE marking).

EXCITATION AND REGULATION SYSTEM SUITED TO THE APPLICATION

Excitation system				Regulation options				
Voltage regulator	**SHUNT**	**AREP**	**PMG**	**T.I.** Current transformer for paralleling	**R726*** Mains paralleling	**R 731*** 3-Phase sensing	**R 734*** 3-Phase sensing on mains paralleling unbalanced	**Potentiometer** Remote voltage
R 220	**Std**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
R 438	**-**	**Std**	**Std**	√	√	√	√	√
R 450	**Optional**	**Optional**	**Optional**	√	√	√	√	√
D510*	**Optional**	**Optional**	**Optional**	√	**inclus**	**inclus**	**contact factory**	√

AVR voltage accuracy ± 0.5% . - √: Possible mounting. - (*) Steel terminal box mounting

PROTECTION SYSTEM SUITED TO THE ENVIRONMENT

- The LSA 42.3 is IP 23.
- Standard winding protection for clean environments with relative humidity ≤ 95%, including indoor marine environments.

Options:
- Filters on air inlet : derating 5%.
- Filters on air inlet and air outlet (IP 44) : derating 10%.
- Winding protection for harsh environments and relative humidity greater than 95%.
- Space heaters.
- Thermal protection for stator windings.
- Height fixing : H = 225 mm with the order ..

REINFORCED MECHANICAL STRUCTURE USING FINITE ELEMENT MODELLING

- Compact rigid assembly to better withstand generator vibrations.
- Steel frame.
- Aluminium flanges and shields.
- Two-bearing and single-bearing versions designed to be suitable for commercially-available heat engines.
- Half-key balancing two bearing.
- Permanently greased bearings (20 000h).
- Direction of rotation : clockwise and anti-clockwise (without derating).

COMPACT AND DESIGN TERMINAL BOX

- Easy access to the AVR (lid) and to the connections.
- 8 way terminal block for reconnecting the voltage.
- Predrilled holes for cable gland.
- Steel terminal box in option.

LSA 42.3 - 4 Pole

General characteristics

Insulation class	H	Excitation system	SHUNT / AREP or PMG
Winding pitch	2/3 (wdg 6)	AVR type	R 220 / R 438
Number of wires	12	Voltage regulation (*)	± 0.5 % / ± 0.5 %
Protection	IP 23	Short-circuit current	- / 300% (3 IN): 10 s
Altitude	≤ 1000 m	Totale Harmonic distortion THD (**)	no load < 3% - on load < 2%
Overspeed	2250 min^{-1}	Waveform: NEMA = TIF (**)	< 50
Air flow	0.10m^3/s, 50 Hz - 0.13m^3/s, 60 Hz		

(*) Steady state. (**) Total harmonic distortion between phases, no-load or on-load (non-distorting).

Ratings 50 Hz - 1500 R.P.M.

kVA / kW - P.F. = 0,8

Duty/T°C		Continuous duty/40°C					Continuous duty/40°C					Stand-by/40°C					Stand-by/27°C				
Class/T°K		H/125°K					F/105°K					H/150°K					H/163°K				
Phase		3 ph.				1 ph.	3 ph.				1 ph.	3 ph.				1 ph.	3 ph.				1 ph.
Y		380V	400V	415V	440V	ΔΔ	380V	400V	415V	440V	ΔΔ	380V	400V	415V	440V	ΔΔ	380V	400V	415V	440V	ΔΔ
Δ		220V	230V	240V		230V	220V	230V	240V		230V	220V	230V	240V		230V	220V	230V	240V		230V
YY					220V					220V					220V					220V	
42.3 VS1	kVA	**25**			24,5	15	**22,8**			22,3	13,7	**26,5**			26	15,9	**27,5**			27	16,5
	kW	***20***			*19,6*	*12*	***18,2***			*17,9*	*10,9*	***21,2***			*20,8*	*12,7*	***22***			*21,6*	*13,2*
42.3 VS2	kVA	**27**			24,2	16,2	**24,6**			22,0	14,7	**28,9**			25,7	17,3	**30**			26,6	18
	kW	***21,6***			*19,4*	*13*	***19,7***			*17,6*	*11,8*	***23,1***			*20,5*	*13,9*	***24***			*21,3*	*14,4*
42.3 VS3	kVA	**32**			30	19,2	**29,1**			27,3	17,5	**33,9**			31,8	20,4	**35,2**			33,0	21,1
	kW	***25,6***			*24*	*15,4*	***23,3***			*21,8*	*14*	***27,1***			*25,4*	*16,3*	***28,2***			*26,4*	*16,9*
42.3 S4	kVA	**35**			30,6	22	**31,9**			27,9	20	**37,1**			32,5	23,3	**38,5**			33,7	24,2
	kW	***28***			*24,5*	*17,6*	***25,5***			*22,3*	*16*	***29,7***			*26*	*18,7*	***30,8***			*27,0*	*19,4*
42.3 S5	kVA	**40**			35	25	**36,4**			31,9	22,8	**42,4**			37,1	26,5	**45**			38,5	28.1
	kW	***32***			*28*	*20*	***29,1***			*25,5*	*18,2*	***33,9***			*29,7*	*21,2*	***36***			*30,8*	*22.5*
42.3 M7	kVA	**45**			39	27	**41**			35,5	24,6	**48,2**			41,3	28,9	**50**			42,9	30
	kW	***36***			*31,2*	*21,6*	***32,8***			*28,4*	*19,7*	***38,5***			*33,1*	*23,1*	***40***			*34,3*	*24*
42.3 M8	kVA	**50**			43	30	**45,5**			39,1	27,3	**53**			45,6	31,8	**55**			47,3	33
	kW	***40***			*34,4*	*24*	***36,4***			*31,3*	*21,8*	***42,4***			*36,5*	*25,4*	***44***			*37,8*	*26,4*
42.3 L9*	kVA	**60**			51,6	36	**54,6**			47,0	32,8	**63,6**			54,7	38,2	**66**			56,8	40
	kW	***48***			*41,3*	*28,8*	***43,7***			*37,6*	*26,2*	***50,9***			*43,8*	*30,5*	***52,8***			*45,4*	*32*

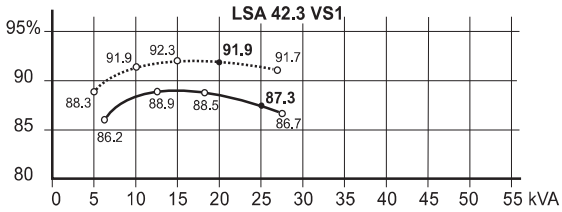
Ratings 60 Hz - 1800 R.P.M.

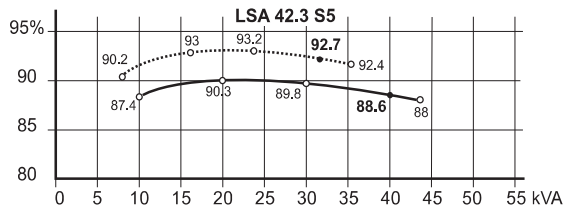
kVA / kW - P.F. = 0,8

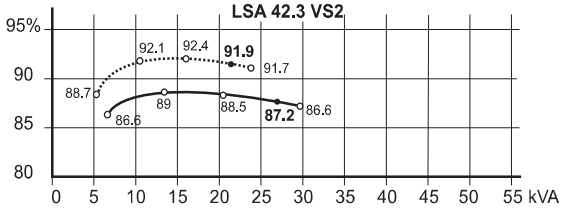
Duty/T°C		Continuous duty/40°C					Continuous duty/40°C					Stand-by/40°C					Stand-by/27°C				
Class/T°K		H/125°K					F/105°K					H/150°K					H/163°K				
Phase		3 ph.				1 ph.	3 ph.				1 ph.	3 ph.				1 ph.	3 ph.				1 ph.
Y		380V	416V	440V	480V	ΔΔ	380V	416V	440V	480V	ΔΔ	380V	416V	440V	480V	ΔΔ	380V	416V	440V	480V	ΔΔ
Δ		220V	240V			240V	220V	240V			240V	220V	240V			240V	220V	240V			240V
YY			208V	220V	240V			208V	220V	240V			208V	220V	240V			208V	220V	240V	
42.3 VS1	kVA	29,1	31,3	31,5	**31,5**	18,9	26,5	28,4	28,7	**28,7**	17,2	30,8	33,1	33,4	**33,4**	20	32	34,4	34,7	**34,7**	20,8
	kW	*23,3*	*25*	*25,2*	***25,2***	*15,1*	*21,2*	*22,8*	*22,9*	***22,9***	*13,8*	*24,7*	*26,5*	*26,7*	***26,7***	*16*	*25,6*	*27,5*	*27,7*	***27,7***	*16,6*
42.3 VS2	kVA	29,9	31,9	33,8	**33,8**	20,3	26,9	29	30,7	**30,7**	18,4	31,4	33,8	35,8	**35,8**	21,5	32,5	35,1	37,5	**37,5**	22,3
	kW	*23,7*	*25,5*	*27*	***27***	*16,2*	*21,5*	*23,2*	*24,6*	***24,6***	*14,7*	*25,1*	*27,1*	*28,6*	***28,6***	*17,2*	*26*	*28,1*	*30*	***30***	*17,8*
42.3 VS3	kVA	34,5	38	40	**40**	24	31,4	34,6	36,4	**36,4**	21,8	36,6	40,3	42,4	**42,4**	25,4	38	41,8	44	**44**	26,4
	kW	*27,6*	*30,4*	*32*	***32***	*19,2*	*25,1*	*27,7*	*29,1*	***29,1***	*17,5*	*29,3*	*32,2*	*33,9*	***33,9***	*20,4*	*30,4*	*33,4*	*35,2*	***35,2***	*21,1*
42.3 S4	kVA	37.5	40,3	42,9	**43,8**	27,5	33,4	36,6	39,0	**39,8**	25	39	42,7	45,4	**46,4**	29,2	40,4	44,3	47,2	**48,1**	30,3
	kW	*30*	*32,2*	*34,3*	***35***	*22*	*26,8*	*29,3*	*31,2*	***31,9***	*20*	*31,2*	*34,1*	*36,4*	***37,1***	*23,3*	*32,3*	*35,4*	*37,7*	***38,5***	*24,2*
42.3 S5	kVA	42	46	49	**50**	31,3	38,2	41,9	44,6	**45,5**	28,4	44,5	50	51,9	**53**	33,1	46,2	50,6	53,9	**55**	34,4
	kW	*33,6*	*36,8*	*39,2*	***40***	*25*	*30,6*	*33,5*	*35,7*	***36,4***	*22,8*	*35,6*	*40*	*41,6*	***42,4***	*26,5*	*37*	*40,5*	*43,1*	***44***	*27,5*
42.3 M7	kVA	46	50	53,5	**56,5**	33,9	41,9	45,5	48,7	**51,4**	30,8	48,8	53	56,7	**59,9**	35,9	50,6	55	58,9	**62,5**	37,5
	kW	*36,8*	*40*	*42,8*	***45,2***	*27,1*	*33,5*	*36,4*	*38,9*	***41,1***	*24,7*	*39*	*42,4*	*45,4*	***47,9***	*28,7*	*40,5*	*44*	*47,1*	***50***	*30*
42.3 M8	kVA	51,5	56,5	59,5	**62,5**	37,5	46,9	51,4	54,1	**56,9**	34,1	54,6	60	63,1	**66,3**	39,8	56,7	62,5	65,5	**68,8**	41,3
	kW	*41,2*	*45,2*	*47,6*	***50***	*30*	*37,5*	*41,1*	*43,3*	***45,5***	*27,3*	*43,7*	*48*	*50,5*	***53***	*31,8*	*45,3*	*50*	*52,4*	***55***	*33*
42.3 L9*	kVA	59	65	69	**75**	45	53,7	59,2	62,8	**68,3**	41	62,5	68,9	73,1	**79,5**	47,7	64,9	71,5	75,9	**82,5**	49,5
	kW	*47,2*	*52,0*	*55,2*	***60***	*36*	*43,0*	*47,3*	*50,2*	***54,6***	*32,8*	*50,0*	*55,1*	*58,5*	***63,6***	*38,2*	*51,9*	*57,2*	*60,7*	***66,0***	*39,6*

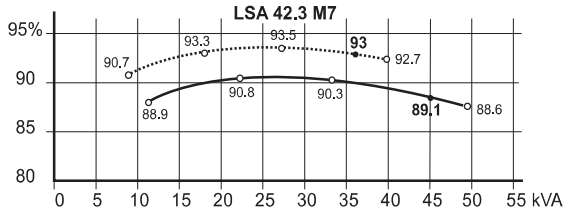
* December 2011 available

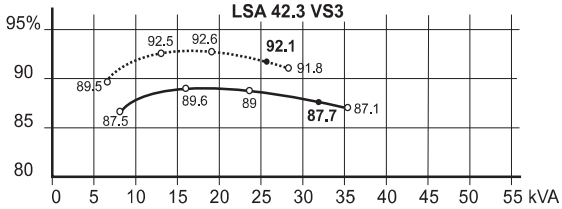
Efficiencies 50 Hz (— P.F. : 0.8) (····· P.F. : 1)

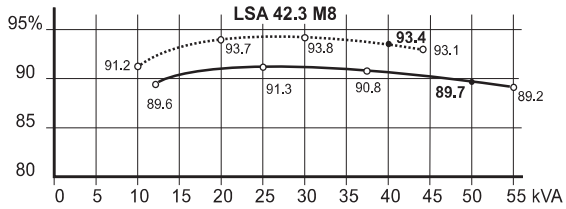


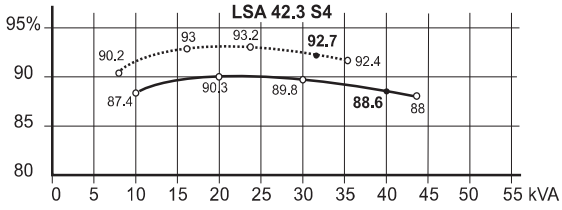


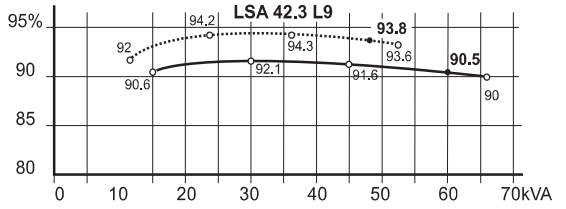












Reactances (%). Time constants (ms) - Class H/400 V

		VS1	VS2	VS3	S4	S5	M7	M8	L9*
Kcc	Short-circuit ratio	0,52	0,49	0,45	0,44	0,44	0,46	0,45	0,47
Xd	Direct-axis synchro. reactance unsaturated	232	244	268	276	276	274	279	230
Xq	Quadrature-axis synchro. reactance unsaturated	116	122	134	138	138	137	140	115
T'do	No-load transient time constant	788	793	806	848	848	882	910	992
X'd	Direct-axis transient reactance saturated	14,7	15,4	16,6	16,3	16,3	15,5	15,3	11,6
T'd	Short-circuit transient time constant	50	50	50	50	50	50	50	50
X"d	Direct-axis subtransient reactance saturated	7,4	7,7	8,3	8,1	8,1	7,8	7,7	5,8
T"d	Subtransient time constant	5	5	5	5	5	5	5	5
X"q	Quadrature-axis subtransient reactance saturated	10,5	11,0	11,9	11,6	11,6	11,0	10,9	8,2
Xo	Zero sequence reactance unsaturated	16,45	16,47	16,34	14,90	14,90	15,10	14,19	14,19
X2	Negative sequence reactance saturated	8,95	9,35	10,11	9,88	9,88	9,39	9,28	6,99
Ta	Armature time constant	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5

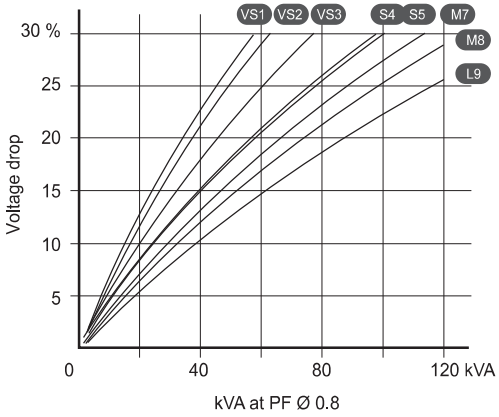
Other class H/400 V data

io (A)	No-load excitation current (SHUNT/AREP)	0,54	0,54	0,55	0,56	0,56	0,56	0,57	0,57
ic (A)	On-load excitation current (SHUNT/AREP)	1,70	1,77	1,81	1,85	1,85	1,84	1,87	1,83
uc (V)	On-load excitation voltage (SHUNT/AREP)	30,2	31,5	32,1	32,9	32,9	32,7	33,2	32,4
ms	Response time (ΔU = 20% transient)	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms
kVA	Start (ΔU = 20% cont. or (ΔU = 30% trans.) SHUNT	51,7	56,0	67,7	92,0	92,0	103,5	115,0	138,0
kVA	Start (ΔU = 20% cont. or (ΔU = 30% trans.) AREP	60,5	65,5	79,2	107,6	107,6	121,1	134,5	161,5
%	Transient ΔU (on-load 4/4) SHUNT - P.F.: 0.8 $_{LAG}$	< 18%	< 18%	< 18%	< 18%	< 18%	< 18%	< 18%	< 18%
%	Transient ΔU (on-load 4/4) AREP - P.F.: 0.8 $_{LAG}$	< 18%	< 18%	< 18%	< 18%	< 18%	< 18%	< 18%	< 18%
W	No-load losses	689	710	764	881	881	943	979	1051
W	Heat dissipation	2951	3209	3692	4237	4237	4529	4735	5207

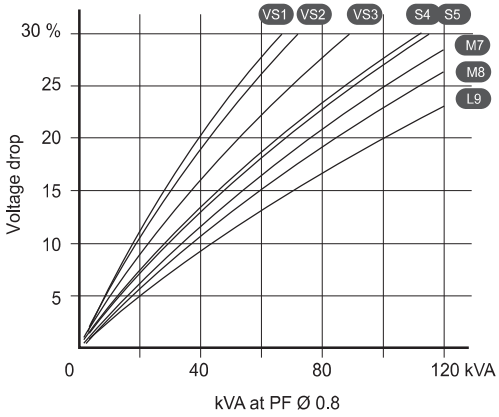
* December 2011 available

Transient voltage variation 400 V - 50 Hz

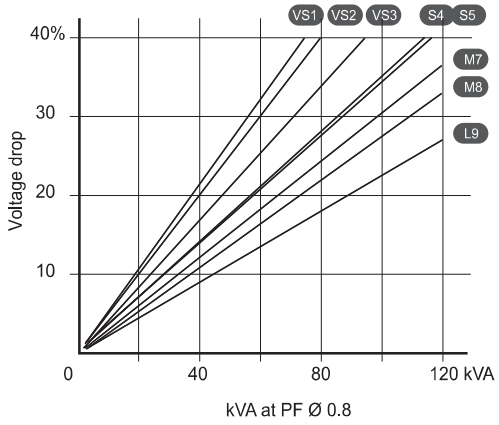
Phase loading (SHUNT system)



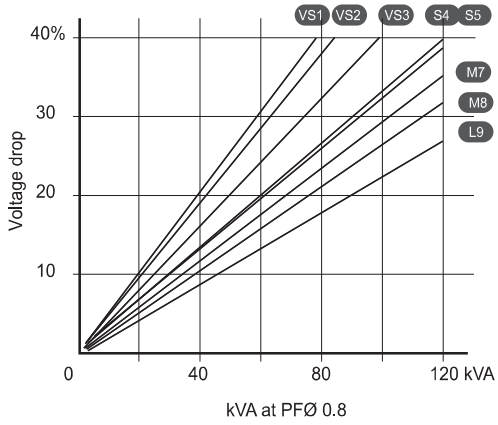
Phase loading (AREP system)



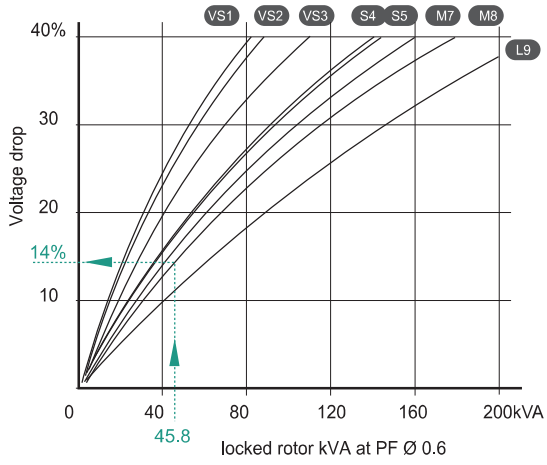
Load shedding (SHUNT system)



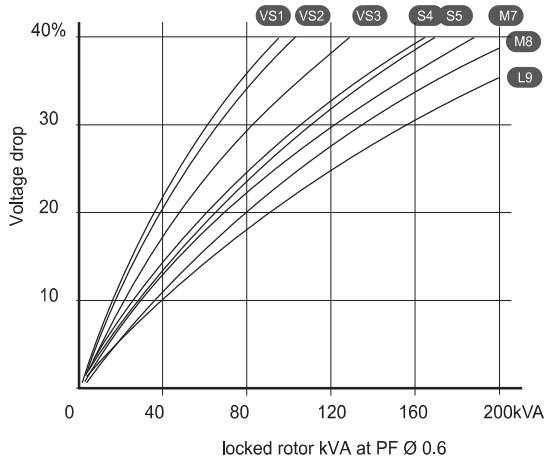
Load shedding (AREP system)



Motor starting (SHUNT system)



Motor starting (AREP system)

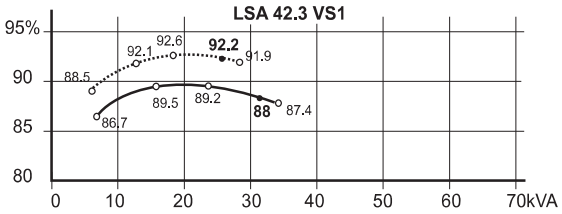


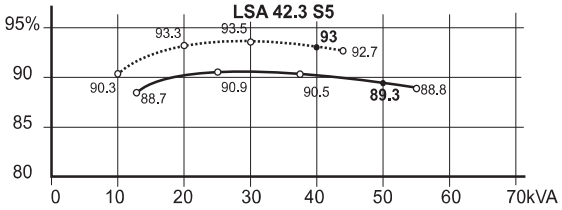
1) For a PF with a Ø other than 0.6, multiply the kVA by K = Sin Ø / 0.8

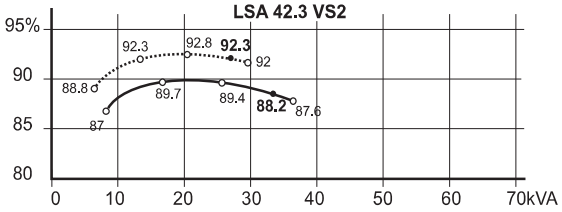
Example of calculation for a PF with a Ø other than 0.6: motor starting kVA calculated at PF Ø 0.4 = 40 kVA ► Sin Ø 0.4 = 0.9165 ► K = 1.145 ► corrected kVA = 45.8 kVA ► Corresponding voltage drop for M8 = 14 %.

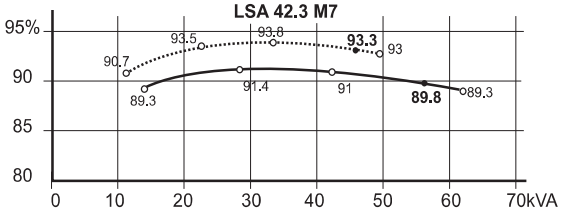
2) For a voltage U other than 400 V (Y) , 230 V (△) at 50 Hz, multiply the kVA by $(400/U)^2$ or $(230/U)^2$.

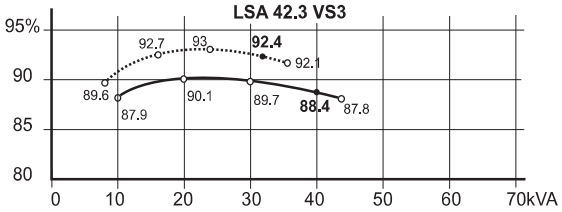
Efficiencies 60 Hz (— P.F. : 0.8) (····· P.F. : 1)

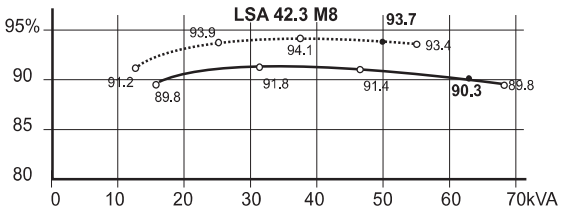


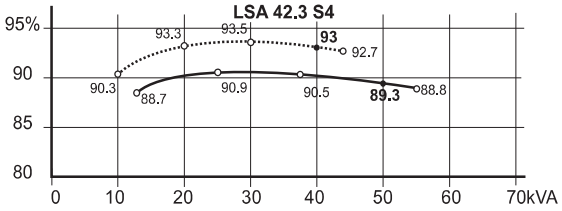


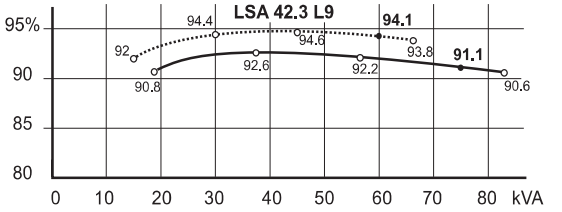












Reactances (%). Time constants (ms) - Class H/480 V

		VS1	VS2	VS3	S4	S5	M7	M8	L9*
Kcc	Short-circuit ratio	0,52	0,49	0,45	0,44	0,44	0,46	0,45	0,47
Xd	Direct-axis synchro. reactance unsaturated	244	254	279	288	288	286	263	217
Xq	Quadrature-axis synchro. reactance unsaturated	122	127	140	144	144	143	132	108
T'do	No-load transient time constant	788	793	806	848	848	882	910	992
X'd	Direct-axis transient reactance saturated	15,5	16,0	17,3	17,0	17,0	16,2	14,5	10,9
T'd	Short-circuit transient time constant	50	50	50	50	50	50	50	50
X"d	Direct-axis subtransient reactance saturated	7,7	8,0	8,7	8,5	8,5	8,1	7,2	5,5
T"d	Subtransient time constant	5	5	5	5	5	5	5	5
X"q	Quadrature-axis subtransient reactance saturated	11,1	11,5	12,4	12,1	12,1	11,5	10,3	7,7
Xo	Zero sequence reactance unsaturated	17,28	17,16	17,02	15,52	15,52	15,80	13,36	11,54
X2	Negative sequence reactance saturated	9,40	9,74	10,53	10,29	10,29	9,82	8,74	6,58
Ta	Armature time constant	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5

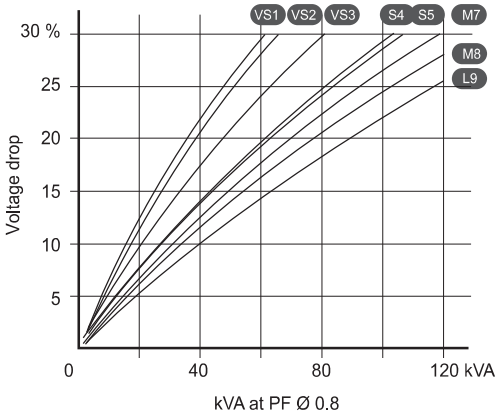
Other class H/480 V data

io (A)	No-load excitation current (SHUNT/AREP)	0,55	0,55	0,55	0,55	0,55	0,55	0,56	0,56
ic (A)	On-load excitation current (SHUNT/AREP)	1,80	1,81	1,89	1,90	1,90	1,88	1,92	1,86
uc (V)	On-load excitation voltage (SHUNT/AREP)	32,1	32,2	33,6	33,8	33,8	33,5	34,1	33,1
ms	Response time (ΔU = 20% transient)	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms	< 500ms
kVA	Start (ΔU = 20% cont. or (ΔU = 30% trans.) SHUNT	53,8	58,3	70,5	95,8	95,8	107,8	119,8	143,8
kVA	Start (ΔU = 20% cont. or (ΔU = 30% trans.) AREP	63,0	68,3	82,5	112,1	112,1	126,1	140,2	168,2
%	Transient ΔU (on-load 4/4) SHUNT - P.F.: 0.8 $_{LAG}$	18 %	18 %	18 %	18 %	18 %	18 %	18 %	18 %
%	Transient ΔU (on-load 4/4) AREP - P.F.: 0.8 $_{LAG}$	18 %	18 %	18 %	18 %	18 %	18 %	18 %	18 %
W	No-load losses	859	886	957	1110	1110	1192	1241	1336
W	Heat dissipation	3442	3620	4215	4774	4774	5122	5340	5854

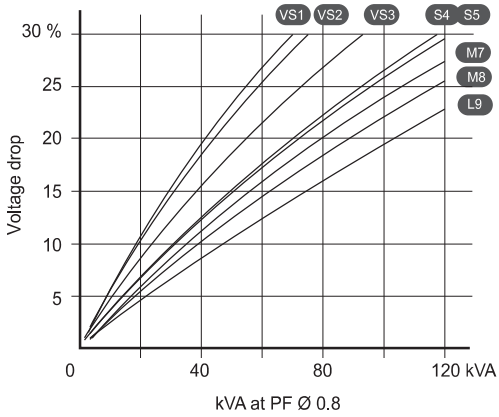
* December 2011 available

Transient voltage variation 480 V - 60 Hz

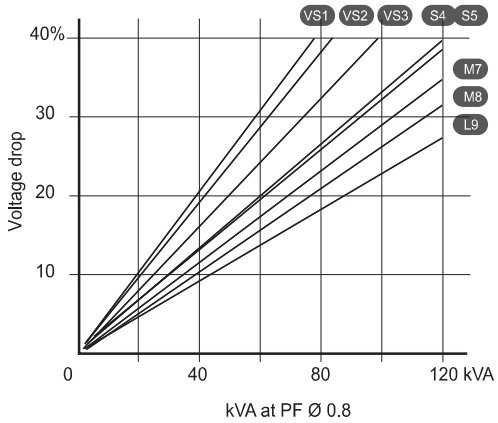
Phase loading (SHUNT system)



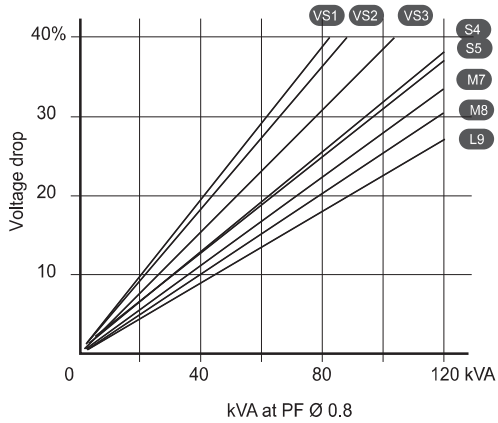
Phase loading (AREP system)



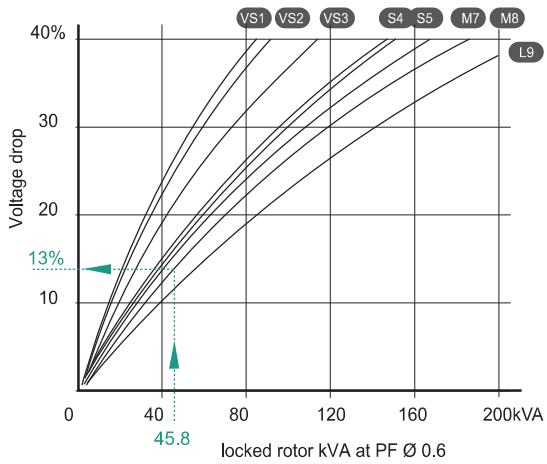
Load shedding (SHUNT system)



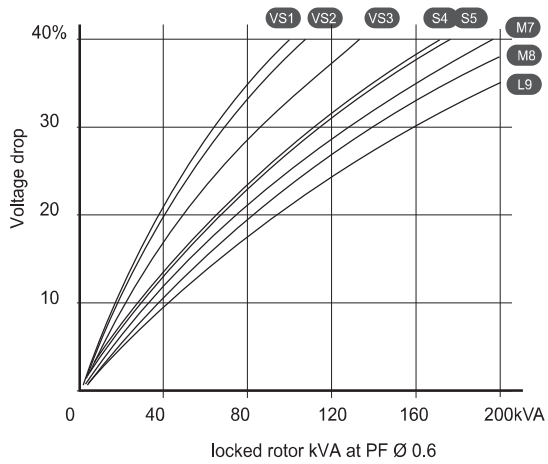
Load shedding (AREP system)



Motor starting (SHUNT system)



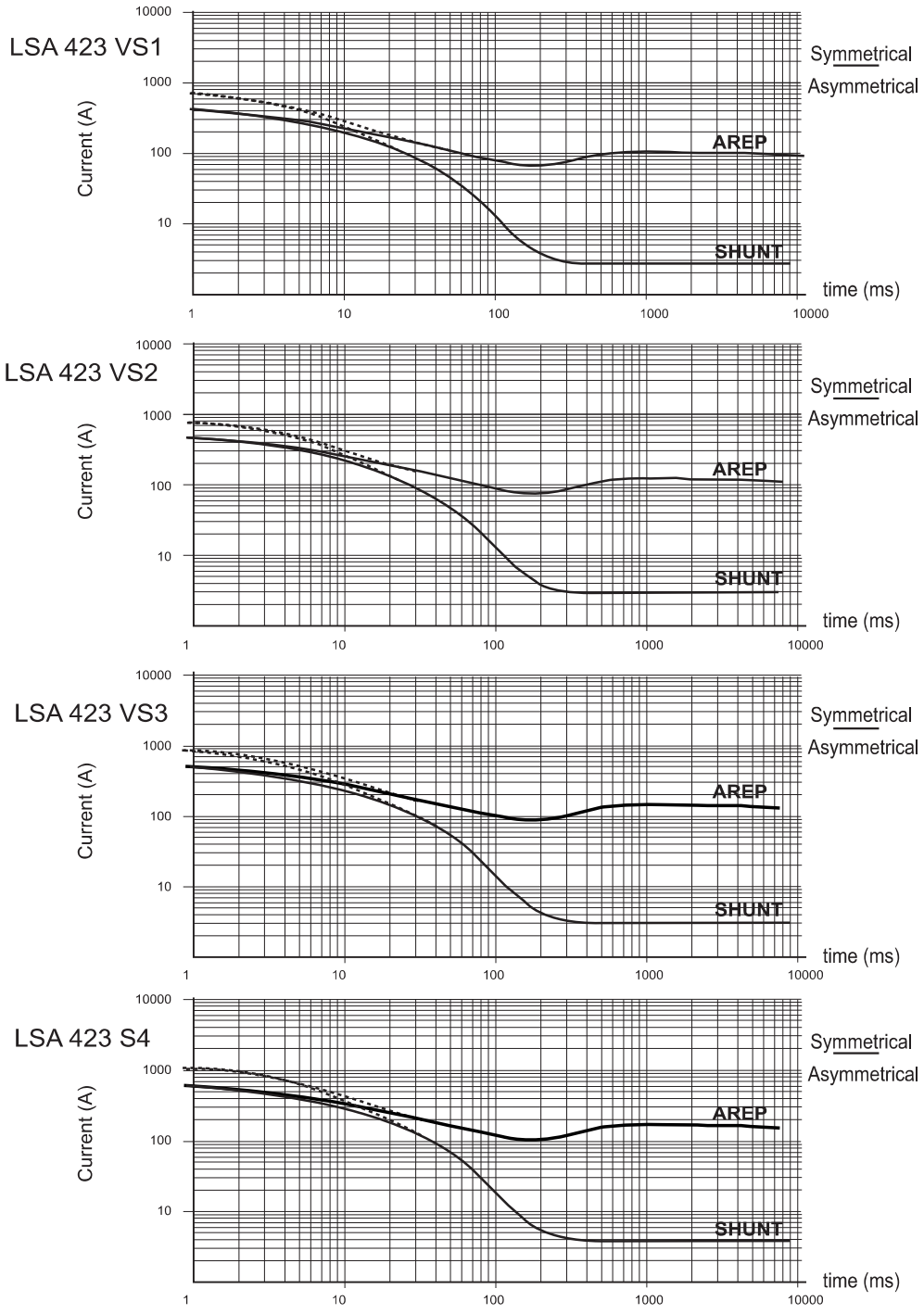
Motor starting (AREP system)



1) For a PF with a Ø other than 0.6, multiply the kVA by K = Sin Ø / 0.8
Example of calculation for a PF with a Ø other than 0.6: motor starting kVA calculated at PF Ø 0.4 = 40 kVA
► Sin Ø 0.4 = 0.9165 ► K = 1.145 ► corrected kVA = 45.8 kVA ► Corresponding voltage drop for M8 = 13 %.

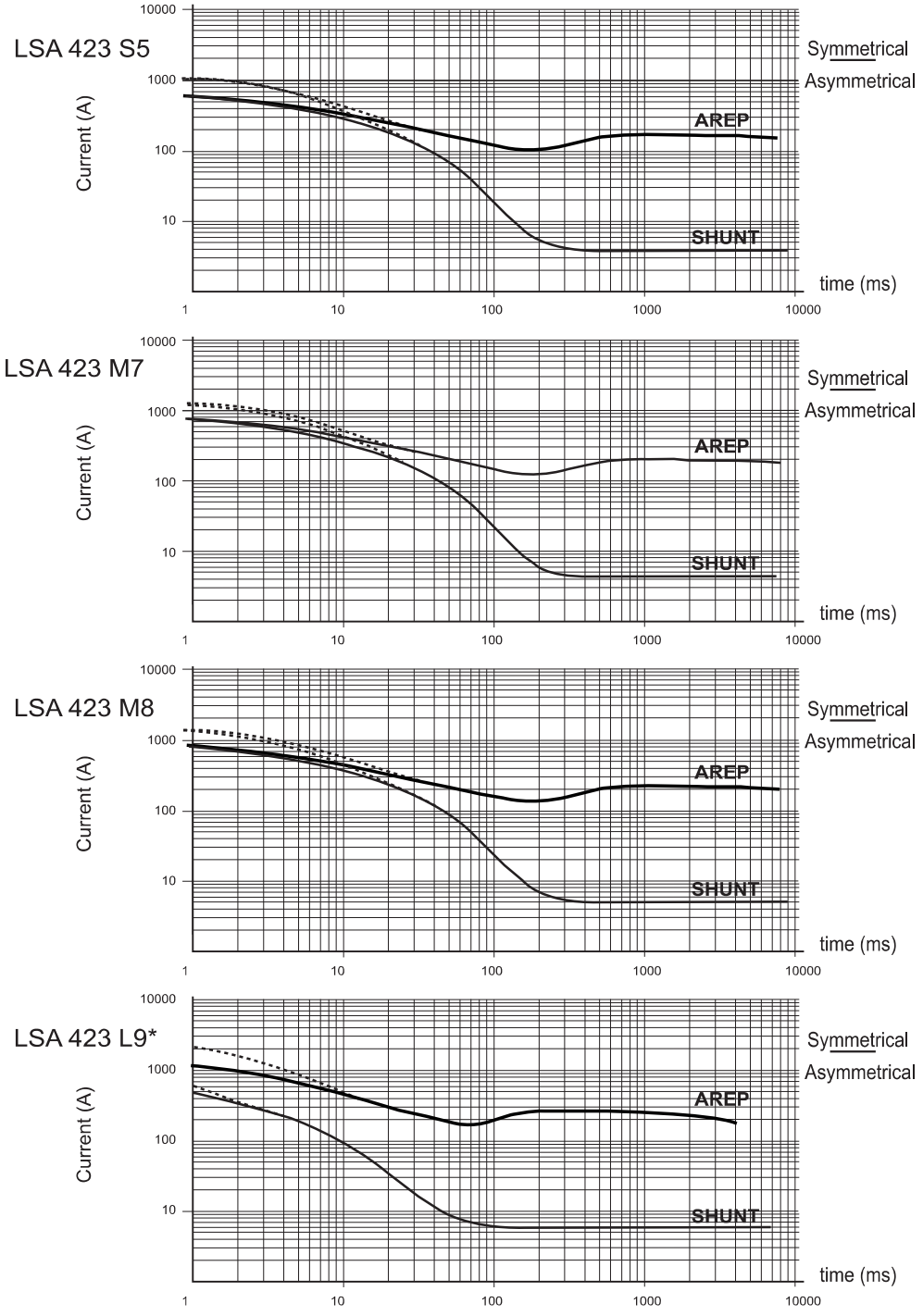
2) For a voltage U other than 480 V (Y), 277 V (△), 240 V (YY) at 60 Hz, multiply the kVA by $(480/U)^2$ or $(277/U)^2$ or $(240/U)^2$.

3-phase short-circuit curves at no load and rated speed (star connection Y)



Influence due to connection
Curves shown are for star (Y) connection.
For other connections, use the following multiplication factors:
- Series delta : Current value x 1.732 - Parallel star : Current value x 2

3-phase short-circuit curves at no load and rated speed (star connection Y)

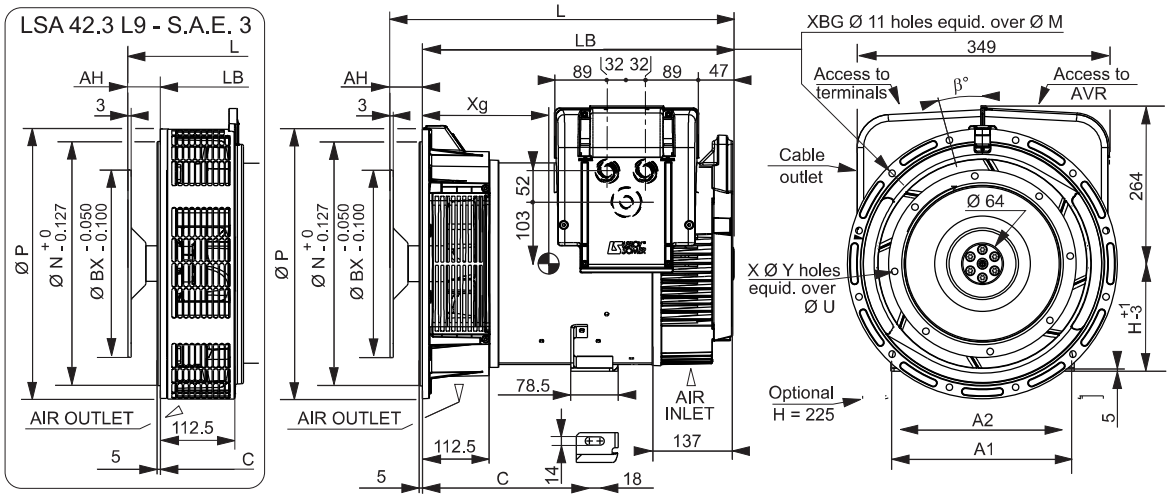


Influence due to short-circuit
Curves are based on a three-phase short-circuit.
For other types of short-circuit, use the following multiplication factors

	3-phase	2-phase L/L	1-phase L/N
Instantaneous (max.)	1	0.87	1.3
Continuous	1	1.5	2.2
Maximum duration (AREP/PMG)		1,5	

* December 2011 available

Single bearing dimensions



Dimensions (mm) and weight				
Type	L	LB	Xg	Weight (kg)
LSA 42.3 VS1	557	503	237	116
LSA 42.3 VS2	557	503	242	121
LSA 42.3 VS3	557	503	252	132
LSA 42.3 S4	602	548	275	157
LSA 42.3 S5	602	548	275	172
LSA 42.3 M7	642	588	287	172
LSA 42.3 M8	642	588	295	177
LSA 42.3 L9*	662	622	309	186

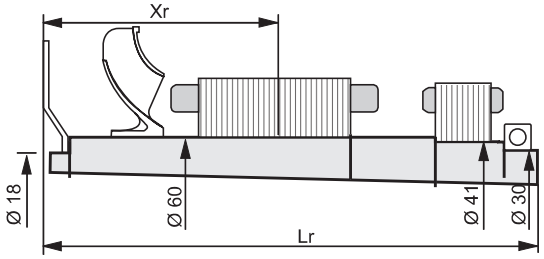
	Standard	Optional
	Frame size	
H	180	225
	Feet dimensions	
C	260	315
A1	307	400
A2	279	356

Coupling			
Flange / Flex plate	2	3	4
11 1/2	x	x	-
10	x	x	x
8	-	x	x
7 1/2	-	x	x

Flange (mm)					
S.A.E.	P	N	M	XBG	β°
4	406	361.95	381	12	15°
3	452.4	409.58	428.62	12	15°
2	491	447.675	466.725	12	15°

Flex plate (mm)						
S.A.E.	BX	U	X	Y	AH	
11 1/2	352.42	333.38	8	11	39.6	
10	314.32	295.28	8	11	53.8	
8	263.52	244.48	6	11	62	
7 1/2	241.3	222.25	8	9	30.2	

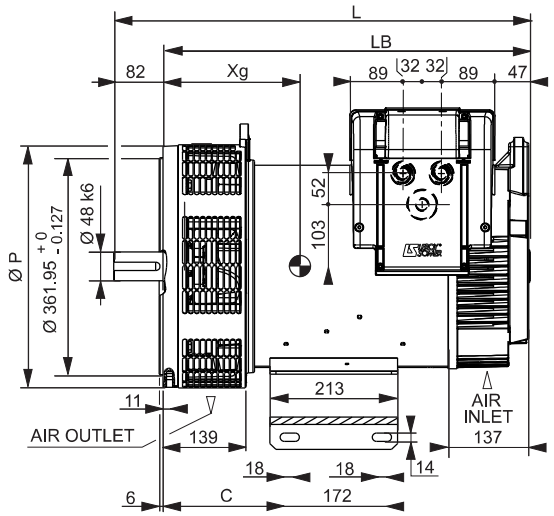
Torsional analysis data

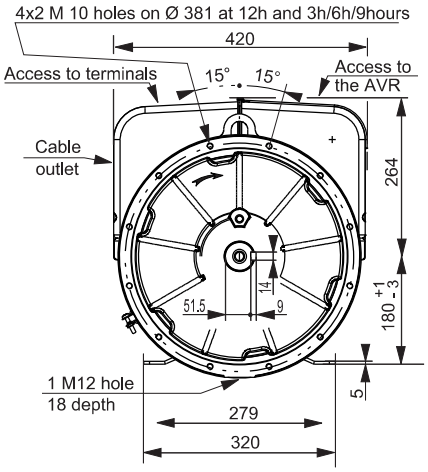


Centre of gravity: Xr (mm), Rotor length: Lr (mm), Weight: M (kg), Moment of inertia: J (kgm²): (4J = MD²)																
	Disque S.A.E. 7 1/2				Disque S.A.E. 8				Disque S.A.E. 10				Disque S.A.E. 11 1/2			
TYPE	Xr	Lr	M	J	Xr	Lr	M	J	Xr	Lr	M	J	Xr	Lr	M	J
LSA 42.3 VS1	279	526.2	45.36	0.2209	277	558	45.68	0.2246	274	549.8	46.13	0.2363	272	535.6	46.62	0.2843
LSA 42.3 VS2	282	526.2	47.36	0.2337	280	558	47.68	0.2374	277	549.8	48.13	0.2491	274	535.6	48.62	0.2611
LSA 42.3 VS3	287	526.2	51.41	0.2592	286	558	51.73	0.2629	283	549.8	52.18	0.2746	281	535.6	52.67	0.2866
LSA 42.3 S4	310	571.2	61.49	0.317	308	603	61.81	0.3207	306	594.8	62.26	0.3324	304	580.6	62.75	0.3444
LSA 42.3 S5	310	571.2	61.49	0.317	308	603	61.81	0.3207	306	594.8	68.18	0.3645	304	580.6	62.75	0.3444
LSA 42.3 M7	325	611.2	67.41	0.3491	323	643	67.73	0.3528	321	634.8	68.18	0.3645	319	620.6	68.67	0.3765
LSA 42.3 M8	330	611.2	70.42	0.3683	328	643	70.74	0.372	326	634.8	71.18	0.3837	324	620.6	71.68	0.3957
LSA 42.3 L9*	344	641.2	77.49	0.4141	342	673	77.81	0.4178	340	664.8	78.25	0.4295	338	650.6	78.75	0.4415

* December 2011 available

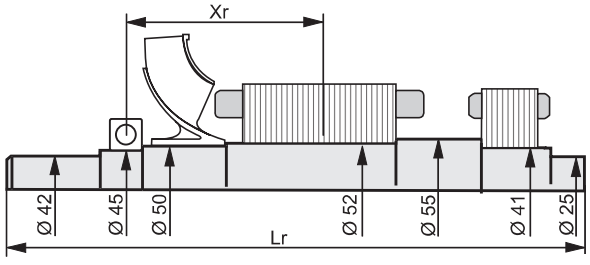
Two bearing dimensions





Dimensions (mm)					
TYPE	L	LB	C	Xg	Weight (kg)
LSA 42.3 VS1	610	528	189.25	252	125
LSA 42.3 VS2	610	528	189.25	257	130
LSA 42.3 VS3	610	528	189.25	267	140
LSA 42.3 S4	655	573	202.75	258	165
LSA 42.3 S5	655	573	202.75	258	165
LSA 42.3 M7	695	613	202.75	302	180
LSA 42.3 M8	695	613	202.75	310	185
LSA 42.3 L9*	725	643	202.75	314	207

Torsional analysis data



Centre of gravity: Xr (mm), Rotor length: Lr (mm), Weight: M (kg), Moment of inertia: J (kgm²): (4J = MD²)				
TYPE	Xr	Lr	M	J
LSA 42.3 VS1	238	603	45.18	0.2135
LSA 42.3 VS2	240	603	47.18	0.2263
LSA 42.3 VS3	245	603	51.23	0.2518
LSA 42.3 S4	267	648	61.31	0.3096
LSA 42.3 S5	267	648	61.31	0.3096
LSA 42.3 M7	281	688	67.23	0.3417
LSA 42.3 M8	286	688	70.23	0.3609
LSA 42.3 L9*	299	718	77.29	0.4066

* December 2011 available

Contact

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