



Alternators single phase dedicated - 4 Pole
LSA 43.2 / LSA 44.2

65 to 135 kVA

Electrical and mechanical data

3542 en - 2012.08 / f

SPECIALLY ADAPTED FOR SINGLE PHASE

Dedicated single phase alternators have been designed for producing single phase current more competitively (from 10 to 40%) than reconnected three phase alternators.

COMPLIANT WITH INTERNATIONAL STANDARDS

The LSA 42.2/43.2/44.2 alternators 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 42.2/43.2/44.2 are designed, manufactured and marketed in an ISO 9001 environment and ISO 14001.

TOP OF THE RANGE ELECTRICAL PERFORMANCE

- Class H insulation.
- Standard 4-wire re-connectable.
- Dedicated single phase windings, type M or M1, optimised for frequency 60Hz, voltage 240V and PF = 1 (15% derating for use at PF = 0.8) (PF = 1 corresponds to general use for single phase voltage).
- 4 lead stator allowing the reconections below:
 - 50 Hz : 230 V in series, 115 V in parallel,
 - 60 Hz : 240 V in series, 120 V in parallel (excepted for LSA 44.2 : only series).
- Total harmonic content < 4%.
- R 791 interference suppression conforming to standard EN 55011 group 1 class B standard for European zone (CE marking).

REINFORCED MECHANICAL STRUCTURE USING FINITE ELEMENT MODELLING

- Compact and rigid assembly to better withstand generator vibrations.
- Steel frame.
- Cast iron (LSA 43.2/44.2) flanges and shields.
- Twin-bearing and single-bearing versions designed to be suitable for engines on the market.
- Half-key balancing.
- Greased for life bearings (regreasable bearings optional).

EXCITATION AND REGULATION SYSTEM SUITED TO THE APPLICATION

Voltage regulator accuracy +/- 0.5%.

Alternator type	Voltage regulator	Excitation system			Regulation options			
		SHUNT	AREP	PMG	Current transformer for paralleling	Mains paralleling R 726	3-phase sensing R 731	Remote voltage potentiometer
LSA 43.2/44.2	R 251	Std	-	-	-	-	-	-

ACCESSIBLE TERMINAL BOX PROPORTIONED FOR OPTIONAL EQUIPMENT

- Easy access to the voltage regulator and to the connections.
- 8 way terminal block for reconnecting voltage reconnection.

PROTECTION SYSTEM SUITED TO THE ENVIRONMENT

- LSA 43.2 / 44.2 are IP 23.
 - Standard winding protection for clean environments with relative humidity <= 95 %, including indoor marine environments.
- Options:
- Filters on air inlet and air outlet (IP 44).
 - Winding protections for harsh environments and relative humidity greater than 95%.
 - Space heaters.
 - Thermal protection for winding.

General characteristics

Insulation class	H	Excitation system	SHUNT
Winding pitch - Code	2/3 pitch - winding M1	A.V.R. model	R 251
Leads	4	Voltage regulation (*)	± 0.5 %
Drip proof	IP 23	Sustained short-circuit current	-
Altitude	≤ 1000 m	Total harmonic TGH / THC (**)	< 4 %
Overspeed	2250 min ⁻¹	Waveform : NEMA = TIF - (**)	< 50
Air flow	0.32 m³/s	Wave form : I.E.C. = THF - (**)	< 2 %

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

Ratings 60 Hz - 1800 R.P.M.

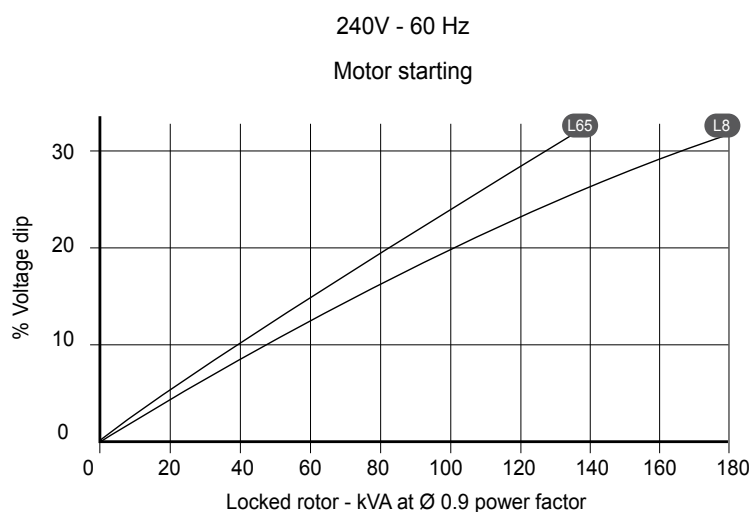
kVA / kW - Power factor = 1				
Duty/Ambiant T°	Continuous / 40°C		St. By. 40°C	St. By. 27°C
Class / T° rise	H / 125° K	F / 105° K	H / 150° K	H / 163° K
1 Phase series — — — — —	240 V	240 V	240 V	240 V
1 Phase parallel — — — — —	120 V	120 V	120 V	120 V
LSA 43.2 L65	65	59	68	72
LSA 43.2 L8	75	68	80	82

Rating kVA at P.F. 0.8 = rating kVA/kW at P.F. 1 x 0.85 - Derating (kVA) cl B = rating (kVA) class H x 0.77

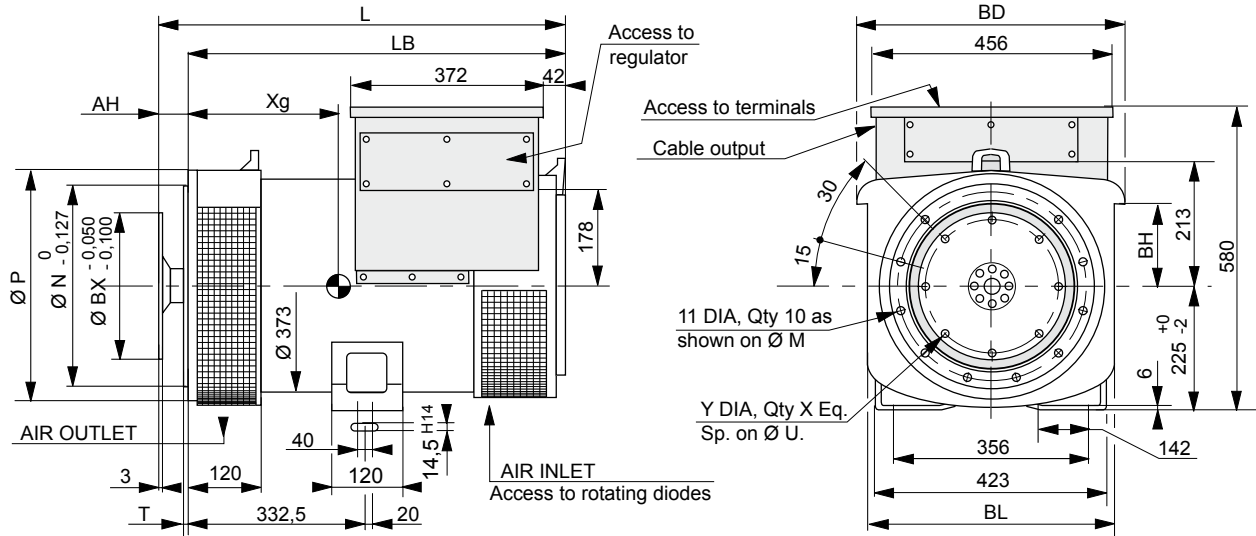
Efficiencies (%)

Class H / 40°C					
Single phase : 240 V - 60 Hz					
P.F. = 1					
	1/4	2/4	3/4	4/4	St.by
LSA 43.2 L65	87.5	90.1	89.6	88.3	87.7
LSA 43.2 L8	86.5	90	90.1	89.3	88.9

Transient voltage variation



Single bearing dimensions



Frame dimensions (mm)

TYPE	L maxi	LB	Xg	Weight M (kg)
LSA 43.2 L65	747	685	315	280
LSA 43.2 L8	766	685	340	320

Flange dimensions (mm)

S.A.E.	BD	BL	BH	P	N	M	T
4	474	452	146	413	361.95	381	5
3	474	452	146	450	409.575	428.625	6
2	514	492	165	490	447.675	466.725	6

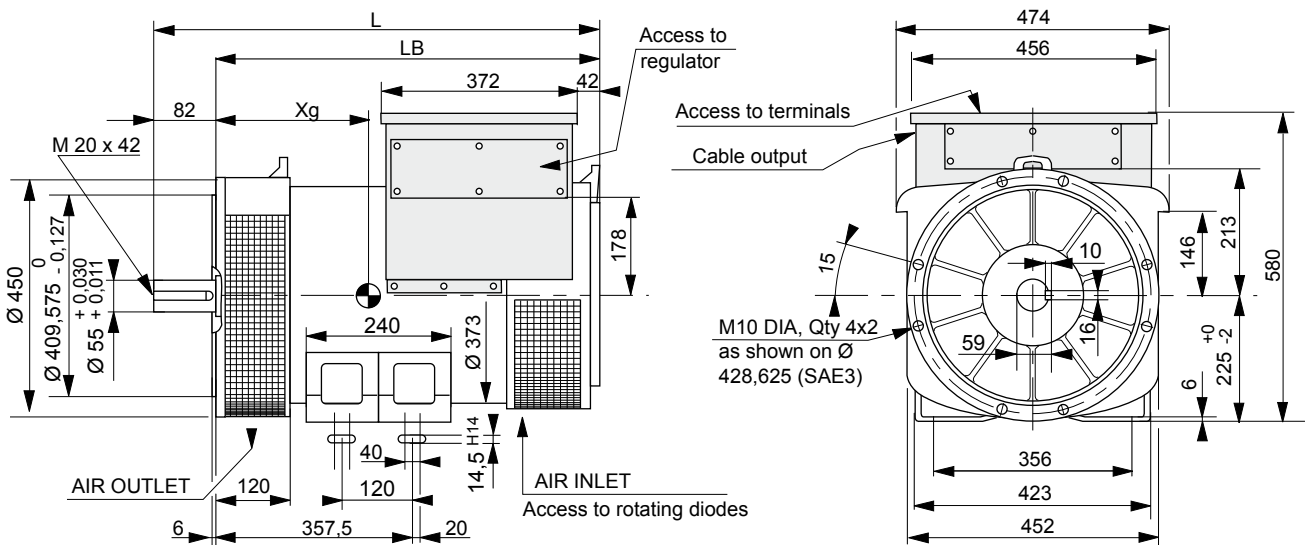
Coupling

Flex plate	8	10	11 ^{1/2}
Flange S.A.E 4	X	X	
Flange S.A.E 3	X	X	X
Flange S.A.E 2		X	X

Flex plate dimensions (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

Two bearings dimensions



Frame dimensions (mm)

TYPE	L maxi	LB	Xg	Weight M (kg)
LSA 43.2 L65	792	710	340	290
LSA 43.2 L8	792	710	365	330

General characteristics

Insulation class	H	Excitation system	SHUNT
Winding pitch - Code	2/3 pitch - winding M1	A.V.R. model	R 251
Leads	4	Voltage regulation (*)	± 0.5 %
Drip proof	IP 23	Sustained short-circuit current	-
Altitude	≤ 1000 m	Total harmonic TGH / THC (**)	< 4 %
Overspeed	2250 min-1	Waveform : NEMA = TIF - (**)	< 50
Air flow	0.44 m3/s	Wave form : I.E.C. = THF - (**)	< 2 %

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

Ratings 60 Hz - 1800 R.P.M.

kVA / kW - Power factor = 1				
Duty/Ambiant T°	Continuous / 40°C		St. By. 40°C	St. By. 27°C
Class / T° rise	H / 125° K	F / 105° K	H / 150° K	H / 163° K
1 Phase series	240 V (*)	240 V (*)	240 V (*)	240 V(*)
LSA 44.2 VS3	80	72	85	88
LSA 44.2 VS45	85	76.5	90	93
LSA 44.2 S7	100	90	105	110
LSA 44.2 M95	135	121.5	140	148

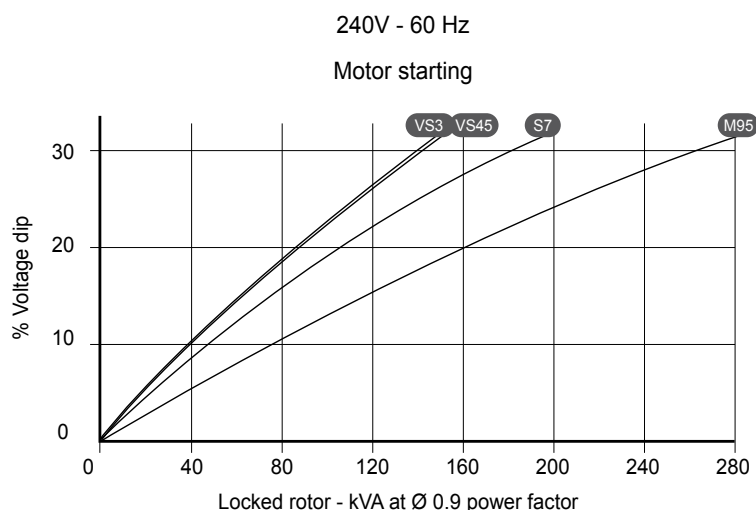
Rating kVA at P.F. 0.8 = rating kVA/kW at P.F. 1 x 0.85 - Derating (kVA) cl B = rating (kVA) class H x 0.77

(*) Voltage 120V not possible as a standard feature

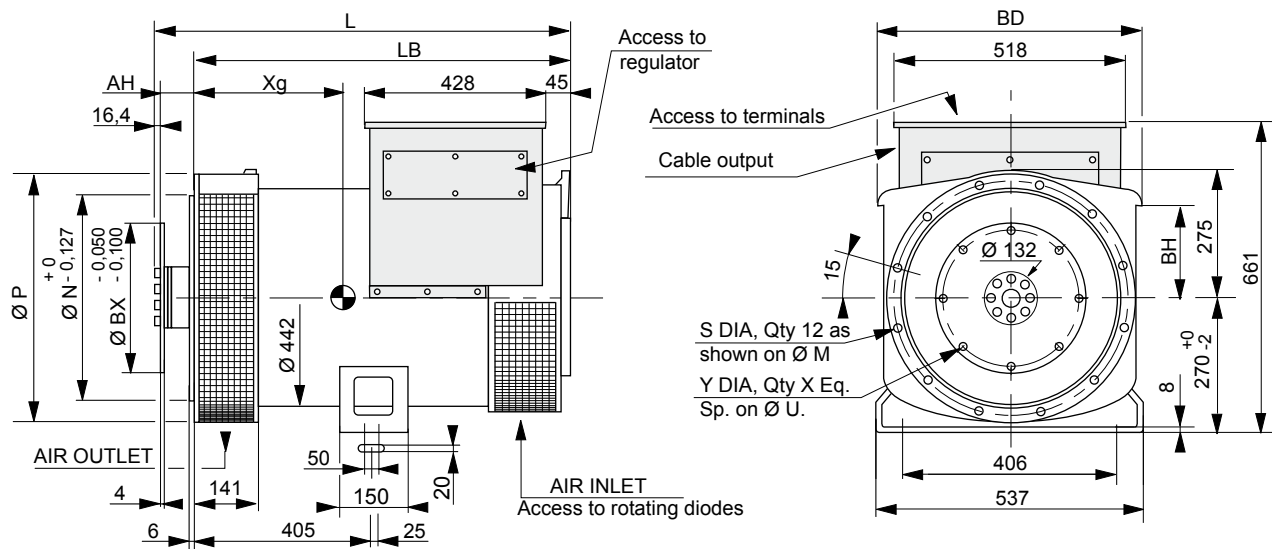
Efficiencies (%)

Class H / 40°C					
Single phase : 240 V - 60 Hz					
P.F. = 1					
	1/4	2/4	3/4	4/4	St.by
LSA 44.2 VS3	87.5	90.6	90.4	89.4	89
LSA 44.2 VS45	88	90.6	90.3	89.1	88.6
LSA 44.2 S7	88.6	91.5	91.4	90.5	90.1
LSA 44.2 M95	88.4	91.6	91.7	91.1	90.7

Transient voltage variation



Single bearing dimensions



Frame dimensions (mm)

TYPE	L maxi	LB	Xg	Weight M (kg)
LSA 44.2 VS3	755	685	335	385
LSA 44.2 VS45	755	685	335	385
LSA 44.2 S7	815	745	365	440
LSA 44.2 M95	875	805	395	495

Flange dimensions (mm)

S.A.E.	BD	S	BH	P	N	M
3	530	11	210	450	409.575	428.625
2	530	11	210	488	447.675	466.675
1	590	12.5	240	554	511.175	530.225

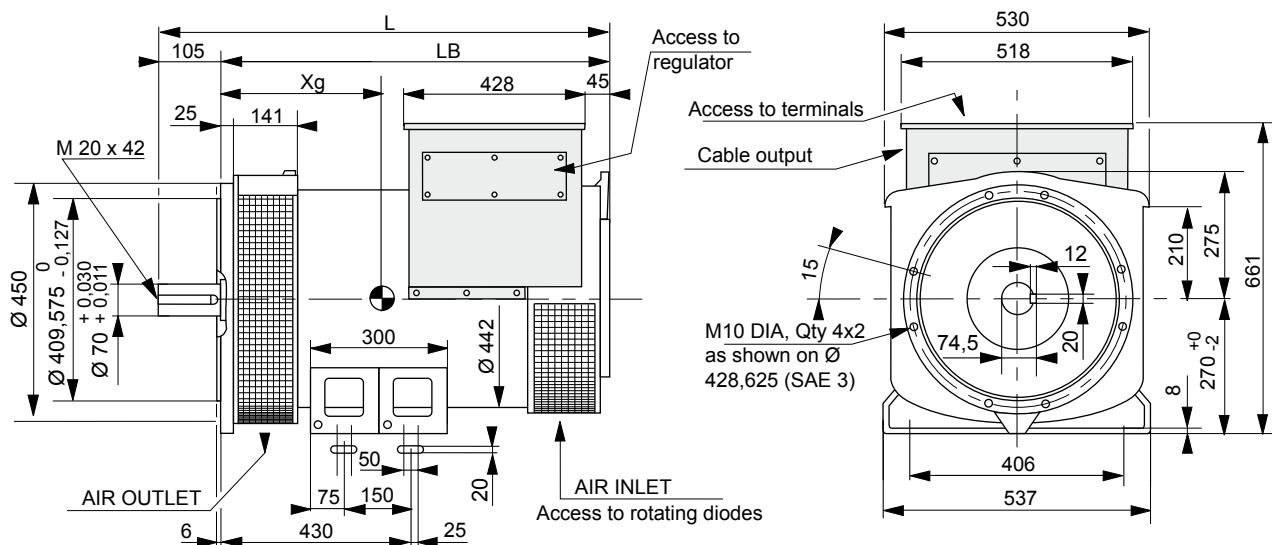
Coupling

Flex plate	10	11 1/2	14
Flange S.A.E 3	X	X	
Flange S.A.E 2	X	X	
Flange S.A.E 1		X	X

Flex plate dimensions (mm)

S.A.E.	BX	U	X	Y	AH
14	466.72	438.15	8	14	24.4
11 1/2	352.42	333.38	8	11	39.6
10	314.32	295.28	8	11	53.8

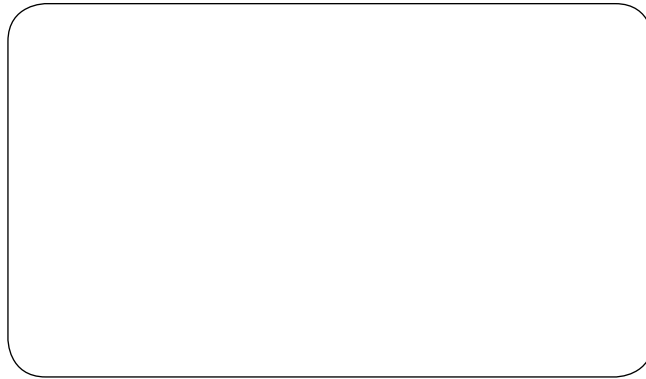
Two bearings dimensions



Frame dimensions (mm)

TYPE	L maxi	LB	Xg	Weight M (kg)
LSA 44.2 VS3	815	710	360	405
LSA 44.2 VS45	815	710	360	405
LSA 44.2 S7	875	770	390	460
LSA 44.2 M95	935	830	420	515

Contact



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