

LSA 44.3

**Low Voltage Alternator - 4 pole
Dedicated single-phase**

57 to 82 kVA - 50 Hz / 80 to 125 kVA - 60 Hz
Electrical and mechanical data

LEROY-SOMER™

Nidec
All for dreams

The best of performance

Nidec Leroy-Somer single-phase LSA 44.3 alternator has been designed to offer you the best power generation performances. With its meticulous design and optimized architecture, the single-phase LSA 44.3 strikes the perfect balance between compactness, reliability, performance and longevity.

The single-phase LSA 44.3 alternator is a machine with a dedicated single-phase winding. It has 10 to 40% more power than an equivalent three-phase alternator connected with the same single-phase voltage.

Standards

Nidec Leroy-Somer single-phase LSA 44.3 alternator meets all key international standards and regulations, including IEC 60034, NEMA MG 1.32-33, ISO 8528-3, CSA C22.2 n°100-14 and UL 1446 (UL 1004 on request). Also compliant with IEC 61000-6-2, IEC 61000-6-3, IEC 61000-6-4, VDE 0875G, VDE 0875N and EN 55011, group 1 class A for European zone.

Nidec Leroy-Somer single-phase LSA 44.3 alternator can be integrated in EC marked generator set, and bears EC, EAC and CMIM markings. It is designed, manufactured and marketed in an ISO 9001 and ISO 14001 quality assurance environment.

Electrical characteristics and performances

- Class H insulation
- 2/3 pitch winding, dedicated single-phase, 4-wire (M or M1) reconnectable (optimized for 240 V / 60 Hz, P.F. = 1) (15% derating for use at PF = 0.8) (PF = 1 corresponds to general use for single-phase voltage)
- Possible voltages:
 - 50 Hz: 230 V in series
 - 60 Hz: 240 V in series

Excitation and regulation system

Excitation system		Regulation options		
AVR	SHUNT	C.T. Current transformer for paralleling	Mains paralleling	Remote voltage potentiometer
R251	Standard			√

Protection system and options

- The single-phase LSA 44.3 is IP 23
- Complete winding protection for clean environments with relative humidity $\leq 95\%$, including indoor marine environments
- Options:
 - Filters on air inlet: derating 5%
 - Filters on air inlet and air outlet (IP 44): derating 10%
 - Reinforced winding protection for harsh environments and relative humidity greater than 95%
 - Space heater
 - Thermal protection for stator windings
 - Shaft height: H = 225 mm (to be specified when ordering)

Mechanical construction

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

Terminal box design

- Easy access to the voltage regulator (lid) and to the connections
- 4-way terminal block for reconnecting the voltage
- Predrilled holes for cable gland

Frame dimensions

- Dimensions, weight and coupling are identical to LSA 44.3 three-phase (see catalogue ref. 5028)

LSA 44.3 Dedicated single-phase - 57 to 82 kVA - 50 Hz / 80 to 125 kVA - 60 Hz

General characteristics

Insulation class	H	Excitation system	SHUNT
Winding pitch	2/3 (wind. M 50 Hz, M1 60 Hz)	AVR type	R251
Number of wires	4	Voltage regulation (*)	± 0.5 %
Protection	IP 23	Short-circuit current	-
Altitude	≤ 1000 m	Total Harmonic Distortion THD (**) in no-load	< 3 %
Overspeed	2250 R.P.M.	Total Harmonic Distortion THD (**) on linear load	< 5 %
Air flow	0.25 m ³ /s (50 Hz) / 0.30 m ³ /s (60 Hz)	Waveform: NEMA = TIF (**)	< 50

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

Ratings : 50 Hz - 1500 R.P.M. - Winding M

kVA / kW - Power factor = 1				
Duty / T° C	Continuous/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
1 phase series	230 V	230 V	230 V	230 V
LSA 44.3 S3	57	51	60	63
LSA 44.3 S5	69	62	73	76
LSA 44.3 M6	-	-	-	-
LSA 44.3 M8	82	74	87	90
LSA 44.3 L10	-	-	-	-

60 Hz - 1800 R.P.M. - Winding M1

kVA / kW - Power factor = 1			
Continuous/40°C		Stand-by/40°C	Stand-by/27°C
H / 125° K	F / 105° K	H / 150° K	H / 150° K
240 V	240 V	240 V	240 V
80	73	85	88
100	91	106	110
115	105	122	127
-	-	-	-
125	114	133	138

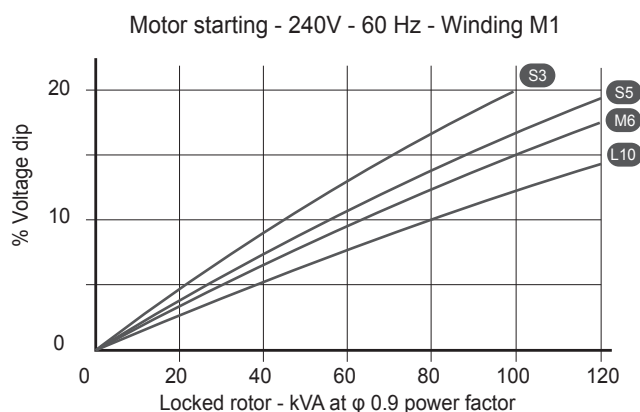
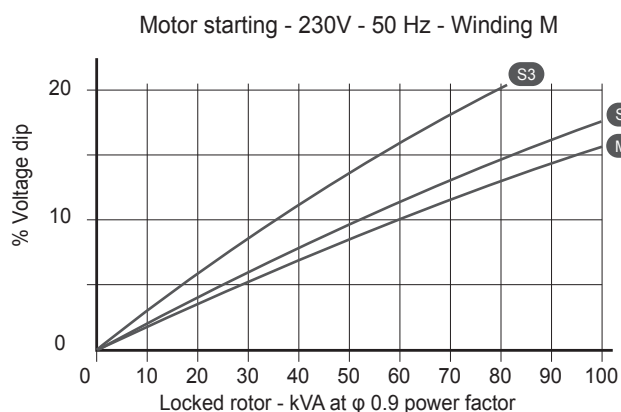
Rating kVA at P.F. 0.8 = rating kVA/kW at P.F. 1 x 0.85 - Derating (kVA) cl B = rating (kVA) class H x 0.80

Efficiencies (%)

Class H / 40°C - Power factor = 1 - Winding M					
Single-phase: 230 V - 50 Hz					
	1/4	2/4	3/4	4/4	Stand-by
LSA 44.3 S3	87.3	91.1	91.5	91	90.7
LSA 44.3 S5	88.3	91.7	92	91.5	91.1
LSA 44.3 M6	-	-	-	-	-
LSA 44.3 M8	89.6	92.6	92.8	92.3	92
LSA 44.3 L10	-	-	-	-	-

Class H / 40°C - Power factor = 1 - Winding M1					
Single-phase: 240 V - 60 Hz					
	1/4	2/4	3/4	4/4	Stand-by
	85	89.7	90.4	90	89.7
	84.5	89.5	90.4	90	89.7
	89.7	92	91.7	90.7	90.2
	-	-	-	-	-
	88.6	92	92.3	91.7	91.4

Transient voltage variation



LEROY-SOMERTM

www.leroy-somer.com/epg

[Linkedin.com/company/leroy-somer](https://www.linkedin.com/company/leroy-somer)
[Twitter.com/Leroy_Somer_en](https://twitter.com/Leroy_Somer_en)
[Facebook.com/LeroySomer.Nidec.en](https://www.facebook.com/LeroySomer.Nidec.en)
[YouTube.com/LeroySomerOfficiel](https://www.youtube.com/LeroySomerOfficiel)



Nidec
All for dreams

© 2022 Moteurs Leroy-Somer SAS. The information contained in this brochure is for guidance only and does not form part of any contract. The accuracy cannot be guaranteed as Moteurs Leroy-Somer SAS have an ongoing process of development and reserve the right to change the specification of their products without notice.

Moteurs Leroy-Somer SAS. Headquarters: Bd Marcellin Leroy, CS 10015, 16915 Angoulême Cedex 9, France. Share Capital: 38,679,664 €, RCS Angoulême 338 567 258.