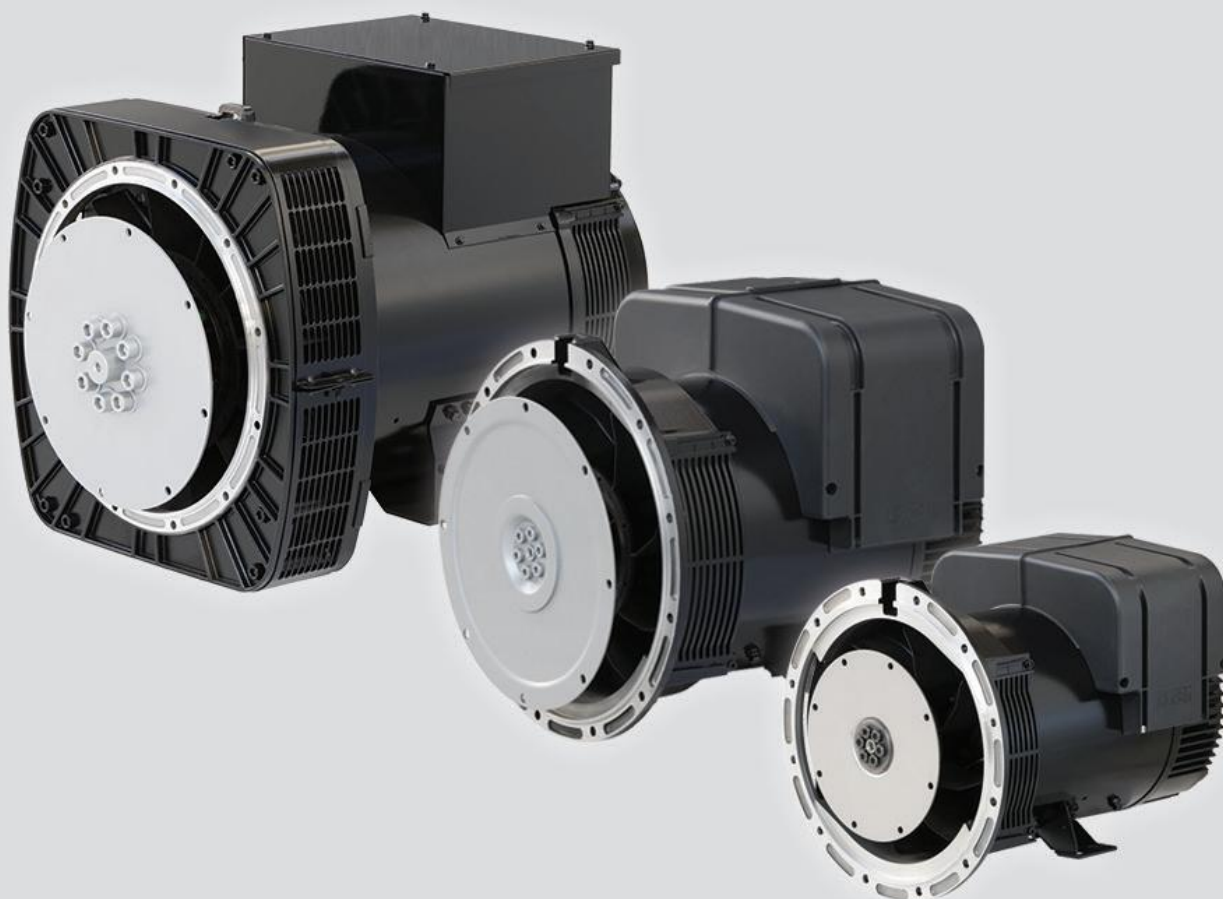




Low Voltage Alternators - 4 pole

TAL A44

Electrical and mechanical data

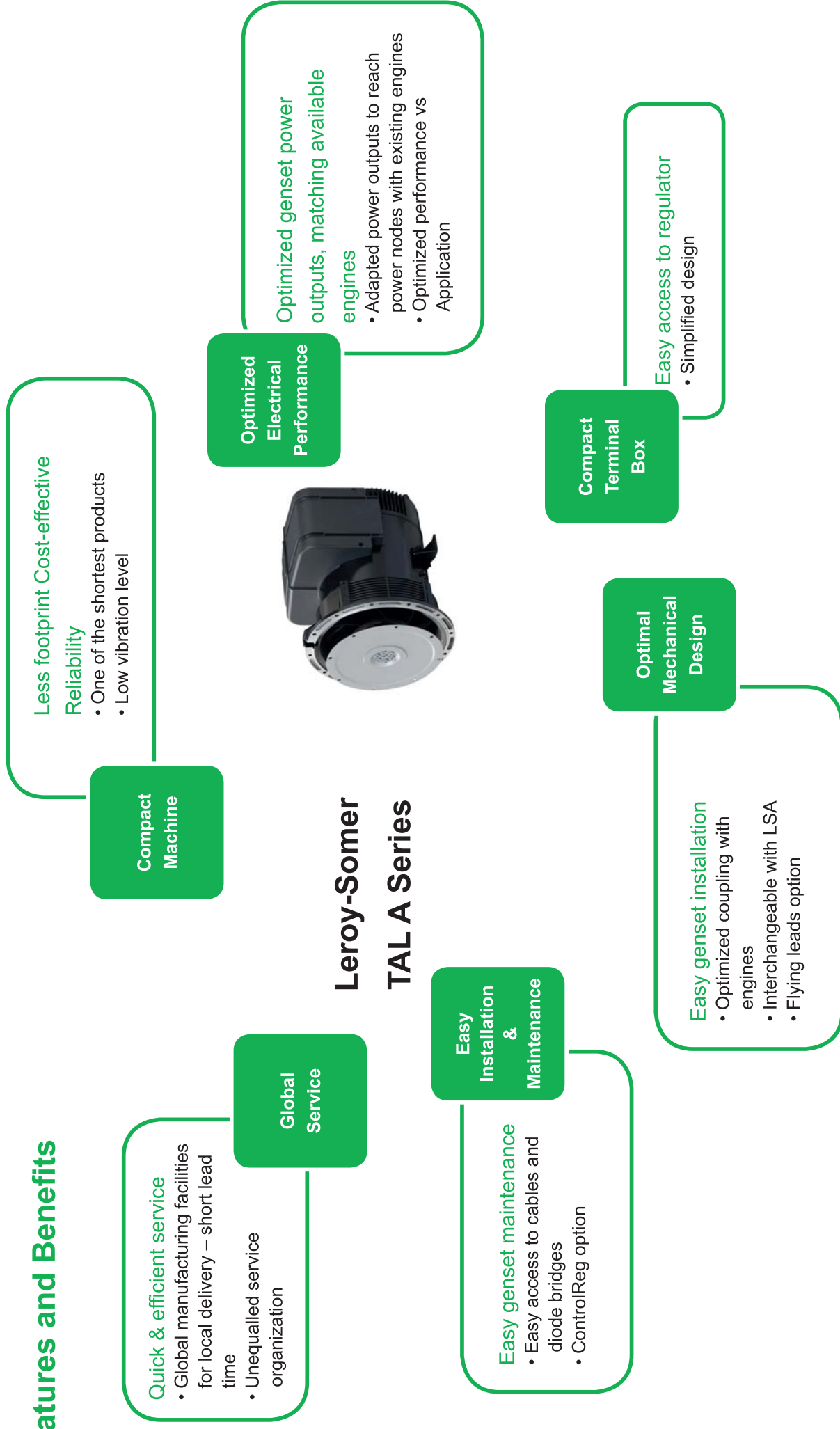
13 to 200 kVA - 50 Hz / 15.5 to 250 kVA - 60 Hz

LEROY-SOMER™

Nidec
All for dreams

Product Feature

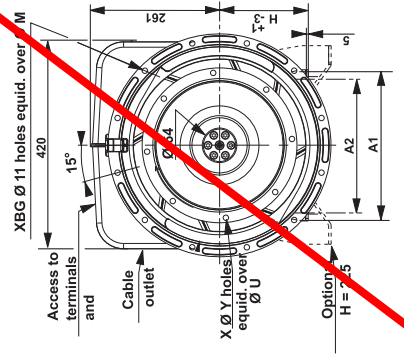
Features and Benefits



Low Voltage Alternators - 4 pole

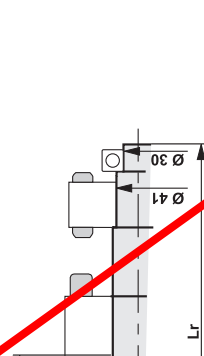
TAL A44 - Three-phase 85 to 200 kVA - 50 Hz / 102 to 250 kVA - 60 Hz

General characteristics - 6 & 12-wire



Shaft height (mm)		Option		Coupling			
Standard				Flange	Flex plate		
H	153		225		3	4	
C	260	299 (A, B, C) / 312.5		11 1/2	x	-	
B	18	23		10	x	x	
A1	307	400		8	-	x	
A	279	356		7 1/2	-	x	

A vertical line with arrows at both ends, labeled X_r on the left. A small curved line is on the right side of the line.



S	J, Moment of inertia: J (kgm ²): (4J = MD ²)				S.A.E. 10				S.A.E. 11/12			
	J	Xr	Lr	J	Xr	Lr	J	Xr	Lr	M	J	
4	0.220	274	549.8	44.9	0.211	272	355.6	45.4	0.244			
5	0.233	277	549.8	46.9	0.224	274	537.6	47.4	0.257			
4	0.258	283	549.8	50.9	0.249	281	535.5	51.4	0.282			
6	0.316	306	594.8	61	0.307	304	580.6	61.5	0.340			
6	0.316	306	594.8	61	0.307	304	580.6	61.5	0.340			
5	0.348	321	634.8	66.9	0.339	319	620.6	67	0.372			
5	0.367	326	634.8	69.9	0.358	324	620.6	70.4	0.391			
8	0.418	340	664.8	78.2	0.430	338	650.6	78.8	0.442			

The torsional analysis of the transmission is imperative. All values are available in the following table.

ns. The torsional analysis of the transmission is imperative. All values are available

Insulation class	H	
Winding pitch	2/3 (wind.6S - 6-wire / wind.6 - 12-wire)	
Number of wires	6 or 12	
Protection	IP 23	
Altitude	≤ 1000 m	
Overspeed	2250 R.P.M.	
Air flow 50 Hz (m³/s)	0.25*	
Air flow 60 Hz (m³/s)	0.30**	
AREP+ Short-circuit current = 2.7 In: 5 seconds (***)		

(*) 0.29 for LAM (*) 0.34 for LAM ***0.350; 2.7In 10 seconds

Ratings 50 Hz - 1500 R.P.M. - 6 & 12-wire

(*) 0.29 for L&M (**) 0.34 for L&M ***D350: 2.7ln 10 seconds

kVA / kW - PF = 0.8									
Duty/T _{sc}		Continuous/ 40°C				Stand-by/ 40°C			
Class/T _{sc} K		F-105K		H-150K		H-163K			
Phase		3ph.		1ph.		3ph.		1ph.	
Y	Δ	380V 400V 415V 440V	230V	380V 400V 415V 440V	230V	380V 400V 415V 440V	230V	380V 400V 415V 440V	230V
Δ	Y	220V 230V 240V	*	220V 230V 240V	*	220V 230V 240V	*	220V 230V 240V	230V *
YY	YY	190V 200V 208V 220V		190V 200V 208V 220V		190V 200V 208V 220V		190V 200V 208V 220V	
ΔΔ	ΔΔ	230V		230V		230V		230V	
TAL A44 C	kVA	81	85	85	42	73	76.5	76.5	38
	kW	64.8	68.0	68.0	33.6	58.4	61.2	61.2	30.4
TAL A44 D	kVA	100	100	95	48	90	86	86	43
	kW	80.0	80.0	76.0	38.4	72.0	72.0	68.8	34.4
TAL A44 E	kVA	119	125	119	60	107	112.5	107	54
	kW	95.2	100.0	95.2	48.0	85.6	90.0	85.6	43.2
TAL A44 H	kVA	137	151	137	67	124	125	115	60
	kW	110.0	110.0	102.4	53.6	99.2	100.0	92.0	48.0
TAL A44 J	kVA	143	150	143	73	129	135	129	66
	kW	114.4	120.0	114.4	58.4	103.2	108.0	103.2	52.8
TAL A44 K	kVA	161.5	170	161.5	80	145.5	145	145	72
	kW	129.2	136.0	129.2	64.0	116.0	122.4	116.0	57.6
TAL A44 L	kVA	180	180	171	90	164	164	156	82
	kW	144.0	144.0	136.8	72.0	131.2	131.2	124.8	65.6
TAL A44 M	kVA	192	200	192	100	175	182	182	91
	kW	153.6	160.0	153.6	80.0	124.8	132.0	124.8	65.6
TAL Only	kW	153.6	160.0	153.6	80.0	124.8	132.0	124.8	65.6

Ratings 60 Hz - 1800 R.P.M. - 6 & 12-wire

kVA / kW · PF = 0.8																
Duty / T °C			Continuous/ 40 °C				Continuous/ 40 °C				Stand-by/ 27 °C					
Class		H:125K	3ph.		1ph.	F:105K		3ph.		1ph.	H:150K		3ph.		1ph.	
Phase			380V 416V 440V 480V		220V 240V 254V 277V	190V 208V 220V 240V	380V 416V 440V 480V		220V 240V 254V 277V	190V 208V 220V 240V	380V 416V 440V 480V		220V 240V 254V 277V	190V 208V 220V 240V	380V 416V 440V 480V	
Y		Δ	Y Y	ΔΔ												
TAL A44 C	kVA	81	88	93	102	52	72.5	79.5	83.5	92	47	85	93	97	107	54.6
	kW	64.8	70.4	74.4	81.6	41.6	58.0	63.6	66.8	73.6	37.6	68.0	74.4	77.6	85.6	43.7
TAL A44 D	kVA	95	104	109	120	65	85	93.5	98	108	58.5	100	109	115	126	68
	kW	76.0	83.2	87.2	96.0	52.0	88.0	94.8	78.4	86.4	46.8	80.0	87.2	92.0	100.8	54.4
TAL A44 E	kVA	119	130	137	150	76	107	117	123	135	68.4	124	136	143	158	80
	kW	95.2	104.0	109.6	120.0	60.8	85.6	93.6	98.4	108.0	54.7	99.2	108.8	114.4	126.4	64.5
TAL A44 H	kVA	130	143	150	165	81	117	129	135	150	73	137	150	158	173	85
	kW	104.0	114.4	120.0	132.0	64.8	93.6	103.2	108.0	120.0	58.4	109.6	120.0	126.4	138.4	68.0
TAL A44 J	kVA	142	156	164	180	95	128	140	147	162	85.5	149	164	172	189	100
	kW	113.6	124.8	131.2	144.0	76.0	102.4	112.0	117.6	129.6	68.4	119.2	131.2	137.6	151.2	80.0
TAL A44 K	kVA	161	177	186	204	105	145	159	167	184	94.5	169	185	195	214	110
	kW	128.8	141.6	148.8	163.2	84.0	116.0	127.2	133.6	147.2	75.6	135.2	148.0	156.0	171.2	88.0
TAL A44 L	kVA	180	195	210	225	113	164	177	191	205	102	176	207	223	239	121
	kW	144.0	156.0	168.0	180.0	90.4	131.2	141.6	152.8	164.0	81.6	152.8	165.6	178.4	191.2	95.2
TAL A44 M	kVA	200	215	230	250	125	182	196	209	228	114	212	228	244	265	133
	kW	160.0	172.0	184.0	200.0	100.0	145.6	156.8	167.2	182.4	91.2	169.6	182.4	195.2	212.0	106.4

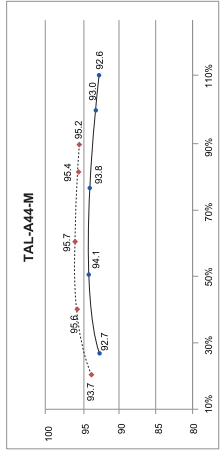
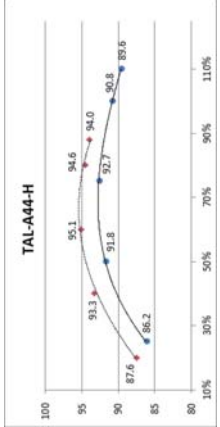
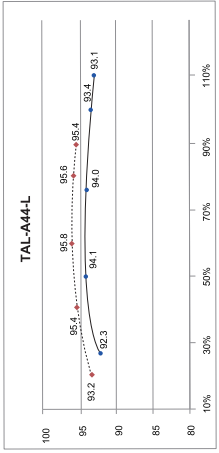
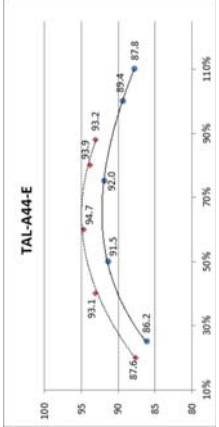
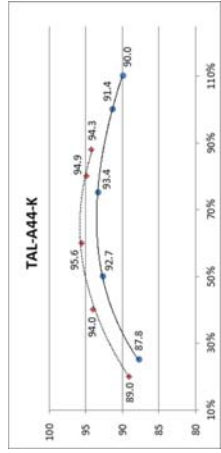
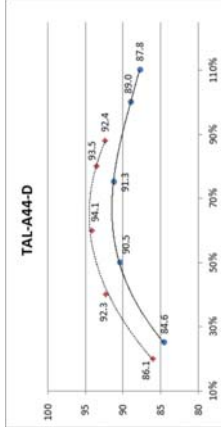
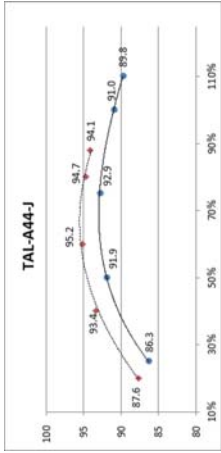
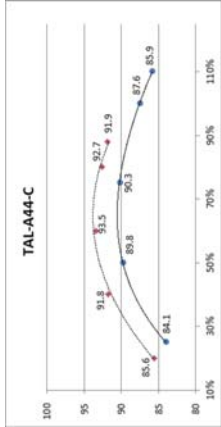
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| erov-Somer Electric Power Generation

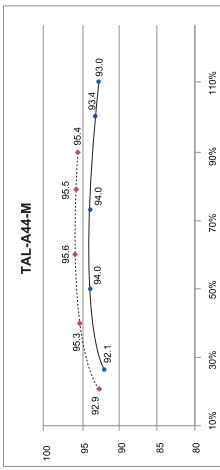
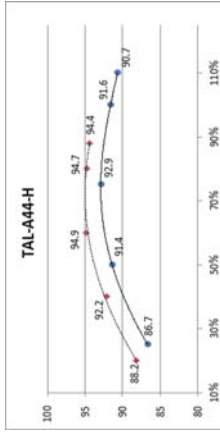
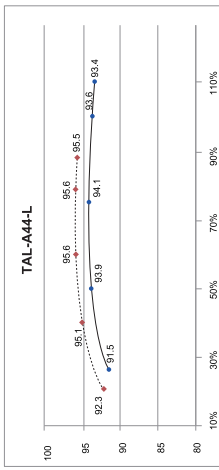
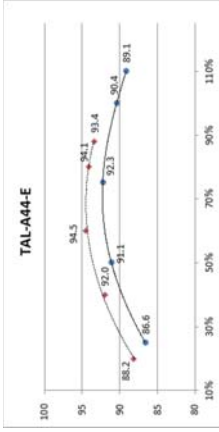
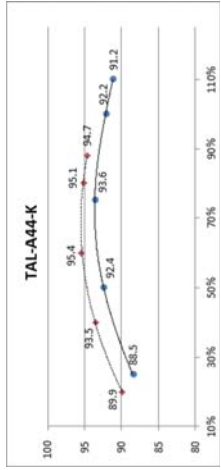
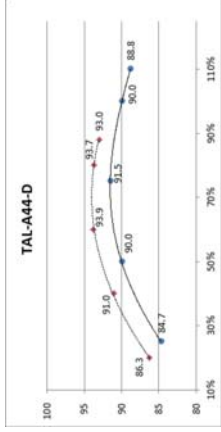
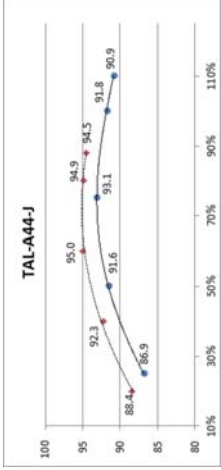
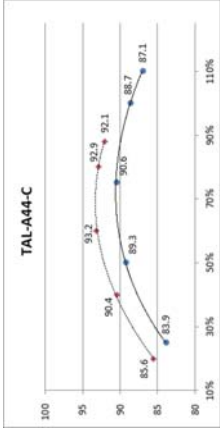
Perov-Somer Electric Power Generation

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Efficiencies 400 V - 50 Hz (— P.F.: 0.8) (..... P.F.: 1) - 6 & 12-wire



Efficiencies 480 V - 60 Hz (— P.F.: 0.8) (..... P.F.: 1) - 6 & 12-wire



Low Voltage Alternators - 4 pole

TAL A44 - Three-phase 85 to 200 kVA - 50 Hz / 102 to 250 kVA - 60 Hz

Reactances (%). Time constants (ms) - Class H / 400 V - 6 & 12-wire

	TAL A44 C	TAL A44 D	TAL A44 E	TAL A44 H	TAL A44 J	TAL A44 K	TAL A44 L	TAL A44 M
Kcc	Short-circuit ratio	0.50	0.59	0.62	0.56	0.61	0.37	0.33
Xd	Direct-axis synchro.reactance unsaturated	321	303	279	307	290	373	381
Xq	Quadrature-axis synchro. reactance unsaturated	193	182	167	184	174	224	194
T'do	No-load transient time constant	1747	1796	1952	1952	2013	2077	2025
X'd	Direct-axis transient reactance saturated	17.7	17.2	14.6	16.1	15.0	16.6	18.9
T'd	Short-circuit transient time constant	100	100	100	100	100	100	100
X''d	Direct-axis subtransient reactance saturated	10.6	10.3	8.8	9.6	9.0	9.9	11.3
T''d	Subtransient time constant	10.0	10.0	10.0	10.0	10.0	10.0	10.0
X''q	Quadrature-axis subtransient reactance saturated	21.0	20.4	17.4	19.1	17.8	19.7	21.9
Xo	Zero sequence reactance saturated	0.6	0.6	0.6	0.6	0.6	0.7	0.78
X2	Negative sequence reactance saturated	15.8	15.4	13.1	14.4	13.4	14.8	16.62
Ta	Armature time constant	15	15	15	15	15	15	15

Other class H/400V data	TAL A44 C	TAL A44 D	TAL A44 E	TAL A44 H	TAL A44 J	TAL A44 K	TAL A44 L	TAL A44 M
ms	Response time ($\Delta U=20\%$)	500	500	500	500	500	500	500
W	No-load losses	1890	2213	2433	2436	2533	2665	2665
W	Heat dissipation	9625	9888	11857	11145	11868	12796	11895

Low Voltage Alternators - 4 pole

TAL A44 - Three-phase 85 to 200 kVA - 50 Hz / 102 to 250 kVA - 60 Hz

Reactances (%). Time constants (ms) - Class H / 480 V - 6 & 12-wire

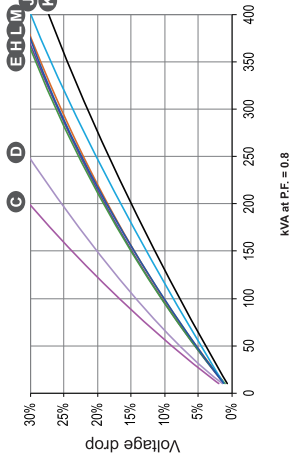
	TAL A44 C	TAL A44 D	TAL A44 E	TAL A44 H	TAL A44 J	TAL A44 K	TAL A44 L	TAL A44 M
Kcc	Short-circuit ratio	0.50	0.59	0.62	0.56	0.61	0.36	0.32
Xd	Direct-axis synchro.reactance unsaturated	321	303	279	307	290	373	397
Xq	Quadrature-axis synchro. reactance unsaturated	193	182	167	184	174	224	202
T'do	No-load transient time constant	1747	1796	1952	1952	2013	2077	2025
X'd	Direct-axis transient reactance saturated	17.7	17.2	14.6	16.1	15.0	16.6	19.6
T'd	Short-circuit transient time constant	100	100	100	100	100	100	100
X''d	Direct-axis subtransient reactance saturated	10.6	10.3	8.8	9.6	9.0	9.9	11.7
T''d	Subtransient time constant	10.0	10.0	10.0	10.0	10.0	10.0	10.0
X''q	Quadrature-axis subtransient reactance saturated	21.0	20.4	17.4	19.1	17.8	19.7	22.8
Xo	Zero sequence reactance saturated	0.6	0.6	0.6	0.6	0.6	0.7	0.81
X2	Negative sequence reactance saturated	15.8	15.4	13.1	14.4	13.4	14.8	17.32
Ta	Armature time constant	15	15	15	15	15	15	15

Other class H/480V data	TAL A44 C	TAL A44 D	TAL A44 E	TAL A44 H	TAL A44 J	TAL A44 K	TAL A44 L	TAL A44 M
ms	Response time ($\Delta U=20\%$)	500	500	500	500	500	500	500
W	No-load losses	2722	3187	3503	3508	3647	4253	3923
W	Heat dissipation	10395	10667	12743	12105	12863	13807	14130

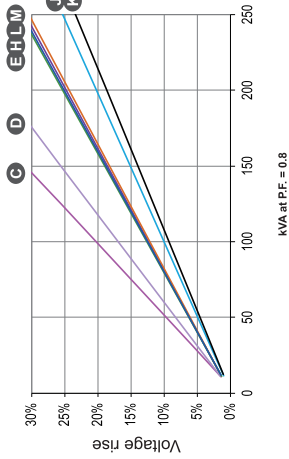
Low Voltage Alternators - 4 pole

TAL A44 - Three-phase 85 to 200 kVA - 50 Hz / 102 to 250 kVA - 60 Hz

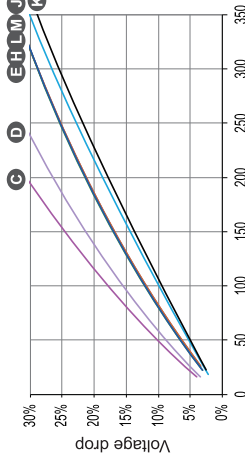
Transient voltage variation 400V - 50 Hz - 12-wire



Phase loading (SHUNT/AREP+) - kVA at P.F. = 0.8



Load shedding (SHUNT/AREP+) - kVA at P.F. = 0.8



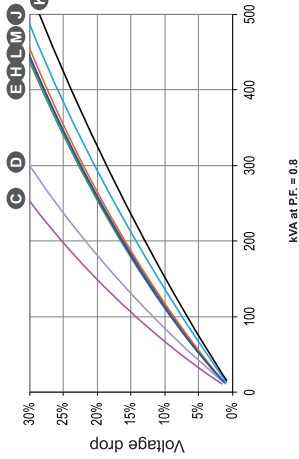
Motor starting (SHUNT/AREP+) - locked rotor kVA at P.F. = 0.6

- 1) For a starting P.F. other than 0.6, the starting kVA must be multiplied by $K = \text{Sine P.F.} / 0.8$
- 2) For voltages other than 400V (Y), 230V (Δ) at 50 Hz, then kVA must be multiplied by $(400/U)^2$ or $(230/U)^2$.

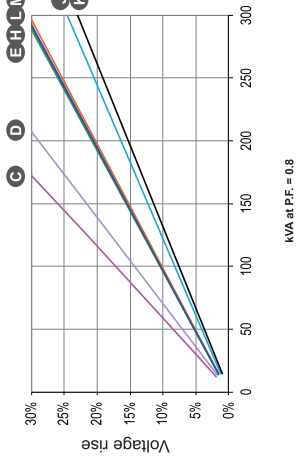
Low Voltage Alternators - 4 pole

TAL A44 - Three-phase 85 to 200 kVA - 50 Hz / 102 to 250 kVA - 60 Hz

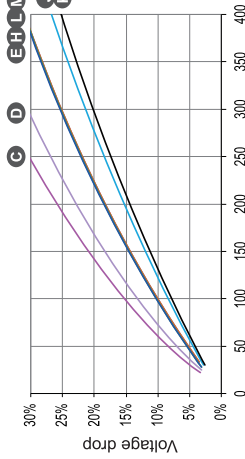
Transient voltage variation 480V - 60 Hz - 6-wire



Phase loading (SHUNT/AREP+) - kVA at P.F. = 0.8



Load shedding (SHUNT/AREP+) - kVA at P.F. = 0.8

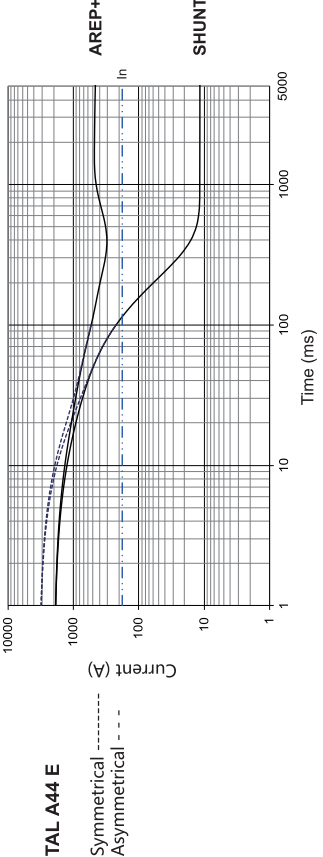
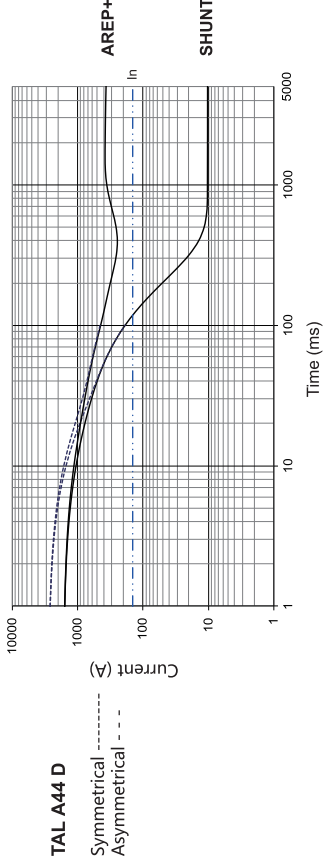
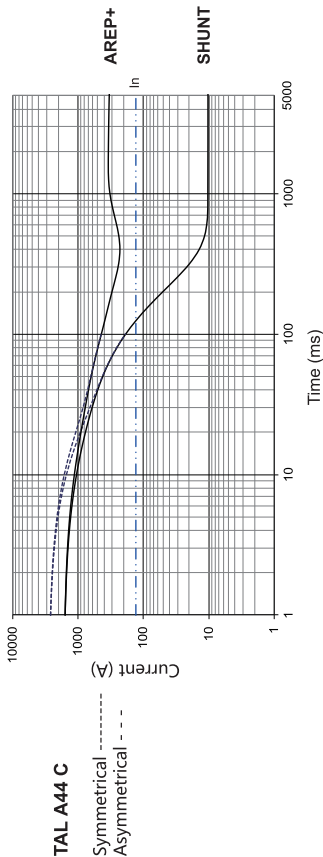


Motor starting (SHUNT/AREP+) - locked rotor kVA at P.F. = 0.6

- 1) For a starting P.F. other than 0.6, the starting kVA must be multiplied by $K = \text{Sine P.F.} / 0.8$
- 2) For voltages other than 480V (Y), 277V (Δ), 240V (YY) at 60 Hz, then kVA must be multiplied by $(480/U)^2$ or $(277/U)^2$ or $(240/U)^2$.

Low Voltage Alternators - 4 pole

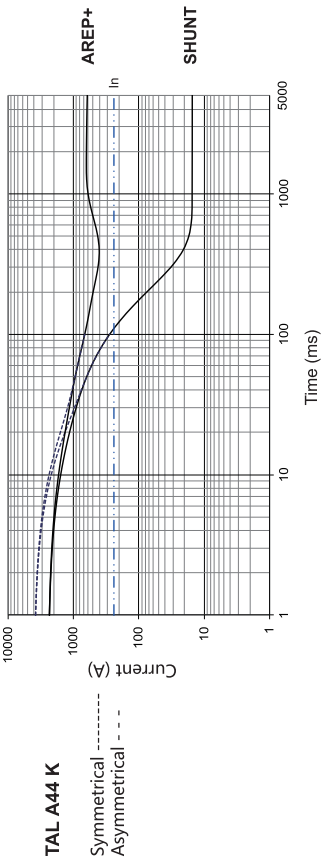
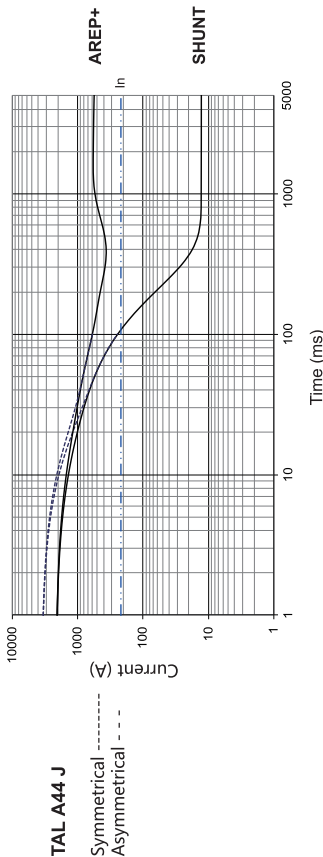
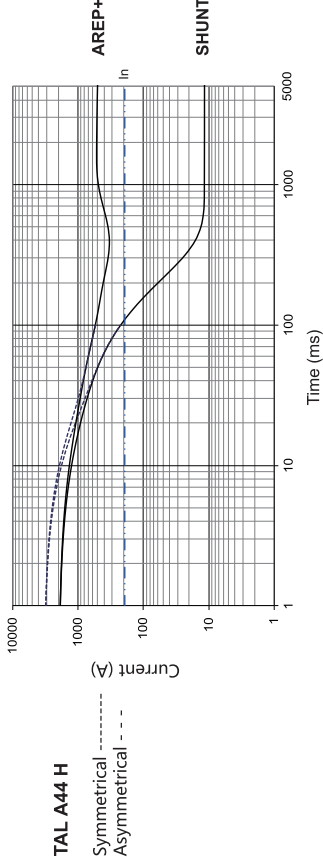
TAL A44 - Three-phase 85 to 200 kVA - 50 Hz / 102 to 250 kVA - 60 Hz



Influence due to connection
For (Δ) connection, use the following multiplication factor:
- Current value x 1.732.

Low Voltage Alternators - 4 pole

TAL A44 - Three-phase 85 to 200 kVA - 50 Hz / 102 to 250 kVA - 60 Hz

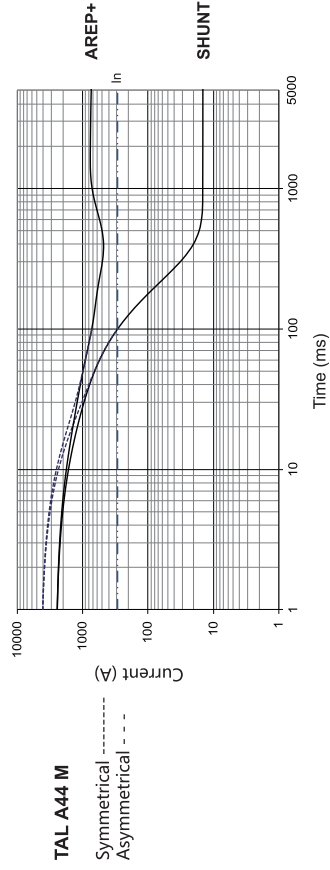
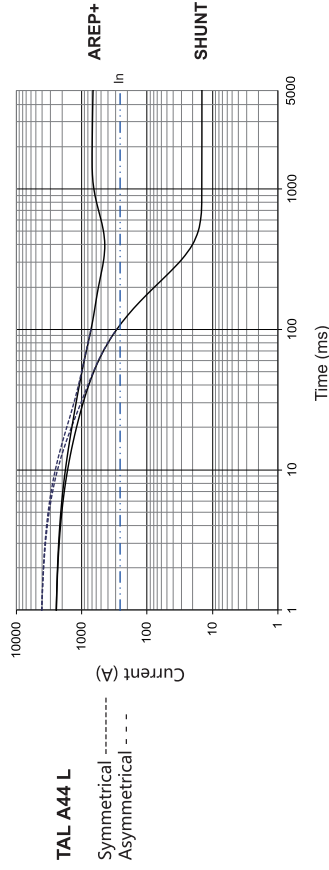


Influence due to short-circuit
Curves are based on a three-phase short-circuit.
For other types of short-circuit,
use the following multiplication factors.

	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		1.5	

Low Voltage Alternators - 4 pole

TAL A44 - Three-phase 85 to 200 kVA - 50 Hz / 102 to 250 kVA - 60 Hz



Influence due to connection

For (Δ) connection, use the following multiplication factor:

- Current value x 1.732.

	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		15	

Influence due to short-circuit

Influence due to short-circuit
Curves are based on a three-phase short-circuit.

For other types of short-

For other types of short-circuit, use the following multiplication factors.

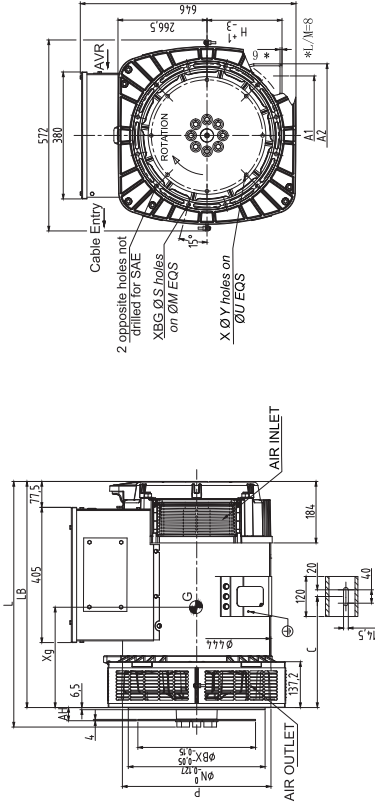
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Lerov-Somer Electric Power Generation

Low Voltage Alternators - 4 pole

TAL A44 - Three-phase 85 to 200 kVA - 50 Hz / 102 to 250 kVA - 60 Hz

Single bearing general arrangement - 4, 6 & 12-wire



Dimensions (mm) and weight (kg)					
Type	L	LB	Xg	Weight/kg	
TAL A44 C	735	677	301	267	
TAL A44 D	735	677	313	295	
TAL A44 E/H	805	747	353	368	
TAL A44 J	805	747	365	398	
TAL A44 K	847	787	383	433	
TAL A44 L	930	872	416	554	
TAL A44 M	930	872	416	554	

Shaft Height(mm)					
	standard		option		
H	225(*)	270(**)	280(***)		
	Feet length				
C	332.5	405	429		
A1	356	406	457		
A2	474	474	541		

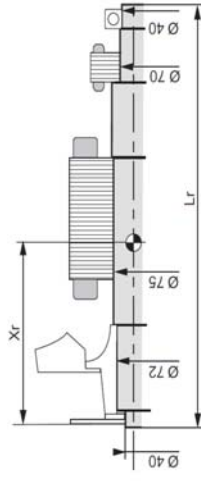
(*) not available for L and M

(**) only for L and M

Flange (mm)				
S.A.E.	P	N	M	
3	445	409.575	428.62	
2	485	447.675	486.725	
1	560.5(*)	511.18	530.22	

		Flex plate (mm)					
S	XBG	S.A.E.	BX	U	X	Y	AH
11	12	11/12	352.42	333.38	8	11	39.6
11	12	10	314.32	295.28	8	11	53.8

Torsional analysis data



Centre of gravity: Xr (mm), Rotor length: Lr (mm), Weight: M (kg), Moment of inertia: J (kgm²): (4J = MD²)										
Type	Flex Plate SAE 10			Flex Plate SAE 11 1/2			Flex Plate SAE 11 1/2			
	Xr	Lr	M	J	Xr	Lr	M	J	Xr	J
TAL A44 C	341	704	113	0.805	308	704	113	0.821		
TAL A44 D	354	704	120	0.867	325	704	120	0.883		
TAL A44 E	399	774	153	1.141	389	774	153	1.157		
TAL A44 H	399	774	153	1.141	389	774	153	1.157		
TAL A44 J	410	774	165	1.248	400	774	164	1.264		
TAL A44 K	429	814	180	1.383	420	814	180	1.399		
TAL A44 L	465	914	224.1	1.753	450.7	899	223.7	1.769		
TAL A44 M	465	914	224.1	1.753	450.7	899	223.7	1.769		

NOTE : Dimensions are for information only and may be subject to modifications. Contractual 2D/3D drawings can be downloaded from the Leroy-Somer site. The personal analysis of the transmission is imperative. All values are available upon request.

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