

name=
urlparam
pos=729
11



Low Voltage Alternators - 4 pole

TAL040 - TAL042 - TAL044

10 to 150 kVA - 50 Hz / 12.5 to 188 kVA - 60 Hz

Electrical and mechanical data

Leroy-Somer™

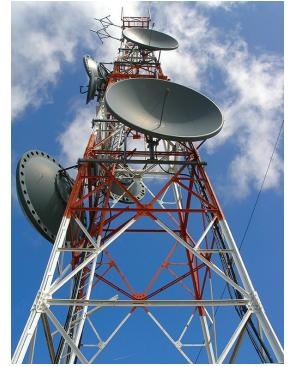

EMERSON™
Industrial Automation

Low Voltage Alternators - 4 pole

TAL040 - TAL042 - TAL044 - 10 to 150 kVA - 50 Hz / 12.5 to 188 kVA - 60 Hz

Adapted to needs

The TAL alternator range is designed to meet the specific needs of telecom, commercial & industrial markets, as well as stand-by applications .



Compliant with international standards

The TAL range complies with international standards and regulations : IEC 60034...
The range is designed, manufactured and marketed in an ISO 9001 and 14001 environment.

Electrical design

- Class H insulation.
- Low voltage winding.
- 4 - terminal plates.
- Optimized performance.



Robust design

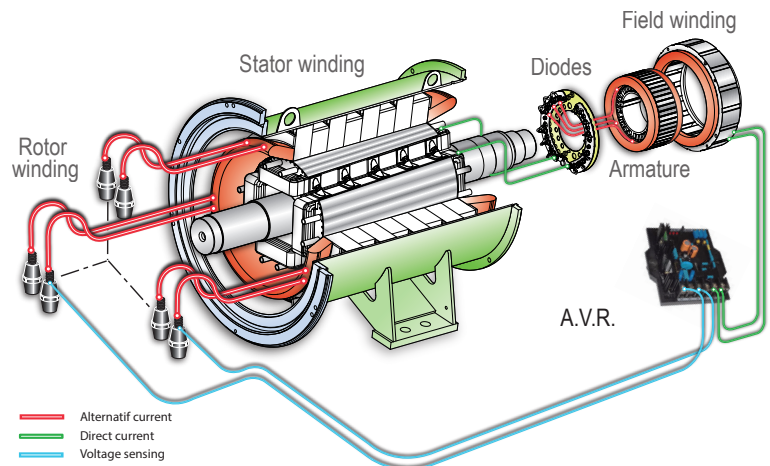
- Compact and rugged assembly to withstand engine vibrations.
- Steel frame.
- Aluminum flanges and shields.
- Single-bearing design to be suitable with most diesel engines.
- Sealed for life single bearing.
- Direction of rotation : clockwise.

Excitation and regulation

- The TAL range is shunt excited.
- Specially developed R 120 voltage regulator integrated into the terminal box.

Compact terminal box

- Easy access to AVR and terminals.



Environment and protection

- The alternator is IP 23.
- Standard winding protection for non-harsh environments with relative humidity $\leq 95\%$.

Available options

- Customized painting.
- Space heater.

Low Voltage Alternators - 4 pole

TAL040 - TAL042 - TAL044 - 10 to 150 kVA - 50 Hz / 12.5 to 188 kVA - 60 Hz

General characteristics - 3 phase

Insulation class	H	Excitation system	SHUNT
Winding pitch	2/3 (Winding 6S)	AVR type	R 120
Number of wires	6	Voltage regulation (*)	± 1 %
Protection	IP 23	Totale Harmonic distortion THD (**) in no-load: < 3.5 % according to C.E.I.	
Altitude	≤ 1000 m	Totale Harmonic distortion THD (**) in linear load: < 5 % according to C.E.I.	
Overspeed	2250 R.P.M.	Waveform: NEMA = TIF (**)	< 50
Air flow (m ³ /s)	50Hz : TAL040 : 0.06 - TAL042 : 0.10 - TAL044 : 0.25 60Hz : TAL040 : 0.07 - TAL042 : 0.13 - TAL044 : 0.30		(*) Steady state. (**) between phases

Ratings / Efficiencies - 3 phase

kVA / kW - P.F. = 0.8																						
Type	50 Hz - 1500 R.P.M.							60 Hz - 1800 R.P.M.														
	Continuous / 40°C				Stand-by / 27°C			Continuous / 40°C				Stand-by / 27°C										
Duty/T°C	H / 125°K							H / 163°K														
Class/T°K	Rating kVA				Rating kVA			Rating kVA				Rating kVA										
Phase	3 ph.			1 ph.	3 ph.			1 ph.	3 ph.			1 ph.	h									
Y	380V	400V	415V	h	380V	400V	415V	h	380V	416V	440V	480V	h	380V	416V	440V	480V	h				
Δ	220V	230V	240V	230V	220V	230V	240V	230V	220V	240V	254V	277V	240V	220V	240V	254V	277V	240V				
TAL040 B	10	10.0	10.0	7.0	81.2	11.0	11.0	11.0	8.0	80.7	10	11	11.5	12.5	9.0	82.1	11.5	12	13	14	10.0	81.8
TAL040 C	12.5	12.5	12.5	7.0	82.7	14.0	14.0	14.0	8.0	82.3	12.5	13.5	14.5	15.5	9.0	83.6	14	15	16	17	10.0	83.3
TAL040 D	15	15.0	15.0	10.5	83.4	16.5	16.5	16.5	12.0	83	15	16.5	17.5	19	13.0	84.2	17	18.5	19.5	21	14.0	83.8
TAL040 E	17.5	17.5	17.5	12.5	84	19.5	19.5	19.5	14.0	83.5	17.5	19	20	22	14.5	84.8	19.5	21	22	24.5	15.5	84.4
TAL040 F	20	20.0	20.0	14.0	85.1	22.0	22.0	22.0	15.5	84.7	20	22	23	25	16.0	85.7	22	24.5	26	27.5	17.5	84.4
TAL042 A	25	25.0	25.0	15.0	85.3	27.5	27.5	27.5	16.5	84.8	29.1	31.3	31.5	31.5	18.9	86.1	32.0	34.4	34.7	34.7	20.8	85.7
TAL042 B	27	27.0	27.0	16.2	85.7	30.0	30.0	30.0	18.0	85.2	29.9	31.9	33.8	33.8	19.2	86.5	32.5	35.1	37.5	37.5	21.1	86
TAL042 C	31	32.0	32.0	19.2	86.3	34.1	35.2	35.2	21.1	85.8	33.4	36.8	38.8	40.0	22.8	87.1	36.7	40.5	42.7	44.0	25.1	86.6
TAL042 D	35	35.0	35.0	22.0	88.1	38.5	38.5	38.5	24.2	87.7	37.5	40.3	42.9	43.8	24.2	88.6	41.3	44.3	47.2	48.1	26.6	88.4
TAL042 E	39.5	40.0	40.0	25.0	87.6	43.5	45.0	45.0	28.1	87.1	41.5	45.4	48.4	50.0	27.6	88.2	45.7	49.9	53.2	55.0	30.4	87.8
TAL042 F	43	45.0	45.0	27.0	87.9	47.3	50.0	50.0	30.0	87.4	44.0	47.8	51.1	56.5	30.0	88.5	48.4	52.6	56.2	62.5	33.0	88.1
TAL042 G	47.5	50.0	50.0	30.0	88	52.3	55.0	55.0	33.0	87.6	48.9	53.7	56.5	62.5	33.9	88	53.8	59.1	62.2	68.8	37.3	87.6
TAL042 H	58	60.0	60.0	36.0	88.4	63.8	66.0	66.0	40.0	87.9	57.0	62.8	66.7	75.0	39.0	89	62.7	69.1	73.4	82.5	42.9	88.6
TAL044 A	70	70	70	42.0	89.8	77	77	77	46.0	89.7	69	76	80	88	46.0	89.9	76	83	88	96	50.0	89.9
TAL044 B	80	80	80	48.0	89.6	88	88	88	53.0	89.4	79	87	92	100	52.0	89.9	87	95	101	110	57.0	89.7
TAL044 C	90	90	90	48.0	90.3	100	100	100	53.0	90.1	89	98	103	113	52.0	90.5	98	107	113	124	57.0	90.4
TAL044 D	100	100	100	60.0	90.1	110	110	110	66.0	89.9	99	108	115	125	65.0	90.4	109	119	126	138	72.0	90.2
TAL044 E	125	125	125	67.0	90.4	138	138	138	74.0	90.1	124	135	143	156	76.0	90.7	136	149	158	172	83.0	90.5
TAL044 H	135	135	135	73.0	90.9	149	149	149	80.0	90.6	134	146	155	169	81.0	91.1	147	161	170	186	89.0	90.9
TAL044 J	150	150	150	80.0	91.1	165	165	165	88.0	90.8	148	163	172	188	95.0	91.3	163	179	189	206	105.0	91.1



Low Voltage Alternators - 4 pole

TAL040 - TAL042 - TAL044 - 10 to 150 kVA - 50 Hz / 12.5 to 188 kVA - 60 Hz

General characteristics - Single phase

Insulation class	H	Excitation system	SHUNT
Winding pitch	2/3 (Winding M/M1)	AVR type	R 120
Number of wires	4	Voltage regulation (*)	± 1 %
Protection	IP 23	Totale Harmonic distortion THD (**) in no-load: < 3.5 % according to C.E.I.	
Altitude	≤ 1000 m	Totale Harmonic distortion THD (**) in linear load: < 5 % according to C.E.I.	
Overspeed	2250 R.P.M.	Waveform: NEMA = TIF (**)	< 100
Air flow (m ³ /s)	50Hz : TAL040 : 0.06 - TAL042 : 0.10 - TAL044 : 0.25 60Hz : TAL040 : 0.07 - TAL042 : 0.13 - TAL044 : 0.30	(*) Steady state. (**) between phases	

Ratings / Efficiencies - Single phase

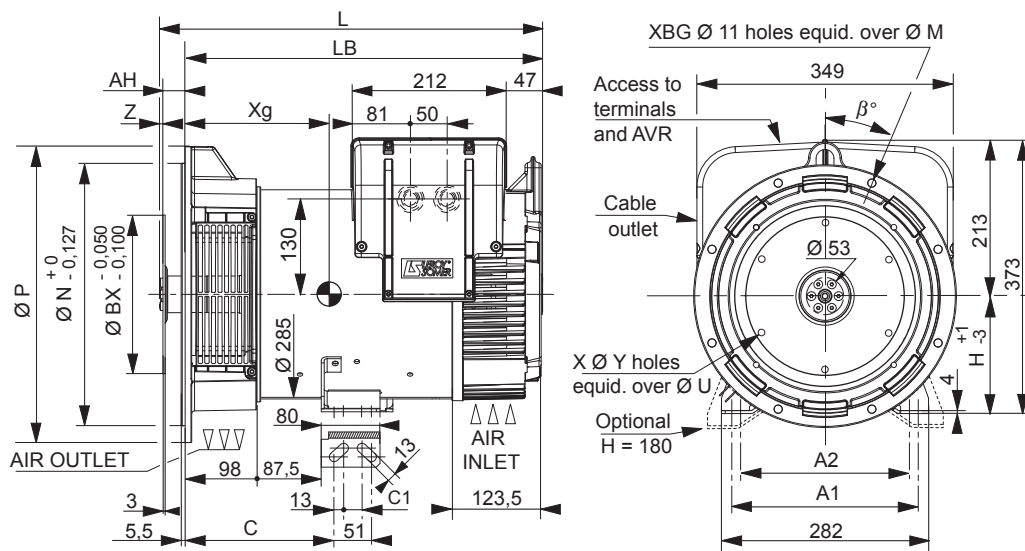
kVA / kW - P.F. = 1								
Type	50 Hz - 1500 R.P.M.				60 Hz - 1800 R.P.M.			
Duty/T°C	Continuous / 40°C		Stand-by / 27°C		Continuous / 40°C		Stand-by / 27°C	
Class/T°K	H / 125°K		H / 163°K		H / 125°K		H / 163°K	
1 Phase serie	230V	h %	230V	h %	240V	h %	240V	h %
TAL040 C	10.5	80.2	11.4	78.9	11.5	80	12.5	79
TAL040 C1	12	82.4	13.2	81.5	13.5	81.7	15	80.8
TAL040 D	13.2	83.4	14.5	82.6	14.5	82.6	16	81.8
TAL040 E	14.5	84.2	16	83.5	15.8	83.5	17.4	82.8
TAL040 F	16	85.2	17.6	84.7	17.6	84.5	19.4	83.8
TAL042 A	18.2	85.7	20	84.7	23	86.3	25.3	85.7
TAL042 B	20.3	86.1	22.3	85.3	26	86.3	28.6	85.7
TAL042 C	22.4	87	24.6	86.4	28.8	87.2	31.6	86.6
TAL042 D	25	88.6	27.5	88.2	31.5	88.4	34.7	88.1
TAL042 E	28	88.1	30.8	87.6	36	87.9	39.6	87.4
TAL042 F	31.5	88.3	34.7	87.7	40	88.2	44	87.6
TAL042 G	35	88.5	38.5	88	47.2	88.1	51.9	87.9
TAL042 H	42	88.7	46.2	88.2	53	88.6	58.3	88.2
TAL044 B	57	89	63	88.7	80	88	88	87.7
TAL044 D	69	89.5	76	89.1	100	88	110	87.7
TAL044 E	-	-	-	-	115	88.7	127	88.2
TAL044 H	82	90.3	90	90	-	-	-	-
TAL044 J	-	-	-	-	125	89.7	138	89.4



Low Voltage Alternators - 4 pole

TAL040 - TAL042 - TAL044 - 10 to 150 kVA - 50 Hz / 12.5 to 188 kVA - 60 Hz

TAL040 single bearing general arrangement



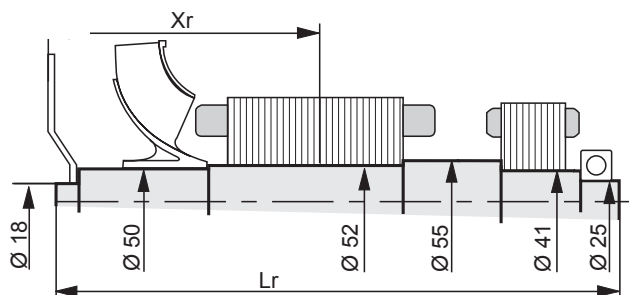
Dimensions (mm) and weight				
Type	L maxi	LB	Xg	Weight (kg)
TAL040 B	467	405	186	73
TAL040 C	467	405	186	73
TAL040 D	497	435	204	87
TAL040 E	497	435	221	92
TAL040 F	517	455	221	102

Standard	Option		Coupling	
	Shaft height	Flange	4	
H	160	180	Flex plate	x
C	Feet length		10	x
	203	238	8	x
C1	25	22	7 1/2	x
A1	254	279	-	-
A2	230	-	-	-

Flange (mm)					
S.A.E.	P	N	M	XBG	β°
4	408	361.95	381	12	15°
-	-	-	-	-	-
-	-	-	-	-	-

Flex plate (mm)						
S.A.E.	BX	U	X	Y	AH	Z
10	314.32	295.28	8	11	53.8	0
8	263.52	244.48	6	11	62	0
7 1/2	241.3	222.25	8	9	30.2	4.5

Torsional analysis data



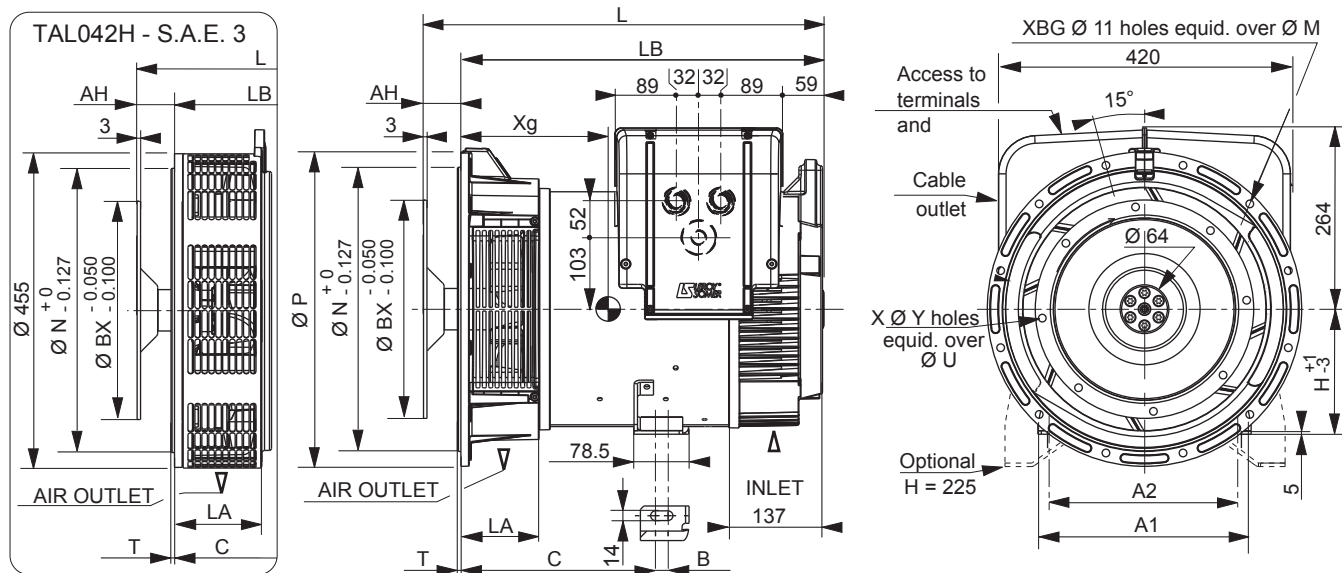
Centre of gravity: Xr (mm), Rotor length: Lr (mm), Weight: M (kg), Moment of inertia: J (kgm ²): (4J = MD ²)												
Type	Flex plate S.A.E. 7 1/2				Flex plate S.A.E. 8				Flex plate S.A.E. 10			
	Xr	Lr	M	J	Xr	Lr	M	J	Xr	Lr	M	J
TAL040 B	211.7	428	25.7	0.0802	243.5	428	26	0.0847	238.3	428	26.5	0.0964
TAL040 C	211.7	428	25.7	0.0802	243.5	428	26	0.0847	248.3	428	28.91	0.1052
TAL040 D	229.2	458	30.48	0.0959	261	458	30.78	0.1004	255.8	458	31.28	0.1121
TAL040 E	236.7	458	32.39	0.1027	268.5	458	32.69	0.1072	263.3	458	33.19	0.1189
TAL040 F	246.7	478	35.42	0.1125	278.5	478	35.72	0.1170	273.3	478	36.22	0.1287

NOTE : Dimensions are for information only and may be subject to modifications. Contractuel 2D drawings can be downloaded from the Leroy-Somer site, 3D drawing files are available upon request.

Low Voltage Alternators - 4 pole

TAL040 - TAL042 - TAL044 - 10 to 150 kVA - 50 Hz / 12.5 to 188 kVA - 60 Hz

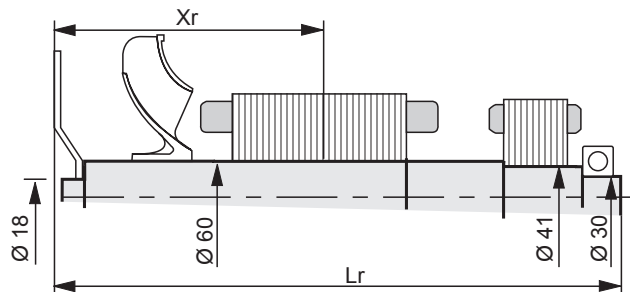
TAL042 single bearing general arrangement



Dimensions (mm) and weight (kg)					H = 180 (Standard)				H = 225 (Option)				Coupling		
Type	L	LB	Xg	Weight (kg)	C	B	A1	A2	C	B	A1	A2	Flange	3	4
TAL042 A	565	503	237	117	260	18	307	279	299	23	400	356	11 1/2	x	-
TAL042 B	565	503	242	122	260	18	307	279	299	23	400	356	10	x	x
TAL042 C	565	503	252	133	260	18	307	279	299	23	400	356	8	-	x
TAL042 D	610	548	275	165	260	18	307	279	312.5	23	400	356	7 1/2	-	x
TAL042 E	610	548	275	165	260	18	307	279	312.5	23	400	356			
TAL042 F	650	588	287	181	260	18	307	279	312.5	23	400	356			
TAL042 G	650	588	295	186	260	18	307	279	312.5	23	400	356			
TAL042 H	662	622	310	187	260	18	307	279	312.5	23	400	356			

Flange (mm)							Flex plate (mm)					
S.A.E.	P	N	M	XBG	T	LA	S.A.E.	BX	U	X	Y	AH
4	406	361.95	381	12	6	122	11 1/2	352.42	333.38	8	11	39.6
3	452	409.58	428.62	12	5	112.5	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



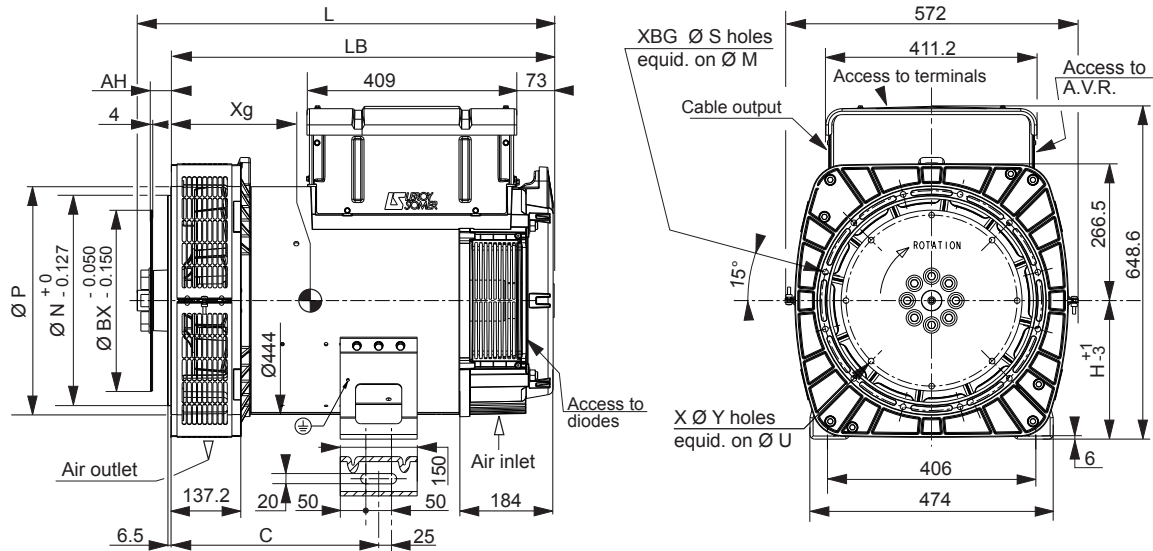
Centre of gravity: Xr (mm), Rotor length: Lr (mm), Weight: M (kg), Moment of inertia: J (kgm ²): (4J = MD ²)																
Type	Flex plate S.A.E. 7 1/2				Flex plate S.A.E. 8				Flex plate S.A.E. 10				Flex plate S.A.E. 11 1/2			
	Xr	Lr	M	J	Xr	Lr	M	J	Xr	Lr	M	J	Xr	Lr	M	J
TAL042 A	279	526.2	45.36	0.2209	277	558	45.68	0.2246	274	549.8	46.13	0.2363	272	535.6	46.62	0.2843
TAL042 B	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
TAL042 C	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
TAL042 D	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
TAL042 E	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
TAL042 F	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
TAL042 G	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
TAL042 H	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

NOTE : Dimensions are for information only and may be subject to modifications. Contractuel 2D drawings can be downloaded from the Leroy-Somer site, 3D drawing files are available upon request.

Low Voltage Alternators - 4 pole

TAL040 - TAL042 - TAL044 - 10 to 150 kVA - 50 Hz / 12.5 to 188 kVA - 60 Hz

TAL044 single bearing general arrangement

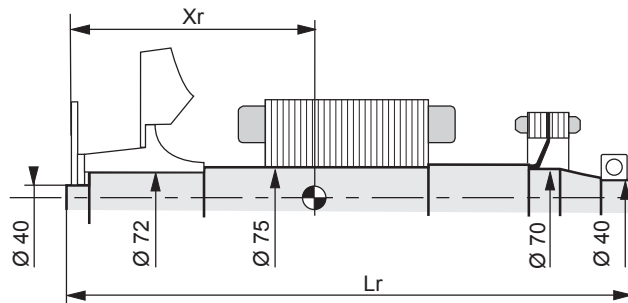


Dimensions (mm) and weight							Coupling	
Type	L	LB	Xg	C	H(*)	Weight/kg	Flange	Flex plate
TAL044 A	743	677	313	405	270	295	3	
TAL044 B	743	677	313	405	270	295	11 1/2	x
TAL044 C	743	677	313	405	270	295	10	x
TAL044 D	743	677	329	405	270	332		
TAL044 E	813	747	353	405	270	368		
TAL044 H	813	747	365	405	270	398		
TAL044 J	854	787	383	405	270	433		

(*) Shaft height H = 225 optional (C = 332.5 / 406 = 356) drawing available upon request.

Flange (mm)						Flex plate (mm)					
S.A.E.	P	N	M	S	XBG	S.A.E.	BX	U	X	Y	AH
3	530	409.575	428.62	11	12	11 1/2	352.42	333.38	8	11	39.6
						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)

Flex plate	Flex plate S.A.E. 10				Flex plate S.A.E. 11 1/2				
	Type	Xr	Lr	M	J	Xr	Lr	M	J
TAL044 A		348	729	118	0.854	334	729	117	0.869
TAL044 B		348	729	118	0.854	334	729	117	0.869
TAL044 C		348	729	118	0.854	334	729	117	0.869
TAL044 D		363	729	134	1.005	349	729	133	1.020
TAL044 E		385	799	149	1.121	372	799	148	1.136
TAL044 H		403	799	161	1.228	390	799	160	1.243
TAL044 J		423	839	176	1.363	410	839	175	1.378

NOTE : Dimensions are for information only and may be subject to modifications. Contractuel 2D drawings can be downloaded from the Leroy-Somer site, 3D drawing files are available upon request.

EMERSON. CONSIDER IT SOLVED.™

www.emersonindustrial.com

© Emerson 2014. The information contained in this brochure is for guidance only and does not form part of any contract. The accuracy cannot be guaranteed as Emerson 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: 65 800 512 €, RCS Angoulême 338 567 258.

Leroy-Somer™


EMERSON™
Industrial Automation