



Low Voltage Alternators - 4 pole

TAL046 - TAL047 - TAL049

180 to 1000 kVA - 50 Hz / 225 to 1250 kVA - 60 Hz
Electrical and mechanical data

Leroy-Somer™


EMERSON™

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Adapted to needs

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

Compliant with international standards

The TAL range complies with international standards and regulations: IEC 60034 and derivative. The range is designed, manufactured and marketed in an ISO 9001 and 14001 environment. It can be integrated into a CE market generator set.

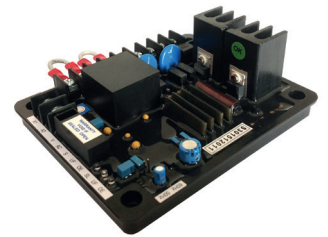


Electrical design

- Class H insulation
- Low voltage winding
- 4 - terminal plate (adapted plate for 6 wires machine)
- Possibility of star and delta connection
- Optimized performance

Robust design

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



Excitation and regulation

- The TAL range is shunt excited
- R150 voltage regulator integrated into the terminal box
- Short-circuit capacity option

Compact terminal box

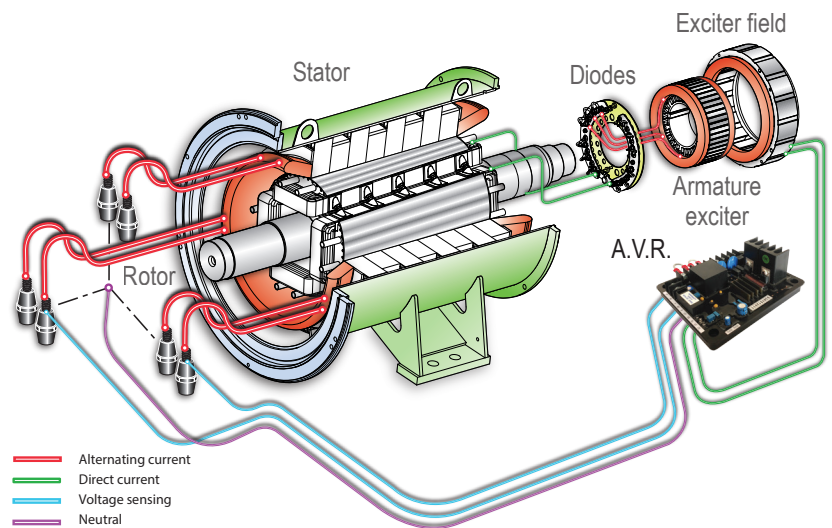
- Easy access to AVR and terminals
- Standard terminal box with possibility of mounting measurement CTs
- Possibility of current transformer for parallel operation

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 heaters
- Large size terminal box for measurement CTs mounting
- Current transformer for parallel operation



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General characteristics

Insulation class	H	Excitation system	SHUNT
Winding pitch	2/3 (Winding 6S)	AVR type	R150
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 (m³/s)	50Hz : TAL046: 0.48 - TAL047: 0.9 - TAL049: 1 60Hz : TAL046: 0.58 - TAL047: 1.1 - TAL049: 1.2	Waveform: I.E.C. = THF (**)	< 2%

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

Ratings / Efficiencies / Reactances

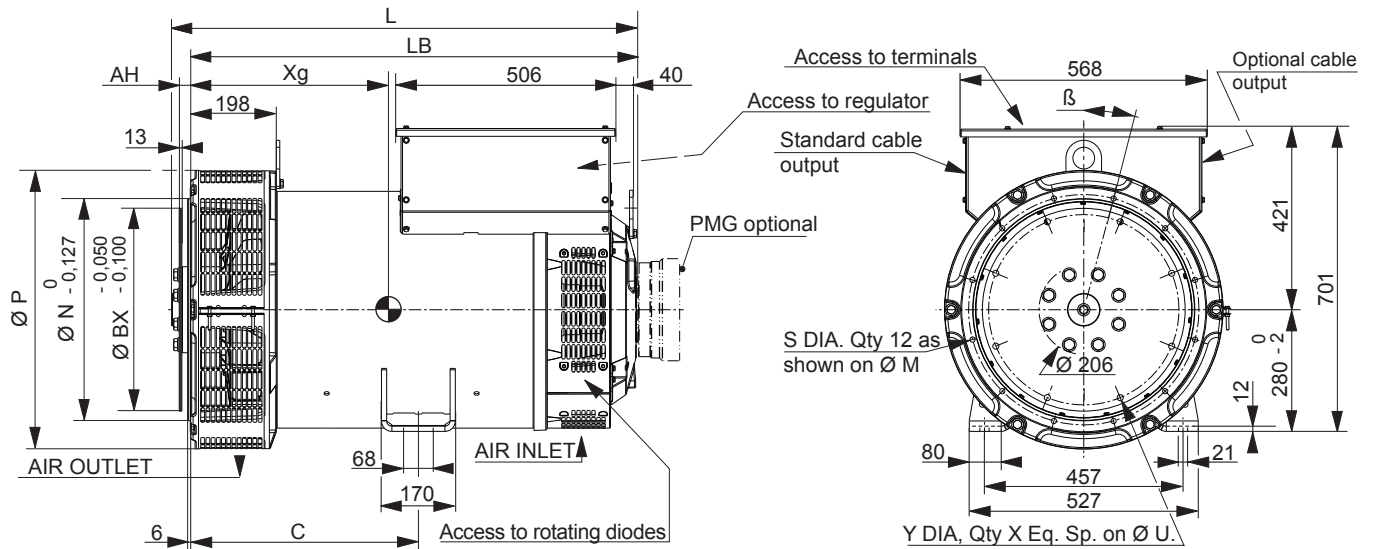
kVA / kW - P.F. = 0.8																				
Type		50 Hz - 1500 R.P.M.								60 Hz - 1800 R.P.M.										
Duty/T°C	Continuous / 40°C	Stand-by / 27°C				Stand-by / 27°C				Continuous / 40°C				Stand-by / 27°C						
Class/T°C	H / 125°K	H / 163°K				H / 163°K				H / 125°K				H / 163°K						
Rating kVA		Rating kVA				Rating kVA				Rating kVA				Rating kVA						
Phase	3 ph.			η %	3 ph.			η %	3 ph.				η %	3 ph.				η %		
Y	380V	400V	415V		380V	400V	415V		x'd	x'd	380V	416V	440V	480V		380V	416V	440V	480V	
Δ	220V	230V	240V		220V	230V	240V				220V	240V	254V	277V		220V	240V	254V	277V	
TAL046 A	180	180	180	91.4	200	200	200	91.2	17.1	13.0	180	195	210	225	92	200	215	230	250	91.8
TAL046 B	200	200	200	91.7	220	220	220	91.3	17.9	14.4	200	215	230	250	92.2	220	237	253	275	91.8
TAL046 C	230	230	230	91.5	253	253	253	91.1	17.2	12.7	226	250	262	288	92.2	250	275	288	316	91.7
TAL046 D	240	250	250	92.4	264	275	275	92.0	17.0	12.3	245	265	280	313	92.5	270	292	308	344	92.2
TAL046 E	275	275	275	93	303	303	305	92.6	13.6	10.7	275	300	315	344	93.5	303	330	347	378	93.2
TAL046 F	290	300	300	92.8	320	330	330	92.5	14.5	11.7	290	315	340	360	93.6	320	347	374	400	93.3
TAL046 G	325	325	325	93.5	360	360	360	93.3	12.7	10.0	315	345	365	406	94.2	347	380	402	447	94
TAL046 H	350	365	365	93.3	385	400	400	93	14.3	11.2	345	375	400	438	94.2	380	413	440	480	93.9
TAL047 A	380	410	410	92.7	420	450	450	92.2	19.7	13.8	450	480	500	510	93.1	495	530	550	580	92.8
TAL047 B	420	455	455	92.2	460	500	500	91.7	21.9	15.3	475	510	530	570	92.7	525	560	585	625	92.3
TAL047 C	465	500	500	93.2	510	550	550	92.8	19.7	13.9	520	555	590	625	93.7	570	610	650	690	93.3
TAL047 D	510	550	550	94.1	560	600	600	93.8	16.7	11.7	560	610	630	690	94.4	615	670	695	750	94.2
TAL047 E	555	600	600	93.9	610	660	660	93.5	19.3	13.6	600	660	685	750	94.3	660	725	755	825	94
TAL047 F	610	660	660	94.2	670	730	730	94.1	17.8	12.3	650	715	755	825	94.6	720	785	830	910	94.5
TAL049 B	730	730	730	94.1	805	805	805	93.8	14.2	11.3	725	795	840	915	94.4	800	875	925	1005	94.2
TAL049 C	820	820	820	94.0	910	910	910	93.5	16.6	13.3	815	890	940	1025	94.3	895	980	1040	1130	93.9
TAL049 D	910	910	910	93.9	1010	1010	1010	93.5	14.1	11.3	905	990	1045	1140	94.2	1000	1090	1155	1255	93.9
TAL049 E	1000	1000	1000	94.4	1100	1100	1100	94.0	16.1	12.9	990	1083	1146	1250	94.6	1089	1192	1260	1375	94.4



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TAL046 single bearing general arrangement



Dimensions (mm) and weight

Type	L without PMG	LB	Xg	C	Weight (kg)
TAL046 A	944**/935	892	408	429	569
TAL046 B	944**/935	892	414	429	599
TAL046 C	944**/935	892	423	429	674
TAL046 D	944**/935	892	423	429	682
TAL046 E	989**/980	937	445	429	754
TAL046 F	989**/980	937	445	429	754
TAL046 G*	1084**/1075	1032	493	525	888
TAL046 H*	1084**/1075	1032	493	525	888

Coupling

	Flex plate	11 1/2	14	18
Flange S.A.E 3	X			
Flange S.A.E 2	X			
Flange S.A.E 1	X	X		
Flange S.A.E 1/2			X	
Flange S.A.E 0			X	X

Flange (mm)

S.A.E.	P	N	M	S	β°
3	641	409.575	428.625	11	15°
2	641	447.675	466.725	11	15°
1	641	511.175	530.225	12	15°
1/2	713	584.2	619.125	14	15°
0	713	647.7	679.45	14	11° 15'

Flex plate (mm)

S.A.E.	BX	U	X	Y	AH
11 1/2	352.42	333.38	8	11	39.6
14	466.72	438.15	8	14	25.4
18***	571.5	542.92	6	17	15.7

*** Option

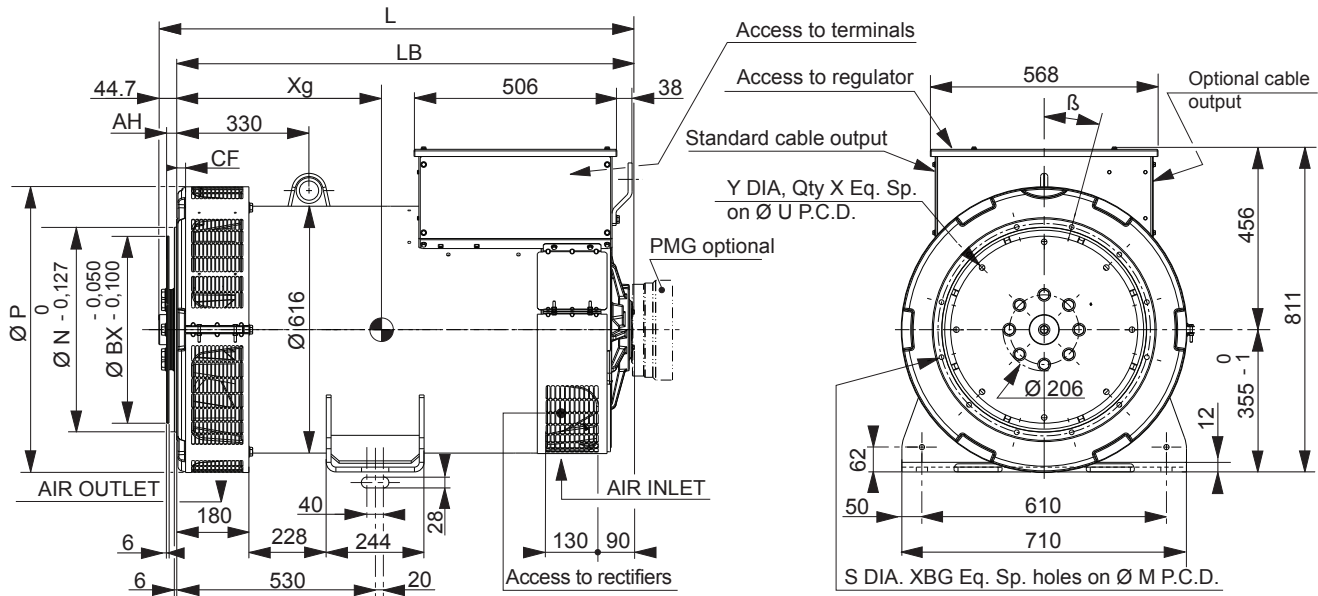
* Shaft height = 355 mm optional ** Dimensions with SAE 11.5

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.

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Dimensions (mm) and weight				
Type	L without PMG	LB	Xg	Weight (kg)
TAL047 A	1041	996	471	1113
TAL047 B	1101	1056	471	1113
TAL047 C	1101	1056	471	1113
TAL047 D	1201	1156	511	1240
TAL047 E	1221	1176	545	1372
TAL047 F	1221	1176	545	1372

Coupling				
Flex plate	11 1/2	14	18	
Flange S.A.E 1	X	X		
Flange S.A.E 1/2		X		
Flange S.A.E 0		X	X	

Flange (mm)							
S.A.E.	P	N	M	XBG	S	β°	CF
1	713	511.175	530.225	12	12	15°	15
1/2	713	584.2	619.125	12	14	15°	22
0	713	647.7	679.45	16	14	11° 15'	42

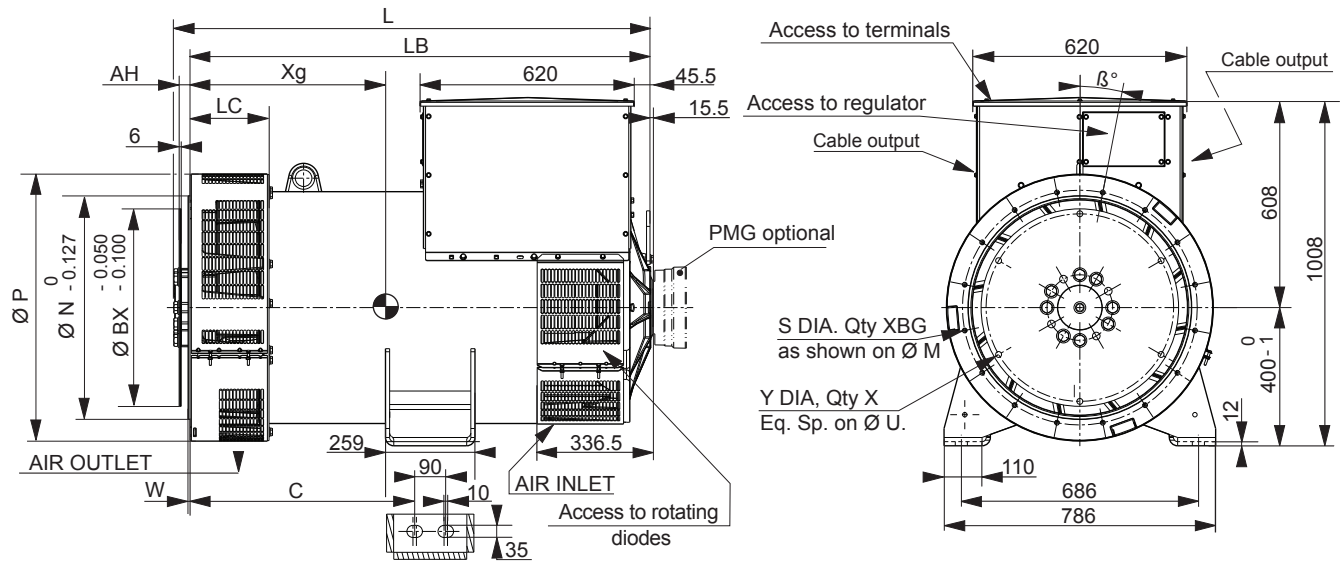
Flex plate (mm)					
S.A.E.	BX	U	X	Y	AH
11 1/2	352.42	333.38	8	11	39.6
14	466.72	438.15	8	14	25.4
18	571.5	542.92	6	17	15.7

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TAL049 single bearing general arrangement



Dimensions (mm) and weight

Type	L without PMG	LB	C	Xg	Weight (kg)
TAL049 B	1372	1331	650	629	1574
TAL049 C	1372	1331	650	636	1635
TAL049 D	1462	1421	650	673	1788
TAL049 E	1462	1421	650	681	1837

Coupling

Flex plate	14	18
Flange S.A.E 1	X	
Flange S.A.E 1/2	X	
Flange S.A.E 0	X	X
Flange S.A.E 00		X

Flange (mm)

S.A.E.	P	N	M	LC	XBG	W	β°
1	773	511.175	530.225	228.5	12	6	15°
1/2	773	584.2	619.125	228.5	12	6	15°
0	773	647.7	679.45	228.5	16	6	11° 15'
00	883	787.4	850.9	245	16	7	11° 15'

Flex plate (mm)

S.A.E.	BX	U	X	Y	AH
14	466.7	438.15	8	14	25.4
18	571.5	542.92	6	17	15.7

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