

SMF180 Range

15kW - 34kW

Application and Standards

SMF180 4 pole alternators are designed for different applications: prime,stand-by,telcom,rental,etc.
Comply with standards of IEC60034,NEMA MG1-32,IS08528,CSA C22.2-100 , VDE 0530 , GB755

Electrical Features

- H class insulation
- Special-treated winding is optional to meet the needs of harsh environment
- 12 leads, achieve a variety of voltage output
- 2/3 winding pitch, effective control of harmonics.
- High efficiency and strong motor start ability
- Variety of excitation and voltage regulation system to meet different loads.

Mechanical Features

- Be protected to IP23, and IP44 is optional
- Both single bearing and double bearing configurations are available
- Sealed for life bearings
- Blackening coupling disc
- The rotors are dynamically balanced according to ISO 1940. A half-key balanced for double bearings.



Common Data

Insulation	H	Voltage Regulation	± 1%	THD	No load<1.5%
Altitude	≤1000m	Leads	12	TIF	<50
Protection	IP23	Winding pitch	2/3	THF	<2%
Overspeed	2250rpm	AVR	SX460 (Standard) / SX440 (Optional)		

Rating

H Class	50Hz / 1500RPM / 40 °C / PF 0.8						60Hz / 1800RPM / 40 °C / PF 0.8					
	Voltage		Cont.		Standby	Efficiency	Cont.		Standby		Efficiency	
Y Series Star	380	400	415	440	400		416	440	460	480	480	
YY Parallel Star	190	200	208	220	200		208	220	230	240	240	
△ Series Delta	220	230	240	254	230		240	254	266	277	277	

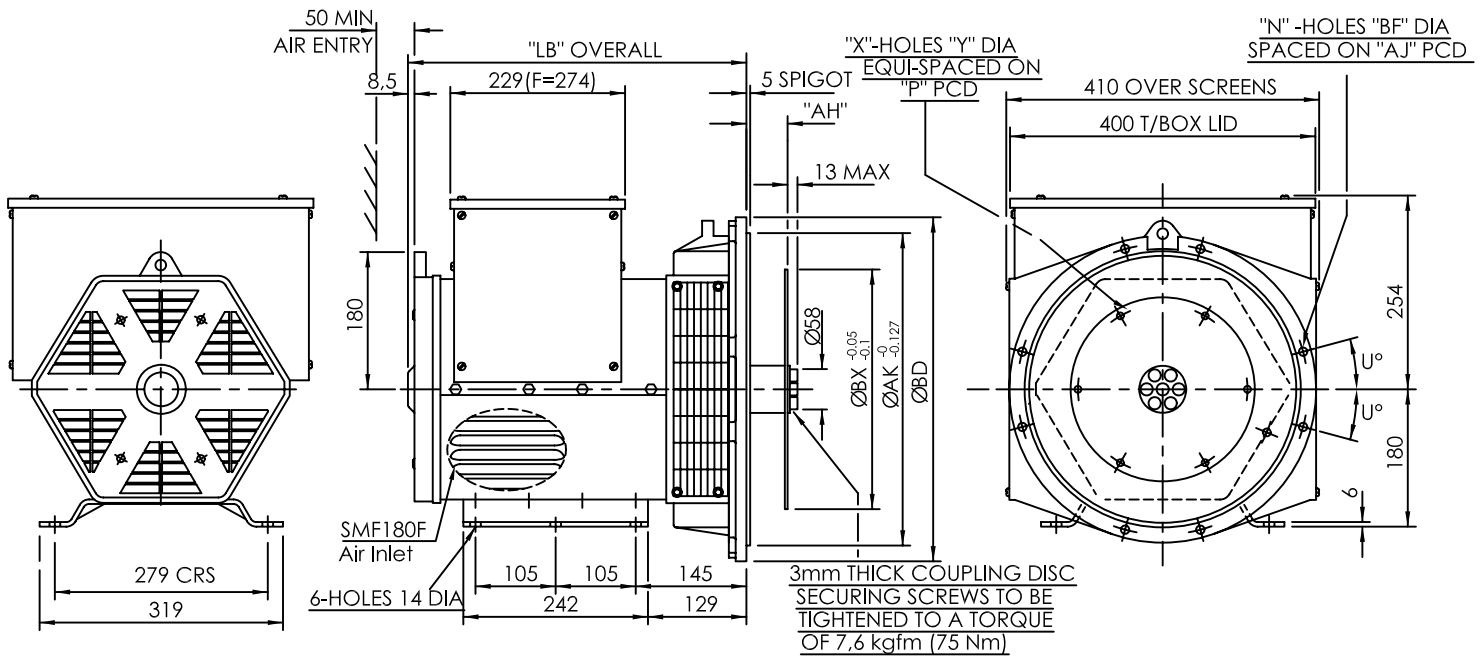
SMF180B	kVA	18.8	18.8	18.8	14.7	20.0	83.4%	18.0	23.0	23.0	25.3	24.0	84.2%
	kW	15.0	15.0	15.0	11.7	16.0		14.4	18.4	18.4	20.0	19.2	
SMF180C	kVA	22.5	22.5	22.5	17.5	24.0	84.2%	27.5	28.8	28.8	30.0	28.0	84.2%
	kW	18.0	18.0	18.0	14.0	19.0		22.0	23.0	23.0	24.0	22.4	
SMF180DS	kVA	25.0	25.0	25.0	20.0	27.5	85.8%	30.0	32.5	32.5	32.5	37.5	86.1%
	kW	20.0	20.0	20.0	16.0	22.0		24.0	26.0	26.0	26.0	30.0	
SMF180D	kVA	27.5	27.5	27.5	22.5	29.0	85.8%	32.5	34.4	34.4	35.0	37.5	86.1%
	kW	22.0	22.0	22.0	18.0	23.0		26.0	27.5	27.5	28.0	30.0	
SMF180E	kVA	31.3	31.3	31.3	27.5	34.0	86.2%	35.0	37.5	37.5	37.5	38.8	87.0%
	kW	25.0	25.0	25.0	22.0	27.0		28.0	30.0	30.0	30.0	31.0	
SMF180F	kVA	37.5	37.5	37.5	32.5	40.0	86.9%	44.3	46.9	46.9	46.9	48.5	87.0%
	kW	30.0	30.0	30.0	26.0	32.0		35.4	37.5	37.5	37.5	38.8	
SMF180G	kVA	40.0	42.5	40.0	35.0	44.0	86.6%	47.3	50.0	50.0	50.0	52.0	87.5%
	kW	32.0	34.0	32.0	28.0	35.2		37.8	40.0	40.0	40.0	41.6	

Reactance- time constant (s) -H class

SMF180 B/C/D/E/F

50Hz @ 400V		SMF180C	SMF180C	SMF180DS	SMF180D	SMF180E	SMF180F
Xd	Direct axis synchro. reactance unsaturated	1.691	1.688	1.648	1.648	1.558	1.998
X'd	Direct axis transient reactance saturated	0.171	0.169	0.169	0.169	0.15	0.151
X''d	Direct axis sub transient reactance saturated	0.112	0.11	0.11	0.11	0.11	0.081
Xq	Quadra. Axis synchro. reactance unsaturated	0.837	0.835	0.828	0.828	0.778	0.965
X''q	Quadra. Axis sub transient reactance saturated	0.19	0.188	0.19	0.19	0.17	0.168
X2	Negative sequence reactance unsaturated	0.162	0.160	0.155	0.155	0.140	0.13
Xo	Zero sequence reactance unsaturated	0.073	0.072	0.07	0.07	0.065	0.065
T'd	Short-Circuit transient time constant	0.019	0.020	0.022	0.022	0.023	0.023
T''d	Sub transient time constant	0.0045	0.0048	0.0053	0.0053	0.0058	0.0058
T'do	Open circuit time constant	0.380	0.4	0.44	0.44	0.52	0.52
Ta	Armature time constant	0.0055	0.0058	0.063	0.063	0.007	0.007
Kcc	Short circuit ratio	0.591	0.592	0.607	0.607	0.642	0.642

Outline Drawing



Dimension (mm)	SAE 2	SAE 3	SAE 4/5	Net W.	Gross W.	Packing
Model	LB	LB	LB	kg	kg	L x W x H (mm)
SMF180B	470.5	443.5	431.5	115	125	740×650×700
SMF180C	470.5	443.5	431.5	123	133	740×650×700
SMF180DS	560.5	533.5	521.5	138	150	740×650×700
SMF180D	560.5	533.5	521.5	145	155	740×650×700
SMF180E	560.5	533.5	521.5	167	177	740×650×700
SMF180F	621.0	593.5	581.5	200	210	740×650×700

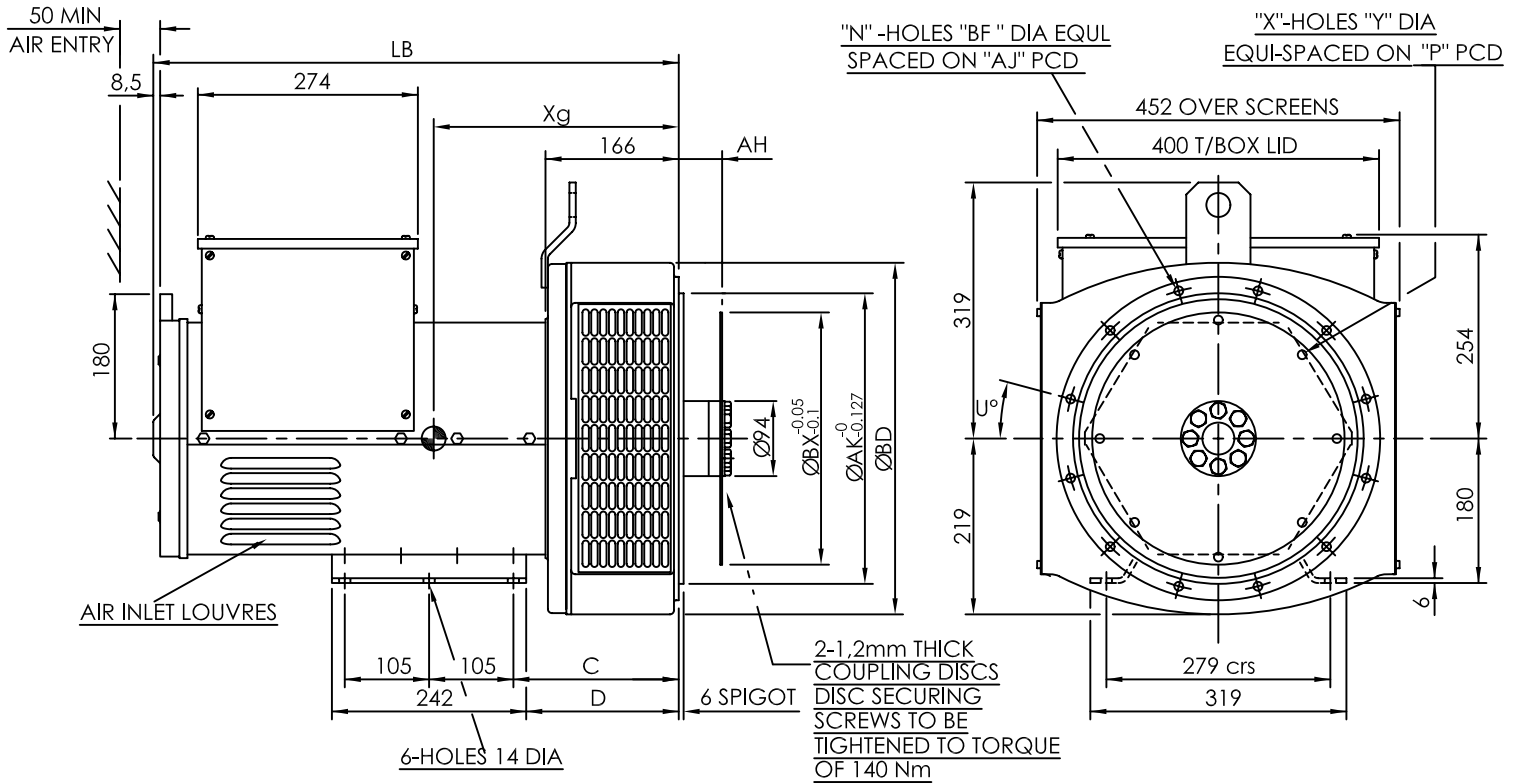
Flange (mm)										Disc	(mm)				
SAE#	BD	AK	AJ	U °	BF	n	C	D	SAE#	BX	P	X	Y	AH	
SAE 5	356	314.32	333.38	22.5	11	8	133	117	11.5	352.4	333.38	8	11	39.6	
SAE 4	402	361.95	381	15	11	8	133	117	10	314.3	295.28	8	11	53.8	
SAE 3	451	409.58	428.62	15	11	8	145	129	8	263.5	244.48	6	11	62	
SAE 2	489	447.68	466.72	15	11	12	172	156	7.5	241.3	222.25	8	9	30.2	
									6.5	215.9	200.02	6	9	30.2	

Reactance- time constant (s) -H class

SMF180 G

50Hz @ 400V		SMF180G
Xd	Direct axis synchro. reactance unsaturated	2.05
X'd	Direct axis transient reactance saturated	0.155
X''d	Direct axis sub transient reactance saturated	0.083
Xq	Quadra. Axis synchro. reactance unsaturated	0.988
X''q	Quadra. Axis sub transient reactance saturated	0.17
X2	Negative sequence reactance unsaturated	0.171
Xo	Zero sequence reactance unsaturated	0.11
T'd	Short-Circuit transient time constant	0.025
T''d	Sub transient time constant	0.015
T'do	Open circuit time constant	0.58
Ta	Armature time constant	0.0105
Kcc	Short circuit ratio	0.488

Outline Drawing



Dimension (mm)	SAE 2		SAE 3		SAE 4/5		Net W.	Gross W.	Packing
Model	LB	Xg	LB	Xg			kg	kg	L x W x H (mm)
SMF180G	668.8	325	654.5	325			210	220	740×650×700

Flange (mm)									Disc (mm)					
SAE#	BD	AK	AJ	U °	BF	n	C	D	SAE#	BX	P	X	Y	AH
SAE 4	402	361.95	381	15	11	12	206	190	14	466.72	438.15	8	13.5	25.4
SAE 3	451	409.58	428.62	15	11	12	206	190	11.5	352.42	333.38	8	11	39.6
SAE 2	490	447.68	466.72	15	11	12	206	190	10	314.32	295.28	8	11	53.8
SAE 1	617	511.18	530.22	15	11	12	220	204	8	263.52	244.48	6	11	62