

15kW - 32kW

SM180 Range

Application and Standards

SM180 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	± 0.5%	THD	No load<1.5%
Altitude	<=1000m	Leads	12	TIF	<50
Protection	IP23	Winding pitch	2/3	THF	<2%
Overspeed	2250rpm	AVR	VR301(Standard), VR302 (Optional)		

Rating

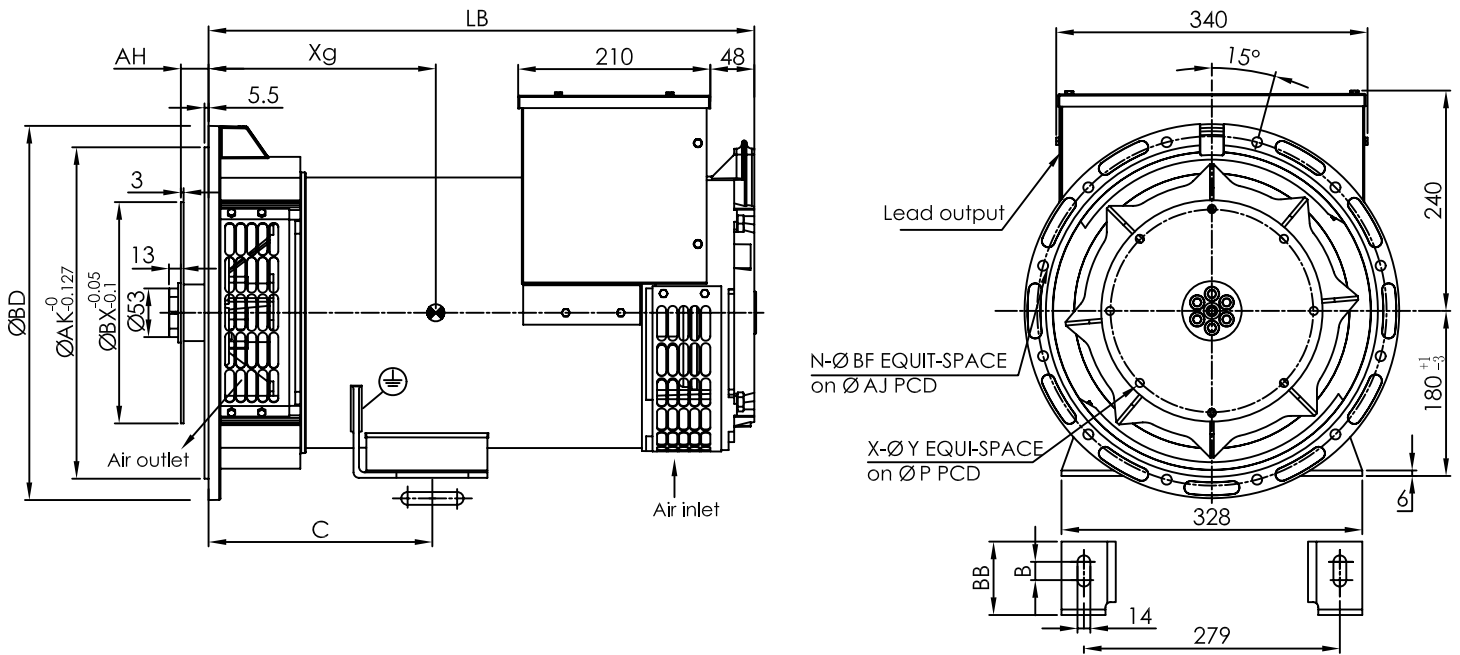
H Class	50Hz / 1500RPM / 40 °C / PF 0.8						60Hz / 1800RPM / 40 °C / PF 0.8						
	Voltage		Prime		Standby	Efficiency	Prime		Standby	Efficiency			
Y Series Star	380	400	415	440	400	83.4%	416	440	460	480	480	84.2%	
YY Parallel Star	190	200	208	220	200	84.3%	208	220	230	240	240	84.3%	
△ Series Delta	220	230	240	254	230	85.7%	240	254	266	277	277	86.1%	
SM180B	kVA	18.8	18.8	18.8	14.7	21.8	83.4%	18.0	23.0	23.0	25.3	27.0	84.2%
	kW	15.0	15.0	15.0	11.7	17.4	83.4%	14.4	18.4	18.4	20.0	22.0	84.2%
SM180C	kVA	22.5	22.5	22.5	17.5	26.0	84.3%	27.5	28.8	28.8	30.0	33.0	84.3%
	kW	18.0	18.0	18.0	14.0	20.8	84.3%	22.0	23.0	23.0	24.0	26.0	84.3%
SM180DS	kVA	25.0	25.0	25.0	20.0	27.5	85.7%	30.0	32.5	32.5	32.5	37.5	86.1%
	kW	20.0	20.0	20.0	16.0	22.0	85.7%	24.0	26.0	26.0	26.0	30.0	86.1%
SM180D	kVA	27.5	27.5	27.5	22.5	29.0	85.9%	32.5	34.4	34.4	35.0	37.5	86.2%
	kW	22.0	22.0	22.0	18.0	32.2	85.9%	26.0	27.5	27.5	28.0	30.0	86.2%
SM180E	kVA	31.3	31.3	31.3	27.5	26.0	86.6%	35.0	37.5	37.5	37.5	38.8	87.4%
	kW	25.0	25.0	25.0	22.0	32.5	86.6%	28.0	30.0	30.0	30.0	31.0	87.4%
SM180F	kVA	37.5	37.5	37.5	32.5	39.0	87.1%	44.3	46.9	46.9	46.9	48.5	87.5%
	kW	30.0	30.0	30.0	26.0	31.2	87.1%	35.4	37.5	37.5	37.5	38.8	87.5%
SM180G	kVA	40.0	40.0	40.0	35.0	44.0	87.7%	47.3	50.0	50.0	50.0	52.0	88.6%
	kW	32.0	32.0	32.0	28.0	35.2	87.7%	37.8	40.0	40.0	40.0	41.6	88.6%

Reactance- time constant (s) -H class

SM180 B/C/DS/D/E/F/G

50Hz @ 400V		SM180B	SM180C	SM180DS	SM180D	SM180E	SM180F	SM180G
Xd	Direct axis synchro. reactance unsaturated	1.691	1.688	1.648	1.648	1.558	1.998	2.050
X'd	Direct axis transient reactance saturated	0.171	0.169	0.169	0.169	0.15	0.151	0.155
X''d	Direct axis sub transient reactance saturated	0.112	0.11	0.11	0.11	0.108	0.081	0.083
Xq	Quadra. Axis synchro. reactance unsaturated	0.837	0.835	0.828	0.828	0.778	0.965	0.988
X''q	Quadra. Axis sub transient reactance saturated	0.19	0.188	0.19	0.19	0.17	0.168	0.172
X2	Negative sequence reactance unsaturated	0.162	0.16	0.155	0.155	0.14	0.127	0.171
Xo	Zero sequence reactance unsaturated	0.073	0.072	0.07	0.07	0.065	0.061	0.110
T'd	Short-Circuit transient time constant	0.019	0.02	0.022	0.022	0.023	0.024	0.025
T''d	Sub transient time constant	0.0045	0.0048	0.0053	0.0053	0.0058	0.011	0.015
T'do	Open circuit time constant	0.38	0.4	0.44	0.44	0.52	0.56	0.580
Ta	Armature time constant	0.0055	0.0058	0.063	0.063	0.007	0.01	0.0105
Kcc	Short circuit ratio	0.591	0.592	0.607	0.607	0.642	0.501	0.188

Outline Drawing



Dimension (mm)	SAE 2, 3, 4					Net W.	Gross W.	Packing
	LB	C	B	BB	Xg			
Model								
SM180B	440	244	39	107	203	106	116	1136x686x800
SM180C	440	244	39	107	213	114	124	1136x686x800
SM180DS	495	244	39	107	237	136	146	1136x686x800
SM180D	495	244	39	107	237	136	146	1136x686x800
SM180E	535	251.5	54	146	257	159	169	1136x686x800
SM180F	565	251.5	54	146	272	182	192	1136x686x800
SM180G	565	251.5	54	146	287	197	207	1136x686x800

Flange (mm)	SAE#					Disc SAE#	(mm)				
	BD	AK	AJ	BF	n		BX	P	X	Y	AH
SAE 4	408	361.95	381	11	12	11.5	352.42	333.38	8	11	39.6
SAE 3	460	409.58	428.62	11	12	10	314.32	295.28	8	11	53.8
SAE 2	500	447.68	466.72	11	12	8	263.52	244.48	6	11	62
						7.5	241.3	222.25	8	9	30.2
						6.5	215.9	200.02	6	9	30.2