SMM

ALTERNATOR

FUJIAN SINOCOX GENERATOR TECHNOLOGY CO., LTD.

SMM180 Range

_ Rev.G _

APPLICATION AND STANDARDS

Widly used for homes, small shops and offices as a prime power supply or backup

Comply with standards of IEC60034,NEMA MG1-22,IS08528,CSA C22.2-100，VDE 0530，GB755

ELECTRICAL FEATURES

The high efficiency semiconductors of the AVR ensure positive build-up from initial low levels of residual voltage.

2/3 winding pitch, effective control of harmonics.

12 leads, achieve a variety of voltage output

High efficiency and strong motor start ability

Be capable of running at overload up to 10% for 1 hour every 12 hours.

The "ARAP" - Auxiliary Regulation Adopted Principle is optional

Variety of excitation and voltage regulation system to meet different loads.

MECHANICAL FEATURES

Be protected to IP23, and IP44 is optional

Sealed for life bearings

Both single bearing and double bearing configurations are available

Steel sheet terminal box, which provides enough space for customer's reconnection

The rotor is dynamically balanced according to ISO 1940. A half-key balanced for double bearings.

INSULATION AND IMPREGNATION

H class insulation

The VPI (Vacuum Pressure Impregnation) equiped to ensure the electrical insulation and mechanical strength.

The "Anti-Harsh" winding is optional to meet the needs of harsh environment

COMMON DATA

INSULATION	ALTITUDE	OVERSPEED	PROTECTION	LEADS	PITCH	AVR	VOLTAGE REGULATION	WAVEFORM DISTORTION	TIF	THF
H/H	<=1000m	2250 rpm	IP23	12	2/3	SX460	± 1%	<1.5% NO LOAD	<50	<2%

RATING TABLE

H CLASS	50Hz/1500RPM/PF 0.8											60Hz/1800RPM/PF 0.8										
TEMP.	90℃/50℃ PRIME POWER								110℃/50℃ Standby		Effi.	90℃/50℃ PRIME POWER								110℃/50℃ Standby		Effi.
SERIES STAR	380		**400**		415		440		400		400	416		440		460		**480**		480		480
PARALLEL STAR	190		**200**		208		220		200		200	208		220		230		**240**		240		240
SERIES DELTA	220		**230**		240		254		230		230	240		254		266		**277**		277		277
RATING	kVA	kW	kVA	kW	kVA	kW	kVA	kW	kVA	kW	%	kVA	kW	kVA	kW	kVA	kW	kVA	kW	kVA	kW	%
SMM180B	14.1	11.3	**14.1**	**11.3**	14.1	11.3	N/A	N/A	15.0	12.0	84.8	16.0	12.8	16.0	12.8	16.0	12.8	**16.0**	**12.8**	18.8	15.0	85.5
SMM180C	15.2	12.2	**15.2**	**12.2**	15.2	12.2	N/A	N/A	16.8	13.4	84.8	18.4	14.7	19.3	15.4	19.3	15.4	**19.3**	**15.4**	21.4	17.1	85.7
SMM180DS	16.5	13.2	**16.5**	**13.2**	16.5	13.2	N/A	N/A	18.5	14.8	86.4	20.0	16.0	21.8	17.4	21.8	17.4	**21.8**	**17.4**	25.0	20.0	86.2
SMM180D	20.1	16.1	**20.1**	**16.1**	20.1	16.1	N/A	N/A	22.2	17.8	86.4	23.2	18.6	24.6	19.7	24.6	19.7	**24.6**	**19.7**	27.1	21.7	87.2
SMM180E	22.8	18.2	**22.8**	**18.2**	22.8	18.2	N/A	N/A	25.0	20.0	86.9	26.5	21.2	27.8	22.2	27.8	22.2	**27.8**	**22.2**	30.0	24.0	88.3
SMM180F	30.9	24.7	**30.9**	**24.7**	30.9	24.7	N/A	N/A	34.0	27.2	87.5	36.0	28.8	37.9	30.3	37.9	30.3	**37.9**	**30.3**	42.1	33.7	88.5
SMM180G	31.9	25.5	**32.6**	**26.1**	31.9	25.5	N/A	N/A	34.5	27.6	87.7	36.6	29.3	38.9	31.1	38.9	31.1	**38.9**	**31.1**	43.0	34.4	89.0

Sincox

4-Pole

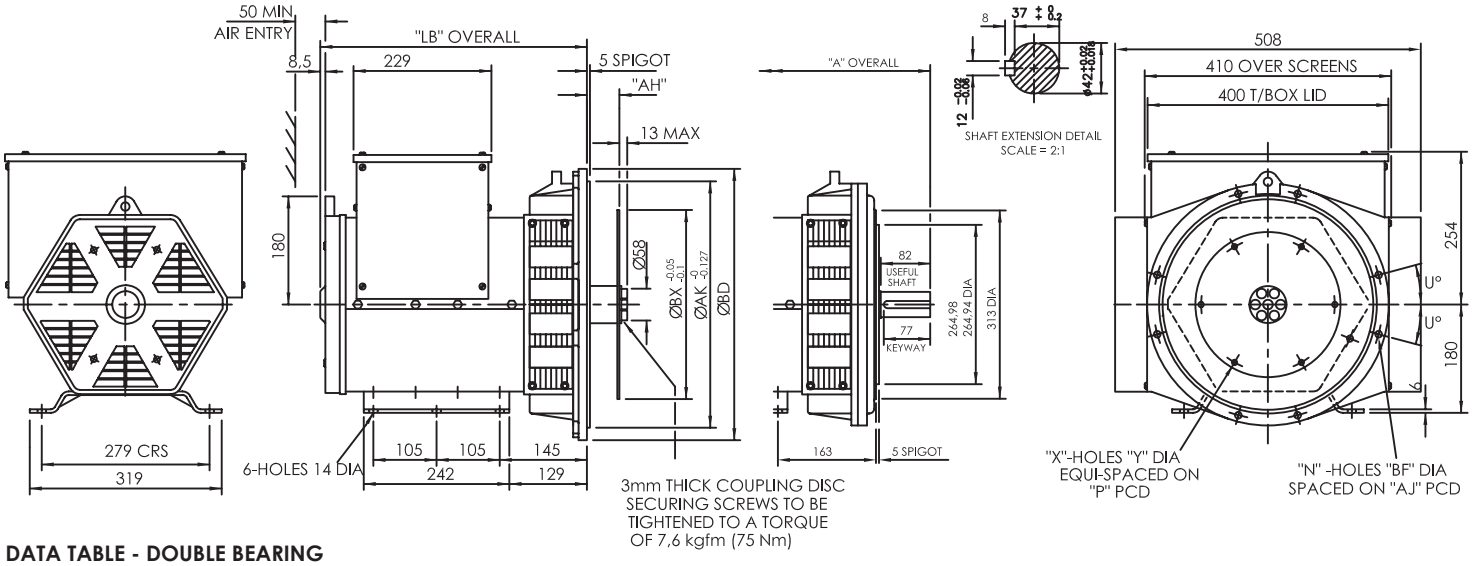
Always Better

REACTANCE-TIME CONSTANT(s) H CLASS

SMM180 B/C/DS/D/E/F

60Hz @ 480V		SMM180B	SMM180C	SMM180DS	SMM180D	SMM180E	SMM180F
Xd	Direct axis synchro. reactance unsaturated	1.281	1.281	1.406	1.406	1.426	1.567
X'd	Direct axis transient reactance saturated	0.130	0.130	0.142	0.142	0.144	0.118
X"d	Direct axis sub transient reactance saturated	0.082	0.082	0.090	0.090	0.091	0.065
Xq	Quadra. Axis synchro. reactance unsaturated	0.635	0.635	0.696	0.696	0.706	0.755
X"q	Quadra. Axis sub transient reactance saturated	0.143	0.143	0.157	0.157	0.159	0.133
X2	Negative sequence reactance unsaturated	0.116	0.116	0.128	0.128	0.130	0.099
Xo	Zero sequence reactance unsaturated	0.055	0.055	0.060	0.060	0.062	0.027
T'd	Short-Circuit transient time constant	0.02s	0.02s	0.02s	0.02s	0.020	0.24s
T"d	Sub transient time constant	0.005s	0.005s	0.005s	0.005s	0.005s	0.015s
T'do	Open circuit time constant	0.4s	0.4s	0.4s	0.4s	0.5s	0.57s
Ta	Armature time constant	0.006s	0.006s	0.006s	0.006s	0.006s	0.0095s
Kcc	Short circuit ratio	0.781	0.781	0.711	0.711	0.701	0.500

OUTLINE DRAWING



DATA TABLE - DOUBLE BEARING

Dimension（mm）	Double BRG			Weight		Packing
Model	A			Net(kg)	Gross(kg)	L x W x H (mm)
SMM180B	551.5			118	146	1120x680x700
SMM180C	551.5			126	154	1120x680x700
SMM180DS	641.5			141	169	1120x680x700
SMM180D	641.5			144	172	1120x680x700
SMM180E	641.5			170	198	1120x680x700
SMM180F	701.5			183	218	1120x680x700

DATA TABLE - SINGLE BEARING

Dimension（mm）	SAE 2	SAE 3	SAE 4/5	Weight		Packing
Model	LB	LB	LB	Net(kg)	Gross(kg)	L x W x H (mm)
SMM180B	470.5	443.5	431.5	115	143	1120x680x700
SMM180C	470.5	443.5	431.5	123	151	1120x680x700
SMM180DS	560.5	533.5	521.5	138	166	1120x680x700
SMM180D	560.5	533.5	521.5	145	173	1120x680x700
SMM180E	560.5	533.5	521.5	167	195	1120x680x700
SMM180F	620.5	593.5	581.5	185	215	1120x680x700

Flange（mm）									Disc(mm)					
SAE#	BD	AK	AJ	BF	N	U°	C	D	SAE#	BX	P	X	Y	AH
SAE 5	356	314.32	333.38	11	8	22.5	133	117	11.5	352.42	333.38	8	11	39.6
SAE 4	402	361.95	381.00	11	8	15	133	117	10	314.32	295.28	8	11	53.8
SAE 3	451	409.58	428.62	11	8	15	145	129	8	263.52	244.48	6	11	62
SAE 2	489	447.68	466.72	11	12	15	172	156	7.5	241.30	222.25	8	9	30.2
									6.5	215.90	200.02	6	9	30.2

SINOCOX ELECTRO - MECHANICAL FUZHOU CO., LTD

4-Pole

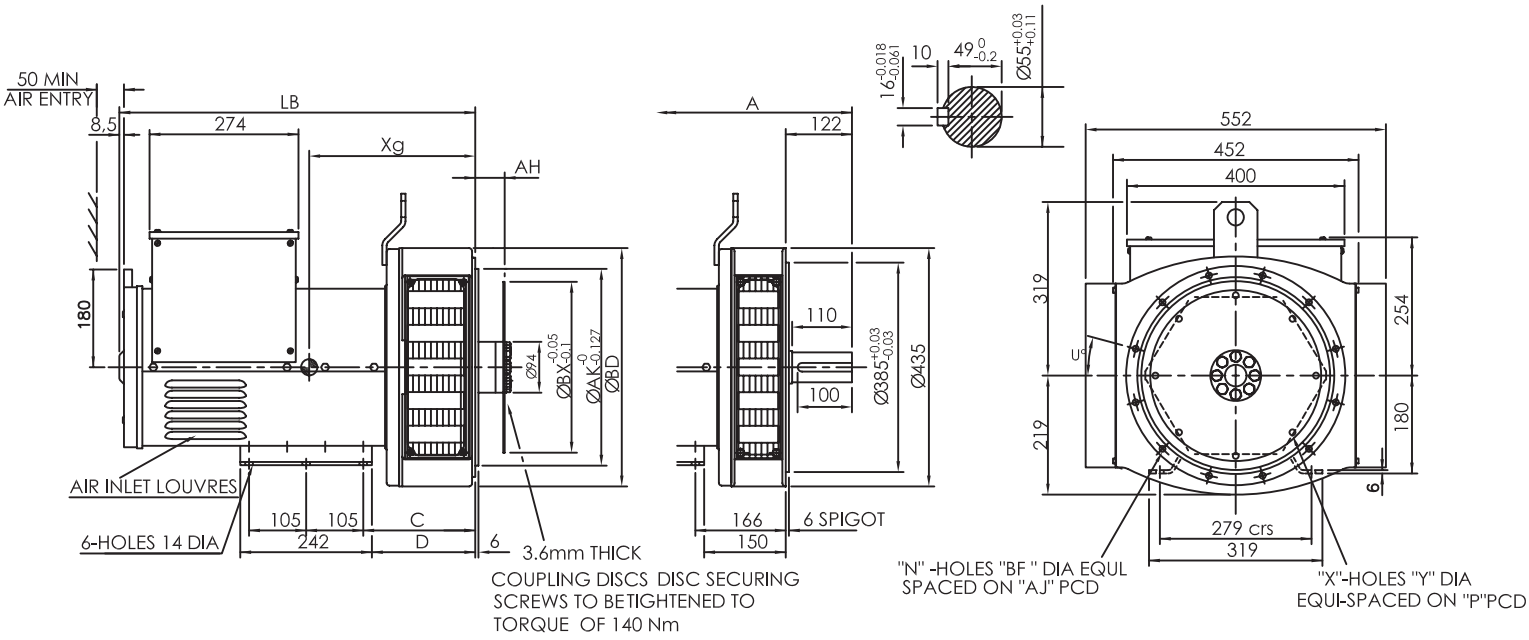
Always Better

REACTANCE-TIME CONSTANT(s) H CLASS

SMM180G

	60Hz @ 480V	SMM180G
Xd	Direct axis synchro. reactance unsaturated	1.424
X'd	Direct axis transient reactance saturated	0.108
X"d	Direct axis sub transient reactance saturated	0.063
Xq	Quadra. Axis synchro. reactance unsaturated	0.685
X"q	Quadra. Axis sub transient reactance saturated	0.120
X2	Negative sequence reactance unsaturated	0.009
Xo	Zero sequence reactance unsaturated	0.027
T'd	Short-Circuit transient time constant	0.0025s
T"d	Sub transient time constant	0.016s
T'do	Open circuit time constant	0.59s
Ta	Armature time constant	0.0102s
Kcc	Short circuit ratio	0.702

OUTLINE DRAWING



DATA TABLE - DOUBLE BEARING

Dimension（mm）	Double BRG			Weight		Packing
Model	A			Net(kg)	Gross(kg)	L x W x H (mm)
SMM180G	736.5			215	244	1120x800x750

DATA TABLE - SINGLE BEARING

Dimension（mm）	SAE 2	SAE 3		Weight		Packing
Model	LB	LB		Net(kg)	Gross(kg)	L x W x H (mm)
SMM180G	668.8	654.5		210	236	1120x800x750

Flange（mm）									Disc(mm)					
SAE#	BD	AK	AJ	BF	N	U°	C	D	SAE#	BX	P	X	Y	AH
SAE 5	356	314.32	333.38	11	8	22.5	133	117	11.5	352.42	333.38	8	11	39.6
SAE 4	402	361.95	381.00	11	8	15	133	117	10	314.32	295.28	8	11	53.8
SAE 3	451	409.58	428.62	11	8	15	145	129	8	263.52	244.48	6	11	62.0
SAE 2	489	447.68	466.72	11	12	15	172	156	7.5	241.30	222.25	8	9	30.2
									6.5	215.90	200.02	6	9	30.2