

# SMF

FUJIAN SINOCOX GENERATOR TECHNOLOGY CO., LTD.

ALTERNATOR

## SMF160 Range

\_ Rev.G \_

### APPLICATION AND STANDARDS

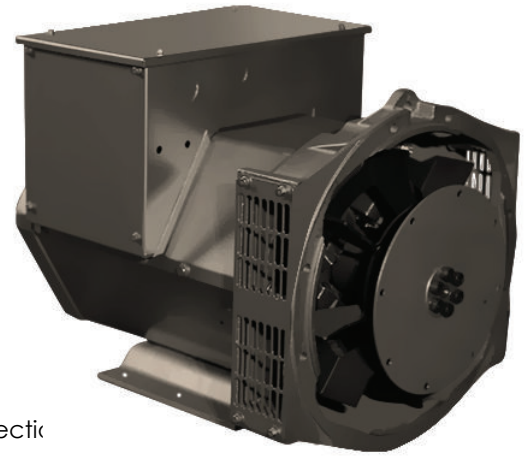
Widely used for homes, small shops and offices as a prime power supply or backup  
Comply with standards of IEC60034,NEMA MG1-22,IS08528,CSA C22.2-100, VDE 0530, GB755

### 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 bearing



### INSULATION AND IMPREGNATION

H class insulation  
The VPI (Vacuum Pressure Impregnation) equipped 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

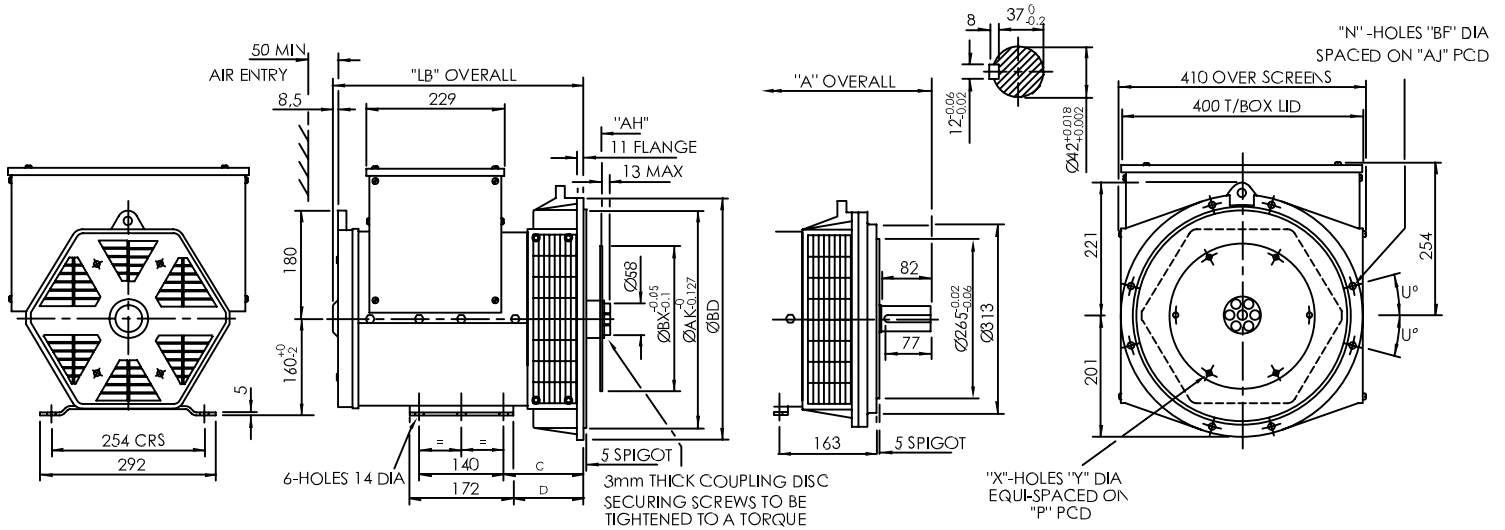
H CLASS	50Hz/1500RPM/PF 0.8											60Hz/1800RPM/PF 0.8											
	125°C/40°C PRIME POWER										163°C/27°C Standby	Effi.	125°C/40°C PRIME POWER										163°C/27°C Standby
SERIES STAR	380	400	415	440	400	400	416	440	460	480	480	480	480	480	480	480	480	480	480	480	480		
PARALLEL STAR	190	200	208	220	200	200	208	220	230	240	240	240	240	240	240	240	240	240	240	240	240		
SERIES DELTA	220	230	240	254	230	230	240	254	266	277	277	277	277	277	277	277	277	277	277	277	277		
RATING	kVA	kW	kVA	kW	kVA	kW	kVA	kW	kVA	kW	%	kVA	kW	kVA	kW	kVA	kW	kVA	kW	kVA	kW	%	
SMF160B	8.1	6.5	8.1	6.5	8.1	6.5	6.2	5.0	8.8	7.1	77.3	9.6	7.7	10.2	8.2	10.2	8.2	10.2	8.2	10.2	8.2	78.3	
SMF160C	11.0	8.8	11.0	8.8	11.0	8.8	8.5	6.8	11.9	9.5	79.5	13.0	10.4	13.8	11.0	13.8	11.0	13.8	11.0	13.8	11.0	80.9	
SMF160D	13.5	10.8	13.5	10.8	13.5	10.8	11.0	8.8	14.6	11.7	80.8	16.0	12.8	16.9	13.5	16.9	13.5	16.9	13.5	16.9	13.5	82.4	
SMF160E	16.0	12.8	16.0	12.8	16.0	12.8	13.5	10.8	17.4	13.9	81.8	18.9	15.1	20.0	16.0	20.0	16.0	20.0	16.0	20.0	16.0	83.6	

**REACTANCE-TIME CONSTANT(s) H CLASS**

**SMF160 B/C/D/E**

60Hz @ 480V		SMF160B	SMF160C	SMF160D	SMF160E
Xd	Direct axis synchro. reactance unsaturated	1.889	1.858	1.828	1.807
X'd	Direct axis transient reactance saturated	0.194	0.189	0.186	0.185
X''d	Direct axis sub transient reactance saturated	0.122	0.118	0.117	0.115
Xq	Quadra. Axis synchro. reactance unsaturated	0.938	0.923	0.907	0.898
X'q	Quadra. Axis sub transient reactance saturated	0.216	0.212	0.209	0.208
X2	Negative sequence reactance unsaturated	0.178	0.178	0.176	0.174
Xo	Zero sequence reactance unsaturated	0.182	0.081	0.08	0.079
T'd	Short-Circuit transient time constant	0.012s	0.014s	0.017s	0.018s
T''d	Sub transient time constant	0.003s	0.003s	0.004s	0.005s
T'do	Open circuit time constant	0.2s	0.3s	0.3s	0.4s
Ta	Armature time constant	0.004s	0.005s	0.005s	0.006s
Kcc	Short circuit ratio	0.529	0.538	0.547	0.553

**OUTLINE DRAWING**



**DATA TABLE - DOUBLE BEARING**

Dimension ( mm )	Double BRG	Weight		Packing
		Net(kg)	Gross(kg)	
Model	A			L x W x H (mm)
SMF160B	484.5	83	111	1120x680x700
SMF160C	484.5	93	121	1120x680x700
SMF160D	511.5	101	129	1120x680x700
SMF160E	511.5	108	136	1120x680x700

**DATA TABLE - SINGLE BEARING**

Dimension ( mm )	SAE			Weight		Packing
	SAE 2	SAE 3	SAE 4/5	Net(kg)	Gross(kg)	
Model	LB	LB	LB			L x W x H (mm)
SMF160B	403.5	376.5	364.5	80	108	1120x680x700
SMF160C	403.5	376.5	364.5	90	118	1120x680x700
SMF160D	430.5	403.5	391.5	98	126	1120x680x700
SMF160E	430.5	403.5	391.5	105	133	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	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	241.3	222.25	8	9	30.2
									6.5	215.9	200.02	6	9	30.2