

ALTERNATOR

SMF162 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

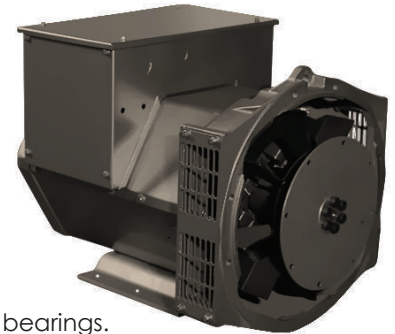
The high efficiency semiconductors of the AVR ensure positive build-up from initial low levels of residual voltage.
2/3 winding pitch, effective control of harmonics.
12 leads, achieve a variety of voltage output
High efficiency and strong motor start ability
Be capable of running at overload up to 10% for 1 hour every 12 hours.
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) equipped to ensure the electrical insulation and mechanical strength.
environment



COMMON DATA

INSULATION	ALTITUDE	OVERSPEED	PROTECTION	LEADS	PITCH	AVR	VOLTAGE REGULATION	WAVEFORM DISTORTION	TIF	THF
H/H	<=1000m	4500 rpm	IP23	12	2/3	SX460	± 1%	<1.5% NO LOAD	<50	<2%

RATING TABLE @ 3-Phase

H CLASS	50Hz/3000RPM/PF 0.8											60Hz/3600RPM/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											
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	%	
SMF162C	12.5	10.0	12.5	10.0	12.5	10.0	12.0	9.6	13.8	11.0	74.2	14.7	11.8	15.6	12.5	15.6	12.5	15.6	12.5	15.6	12.5	73.6	
SMF162D	15.0	12.0	15.0	12.0	15.0	12.0	14.5	11.6	16.5	13.2	77.1	17.8	14.2	18.8	15.0	18.8	15.0	18.8	15.0	18.8	15.0	76.7	
SMF162E	17.5	14.0	17.5	14.0	17.5	14.0	16.5	13.2	19.3	15.4	79.1	20.8	16.6	21.9	17.5	21.9	17.5	21.9	17.5	21.9	17.5	78.9	
SMF162F	25.0	20.0	25.0	20.0	25.0	20.0	22.5	18.0	27.5	22.0	82.6	29.6	23.7	31.3	25.0	31.3	25.0	31.3	25.0	31.3	25.0	81.5	

RATING TABLE @ 1-Phase

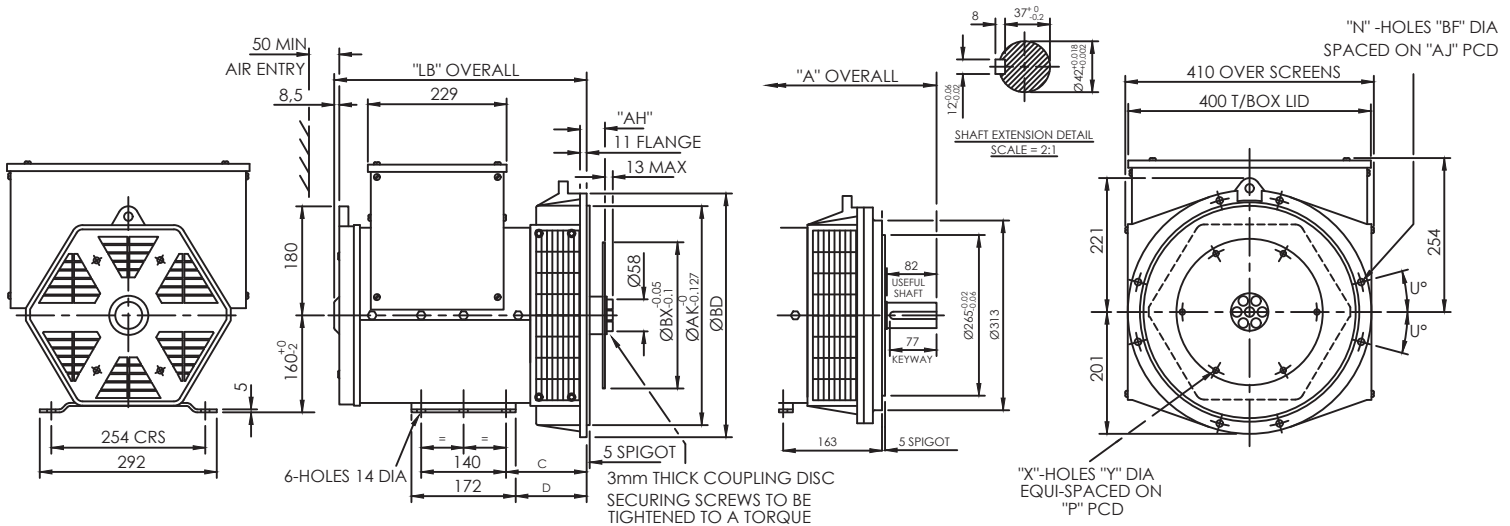
H CLASS	12 Wire Reconnectable Single Phase										4 Wire Dedicated Single Phase											
	125°C/40°C PRIME POWER										Effi.	125°C/40°C PRIME POWER										Effi.
FREQ.	50Hz/3000RPM					60Hz/3600RPM					50Hz	50Hz/3000RPM					60Hz/3600RPM					50Hz
VOLTAGE	220-240V					240V					230	220-240V					240V					230
FACTOR	1	0.8	1	0.8	1	0.8	1	0.8	1	0.8	0.8	1	0.8	1	0.8	1	0.8	1	0.8	1	0.8	0.8
RATING	kVA	kW	kVA	kW	kVA	kW	kVA	kW	kVA	kW	%	kVA*	kW	kVA	kW	kVA	kW	kVA	kW	kVA	kW	%
SMF162C	7.5	7.5	7.5	6.0	8.8	8.8	8.8	7.0			68.0	9.6	9.6	8.4	6.7	12.0	12.0	10.0	8.0			68.1
SMF162D	9.0	9.0	9.0	7.2	10.7	10.7	10.7	8.6			72.0	11.5	11.5	10.0	8.0	15.0	15.0	12.4	9.9			72.4
SMF162E	10.5	10.5	10.5	8.4	12.5	12.5	12.5	10.0			74.3	13.5	13.5	11.8	9.4	17.5	17.5	14.4	11.5			74.7
SMF162F	15.0	15.0	15.0	12.0	17.8	17.8	17.8	14.2			77.4	17.5	17.5	16.8	13.4	22.0	22.0	20.6	16.5			77.9

REACTANCE-TIME CONSTANT(s) H CLASS

SMF162 C/D/E/F

60Hz @ 480V		SMF162C	SMF162D	SMF162E	SMF162F
Xd	Direct axis synchro. reactance unsaturated	2.694	2.681	2.500	3.001
X'd	Direct axis transient reactance saturated	0.275	0.272	0.260	0.310
X''d	Direct axis sub transient reactance saturated	0.173	0.170	0.160	0.190
Xq	Quadra. Axis synchro. reactance unsaturated	1.336	1.332	1.250	1.501
X''q	Quadra. Axis sub transient reactance saturated	0.321	0.310	0.280	0.352
X2	Negative sequence reactance unsaturated	0.270	0.261	0.241	0.290
Xo	Zero sequence reactance unsaturated	0.130	0.120	0.111	0.132
T'd	Short-Circuit transient time constant	0.012s	0.012s	0.012s	0.012s
T''d	Sub transient time constant	0.003s	0.003s	0.003s	0.003s
T'do	Open circuit time constant	0.224s	0.224s	0.224s	0.224s
Ta	Armature time constant	0.004s	0.004s	0.004s	0.004s
Kcc	Short circuit ratio	0.371	0.373	0.400	0.333

OUTLINE DRAWING



DATA TABLE - DOUBLE BEARING

Dimension (mm)	Double BRG	Weight		Packing
		Net(kg)	Gross(kg)	
Model	A			L x W x H (mm)
SMF162C	484.5	92	120	1120x680x700
SMF162D	484.5	97	125	1120x680x700
SMF162E	536.5	104	132	1120x680x700
SMF162F	536.5	120	148	1120x680x700

DATA TABLE - SINGLE BEARING

Dimension (mm)	Double BRG	SAE3	SAE4	SAE5	Weight		Packing
					Net(kg)	Gross(kg)	
Model	A	LB	LB	LB			L x W x H (mm)
SMF162C	484.5	376.5	364.5	364.5	89	117	1120x680x700
SMF162D	484.5	376.5	364.5	364.5	94	122	1120x680x700
SMF162E	536.5	428.5	416.5	416.5	101	129	1120x680x700
SMF162F	536.5	428.5	416.5	416.5	117	145	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
									7.5	241.3	222.25	8	9	30.2
									6.5	215.9	200.02	6	9	30.2