

## ALTERNATOR

# SMF315 Range

\_ Rev. H \_

### 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.

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

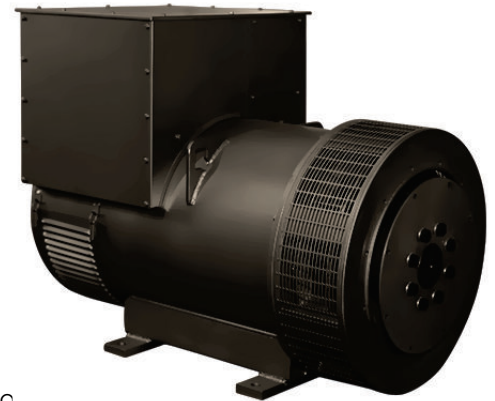
Be protected to IP23, and IP44 is optional

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	AS440	± 1%	<1.5% NO LOAD	<50	<2%

### RATING TABLE

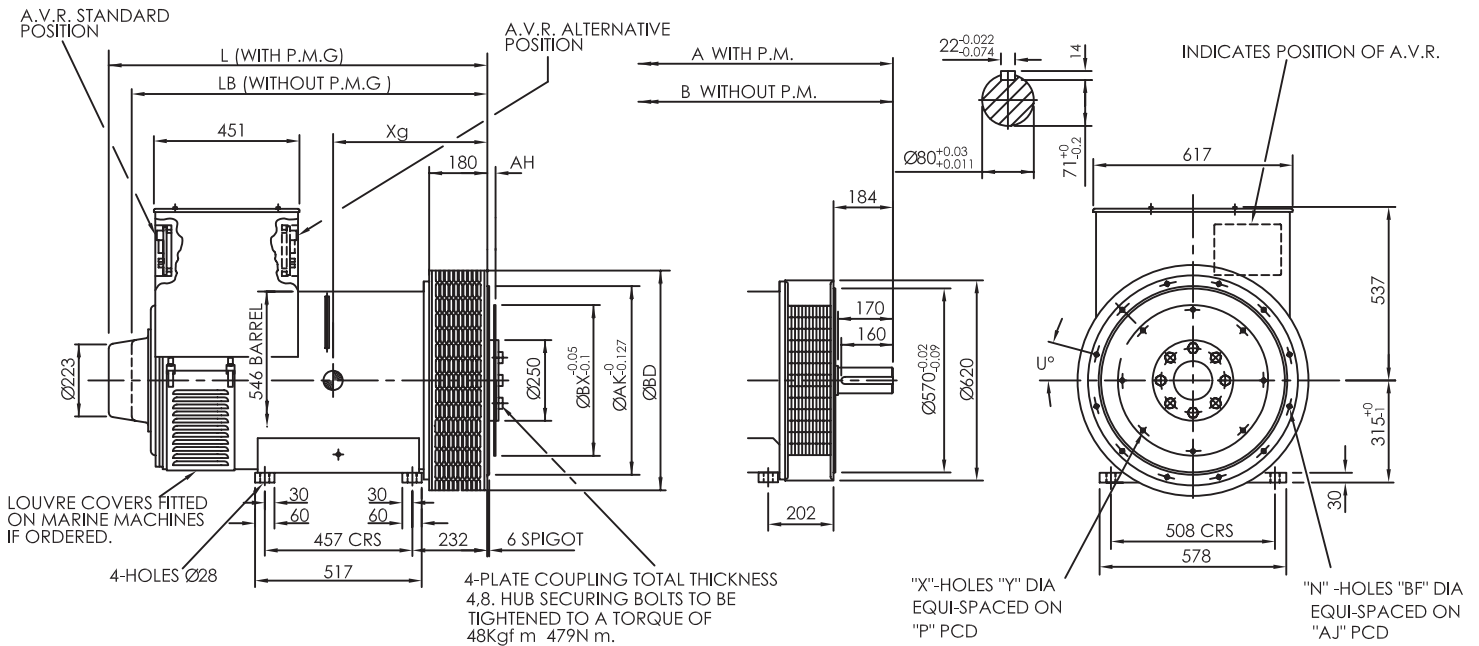
H CLASS	50Hz/1500RPM/PF 0.8											60Hz/1800RPM/PF 0.8											
	125°C/40°C PRIME POWER										163°C/27°C Standby	Effi.	125°C/40°C PRIME POWER										163°C/27°C Standby
SERIES STAR	380		<b>400</b>	415	440						400	400	416	440	460	<b>480</b>						480	480
PARALLEL STAR	190		<b>200</b>	208	220						200	200	208	220	230	<b>240</b>						240	240
SERIES DELTA	220		<b>230</b>	240	254						230	230	240	254	266	<b>277</b>						277	277
RATING	kVA	kW	kVA	kW	kVA	kW	kVA	kW	kVA	kW	%	kVA	kW	kVA	kW	kVA	kW	kVA	kW	kVA	kW	%	
SMF315B	250	200	<b>250</b>	<b>200</b>	250	200	250	200	278	222	92.9	290	232	302	242	316	253	<b>316</b>	<b>253</b>	348	278	92.8	
SMF315C	300	240	<b>300</b>	<b>240</b>	300	240	290	232	334	267	93.1	345	276	360	288	378	302	<b>378</b>	<b>302</b>	415	332	93.4	
SMF315DS	313	250	<b>313</b>	<b>250</b>	313	250	313	250	346	276	93.2	357	285	367	293	390	312	<b>390</b>	<b>312</b>	426	340	93.8	
SMF315D	325	260	<b>325</b>	<b>260</b>	325	260	325	260	360	288	93.5	371	297	382	306	406	325	<b>406</b>	<b>325</b>	445	356	93.7	
SMF315E	350	280	<b>350</b>	<b>280</b>	350	280	350	280	390	312	93.5	400	320	421	337	444	355	<b>444</b>	<b>355</b>	478	382	93.8	
SMF315F	380	304	<b>380</b>	<b>304</b>	380	304	380	304	415	332	93.6	425	340	446	357	469	375	<b>469</b>	<b>375</b>	503	402	94.0	
SMF315G	400	320	<b>400</b>	<b>320</b>	400	320	400	320	451	361	93.7	456	365	481	385	500	400	<b>500</b>	<b>400</b>	555	444	94.0	

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

**SMF315 B/C/DS/D/E/F/G**

60Hz @ 480V		SMF315B	SMF315C	SMF315DS	SMF315D	SMF315E	SMF315F	SMF315G
Xd	Direct axis synchro. reactance unsaturated	3.1	2.95	2.95	2.95	2.87	2.71	2.71
X'd	Direct axis transient reactance saturated	0.21	0.18	0.18	0.18	0.17	0.15	0.15
X''d	Direct axis sub transient reactance saturated	0.13	0.12	0.12	0.12	0.12	0.11	0.11
Xq	Quadra. Axis synchro. reactance unsaturated	2.66	2.53	2.53	2.53	2.41	2.39	2.39
X''q	Quadra. Axis sub transient reactance saturated	0.37	0.33	0.33	0.33	0.34	0.35	0.35
X2	Negative sequence reactance unsaturated	0.25	0.25	0.25	0.25	0.23	0.24	0.24
Xo	Zero sequence reactance unsaturated	0.09	0.08	0.08	0.08	0.08	0.08	0.08
Td	Short-Circuit transient time constant	0.08s	0.08s	0.08s	0.08s	0.08s	0.08s	0.08s
T'd	Sub transient time constant	0.019s	0.019s	0.019s	0.019s	0.019s	0.019s	0.019s
T'do	Open circuit time constant	1.7s	1.7s	1.7s	1.7s	1.7s	1.7s	1.7s
Ta	Armature time constant	0.018s	0.018s	0.018s	0.018s	0.018s	0.018s	0.018s
Kcc	Short circuit ratio	0.56	0.338	0.338	0.338	0.384	0.369	0.369

**OUTLINE DRAWING**



**DATA TABLE - DOUBLE BEARING**

Dimension (mm)	Double BRG		Weight		Packing
	A	B	Net(kg)	Gross(kg)	L x W x H (mm)
Model					
SMF315B	1361	1254	728	768	1400x850x1060
SMF315C	1361	1254	796	836	1400x850x1060
SMF315DS	1361	1254	812	852	1400x850x1060
SMF315D	1361	1254	822	862	1400x850x1060
SMF315E	1361	1254	850	890	1400x850x1060
SMF315F	1451	1344	911	951	1500x850x1060
SMF315G	1451	1344	953	993	1500x850x1060

**DATA TABLE - SINGLE BEARING**

Dimension (mm)	SAE 0/0.5/1/2			Weight		Packing
	LB	L	Xg	Net(kg)	Gross(kg)	L x W x H (mm)
Model						
SMF315B	1101	1172	463	718	754	1350x850x1060
SMF315C	1101	1172	483	786	822	1350x850x1060
SMF315DS	1101	1172	494	802	838	1350x850x1060
SMF315D	1101	1172	494	812	848	1350x850x1060
SMF315E	1101	1172	504	840	876	1350x850x1060
SMF315F	1191	1262	520	901	937	1350x850x1060
SMF315G	1191	1262	530	943	979	1350x850x1060

Flange (mm)							Disc(mm)					
SAE#	BD	AK	AJ	BF	N	U°	SAE#	BX	P	X	Y	AH
<b>SAE 2</b>	620	447.68	466.72	11	12	15	<b>18</b>	571.5	542.92	6	16.7	15.7
<b>SAE 1</b>	620	511.18	530.22	14	12	15	<b>14</b>	466.72	438.15	8	13.5	25.4
<b>SAE 0.5</b>	655	584.2	619.12	14	12	15	<b>11.5</b>	352.42	333.38	8	11	39.6
<b>SAE 0</b>	705	647.7	679.45	14	16	11.25						