

SVI224FS | THREE-PHASE SYNCHRONOUS ALTERNATOR

Product Data Sheet

General Data

Ambient Temperature	40°C	Method of Cooling	Air cooling	
Temperature Rise	125°C	Direction of Rotation	Clockwise	
Insulation Class	H	Maximum Over-speed	2250r/min	
Power Factor	0.8	Degree of Protection / Enclosure	IP23	
Excitation	Brushless	Altitude	1000m	
Winding Pitch	2/3	Stator winding	Double Layer Lap	
Pole	4	Number of Terminal	12	
Duty	S1- Continuous	Rotor	With damping cage	
Waveform	TIF<50			THF<2%
RFI Suppression	BS EN 61000-6-2&BS EN 61000-6-4,VDE 0875G,VDE0874N			
Waveform distortion	Noload<1.5%,Non-distorting balanced linear load<5%			
AVR MODEL	Standard	Selection		PMG
	SX460	AS440	KRS440	MX341B MX321
Voltage Regulation - in steady state condition	±1.0	±1.0	±1.0	±0.5 ±0.5
Short Circuit Current Capacity	Control does not sustain a short circuit current			295A

Electrical Characteristic

Frequency	Hz	50				60			
Voltage (series star) Y	V	380/220	400/231	415/240	440/254	416/240	440/254	460/266	480/277
Voltage (parallel star) YY	V	190/110	200/115	208/120	220/127	208/120	220/127	230/133	240/138
Voltage (series delta) Δ	V	220	230	240	254	240	254	266	277
Rated power at Class H (125° C) temperature rise	kVA	67.5	67.5	67.5	60	74	76	80	81
	kW	54.0	54.0	54.0	48.0	59.2	60.8	64.0	64.8
Efficiency at Class H (P.F.=0.8)	4/4%	88.2	88.8	89	90.1	88.9	89.1	89.4	89.6
	3/4%	89.5	89.8	90	90.2	90	90.1	90.4	90.5
	2/4%	90.3	90.3	90.4	90	90.9	90.9	91	91
Efficiency at Class H (P.F.=1.0)	4/4%	90.9	91.2	91.5	92.5	91.1	91.5	91.8	92
	3/4%	91.9	92.1	92.3	92.7	92.1	92.4	92.6	92.8
	2/4%	92.7	92.8	92.8	92.4	92.9	93	93	93

Reactances (%) at Class H

Direct axis synchronous reactance unsaturated	Xd	2.48	2.24	2.08	1.39	3	2.78	2.64	2.5
Direct axis transient reactance saturated	X'd	0.19	0.17	0.16	0.11	0.22	0.2	0.19	0.18
Direct axis subtransient reactance saturated	X''d	0.13	0.12	0.11	0.07	0.15	0.14	0.13	0.13
Quadrature axis synchronous reactance unsaturated	Xq	1.13	1.02	0.95	0.63	1.38	1.28	1.21	1.15
Quadrature axis subtransient reactance saturated	X''q	0.14	0.13	0.12	0.08	0.14	0.13	0.12	0.12
Leakage reactance	Xl	0.08	0.08	0.07	0.05	0.09	0.08	0.08	0.08
Negative sequence reactance saturated	X2	0.13	0.12	0.11	0.07	0.14	0.13	0.12	0.12
Zero sequence reactance unsaturated	X0	0.11	0.1	0.09	0.06	0.09	0.08	0.08	0.08
Short-circuit ratio	Kcc	0.4032	0.4464	0.4808	0.7194	0.3333	0.3597	0.3788	0.4000
Short-circuit transient time constant (sec.)	T'd	0.029							
Subtransient time constant (sec.)	T''d	0.008							
Open circuit time constant (sec.)	T'do	0.7							
Armature time constant (sec.)	Ta	0.0065							
Stator Winding Resistance (20 °C) (Ra)	ohm	0.085							
Rotor Winding Resistance (20 °C) (Rf)	ohm	0.76							
Exciter Stator Resistance (20 °C)	ohm	21							
Exciter Rotor Phase resistance	ohm	0.07							
No load excitation current	io (A)	0.5	0.52	0.6	0.5	0.5	0.51	0.52	0.53
Full load excitation current	ic(A)	1.8	1.8	1.9	1.8	1.8	1.8	1.9	1.9
Cooling air requirement	m³ /sec	0.216m³/s 458cfm				0.281m³/s 595cfm			

Mechanical Characteristic

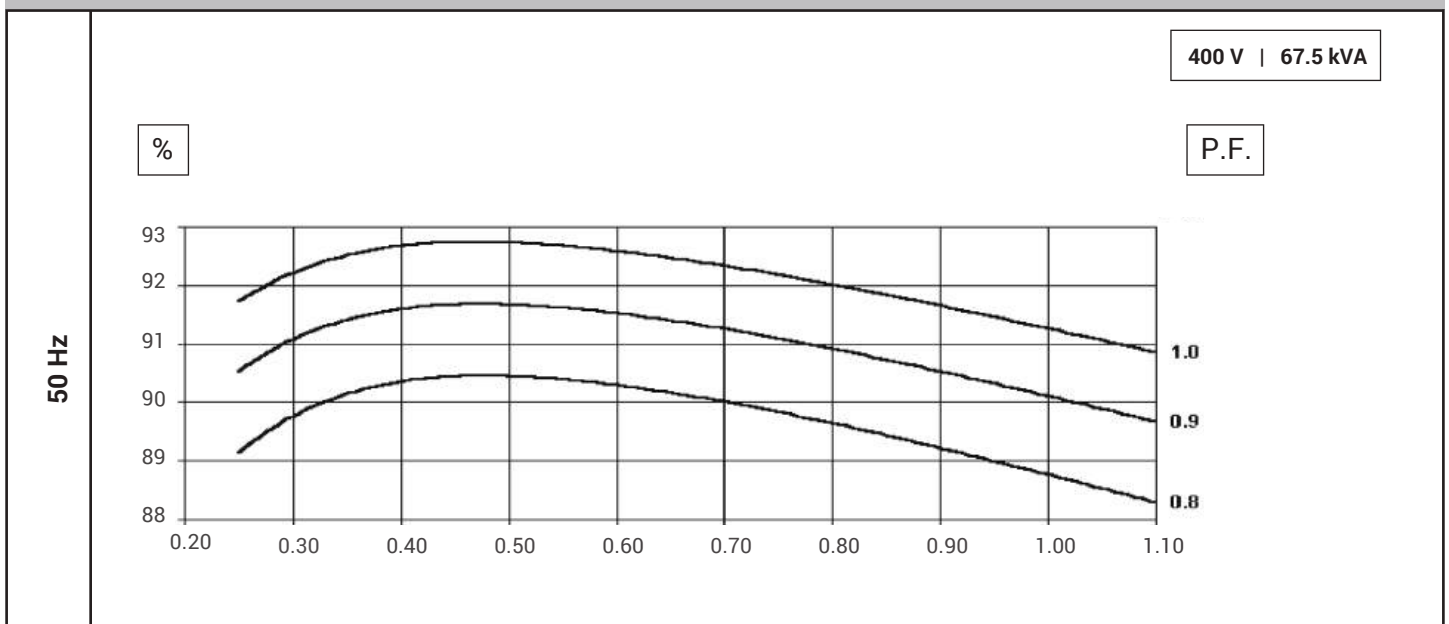
Configuration	Single Bearing		Double Bearing	
Type of Construction	B2-SAE		IM B34	
Total Weight - kgs	286		264	
Weight wound stator - kgs	106		106	
Weight wound rotor - kgs	101		93	
Inertia (J) [kgm²]	0.5401kgm²		0.5084kgm²	
Drive end bearing / Lubrication			BALL.6312-2RS(ISO)	
Non-drive end bearing / Lubrication	BALL.6309-2RS(ISO)		BALL.6309-2RS(ISO)	
Packing crate size (cm)	86X55X84		86X49X84	

SVI224DS | THREE-PHASE SYNCHRONOUS ALTERNATOR**SUNNOVA®**

Product Data Sheet

Ratings

Class Temp-Rise		Cont. F - 105/40 °C				Cont. H - 125/40 °C				Standby - 150/40 °C				Standby - 163/27 °C			
50 Hz	Series Star (V)	380	400	415	440	380	400	415	440	380	400	415	440	380	400	415	440
	Parallel Star (V)	190	200	208	220	190	200	208	220	190	200	208	220	190	200	208	220
	Series Delta (V)	220	230	240	254	220	230	240	254	220	230	240	254	220	230	240	254
	kVA	62.8	62.8	62.8	55.8	67.5	67.5	67.5	60	71.6	71.6	71.6	63.6	73.6	73.6	73.6	65.4
	kW	50.2	50.2	50.2	44.6	54	54	54	48	57.2	57.2	57.2	50.9	58.9	58.9	58.9	52.3
	Efficiency (%)	88.9	89.3	89.5	90.3	88.3	88.8	89.1	90.2	88.2	88.7	89	90.2	88	88.5	88.8	90.1
	kW Input	56	56	56	49	61	61	61	53	65	65	64	56	67	67	66	58

Three Phase Efficiency Curves**Dimensions**