

SVI274E | 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			630A	

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	140	140	140	N/A	160	167.5	167.5	178.8
	kW	112	112	112	N/A	128	134	134	143
Efficiency at Class H (P.F.=0.8)	4/4%	91.2	91.7	92	N/A	91.3	91.7	92	92.1
	3/4%	92.2	92.5	92.7	N/A	92.3	92.6	92.7	92.8
	2/4%	92.8	92.9	92.9	N/A	92.9	93	93	93
Efficiency at Class H (P.F.=1.0)	4/4%	93.1	93.5	93.7	N/A	93.1	93.4	93.7	93.8
	3/4%	94	94.2	94.3	N/A	94	94.1	94.3	94.4
	2/4%	94.5	94.5	94.6	N/A	94.3	94.5	94.6	94.6

Reactances (%) at Class H

Direct axis synchronous reactance unsaturated	Xd	2.34	2.11	1.96	N/A	2.68	2.51	2.29	2.25
Direct axis transient reactance saturated	X'd	0.21	0.19	0.18	N/A	0.25	0.23	0.21	0.21
Direct axis subtransient reactance saturated	X''d	0.14	0.13	0.12	N/A	0.17	0.16	0.15	0.14
Quadrature axis synchronous reactance unsaturated	Xq	1.53	1.38	1.28	N/A	1.74	1.63	1.49	1.46
Quadrature axis subtransient reactance saturated	X''q	0.18	0.16	0.15	N/A	0.22	0.21	0.19	0.18
Leakage reactance	Xl	0.08	0.08	0.07	N/A	0.09	0.08	0.08	0.08
Negative sequence reactance saturated	X2	0.16	0.14	0.13	N/A	0.19	0.18	0.16	0.16
Zero sequence reactance unsaturated	X0	0.1	0.09	0.08	N/A	0.11	0.1	0.09	0.09
Short-circuit ratio	Kcc	0.4274	0.4739	0.5102	N/A	0.3731	0.3984	0.4367	0.4444
Short-circuit transient time constant (sec.)	T'd	0.032							
Subtransient time constant (sec.)	T''d	0.01							
Open circuit time constant (sec.)	T'do	0.85							
Armature time constant (sec.)	Ta	0.007							
Stator Winding Resistance (20 °C) (Ra)	ohm	0.337							
Rotor Winding Resistance (20 °C) (Rf)	ohm	1.14							
Exciter Stator Resistance (20 °C)	ohm	20							
Exciter Rotor Phase resistance	ohm	0.091							
No load excitation current	io (A)	0.5	0.52	0.6	N/A	0.5	0.51	0.52	0.53
Full load excitation current	ic(A)	2.4	2.4	2.5	N/A	2.4	2.4	2.5	2.5
Cooling air requirement	m³ /sec	0.514m³/s 1090cfm				0.617m³/s 1308cfm			

Mechanical Characteristic

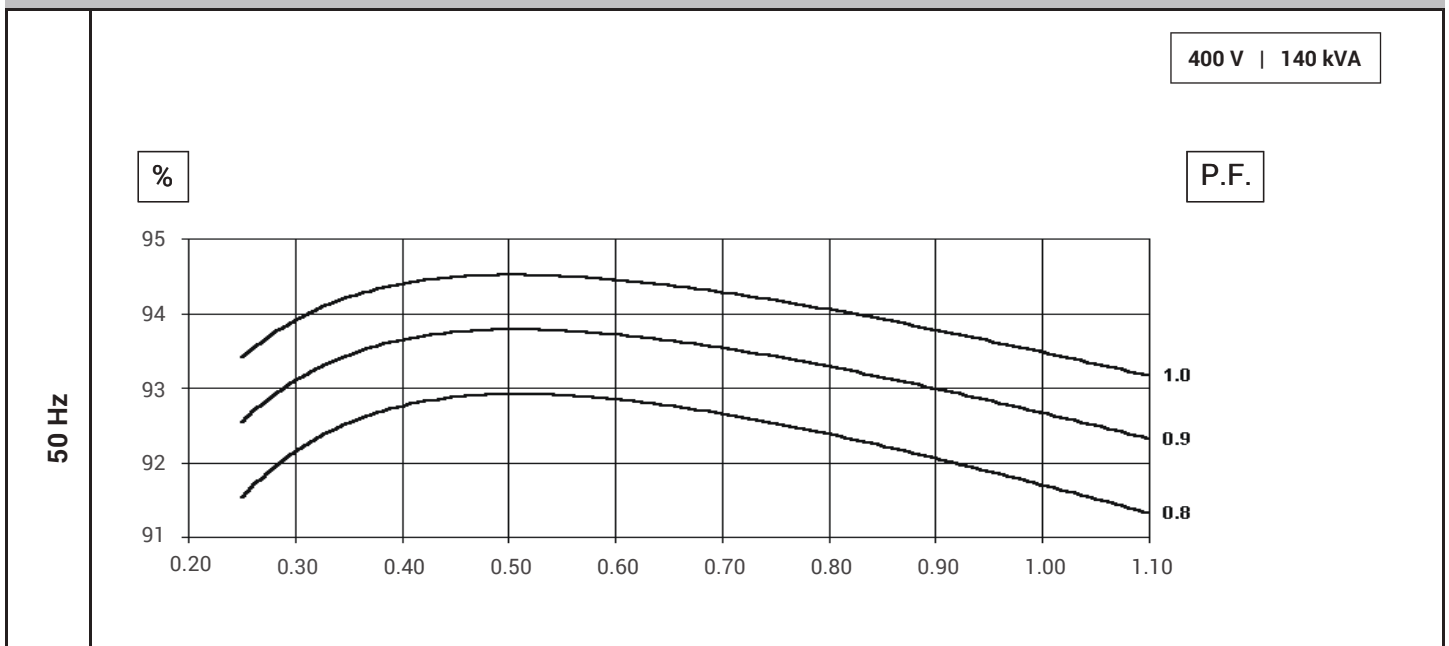
Configuration	Single Bearing		Double Bearing	
Type of Construction	B2-SAE		IM B34	
Total Weight - kgs	460		447	
Weight wound stator - kgs	172		172	
Weight wound rotor - kgs	167.51		156-55	
Inertia (J) [kgm²]	1.3271kgm²		1.2765kgm²	
Drive end bearing / Lubrication			BALL.6315-2RS(ISO)	
Non-drive end bearing / Lubrication	BALL.6310-2RS(ISO)		BALL.6310-2RS(ISO)	
Packing crate size (cm)	98X63X94		104X63X94	

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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	125	125	125	N/A	140	140	140	N/A	145	145	145	N/A	150	150	150	N/A
	kW	100	100	100	N/A	112	112	112	N/A	116	116	116	N/A	120	120	120	N/A
	Efficiency (%)	91.7	92.1	92.3	N/A	91.3	91.7	92	N/A	91.1	91.6	91.8	N/A	91	91.4	91.7	N/A
	kW Input	109.1	108.6	108.3	N/A	122.7	122.1	121.7	N/A	127.3	126.6	126.4	N/A	131.9	131.3	130.9	N/A

Three Phase Efficiency Curves**Dimensions**