

SVI274K | 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			850A	

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	250	250	250	N/A	291	299	312.5	312.5
	kW	200.0	200.0	200.0	N/A	232.8	239.2	250.0	250.0
Efficiency at Class H (P.F.=0.8)	4/4%	92.4	92.7	92.8	N/A	92.6	92.8	92.9	93
	3/4%	93.3	93.4	93.3	N/A	93.3	93.4	93.4	93.4
	2/4%	93.4	93.3	93.2	N/A	93.2	93.2	93.1	93.1
Efficiency at Class H (P.F.=1.0)	4/4%	94.1	94.3	94.4	N/A	94.1	94.3	94.3	94.5
	3/4%	94.8	94.9	95	N/A	94.8	94.9	94.9	95
	2/4%	94.9	94.9	94.8	N/A	94.7	94.7	94.7	94.7

Reactances (%) at Class H

Direct axis synchronous reactance unsaturated	Xd	2.825	2.55	2.369	N/A	3.161	2.903	2.776	2.55
Direct axis transient reactance saturated	X'd	0.132	0.119	0.111	N/A	0.148	0.136	0.13	0.119
Direct axis subtransient reactance saturated	X''d	0.086	0.078	0.072	N/A	0.097	0.089	0.085	0.078
Quadrature axis synchronous reactance unsaturated	Xq	1.263	1.14	1.059	N/A	1.413	1.298	1.241	1.14
Quadrature axis subtransient reactance saturated	X''q	0.152	0.137	0.127	N/A	0.17	0.156	0.149	0.137
Leakage reactance	Xl	0.066	0.06	0.056	N/A	0.074	0.068	0.065	0.06
Negative sequence reactance saturated	X2	0.12	0.108	0.1	N/A	0.134	0.123	0.118	0.108
Zero sequence reactance unsaturated	X0	0.022	0.02	0.019	N/A	0.025	0.023	0.022	0.02
Short-circuit ratio	Kcc	0.3540	0.3922	0.4221	N/A	0.3164	0.3445	0.3602	0.3922
Short-circuit transient time constant (sec.)	T'd	0.049							
Subtransient time constant (sec.)	T''d	0.02							
Open circuit time constant (sec.)	T'do	1.27							
Armature time constant (sec.)	Ta	0.018							
Stator Winding Resistance (20 °C) (Ra)	ohm	0.01257							
Rotor Winding Resistance (20 °C) (Rf)	ohm	2.07							
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	0.58m³/s 1230cfm				0.69m³/s 1463cfm			

Mechanical Characteristic

Configuration	Single Bearing		Double Bearing	
Type of Construction	B2-SAE		IM B34	
Total Weight - kgs	688		678	
Weight wound stator - kgs	304		304	
Weight wound rotor - kgs	272.6		259	
Inertia (J) [kgm²]	2.3934kgm²		2.1102kgm²	
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)	115X63X94		120X63X94	

Product Data Sheet



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	229	229	229	N/A	250	250	250	N/A	265	265	265	N/A	275	275	275	N/A
	kW	183.2	183.2	183.2	N/A	200	200	200	N/A	212	212	212	N/A	220	220	220	N/A
	Efficiency (%)	92.8	93	93.1	N/A	92.5	92.7	92.8	N/A	92.2	92.4	92.6	N/A	92	92.2	92.4	N/A
	kW Input	197.4	197	196.8	N/A	216.2	215.7	215.5	N/A	229.9	229.4	228.9	N/A	239.1	238.6	238.1	N/A

50 Hz

400 V | 250 kVA

%

P.F.

P.F.	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10
1.0	92.8	93.6	94.2	94.8	95.0	95.0	94.8	94.5	94.2	93.8
0.9	91.8	92.6	93.2	93.8	94.0	94.0	93.8	93.5	93.2	92.8
0.8	90.8	91.6	92.2	92.8	93.0	93.0	92.8	92.5	92.2	91.8

[illegible]