

Kato Engineering/Leroy-Somer Generator Design Program

PREDICTED GENERATOR PERFORMANCE VALUES

8P10-4000								
KW	KVA	PF	TAMB	TRISE	POLES	RPM	SLOTS	HZ
3300.	4125.	0.8	40	80	8	900	120	60
VOLTS-PH	VOLTS-LL	AMPS-PH	AMPS-LN	BASE Z	025	026	PHASE/CONNECTION	
2402	4160	572.5	572.5	4.195	00006	00005	3 PHASE WYE	

0.6667 PER UNIT PITCH

REACTANCES		SAT	UNSAT	HI POT VALUES		VOLTS		
SYNCHRONOUS				STATOR		9320		
DIRECT AXIS	X _d	183.7	228.1	ROTOR		1500		
QUADRATURE AXIS	X _q	98.4	119.6	EXCITER FIELD		1500		
TRANSIENT				EXCITER ARM		1500		
DIRECT AXIS	X' _d	30.0	34.1					
QUADRATURE AXIS	X' _q	98.4	119.6	MOTOR STARTING		0 P.F.		
SUBTRANSIENT						INRUSH	%VOLT	
DIRECT AXIS	X'' _d	19.8	23.3	SKVA AT GENERATOR		SKVA	DIP	
QUADRATURE AXIS	X'' _q	27.2	32.0	TERMINALS		1344.7	10	
NEGATIVE SEQUENCE		X ₂	23.5	27.6			2135.7	15
ZERO SEQUENCE		X ₀	2.3	2.7			3025.6	20
LEAKAGE REACTANCE		X _L	9.909	11.26			4034.1	25
							5186.7	30
RESISTANCES @ 25C -		RDCa	0.02593					
		RDCf	0.6584					

NL-FL VOLTAGE DIP AT RATED P.F. = 18.5%
 USED XID= 34.1% FOR DIP CALCULATION.

TIME CONSTANTS (SECONDS)		
D-AXIS 3-PH S.C. TRANSIENT	T'd3	0.753
D-AXIS O.C. TRANSIENT	T'd0	4.090
D-AXIS 3-PH S.C. SUB-TRANS	T''d3	0.027
D-AXIS O.C. SUB-TRANS	T''d0	0.041
ARM CKT (ASYMMETRICAL S.C.)	TA	0.068

TRANSIENT TORQUES			KW	HEAT REJ		
	TORQUE	MAX TORQUE	@0.8P.F.	%EFF	BTU/HR	
CONDITION	P.U.	FT-LBS				
3-PH S.C.	5.1	162887	FL	3300.0	96.5	407829
L-L S.C.	6.0	193503	3/4L	2475.0	96.5	304585
			1/2L	1650.0	96.1	229392
			1/4L	825.0	93.9	181913

EFFICIENCY CALCULATED AT 95.0C

SHORT CIRCUIT CURRENT	INSTANTANEOUS SYMMETRICAL FAULT CURRENT		INSTANTANEOUS ASYMMETRICAL FAULT CURRENT	
	P.U.	AMPS	P.U.	AMPS
3-PH	5.05	2892	8.75	5009
L-L	4.00	2290	6.93	3967
L-N	6.58	3768	11.40	6527

OVERSPEED: 1125.0 RPM FOR 1 MINUTE. MINIMUM 3 PHASE MOTORING POWER: 330.00 KW

FULL LOAD NO LOAD
 SYNCH COEFF 6832KW/RAD 3296KW/RAD

DISPLACEMENT ANGLE: 29.8 DEGREES

BY _____

