

VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

						IE:3
Type	K280M-2		Poles	2	Power	90,0 kW
Voltage	400	V	Current	151 A	Frequency	50 Hz
Speed	2977	r/min	Duty	S1	Connecti	△
Ins.class	F		Weight	705 kg		IP55
MAJOR CONTENTS				TEST VALUE		
95,0 °C PHASE RESISTANCE OF WINDING			Ω	0,0397		
NO LOAD CURRENT			A	41,271		
NO LOAD INPUT			W	1869,37		
CORE LOSS(Pfe)			W	935,88		
WINDAGE FRICTION LOSS(Pfw)			W	873,31		
STATOR WINDING LOSS(Pcu1)			W	865,12		
ROTOR WINDING LOSS(Pcu2)			W	700,04		
STRAY LOAD LOSS(Ps)			W	812,47		
LOCKED ROTOR CURRENT			A	1134,994		
LOCKED ROTOR INPUT @ FULL LOAD			W	284583		
LOCKED ROTOR TORQUE			N.m	761,4		
PULL OUT TORQUE			N.m	955,4		
LOCKED ROTOR CURRENT/RATED CURRENT			P.U	7,51		
LOCKED ROTOR TORQUE/RATED TORQUE			P.U	2,63		
PULL OUT TORQUE/RATED TORQUE			P.U	3,30		
FULL LOAD TORQUE			N.m	288,8		
FULL LOAD CURRENT			A	151,0		
FULL LOAD SLIP			%	0,758		
INPUT @ FULL LOAD			kW	94,187		
FULL LOAD SPEED			r/min	2977,3		
EFFICIENCY @ FULL LOAD			%	95,55		
EFFICIENCY @ 75% LOAD			%	95,58		
POWER FACTOR @ FULL LOAD				0,900		
STATOR WINDING TEMPERATURE RISE			K	53		
D.E. BEARINGS TEMPERATURE BY PT100			°C	44,0		
STATOR WINDING TEMPERATURE			°C	69,8		
High voltage test			V	1800	Imin	
Insulation resistance			MΩ	500		
NOISE (LW)			dB(A)	89		
VIBRATION			mm/s	1,9		

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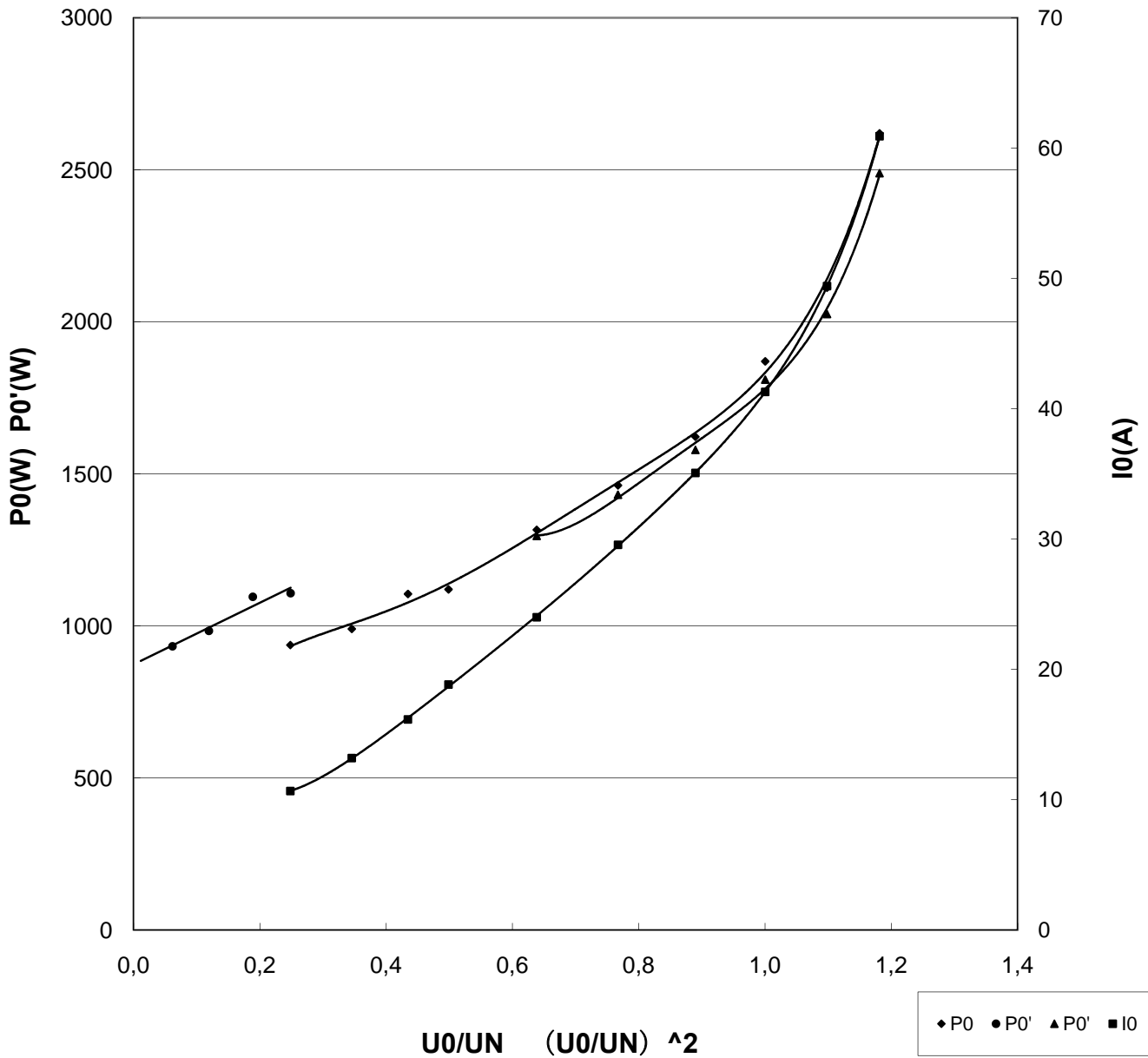
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Speed	2977	r/min	Duty	S1		Connection	Δ				
Ins.class	F		Weight	705	kg	IP55					
NO LOAD TEST											
VOL	mul.	HZ	I01	I02	I03	mul.	W1	W2	mul.	°C	Ω
472,5	1	50	3,038	3,096	3,003	20	-638,9	769,9	20	59,4	0,02360
439,3	1	50	2,447	2,532	2,433	20	-480,5	586,1	20	59,1	0,02358
400,1	1	50	2,038	2,119	2,036	20	-358	451,5	20	58,8	0,02355
355,9	1	50	1,724	1,811	1,726	20	-266,4	347,5	20	58,5	0,02353
306,8	1	50	1,443	1,541	1,450	20	-188,0	261,1	20	58,1	0,02350
255,4	1	50	1,165	1,263	1,171	20	-120,0	185,8	20	57,8	0,02347
199,5	1	50	1,875	1,863	1,912	10	-114,5	226,5	10	57,1	0,02342
173,8	1	50	1,609	1,597	1,640	10	-68,1	178,6	10	56,9	0,02340
138,2	1	50	1,313	1,305	1,339	10	-29,6	128,6	10	56,7	0,02338
99,3	1	50	1,060	1,053	1,086	10	6,3	87,4	10	56,4	0,02336
data calculation of no load											
V%	U0/UN	I0	P0	(U0/UN)^2	P0cu1	P0'	COSφ				
118,1%	1,18	60,913	2620,0	1,396	131,35	2488,65	0,053				
109,8%	1,10	49,413	2112,0	1,206	86,35	2025,65	0,056				
100,0%	1,00	41,287	1870,0	1,001	60,22	1809,78	0,065				
89,0%	0,89	35,073	1622,0	0,792	43,41	1578,59	0,075				
76,7%	0,77	29,560	1462,0	0,588	30,80	1431,20	0,093				
63,8%	0,64	23,993	1316,0	0,408	20,27	1295,73	0,124				
49,9%	0,50	18,833	1120,0	0,249	12,46	1107,54	0,172				
43,4%	0,43	16,153	1105,0	0,189	9,16	1095,84	0,227				
34,6%	0,35	13,190	990,0	0,119	6,10	983,90	0,314				
24,8%	0,25	10,663	937,0	0,062	3,98	933,02	0,511				
RESULTS AT: 400 V											
N.L.AMP	41,27	N.L.LOSS(W)	1869,37	Pw(W)	873,3	Pe(W)	935,9				

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No Load Curve



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LOCKED ROTOR TEST

VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqur (kg.m)
265,7	1,0	3,533	3,532	3,584	200,0	-152,3	731,3	200,0	30,4
235,2	1,0	3,068	3,066	3,107	200,0	-118,1	561,7	200,0	23,4
197,8	1,0	2,516	2,515	2,547	200,0	-83,4	386,3	200,0	16,5
168,1	1,0	2,104	2,103	2,128	200,0	-60,5	273,6	200,0	11,6
146,0	1,0	1,813	1,812	1,832	200,0	-45,5	204,4	200,0	8,7
128,9	1,0	1,590	1,588	1,606	200,0	-35,4	158,4	200,0	6,7
107,9	1,0	2,648	2,648	2,677	100,0	-50,3	220,4	100,0	4,7

data calculation of locked rotor

Uk V	Ik A	Pk kW	Tk N.m	LOGUk	LOGIk	LOGPk	LOGTk
265,68	709,97	115,800	297,92	2,4244	2,8512	2,0637	2,4741
235,16	615,98	88,720	229,32	2,3714	2,7896	1,9480	2,3604
197,79	505,15	60,580	161,70	2,2962	2,7034	1,7823	2,2087
168,11	422,37	42,620	113,68	2,2256	2,6257	1,6296	2,0557
146,00	363,72	31,780	85,26	2,1644	2,5608	1,5022	1,9307
128,95	319,01	24,600	65,66	2,1104	2,5038	1,3909	1,8173
107,89	265,75	17,010	46,06	2,0330	2,4245	1,2307	1,6633

performance collection of locked rotor

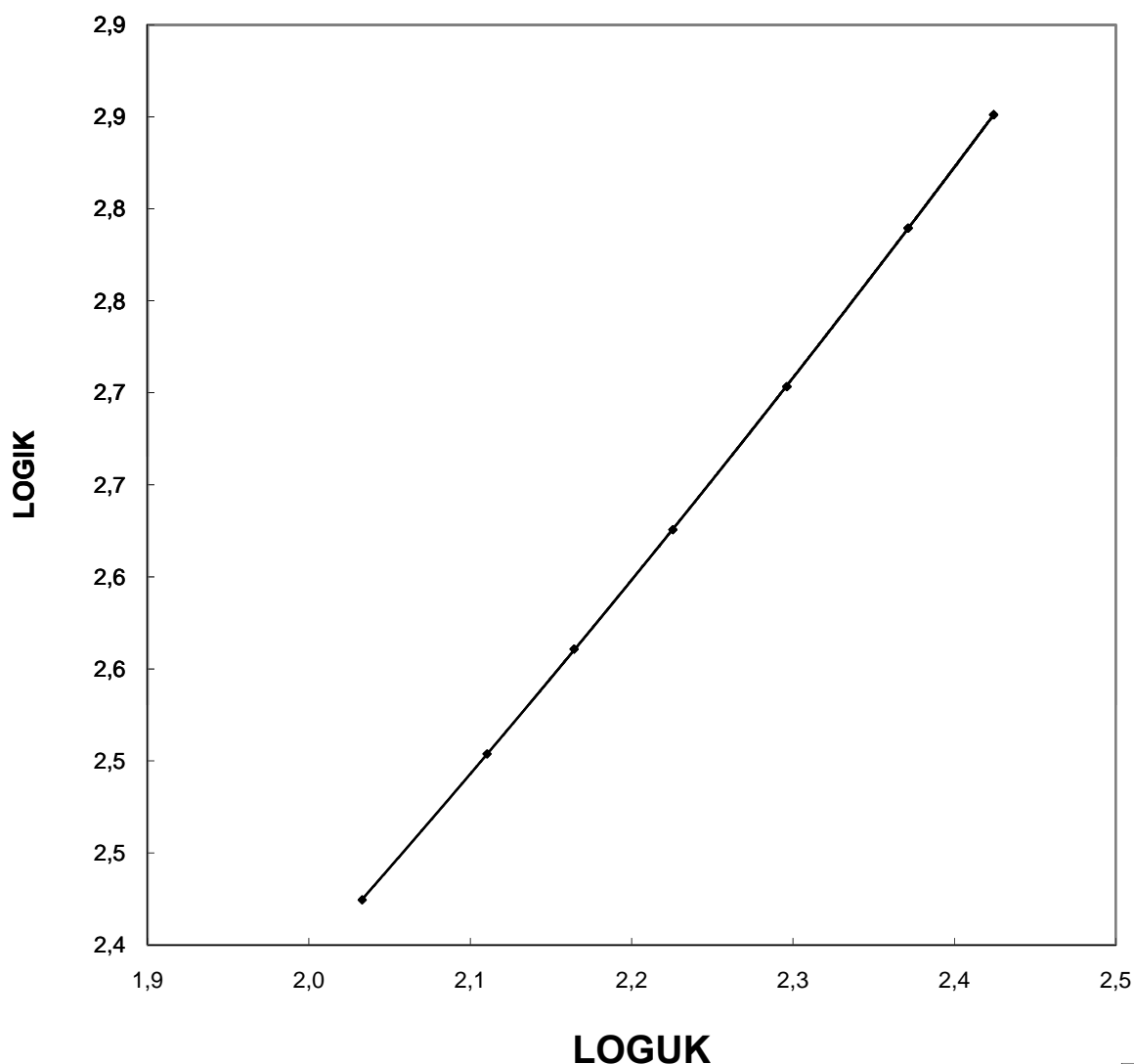
	at rated volts	at rated current	at 2.5 times rated current	at 100V
VOLTS (V)	400	65,360	151,3	100,0
AMPS (A)	1135,0	152,0	380,0	241,90
INPUT (kW)	284,58		34,5	14,289
TORQUE (N.m)	761,40			

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Voltage	400 V	Current	151 A	Frequency	50,0	kW
Speed	2977 r/min	Duty	S1	Connection	Δ	Hz
Ins.class	F	Weight	705 kg			IP55

LOCKED



◆LOGIK

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Speed	2977	r/min		Duty	S1		Connection	Δ			
Ins.class	F			Weight	705	kg		IP55			

TEMPERATURE RISE TEST

TIME (h:min)	V	I1	I2	I3	mul.	W1	W2	mul.	T1 °C	T2 °C	T3 °C	T4 °C	T5 °C	T6 °C	T7 °C	T8 °C	T9 °C	T10 °C	T11 °C	T12 °C	T13 °C	
10,58	400,5	1,517	1,526	1,530	100	337,6	606,4	100	39,1	—	64,7	64,1	—	—	—	—	—	—	—	—	—	9,5
11,28	400,5	1,519	1,527	1,532	100	338,0	607,2	100	40,7	—	65,9	65,2	—	—	—	—	—	—	—	—	—	10,2
11,58	400,5	1,521	1,530	1,534	100	339,5	608,2	100	41,7	—	67,4	66,8	—	—	—	—	—	—	—	—	—	9,9
12,28	400,6	1,501	1,509	1,513	100	333,6	600,0	100	42,8	—	69,0	68,4	—	—	—	—	—	—	—	—	—	11,1
12,58	400,4	1,519	1,527	1,532	100	338,4	606,9	100	43,4	—	68,8	68,2	—	—	—	—	—	—	—	—	—	11,2
13,28	400,3	1,520	1,527	1,533	100	338,0	607,3	100	44,1	—	69,6	69,1	—	—	—	—	—	—	—	—	—	11,1
14,02	400,4	1,495	1,501	1,506	100	332,7	597,5	100	44,2	—	70,2	69,5	—	—	—	—	—	—	—	—	—	11,7
14,28	400,2	1,509	1,517	1,521	100	335,8	602,7	100	44,0	—	69,8	69,1	—	—	—	—	—	—	—	—	—	11,3
The average of the last three		151,430			A	93800		W	44,0	—	69,9	69,1	—	—	—	—	—	—	—	—	—	11,4

T1 T2 : DE BEARING TEMPERATURE

T11 : CORE TEMPERATRE

T12: FRAME TEMPERATRE

T3~T10 : DE WINDING TEMPERATURE

T13 : AMBIENT TEMPERATURE

WINDING RESISTANCE (HOT) AT END OF TEMPERATURE RISE TEST

TIME (S)	59	91	128	150	174	206	254	295		
RESISTANCE (Ω)	0,02406	0,02403	0,02395	0,02390	0,02385	0,02378	0,02370	0,02364		

WINDING RESISTANCE(COLD)

Δ	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0,01942	0,01945	0,01945	0,01944	0,01942	7,5 °C
Y	U1-U2	V1-V2	W1-W2	AVERAGE	MIN	AMBIENT TEM.
						°C

resistance value at 0 sec (Ω)

0,024196

calculation value of temp.rising

55,77

K

90 S (Ω)

0,024018

calculation value of temp.rising

53,54

K

full load curent

151,05 A

modify value of temp. rising

53,28

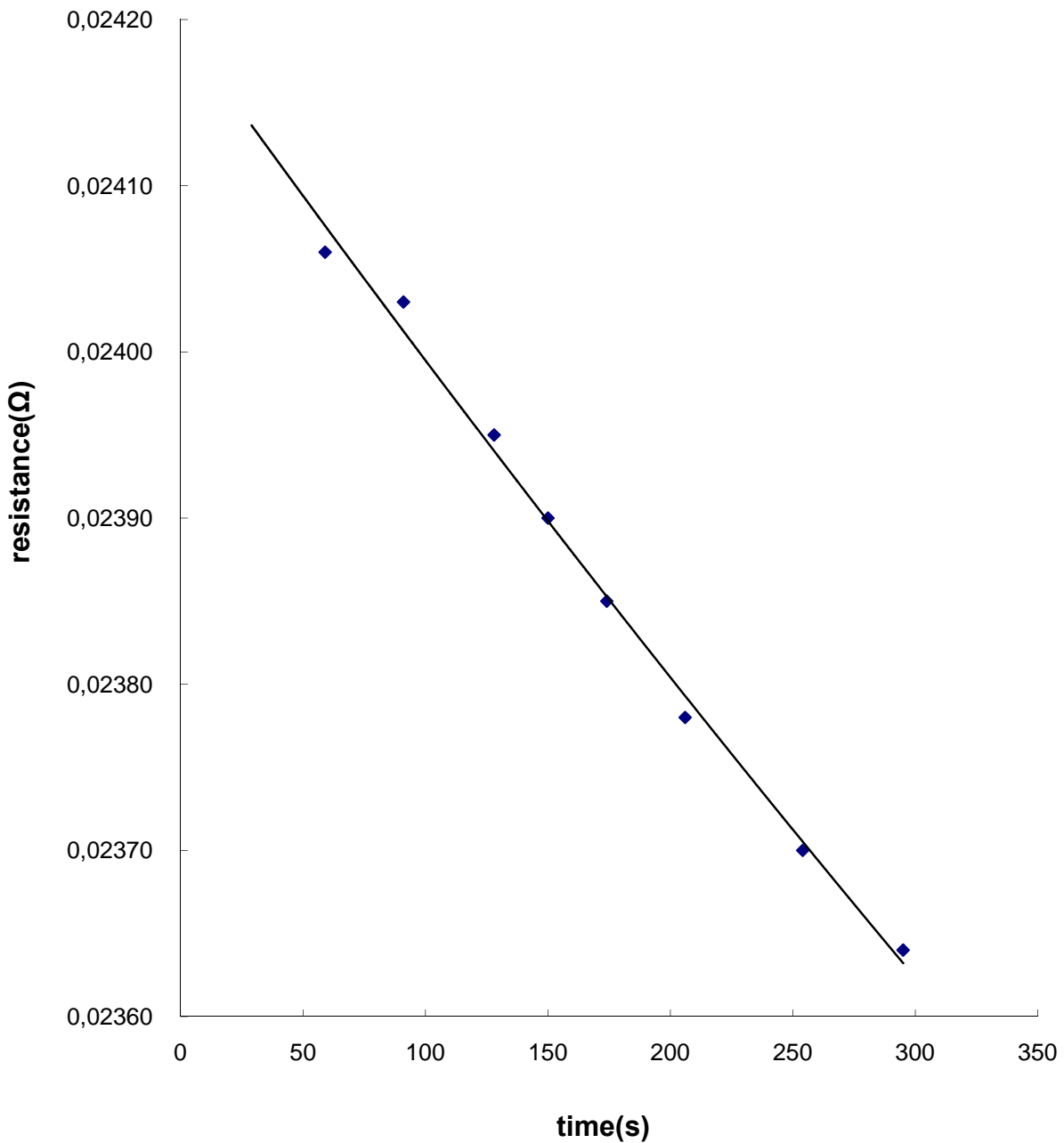
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RESISTANCE CURVE



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Ins.class	F		Weight	705	kg		IP55		

LOAD CURVE

