

VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

						IE:3	
Type	K200L-2		Poles	2		Power	30,0 kW
Voltage	400	V	Current	52,0	A	Frequenc	50 Hz
Speed	2962	r/min	Duty	S1		Connecti	△
Ins.class	F		Weight	298	kg	IP55	
MAJOR CONTENTS				TEST VALUE			
95,0 °C PHASE RESISTANCE OF WINDING				Ω	0,2167		
NO LOAD CURRENT				A	14,528		
NO LOAD INPUT				W	773,29		
CORE LOSS(Pfe)				W	398,22		
WINDAGE FRICTION LOSS(Pfw)				W	334,81		
STATOR WINDING LOSS(Pcu1)				W	570,00		
ROTOR WINDING LOSS(Pcu2)				W	400,10		
STRAY LOAD LOSS(Ps)				W	403,12		
LOCKED ROTOR CURRENT				A	398,980		
LOCKED ROTOR INPUT @ FULL LOAD				W	108201		
LOCKED ROTOR TORQUE				N.m	226,2		
PULL OUT TORQUE				N.m	290,8		
LOCKED ROTOR CURRENT/RATED CURRENT				P.U	7,67		
LOCKED ROTOR TORQUE/RATED TORQUE				P.U	2,34		
PULL OUT TORQUE/RATED TORQUE				P.U	3,01		
FULL LOAD TORQUE				N.m	96,8		
FULL LOAD CURRENT				A	52,0		
FULL LOAD SLIP				%	1,285		
INPUT @ FULL LOAD				kW	32,110		
FULL LOAD SPEED				r/min	2961,5		
EFFICIENCY @ FULL LOAD				%	93,43		
EFFICIENCY @ 75% LOAD				%	93,82		
POWER FACTOR @ FULL LOAD					0,891		
STATOR WINDING TEMPERATURE RISE				K	59		
D.E. BEARINGS TEMPERATURE BY PT100				°C	37,0		
STATOR WINDING TEMPERATURE				°C	63,2		
High voltage test				V	1800	Imin	
Insulation resistance				MΩ	500		
NOISE (LW)				dB(A)	84		
VIBRATION				mm/s	0,7		

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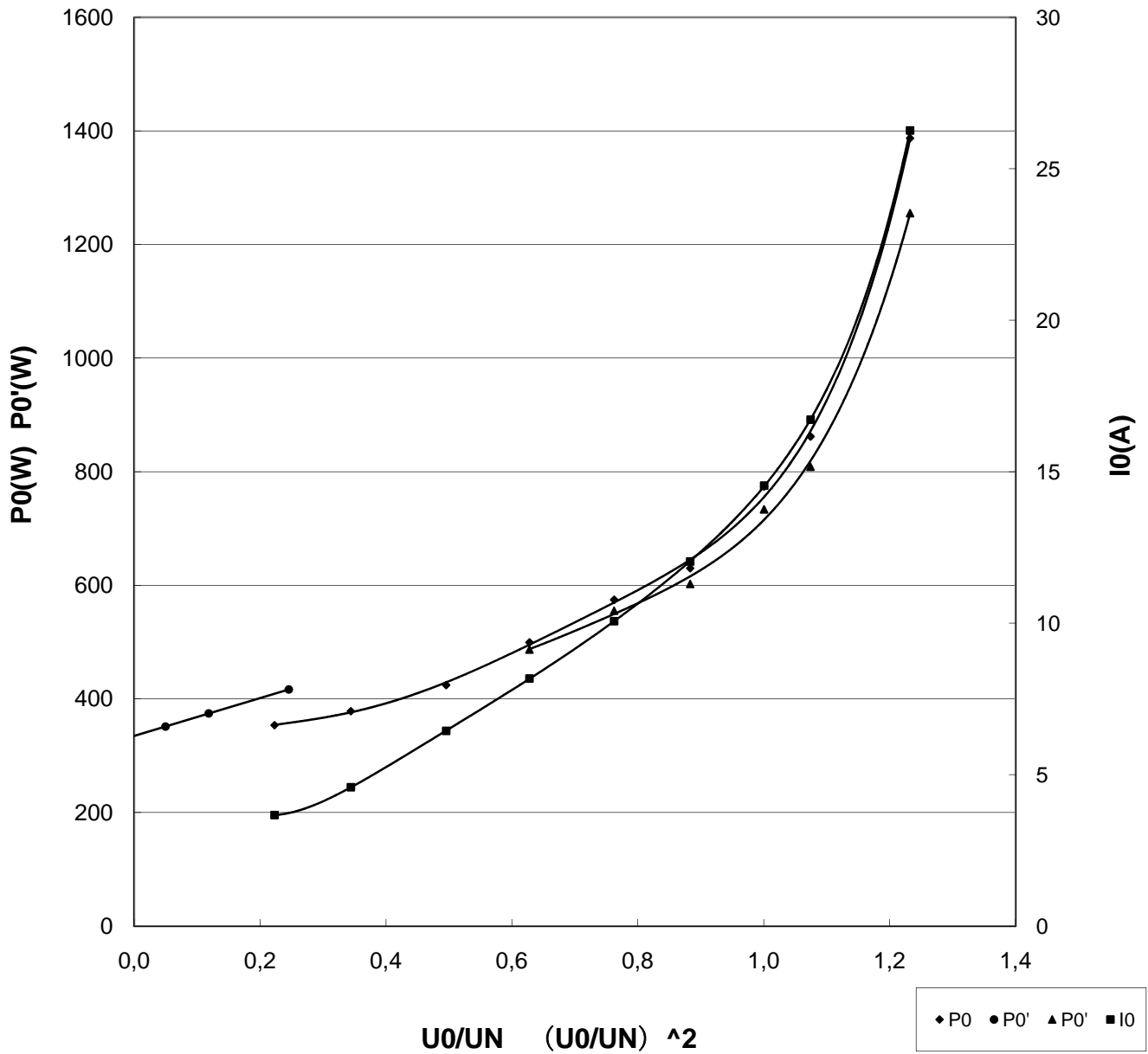
Type	K200L-2		Poles	2		Power	30,0 kW		IE:3		
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Speed	2962	r/min	Duty	S1		Connection	△				
Ins.class	F		Weight	298	kg			IP55			
NO LOAD TEST											
VOL	mul.	HZ	I01	I02	I03	mul.	W1	W2	mul.	°C	Ω
492,9	1	50	2,670	2,579	2,630	10	-543,4	682,1	10	55,9	0,12734
429,7	1	50	1,695	1,649	1,671	10	-297,9	384,1	10	55,7	0,12725
400,2	1	50	1,471	1,438	1,453	10	-237,2	314,6	10	55,5	0,12716
353,3	1	50	2,414	2,380	2,428	5	-333,7	459,7	5	55,2	0,12703
304,9	1	50	2,016	1,987	2,035	5	-226,3	341,2	5	54,9	0,12690
251,2	1	50	1,639	1,615	1,651	5	-139,3	239,2	5	54,7	0,12681
198,2	1	50	3,219	3,220	3,226	2	-191,5	403,7	2	54,2	0,12659
137,7	1	50	2,283	2,304	2,289	2	-46,3	235,5	2	54	0,12651
89,2	1	50	1,818	1,853	1,827	2	28,6	148,3	2	53,8	0,12642
data calculation of no load											
V%	U0/UN	I0	P0	(U0/UN)^2	P0cu1	P0'					
123,2%	1,23	26,263	1387,0	1,519	131,75	1255,25					
107,4%	1,07	16,717	862,0	1,154	53,34	808,66					
100,1%	1,00	14,540	774,0	1,001	40,33	733,67					
88,3%	0,88	12,037	630,0	0,780	27,61	602,39					
76,2%	0,76	10,063	574,5	0,581	19,28	555,22					
62,8%	0,63	8,175	499,5	0,394	12,71	486,79					
49,6%	0,50	6,443	424,4	0,246	7,88	416,52					
34,4%	0,34	4,584	378,4	0,118	3,99	374,41					
22,3%	0,22	3,665	353,8	0,050	2,55	351,25					
RESULTS AT: 400 V											
N.L.AMP	14,53	N.L.LOSS(W)	773,29	Pw(W)	334,8	Pe(W)	398,2				

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Voltage	400	V	Current	52,0	A	Frequency	50,0 Hz		
Speed	2962	r/min	Duty	S1		Connection	Δ		
Ins.class	F		Weight	298	kg				

No Load Curve



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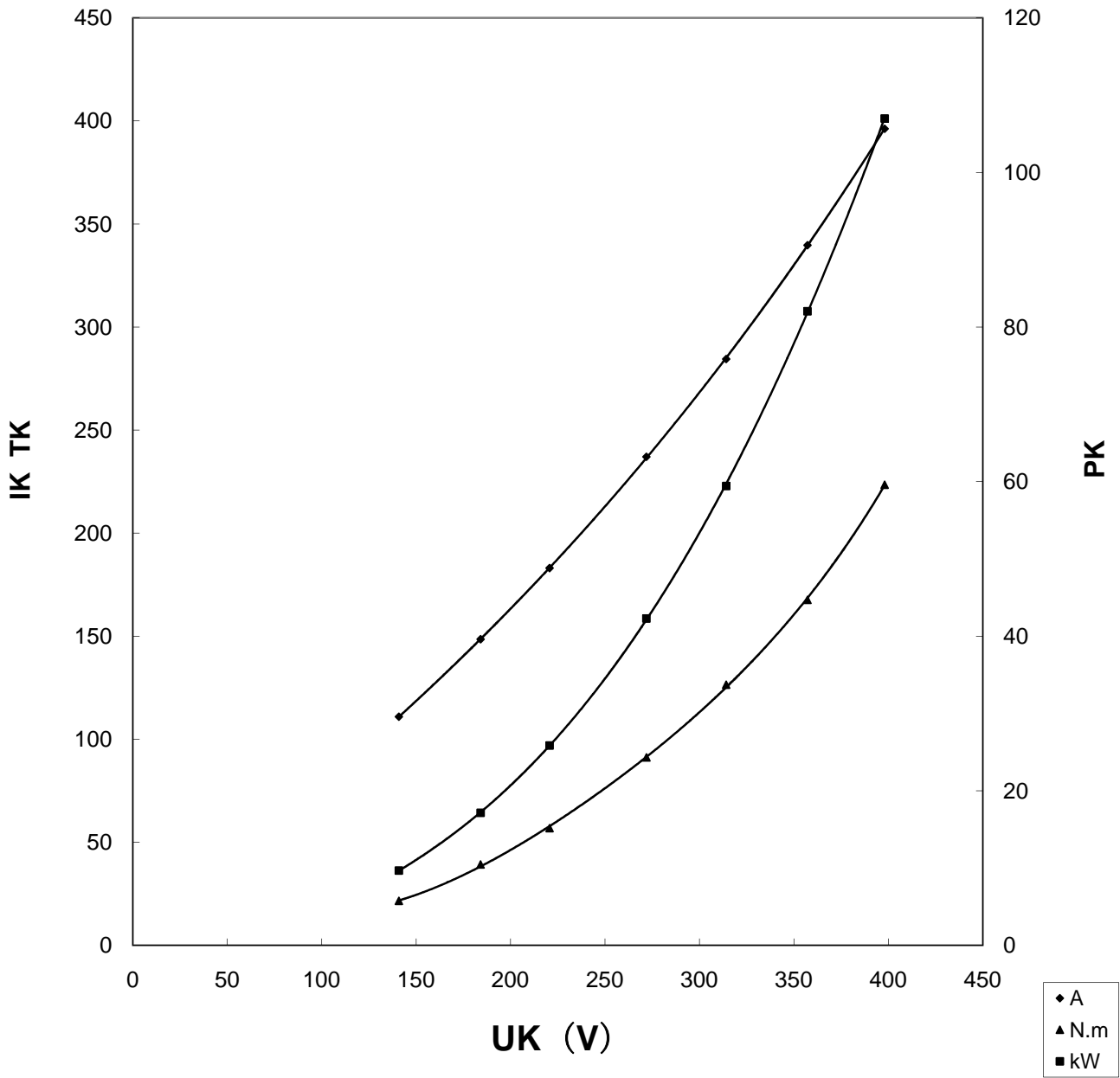
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Speed	2962	r/min	Duty	S1		Connection	Δ		
Ins.class	F		Weight	298	kg	IP55			
LOCKED ROTOR TEST									
VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqur (kg.m)
398,0	1,0	1,968	1,986	1,988	200,0	-98,6	633,5	200,0	22,8
357,2	1,0	1,688	1,706	1,701	200,0	-78,5	488,7	200,0	17,1
314,1	1,0	2,825	2,862	2,846	100,0	-122,3	716,6	100,0	12,9
271,9	1,0	2,354	2,387	2,369	100,0	-92,1	515,0	100,0	9,3
220,6	1,0	1,819	1,844	1,828	100,0	-62,2	320,8	100,0	5,8
184,1	1,0	2,955	2,992	2,964	50,0	-89,1	432,1	50,0	4,0
140,8	1,0	2,211	2,232	2,213	50,0	-52,3	245,9	50,0	2,2
data calculation of locked rotor									
Uk	IK	PK	TK		LOGUk	LOGIk	LOGPk	LOGTk	
V	A	kW	N.m						
398,00	396,21	106,980	223,44		2,5999	2,5979	2,0293	2,3492	
357,16	339,72	82,040	167,58		2,5529	2,5311	1,9140	2,2242	
314,11	284,46	59,430	126,42		2,4971	2,4540	1,7740	2,1018	
271,89	237,03	42,290	91,14		2,4344	2,3748	1,6262	1,9597	
220,63	183,03	25,860	56,84		2,3437	2,2625	1,4126	1,7547	
184,11	148,52	17,150	39,20		2,2651	2,1718	1,2343	1,5933	
140,84	110,91	9,680	21,56		2,1487	2,0450	0,9859	1,3336	
performance collection of locked rotor									
	at rated volts		at rated current		at 2.5 times rated current		at 100V		
VOLTS (V)	400		68,514		162,8		100,0		
AMPS (A)	399,0		52,1		130,3		77,70		
INPUT (kW)	108,20				13,7		4,676		
TORQUE (N.m)	226,18								

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Voltage	400	V	Current	52,0	A	Frequency	50,0 Hz		
Speed	2962	r/min	Duty	S1		Connection	Δ		
Ins.class	F		Weight	298	kg		IP55		

Locked Rotor Curve



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Speed	2962	r/min	Duty	S1		Connection	Δ				
Ins.class	F		Weight	298	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	
14,30	400,2	2,618	2,640	2,629	20	585,6	1064	20	35,6	—	61,2	60,1	—	—	—	—	—	—	—	—	—	12,3
15,00	400,1	2,618	2,635	2,629	20	584,3	1060	20	36,3	—	62,0	60,9	—	—	—	—	—	—	—	—	—	12,4
15,30	400,1	2,616	2,636	2,627	20	582,3	1055	20	37,0	—	62,5	61,4	—	—	—	—	—	—	—	—	—	12,5
15,59	400,1	2,589	2,609	2,600	20	575,4	1044	20	37,7	—	63,2	62,1	—	—	—	—	—	—	—	—	—	12,7
16,29	400,0	2,588	2,611	2,595	20	574,1	1045	20	37,0	—	63,2	62,1	—	—	—	—	—	—	—	—	—	12,8
The average of the last three		52,160		A		32503,3		W	37,0	—	63,0	62,1	—	—	—	—	—	—	—	—	—	12,7

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)	37	55	81	103	130	153	176	194		
RESISTANCE (Ω)	0,1341	0,1336	0,1332	0,1327	0,1323	0,1318	0,1315	0,1312		

WINDING RESISTANCE(COLD)

	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
Δ	0,108	0,108	0,1081	0,10803	0,10800	11,8 °C
	U1-U2	V1-V2	W1-W2	AVERAGE	MIN	AMBIENT TEM.
Y						°C

resistance value at 0 sec (Ω) 0,134883 calculation value of temp.rising 60,57 K

30 S (Ω) 0,134189 calculation value of temp.rising 58,98 K

full load curent 52,01 A modify value of temp. rising 58,65 K

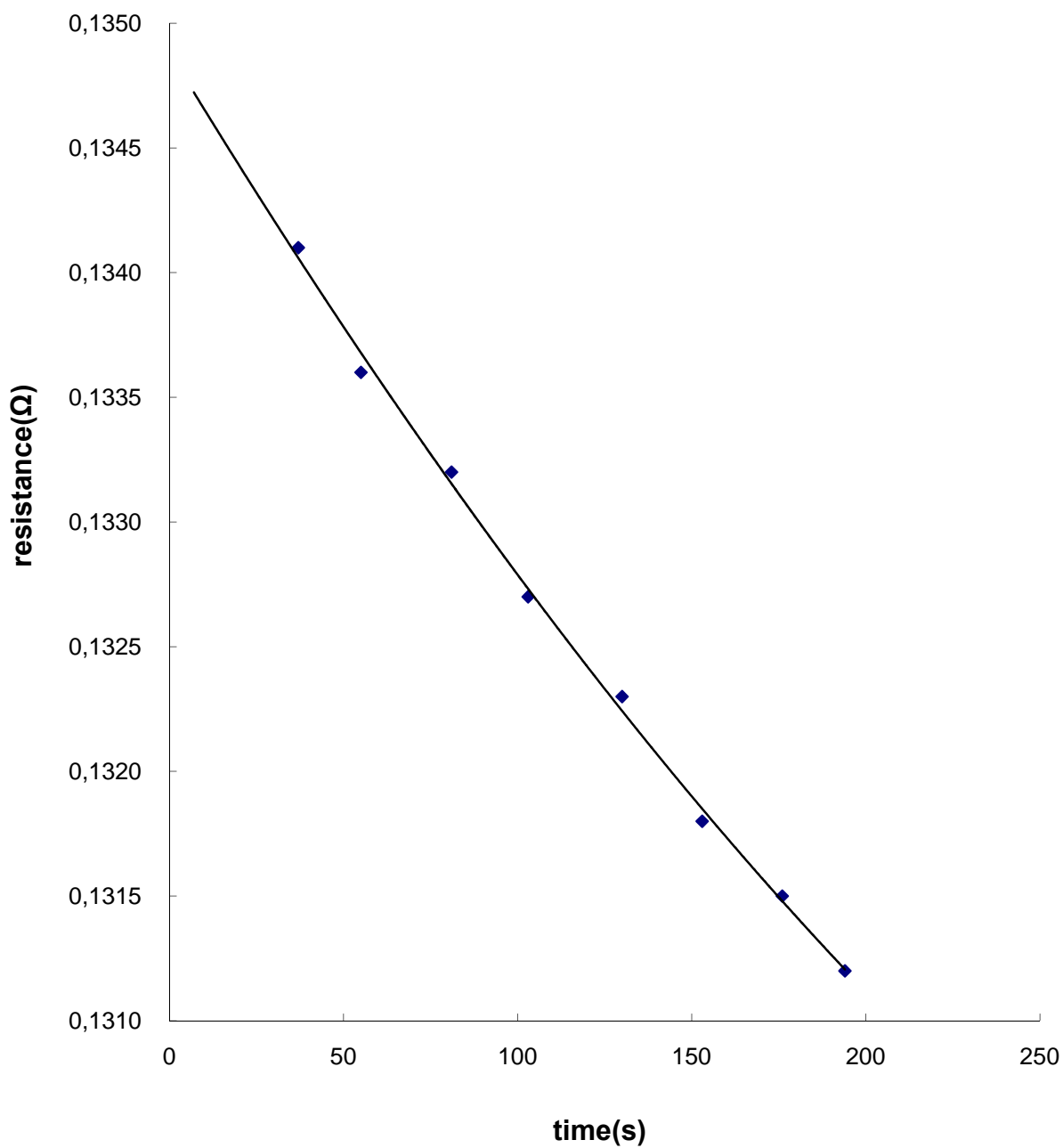
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IE:2

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Voltage	400	V	Current	52,0	A	Frequency	50,0	Hz
Speed	2962	r/min	Duty	S1		Connection	Δ	
Ins.class	F		Weight	298	kg	IP55		

RESISTANCE CURVE



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Voltage	400 V	Current	52,0 A	Frequency	50,0	kW								
Speed	2962 r/min	Duty	S1	Connection	Δ	Hz								
Ins.class	F	Weight	298 kg											
LOAD TEST														
V	HZ	I1	I2	I3	mul.	W1	W2	mul.	r/min	Resistance Ω	Temperature °C	Torque N.m		
400,1	50,01	3,976	3,992	3,990	20	881,6	1577,9	20	2937,4	0,1310	64,3	146,53		
400,0	50,00	3,301	3,318	3,310	20	737,1	1310,8	20	2950,1	0,1313	64,9	122,54		
400,1	50,01	2,614	2,638	2,621	20	574,8	1045,4	20	2962,9	0,1315	65,5	96,96		
400,3	50,01	1,949	1,989	1,949	20	378,6	827,6	20	2975,2	0,1313	64,9	71,82		
400,3	50,00	1,434	1,468	1,432	20	238,2	581,3	20	2984,2	0,1311	64,4	48,43		
400,3	50,00	2,488	2,458	2,473	10	357,2	964,3	10	2988,1	0,1308	63,7	38,60		
400,3	50,00	1,948	1,916	1,928	10	137,2	717,2	10	2993,9	0,1305	63,2	23,85		
400,4	50,0	1,534	1,493	1,511	10,0	-159,8	392,5	10	2997,9	0,1299	61,7	4,38		
400,0	50,0	1,465	1,431	1,446	10,0	-235,1	314,3	10	3000,0	0,1277	56,8	0,00		
slope A= 0,04324 intercept B= 57,01 relative coefficient r= 0,993														
LOAD %	P2 W	I A	P1 W	Pcu1s W	Ss %	Pcu2s W	Ps W	Pz W	N.m	EFF %	P.F			
150,0	45000	79,44	49023,6	1329,7	2,179	1030,4	928,4	4021,6	146,5	91,79	0,891			
125,0	37500	65,37	40442,2	900,2	1,699	665,0	638,2	2936,4	121,5	92,73	0,893			
100,0	30000	52,01	32109,6	570,0	1,285	400,1	403,1	2106,2	96,6	93,43	0,891			
75,0	22500	39,06	23981,8	321,4	0,871	202,7	223,4	1480,5	71,9	93,82	0,886			
50,0	15000	28,49	16087,6	171,1	0,534	82,9	99,6	1086,5	48,0	93,24	0,815			
25,0	7500	19,08	8349,0	76,7	0,204	16,0	24,3	850,1	23,7	89,83	0,632			

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Speed	2962	r/min	Duty	S1		Connection	Δ		
Ins.class	F		Weight	298	kg		IP55		

LOAD CURVE

