

VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

IE:3

Type	K280S-2	Poles	2	Power	75,0	kW
Voltage	400 V	Current	128,0 A	Frequency	50	Hz
Speed	2979 r/min	Duty	S1	Connecti	△	
Ins.class	F	Weight	565 kg		IP55	

MAJOR CONTENTS		TEST VALUE	
95,0 °C PHASE RESISTANCE OF WI	Ω	0,0473	
NO LOAD CURRENT	A	34,427	
NO LOAD INPUT	W	1931,44	
CORE LOSS(Pfe)	W	1159,65	
WINDAGE FRICTION LOSS(Pfw)	W	722,58	
STATOR WINDING LOSS(Pcu1)	W	736,18	
ROTOR WINDING LOSS(Pcu2)	W	544,80	
STRAY LOAD LOSS(Ps)	W	978,43	
LOCKED ROTOR CURRENT	A	953,752	
LOCKED ROTOR INPUT @ FULL LOAD	W	240139	
LOCKED ROTOR TORQUE	N.m	672,7	
PULL OUT TORQUE	N.m	793,1	
LOCKED ROTOR CURRENT/RATED CURF	P.U	7,45	
LOCKED ROTOR TORQUE/RATED TORQI	P.U	2,79	
PULL OUT TORQUE/RATED TORQUE	P.U	3,29	
FULL LOAD TORQUE	N.m	240,6	
FULL LOAD CURRENT	A	128,0	
FULL LOAD SLIP	%	0,705	
INPUT @ FULL LOAD	kW	79,147	
FULL LOAD SPEED	r/min	2978,8	
EFFICIENCY @ FULL LOAD	%	94,76	
EFFICIENCY @ 75% LOAD	%	94,73	
POWER FACTOR @ FULL LOAD		0,893	
STATOR WINDING TEMPERATURE RISE	K	52	
D.E. BEARINGS TEMPERATURE BY PT10	°C	43,3	
STATOR WINDING TEMPERATURE	°C	65,8	
High voltage test	V	1800	Imin
Insulation resistance	MΩ	500	
NOISE (LW)	dB(A)	93	
VIBRATION	mm/s	1,6	

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Speed	2979 r/min	Duty	S1	Connection	Δ	
Ins.class	F	Weight	565 kg		IP55	

NO LOAD TEST

VOL	mul.	HZ	I01	I02	I03	mul.	W1	W2	mul.	°C	Ω
478,9	1	50	2,796	2,862	2,744	20	-592,8	737,4	20	55,3	0,02772
435,4	1	50	2,021	2,100	1,999	20	-386,0	494,9	20	55,1	0,02770
400,1	1	50	1,697	1,777	1,692	20	-291,9	388,5	20	54,9	0,02768
349,4	1	50	1,403	1,490	1,402	20	-206,4	290,5	20	54,6	0,02765
302,0	1	50	1,189	1,277	1,190	20	-148,4	219,2	20	54,3	0,02762
245,2	1	50	0,937	1,032	0,936	20	-89,7	151,5	20	54,2	0,02762
200,0	1	50	3,202	3,177	3,200	5	-179,3	411,3	5	53,8	0,02758
181,9	1	50	2,903	2,884	2,901	5	-132,7	351,2	5	53,6	0,02756
151,5	1	50	2,427	2,417	2,430	5	-71,1	259,9	5	53,4	0,02754
102,5	1	50	1,890	1,888	1,899	5	7,6	162,6	5	53,0	0,02750

data calculation of no load

V%	U0/UN	I0	P0	(U0/UN)^2	P0cu1	P0'
119,7%	1,20	56,013	2892,0	1,434	130,46	2761,54
108,8%	1,09	40,800	2178,0	1,185	69,17	2108,83
100,0%	1,00	34,440	1932,0	1,001	49,25	1882,75
87,3%	0,87	28,633	1682,0	0,763	34,01	1647,99
75,5%	0,76	24,373	1416,0	0,570	24,62	1391,38
61,3%	0,61	19,367	1236,0	0,376	15,54	1220,46
50,0%	0,50	15,965	1160,0	0,250	10,54	1149,46
45,5%	0,45	14,480	1092,5	0,207	8,67	1083,83
37,9%	0,38	12,123	944,0	0,143	6,07	937,93
25,6%	0,26	9,462	851,0	0,066	3,69	847,31

RESULTS AT: 400 V

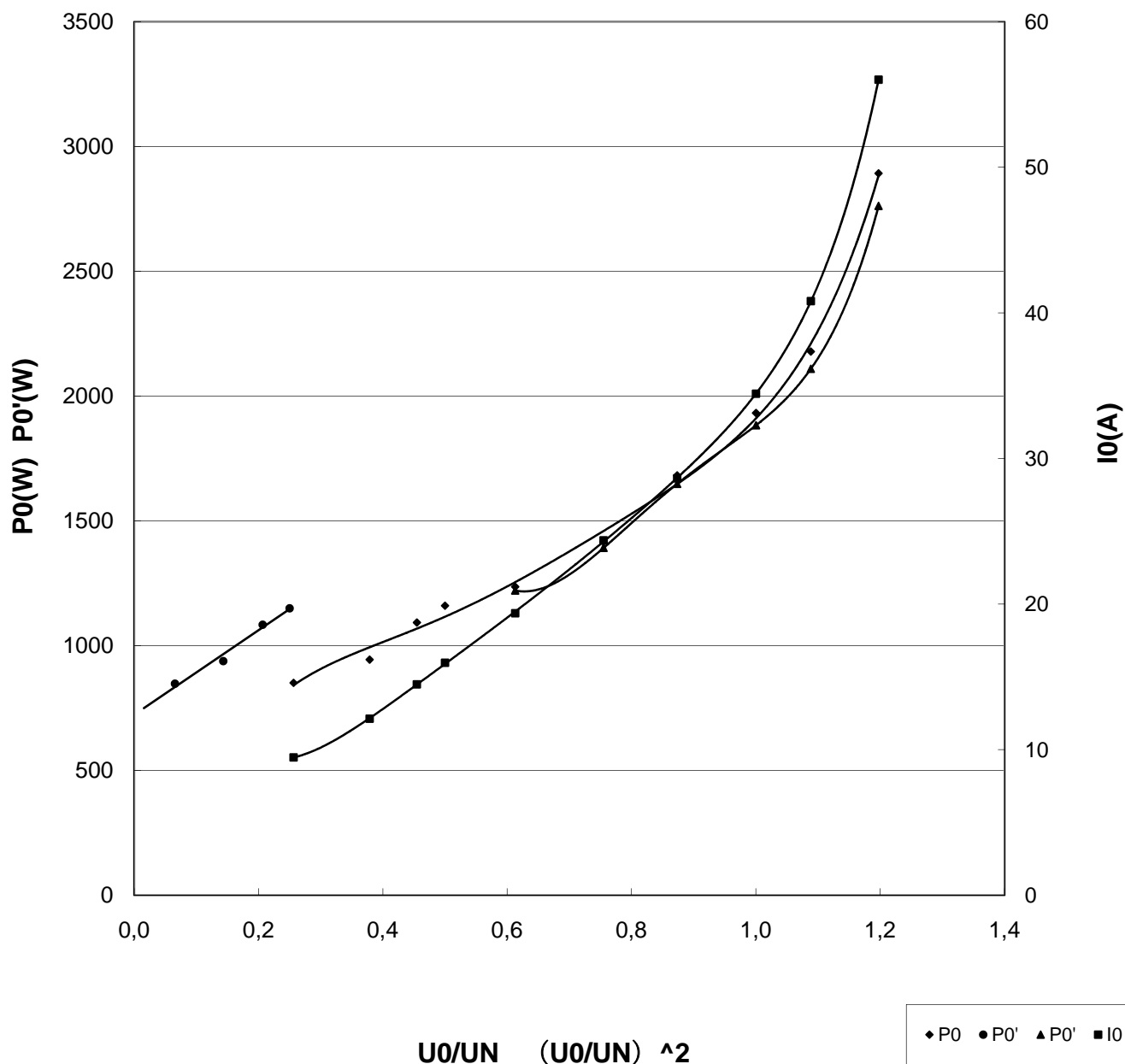
N.L.AMP	34,43	N.L.LOSS(W)	1931,44	Pw(W)	722,6	Pe(W)	1159,7		
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Type	K280S-2		Poles	2		Power	75,0 kW		IE:3
Voltage	400	V	Current	128,0	A	Frequency	50,0 Hz		
Speed	2979	r/min	Duty	S1		Connection	Δ		
Ins.class	F		Weight	565	kg				

No Load Curve



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ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

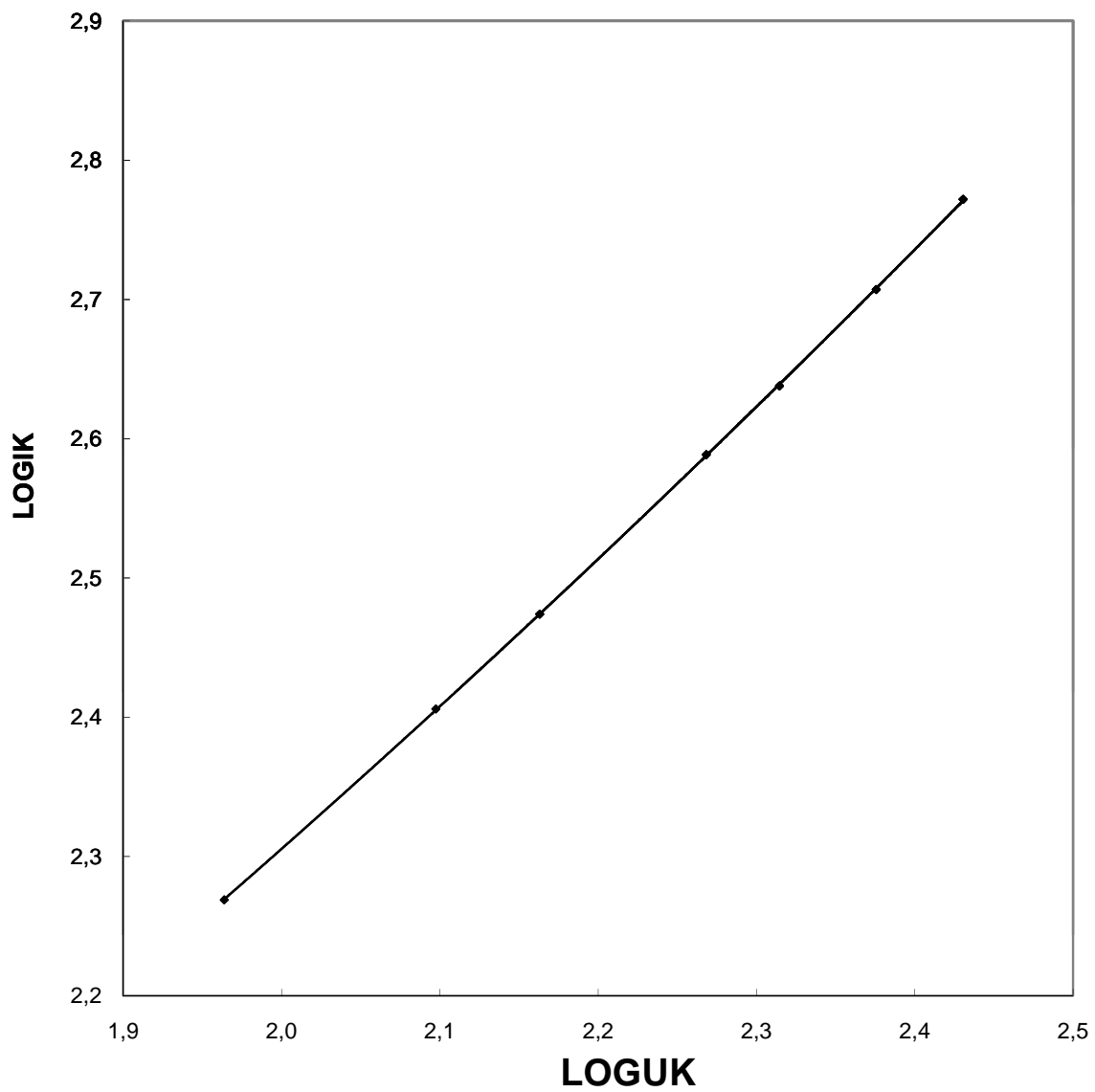
Type	K280S-2		Poles	2		Power	75,0		IE:3
Voltage	400	V	Current	128,0	A	Frequency	50,0		kW
Speed	2979	r/min	Duty	S1		Connection	Δ		Hz
Ins.class	F		Weight	565	kg	IP55			
LOCKED ROTOR TEST									
VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqu (kg.m)
269,5	1,0	2,945	2,950	2,977	200,0	-114,8	629,1	200,0	26,40
237,5	1,0	2,538	2,541	2,563	200,0	-86,4	479,0	200,0	20,35
206,3	1,0	2,165	2,167	2,185	200,0	-64,3	354,3	200,0	15,20
185,5	1,0	1,932	1,934	1,950	200,0	-51,9	284,4	200,0	12,15
145,6	1,0	2,971	2,972	2,994	100,0	-65,4	341,9	100,0	7,25
125,2	1,0	2,537	2,542	2,559	100,0	-47,2	251,0	100,0	5,30
92,0	1,0	1,853	1,853	1,867	100,0	-25,5	134,3	100,0	2,80
data calculation of locked rotor									
Uk	IK	PK	TK		LOGUk	LOGIk	LOGPk	LOGTk	
V	A	kW	N.m						
269,47	591,47	102,860	258,72		2,4305	2,7719	2,0122	2,4128	
237,47	509,52	78,520	199,43		2,3756	2,7072	1,8950	2,2998	
206,32	434,47	58,000	148,96		2,3145	2,6380	1,7634	2,1731	
185,47	387,79	46,500	119,07		2,2683	2,5886	1,6675	2,0758	
145,58	297,89	27,650	71,05		2,1631	2,4741	1,4417	1,8516	
125,16	254,63	20,380	51,94		2,0975	2,4059	1,3092	1,7155	
92,00	185,73	10,880	27,44		1,9638	2,2689	1,0366	1,4384	
performance collection of locked rotor									
	at rated volts		at rated current		at 2.5 times rated current		at 100V		
VOLTS (V)	400		65,383		153,1		100,0		
AMPS (A)	953,8		127,0		317,5		200,75		
INPUT (kW)	240,14				31,2		12,788		
TORQUE (N.m)	672,72								

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Type	K280S-2	Poles	2	Power	75,0	IE:3
Voltage	400 V	Current	128,0 A	Frequency	50,0	kW Hz
Speed	2979 r/min	Duty	S1	Connection	Δ	
Ins.class	F	Weight	565 kg		IP55	

LOCKED



◆ LOGIK

VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

Type	K280S-2		Poles	2		Power	75 kW		IE:3		
Voltage	400	V	Current	128,0	A	Frequency	50 Hz				
Speed	2979	r/min	Duty	S1		Connection	Δ				
Ins.class	F		Weight	565	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	
21,00	400,5	1,286	1,292	1,296	100	283,7	521,6	100	40,1	—	57,7	55,6	—	—	—	—	—	—	—	—	—	11,9
21,33	400,1	1,299	1,304	1,309	100	287,8	525,8	100	42,0	—	62,4	59,9	—	—	—	—	—	—	—	—	—	11,8
21,58	400,0	1,262	1,267	1,271	100	278,5	510,6	100	43,2	—	64,4	62,6	—	—	—	—	—	—	—	—	—	11,8
22,29	400,1	1,269	1,275	1,280	100	281,4	513,5	100	43,4	—	65,0	63,3	—	—	—	—	—	—	—	—	—	11,6
22,58	399,8	1,280	1,284	1,289	100	281,6	517,6	100	43,4	—	65,5	63,8	—	—	—	—	—	—	—	—	—	11,7
23,30	400,1	1,277	1,282	1,285	100	282,6	517,3	100	43,3	—	65,8	64,0	—	—	—	—	—	—	—	—	—	11,6
The average of the last three		128,010			A	79800		W	43,3	—	65,4	64,0	—	—	—	—	—	—	—	—	—	11,6

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)	56	77	106	136	156	185	210	235		
RESISTANCE	0,02857	0,02852	0,02846	0,02841	0,02835	0,02829	0,02824	0,02820		

WINDING RESISTANCE(COLD)

Δ	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0,02355	0,02358	0,02357	0,02357	0,02355	11,8 °C
Y	U1-U2	V1-V2	W1-W2	AVERAGE	MIN	AMBIENT TEM.
						°C

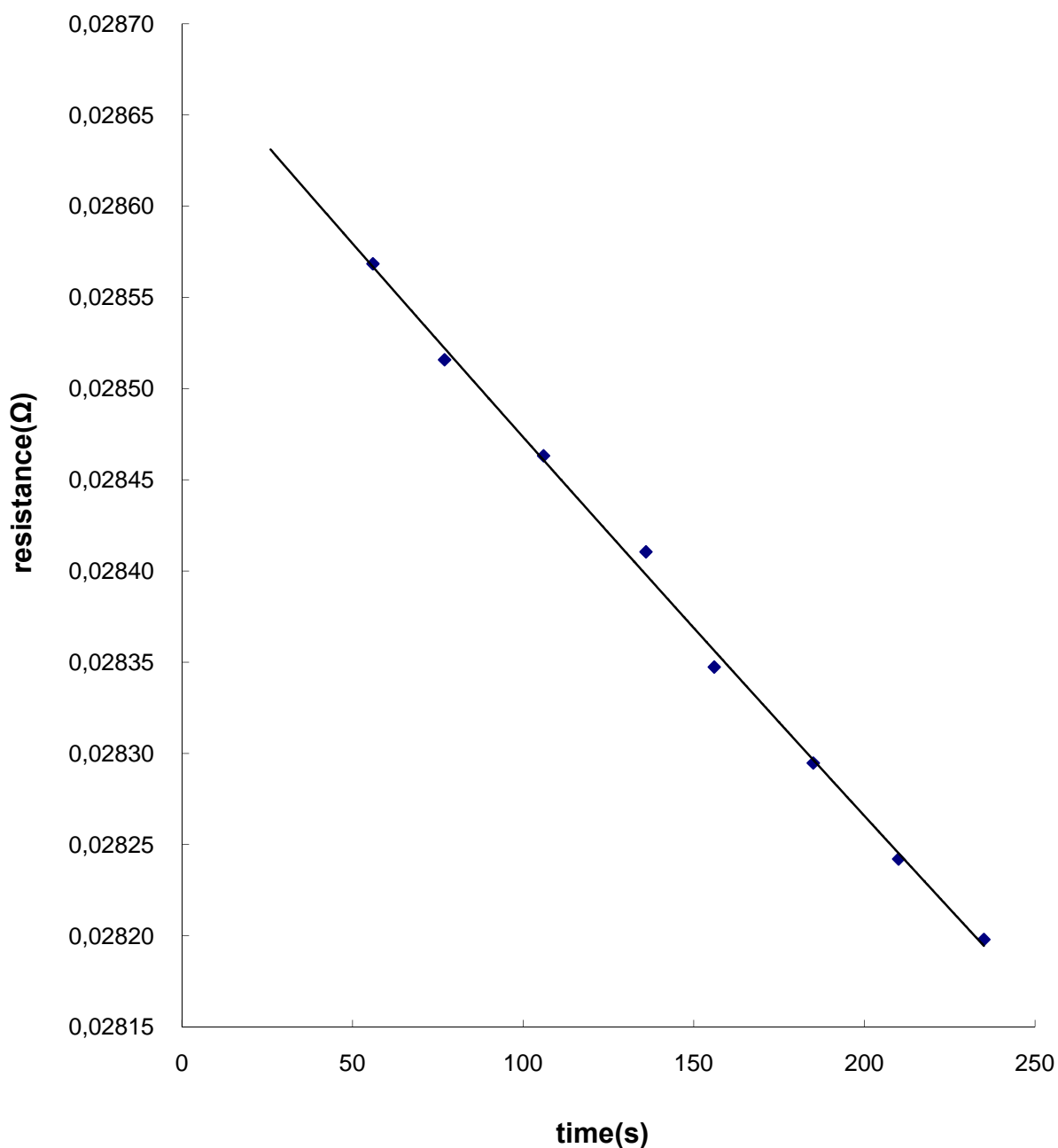
resistance value at 0 sec (Ω)		0,028687	calculation value of temp.rising	54,00	K
90 S (Ω)		0,028494	calculation value of temp.rising	51,98	K
full load curent		127,99 A	modify value of temp. rising	51,96	K

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ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

Type	K280S-2	Poles	2	output Power	75,0	IE:3		
Voltage	400	V	Current	128,0	A	Frequency	50,0	Hz
Speed	2979	r/min	Duty	S1	Connection	Δ		
Ins.class	F	Weight	565	kg	IP55			

RESISTANCE CURVE



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Type	K280S-2		Poles	2		Power	75,0		IE:3			
Voltage	400	V	Current	128,0	A	Frequency	50,0		kW			
Speed	2979	r/min	Duty	S1		Connection	Δ		Hz			
Ins.class	F		Weight	565	kg				IP55			
LOAD TEST												
V	HZ	I1	I2	I3	mul.	W1	W2	mul.	r/min	Resistance Ω	Temperature °C	Torque r N.m
399,8	50,02	1,935	1,944	1,955	100	417,7	775,9	100	2968,3	0,0287	65,2	359,8
400,1	50,02	1,576	1,583	1,592	100	348,9	631,8	100	2975,5	0,0287	65,9	297,2
400,2	50,02	1,284	1,290	1,295	100	283,1	514,8	100	2980,7	0,0288	66,3	240,9
400,2	49,99	1,941	1,954	1,957	50	402,3	780,1	50	2986,3	0,0287	66,0	177,7
400,4	50,03	1,515	1,526	1,525	50	276,0	607,6	50	2990,5	0,0287	65,5	131,5
400,1	50,02	1,404	1,413	1,412	50	240,0	559,9	50	2991,5	0,0286	65,0	118,4
400,1	50,01	0,948	0,953	0,948	50	79,5	362,7	50	2996,1	0,0285	63,9	62,42
400,2	50,0	1,768	1,859	1,759	20,0	-213,7	488,8	20	3000,2	0,0284	62,2	10,19
400,2	50,0	1,723	1,821	1,718	20,0	-300,3	397,6	20	3000,0	0,0276	54,2	0,00
slope A= 0,01660		intercept B= 80,68				relative coefficient r= 0,990						
LOAD %	P2 W	I A	P1 W	Pcu1s W	Ss %	Pcu2s W	Ps W	Pz W	N.m	EFF %	P.F	
150,0	112500	194,86	119603	1706,5	1,152	1344,7	2171,6	7105,0	361,7	94,06	0,886	
125,0	93750	160,26	99185,7	1154,3	0,909	880,2	1510,2	5427,0	301,6	94,52	0,893	
100,0	75000	127,95	79123,9	735,8	0,705	544,4	956,4	4118,8	240,0	94,79	0,893	
75,0	56250	97,90	59366,0	430,8	0,460	265,5	535,6	3114,1	179,6	94,75	0,875	
50,0	37500	70,46	39973,0	223,1	0,339	130,7	236,8	2472,9	119,4	93,81	0,819	
25,0	18750	45,80	20805,0	94,3	0,145	28,3	58,7	2063,5	59,5	90,12	0,656	

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Voltage	400	V	Current	128,0	A	Frequency	50,0	Hz	
Speed	2979	r/min	Duty	S1		Connection	Δ		
Ins.class	F		Weight	565	kg		IP55		

LOAD CURVE

