



ROYCECROSSGROUP



ROYCE CROSS GROUP

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

NAMEPLATE DATA			
Y3-160L-4 FRAME	IEC TYPE	15 kW	1471 r/min
4 POLE	3 PHASE	415 VOLTS	50 Hz
ROYCE CROSS GROUP MANUFACTURER	26.8 AMPS	IP55 IP	
	S1 DUTY	F INS.CLASS	CONNECTION

MAJOR CONTENTS	UNIT	TEST VALUE
STATOR RESISTANCE OF PHASE	OHM	0.66303
NO LOAD CURRENT	AMP	12.53
NO LOAD INPUT	W	569.2
CORE LOSS(Pfe)	W	419.0
WINDAGE FRICTION LOSS(Pfw)	W	56.8
STATOR WINDING LOSS(Pcu1)	W	464.1
ROTOR WINDING LOSS(Pcu2)	W	292.0
STRAY LOAD LOSS(Ps)	W	81.9
FULL LOAD CURRENT	AMP	26.78
LOCKED ROTOR CURRENT	AMP	192.49
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	7.18
FULL LOAD TORQUE	N.m	97.33
LOCKED ROTOR TORQUE	N.m	217.80
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	2.24
PULL OUT TORQUE	N.m	281.83
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	2.89
INPUT @ FULL LOAD	kW	16.31
EFFICIENCY @ FULL LOAD	%	91.95
POWER FACTOR @ FULL LOAD		0.85

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Type	Y3-160L-4	Poles	4	Power	15.0 kW
Voltage	415 V	Current	26.8 A	Frequency	50 Hz
Speed	1471 r/min	Duty	S1	Connection	△
Ins. class	F	Weight	0 kg		IP55

NO LOAD TEST

VOL	mul.	Hz	I01	I02	I03	mul.	W1	W2	mul.	
487.9	1	50	4.304	4.323	4.278	5	-889.1	1129.6	5	61.0
450.7	1	50	3.205	3.230	3.170	5	-621.6	778.3	5	61.0
415.9	1	50	2.529	2.549	2.479	5	-456.6	571.2	5	61.0
373.0	1	50	2.003	2.025	1.948	5	-325.9	411.0	5	60.9
307.4	1	50	1.505	1.528	1.455	5	-201.1	258.8	5	60.6
257.1	1	50	3.039	3.026	2.943	2	-325.7	435.0	2	60.0
207.0	1	50	2.369	2.371	2.274	2	-200.2	282.4	2	59.4
175.2	1	50	1.970	1.975	1.891	2	-136.1	202.9	2	59.1
139.5	1	50	1.560	1.567	1.496	2	-80.0	132.7	2	58.9
93.8	1	50	1.069	1.054	1.030	2	-26.9	66.3	2	58.2

Initial Resistance immediately before no-load test: 0 Ω ambient temperature: 0.0 °C

Final Resistance immediately later no-load test: 0 Ω ambient temperature: 0.0 °C

ROYCE CROSS GROUP	Manufacturing Date	Serial No
	0.00	0
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	0/01/1900	0

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Type	Y3-160L-4	Poles	4	Power	15.0	kW
Voltage	415 V	Current	26.8 A	Frequency	50.0	Hz
Speed	1471 r/min	Duty	S1	Connection		
Ins. class	F	Weight	0 kg		IP55	

LOCKED ROTOR TEST

VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqu N. m
415.6	1.0	1.918	1.937	1.932	100.0	-69.4	770.0	100	218.54
371.1	1.0	1.634	1.648	1.643	100.0	-55.4	583.8	100	165.51
325.0	1.0	1.354	1.365	1.359	100.0	-45.3	421.8	100	117.96
288.3	1.0	2.295	2.314	2.305	50.0	-78.2	628.7	50	87.78
235.7	1.0	1.761	1.779	1.769	50.0	-56.9	389.6	50	64.01
189.1	1.0	1.339	1.354	1.342	50.0	-39.1	234.7	50	32.92
145.8	1.0	2.480	2.508	2.485	20.0	-62.8	332.0	20	18.29
102.5	1.0	1.704	1.722	1.705	20.0	-31.2	159.2	20	8.23

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ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

ROYCE CROSS GROUP

Type	Y3-160L-4		Poles	4		Power	15 kW	
Voltage	415 V		Current	26.8 A		Frequency	50 Hz	
Speed	1471 r/min		Duty	S1		Connection		
Ins. class	F		Weight	0 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	
10:00	415.4	2.721	2.753	2.717	10	510.2	1160.6	10	44.4	—	68.6	66.0	—	—	—	—	—	—	—	—	—	5.3
10:30	415.4	2.713	2.751	2.711	10	509.0	1160.2	10	46.2	—	70.4	67.8	—	—	—	—	—	—	—	—	—	5.8
11:00	415.3	2.725	2.757	2.719	10	510.6	1161.2	10	46.8	—	71.3	68.6	—	—	—	—	—	—	—	—	—	6.3
11:30	415.3	2.730	2.763	2.732	10	514.6	1164.2	10	47.3	—	72.1	69.5	—	—	—	—	—	—	—	—	—	6.6
12:00	415.2	2.728	2.765	2.727	10	513.2	1165.8	10	48.2	—	73.4	70.7	—	—	—	—	—	—	—	—	—	6.9
12:30	415.1	2.727	2.765	2.728	10	513.6	1165.2	10	48.8	—	73.7	71.1	—	—	—	—	—	—	—	—	—	7.1
13:00	415.0	2.728	2.761	2.725	10	514.4	1163.8	10	48.6	—	74.1	71.5	—	—	—	—	—	—	—	—	—	7.1
最后三点平均值		27.392			A	16786.67		W	48.6	—	73.7	71.1	—	—	—	—	—	—	—	—	—	7.0

T1 T2: DE BEARING TEMPERATURE
T3~T10: DE WINDING TEMPERATURE

T11: CORE TEMPERATRE
T13: AMBIENT TEMPERATURE

T12: FRAME TEMPERATRE

WINDING RESISTANCE (HOT) AT END OF TEMPERATURE RISE TEST

TIME (S)	23	33	44	55	66	76	90	110
RESISTANCE	0.4045	0.4035	0.4025	0.4015	0.4005	0.3997	0.3987	0.3975

WINDING RESISTANCE (COLD)

△	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0.3217	0.3211	0.3212	0.32133	0.32110	4.9 °C
Y	U1-U2	V1-V2	W1-W2	AVERAGE	MIN	AMBIENT TEM.
	0	0	0	0.000	0	0 °C

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Type	Y3-160L-4	Poles	4	output Power	15.0	kW		
Voltage	415	V	Current	26.8	A	Frequency	50.0	Hz
Speed	1471	r/min	Duty	S1	Connection			
Ins. class	F	Weight	0	kg		IP55		

LOAD TEST

V	Hz	A1 (unit)	A2 (unit)	A3 (unit)	mul.	W1 (unit)	W2 (unit)	mul.	r/min
415.2	50.01	1.970	1.992	1.965	20	412.9	841.4	20	1455.7
415.0	50.02	1.662	1.683	1.658	20	336.2	710.2	20	1464.6
415.0	50.01	1.395	1.415	1.391	20	263.8	597.0	20	1471.9
415.2	50.02	1.219	1.234	1.213	20	210.2	519.6	20	1477.0
414.9	50.01	2.206	2.230	2.196	10	342.9	934.2	10	1479.9
415.1	50.02	1.723	1.748	1.710	10	161.6	709.9	10	1487.3
415.0	50.01	1.408	1.428	1.391	10	7.7	532.6	10	1493.0

% LOAD	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P. F.
150	22500	24878.7	39.205	994.7	3.124	733.2	175.0	90.44	0.883
125	18750	20526.9	32.782	695.5	2.488	483.1	122.6	91.34	0.871
100	15000	16313.8	26.779	464.1	1.892	292.0	81.9	91.95	0.848
75	11250	12235.6	21.473	298.4	1.377	158.7	52.8	91.94	0.793
50	7500	8259.1	16.835	183.4	0.882	67.6	32.4	90.81	0.683
25	3750	4370.3	13.089	110.9	0.383	14.7	19.0	85.81	0.465

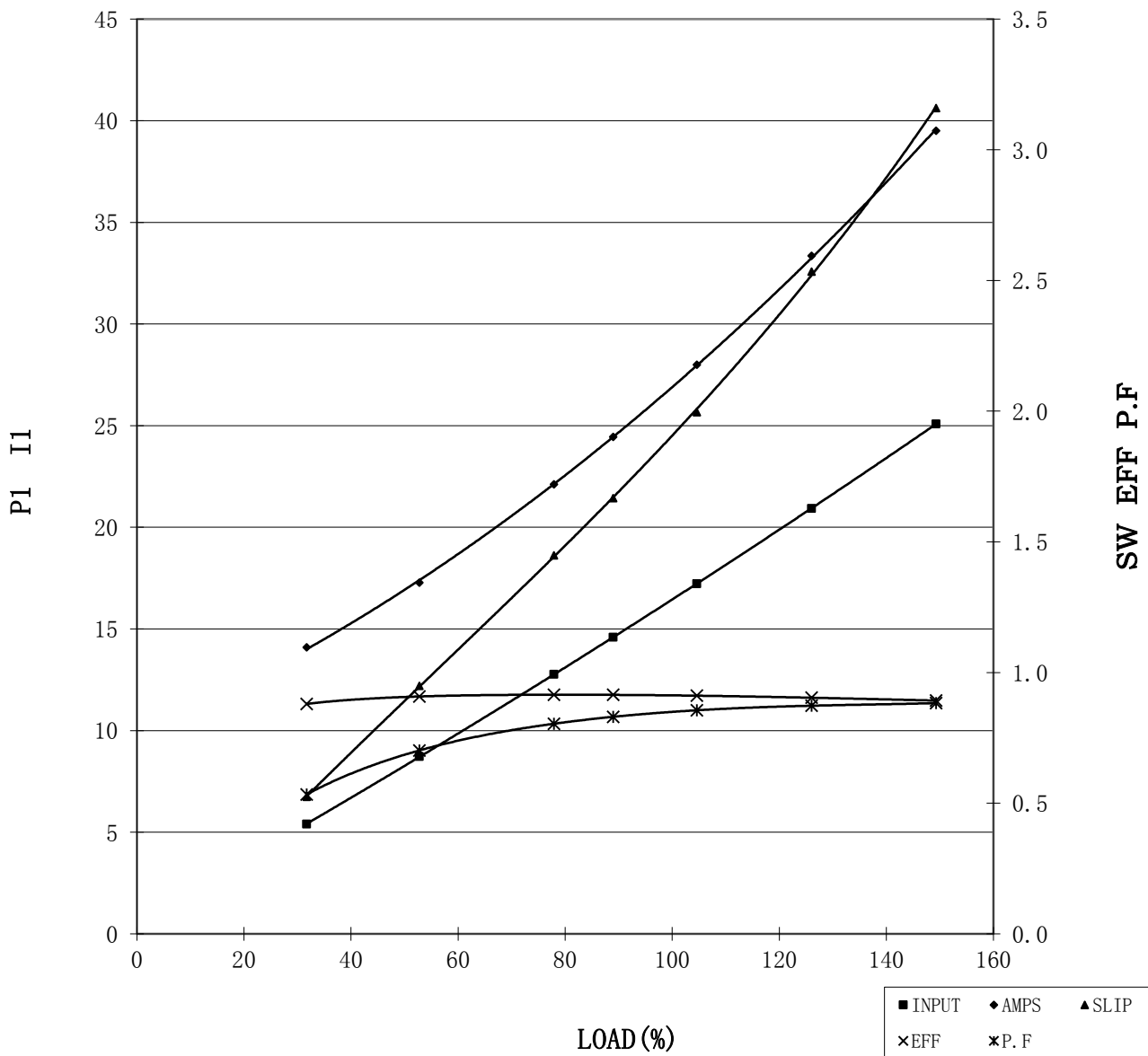
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Type	Y3-160L-4	Poles	4	output Power	15.0	kW
Voltage	415 V	Current	26.8 A	Frequency	50.0	Hz
Speed	1471 r/min	Duty	S1	Connection		
Ins. class	F	Weight	0 kg		IP55	

LOAD CURVE



ROYCE CROSS GROUP

Manu. Date

0.00

Serial No

0

Test Date

0/01/1900

Report Number

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