



ROYCECROSSGROUP



ROYCE CROSS GROUP

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

NAMEPLATE DATA			
Y3-160M2-8 FRAME	IEC TYPE	5.5 kW	717 r/min
8 POLE	3 PHASE	415 VOLTS	50 Hz
ROYCE CROSS GROUP MANUFACTURER	11.6 AMPS	IP55 IP	
	S1 DUTY	F INS.CLASS	CONNECTION

MAJOR CONTENTS	UNIT	TEST VALUE
STATOR RESISTANCE OF PHASE	OHM	2.65321
NO LOAD CURRENT	AMP	6.03
NO LOAD INPUT	W	334.2
CORE LOSS(Pfe)	W	114.4
WINDAGE FRICTION LOSS(Pfw)	W	134.7
STATOR WINDING LOSS(Pcu1)	W	357.8
ROTOR WINDING LOSS(Pcu2)	W	258.7
STRAY LOAD LOSS(Ps)	W	32.7
FULL LOAD CURRENT	AMP	11.69
LOCKED ROTOR CURRENT	AMP	60.80
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	5.24
FULL LOAD TORQUE	N.m	73.22
LOCKED ROTOR TORQUE	N.m	152.23
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	2.08
PULL OUT TORQUE	N.m	186.18
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	2.54
INPUT @ FULL LOAD	kW	6.40
EFFICIENCY @ FULL LOAD	%	85.88
POWER FACTOR @ FULL LOAD		0.76
FULL LOAD SLIP	%	4.362
FULL LOAD SPEED	r/min	717.3
STATOR WINDING TEMPERATURE RISE	K	64
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	61.0
AMBIENT TEMPERATURE OF TESTING	Deg. C	23.5
NOISE	dB(A)	65
VIBRATION	mm/s	0.9

The data above is calculated as per IEC 34-2,all data at nominal Volts.

	ROYCE CROSS GROUP	SERIAL NO.			
					0

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Type	Y3-160M2-8		Poles	8		Power	5.5 kW	
Voltage	415	V	Current	11.6	A	Frequency	50 Hz	
Speed	717	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.	Ω
434.8	1	50	3.306	3.308	3.314	2	-542.3	724.8	2	1.559
420.4	1	50	3.090	3.098	3.097	2	-487.8	659.4	2	1.559
415.0	1	50	3.011	3.021	3.018	2	-468.6	635.7	2	1.559
364.5	1	50	2.456	2.471	2.459	2	-326.6	466.8	2	1.559
308.9	1	50	1.999	2.018	1.996	2	-215.0	334.6	2	1.559
253.7	1	50	1.608	1.621	1.598	2	-128.9	232.6	2	1.559
205.9	1	50	1.287	1.316	1.299	2	-70.6	161.3	2	1.559
186.1	1	50	1.184	1.205	1.197	2	-50.8	138.8	2	1.559
157.5	1	50	1.029	1.043	1.028	2	-27.5	109.6	2	1.559
107.6	1	50	0.848	0.841	0.829	2	3.6	71.0	2	1.559

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

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	0.00	0
	Test Date	Report Number
	0/01/1900	0

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ROYCE CROSS GROUP

Type	Y3-160M2-8	Poles	8	Power	5.5	kW
Voltage	415 V	Current	11.6 A	Frequency	50.0	Hz
Speed	717 r/min	Duty	S1	Connection		
Ins. class	F	Weight	0 kg		IP55	

LOCKED ROTOR TEST

VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqure N. m
416.2	1.0	3.062	3.043	3.052	20.0	-8.0	1098.9	20	153.27
372.2	1.0	2.609	2.596	2.599	20.0	-15.5	832.1	20	114.95
332.2	1.0	2.223	2.209	2.216	20.0	-20.1	628.7	20	86.63
290.4	1.0	1.847	1.830	1.836	20.0	-21.0	450.7	20	61.54
252.3	1.0	3.048	3.022	3.037	10.0	-44.9	641.5	10	42.83
209.4	1.0	2.380	2.371	2.376	10.0	-38.5	411.4	10	26.95
180.0	1.0	1.968	1.961	1.962	10.0	-31.7	290.4	10	18.82
140.4	1.0	2.947	2.934	2.956	5.0	-43.5	335.2	5	10.88
102.5	1.0	2.099	2.088	2.097	5.0	-23.5	171.9	5	5.59

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Type	Y3-160M2-8		Poles	8		Power	5.5	kW
Voltage	415	V	Current	11.6	A	Frequency	50	Hz
Speed	717	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	
11:00	415.4	2.316	2.324	2.318	5	343.4	986.6	5	54.7	—	82.2	—	—	—	—	—	—	—	—	—	—	23.6
11:30	415.1	2.335	2.340	2.334	5	350.0	994.2	5	57.2	—	84.9	—	—	—	—	—	—	—	—	—	—	23.8
12:00	415.3	2.319	2.331	2.325	5	347.7	991.4	5	58.8	—	86.7	—	—	—	—	—	—	—	—	—	—	24.0
12:30	415.1	2.319	2.332	2.327	5	347.1	990.6	5	60.0	—	88.0	—	—	—	—	—	—	—	—	—	—	24.5
13:00	415.3	2.327	2.321	2.334	5	354.3	987.2	5	60.7	—	88.7	—	—	—	—	—	—	—	—	—	—	24.9
13:30	415.4	2.326	2.325	2.323	5	350.2	988.1	5	61.4	—	89.3	—	—	—	—	—	—	—	—	—	—	24.2
14:00	415.3	2.322	2.329	2.323	5	348.5	989.8	5	61.5	—	89.3	—	—	—	—	—	—	—	—	—	—	23.4
14:30	415.4	2.309	2.308	2.325	5	351.0	982.2	5	61.0	—	89.1	—	—	—	—	—	—	—	—	—	—	23.0
最后三点平均值	11.605		A		6683		W		61.0	—	89.1	—	—	—	—	—	—	—	—	—	—	23.5

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)	47	67	87	110	132	152	184
RESISTANCE	1.714	1.705	1.697	1.691	1.685	1.681	1.676

WINDING RESISTANCE (COLD)

△	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	1.379	1.380	1.380	1.37967	1.37900	22.4 °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	Y3-160M2-8	Poles	8	output Power	5.5	kW		
Voltage	415	V	Current	11.6	A	Frequency	50.0	Hz
Speed	717	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
415.0	50.01	3.246	3.251	3.260	5	523.9	1339.9	5	694.4
415.2	50.01	3.035	3.041	3.046	5	483.9	1253.2	5	699.0
414.9	50.01	2.432	2.418	2.423	5	352.9	989.7	5	715.4
415.1	50.01	1.934	1.923	1.924	5	216.3	773.1	5	727.9
415.1	50.01	1.543	1.538	1.534	5	84.6	592.0	5	738.7
415.0	50.00	3.795	3.795	3.837	2	194.7	1444.9	2	738.2
415.1	50.01	3.241	3.230	3.236	2	-119.8	1097.9	2	746.2

% LOAD	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P. F.
150	8250	10125.9	17.610	812.2	8.251	759.1	73.1	81.47	0.800
125	6875	8183.7	14.365	540.5	6.362	479.0	48.8	84.01	0.793
100	5500	6404.5	11.687	357.8	4.362	258.7	32.7	85.88	0.762
75	4125	4631.1	8.577	192.7	0.966	41.8	17.3	89.07	0.751
50	2750	3208.0	7.556	149.6	1.524	44.9	13.6	85.72	0.591
25	1375	1739.0	6.283	103.4	0.356	5.4	9.3	79.07	0.385

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Ins. class	F	Weight	0	kg			IP55	

Load Curve

