



ROYCECROSSGROUP



ROYCE CROSS GROUP

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

NAMEPLATE DATA			
Y3-132M2-6 FRAME	IEC TYPE	5.5 kW	965 r/min
6 POLE	3 PHASE	415 VOLTS	50 Hz
ROYCE CROSS GROUP MANUFACTURER	11.1 AMPS	IP55 IP	
	S1 DUTY	F INS.CLASS	CONNECTION

MAJOR CONTENTS	UNIT	TEST VALUE
STATOR RESISTANCE OF PHASE	OHM	2.93685
NO LOAD CURRENT	AMP	5.92
NO LOAD INPUT	W	303.2
CORE LOSS(Pfe)	W	158.2
WINDAGE FRICTION LOSS(Pfw)	W	49.5
STATOR WINDING LOSS(Pcu1)	W	356.5
ROTOR WINDING LOSS(Pcu2)	W	165.5
STRAY LOAD LOSS(Ps)	W	31.4
FULL LOAD CURRENT	AMP	11.05
LOCKED ROTOR CURRENT	AMP	76.11
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	6.86
FULL LOAD TORQUE	N.m	54.08
LOCKED ROTOR TORQUE	N.m	121.85
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	2.25
PULL OUT TORQUE	N.m	157.83
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	2.90
INPUT @ FULL LOAD	kW	6.26
EFFICIENCY @ FULL LOAD	%	87.84
POWER FACTOR @ FULL LOAD		0.79
FULL LOAD SLIP	%	2.878
FULL LOAD SPEED	r/min	971.2
STATOR WINDING TEMPERATURE RISE	K	64
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	52.1
AMBIENT TEMPERATURE OF TESTING	Deg. C	18.2
NOISE	dB(A)	78
VIBRATION	mm/s	0.7

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

	ROYCE CROSS GROUP	SERIAL NO.			

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Type	Y3-132M2-6		Poles	6		Power	5.5 kW
Voltage	415 V		Current	11.1 A		Frequency	50 Hz
Speed	965 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.	
441.6	1	50	3.543	3.631	3.514	2	-584.4	777.4	2	71.3
428.9	1	50	3.254	3.271	3.235	2	-508.9	679.3	2	71.1
415.2	1	50	2.954	2.973	2.967	2	-442.1	593.9	2	70.9
366.0	1	50	2.251	2.235	2.260	2	-288.2	397.7	2	70.8
312.5	1	50	1.762	1.750	1.793	2	-183.7	268.2	2	70.7
262.1	1	50	1.391	1.431	1.433	2	-120.0	186.8	2	70.6
207.0	1	50	1.115	1.079	1.078	2	-69.0	121.0	2	70.5
177.4	1	50	0.906	0.935	0.949	2	-43.9	88.4	2	70.3
135.2	1	50	0.722	0.741	0.698	2	-23.6	60.1	2	70.3
83.7	1	50	0.491	0.527	0.490	2	-2.1	31.6	2	69.9

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Voltage	415 V	Current	11.1 A	Frequency	50.0	Hz
Speed	965 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	1.523	1.532	1.532	50.0	18.0	614.7	50	122.77
369.1	1.0	3.176	3.200	3.195	20.0	10.3	1130.7	20	88.27
324.0	1.0	2.615	2.629	2.635	20.0	-8.6	805.6	20	61.34
281.3	1.0	2.130	2.130	2.129	20.0	-21.7	558.5	20	41.41
238.3	1.0	1.664	1.669	1.677	20.0	-30.2	362.6	20	26.47
194.0	1.0	2.443	2.449	2.467	10.0	-55.1	419.5	10	15.22
143.6	1.0	1.570	1.589	1.579	10.0	-39.5	193.2	10	6.36
103.3	1.0	1.008	1.004	1.017	10.0	-21.3	85.0	10	2.58

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Voltage	415 V			Current	11.1 A			Frequency	50 Hz		
Speed	965 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	415.8	2.221	2.242	2.218	5	324.2	957.4	5	45.6	—	78.1	—	—	—	—	—	—	—	—	—	—	16.8
10:30	415.8	2.230	2.242	2.225	5	328.6	958.4	5	49.3	—	81.8	—	—	—	—	—	—	—	—	—	—	17.4
11:01	415.7	2.203	2.242	2.225	5	323.2	957.8	5	51.2	—	84.3	—	—	—	—	—	—	—	—	—	—	17.4
11:30	415.8	2.199	2.238	2.229	5	324.0	956.2	5	51.2	—	85.6	—	—	—	—	—	—	—	—	—	—	17.8
12:00	415.7	2.227	2.232	2.227	5	331.2	954.4	5	51.6	—	86.8	—	—	—	—	—	—	—	—	—	—	18.0
12:30	415.8	2.219	2.230	2.240	5	332.8	953.6	5	52.3	—	87.7	—	—	—	—	—	—	—	—	—	—	18.1
13:00	415.7	2.218	2.230	2.214	5	326.8	953.6	5	52.3	—	88.1	—	—	—	—	—	—	—	—	—	—	18.1
13:28	415.8	2.214	2.249	2.225	5	325.2	961.4	5	52.1	—	88.1	—	—	—	—	—	—	—	—	—	—	18.4
最后三点平均值		11.133		A		6422.333		W	52.1	—	88.0	—	—	—	—	—	—	—	—	—	—	18.2

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)	36	59	81	107	142	190	248	305
RESISTANCE	1.8473	1.8403	1.8323	1.8253	1.8193	1.8143	1.8083	1.8043

WINDING RESISTANCE (COLD)

△	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	1.498	1.451	1.499	1.48267	1.45100	14.9 °C
Y	U1-U2	V1-V2	W1-W2	AVERAGE	MIN	AMBIENT TEM.
	0	0	0	0.000	0	0 °C

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Voltage	415	V	Current	11.1	A	Frequency	50.0	Hz
Speed	965	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	49.99	2.760	2.794	2.775	5	456.0	1190.8	5	959.7
415.2	49.99	2.595	2.601	2.599	5	419.9	1107.9	5	963.2
415.3	49.99	2.263	2.298	2.279	5	331.4	973.6	5	970.1
415.4	49.99	1.829	1.861	1.837	5	202.6	774.1	5	979.8
415.0	49.99	3.678	3.703	3.693	2	186.3	1461.2	2	988.5
415.2	49.99	3.228	3.310	3.300	2	-18.6	1217.2	2	992.9
415.2	49.99	3.060	3.132	3.060	2	-156.8	1085.9	2	995.4

% LOAD	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P. F.
150	8250	9716.0	16.045	755.9	5.000	438.4	64.1	84.91	0.842
125	6875	7947.3	13.454	531.5	3.951	286.8	46.3	86.51	0.822
100	5500	6264.8	11.058	359.0	2.899	166.7	31.4	87.79	0.788
75	4125	4668.7	8.921	233.6	1.924	82.2	20.1	88.35	0.728
50	2750	3156.9	7.257	154.6	1.093	31.1	13.5	87.11	0.605
25	1375	1705.2	6.056	107.7	0.379	5.5	9.4	80.64	0.392

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Ins. class	F	Weight	0	kg			IP55	

Load Curve

