



ROYCE CROSS GROUP

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

NAMEPLATE DATA			
Y3-132M-4 FRAME	IEC TYPE	7.50 kW	1456 r/min
4 POLE	3 PHASE	415 VOLTS	50 Hz
ROYCE CROSS GROUP MANUFACTURER	13.5 AMPS	IP55 IP	
	S1 DUTY	F INS.CLASS	CONNECTION

MAJOR CONTENTS	UNIT	TEST VALUE
STATOR RESISTANCE OF PHASE	OHM	1.82656
NO LOAD CURRENT	AMP	4.879
NO LOAD INPUT	W	274.86
CORE LOSS(Pfe)	W	137.70
WINDAGE FRICTION LOSS(Pfw)	W	95.71
STATOR WINDING LOSS(Pcu1)	W	332.30
ROTOR WINDING LOSS(Pcu2)	W	229.63
STRAY LOAD LOSS(Ps)	W	42.17
FULL LOAD CURRENT	AMP	13.49
LOCKED ROTOR CURRENT	AMP	90.55
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	6.76
FULL LOAD TORQUE	N.m	49.18
LOCKED ROTOR TORQUE	N.m	99.94
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	2.04
PULL OUT TORQUE	N.m	163.63
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	3.33
INPUT @ FULL LOAD	kW	8.34
EFFICIENCY @ FULL LOAD	%	89.95
POWER FACTOR @ FULL LOAD		0.86
FULL LOAD SLIP	%	2.919
FULL LOAD SPEED	r/min	1456.2
STATOR WINDING TEMPERATURE RISE	K	59
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	64.0
AMBIENT TEMPERATURE OF TESTING	Deg. C	25.0
NOISE	dB(A)	67
VIBRATION	mm/s	0.4

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Type	Y3-132M-4		Poles	4		Power	7.5 kW	
Voltage	415	V	Current	13.4	A	Frequency	50 Hz	
Speed	1459	r/min	Duty	S1		Connection	△	
Ins. class	F		Weight	69	kg	IP55		

NO LOAD TEST

VOL	mul.	HZ	I01	I02	I03	mul.	W1	W2	mul.	
468.6	1	50	3.741	3.736	3.807	2	-839.1	1063.3	2	79.8
444.5	1	50	3.045	3.040	3.105	2	-648.7	817.4	2	79.5
415.7	1	50	2.432	2.427	2.489	2	-475.5	613.3	2	79.3
368.1	1	50	1.822	1.817	1.866	2	-303.7	415.9	2	79.2
318.7	1	50	1.455	1.450	1.486	2	-198.4	296.3	2	79.0
255.1	1	50	1.106	1.101	1.127	2	-103.1	193.0	2	78.8
206.4	1	50	0.878	0.873	0.893	2	-56.4	130.5	2	78.6
191.1	1	50	0.812	0.807	0.825	2	-44.0	114.4	2	78.4
160.8	1	50	0.692	0.688	0.703	2	-22.2	87.6	2	78.4
112.6	1	50	0.538	0.535	0.545	2	0.0	55.3	2	78.1

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
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Type	Y3-132M-4	Poles	4	Power	7.5	kW
Voltage	415 V	Current	13.4 A	Frequency	50.0	Hz
Speed	1459 r/min	Duty	S1	Connection		
Ins. class	F	Weight	69 kg		IP55	

LOCKED ROTOR TEST

VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqure (kg. m)
413.8	1.0	1.809	1.799	1.803	50.0	96.2	835.5	50	10.13
363.7	1.0	1.507	1.488	1.495	50.0	69.2	607.8	50	7.21
324.8	1.0	1.289	1.268	1.274	50.0	49.2	461.5	50	5.39
286.6	1.0	2.735	2.676	2.688	20.0	72.6	852.8	20	4.03
232.2	1.0	2.060	2.007	2.013	20.0	26.5	511.2	20	2.37
183.5	1.0	1.501	1.460	1.465	20.0	0.0	287.2	20	1.33
143.2	1.0	2.152	2.094	2.101	10.0	-12.9	314.1	10	0.69
110.8	1.0	1.546	1.517	1.521	10.0	-13.6	172.2	10	0.39

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Type	Y3-132M-4			Poles	4			Power	7.5 kW		
Voltage	415 V			Current	13.4 A			Frequency	50 Hz		
Speed	1459 r/min			Duty	S1			Connection			
Ins. class	F			Weight	69 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	414.9	1.363	1.358	1.362	10	291.3	599.2	10	62.2	—	80.2	—	—	—	—	—	—	—	54.3	—	24.1
10.30	414.9	1.359	1.353	1.357	10	290.9	597.5	10	63.5	—	86.0	—	—	—	—	—	—	—	57.8	—	24.5
11.00	414.9	1.350	1.344	1.349	10	289.4	593.3	10	63.8	—	88.2	—	—	—	—	—	—	—	59.4	—	24.6
11.30	415.0	1.351	1.346	1.350	10	290.0	594.7	10	64.0	—	89.2	—	—	—	—	—	—	—	60.1	—	24.7
12.00	415.0	1.345	1.340	1.344	10	288.1	591.9	10	64.0	—	90.6	—	—	—	—	—	—	—	61.6	—	24.9
12.30	415.0	1.349	1.343	1.348	10	289.1	593.4	10	64.2	—	90.8	—	—	—	—	—	—	—	61.8	—	25.2
13.00	415.0	1.343	1.336	1.341	10	286.9	590.0	10	64.0	—	90.5	—	—	—	—	—	—	—	61.6	—	25.0
最后三点平均值	13.432		A		8798		W		64.0	—	90.6	—	—	—	—	—	—	—	61.6	—	25.0

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)	45	59	76	103	134	158	177	212
RESISTANCE	1.168	1.163	1.152	1.141	1.134	1.128	1.123	1.118

WINDING RESISTANCE (COLD)

△	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0.9531	0.9533	0.9530	0.95313	0.95300	23.3 °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	13.4	A	Frequency	50.0	Hz
Speed	1459	r/min	Duty	S1	Connection			
Ins. class	F	Weight	69	kg		IP55		

LOAD TEST

V	HZ	A1 (unit)	A2 (unit)	A3 (unit)	mul.	W1 (unit)	W2 (unit)	mul.	r/min
415.0	50.00	3.737	3.724	3.733	5	815.0	1563.2	5	1433.0
415.0	50.00	3.576	3.563	3.572	5	775.8	1496.0	5	1435.8
415.1	50.00	2.829	2.815	2.824	5	574.6	1182.2	5	1454.9
414.9	50.00	2.704	2.692	2.699	5	538.6	1129.4	5	1457.1
415.0	50.00	2.242	2.229	2.248	5	394.8	931.5	5	1468.5
415.2	50.00	1.948	1.935	1.954	5	294.0	802.1	5	1475.5
415.1	50.00	1.728	1.714	1.733	5	210.7	699.4	5	1480.5
415.1	50.00	1.525	1.511	1.530	5	126.0	598.9	5	1485.7
415.0	50.00	1.312	1.299	1.318	5	12.6	474.6	5	1492.4

% LOAD	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P. F.
150	11250	12901.9	20.189	744.5	4.922	591.6	94.5	87.20	0.889
125	9375	10593.4	16.740	511.8	3.983	396.0	65.0	88.50	0.880
100	7500	8337.5	13.488	332.3	2.919	229.6	42.2	89.95	0.860
75	5625	6210.0	10.660	207.6	1.969	115.5	26.3	90.58	0.810
50	3750	4169.5	8.208	123.1	1.181	46.2	15.6	89.94	0.707
25	1875	2197.7	6.335	73.3	0.426	8.5	9.3	85.32	0.483

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Type	Y3-132M-4	Poles	4	output Power	7.5	kW
Voltage	415 V	Current	13.4 A	Frequency	50.0	Hz
Speed	1459 r/min	Duty	S1	Connection		
Ins. class	F	Weight	0 kg			IP55

Load Curve

