



ROYCECROSSGROUP



ROYCE CROSS GROUP

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

NAMEPLATE DATA			
Y3-132M-8 FRAME	IEC TYPE	3 kW	708 r/min
8 POLE	3 PHASE	415 VOLTS	50 Hz
ROYCE CROSS GROUP MANUFACTURER	S1 DUTY	IP55 IP	Y CONNECTION
		F INS.CLASS	

MAJOR CONTENTS	UNIT	TEST VALUE
STATOR RESISTANCE OF PHASE	OHM	2.26085
NO LOAD CURRENT	AMP	4.10
NO LOAD INPUT	W	223.3
CORE LOSS(Pfe)	W	90.6
WINDAGE FRICTION LOSS(Pfw)	W	32.2
STATOR WINDING LOSS(Pcu1)	W	297.2
ROTOR WINDING LOSS(Pcu2)	W	181.2
STRAY LOAD LOSS(Ps)	W	17.8
FULL LOAD CURRENT	AMP	6.62
LOCKED ROTOR CURRENT	AMP	32.85
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	4.90
FULL LOAD TORQUE	N.m	40.46
LOCKED ROTOR TORQUE	N.m	90.60
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	2.24
PULL OUT TORQUE	N.m	95.94
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	2.37
INPUT @ FULL LOAD	kW	3.62
EFFICIENCY @ FULL LOAD	%	82.90
POWER FACTOR @ FULL LOAD		0.76
FULL LOAD SLIP	%	5.605
FULL LOAD SPEED	r/min	708.0
STATOR WINDING TEMPERATURE RISE	K	62
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	63.2
AMBIENT TEMPERATURE OF TESTING	Deg. C	22.3
NOISE	dB(A)	62
VIBRATION	mm/s	0.4

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

	ROYCE CROSS GROUP	SERIAL NO.	0	
		DATE	0/01/1900	REV
				0

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Type	Y3-132M-8	Poles	8	Power	3.0 kW
Voltage	415 V	Current	6.7 A	Frequency	50 Hz
Speed	708 r/min	Duty	S1	Connection	Y
Ins. class	F	Weight	61 kg		IP55

NO LOAD TEST

VOL	mul.	HZ	I01	I02	I03	mul.	W1	W2	mul.	Ω
494.0	1	50	3.082	3.086	3.076	2	-535.7	739.0	2	1.989
453.7	1	50	2.470	2.474	2.464	2	-397.1	542.1	2	1.989
414.0	1	50	2.042	2.047	2.038	2	-298.8	409.7	2	1.989
357.4	1	50	1.612	1.617	1.609	2	-201.1	281.6	2	1.989
303.7	1	50	1.305	1.309	1.302	2	-135.0	196.4	2	1.989
251.4	1	50	1.049	1.051	1.046	2	-86.4	133.1	2	1.989
206.4	1	50	0.846	0.848	0.845	2	-53.6	90.7	2	1.989
172.3	1	50	0.701	0.703	0.699	2	-34.1	65.0	2	1.989
135.7	1	50	0.556	0.557	0.553	2	-17.8	43.0	2	1.989
76.1	1	50	0.353	0.354	0.352	2	0.0	19.2	2	1.989

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Speed	708 r/min	Duty	S1	Connection	Y	
Ins. class	F	Weight	61 kg		IP55	

LOCKED ROTOR TEST

VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqure N. m
415.2	1.0	1.646	1.644	1.641	20.0	56.6	533.1	20	90.71
371.4	1.0	2.818	2.811	2.808	10.0	76.3	812.1	10	68.74
327.9	1.0	2.378	2.373	2.367	10.0	46.4	601.7	10	50.54
285.1	1.0	1.980	1.976	1.968	10.0	24.9	432.4	10	35.89
242.4	1.0	1.611	1.608	1.599	10.0	11.0	296.2	10	23.81
194.7	1.0	2.476	2.476	2.466	5.0	0.0	362.4	5	14.65
156.5	1.0	1.937	1.938	1.933	5.0	0.0	225.9	5	9.03
111.7	1.0	1.357	1.358	1.355	5.0	0.0	111.9	5	4.40

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Voltage	415 V		Current	6.7 A		Frequency	50 Hz	
Speed	708 r/min		Duty	S1		Connection	Y	
Ins. class	F		Weight	61 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
13:00	415.2	3.379	3.385	3.379	2	507.5	1431.5	2	56.3	—	—	—	—	—	—	—	—	—	59.9	—	21.7
13:30	415.4	3.361	3.370	3.361	2	506.8	1426.3	2	59.2	—	—	—	—	—	—	—	—	—	63.4	—	22.2
14:02	415.2	3.361	3.368	3.359	2	510.3	1424.8	2	61.2	—	—	—	—	—	—	—	—	—	64.9	—	22.2
14:29	415.3	3.365	3.372	3.365	2	512.3	1427.5	2	63.1	—	—	—	—	—	—	—	—	—	65.7	—	22.4
15:00	415.4	3.354	3.363	3.354	2	509.8	1423.8	2	63.2	—	—	—	—	—	—	—	—	—	65.9	—	22.4
最后三点平均值		6.725			A	3872.167		W	63.2	—	—	—	—	—	—	—	—	—	65.9	—	22.3

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)	46	66	87	104	114	123	132	142
RESISTANCE	2.188	2.169	2.153	2.142	2.136	2.132	2.128	2.124

WINDING RESISTANCE (COLD)

△	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0	0	0	0.00000	0.00000	0 °C
Y	U1-U2	V1-V2	W1-W2	AVERAGE	MIN	AMBIENT TEM.
	1.758	1.759	1.759	1.759	1.758	21.7 °C

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Voltage	415	V	Current	6.7	A	Frequency	50.0	Hz
Speed	708	r/min	Duty	S1	Connection	Y		
Ins. class	F	Weight	61	kg	IP55			

LOAD TEST

V	HZ	A1 (unit)	A2 (unit)	A3 (unit)	mul.	W1 (unit)	W2 (unit)	mul.	r/min
415.0	50.00	1.774	1.777	1.774	5	295.3	732.0	5	682.0
415.1	50.00	1.681	1.683	1.681	5	275.1	693.0	5	684.7
415.3	50.00	1.404	1.407	1.403	5	207.1	576.2	5	703.7
415.1	50.00	3.216	3.227	3.222	2	430.9	1312.3	2	710.4
415.1	50.01	2.785	2.797	2.791	2	293.6	1118.3	2	720.4
414.9	50.00	2.266	2.274	2.267	2	82.6	854.7	2	733.5
415.3	50.00	2.049	2.056	2.048	2	-48.7	713.3	2	738.7
415.1	50.01	1.967	1.974	1.965	2	-116.4	643.9	2	743.8

% LOAD	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P. F.
150	4500	5839.4	9.960	672.0	9.985	505.2	39.4	77.06	0.816
125	3750	4708.1	8.215	457.1	8.425	350.8	27.4	79.65	0.797
100	3000	3618.9	6.624	297.2	5.605	181.2	17.8	82.90	0.760
75	2250	2672.4	5.418	198.9	3.721	88.8	11.9	84.20	0.686
50	1500	1800.2	4.479	135.9	2.124	33.4	8.1	83.32	0.559
25	750	987.2	3.896	102.9	0.688	5.5	6.1	75.97	0.352

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Load Curve

