



ROYCECROSSGROUP



ROYCE CROSS GROUP

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

NAMEPLATE DATA			
Y3-200L2-2 FRAME	IEC TYPE	37 kW	2950 r/min
2 POLE	3 PHASE	415 VOLTS	50 Hz
ROYCE CROSS GROUP MANUFACTURER	60.8 AMPS	IP55 IP	
	S1 DUTY	F INS.CLASS	CONNECTION

MAJOR CONTENTS	UNIT	TEST VALUE
STATOR RESISTANCE OF PHASE	OHM	0.20687
NO LOAD CURRENT	AMP	15.96
NO LOAD INPUT	W	1201.8
CORE LOSS(Pfe)	W	521.5
WINDAGE FRICTION LOSS(Pfw)	W	630.1
STATOR WINDING LOSS(Pcu1)	W	757.8
ROTOR WINDING LOSS(Pcu2)	W	486.5
STRAY LOAD LOSS(Ps)	W	198.5
FULL LOAD CURRENT	AMP	60.71
LOCKED ROTOR CURRENT	AMP	438.96
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	7.22
FULL LOAD TORQUE	N.m	119.29
LOCKED ROTOR TORQUE	N.m	288.30
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	2.41
PULL OUT TORQUE	N.m	357.03
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	2.98
INPUT @ FULL LOAD	kW	39.59
EFFICIENCY @ FULL LOAD	%	93.45
POWER FACTOR @ FULL LOAD		0.91
FULL LOAD SLIP	%	1.270
FULL LOAD SPEED	r/min	2961.9
STATOR WINDING TEMPERATURE RISE	K	69
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	62.2
AMBIENT TEMPERATURE OF TESTING	Deg. C	12.5
NOISE	dB(A)	86
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		
					0

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Type	Y3-200L2-2		Poles	2		Power	37.0 kW
Voltage	415	V	Current	60.8	A	Frequency	50 Hz
Speed	2950	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.	
437.2	1	50	1.824	1.817	1.836	10	-324.2	455.0	10	80.1
423.9	1	50	1.647	1.700	1.693	10	-285.1	410.3	10	79.8
414.8	1	50	1.561	1.610	1.613	10	-260.3	380.4	10	79.7
365.5	1	50	2.474	2.440	2.567	5	-318.0	524.8	5	79.4
314.1	1	50	2.088	2.109	2.007	5	-242.7	425.9	5	79.3
254.0	1	50	1.685	1.587	1.718	5	-104.5	269.7	5	79.1
206.2	1	50	1.383	1.283	1.411	5	-41.1	193.5	5	78.9
187.5	1	50	1.272	1.185	1.320	5	-16.8	164.8	5	78.6
173.4	1	50	3.018	2.973	2.861	2	-56.6	421.1	2	78.2
114.0	1	50	2.540	2.283	2.519	2	86.2	249.5	2	77.9

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Type	Y3-200L2-2	Poles	2	Power	37.0	kW
Voltage	415 V	Current	60.8 A	Frequency	50.0	Hz
Speed	2950 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
288.2	1.0	1.402	1.404	1.403	200.0	-62.2	367.4	200	117.82
276.0	1.0	2.669	2.668	2.669	100.0	-117.2	665.0	100	105.23
238.4	1.0	2.236	2.227	2.225	100.0	-91.1	478.1	100	76.45
205.0	1.0	1.866	1.865	1.858	100.0	-68.3	341.5	100	55.76
172.5	1.0	3.069	3.050	3.068	50.0	-97.3	468.3	50	38.67
137.5	1.0	2.386	2.393	2.396	50.0	-63.9	290.7	50	23.38
105.3	1.0	1.816	1.814	1.803	50.0	-38.3	167.7	50	13.49

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Type	Y3-200L2-2			Poles	2			Power	37 kW		
Voltage	415 V			Current	60.8 A			Frequency	50 Hz		
Speed	2950 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	415.3	2.984	3.018	3.002	20	278.1	529.8	50	52.8	—	76.1	75.2	—	—	—	—	—	—	—	—	—	11.5
10:30	415.2	3.038	3.023	3.052	20	288.1	528.1	50	56.8	—	81.0	79.9	—	—	—	—	—	—	—	—	—	11.9
11:00	415.2	2.986	2.968	2.995	20	285.4	521.9	50	63.3	—	85.0	84.0	—	—	—	—	—	—	—	—	—	12.4
11:30	415.2	2.928	2.948	2.961	20	275.4	518.7	50	62.3	—	84.8	83.8	—	—	—	—	—	—	—	—	—	12.4
12:00	415.1	2.995	3.023	3.002	20	280.5	529.9	50	62.2	—	84.9	83.8	—	—	—	—	—	—	—	—	—	12.8
最后三点平均值		59.572			A	40195.04			W	62.2	—	84.9	83.9	—	—	—	—	—	—	—	—	12.5

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)	68	99	136	155	181	198	220	240
RESISTANCE	0.1304	0.1299	0.1293	0.1290	0.1286	0.1283	0.1281	0.1278

WINDING RESISTANCE (COLD)

△	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0.1027	0.1028	0.1028	0.10277	0.10270	10.9 °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	Y3-200L2-2	Poles	2	output Power	37.0	kW		
Voltage	415	V	Current	60.8	A	Frequency	50.0	Hz
Speed	2950	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
414.9	50.01	3.819	3.797	3.824	20	894.4	1612.8	20	2953.1
415.4	50.01	3.361	3.377	3.402	20	785.3	1447.0	20	2959.1
415.3	50.02	3.093	3.073	3.100	20	708.7	1309.2	20	2963.8
415.1	50.01	2.359	2.383	2.397	20	496.9	1014.8	20	2973.8
415.3	50.01	1.742	1.737	1.722	20	290.0	736.9	20	2983.1
415.3	50.01	2.361	2.415	2.359	10	125.3	954.6	10	2992.3

% LOAD	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P. F.
150	55500	59964.4	91.539	1722.6	2.015	1160.3	429.9	92.55	0.911
125	46250	49661.6	75.510	1172.2	1.630	781.7	306.2	93.13	0.915
100	37000	39594.4	60.714	757.8	1.270	486.5	198.5	93.45	0.907
75	27750	29735.7	46.933	452.8	0.913	262.7	118.6	93.32	0.881
50	18500	20068.5	34.156	239.8	0.592	114.3	62.9	92.18	0.817
25	9250	10572.8	23.529	113.8	0.280	27.9	29.5	87.49	0.625

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Ins. class	F	Weight	0 kg		IP55	

Load Curve

