



ROYCECROSSGROUP



ROYCE CROSS GROUP

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

NAMEPLATE DATA			
Y3-90L-6 FRAME	IEC TYPE	1.1 kW	952 r/min
6 POLE	3 PHASE	415 VOLTS	50 Hz
ROYCE CROSS GROUP MANUFACTURER	2.6 AMPS	IP55 IP	Y CONNECTION
	S1 DUTY	F INS.CLASS	

MAJOR CONTENTS	UNIT	TEST VALUE
STATOR RESISTANCE OF PHASE	OHM	6.33623
NO LOAD CURRENT	AMP	1.94
NO LOAD INPUT	W	148.0
CORE LOSS(Pfe)	W	59.5
WINDAGE FRICTION LOSS(Pfw)	W	21.6
STATOR WINDING LOSS(Pcu1)	W	120.3
ROTOR WINDING LOSS(Pcu2)	W	56.3
STRAY LOAD LOSS(Ps)	W	6.8
FULL LOAD CURRENT	AMP	2.62
LOCKED ROTOR CURRENT	AMP	13.06
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	4.95
FULL LOAD TORQUE	N.m	11.03
LOCKED ROTOR TORQUE	N.m	26.35
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	2.39
PULL OUT TORQUE	N.m	28.52
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	2.58
INPUT @ FULL LOAD	kW	1.36
EFFICIENCY @ FULL LOAD	%	80.96
POWER FACTOR @ FULL LOAD		0.72
FULL LOAD SLIP	%	4.776
FULL LOAD SPEED	r/min	952.2
STATOR WINDING TEMPERATURE RISE	K	40
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	36.9
AMBIENT TEMPERATURE OF TESTING	Deg. C	11.0
NOISE	dB(A)	55
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		
					0

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Type	Y3-90L-6	Poles	6	Power	1.1 kW
Voltage	415 V	Current	2.64 A	Frequency	50 Hz
Speed	952 r/min	Duty	S1	Connection	Y
Ins. class	F	Weight	0 kg		IP55

NO LOAD TEST

VOL	mul.	Hz	I01	I02	I03	mul.	W1	W2	mul.	
461.4	1	50	1.230	1.207	1.178	2	-275.3	377.0	2	43.6
415.3	1	50	0.990	0.971	0.956	2	-197.6	271.7	2	43.9
361.4	1	50	0.789	0.781	0.761	2	-137.4	191.1	2	44.1
305.4	1	50	0.625	0.627	0.604	2	-90.8	131.5	2	44.1
251.2	1	50	0.491	0.496	0.476	2	-57.1	87.5	2	43.9
207.0	1	50	0.393	0.401	0.381	2	-35.7	60.1	2	43.7
158.6	1	50	0.295	0.307	0.289	2	-17.2	38.2	2	43.6
109.2	1	50	0.206	0.220	0.205	2	-5.7	20.8	2	43.4
74.9	1	50	0.158	0.171	0.160	2	-0.2	12.8	2	42.2
56.2	1	50	0.154	0.171	0.161	2	1.8	10.1	2	41.7

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Speed	952 r/min	Duty	S1	Connection	Y	
Ins. class	F	Weight	0 kg		IP55	

LOCKED ROTOR TEST

VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqure N. m
414.0	1.0	2.598	2.590	2.620	5.0	122.8	1119.2	5	26.20
365.2	1.0	2.191	2.177	2.191	5.0	76.3	821.1	5	18.60
317.8	1.0	1.807	1.797	1.811	5.0	40.2	584.4	5	12.90
268.4	1.0	1.442	1.434	1.446	5.0	15.6	388.5	5	8.50
220.0	1.0	1.118	1.111	1.120	5.0	1.8	242.6	5	5.20
159.3	1.0	0.759	0.754	0.758	5.0	-3.7	117.0	5	2.40
109.8	1.0	0.505	0.502	0.504	5.0	-2.9	53.0	5	1.10
96.3	1.0	0.440	0.438	0.440	5.0	-2.4	40.4	5	0.80

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ROYCE CROSS GROUP

Type	Y3-90L-6	Poles	6	Power	1.1	kW
Voltage	415 V	Current	2.64 A	Frequency	50	Hz
Speed	952 r/min	Duty	S1	Connection	Y	
Ins. class	F	Weight	0		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	
14:00	414.9	1.311	1.322	1.292	2	124.8	543.8	2	36.0	—	51.8	50.1	—	—	—	—	—	—	—	—	—	10.2
14:30	415.6	1.309	1.319	1.291	2	123.9	543.2	2	36.6	—	53.1	51.4	—	—	—	—	—	—	—	—	—	11.0
15:00	415.4	1.317	1.327	1.298	2	127.0	547.1	2	37.0	—	54.2	52.5	—	—	—	—	—	—	—	—	—	10.7
15:30	415.6	1.316	1.327	1.327	2	126.4	546.7	2	36.7	—	54.6	52.9	—	—	—	—	—	—	—	—	—	11.1
16:00	415.2	1.311	1.324	1.324	2	125.5	545.3	2	36.9	—	55.0	53.3	—	—	—	—	—	—	—	—	—	11.2
最后三点平均值		2.638			A	1345.333		W	36.9	—	54.6	52.9	—	—	—	—	—	—	—	—	—	11.0

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)	30	40	50	60	70	80		
RESISTANCE	5.4962	5.4868	5.4785	5.4713	5.4646	5.4585		

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.
	4.699	4.701	4.701	4.700	4.699	9.8 °C

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Type	Y3-90L-6	Poles	6	output Power	1.1	kW		
Voltage	415	V	Current	2.64	A	Frequency	50.0	Hz
Speed	952	r/min	Duty	S1	Connection	Y		
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
414.6	50.02	1.482	1.494	1.473	2	186.3	632.0	2	944.8
414.8	50.03	1.385	1.396	1.370	2	154.7	584.3	2	950.7
414.6	50.02	1.298	1.313	1.284	2	125.1	544.3	2	956.0
415.3	50.02	1.124	1.129	1.100	2	53.6	450.9	2	968.4
415.2	50.01	0.987	0.988	0.963	2	-20.2	364.8	2	980.3
415.0	50.01	0.910	0.902	0.883	2	-90.0	290.7	2	989.5

% LOAD	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P. F.
150	1650	2063.6	3.501	214.7	7.502	134.5	11.7	79.96	0.820
125	1375	1710.0	3.058	163.8	6.157	91.6	9.2	80.41	0.778
100	1100	1358.7	2.622	120.3	4.776	56.3	6.8	80.96	0.721
75	825	1028.4	2.257	89.2	3.460	30.4	5.0	80.22	0.634
50	550	717.0	1.983	68.8	2.215	13.0	3.9	76.71	0.503
25	275	422.2	1.808	57.3	1.202	3.6	3.2	65.14	0.325

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Load Curve

