



**ROYCECROSSGROUP**



**ROYCE CROSS GROUP**

**ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR**

<b>NAMEPLATE DATA</b>			
Y3-112M-4 FRAME	IEC TYPE	4 kW	1441 r/min
4 POLE	3 PHASE	415 VOLTS	50 Hz
ROYCE CROSS GROUP MANUFACTURER	7.3 AMPS	IP55 IP	
	S1 DUTY	F INS.CLASS	CONNECTION

MAJOR CONTENTS	UNIT	TEST VALUE
STATOR RESISTANCE OF PHASE	OHM	4.42924
NO LOAD CURRENT	AMP	3.00
NO LOAD INPUT	W	176.7
CORE LOSS(Pfe)	W	109.5
WINDAGE FRICTION LOSS(Pfw)	W	31.6
STATOR WINDING LOSS(Pcu1)	W	235.9
ROTOR WINDING LOSS(Pcu2)	W	137.8
STRAY LOAD LOSS(Ps)	W	23.4
FULL LOAD CURRENT	AMP	7.43
LOCKED ROTOR CURRENT	AMP	48.02
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	6.58
FULL LOAD TORQUE	N.m	26.33
LOCKED ROTOR TORQUE	N.m	64.91
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	2.45
PULL OUT TORQUE	N.m	80.95
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	3.05
INPUT @ FULL LOAD	kW	4.54
EFFICIENCY @ FULL LOAD	%	88.14
POWER FACTOR @ FULL LOAD		0.85
FULL LOAD SLIP	%	3.287
FULL LOAD SPEED	r/min	1450.7
STATOR WINDING TEMPERATURE RISE	K	58
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	37.9
AMBIENT TEMPERATURE OF TESTING	Deg. C	9.5
NOISE	dB(A)	61
VIBRATION	mm/s	0.7

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

	<b>ROYCE CROSS GROUP</b>	<b>SERIAL NO.</b>	0		
					0

## ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

### ROYCE CROSS GROUP

Type	Y3-112M-4		Poles	4		Power	4.0 kW	
Voltage	415	V	Current	7.3	A	Frequency	50 Hz	
Speed	1441	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.	Ω
459.3	1	50	4.152	4.127	3.862	1	-1174.6	1441.6	1	60.4 2.643
414.9	1	50	3.049	3.050	2.884	1	-774.2	950.8	1	60.4 2.643
363.8	1	50	2.320	2.286	2.207	1	-497.4	629.1	1	60.2 2.641
311.4	1	50	1.824	1.804	1.727	1	-328.8	433.4	1	60.2 2.641
258.9	1	50	1.427	1.435	1.355	1	-209.4	292.7	1	60.2 2.641
206.2	1	50	1.087	1.109	1.040	1	-119.8	186.4	1	60.0 2.64
157.3	1	50	0.809	0.842	0.778	1	-60.8	114.1	1	60.0 2.64
120.8	1	50	0.621	0.655	0.606	1	-28.8	73.5	1	59.8 2.638
84.3	1	50	0.451	0.507	0.465	1	-6.8	44.8	1	59.6 2.636
52.4	1	50	0.377	0.436	0.395	1	4.8	28.1	1	58.9 2.63

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

<b>ROYCE CROSS GROUP</b>	Manufacturing Date	Serial No
	0.00	0
	Test Date	Report Number
	0/01/1900	0

# ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

## ROYCE CROSS GROUP

Type	Y3-112M-4	Poles	4	Power	4.0	<b>kW</b>
Voltage	415 <b>V</b>	Current	7.3 <b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	1441 <b>r/min</b>	Duty	S1	Connection		
Ins. class	F	Weight	0 <b>kg</b>		IP55	

### LOCKED ROTOR TEST

VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqure N. m
416.0	1.0	2.415	2.393	2.417	20.0	24.5	1122.8	20	65.25
371.3	1.0	2.059	2.037	2.063	20.0	14.8	852.8	20	49.69
325.5	1.0	1.725	1.698	1.721	20.0	4.4	619.4	20	35.79
278.4	1.0	2.805	2.754	2.788	10.0	-13.8	850.6	10	24.14
237.0	1.0	2.269	2.219	2.246	10.0	-24.4	576.6	10	16.06
179.6	1.0	1.578	1.541	1.558	10.0	-27.4	296.8	10	8.07
109.3	1.0	1.694	1.668	1.677	5.0	-31.2	187.6	5	2.50
81.2	1.0	1.210	1.198	1.201	5.0	-18.4	98.8	5	1.33

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	0/01/1900	0

# ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

## ROYCE CROSS GROUP

Type	Y3-112M-4		Poles	4		Power	4 kW	
Voltage	415 V		Current	7.3 A		Frequency	50 Hz	
Speed	1441 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	
13:30	414.8	3.681	3.747	3.666	2	617.9	1638.2	2	38.9	—	66.7	64.6	—	—	—	—	—	—	—	—	—	8.6
14:00	414.9	3.687	3.751	3.684	2	620.3	1640.2	2	38.1	—	66.6	64.5	—	—	—	—	—	—	—	—	—	9.2
14:30	414.7	3.686	3.743	3.670	2	616.9	1635.8	2	37.7	—	66.6	64.5	—	—	—	—	—	—	—	—	—	9.7
15:00	415.1	3.673	3.740	3.669	2	617.3	1636.4	2	37.9	—	66.9	64.8	—	—	—	—	—	—	—	—	—	9.5
最后三点平均值		7.401			A	4511.267		W	37.9	—	66.7	64.6	—	—	—	—	—	—	—	—	—	9.5

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)	30	40	50	60	70	80		
RESISTANCE	2.7015	2.6992	2.6969	2.6950	2.6931	2.6913		

#### WINDING RESISTANCE (COLD)

△	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	2.155	2.156	2.153	2.15467	2.15300	5.8 °C
Y	U1-U2	V1-V2	W1-W2	AVERAGE	MIN	AMBIENT TEM.
	0	0	0	0.000	0	12.5 °C

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	0/01/1900	0

## ELECTRIC MOTOR TEST REPORT – THREE PHASE INDUCTION MOTOR

Type	Y3-112M-4	Poles	4	output Power	4.0	<b>kW</b>		
Voltage	415	<b>V</b>	Current	7.3	<b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	1441	<b>r/min</b>	Duty	S1	Connection			
Ins. class	F	Weight	0	<b>kg</b>		IP55		

### LOAD TEST

V	Hz	A1 (unit)	A2 (unit)	A3 (unit)	mul.	W1 (unit)	W2 (unit )	mul.	r/min
415.4	50.00	4.311	4.377	4.317	2	813.4	1928.3	2	1442.7
414.9	50.01	3.984	4.040	3.974	2	714.8	1773.7	2	1448.5
415.3	50.00	3.651	3.709	3.655	2	612.0	1625.7	2	1453.9
415.2	49.99	2.963	3.024	2.966	2	373.6	1302.4	2	1466.7
415.0	50.00	2.407	2.464	2.389	2	131.4	1011.1	2	1478.2
415.0	50.00	2.016	2.058	1.963	2	-126.7	735.5	2	1490.1

% LOAD	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P. F.
<b>150</b>	6000	6997.3	10.625	482.8	5.148	327.6	45.7	85.75	0.916
<b>125</b>	5000	5746.3	9.016	347.6	4.221	223.1	34.4	87.01	0.887
<b>100</b>	4000	4538.2	7.426	235.9	3.287	137.8	23.4	88.14	0.850
<b>75</b>	3000	3384.0	6.009	154.4	2.344	73.1	15.4	88.65	0.784
<b>50</b>	2000	2282.9	4.838	100.1	1.529	31.7	9.9	87.61	0.656
<b>25</b>	1000	1224.8	4.030	69.5	0.701	7.3	6.9	81.65	0.423

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	Test Date 0/01/1900	Report Number 0

# ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

## ROYCE CROSS GROUP

Type	Y3-112M-4	Poles	4	output Power	4.0	<b>kW</b>
Voltage	415 <b>V</b>	Current	7.3 <b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	1441 <b>r/min</b>	Duty	S1	Connection		
Ins. class	F	Weight	0 <b>kg</b>		IP55	

### Load Curve

