



**ROYCECROSSGROUP**



**ROYCE CROSS GROUP**

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

<b>NAMEPLATE DATA</b>			
Y3-112M-2 <b>FRAME</b>	IEC TYPE	4 kW	2885 r/min
2 <b>POLE</b>	3 <b>PHASE</b>	415 <b>VOLTS</b>	50 Hz
<b>ROYCE CROSS GROUP MANUFACTURER</b>	7.0 <b>AMPS</b>	IP55 <b>IP</b>	
	S1 <b>DUTY</b>	F <b>INS.CLASS</b>	<b>CONNECTION</b>

MAJOR CONTENTS	UNIT	TEST VALUE
STATOR RESISTANCE OF PHASE	OHM	4.75039
NO LOAD CURRENT	AMP	1.72
NO LOAD INPUT	W	145.7
CORE LOSS(Pfe)	W	89.5
WINDAGE FRICTION LOSS(Pfw)	W	47.2
STATOR WINDING LOSS(Pcu1)	W	223.6
ROTOR WINDING LOSS(Pcu2)	W	132.8
STRAY LOAD LOSS(Ps)	W	89.4
FULL LOAD CURRENT	AMP	7.09
LOCKED ROTOR CURRENT	AMP	48.36
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	6.91
FULL LOAD TORQUE	N.m	13.14
LOCKED ROTOR TORQUE	N.m	32.01
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	2.42
PULL OUT TORQUE	N.m	44.64
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	3.37
INPUT @ FULL LOAD	kW	4.58
EFFICIENCY @ FULL LOAD	%	87.29
POWER FACTOR @ FULL LOAD		0.90
FULL LOAD SLIP	%	3.110
FULL LOAD SPEED	r/min	2906.7
STATOR WINDING TEMPERATURE RISE	K	51
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	36.6
AMBIENT TEMPERATURE OF TESTING	Deg. C	11.2
NOISE	dB(A)	75
VIBRATION	mm/s	0.3

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

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

# ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

## ROYCE CROSS GROUP

Type	Y3-112M-2	Poles	2	Power	4.0 kW
Voltage	415 V	Current	7 A	Frequency	50 Hz
Speed	2885 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
459.9	1	50	2.151	2.113	1.964	1	-570.4	746.8	1	52.6 2.76
415.3	1	50	1.774	1.727	1.647	1	-404.6	553.2	1	52.2 2.756
362.0	1	50	1.451	1.453	1.342	1	-290.0	412.6	1	52.0 2.754
308.0	1	50	1.183	1.203	1.091	1	-196.2	299.0	1	51.8 2.752
253.9	1	50	0.943	0.987	0.874	1	-122.4	210.6	1	51.4 2.749
207.1	1	50	0.752	0.804	0.700	1	-72.0	148.2	1	51.3 2.748
158.5	1	50	0.572	0.637	0.546	1	-32.4	97.4	1	50.9 2.744
110.3	1	50	0.422	0.502	0.432	1	-4.0	61.2	1	49.5 2.73
80.3	1	50	0.376	0.457	0.403	1	7.0	44.4	1	48.2 2.718

Initial Resistance immediately before no-load test: 0 Ω ambient temperature: 0.0

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-2	Poles	2	Power	4.0	<b>kW</b>
Voltage	415 <b>V</b>	Current	7 <b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	2885 <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.	Torqu N. m
416.0	1.0	4.865	4.837	4.855	10.0	298.0	2156.2	10	32.18
373.1	1.0	4.126	4.107	4.130	10.0	260.9	1658.1	10	24.65
326.5	1.0	3.455	3.435	3.449	10.0	195.5	1214.6	10	17.91
279.7	1.0	2.847	2.825	2.840	10.0	129.1	852.9	10	12.36
223.7	1.0	2.173	2.150	2.164	10.0	65.7	513.5	10	7.37
180.0	1.0	1.677	1.660	1.669	10.0	32.3	315.1	10	4.52
108.1	1.0	0.937	0.939	0.945	10.0	4.6	104.2	10	1.51
60.2	1.0	0.513	0.513	0.517	10.0	0.7	31.4	10	0.55

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## ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

### ROYCE CROSS GROUP

Type	Y3-112M-2		Poles	2	Power	4	kW	
Voltage	415	V	Current	7	A	Frequency	50	Hz
Speed	2885	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	
14:30	415.1	3.458	3.488	3.436	2	820.3	1441.1	2	39.9	—	69.1	67.5	—	—	—	—	—	—	—	—	—	11.2
15:00	415.6	3.442	3.467	3.427	2	815.1	1435.7	2	38.3	—	66.0	64.4	—	—	—	—	—	—	—	—	—	11.2
15:30	415.3	3.417	3.447	3.424	2	811.4	1427.4	2	37.4	—	64.6	63.0	—	—	—	—	—	—	—	—	—	11.1
16:00	415.0	3.445	3.477	3.440	2	816.0	1437.6	2	37.2	—	63.8	62.2	—	—	—	—	—	—	—	—	—	11.2
16:30	415.0	3.428	3.466	3.429	2	810.7	1433.5	2	36.6	—	63.6	62.0	—	—	—	—	—	—	—	—	—	11.2
最后三点平均值	6.883		A		4491.067		W		36.6	—	64.0	62.4	—	—	—	—	—	—	—	—	—	11.2

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	2.8210	2.8160	2.8120	2.8080	2.8030	2.8000		

#### WINDING RESISTANCE (COLD)

△	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	2.356	2.356	2.356	2.35600	2.35600	10.5 °C
Y	U1-U2	V1-V2	W1-W2	AVERAGE	MIN	AMBIENT TEM.
	0	0	0	0.000	0	0 °C

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Manu. Date

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0.00

0

Test Date

Report Number

0/01/1900

0

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Type	Y3-112M-2	Poles	2	output Power	4.0	<b>kW</b>		
Voltage	415	<b>V</b>	Current	7	<b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	2885	<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
414.9	50.00	2.046	2.059	2.030	5	489.5	842.0	5	2869.8
414.9	50.00	1.645	1.662	1.640	5	399.5	679.0	5	2893.6
414.6	50.00	3.436	3.471	3.424	2	801.5	1421.2	2	2914.0
415.5	50.00	2.662	2.686	2.632	2	556.2	1105.6	2	2937.7
415.4	50.00	1.952	1.990	1.932	2	306.4	814.4	2	2959.3
415.3	50.00	1.388	1.425	1.322	2	47.8	546.0	2	2979.5

% LOAD	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P. F.
<b>150</b>	6000	7230.2	11.098	548.5	4.916	323.3	221.7	82.98	0.906
<b>125</b>	5000	5863.8	8.992	360.1	4.032	218.6	148.5	85.27	0.907
<b>100</b>	4000	4582.6	7.086	223.6	3.110	132.8	89.4	87.29	0.900
<b>75</b>	3000	3387.3	5.410	130.3	2.225	70.5	49.8	88.57	0.871
<b>50</b>	2000	2259.7	3.940	69.1	1.435	30.2	23.7	88.51	0.798
<b>25</b>	1000	1186.8	2.755	33.8	0.716	7.6	8.7	84.26	0.599

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## ROYCE CROSS GROUP

Type	Y3-112M-2	Poles	2	output Power	4.0	<b>kW</b>
Voltage	415 V	Current	7 A	Frequency	50.0	<b>Hz</b>
Speed	2885 r/min	Duty	S1	Connection		
Ins. class	F	Weight	0 kg		IP55	

### Load Curve

