



**ROYCECROSSGROUP**



**ROYCE CROSS GROUP**

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

<b>NAMEPLATE DATA</b>			
Y3-160M1-2 <b>FRAME</b>	IEC TYPE 3 <b>PHASE</b>	11 <b>kW</b>	2936 <b>r/min</b>
2 <b>POLE</b>	18.8 <b>AMPS</b>	415 <b>VOLTS</b>	50 <b>Hz</b>
<b>ROYCE CROSS GROUP MANUFACTURER</b>	S1 <b>DUTY</b>	IP55 <b>IP</b>	<b>CONNECTION</b>
		F <b>INS.CLASS</b>	

MAJOR CONTENTS	UNIT	TEST VALUE
STATOR RESISTANCE OF PHASE	OHM	1.10628
NO LOAD CURRENT	AMP	5.792
NO LOAD INPUT	W	436.8
CORE LOSS(Pfe)	W	115.3
WINDAGE FRICTION LOSS(Pfw)	W	287.4
STATOR WINDING LOSS(Pcu1)	W	382.6
ROTOR WINDING LOSS(Pcu2)	W	266.0
STRAY LOAD LOSS(Ps)	W	66.5
FULL LOAD CURRENT	AMP	18.60
LOCKED ROTOR CURRENT	AMP	116.98
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	6.22
FULL LOAD TORQUE	N.m	35.83
LOCKED ROTOR TORQUE	N.m	75.53
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	2.11
PULL OUT TORQUE	N.m	86.55
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	2.42
INPUT @ FULL LOAD	kW	12.12
EFFICIENCY @ FULL LOAD	%	90.77
POWER FACTOR @ FULL LOAD		0.91
FULL LOAD SLIP	%	2.289
FULL LOAD SPEED	r/min	2931.3
STATOR WINDING TEMPERATURE RISE	K	58
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	47.9
AMBIENT TEMPERATURE OF TESTING	Deg. C	16.8
NOISE	dB(A)	80
VIBRATION	mm/s	0.8

	<b>ROYCE CROSS GROUP</b>			
				0

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## ROYCE CROSS GROUP

Type	Y3-160M1-2	Poles	2	Power	11.0 kW
Voltage	415 V	Current	18.8 A	Frequency	50 Hz
Speed	2936 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.	
478.0	1	50	8.488	8.552	8.534	1	-1349.3	1896.0	1	67.9
451.0	1	50	7.022	7.073	7.071	1	-1016.8	1504.5	1	67.7
415.6	1	50	5.804	5.818	5.800	1	-739.4	1176.8	1	67.5
370.5	1	50	4.796	4.811	4.776	1	-500.8	901.9	1	67.4
310.0	1	50	3.897	3.897	3.866	1	-283.5	651.0	1	67.2
256.0	1	50	3.232	3.219	3.177	1	-137.5	480.5	1	67.0
207.3	1	50	2.690	2.704	2.654	1	-37.2	356.7	1	66.8
196.8	1	50	2.612	2.614	2.570	1	-18.0	333.9	1	66.6
174.2	1	50	2.420	2.451	2.394	1	19.0	292.5	1	66.4
137.3	1	50	2.280	2.295	2.255	1	70.7	232.5	1	66.2

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

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## ROYCE CROSS GROUP

Type	Y3-160M1-2	Poles	2	Power	11.0	<b>kW</b>
Voltage	415 <b>V</b>	Current	18.8 <b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	2936 <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 (kg. m)
415.0	1.0	5.853	5.897	5.796	20.0	-144.7	2104.9	20	7.71
369.6	1.0	5.042	5.086	4.987	20.0	-107.3	1616.7	20	5.91
321.6	1.0	4.248	4.287	4.197	20.0	-93.8	1181.8	20	4.27
274.8	1.0	3.494	3.537	3.447	20.0	-77.0	828.5	20	2.93
217.2	1.0	2.611	2.651	2.573	20.0	-56.5	484.4	20	1.67
176.0	1.0	2.020	2.050	1.986	20.0	-41.4	300.0	20	1.03
139.4	1.0	3.061	3.110	3.018	10.0	-57.3	356.3	10	0.63
105.2	1.0	2.230	2.265	2.201	10.0	-33.9	193.7	10	0.36

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## ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

### ROYCE CROSS GROUP

Type	Y3-160M1-2		Poles	2		Power	11 kW	
Voltage	415 V		Current	18.8 A		Frequency	50 Hz	
Speed	2936 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	415.6	3.767	3.767	3.745	5	954.8	1570.2	5	46.3	—	72.0	72.4	—	—	—	—	—	—	—	—	—	15.9
10:30	415.4	3.812	3.812	3.787	5	963.9	1586.9	5	46.7	—	73.1	73.5	—	—	—	—	—	—	—	—	—	16.3
11:00	415.5	3.787	3.790	3.762	5	957.7	1577.5	5	47.6	—	73.5	73.9	—	—	—	—	—	—	—	—	—	16.5
11:30	415.4	3.765	3.767	3.742	5	953.3	1569.3	5	48.0	—	73.9	74.3	—	—	—	—	—	—	—	—	—	16.8
12:00	415.6	3.751	3.753	3.728	5	948.9	1564.1	5	47.9	—	73.6	74.1	—	—	—	—	—	—	—	—	—	17.0
最后三点平均值		18.802		A		12618.22		W	47.9	—	73.7	74.1	—	—	—	—	—	—	—	—	—	16.8

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)	54	82	115	135	160	188	209	
RESISTANCE	0.6943	0.6925	0.6909	0.6899	0.6889	0.6879	0.6870	

#### WINDING RESISTANCE (COLD)

△	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0.5599	0.5602	0.5601	0.56007	0.55990	15.6 °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	Y3-160M1-2	Poles	2	output Power	11.0	<b>kW</b>		
Voltage	415	<b>V</b>	Current	18.8	<b>A</b>	Frequency	50.0	<b>Hz</b>
Speed	2936	<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
415.3	49.99	2.634	2.627	2.638	10	674.5	1044.7	10	2907.7
414.9	50.00	2.438	2.431	2.440	10	624.7	965.3	10	2911.3
415.5	50.00	3.892	3.880	3.896	5	994.4	1545.0	5	2931.7
415.1	49.99	2.945	2.932	2.955	5	723.8	1171.8	5	2950.1
415.0	49.99	2.084	2.073	2.090	5	457.4	833.6	5	2966.5
415.2	49.99	3.541	3.524	3.612	2	585.0	1407.9	2	2980.7
414.8	49.99	3.138	3.122	3.205	2	431.8	1231.3	2	2982.6

% LOAD	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P. F.
<b>150</b>	16500	18500.9	28.324	887.5	3.344	585.2	125.4	89.18	0.909
<b>125</b>	13750	15300.6	23.443	608.0	2.995	436.6	103.3	89.87	0.908
<b>100</b>	11000	12117.9	18.597	382.6	2.289	266.0	66.5	90.77	0.907
<b>75</b>	8250	9057.1	14.120	220.6	1.659	144.7	39.1	91.09	0.892
<b>50</b>	5500	6096.0	9.934	109.2	1.088	63.9	20.2	90.22	0.854
<b>25</b>	2750	3219.1	6.178	42.2	0.582	17.8	6.3	85.43	0.725

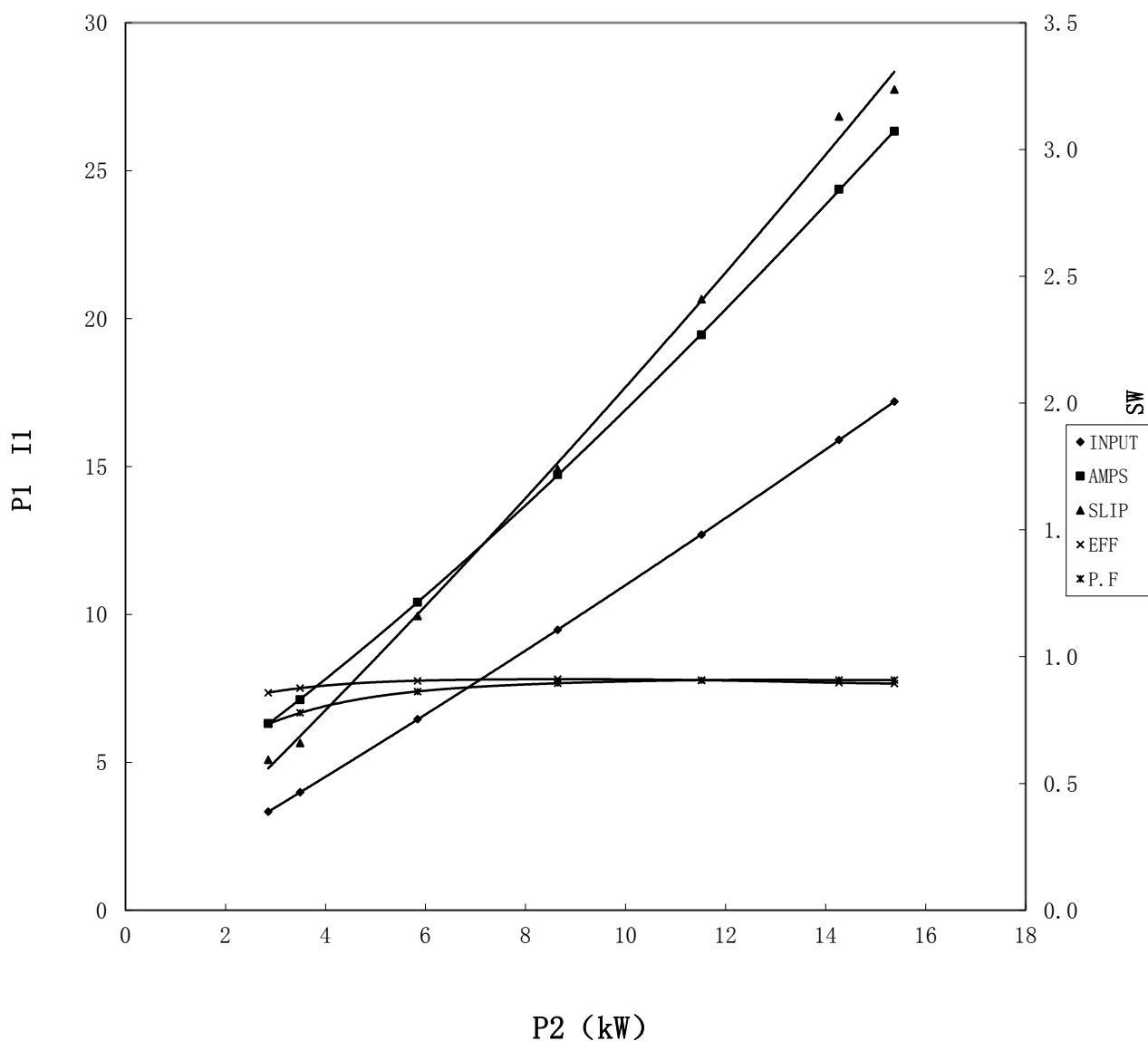
<b>ROYCE CROSS GROUP</b>	<b>Manufacturing Date</b> 0.00	<b>Serial No</b> 0
	Test Date 0/01/1900	Report Number 0

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## ROYCE CROSS GROUP

Type	Y3-160M1-2	Poles	2	output Power	11.0	<b>kW</b>		
Voltage	415	V	Current	18.8	A	Frequency	50.0	<b>Hz</b>
Speed	2936	r/min	Duty	S1	Connection			
Ins. class	F	Weight	0	kg			IP55	

### Load Curve



Manu. Date

Serial No