

ROYCE CROSS GROUP

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

NAMEPLATE DATA			
Y3-355M2-2 FRAME	IEC TYPE	250 kW	2980 r/min
2 POLE	3 PHASE	415 VOLTS	50 Hz
ROYCE CROSS GROUP MANUFACTURER	394.0 AMPS	IP55 IP	
	S1 DUTY	F INS.CLASS	Δ CONNECTION

MAJOR CONTENTS	UNIT	TEST VALUE
STATOR RESISTANCE OF PHASE	OHM	0.01129
NO LOAD CURRENT	AMP	76.46
NO LOAD INPUT	W	6065.9
CORE LOSS(Pfe)	W	1624.2
WINDAGE FRICTION LOSS(Pfw)	W	4369.3
STATOR WINDING LOSS(Pcu1)	W	1717.0
ROTOR WINDING LOSS(Pcu2)	W	1541.3
STRAY LOAD LOSS(Ps)	W	1303.7
FULL LOAD CURRENT	AMP	393.23
LOCKED ROTOR CURRENT	AMP	2673.01
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	6.78
FULL LOAD TORQUE	N.m	800.55
LOCKED ROTOR TORQUE	N.m	1627.27
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	2.03
PULL OUT TORQUE	N.m	2285.10
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	2.85
INPUT @ FULL LOAD	kW	260.47
EFFICIENCY @ FULL LOAD	%	95.98
POWER FACTOR @ FULL LOAD		0.92
FULL LOAD SLIP	%	0.599
FULL LOAD SPEED	r/min	2982.0
STATOR WINDING TEMPERATURE RISE	K	61
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	49.7
AMBIENT TEMPERATURE OF TESTING	Deg. C	9.4
NOISE	dB(A)	95
VIBRATION	mm/s	1.2

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

ROYCE CROSS GROUP Y3-355M2-2 250 kW 415 VOLTS 50 Hz	SERIAL NO.	0		
	DATE	1900/1/0	REV	
	DRAWN		DOCUMENT NO.	
	APPRVD		0	
	CHECKED			

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

ROYCE CROSS GROUP

Type	Y3-355M2-2	Poles	2	Power	250.0 kW
Voltage	415 V	Current	394 A	Frequency	50 Hz
Speed	2980 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.	°C	Ω
501.2	1	50	2.061	2.067	2.278	50	-650.2	787.9	50	67.6	0.007
458.2	1	50	1.759	1.760	1.910	50	-359.7	487.6	50	67.5	0.007
415.6	1	50	1.518	1.435	1.646	50	-228.7	350.1	50	67.2	0.007
354.9	1	50	1.132	1.181	1.245	50	-118.9	232.1	50	66.9	0.007
308.8	1	50	2.361	2.515	2.607	20	-197.8	463.7	20	66.7	0.007
258.6	1	50	1.930	2.068	2.122	20	-98.6	351.0	20	66.4	0.007
206.6	1	50	1.641	1.753	1.805	20	-31.1	266.6	20	66.1	0.007
186.4	1	50	1.550	1.649	1.699	20	-5.0	238.5	20	65.3	0.007
160.8	1	50	1.487	1.582	1.621	20	18.9	209.9	20	65.1	0.007

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

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	0.00	0
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Speed	2980 r/min	Duty	S1	Connection	Δ	
Ins. class	F	Weight	0 kg		IP55	

LOCKED ROTOR TEST

VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqure N. m
193.2	1.0	2.653	2.659	2.672	400.0	-113.5	441.4	400	258.10
174.8	1.0	2.358	2.364	2.374	400.0	-92.7	354.2	400	208.08
156.1	1.0	2.080	2.087	2.094	400.0	-74.2	278.7	400	162.40
138.9	1.0	1.831	1.837	1.842	400.0	-58.6	217.8	400	126.15
119.1	1.0	1.554	1.559	1.563	400.0	-42.9	158.2	400	89.90
108.6	1.0	1.408	1.413	1.418	400.0	-35.6	130.6	400	73.95
90.8	1.0	1.173	1.177	1.181	400.0	-24.7	91.1	400	50.75
73.7	1.0	1.896	1.905	1.909	200.0	-32.8	119.4	200	32.63

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Voltage	415	V	Current	394	A	Frequency	50	Hz
Speed	2980	r/min	Duty	S1		Connection	Δ	
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	415.4	1.974	1.982	1.945	200	484.8	813.0	200	57.1	—	76.2	73.2	—	—	—	—	—	—	—	—	—	8.5
10:30	415.0	1.983	1.992	1.953	200	491.5	817.8	200	53.4	—	77.8	74.7	—	—	—	—	—	—	—	—	—	8.6
11:00	415.2	1.983	1.994	1.963	200	495.1	824.1	200	51.5	—	79.0	75.5	—	—	—	—	—	—	—	—	—	9.1
11:30	415.3	1.991	1.988	1.961	200	493.2	822.0	200	50.6	—	78.9	75.8	—	—	—	—	—	—	—	—	—	9.2
12:00	415.3	1.980	1.977	1.955	200	488.4	814.5	200	50.4	—	80.0	76.8	—	—	—	—	—	—	—	—	—	9.6
12:30	415.2	1.974	1.971	1.952	200	486.0	815.1	200	50.0	—	80.1	77.0	—	—	—	—	—	—	—	—	—	9.2
13:00	415.3	1.982	1.996	1.971	200	488.2	822.5	200	49.7	—	80.3	77.1	—	—	—	—	—	—	—	—	—	9.5
最后三点平均值	394.635		A		260988.7		W		49.7	—	80.1	77.0	—	—	—	—	—	—	—	—	—	9.4

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)	76	98	125	150	169	193	213	240
RESISTANCE	0.00699	0.00698	0.00696	0.00695	0.00694	0.00693	0.00693	0.00692

WINDING RESISTANCE (COLD)

Δ	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0.005515	0.005525	0.005526	0.00552	0.00552	7.2 °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	Y3-355M2-2	Poles	2	output Power	250.0	kW		
Voltage	415	V	Current	394	A	Frequency	50.0	Hz
Speed	2980	r/min	Duty	S1	Connection	Δ		
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
415.0	50.01	2.938	2.943	2.978	200	719.6	1232.3	200	2971.8
415.1	50.01	2.424	2.404	2.457	200	593.7	1016.7	200	2978.2
414.9	50.00	2.229	2.210	2.261	200	546.9	930.7	200	2979.9
415.3	50.00	1.963	1.944	1.993	200	483.7	819.1	200	2982.9
415.4	50.01	1.486	1.468	1.511	200	365.5	620.7	200	2989.4
415.4	50.00	2.155	2.108	2.193	100	461.5	891.5	100	2993.8
415.0	50.00	1.337	1.316	1.370	100	223.4	470.3	100	2997.9

% LOAD	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P. F.
150	375000	391556.5	592.426	3897.2	1.014	3913.2	2957.6	95.77	0.920
125	312500	325653.3	491.144	2678.6	0.797	2561.5	2038.5	95.96	0.922
100	250000	260474.4	393.230	1717.0	0.599	1541.3	1303.7	95.98	0.922
75	187500	195918.0	295.890	972.2	0.389	751.9	739.4	95.70	0.921
50	125000	132134.4	211.324	495.9	0.211	273.7	379.1	94.60	0.870
25	62500	68939.9	133.573	198.1	0.073	48.8	150.1	90.66	0.718

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Voltage	415	V	Current	394	A	Frequency	50.0	Hz
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Ins. class	F	Weight	0	kg				

Load Curve

