



ROYCECROSSGROUP



ROYCE CROSS GROUP

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

NAMEPLATE DATA

Y3-250M-6 FRAME	IEC TYPE	37 kW	988 r/min
6 POLE	3 PHASE	415 VOLTS	50 Hz
ROYCE CROSS GROUP MANUFACTURER	63.8 AMPS	IP56 IP	
	S1 DUTY	F INS.CLASS	CONNECTION

MAJOR CONTENTS	UNIT	TEST VALUE
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STATOR RESISTANCE OF PHASE	OHM	0.27600
NO LOAD CURRENT	AMP	20.67
NO LOAD INPUT	W	1032.0
CORE LOSS(Pfe)	W	653.4
WINDAGE FRICTION LOSS(Pfw)	W	273.8
STATOR WINDING LOSS(Pcu1)	W	1121.3
ROTOR WINDING LOSS(Pcu2)	W	485.3
STRAY LOAD LOSS(Ps)	W	197.1
FULL LOAD CURRENT	AMP	63.43
LOCKED ROTOR CURRENT	AMP	397.53
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	6.23
FULL LOAD TORQUE	N.m	357.89
LOCKED ROTOR TORQUE	N.m	716.03
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	2.00
PULL OUT TORQUE	N.m	913.27
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	2.55
INPUT @ FULL LOAD	kW	39.74
EFFICIENCY @ FULL LOAD	%	93.12
POWER FACTOR @ FULL LOAD		0.87

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Type	Y3-250M-6	Poles	6	Power	37.0 kW
Voltage	415 V	Current	63.8 A	Frequency	50 Hz
Speed	988 r/min	Duty	S1	Connection	△
Ins. class	F	Weight	0 kg		IP56

NO LOAD TEST

VOL	mul.	Hz	I01	I02	I03	mul.	W1	W2	mul.	Ω
466.2	1	50	2.703	2.694	2.715	10	-444.7	580.9	10	0.164
436.5	1	50	2.283	2.276	2.293	10	-348.5	462.7	10	0.164
415.1	1	50	2.065	2.062	2.076	10	-297.4	400.6	10	0.164
362.9	1	50	3.337	3.330	3.348	5	-411.5	575.8	5	0.164
312.1	1	50	2.734	2.719	2.750	5	-277.5	412.6	5	0.164
266.4	1	50	2.262	2.266	2.283	5	-186.7	301.5	5	0.164
206.8	1	50	1.734	1.732	1.729	5	-100.2	190.1	5	0.164
167.5	1	50	3.494	3.472	3.554	2	-131.2	326.4	2	0.164
133.8	1	50	2.861	2.813	2.863	2	-58.4	232.9	2	0.164
87.3	1	50	2.187	2.147	2.226	2	14.5	138.2	2	0.164

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Type	Y3-250M-6	Poles	6	Power	37.0	kW
Voltage	415 V	Current	63.8 A	Frequency	50.0	Hz
Speed	988 r/min	Duty	S1	Connection		
Ins. class	F	Weight	0 kg		IP56	

LOCKED ROTOR TEST

VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqu N. m
397.5	1.0	1.874	1.887	1.886	200.0	-85.9	606.6	200	652.19
357.9	1.0	1.638	1.647	1.647	200.0	-69.2	475.6	200	507.74
318.0	1.0	2.827	2.839	2.840	100.0	-114.1	725.0	100	377.30
270.7	1.0	2.322	2.332	2.334	100.0	-85.3	503.2	100	261.95
221.9	1.0	1.820	1.827	1.826	100.0	-61.0	320.2	100	162.78
174.3	1.0	2.727	2.743	2.738	50.0	-80.0	371.3	50	91.63
133.7	1.0	2.010	2.022	2.016	50.0	-48.8	207.8	50	50.67
99.6	1.0	1.460	1.468	1.465	50.0	-27.3	111.5	50	26.95

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Type	Y3-250M-6		Poles	6		Power	37 kW	
Voltage	415 V		Current	63.8 A		Frequency	50 Hz	
Speed	988 r/min		Duty	S1		Connection		
Ins. class	F		Weight	0 kg		IP56		

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	
10:30	415.5	3.255	3.263	3.258	20	692.3	1357.3	20	49.7	—	—	—	—	—	—	—	—	—	—	—	47.0	12.5
11:00	415.6	3.275	3.280	3.278	20	697.0	1362.3	20	50.1	—	—	—	—	—	—	—	—	—	—	—	47.6	12.7
11:30	415.6	3.315	3.320	3.315	20	706.3	1381.8	20	50.9	—	—	—	—	—	—	—	—	—	—	—	48.2	12.9
12:00	415.6	3.308	3.313	3.308	20	705.5	1377.5	20	51.8	—	—	—	—	—	—	—	—	—	—	—	48.8	12.7
12:30	415.6	3.233	3.240	3.238	20	687.0	1345.5	20	52.3	—	—	—	—	—	—	—	—	—	—	—	48.9	13.0
13:00	415.6	3.240	3.245	3.240	20	688.8	1348.8	20	51.9	—	—	—	—	—	—	—	—	—	—	—	48.5	12.9
13:30	415.8	3.245	3.250	3.248	20	695.5	1356.5	20	51.7	—	—	—	—	—	—	—	—	—	—	—	48.6	12.9
最后三点平均值	64.839		A		40813.33		W		51.7	—	—	—	—	—	—	—	—	—	—	—	48.6	12.9

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)	46	71	88	115	139	170	205	238
RESISTANCE	0.1778	0.1772	0.1767	0.1762	0.1756	0.1750	0.1744	0.1738

WINDING RESISTANCE (COLD)

△	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0.1375	0.1375	0.1375	0.13750	0.13750	11.6 °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	Y3-250M-6	Poles	6	output Power	37.0	kW		
Voltage	415	V	Current	63.8	A	Frequency	50.0	Hz
Speed	988	r/min	Duty	S1	Connection			
Ins. class		F	Weight	0	kg	IP56		

LOAD TEST

V	Hz	A1 (unit)	A2 (unit)	A3 (unit)	mul.	W1 (unit)	W2 (unit)	mul.	r/min
415.4	49.98	4.143	4.153	4.148	20	876.8	1731.5	20	983.0
415.2	50.01	3.594	3.623	3.612	20	758.9	1502.7	20	985.5
415.2	50.01	3.237	3.264	3.248	20	681.7	1354.2	20	987.4
415.5	49.99	2.873	2.899	2.882	20	598.6	1207.1	20	989.3
415.6	49.98	2.422	2.445	2.431	20	480.8	1018.7	20	991.2
415.3	49.99	1.774	1.797	1.780	20	284.5	741.7	20	994.3
415.4	49.98	2.735	2.732	2.741	10	276.6	1093.7	10	996.8
414.8	49.98	2.061	2.057	2.069	10	-63.6	705.2	10	998.7

% LOAD	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P. F.
150	55500	60422.0	95.761	2555.2	1.961	1122.1	433.4	91.85	0.878
125	46250	50060.5	79.685	1769.3	1.665	793.1	311.5	92.39	0.874
100	37000	39735.1	63.435	1121.3	1.278	485.3	197.1	93.12	0.871
75	27750	29686.9	48.238	648.4	0.863	245.0	114.0	93.48	0.856
50	18500	19934.3	34.955	340.5	0.547	103.6	60.0	92.81	0.793
25	9250	10397.1	24.304	164.6	0.201	19.3	29.4	88.97	0.595

ROYCE CROSS GROUP	Manufacturing Date 2016.07	Serial No 13659
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