



ROYCECROSSGROUP



ROYCE CROSS GROUP

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

NAMEPLATE DATA			
Y3-225M-6 FRAME	IEC TYPE	30 kW	970 r/min
6 POLE	3 PHASE	415 VOLTS	50 Hz
ROYCE CROSS GROUP MANUFACTURER	53.1 AMPS	IP56 IP	
	S1 DUTY	F INS.CLASS	CONNECTION

MAJOR CONTENTS	UNIT	TEST VALUE
STATOR RESISTANCE OF PHASE	OHM	0.36109
NO LOAD CURRENT	AMP	18.04
NO LOAD INPUT	W	880.4
CORE LOSS(Pfe)	W	405.8
WINDAGE FRICTION LOSS(Pfw)	W	370.5
STATOR WINDING LOSS(Pcu1)	W	1019.0
ROTOR WINDING LOSS(Pcu2)	W	515.2
STRAY LOAD LOSS(Ps)	W	165.8
FULL LOAD CURRENT	AMP	53.64
LOCKED ROTOR CURRENT	AMP	330.49
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	6.22
FULL LOAD TORQUE	N.m	291.30
LOCKED ROTOR TORQUE	N.m	576.80
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	1.95
PULL OUT TORQUE	N.m	705.62
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	2.39
INPUT @ FULL LOAD	kW	32.48
EFFICIENCY @ FULL LOAD	%	92.37
POWER FACTOR @ FULL LOAD		0.84
FULL LOAD SLIP	%	1.659
FULL LOAD SPEED	r/min	983.4
STATOR WINDING TEMPERATURE RISE	K	62
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	55.5
AMBIENT TEMPERATURE OF TESTING	Deg. C	23.2
NOISE	dB(A)	75
VIBRATION	mm/s	0.9

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

	ROYCE CROSS GROUP	SERIAL NO.		
		DATE		REV
	Y3-225M-6	DRAWN		DOCUMENT NO.
	30 kW	APPRVD		
	415 VOLTS 50 Hz	CHECKED		

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Type	Y3-225M-6	Poles	6	Power	30.0 kW
Voltage	415 V	Current	53.1 A	Frequency	50 Hz
Speed	970 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
460.1	1	50	2.435	2.432	2.454	10	-488.6	605.4	10	0.213
433.3	1	50	2.013	2.012	2.027	10	-378.2	475.2	10	0.213
415.6	1	50	1.804	1.803	1.821	10	-321.3	409.6	10	0.213
405.2	1	50	3.416	3.408	3.449	5	-588.6	755.3	5	0.213
338.9	1	50	2.559	2.555	2.583	5	-353.7	487.6	5	0.213
260.7	1	50	1.860	1.857	1.877	5	-178.6	288.5	5	0.213
206.0	1	50	3.598	3.602	3.631	2	-234.5	473.0	2	0.213
179.9	1	50	3.134	3.137	3.161	2	-151.1	380.6	2	0.213
139.0	1	50	2.486	2.489	2.505	2	-50.2	261.4	2	0.213
98.1	1	50	2.075	2.077	2.090	2	18.9	178.5	2	0.213

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Voltage	415 V	Current	53.1 A	Frequency	50.0	Hz
Speed	970 r/min	Duty	S1	Connection		
Ins. class	F	Weight	0 kg		IP56	

LOCKED ROTOR TEST

VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqure N.m
412.3	1.0	3.280	3.272	3.277	100.0	-158.2	999.6	100	569.07
357.6	1.0	2.704	2.696	2.696	100.0	-121.2	710.3	100	412.44
299.3	1.0	2.131	2.126	2.125	100.0	-86.9	464.2	100	268.51
248.7	1.0	3.322	3.314	3.314	50.0	-127.2	593.0	50	169.33
199.9	1.0	2.487	2.485	2.483	50.0	-84.8	351.0	50	99.78
149.1	1.0	1.710	1.708	1.708	50.0	-48.4	176.3	50	47.78
97.9	1.0	2.638	2.632	2.635	20.0	-53.3	175.8	20	18.14

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Type	Y3-225M-6		Poles	6		Power	30 kW	
Voltage	415	V	Current	53.1	A	Frequency	50 Hz	
Speed	970	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	2.693	2.688	2.703	20	489.4	1115.0	20	48.4	—	—	—	—	—	—	—	—	—	—	—	48.7	19.2
11:01	415.0	2.637	2.631	2.647	20	478.3	1090.0	20	50.1	—	—	—	—	—	—	—	—	—	—	—	50.8	19.7
11:30	415.0	2.660	2.656	2.671	20	483.7	1100.1	20	51.6	—	—	—	—	—	—	—	—	—	—	—	52.1	20.4
12:00	415.1	2.667	2.660	2.677	20	485.3	1102.3	20	53.2	—	—	—	—	—	—	—	—	—	—	—	53.1	21.1
12:30	415.1	2.701	2.695	2.712	20	493.2	1117.1	20	54.0	—	—	—	—	—	—	—	—	—	—	—	54.4	21.6
13:00	415.2	2.675	2.671	2.685	20	487.8	1106.9	20	54.7	—	—	—	—	—	—	—	—	—	—	—	55.0	23.0
13:30	415.2	2.663	2.658	2.675	20	485.6	1101.2	20	55.2	—	—	—	—	—	—	—	—	—	—	—	55.7	23.0
14:00	415.2	2.650	2.645	2.660	20	482.7	1096.5	20	55.5	—	—	—	—	—	—	—	—	—	—	—	55.9	23.5
最后三点平均值		53.293			A	31738		W	55.5	—	—	—	—	—	—	—	—	—	—	—	55.9	23.2

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)	37	52	76	91	106	125	152	179
RESISTANCE	0.2328	0.2322	0.2311	0.2303	0.2298	0.2292	0.2282	0.2274

WINDING RESISTANCE (COLD)

△	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0.1827	0.1828	0.1827	0.18273	0.18270	15.5 °C
Y	U1-U2	V1-V2	W1-W2	AVERAGE	MIN	AMBIENT TEM.
	0	0	0	0.000	0	0 °C

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Type	Y3-225M-6	Poles	6	output Power	30.0	kW		
Voltage	415	V	Current	53.1	A	Frequency	50.0	Hz
Speed	970	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
415.2	50.01	3.291	3.282	3.303	20	609.7	1384.5	20	978.6
415.2	50.00	2.917	2.910	2.930	20	543.5	1228.1	20	981.6
415.2	50.00	2.618	2.613	2.631	20	483.6	1102.3	20	984.0
415.2	50.00	2.352	2.348	2.364	20	424.5	990.4	20	985.8
415.2	49.99	1.943	1.941	1.953	20	321.6	814.9	20	989.4
415.2	50.00	1.548	1.548	1.560	20	206.4	640.8	20	992.4
415.2	49.99	2.333	2.335	2.350	10	126.3	909.2	10	995.4
415.2	50.00	2.040	2.042	2.057	10	-21.3	734.6	10	996.6

% LOAD	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P. F.
150	45000	49659.0	82.232	2395.2	2.878	1348.6	366.4	90.62	0.840
125	37500	41035.4	67.774	1627.0	2.255	879.7	263.1	91.38	0.842
100	30000	32479.7	53.637	1019.0	1.659	515.2	165.8	92.37	0.842
75	22500	24250.3	41.147	599.7	1.151	267.5	98.1	92.78	0.820
50	15000	16270.9	30.255	324.2	0.732	113.7	53.0	92.19	0.748
25	7500	8502.4	21.707	166.9	0.385	30.5	27.2	88.21	0.545

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