



ROYCECROSSGROUP



ROYCE CROSS GROUP

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

NAMEPLATE DATA			
Y3-160M-6 FRAME	IEC TYPE	7.5 kW	970 r/min
6 POLE	3 PHASE	415 VOLTS	50 Hz
ROYCE CROSS GROUP MANUFACTURER	14.7 AMPS	IP55 IP	
	S1 DUTY	F INS.CLASS	CONNECTION

MAJOR CONTENTS	UNIT	TEST VALUE
STATOR RESISTANCE OF PHASE	OHM	1.72698
NO LOAD CURRENT	AMP	7.43
NO LOAD INPUT	W	370.1
CORE LOSS(Pfe)	W	245.9
WINDAGE FRICTION LOSS(Pfw)	W	34.0
STATOR WINDING LOSS(Pcu1)	W	364.1
ROTOR WINDING LOSS(Pcu2)	W	232.5
STRAY LOAD LOSS(Ps)	W	42.0
FULL LOAD CURRENT	AMP	14.63
LOCKED ROTOR CURRENT	AMP	87.67
LOCKED ROTOR CURRENT/FULL LOAD CURRENT	P.U.	5.96
FULL LOAD TORQUE	N.m	73.82
LOCKED ROTOR TORQUE	N.m	155.35
LOCKED ROTOR TORQUE/FULL LOAD TORQUE	P.U.	2.10
PULL OUT TORQUE	N.m	206.52
PULL OUT TORQUE/FULL LOAD TORQUE	P.U.	2.80
INPUT @ FULL LOAD	kW	8.42
EFFICIENCY @ FULL LOAD	%	89.09
POWER FACTOR @ FULL LOAD		0.80
FULL LOAD SLIP	%	2.978
FULL LOAD SPEED	r/min	970.2
STATOR WINDING TEMPERATURE RISE	K	63
D.E. BEARINGS TEMPERATURE BY PT100	Deg. C	65.4
AMBIENT TEMPERATURE OF TESTING	Deg. C	16.6
NOISE	dB(A)	70
VIBRATION	mm/s	1.0

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

	ROYCE CROSS GROUP	SERIAL NO.	0		
					0

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Type	Y3-160M-6	Poles	6	Power	7.5 kW
Voltage	415 V	Current	14.7 A	Frequency	50 Hz
Speed	970 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.	
453.1	1	50	4.691	4.639	4.657	2	-842.1	1090.2	2	77.3
435.3	1	50	4.177	4.149	4.164	2	-719.5	934.2	2	77.1
415.7	1	50	3.734	3.719	3.726	2	-614.1	799.9	2	76.8
368.1	1	50	2.967	2.969	2.977	2	-428.1	566.5	2	76.7
322.4	1	50	2.460	2.466	2.467	2	-307.9	415.2	2	76.6
269.0	1	50	1.970	1.975	1.976	2	-201.2	280.9	2	76.5
207.0	1	50	1.471	1.476	1.475	2	-111.2	165.2	2	76.3
172.9	1	50	1.216	1.220	1.218	2	-73.2	116.7	2	76.3
139.8	1	50	0.986	0.989	0.989	2	-44.5	79.0	2	76.1
99.6	1	50	0.716	0.719	0.715	2	-18.6	43.8	2	75.9

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Type	Y3-160M-6	Poles	6	Power	7.5	kW
Voltage	415 V	Current	14.7 A	Frequency	50.0	Hz
Speed	970 r/min	Duty	S1	Connection		
Ins. class	F	Weight	0 kg		IP55	

LOCKED ROTOR TEST

VOL	mul.	Ik1	Ik2	Ik3	mul.	W1	W2	mul.	Torqu N. m
415.1	1.0	4.377	4.386	4.391	20.0	-97.0	1544.8	20	155.45
371.9	1.0	3.798	3.805	3.810	20.0	-80.5	1198.8	20	119.44
324.5	1.0	3.175	3.183	3.189	20.0	-71.3	866.2	20	85.59
285.6	1.0	2.664	2.670	2.676	20.0	-63.6	633.1	20	60.70
240.3	1.0	2.140	2.145	2.150	20.0	-51.5	423.3	20	39.61
195.2	1.0	1.653	1.656	1.660	20.0	-37.5	262.1	20	24.38
152.9	1.0	2.485	2.489	2.499	10.0	-50.0	305.1	10	14.30
108.4	1.0	1.718	1.721	1.727	10.0	-25.8	148.2	10	6.89

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Type	Y3-160M-6		Poles	6		Power	7.5 kW	
Voltage	415 V		Current	14.7 A		Frequency	50 Hz	
Speed	970 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
10:30	415.3	2.940	2.947	2.940	5	484.4	1208.3	5	54.3	—	73.9	—	—	—	—	—	—	—	45.5	—	15.3
11:00	415.3	2.985	2.990	2.985	5	498.5	1225.9	5	60.7	—	79.8	—	—	—	—	—	—	—	49.3	—	15.9
11:30	415.3	2.943	2.950	2.947	5	490.4	1210.7	5	61.6	—	82.2	—	—	—	—	—	—	—	49.7	—	15.8
12:00	415.4	2.957	2.966	2.962	5	498.0	1218.5	5	63.0	—	83.9	—	—	—	—	—	—	—	50.6	—	16.0
12:30	415.3	2.972	2.976	2.971	5	496.8	1221.4	5	63.7	—	84.7	—	—	—	—	—	—	—	50.9	—	16.0
13:00	415.4	2.942	2.948	2.942	5	488.7	1209.6	5	64.1	—	85.2	—	—	—	—	—	—	—	51.2	—	16.4
13:30	415.3	2.926	2.935	2.930	5	487.7	1204.1	5	64.5	—	85.6	—	—	—	—	—	—	—	51.7	—	16.6
14:00	415.5	2.959	2.965	2.960	5	495.0	1217.0	5	65.4	—	86.0	—	—	—	—	—	—	—	51.8	—	16.8
最后三点平均值		14.726			A	8503.5		W	65.4	—	85.6	—	—	—	—	—	—	—	51.8	—	16.6

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)	41	78	107	153	191	229	274	336
RESISTANCE	1.0990	1.0940	1.0910	1.0880	1.0840	1.0820	1.0800	1.0780

WINDING RESISTANCE (COLD)

△	U1-V1	U1-W1	V1-W1	AVERAGE	MIN	AMBIENT TEM.
	0.8661	0.8659	0.8658	0.86593	0.86580	13.2 °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	Y3-160M-6	Poles	6	output Power	7.5	kW		
Voltage	415	V	Current	14.7	A	Frequency	50.0	Hz
Speed	970	r/min	Duty	S1	Connection			
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
415.2	50.00	3.697	3.704	3.700	5	673.9	1526.2	5	960.4
415.1	50.01	3.314	3.323	3.316	5	585.1	1366.6	5	965.6
415.1	50.01	2.925	2.932	2.923	5	483.3	1201.0	5	971.2
415.1	50.01	2.740	2.745	2.737	5	433.6	1123.6	5	973.6
415.2	50.00	2.333	2.337	2.329	5	308.8	946.5	5	979.3
414.9	50.01	1.854	1.857	1.847	5	134.1	720.2	5	986.5
415.2	50.00	1.523	1.522	1.513	5	-40.2	524.0	5	993.0

% LOAD	OUTPUT W	INPUT W	AMPS A	Pcu1 W	SLIP %	Pcu2 W	Ps W	EFF %	P. F.
150	11250	12982.2	21.480	784.8	4.870	579.7	87.6	86.66	0.841
125	9375	10655.1	17.973	549.4	3.926	387.2	63.5	87.99	0.825
100	7500	8418.5	14.630	364.1	2.978	232.5	42.0	89.09	0.801
75	5625	6287.6	11.680	232.1	2.131	123.8	26.8	89.46	0.749
50	3750	4245.9	9.241	145.3	1.398	53.9	16.8	88.32	0.639
25	1875	2273.5	7.465	94.8	0.665	12.8	10.9	82.47	0.424

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Ins. class	F	Weight	0 kg			IP55

Load Curve

