

Rockwell N-Series to MDM N-Series Replacement Conversion Table

Description	Rockwell N-Series P/N	MDM N-Series P/N	MDM Dwg	Speed-Torque Curve	MDM N-Series Motor Configuration File			
					UltraMaster (Ultra 100/200)	Download	UltraWare (Ultra 3000)	Download
Motor, 1000 Line Encoder	N-2302-1-F00AA	T0601T0104	33030-004	T0601T0	T0601T0NSeriesMaster(N2302).mtr		T0601T0NSeriesWare(N2302).mxf	
Motor-24V Brake, 1000 Line Encoder	N-2302-1-F04AA	T0601T0105	Call Factory					
Motor, 1000 Line Encoder	N-2304-1-F00AA	T0601B8100	33030-004	T0601B8	T0601B8NSeriesMaster(N2304).mtr		T0601B8NSeriesWare(N2304).mxf	
Motor-24V Brake, 1000 Line Encoder	N-2304-1-F04AA	T0601B8101	Call Factory					
Motor, 2000 Line Encoder	N-3406-2-H00AA	T0851A0109	31030-078	T0851A0	T0851A0NSeriesMaster(N3406).mtr		T0851A0NSeriesWAre(N3406).mxf	
Motor-24V Brake, 2000 Line Encoder	N-3406-2-H04AA	T0851A0110	Call Factory					
Motor, 2000 Line Encoder	N-3412-2-H00AA	T0851C0103	31030-078	T0851C0	T0851C0NSeriesMaster(N3412).mtr		T0851C0NSeriesWAre(N3412).mxf	
Motor-24V Brake, 2000 Line Encoder	N-3412-2-H04AA	T0851C0106	Call Factory					
Motor, 2000 Line Encoder	N-4214-2-H00AA	T1101D0102	32030-047	T1101D0	T1101D0NSeriesMaster(N4214).mtr		T1101D0NSeriesWare(N4214).mxf	
Motor-24V Brake, 2000 Line Encoder	N-4214-2-H04AA	T1101D0103	Call Factory					
Motor, 2000 Line Encoder	N-4220-2-H00AA	T1101C6100	32030-047	T1101C6	T1101C6NSeriesMaster(N4220).mtr		T1101C6NSeriesWare(N4220).mxf	
Motor-24V Brake, 2000 Line Encoder	N-4220-2-H04AA	T1101C6101	Call Factory					
Motor, 2000 Line Encoder	N-5630-2-H00AA	T1101D3100	32030-050	T1101D3	T1101D3NSeriesMaster(N5630).mtr		T1101D3NSeriesWare(N5630).mxf	
Motor-24V Brake, 2000 Line Encoder	N-5630-2-H04AA	T1101D3101	Call Factory					
Motor, 2000 Line Encoder	N-5637-2-H00AA	T1102E0103	32030-052	T1102E0	T1102E0NSeriesMaster(N5637).mtr		T1102E0NSeriesWare(N5637).mxf	
Motor-24V Brake, 2000 Line Encoder	N-5637-2-H04AA	T1102E0103	Call Factory					
Motor, 2000 Line Encoder	N-5647-2-H00AA	T1102G3100	32030-052	T1102G3	T1102G3NSeriesMaster(N5647).mtr		T1102G3NSeriesWare(N5647).mxf	
Motor-24V Brake, 2000 Line Encoder	N-5647-2-H04AA	T1102G3101	Call Factory					

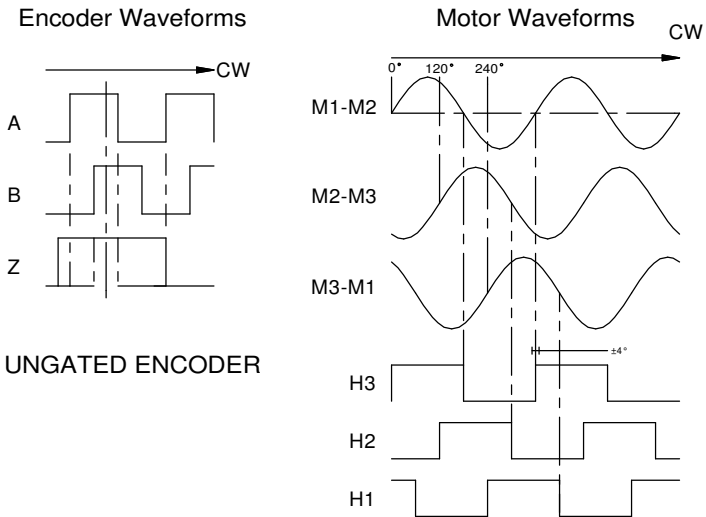
REVISIONS				
REV	ECN	DESCRIPTION	DATE	APP'D
A	DR8319	RELEASED	11/8/06	T.M.
B	ECN3230	WAS 33030-004-007, IS 33030-004, NOTES ADDED	07/03/07	J.S.

ENCODER CONN WIRING CODE	
FROM	TO PIN
OUTPUT A	A
OUTPUT A'	B
OUTPUT B	C
OUTPUT B'	D
OUTPUT Z	E
OUTPUT Z'	F
CASE GROUND	G
N/C	H
+ 5 VDC	J
+ 5 VDC	K
COMMON	L
COMMON	M
N/C	N
N/C	P
THERM	R
THERM	S
OUTPUT W (H1)	T
OUTPUT U (H3)	U
OUTPUT V (H2)	V

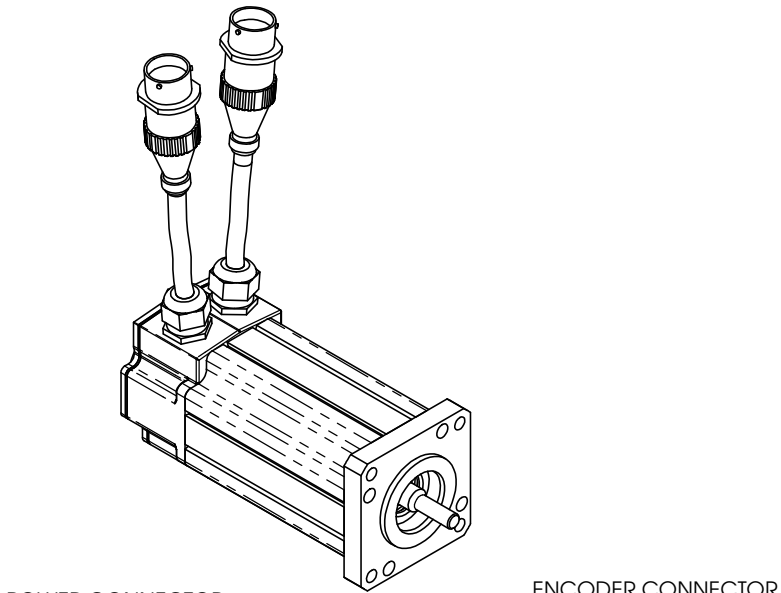
MOTOR CONN. WIRING CODE	
FROM	TO PIN
MOTOR M1	A
MOTOR M2	B
MOTOR M3	C
CASE	D
N/C	E

NOTE:
TEMPERATURE SENSOR:
CONTACTS: NORMALLY CLOSED
MAX AMPS: 6 AMP
RATED VOLTAGE: 24VDC

Clockwise rotation, viewed from the motor shaft, results in these waveforms.

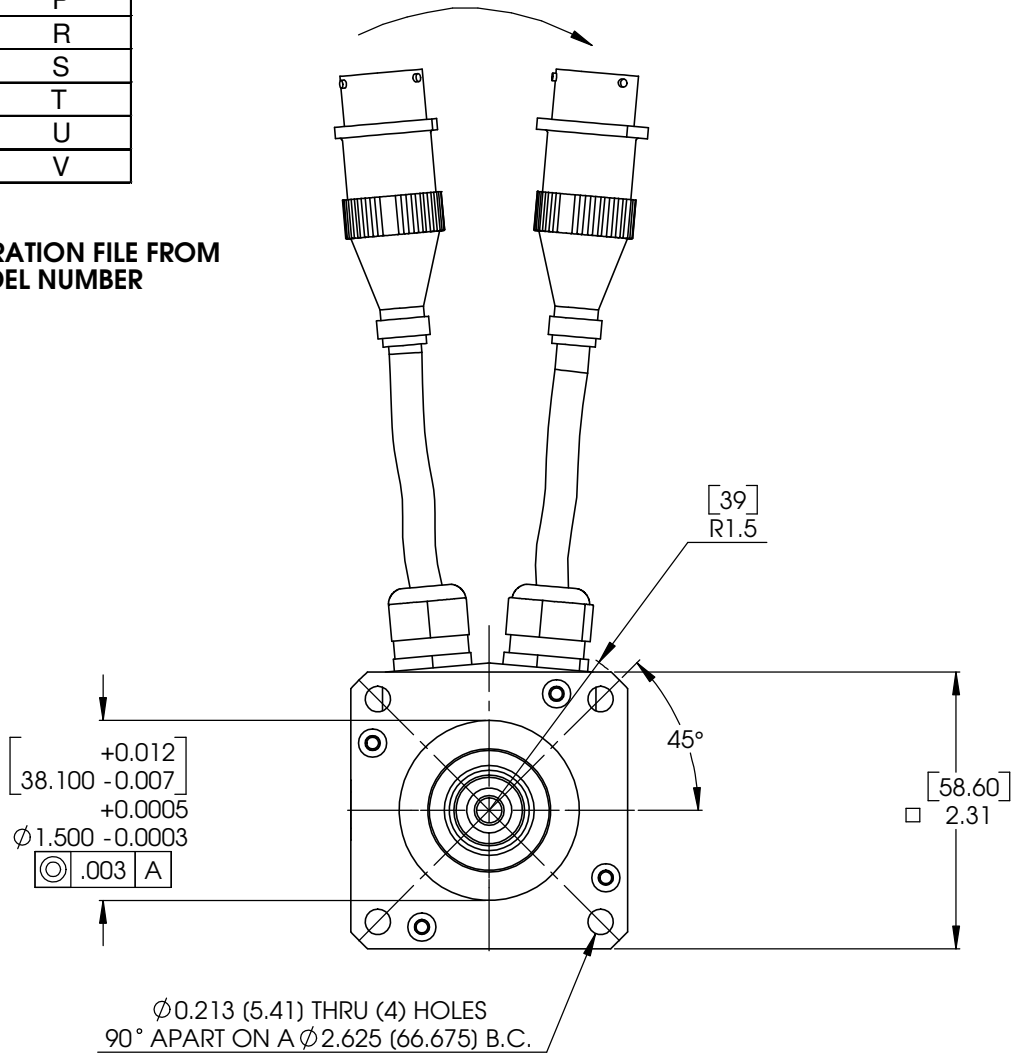
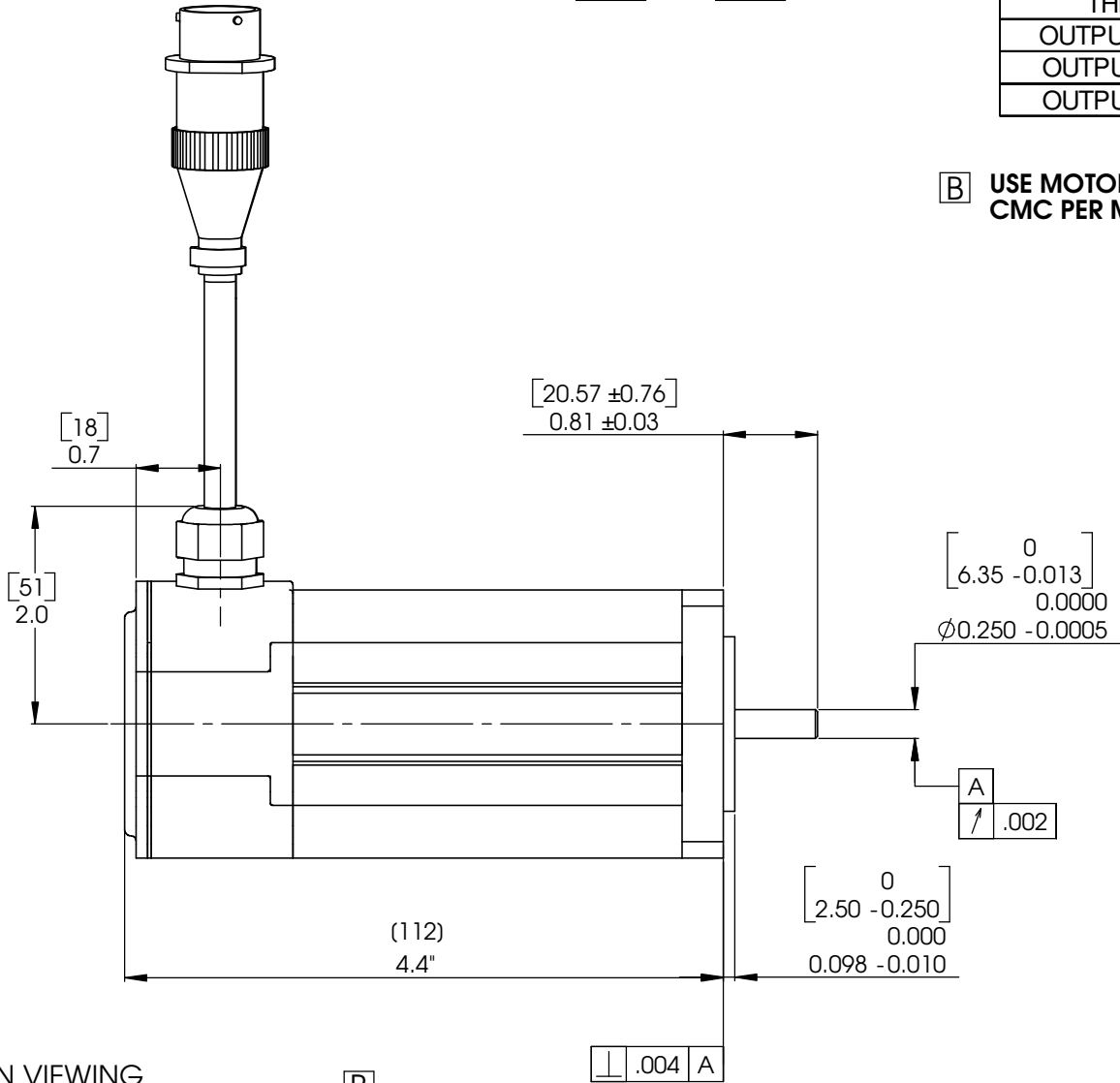
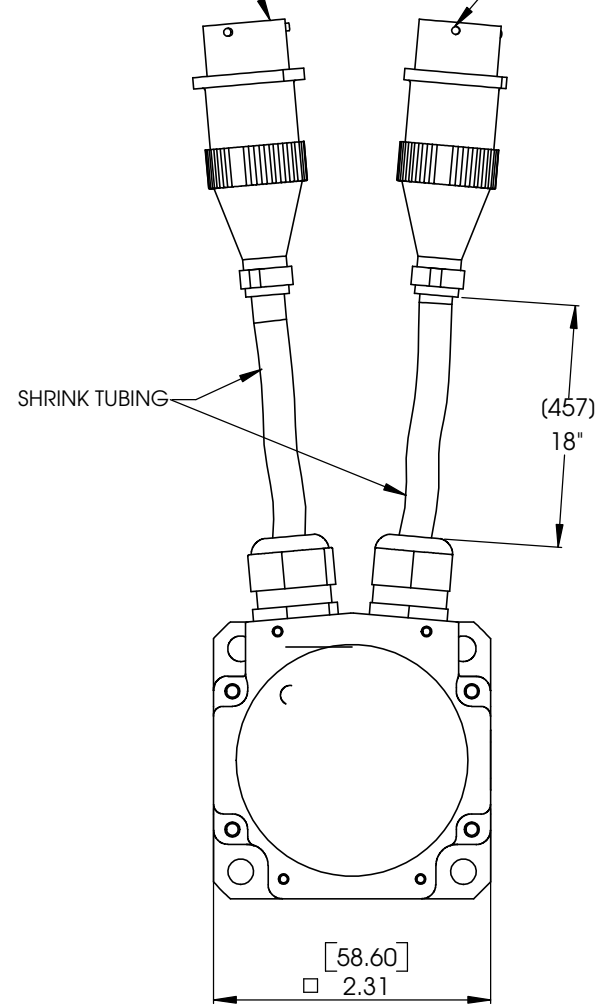


B USE MOTOR CONFIGURATION FILE FROM CMC PER MOTOR MODEL NUMBER



POWER CONNECTOR KPSE01F14-SP-A71

ENCODER CONNECTOR KPSE01F14-19P-A71



NOTES:

1. ROTATION: CLOCKWISE MOTOR ROTATION VIEWING DRIVE END OCCURS WHEN PHASE A LEADS PHASE B, PHASE B LEADS PHASE C.

B FRAME: T0601 WITH NEMA 23 FLANGE

DIMENSIONS IN BRACKETS (DUAL) ARE IN MILLIMETERS

NOTICE Information contained herein is the sole property of Cleveland Motion Controls, Torque Systems Division. This may not be reproduced, copied or traced in any manner in part or whole without the written permission by Cleveland Motion Controls, Torque Systems Division.		MILLIMETERS (mm) TOLERANCES UNLESS OTHERWISE SPECIFIED: X +/- .25 XX +/- .025 XXX +/- .0100 ANGLES N/A MATERIAL FINISH N/A		APPLICATION NEXT ASSY USED ON 60mm DRAWN BY: MEZHER 9/26/06 CHECKED APPROVED		 Cleveland Motion Controls An EMC Company Torque Systems Division	
THIS ANGLE PROJECTION 				TITLE OUTLINE N-2302 N-2304 ELECTROCRRAFT REPLACEMENT			
Drawings in millimeters (mm) and inches are dimensioned in parallel. Dimensions are given in millimeters and inches, per ASME Y14.5-1994.				SIZE D		DWG. NO. 33303-004	
				SCALE 1:1		SHEET OF 1	

CAD GENERATED DRAWING.
DO NOT MANUALLY UPDATE

CAD FILE: 33030-004.SDDRW

ENTER DRIVE LETTER BELOW(S for Sine, T for Trap)

s

ENTER UNIT LETTER BELOW(M for SI, E for English)

m

SELECT WINDING FROM DROP DOWN LIST

Ke = B8(Kv = 22 Vpk/krpm)

CHECKED:SD

all values at 25 deg c unless stated otherwise

TORQUE & CURRENT AT 40 Deg C AMBIENT

^SPECIFICATIONS

Symbol	Units	NOM	MIN	MAX
Tpk Torque,peak stall	Nm			2.5
Tc Torque,continuous stall	Nm	0.51	0.46	0.56
Ktp Torque sensitivity (L TO L)	Nm/Apeak	0.182	0.16	0.20
Kt Torque sensitivity (L TO L)	Nm/Arms	0.257	0.23	0.28
Ra Armature resistance (L TO L)	ohms	6.7	5.70	7.71
La Armature inductance (L TO L)	millihenry	8.2	5.74	10.66
Ip Amps at Tpk	Apeak	13.7	12.3	15.1
Isp Amps at Tc stall	Apeak	3.30	2.97	3.63
Is Amps at Tc stall	Arms	2.33	2.10	2.56
Kep Back EMF constant	Vpeak/Krpm	22.00	19.80	24.20
Ke Back EMF constant	Vrms/Krpm	15.56	14.00	17.12
Kep Back EMF constant	Vpeak/rad/sec	0.210	0.16	0.20
Ke Back EMF constant	Vrms/rad/sec	0.149	0.13	0.16
Ep Volts @ Tpk	Vpeak	91.79		
Fi Viscous friction	Nm/Krpm	0.005		
Tf Static friction torque	Nm	0.020		
Ec volts @ Tc	Vpeak	33.165		
Jm Moment of inertia	Kg-cm2	0.15593		
Tm Time constant,mechanical	milliseconds	2.37		
Te Time constant,electrical	milliseconds	1.22		
Rth Thermal resistance	deg C/watt	1.30		
Tth Time constant,thermal	minutes	15		
Oa Max armature temp	deg C		155	
Km Figure of Merit	Nm/(amp-ohm)	0.07		
Nls Max operating speed	rpmmax			8000
# of motor poles		8		
Wt weight	Kg	1.0		

MODEINUMBER

T0601 B8(Kv = 22 Vpk/krpm)

DRAWN: AR

APPROVED: SD

T0601

—■— RATED

—×— PEAK

MOTOR IS MOUNTED ON A 254 mmx254 mmx6.35 mm ALUMINUM PLATE IN A 40 DEG.C AMBIENT

SPEED/ TORQUE CURVE SHOWN IS RATED. TYPICAL VALUES ARE WITH IN +/- 10% OF RATING

OTHER SPECIFICATIONS

REV(Dt)

Description

A(11/11/05)

Initial Release

B(2/08/06)

Add RMS Kt and Ke

C(2/24/06)

Add # of poles

D(4/6/06)

Sine SI Ke values corrected

E(2/20/07)

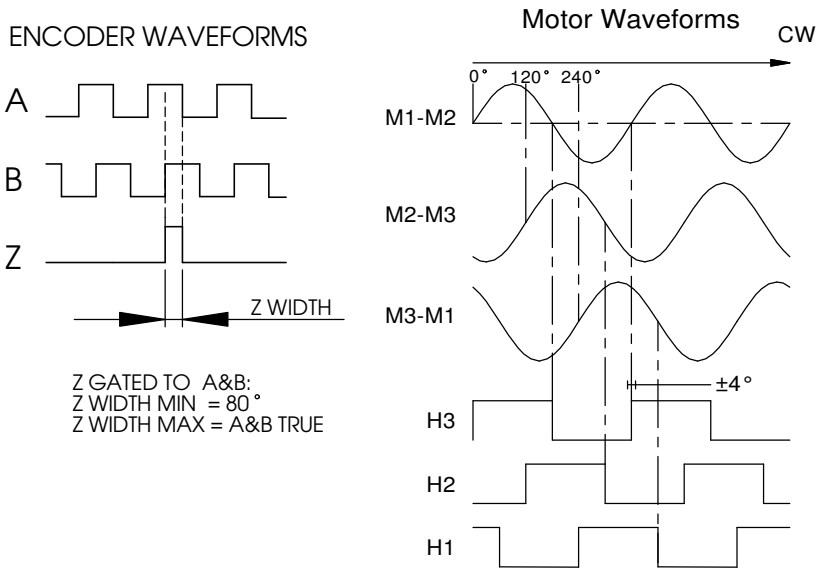
Add B8 winding

RPM	Trated Nm	Peak Voltage	Peak Current	RMS Current	Watts
0	0.510	33.2	3.30	2.33	82
400	0.505	41.7	3.27	2.31	105
800	0.500	50.1	3.23	2.28	128
1600	0.487	66.9	3.15	2.23	171
2400	0.473	83.6	3.06	2.16	210
3200	0.456	100.0	2.95	2.09	246
4000	0.436	116.3	2.82	1.99	274
4800	0.414	132.5	2.68	1.90	300
5600	0.388	148.4	2.51	1.77	314
6400	0.358	164.1	2.32	1.64	323
7200	0.324	179.5	2.10	1.48	320
8000	0.284	194.5	1.84	1.30	306

Rated Speed	Rated Torque
7200	0.3
Rated watts 245	

REVISIONS				
REV	ECN	DESCRIPTION	DATE	APP'D
A	DR8318	RELEASED	11/1/06	T.M.
B	ECN3230	ADDED CONFIG AND FRAME NOTES	07/03/07	J.S.

Clockwise rotation, viewed from the motor shaft, results in these waveforms.

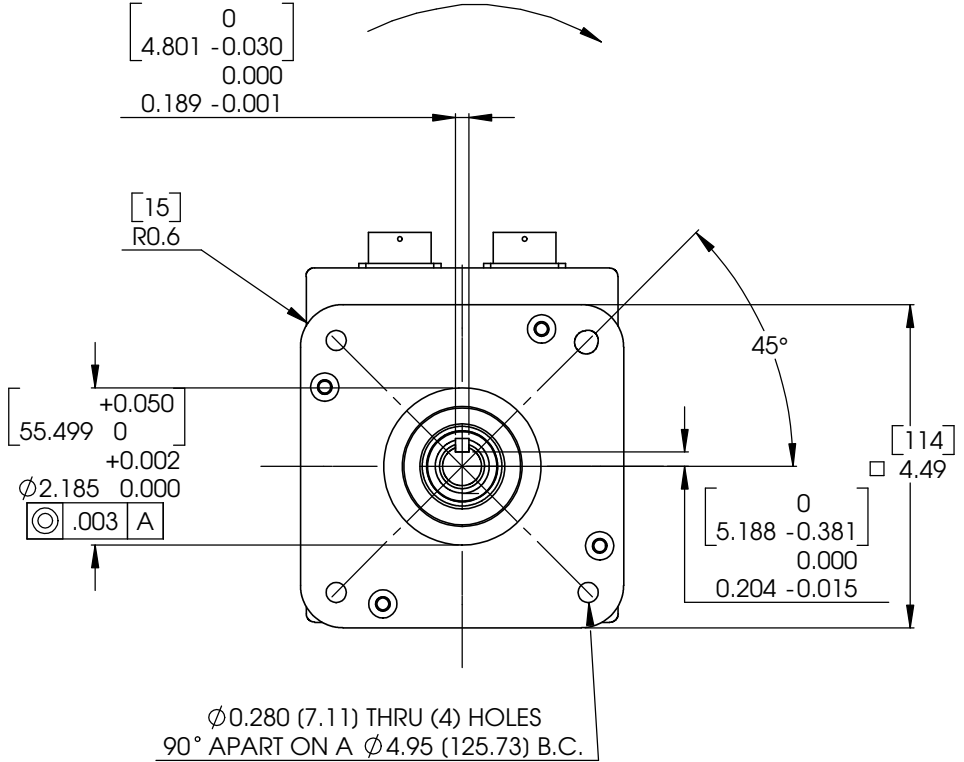
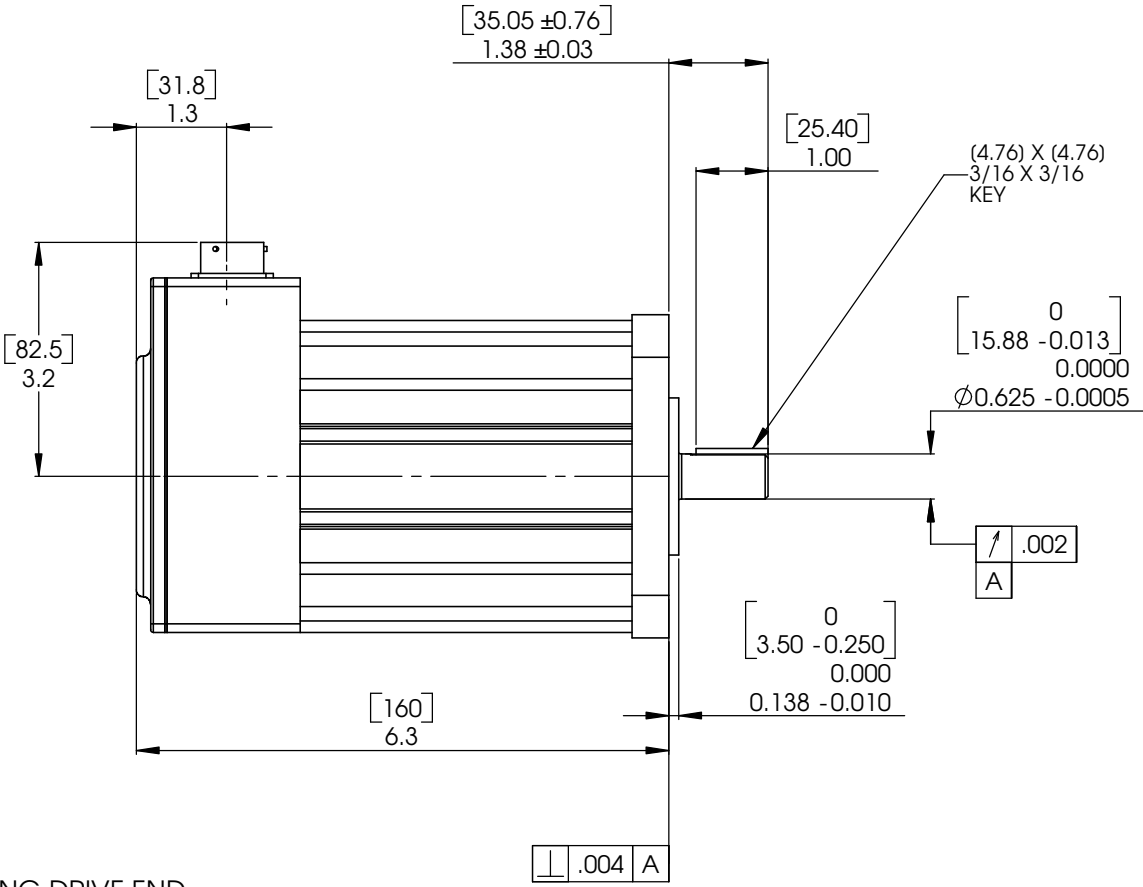
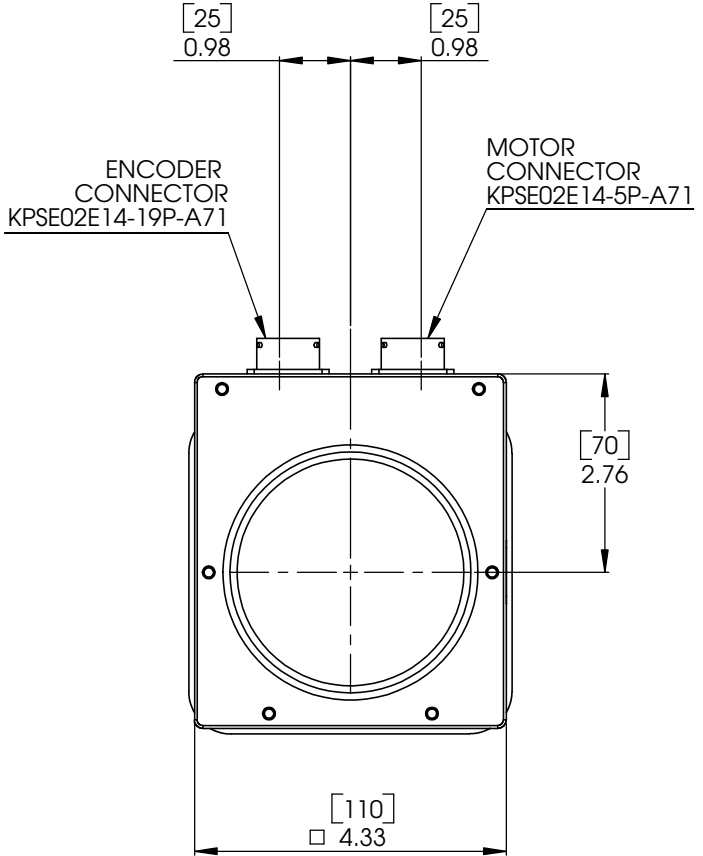
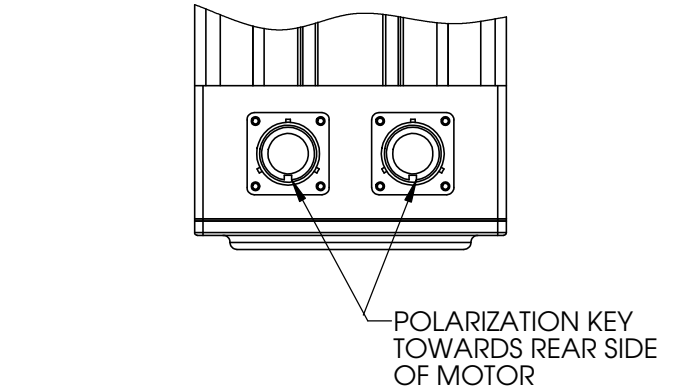


ENCODER CONN WIRING CODE	
FROM	TO PIN
OUTPUT A	A
OUTPUT A'	B
OUTPUT B	C
OUTPUT B'	D
OUTPUT Z	E
OUTPUT Z'	F
CASE GROUND	G
N/A	H
+ 5 VDC	J
+ 5 VDC	K
COMMON	L
COMMON	M
N/A	N
N/A	P
THERMOSTAT	R
THERMOSTAT	S
OUTPUT W (H1)	T
OUTPUT U (H3)	U
OUTPUT V (H2)	V

MOTOR CONN. WIRING CODE	
FROM	TO PIN
MOTOR M1	A
MOTOR M2	B
MOTOR M3	C
CASE	D

NOTE:
TEMPERATURE SENSOR:
CONTACTS: NORMALLY CLOSED
MAX AMPS: 6 AMP
RATED VOLTAGE: 24VDC

USE MOTOR CONFIGURATION FILE FROM CMC PER MOTOR MODEL NUMBER



- NOTES:
1. ROTATION: CLOCKWISE MOTOR ROTATION VIEWING DRIVE END OCCURS WHEN PHASE A LEADS PHASE B, PHASE B LEADS PHASE C.
 2. THE INDEX PULSE OCCURS WHEN FACING THE MOTOR, THE SHAFT KEYWAY IS ORIENTED 90° ± 10° CLOCKWISE (MECHANICAL) FROM CONNECTORS.

FRAME: T1101 WITH NEMA 42 FLANGE

DIMENSIONS IN BRACKETS (DUAL) ARE IN MILLIMETERS	
NOTICE Information contained herein is the sole property of Cleveland Motion Controls, Torque Systems Division. This may not be reproduced, copied or traced in any manner in part or whole without the written permission by Cleveland Motion Controls, Torque Systems Division.	
MILLIMETERS (mm) TOLERANCES UNLESS OTHERWISE SPECIFIED: X ±0.25 XX ±0.125 XXX ±0.100 ANGLES ±0.30 THIRD ANGLE PROJECTION DIMENSIONS IN MILLIMETERS (mm) and inches (in) are shown. Interpret dim. and tol. per ASME Y14.5M-1994.	
APPLICATION NEXT ASSY USED ON 110mm DRAWN T.MEZHER 1/25/07 CHECKED APPROVED	
Cleveland Motion Controls An Ingersoll Rand Company Torque Systems Division TITLE OUTLINE N-4214, N-4220 ELECTROCRRAFT REPLACEMENT SIZE D DWG. NO. 32030-047 REV B SCALE 1:1 SHEET 1 OF 1	

CAD GENERATED DRAWING.
DO NOT MANUALLY UPDATE

ENTER DRIVE LETTER BELOW(S for Sine, T for Trap)

s

ENTER UNIT LETTER BELOW(M for SI, E for English)

m

SELECT WINDING FROM DROP DOWN LIST

Ke = D0(Ke = 50 Vpk/krpm)

					MODE/NUMBER	
					T1101 D0(Ke = 50 Vpk/krpm)	
					DRAWN: AR	
					APPROVED: SD	
					STD CUST	
					YES	
					SD	
					T1101	
					SPEED (RPM)	
					TORQUE (Nm)	
					RATED PEAK	
					MOTOR IS MOUNTED ON A 304.8 mmx304.8 mmx12.7 mm ALUMINUM PLATE IN A 40 DEG.C AMBIENT	
					SPEED/ TORQUE CURVE SHOWN IS RATED. TYPICAL VALUES ARE WITH IN +/- 10% OF RATING	
					OTHER SPECIFICATIONS	
					REV(Dt) Description	
					A(11/11/05) Initial Release	
					B(2/10/06) Add RMS Kt and Ke	
					C(3/20/06) Add # of poles	
					D(4/6/06) Sine SI Ke values corrected	
					E(2/20/07) Add C6 and D3 winding	
					F(5/07/07) Reconfigured speed/torque	

RPM	Trated Nm	Peak Voltage	Peak Current	RMS Current	Watts
0	4.845	21.5	13.79	9.75	222
300	4.821	36.4	13.72	9.70	398
600	4.791	51.3	13.63	9.64	572
1200	4.711	80.9	13.41	9.48	907
1800	4.605	110.4	13.10	9.26	1221
2400	4.471	139.8	12.72	8.99	1510
3000	4.306	169.1	12.25	8.66	1766
3600	4.108	198.2	11.69	8.27	1983
4200	3.871	227.2	11.02	7.79	2146
4800	3.590	255.9	10.22	7.23	2247
5400	3.255	284.4	9.26	6.55	2266
6000	2.847	312.6	8.10	5.73	2182

Rated Speed	Rated Torque
5400	3.3
Rated watts 1844	

ENTER DRIVE LETTER BELOW(S for Sine, T for Trap)

s

ENTER UNIT LETTER BELOW(M for SI, E for English)

m

SELECT WINDING FROM DROP DOWN LIST

Ke = C6(Ke = 34 Vpk/krpm)

CHECKED:SD

all values at 25 deg c unless stated otherwise

TORQUE & CURRENT AT 40 Deg C AMBIENT

^SPECIFICATIONS

Symbol	Units	NOM	MIN	MAX
Tpk	Torque,peak stall	Nm		12.0
Tc	Torque,continuous stall	Nm	5.07	4.56
Ktp	Torque sensitivity (L TO L)	Nm/Apeak	0.281	0.253
Kt	Torque sensitivity (L TO L)	Nm/Arms	0.398	0.358
Ra	Armature resistance (L TO L)	ohms	.44	0.37
La	Armature inductance (L TO L)	millihenry	2.3	1.61
Ip	Amps at Tpk	Apeak	42.6	38.3
Isp	Amps at Tc stall	Apeak	21.20	19.08
Is	Amps at Tc stall	Arms	14.99	13.49
Kep	Back EMF constant	Vpeak/Krpm	34.00	30.60
Ke	Back EMF constant	Vrms/Krpm	24.05	21.65
Kep	Back EMF constant	Vpeak/rad/sec	0.325	0.253
Ke	Back EMF constant	Vrms/rad/sec	0.230	0.207
Ep	Volts @ Tpk	Vpeak	18.74	
Fi	Viscous friction	Nm/Krpm	0.031	
Tf	Static friction torque	Nm	0.034	
Ec	volts @ Tc	Vpeak	13.992	
Jm	Moment of inertia	Kg-cm2	2.37288	
Tm	Time constant,mech	milliseconds	0.99	
Te	Time constant,elect	milliseconds	5.23	
Rth	Thermal resistance	deg C/watt	0.51	
Tth	Time constant,thermal	minutes	25	
Oa	Max armature temp	deg C		155
Km	Figure of Merit	Nm/(amp-ohm)	0.424	
Nls	Max operating speed	rpmmax		6000
	# of motor poles		8	
Wt	weight	Kg	4.9	

MODE/NUMBER

T1101 C6(Ke = 34 Vpk/krpm)

DRAWN: AR

APPROVED: SD

T1101

RPM	Nm	Peak Voltage	Peak Current	RMS Current	Watts
0	5.066	14.0	21.20	14.99	222
300	5.042	24.1	21.10	14.92	407
600	5.011	34.2	20.97	14.83	588
1200	4.928	54.4	20.62	14.58	939
1800	4.818	74.5	20.16	14.26	1270
2400	4.678	94.5	19.58	13.85	1574
3000	4.507	114.4	18.86	13.34	1843
3600	4.301	134.3	18.00	12.73	2069
4200	4.054	154.0	16.97	12.00	2241
4800	3.762	173.6	15.74	11.13	2347
5400	3.411	193.0	14.27	10.09	2370
6000	2.986	212.3	12.50	8.84	2286

Rated Speed5400

Rated Torque3.4

Rated watts1932

MOTOR IS MOUNTED ON A 304.8 mmx304.8 mmx12.7 mm ALUMINUM PLATE IN A 40 DEG.C AMBIENT

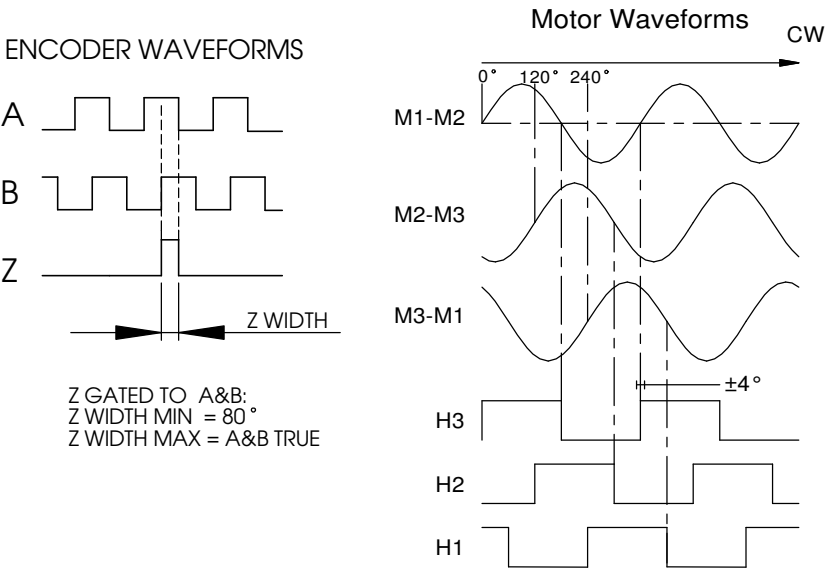
SPEED/ TORQUE CURVE SHOWN IS RATED. TYPICAL VALUES ARE WITH IN +/- 10% OF RATING

SINUSOIDAL DRIVE

REV(Dt)	Description
A(11/11/05)	Initial Release
B(2/10/06)	Add RMS Kt and Ke
C(3/20/06)	Add # of poles
D(4/6/06)	Sine SI Ke values corrected
E(2/20/07)	Add C6 and D3 winding
F(5/07/07)	Reconfigured speed/torque

REVISIONS				
REV	ECN	DESCRIPTION	DATE	APP'D
A	DR8318	RELEASED	11/1/06	T.M.
B	ECN3230	ADDED MTR CONFIG AND FRAME NOTES	07/03/07	J.S.

Clockwise rotation, viewed from the motor shaft, results in these waveforms.

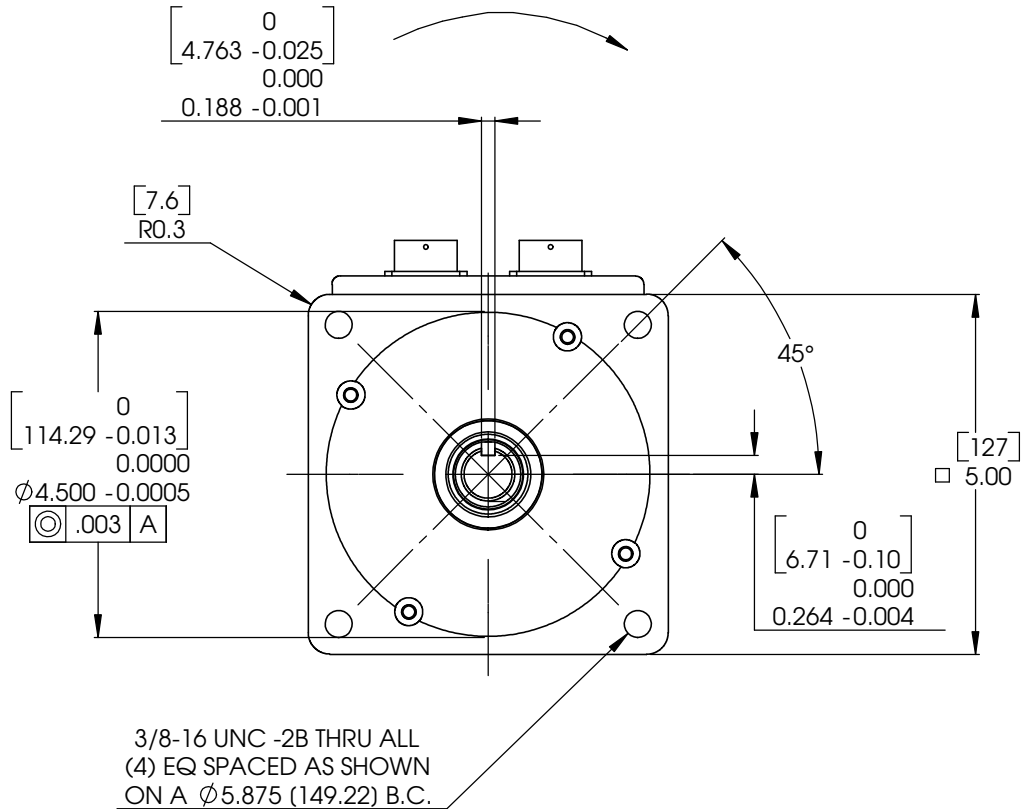
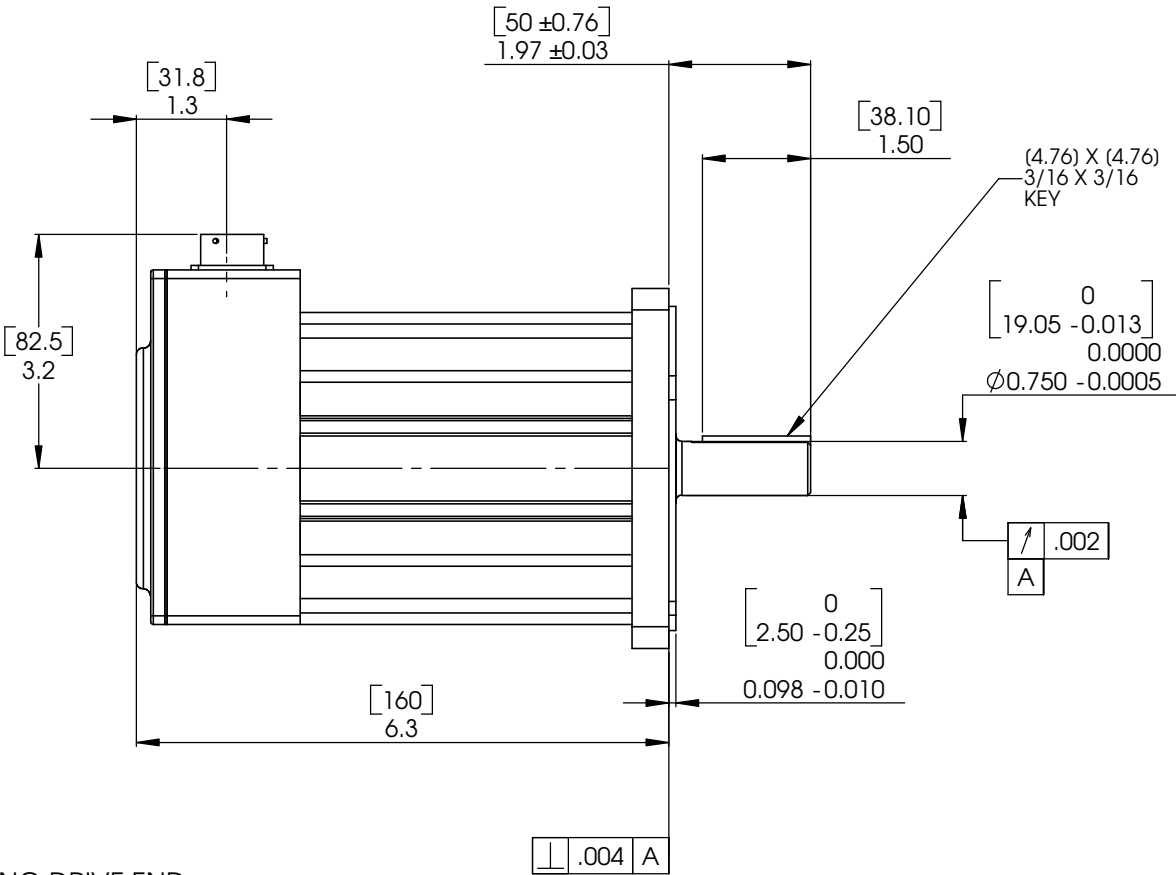
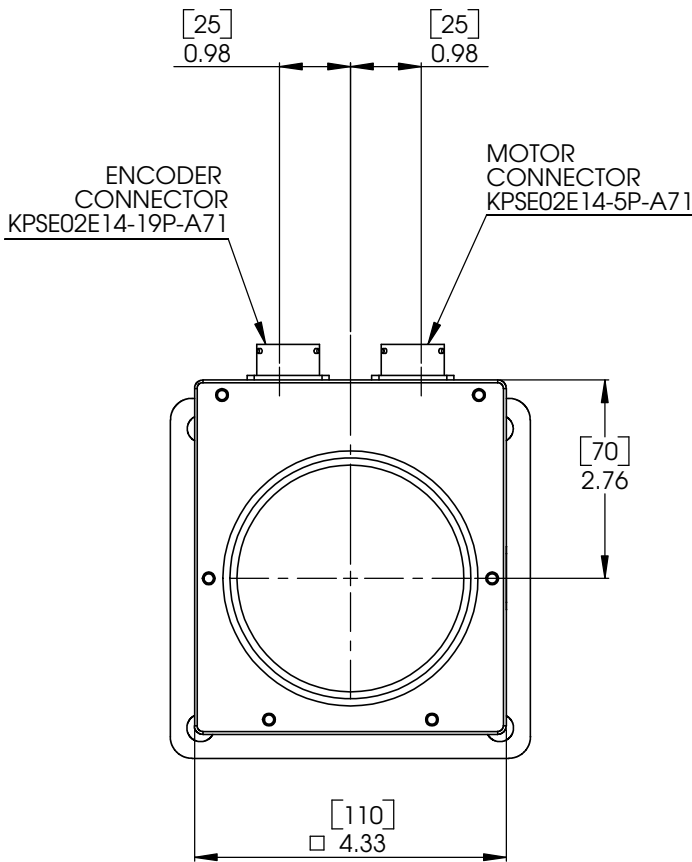


ENCODER CONN WIRING CODE	
FROM	TO PIN
OUTPUT A	A
OUTPUT A'	B
OUTPUT B	C
OUTPUT B'	D
OUTPUT Z	E
OUTPUT Z'	F
CASE GROUND	G
N/A	H
+ 5 VDC	J
+ 5 VDC	K
COMMON	L
COMMON	M
N/A	N
N/A	P
THERMOSTAT	R
THERMOSTAT	S
OUTPUT W (H1)	T
OUTPUT U (H3)	U
OUTPUT V (H2)	V

MOTOR CONN. WIRING CODE	
FROM	TO PIN
MOTOR M1	A
MOTOR M2	B
MOTOR M3	C
CASE	D

NOTE:
TEMPERATURE SENSOR:
CONTACTS: NORMALLY CLOSED
MAX AMPS: 6 AMP
RATED VOLTAGE: 24VDC

B USE MOTOR CONFIGURATION FILE FROM CMC PER MOTOR MODEL NUMBER



NOTES:

1. ROTATION: CLOCKWISE MOTOR ROTATION VIEWING DRIVE END OCCURS WHEN PHASE A LEADS PHASE B, PHASE B LEADS PHASE C.
2. THE INDEX PULSE OCCURS WHEN FACING THE MOTOR, THE SHAFT KEYWAY IS ORIENTED 90° ± 10° CLOCKWISE (MECHANICAL) FROM CONNECTORS.

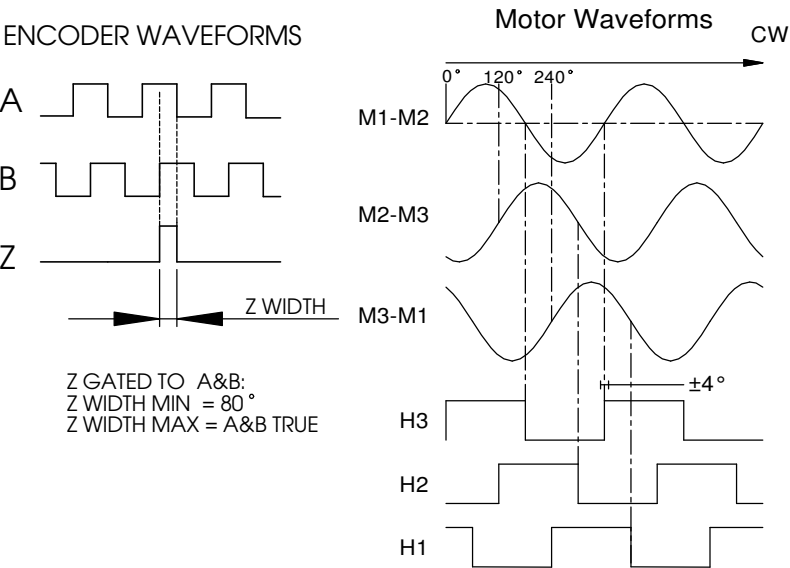
B FRAME: T1101 WITH NEMA 56 FLANGE

DIMENSIONS IN BRACKETS (DUAL) ARE IN MILLIMETERS

NOTICE		MILLIMETERS (mm)		TOLERANCES UNLESS OTHERWISE SPECIFIED		APPLICATION		Cleveland Motion Controls	
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THIRD ANGLE PROJECTION		XX		+/- 0.025		110mm		TITLE	
Angles		XXX		+/- 0.000		DRAWN		1/MEZHER 1/29/07	
MATERIAL		N/A		CHECKED		APPROVED		OUTLINE N-5630 ELECTROCRAFT REPLACEMENT	
FINISH		N/A		DATE		DWG. NO.		REV	
N/A		N/A		D		32030-050		B	
CAD FILE: 32030-050.SDDRW		SCALE: 1:1		SHEET 1 OF 1					

REVISIONS				
REV	ECN	DESCRIPTION	DATE	APP'D
A	DR8384	RELEASED	1/29/07	T.M.
B	ECN3230	LABEL REMOVED FROM DRG. NOTES ADDED	07/03/07	J.S.

Clockwise rotation, viewed from the motor shaft, results in these waveforms.

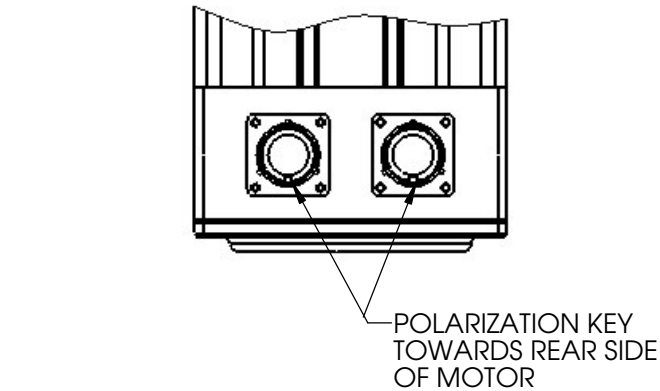


ENCODER CONN WIRING CODE	
FROM	TO PIN
OUTPUT A	A
OUTPUT A'	B
OUTPUT B	C
OUTPUT B'	D
OUTPUT Z	E
OUTPUT Z'	F
CASE GROUND	G
N/A	H
+ 5 VDC	J
+ 5 VDC	K
COMMON	L
COMMON	M
N/A	N
N/A	P
THERMOSTAT	R
THERMOSTAT	S
OUTPUT W (H1)	T
OUTPUT U (H3)	U
OUTPUT V (H2)	V

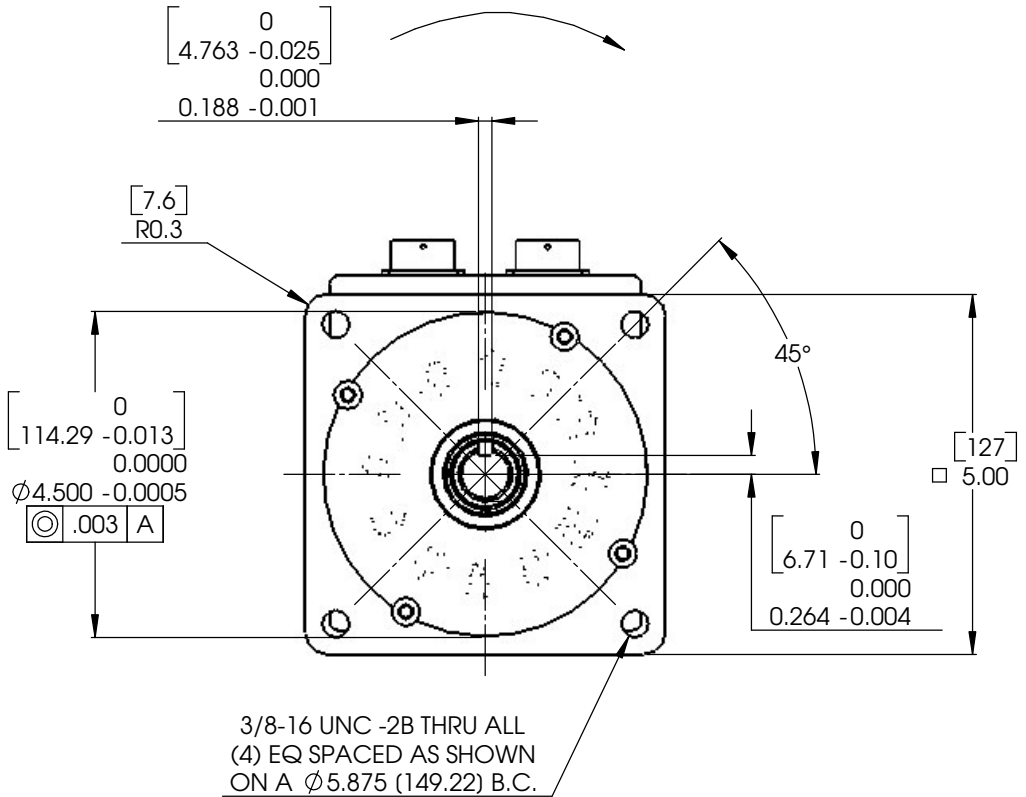
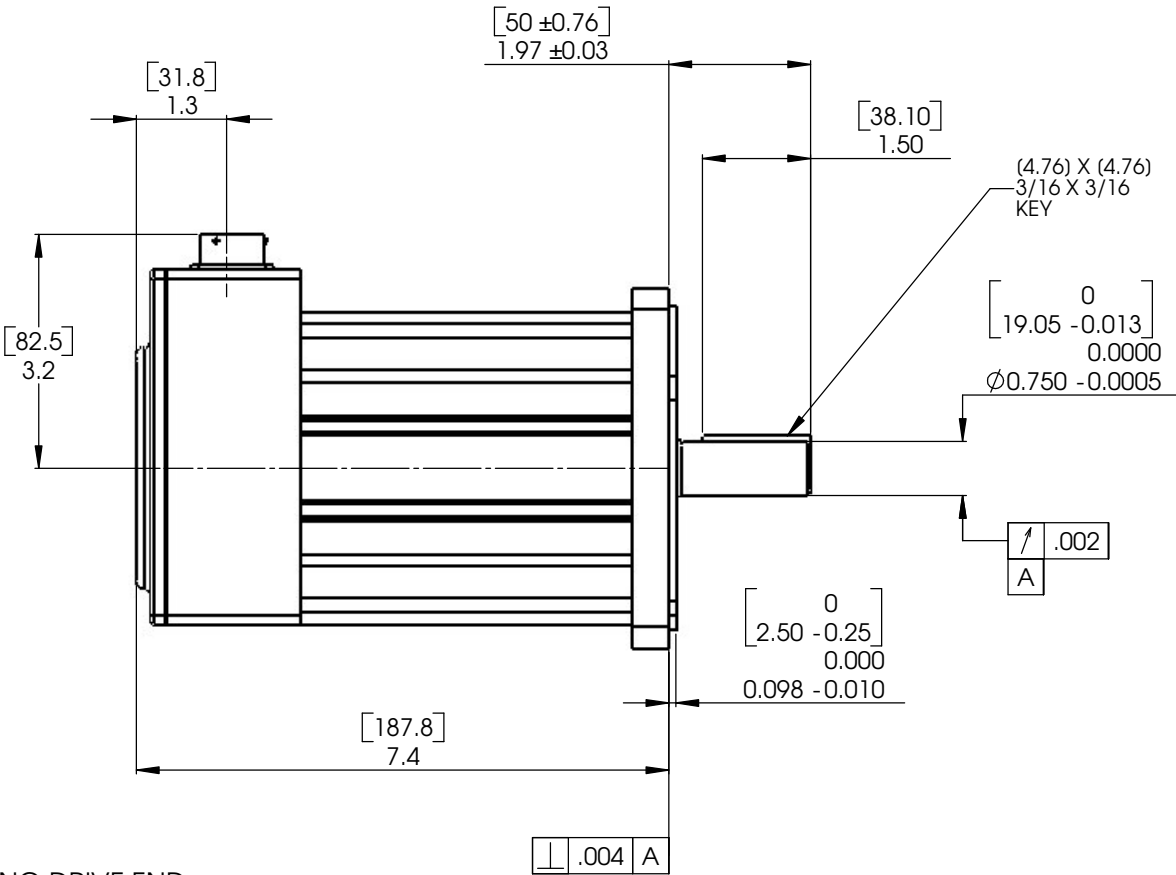
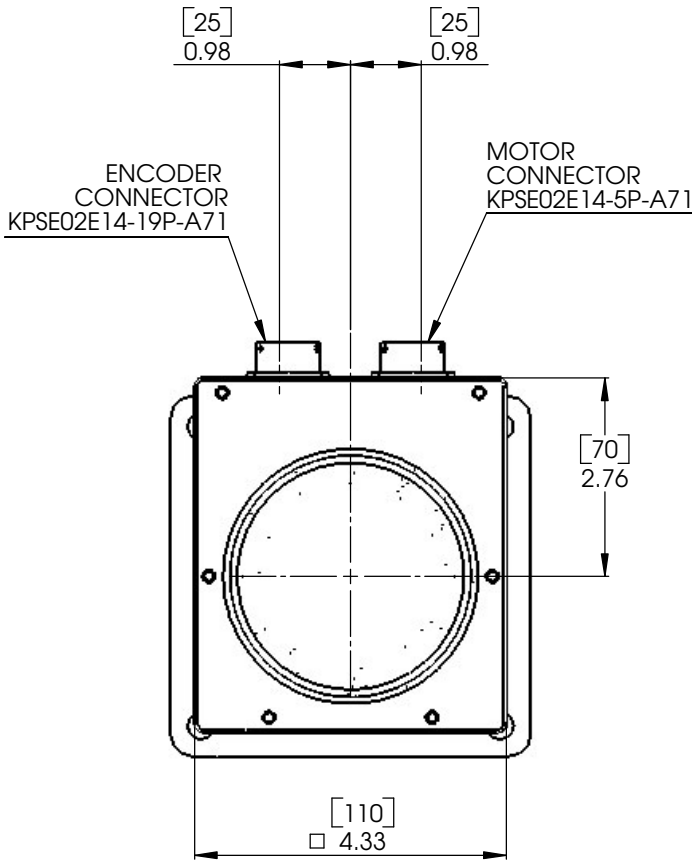
MOTOR CONN. WIRING CODE	
FROM	TO PIN
MOTOR M1	A
MOTOR M2	B
MOTOR M3	C
CASE	D

NOTE:
TEMPERATURE SENSOR:
CONTACTS: NORMALLY CLOSED
MAX AMPS: 6 AMP
RATED VOLTAGE: 24VDC

B USE MOTOR CONFIGURATION FILE FROM CMC PER MOTOR MODEL NUMBER



POLARIZATION KEY
TOWARDS REAR SIDE
OF MOTOR



- NOTES:
1. ROTATION: CLOCKWISE MOTOR ROTATION VIEWING DRIVE END OCCURS WHEN PHASE A LEADS PHASE B, PHASE B LEADS PHASE C.
 2. THE INDEX PULSE OCCURS WHEN FACING THE MOTOR, THE SHAFT KEYWAY IS ORIENTED 90° ± 10° CLOCKWISE (MECHANICAL) FROM CONNECTORS.

B FRAME: T1102 with nema 56 flange

DIMENSIONS IN BRACKETS (DUAL) ARE IN MILLIMETERS

NOTICE Information contained herein is the sole property of Cleveland Motion Controls, Torque Systems Division. This may not be reproduced, copied or traced in any manner in part or whole without the written permission by Cleveland Motion Controls, Torque Systems Division.		MILLIMETERS (mm) TOLERANCES UNLESS OTHERWISE SPECIFIED: X ± 0.25 XX ± 0.25 XXX ± 0.100 ANGLES ± 0-30°		APPLICATION NEXT ASSY USED ON 110mm		 Cleveland Motion Controls An  Company Torque Systems Division	
THIRD ANGLE PROJECTION 		MATERIAL N/A		DRAWN BY MEZHER 1/29/07 CHECKED APPROVED		TITLE OUTLINE N-5637, N-5647 ELECTROCRAFT REPLACEMENT	
FINISH N/A				SIZE DWG. NO. REV. D 32030-052 B		SCALE 1:1 SHEET 1 OF 1	

ENTER DRIVE LETTER BELOW(S for Sine, T for Trap)

ENTER BUS VOLT BELOW(Vdc)

ENTER UNIT LETTER BELOW(M for SI, E for English)

SELECT WINDING FROM DROP DOWN LIST

Ke = E0(Ke = 60 Vpk/krpm)

CHECKED:SD

all values at 25 deg c unless stated otherwise

TORQUE & CURRENT AT 40 Deg C AMBIENT

^SPECIFICATIONS

Symbol	Units	NOM	MIN	MAX
Tpk Torque,peak stall	Nm			21.9
Tc Torque,continuous stall	Nm	8.29	7.46	9.12
Ktp Torque sensitivity (L TO L)	Nm/Apeak	0.496	0.446	0.546
Kt Torque sensitivity (L TO L)	Nm/Arms	0.702	0.632	0.772
Ra Armature resistance (L TO L)	ohms	0.58	0.49	0.67
La Armature inductance (L TO L)	millihenry	3.6	2.52	4.68
Ip Amps at Tpk	Apeak	44.2	39.8	48.6
Isp Amps at Tc stall	Apeak	19.66	17.69	21.63
Is Amps at Tc stall	Arms	13.90	12.51	15.29
Kep Back EMF constant	Vpeak/Krpm	60.00	54.00	66.00
Ke Back EMF constant	Vrms/Krpm	42.43	38.19	46.67
Kep Back EMF constant	Vpeak/rad/sec	0.573	0.446	0.546
Ke Back EMF constant	Vrms/rad/sec	0.405	0.365	0.446
Ep Volts @ Tpk	Vpeak	25.64		
Fi Viscous friction	Nm/Krpm	0.350		
Tf Static friction torque	Nm	0.500		
Ec volts @ Tc	Vpeak	17.104		
Jm Moment of inertia	Kg-cm2	4.29379		
Tm Time constant,mech	milliseconds	0.76		
Te Time constant,elect	milliseconds	6.21		
Rth Thermal resistance	deg C/watt	0.45		
Tth Time constant,thermal	minutes	28		
Oa Max armature temp	deg C			155
Km Figure of Merit	Nm/(amp-ohm)	0.65		
Nls Max operating speed	rpmmax			5237
# of motor poles		8		
Wt weight	Kg	6.7		

MODE NUMBER

T1102 E0(Ke = 60 Vpk/krpm)

DRAWN: AR

STD

CUST

APPROVED:

SD

T1102

Speed (RPM)	Torque (Nm) - RATED	Torque (Nm) - PEAK
5200	1.0	15.0
4000	2.0	18.0
3000	3.0	20.0
2000	4.0	22.0
1000	5.0	24.0
0	10.0	25.0

OTHER SPECIFICATIONS

REV(Dt)	Description
A(11/11/05)	Initial Release
B(2/10/06)	Add RMS Kt and Ke
C(3/20/06)	Add # of poles
D(4/6/06)	Sine SI Ke values corrected
E(2/20/07)	Add G3 winding
F(5/07/07)	Reconfigured speed/torque

MOTOR IS MOUNTED ON A 304.8 mmx304.8 mmx12.7 mm ALUMINUM PLATE IN A 40 DEG.C AMBIENT

SPEED/ TORQUE CURVE SHOWN IS RATED. TYPICAL VALUES ARE WITH IN +/- 10% OF RATING

SINUSOIDAL DRIVE

RPM	Trated Nm	Peak Voltage	Peak Current	RMS Current	Watts
0	8.290	17.1	19.66	13.90	252
262	8.249	32.7	19.56	13.83	516
524	8.199	48.4	19.44	13.75	776
1047	8.071	79.5	19.14	13.53	1280
1571	7.902	110.6	18.74	13.25	1759
2095	7.691	141.6	18.24	12.90	2203
2619	7.434	172.5	17.63	12.47	2603
3142	7.128	203.2	16.90	11.95	2945
3666	6.766	233.9	16.04	11.34	3223
4190	6.338	264.5	15.03	10.63	3420
4713	5.834	294.8	13.83	9.78	3512
5237	5.231	325.0	12.40	8.77	3475

Rated Speed	Rated Torque
4713	5.8

Rated watts
2884

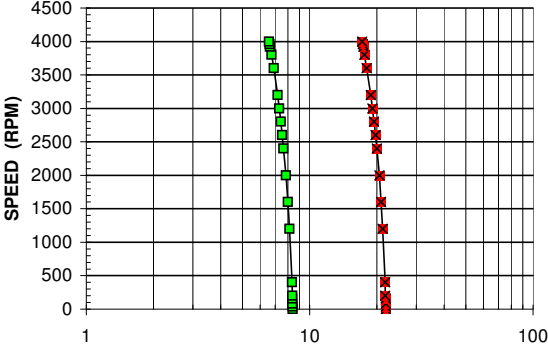
ENTER DRIVE LETTER BELOW(S for Sine, T for Trap)

ENTER BUS VOLT BELOW(Vdc)

ENTER UNIT LETTER BELOW(M for SI, E for English)

SELECT WINDING FROM DROP DOWN LIST

Ke = G3(Ke = 77 Vpk/krpm)

		CHECKED:	SD			MODE NUMBER		T1102 G3(Ke = 77 Vpk/krpm)		DRAWN:	AR
		all values at 25 deg c unless stated otherwise						STD	CUST	APPROVED:	
		TORQUE & CURRENT AT 40 Deg C AMBIENT						YES		SD	
		^SPECIFICATIONS				T1102 					
Symbol	Units	NOM	MIN	MAX							
Tpk Torque,peak stall	Nm			21.9							
Tc Torque,continuous stall	Nm	8.39	7.55	9.23							
Ktp Torque sensitivity (L TO L)	Nm/Apeak	0.637	0.573	0.701							
Kt Torque sensitivity (L TO L)	Nm/Arms	0.900	0.810	0.990							
Ra Armature resistance (L TO L)	ohms	.932	0.79	1.07							
La Armature inductance (L TO L)	millihenry	5.9	4.13	7.67							
Ip Amps at Tpk	Apeak	34.4	31.0	37.8							
Isp Amps at Tc stall	Apeak	15.51	13.96	17.06							
Is Amps at Tc stall	Arms	10.97	9.87	12.07							
Kep Back EMF constant	Vpeak/Krpm	77.00	69.30	84.70							
Ke Back EMF constant	Vrms/Krpm	54.46	49.01	59.91							
Kep Back EMF constant	Vpeak/rad/sec	0.735	0.573	0.701							
Ke Back EMF constant	Vrms/rad/sec	0.520	0.468	0.572							
Ep Volts @ Tpk	Vpeak	32.06									
Fi Viscous friction	Nm/Krpm	0.350									
Tf Static friction torque	Nm	0.500									
Ec volts @ Tc	Vpeak	21.683									
Jm Moment of inertia	Kg-cm2	4.29379									
Tm Time constant,mech	milliseconds	0.74									
Te Time constant,elect	milliseconds	6.33									
Rth Thermal resistance	deg C/watt	0.45									
Tth Time constant,thermal	minutes	28									
Oa Max armature temp	deg C		155								
Km Figure of Merit	Nm/(amp-ohm)	0.66									
Nls Max operating speed	rpmmax			4000							
# of motor poles		8									
Wt weight	Kg	6.7									
					OTHER SPECIFICATIONS						
					SINUSOIDAL DRIVE						
					REV(Dt)		Description				
					A(11/11/05)		Initial Release				
					B(2/10/06)		Add RMS Kt and Ke				
					C(3/20/06)		Add # of poles				
					D(4/6/06)		Sine SI Ke values corrected				
					E(2/20/07)		Add G3 winding				
					F(5/07/07)		Reconfigured speed/torque				

RPM	Trated Nm	Peak Voltage	Peak Current	RMS Current	Watts
0	8.393	21.7	15.51	10.97	252
200	8.363	37.0	15.45	10.92	456
400	8.327	52.3	15.39	10.88	659
800	8.238	82.9	15.22	10.76	1055
1200	8.126	113.4	15.01	10.61	1437
1600	7.991	143.8	14.76	10.44	1804
2000	7.830	174.2	14.47	10.23	2149
2400	7.642	204.5	14.12	9.98	2468
2800	7.427	234.8	13.72	9.70	2759
3200	7.181	265.0	13.27	9.38	3015
3600	6.901	295.0	12.75	9.02	3233
4000	6.585	325.0	12.17	8.61	3403

Rated Speed	Rated Torque
4000	6.6
Rated watts	2763