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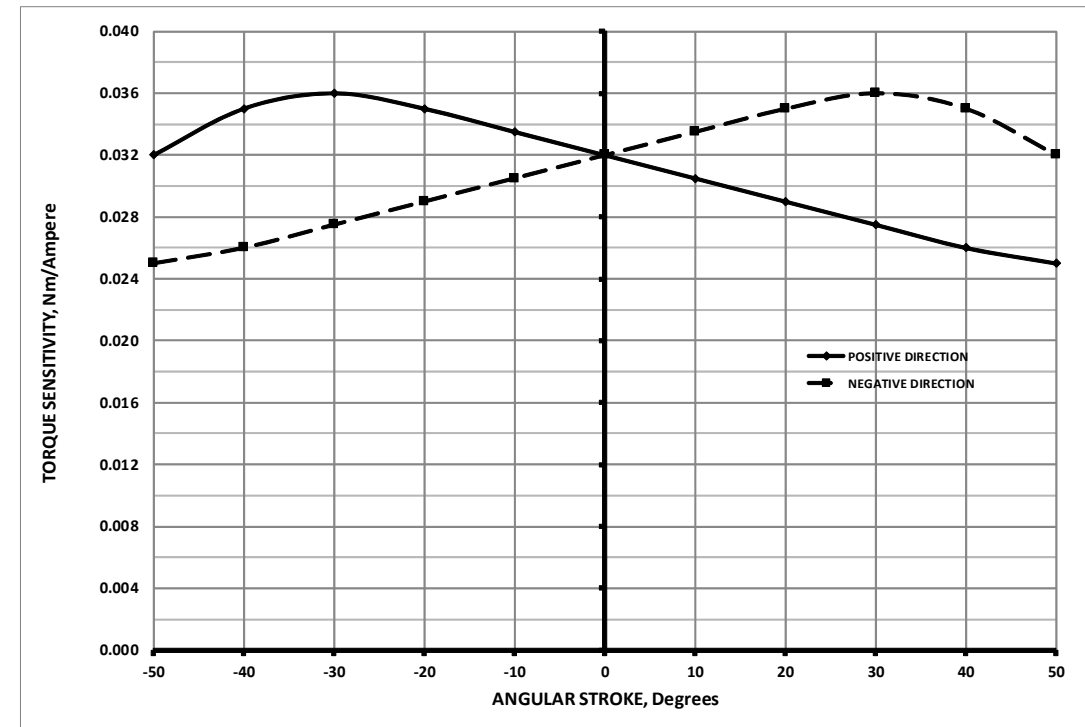
RA27-10-000A

X1

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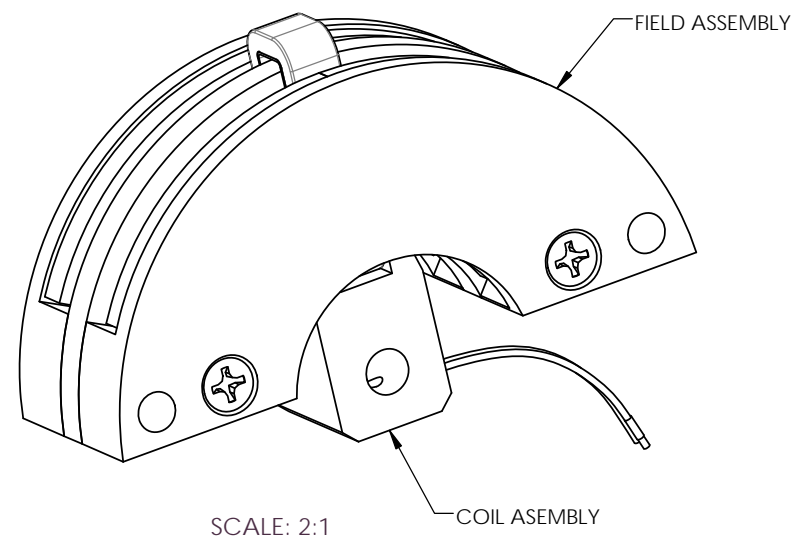
LTR	ECO NO.	DESCRIPTION	DRN	APP'D	DATE
X1	170086	INITIAL RELEASE	RG	MG	03/23/17

Winding Constants *	Units	Tol	Symbol	Wdg	A
DC Resistance	Ohms	± 12.5%	R	3.3	
Voltage @ T _{PS}	Volts	Nominal	V _{PS}	11.2	
Current @ T _{PS}	Amps	Nominal	I _{PS}	3.4	
Current @ T _{CS}	Amps	Nominal	I _{CS}	0.94	
Force Sensitivity @ T _{PS}	N.m/Amp	± 10%	K _{T_{PS}}	0.031	
	oz.in/Amp	± 10%		4.39	
Force Sensitivity @ No-Load	N.m/Amp	± 10%	K _{TNL}	0.031	
	oz.in/Amp	± 10%		4.39	
Back EMF Constant	V/(rad/sec)	± 10%	K _B	0.031	
Inductance ****	mH	± 15%	L	1.6	



Rotary Actuator Parameters *	Units	Symbol	Value
Peak Stall Torque**	N.m	T _{PS}	0.106
	oz.in		15
Continuous Stall Torque ***	N.m	T _{CS}	0.029
	oz.in		4.09
Actuator Constant	N.m/√Watt	K _A	0.017
	oz.in/√Watt		2.39
Electrical Time Constant	ms	τ _E	0.48
Mechanical Time Constant	ms	τ _M	14
Theoretical Acceleration	rad/s ²	α _T	26,044
Max Theoretical Frequency @ Full Stroke and Sinusoidal / Triangular Motion	Hz	f _{max}	27.5/30.53
Power I ² R @ T _{PS}	Watts	P _{PS}	38.1
Angular Stroke	± degrees	S _A	50
Clearance on Each Side of Coil	mm	D _C	0.38
	in		0.015
Moving Coil Assembly Inertia	kg.m ²	J _{CA}	4.09 x 10 ⁻⁶
	oz.in.s ²		0.000579
Thermal Resistance	°C/Watt	Θ _{TH}	30
Maximum Allowable Winding Temp	°C	T _W	155
Mass, Total	kg	M _T	0.19
	oz		6.7

DISCLAIMERS
 * AT MID-STROKE & 25°C AMBIENT TEMPERATURE
 ** 10 SEC @ 25°C AMBIENT & 155°C WINDING TEMPERATURE
 *** AT 25°C AMBIENT & 155°C WINDING TEMPERATURE
 **** MEASURED AT 1000 Hz



METRIC DRAWING



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THIRD ANGLE PROJECTION



UNLESS OTHERWISE SPECIFIED:
 -ALL DIMENSIONS ARE IN MM
 -BREAK SHARP EDGES 0.4 MAX
 -SURFACE ROUGHNESS √1.6
 -DIMENSIONS APPLY AFTER FINISH
 -MAX FILLET R0.4

MILLIMETER TOLERANCES:
 DECIMALS ANGULAR
 X ±0.8 ±0°30'
 0.X ±0.25
 0.XX ±0.13
 DO NOT SCALE DRAWING



DRAWN GUERRERO	DATE 03/22/17	TITLE ROTARY ACTUATOR		
CHECK MCGHEE	03/23/17	SIZE C	FSCM NO. 55789	DWG NO. RA27-10-000A
APPD GODKIN	03/23/17	REV X1	SHEET: 1 OF 2	
FILE NO. L\TOP LEVEL\RA\	SCALE: NONE	EWIF-015-02	REV. A	

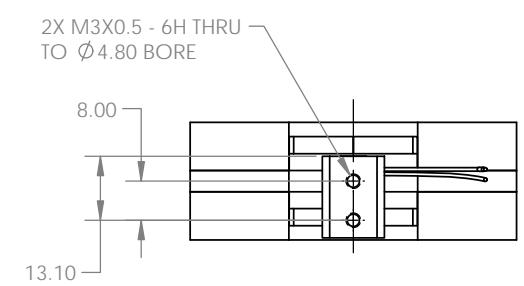
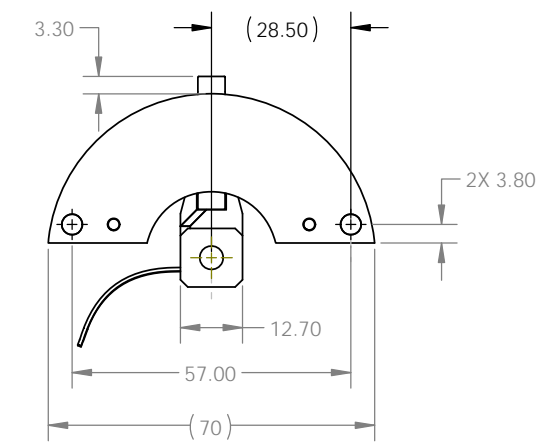
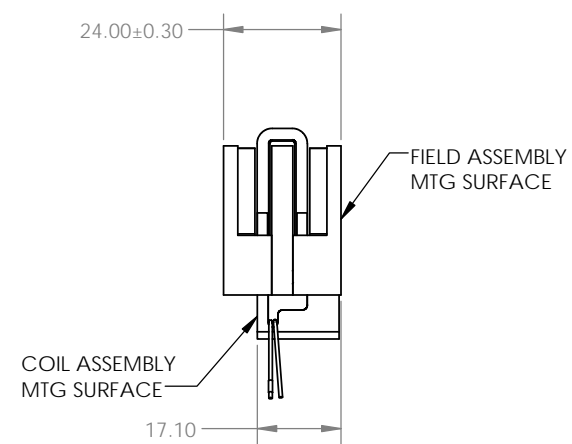
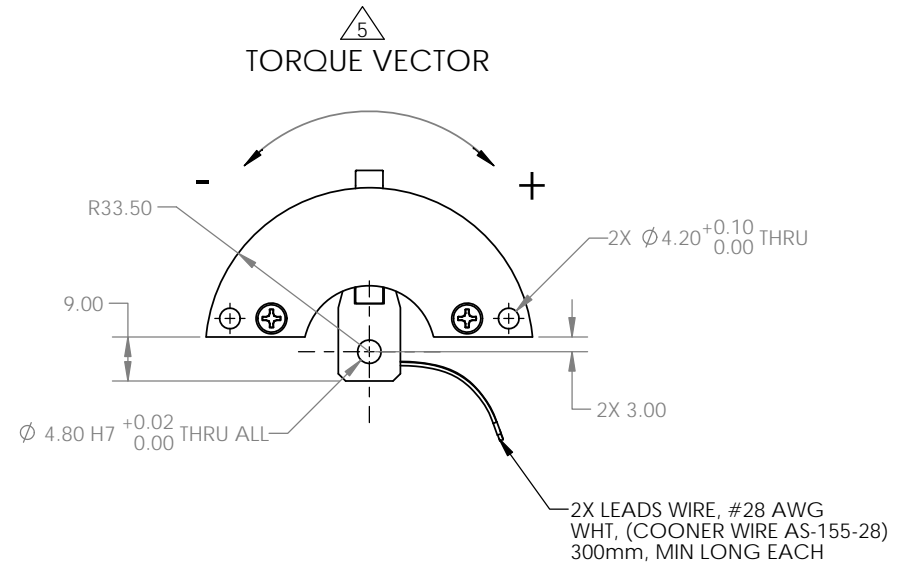
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REVISION HISTORY
SEE PAGE 1



NOTES: UNLESS OTHERWISE SPECIFIED

1. INTERPRET DIMENSIONING AND TOLERANCING IAW ASME Y14.5M-1994.
2. INTERPRET DRAWING IAW ASME Y14.100.
3. ALL ABBREVIATIONS IAW ASME Y14.38.
4. METRIC DRAWING, DIMENSIONS IN BRACKETS [] ARE IN INCHES AND ARE FOR REFERENCE ONLY.
5. A POSITIVE VOLTAGE (+) APPLIED TO THE MARKED LEAD WILL PRODUCE A FORCE ON THE COIL ASSEMBLY IN THE POSITIVE (+) DIRECTION

METRIC DRAWING

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THIRD ANGLE PROJECTION	SIZE	FSCM NO.	DWG NO.	REV
	C	55789	RA27-10-000A	X1
FILE NO: L\TOP LEVEL\RA\	SCALE: NONE	EWIF-013-02 REV. A	SHEET: 2 OF 2	

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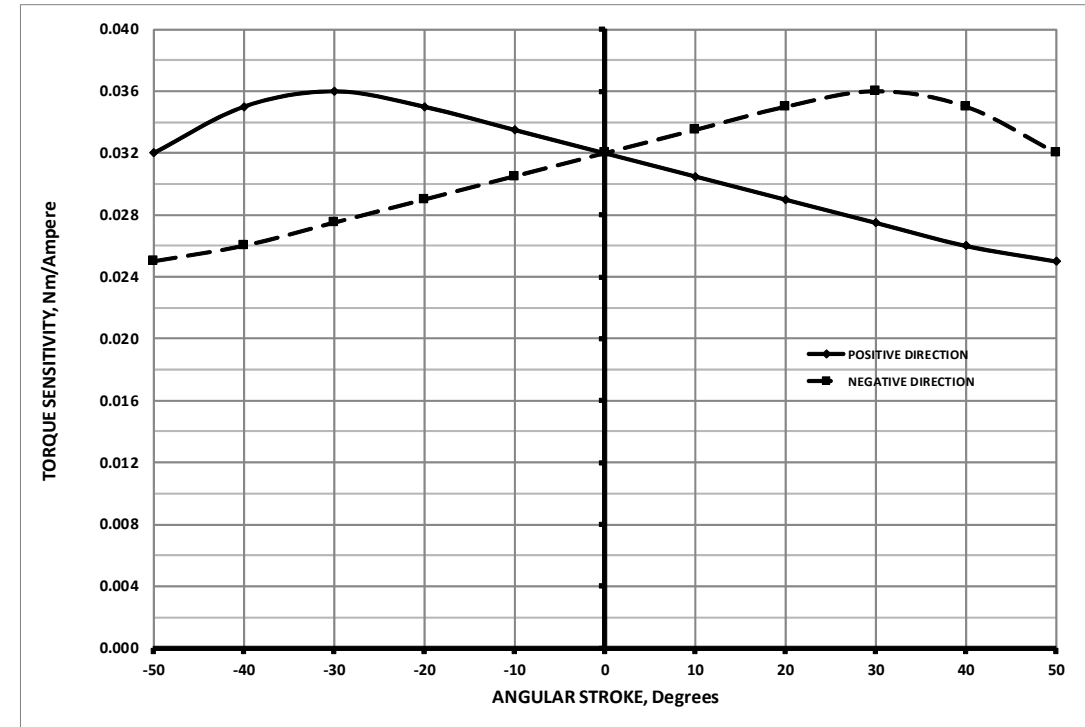
RA27-10-001A

X1

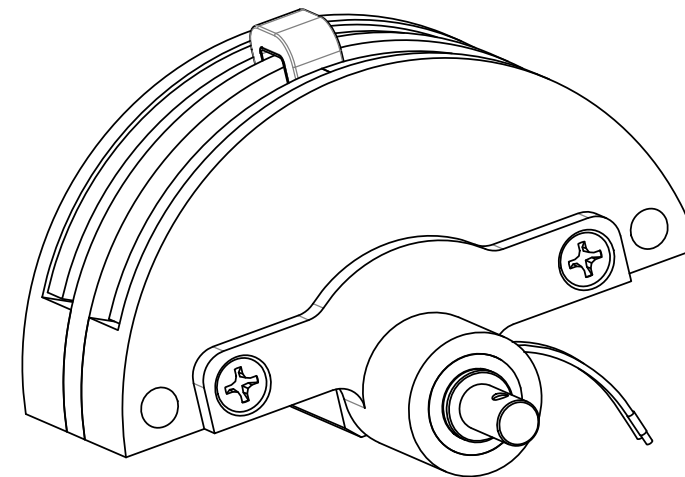
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LTR	ECO NO.	DESCRIPTION	DRN	APP'D	DATE
X1	170086	INITIAL RELEASE	RG	MG	03/23/17

Winding Constants *	Units	Tol	Symbol	Wdg	A
DC Resistance	Ohms	+ 12.5%	R	3.3	
Voltage @ T _{PS}	Volts	Nominal	V _{PS}	11.2	
Current @ T _{PS}	Amps	Nominal	I _{PS}	3.4	
Current @ T _{CS}	Amps	Nominal	I _{CS}	0.94	
Force Sensitivity @ T _{PS}	N.m/Amp	+ 10%	K _{TPS}	0.031	
	oz.in/Amp	+ 10%		4.39	
Force Sensitivity @ No-Load	N.m/Amp	+ 10%	K _{TNL}	0.031	
	oz.in/Amp	+ 10%		4.39	
Back EMF Constant	V/(rad/sec)	+ 10%	K _B	0.031	
Inductance ****	mH	+ 15%	L	1.6	



Rotary Actuator Parameters *	Units	Symbol	Value
Peak Stall Torque**	N.m	T _{PS}	0.106
	oz.in		15
Continuous Stall Torque ***	N.m	T _{CS}	0.029
	oz.in		4.09
Actuator Constant	N.m/√Watt	K _A	0.017
	oz.in/√Watt		2.39
Electrical Time Constant	ms	τ _E	0.48
Mechanical Time Constant	ms	τ _M	14
Theoretical Acceleration	rad/s ²	α _T	26,044
Max Theoretical Frequency @ Full Stroke and Sinusoidal / Triangular Motion	Hz	f _{max}	27.5/30.53
Power I ² R @ T _{PS}	Watts	P _{PS}	38.1
Angular Stroke	± degrees	S _A	50
Clearance on Each Side of Coil	mm	D _C	0.38
	in		0.015
Moving Coil Assembly Inertia	kg.m ²	J _{CA}	4.09 x 10 ⁻⁶
	oz.in.s ²		0.000579
Thermal Resistance	°C/Watt	Θ _{TH}	30
Maximum Allowable Winding Temp	°C	T _W	155
Mass, Total	kg	M _T	0.206
	oz		7.27



SCALE: 2:1

DISCLAIMERS

* AT MID-STROKE & 25°C AMBIENT TEMPERATURE
 ** 10 SEC @ 25°C AMBIENT & 155°C WINDING TEMPERATURE
 *** AT 25°C AMBIENT & 155°C WINDING TEMPERATURE
 **** MEASURED AT 1000 Hz

METRIC DRAWING



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THIRD ANGLE PROJECTION



UNLESS OTHERWISE SPECIFIED:
 -ALL DIMENSIONS ARE IN MM
 -BREAK SHARP EDGES 0.4 MAX
 -SURFACE ROUGHNESS √1.6
 -DIMENSIONS APPLY AFTER FINISH
 -MAX FILLET R0.4

MILLIMETER TOLERANCES:
 DECIMALS ANGULAR
 X ±0.8 ±0°30'
 0.X ±0.25
 0.XX ±0.13

DO NOT SCALE DRAWING



DRAWN	DATE	TITLE			
GUERRERO	03/22/17	ROTARY ACTUATOR			
CHECK	03/23/17				
McGHEE					
APPD	03/23/17	SIZE	FSCM NO.	DWG NO.	REV
GODKIN		C	55789	RA27-10-001A	X1
FILE NO.		SCALE: NONE			
L\TOP LEVEL\RA\		EWIF-015-02	REV. A	SHEET: 1 OF 2	

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RA27-10-001A

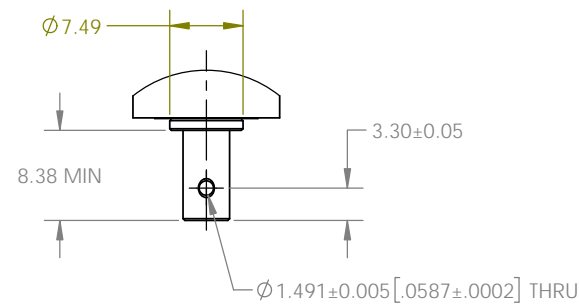
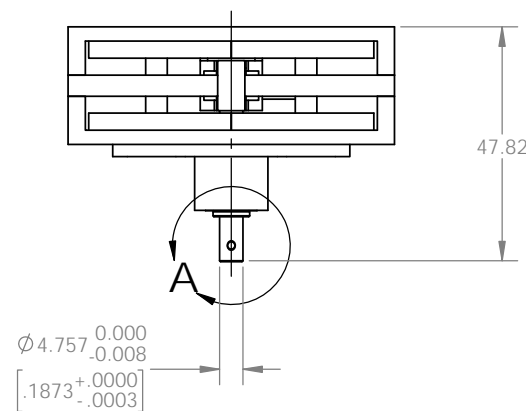
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REVISION HISTORY
SEE PAGE 1

D

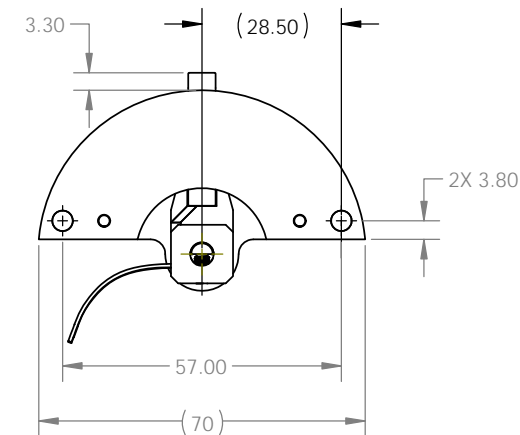
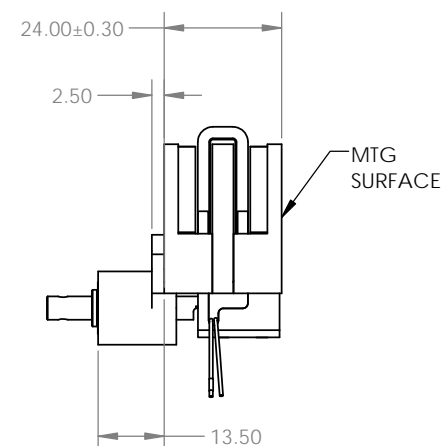
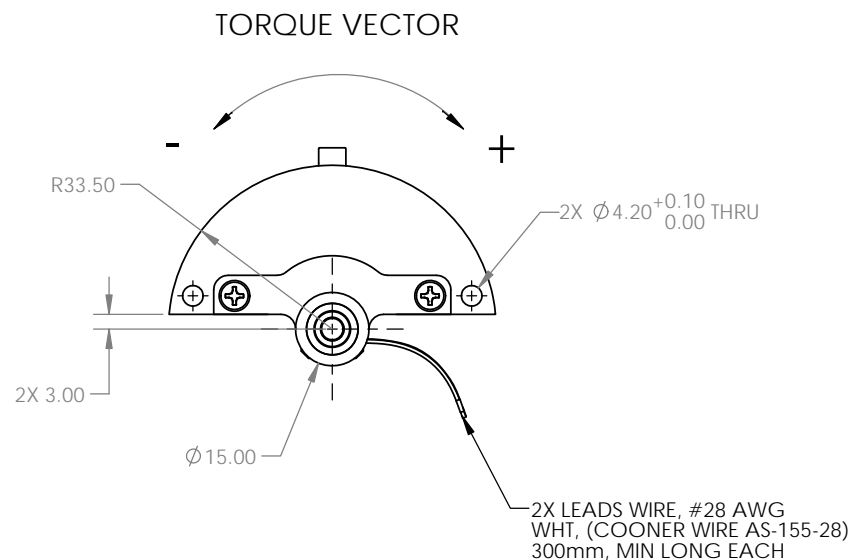
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DETAIL A

C

C



B

B

NOTES: UNLESS OTHERWISE SPECIFIED

1. INTERPRET DIMENSIONING AND TOLERANCING IAW ASME Y14.5M-1994.
2. INTERPRET DRAWING IAW ASME Y14.100.
3. ALL ABBREVIATIONS IAW ASME Y14.38.
4. METRIC DRAWING, DIMENSIONS IN BRACKETS [] ARE IN INCHES AND ARE FOR REFERENCE ONLY.
5. A POSITIVE VOLTAGE (+) APPLIED TO THE MARKED LEAD WILL PRODUCE A FORCE ON THE COIL ASSEMBLY IN THE POSITIVE (+) DIRECTION

METRIC DRAWING

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THIRD ANGLE PROJECTION 	SIZE C	FSCM NO. 55789	DWG NO. RA27-10-001A	REV X1
FILE NO: L\TOP LEVEL\RA\	SCALE: NONE	EWIF-013-02 REV. A	SHEET: 2 OF 2	

A

A

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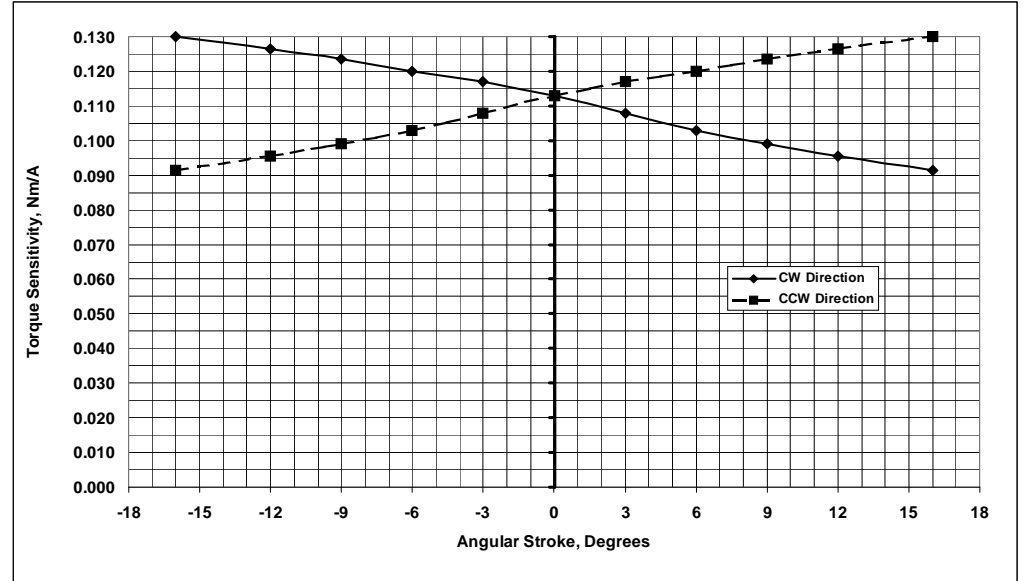
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Winding Constants *	Units	Tol	Symbol	Wdg	A
DC Resistance	Ohms	± 12.5%	R	13	
Voltage @ T _p	Volts	Nominal	V _p	26	
Current @ T _p	Amps	Nominal	I _p	2	
Toeque Sensitivity	Nm/Amp	± 10%	K _T	0.113	
	Oz-in/Amp	± 10%		16	
Back EMF Constant	V/Rad/Sec	± 10%	K _B	0.113	
Inductance ****	milli-Henry	± 15%	L	10	

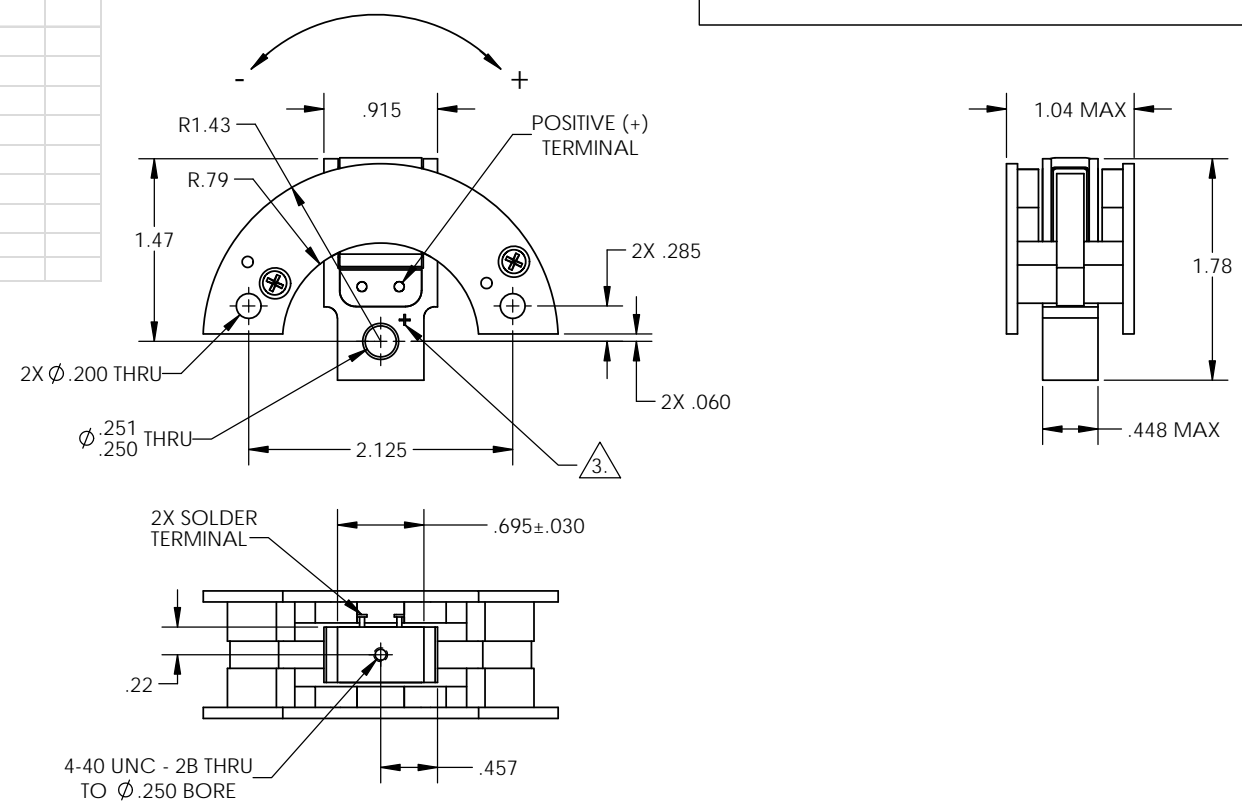
Rotary Actuator Parameters *	Units	Symbol	Value
Peak Torque **	Nm	T _P	0.226
	Oz-in		32
Continuos Stall Torque ***	Nm	F _{CS}	.0727
	Oz-in		10.3
Actuator Constant	Nm/ √Watt	K _A	0.031
	Oz-in/ √Watt		4.44
Electrical Time Constant	milli-sec	τ _E	0.77
Mechanical Time Constant	milli-sec	τ _M	12.8
Theoretical Angular Acceleration	rad/sec ²	α _T	17,937
Max Theoretical Frequency @ Full Stroke and Sinusoidal / Triangular Motion	Hz	f _{max}	40.3/44.8
Power I ² R @ F _p	Watts	P _p	52
Angular Stroke	+/- Degrees		16
Coil Clearance	mm		0.63
	in		0.025
Moving Coil Inertia	Kgm ²	J _{CA}	1.26 X 10 ⁻⁵
	Oz-in-sec ²		0.0018
Thermal Resistance of Coil	°C/Watt	θ _{TH}	16.2
Maximum Allowable Coil Winding Temp	°C	Temp	155
Total Weight	G		157
	Oz	W _T	5.53

* @ 25° C AMBIENT & MID-STROKE POSITIONS (PER COIL)
 ** 10 SEC @ 25° C AMBIENT & 155° C COIL TEMPERATURE
 *** 25° C AMBIENT & 155° C COIL TEMPERATURE
 **** MEASURED AT 1000 Hz

LTR	ECO NO.	DESCRIPTION	DRN	APP'D	DATE
J	110161	UPDATE DWG & PARAMETERS	RG	MG	08/02/11



3. TORQUE VECTOR



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THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED:
 -ALL DIMENSIONS ARE IN INCHES
 -BREAK SHARP EDGES .015 MAX
 -SURFACE ROUGHNESS 63 ✓
 -DIMENSIONS APPLY AFTER FINISH
 -MAX FILLET R.010
 -DIAMETERS SHALL NOT EXCEED A RUNOUT OF .005 FIM

TOLERANCES:
 DECIMALS ANGULAR
 .X ±.03 ±0°30'
 .XX ±.01
 .XXX ±.005
 DO NOT SCALE DRAWING

BEI KIMCO MAGNETICS DIVISION
VISTA, CA 92081

DRAWN JDM	DATE 04/10/90	TITLE ROTARY ACTUATOR	
CHECK THOMPSON	DATE 10/01/06	SIZE C	REV J
APPD A MORCOS	DATE 04/13/90	FSCM NO. 55789	DWG NO. RA29-11-002A
FILE NO. L:\TOP\LEVEL\RA\	SCALE: NONE	SHEET: 1 OF 1	

3. A POSITIVE (+) VOLTAGE APPLIED TO THE + TERMINAL WILL PRODUCE A TORQUE ON THE COIL ASSEMBLY IN THE CW DIRECTION AS SHOWN.

2. INTERPRET DRAWING IAW Y14.100.

1. INTERPRET DIMENSIONING AND TOLERANCING IAW ASME Y14.5M-1994.

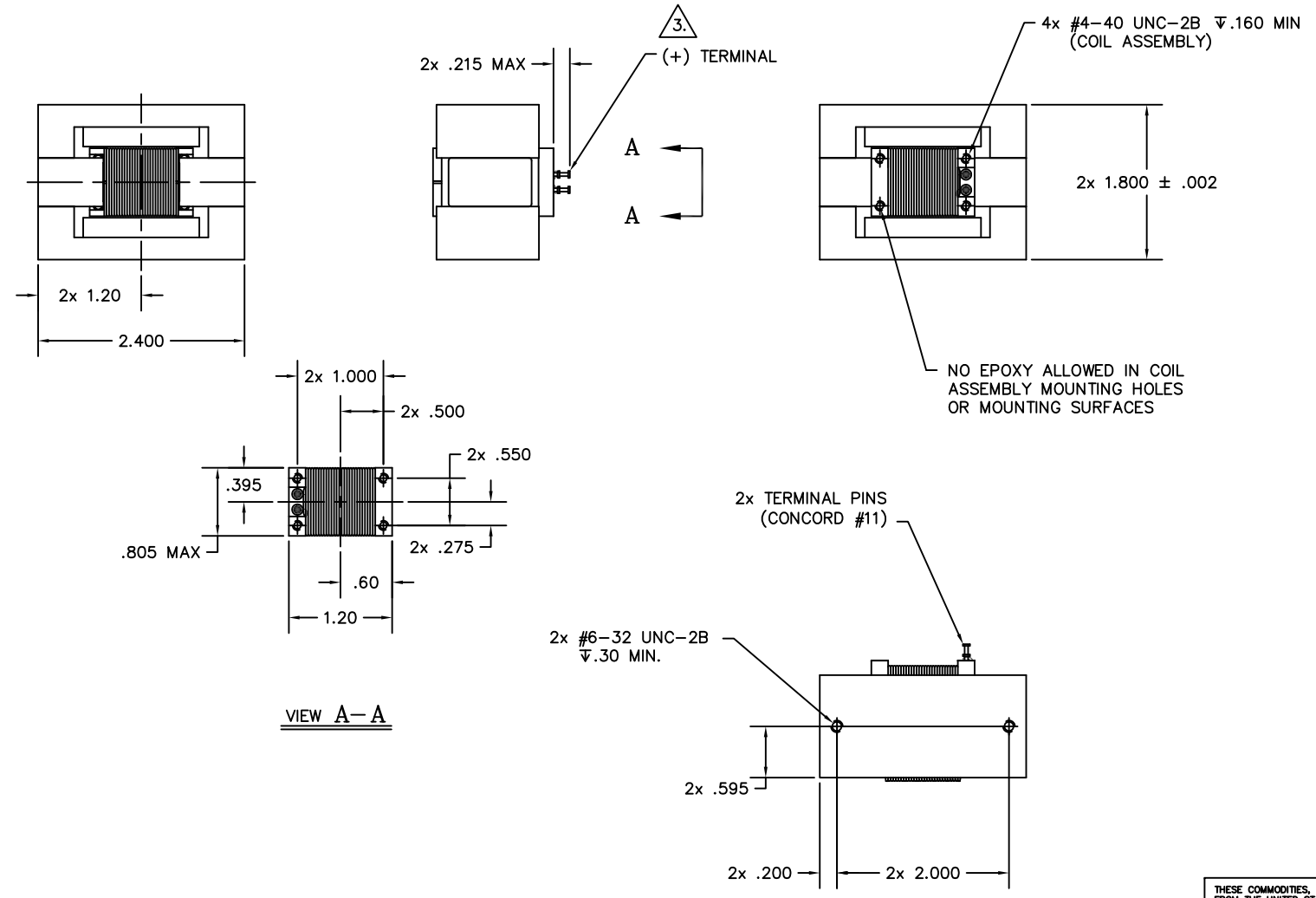
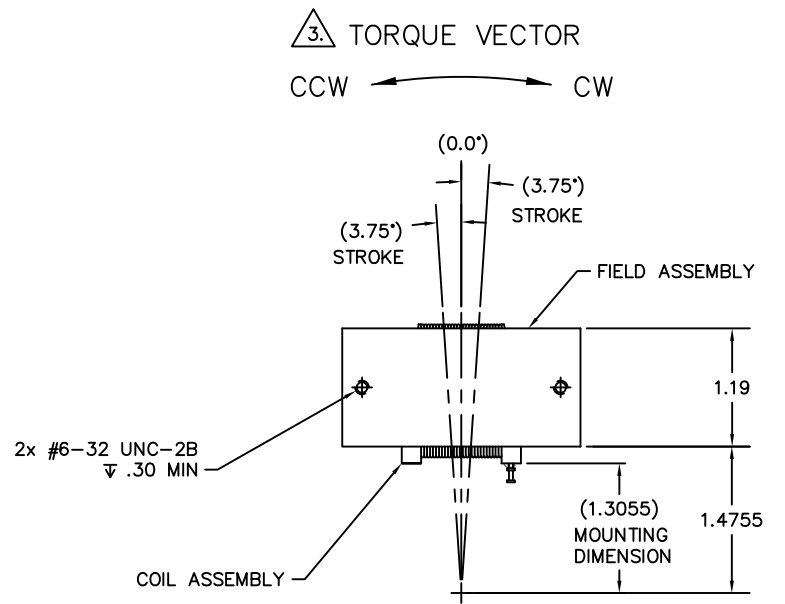
NOTES: UNLESS OTHERWISE SPECIFIED

WINDING CONSTANTS	UNITS	TOL	SYM	WDG A
DC RESISTANCE	OHMS	±10%	R	12.5
VOLTAGE @ K_p	VOLTS	NOMINAL	V_c	31.3
CURRENT @ T_p	AMPERES	NOMINAL	I_c	2.5
DEMAGNETIZATION CURRENT	AMPERES	MAXIMUM	I_{max}	5.0
TORQUE SENSITIVITY	OZ-IN/AMP	±10%	K_T	105
BACK EMF CONSTANT	VOLTS/RAD/SEC	±10%	K_B	0.74
INDUCTANCE ****	MILLI-HENRY	±15%	L	11.5

ROTARY ACTUATOR PARAMETERS	UNITS	SYM	VALUE
PEAK TORQUE *	OZ-IN	T_p	262
CONTINUOUS STALL TORQUE **	OZ-IN	T_{cs}	113
ACTUATOR CONSTANT	oz-in/ \sqrt{WATT}	K_A	29.7
ELECTRICAL TIME CONSTANT	MICRO-SEC	τ_E	920
MECHANICAL TIME CONSTANT	MILLI-SEC	τ_M	TBD
POWER I^2R @ T_p	WATTS	P	77.8
STROKE (ANGULAR)	± DEGREES		3.75
COIL CLEARANCE	IN		0.015
THERMAL RESISTANCE OF COIL ***	°C/WATT	Θ_{th}	6.0
MAX ALLOWABLE TEMP OF COIL	°C	TEMP	155
WEIGHT OF COIL ASSEMBLY	OZ	WTc	0.85-0.95
TOTAL WEIGHT	OZ	WTt	20 MAX.

* 10 SEC @ 25°C AMBIENT, 155°C COIL TEMP
 ** 25°C AMBIENT, 155°C COIL TEMP
 *** UNIT MOUNTED IN TEST FIXTURE
 **** INDUCTANCE MEASURED AT 1000 HZ

REV	DCN NO.	DESCRIPTION	DRN	APP'D	DATE
D	010223	UPDATE TO AS BUILT CONDITION	RRG	MG	02/19/01
E	010338	REMOVED MARKING AT THIS LEVEL	RRG	MG	03/09/01
H	080318	MATCH BOM REVISION LEVEL, ADD RoHS LOGO	SLM	MG	08/04/08



3. A POSITIVE (+) VOLTAGE APPLIED TO THE + TERMINAL WILL PRODUCE A FORCE ON THE COIL ASSEMBLY IN THE CCW DIRECTION WHEN VIEWED AS SHOWN IN TOP VIEW.
 2. INSULATION RESISTANCE TO BE 100MΩ MINIMUM AT 500 VDC.
 1. INTERPRET DIMENSIONS & TOLERANCES PER ANSI Y14.5M-1982.
 NOTES: UNLESS OTHERWISE SPECIFIED

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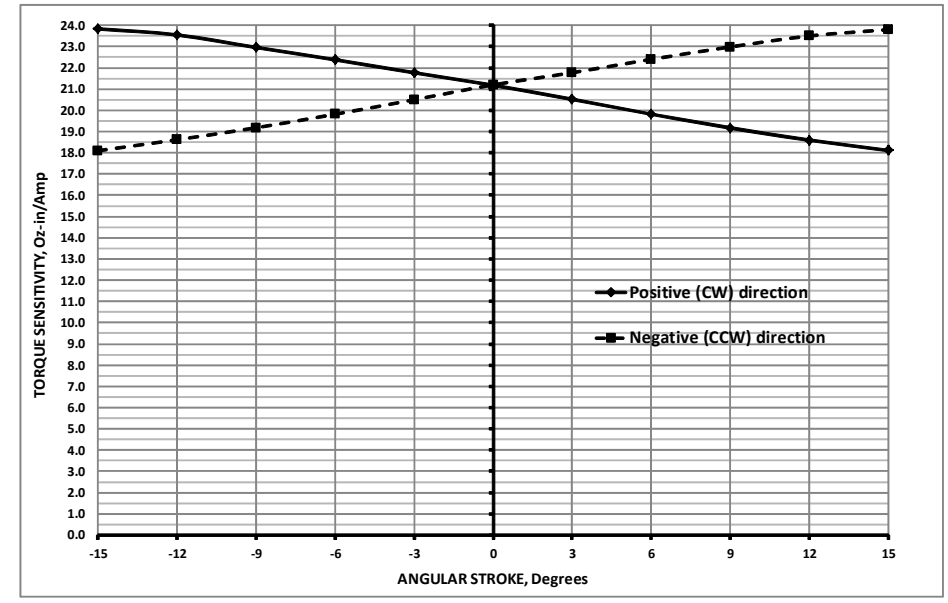


DO NOT SCALE DRAWING UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ARE ANGULAR = ± 30' .X = ± .03 .XX = ± .01 .XXX = ± .005	SIZE D	FSCM NO. 55789	BEI KIMCO MAGNETICS DIVISION SAN MARCOS, CA 92069
TITLE: ROTARY ACTUATOR	DWG NO: RA54-18-000A		DRN: R. GUERRERO 08/28/00
SCALE: 1/1	SHT. 1 OF 1	APP'D: M. GODKIN	09/05/00

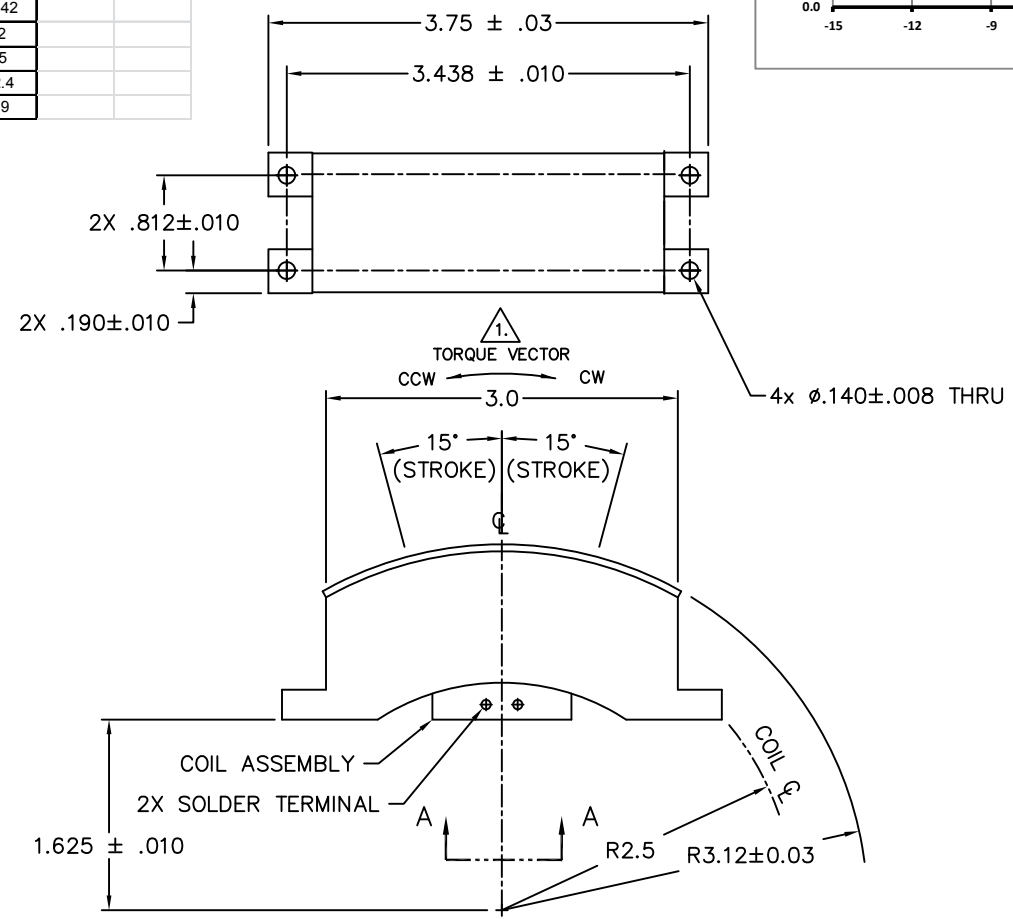
LTR	ECO NO.	DESCRIPTION	DRN	APP'D	DATE
M	070044	UPDATE DRAWING, ADDED RoHS LOGO	RG	MG	02/02/07
N	130022	UPDATE PARAMETERS, ADDED CURVE TABLE	RG	MG	01/23/13
P	130373	UPDATE PARAMETERS TABLE & VALUES	RG	MG	11/12/13

Winding Constants *	Units	Tol	Symbol	Wdg	A
DC Resistance	Ohms	± 12.5%	R		1.9
Voltage @ T _p	Volts	Nominal	V _p		10.8
Current @ T _p	Amps	Nominal	I _p		5.66
Torque Sensitivity	Nm/Amp	± 10%	K _T		0.15
Back EMF Constant	Oz-in/Amp	± 10%			21.2
Inductance ****	mili-Henry	± 15%	L		1.38

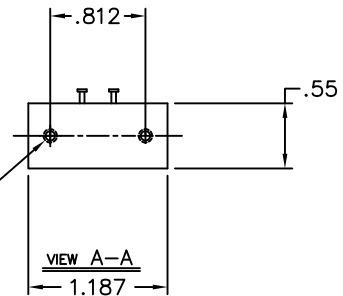
Rotary Actuator Parameters *	Units	Symbol	Value
Peak Torque **	Nm	T _p	0.847
	Oz-in		120
Continuous Stall Torque ***	Nm	T _{CS}	0.445
	Oz-in		62.9
Actuator Constant	Nm/√Watt	K _A	0.109
	Oz-in/√Watt		15.4
Electrical Time Constant	mili-sec	τ _E	0.73
Mechanical Time Constant	mili-sec	τ _M	8.44
Theoretical Angular Acceleration	rad/sec ²	α _T	8470
Max Theoretical Frequency @ Full Stroke and Sinusoidal / Triangular Motion	Hz	f _{max}	28.6/31.8
Power I ² R @ F _p	Watts	P _P	60.9
Angular Stroke	+/- Degrees		15
Clearance on each side of Coil	mm		0.38
	in		0.015
Moving Coil Inertia	Kgm ²	J _{CA}	0.0001
	Oz-in-sec ²		0.0142
Thermal Resistance of Coil in still air	°C/Watt	Θ _{TH}	5.2
Maximum Allowable Coil Winding Temp	°C	Temp	155
Total Weight	G		422.4
	Oz	W _T	14.9



* AT MID-STROKE & 25° AMBIENT TEMPERATURE
 ** 10 SECONDS AT 25°C AMBIENT & 155°C COIL TEMPERATURE
 *** 25°C AMBIENT & 155°C WINDING TEMPERATURE
 **** MEASURED AT 1000 Hz.



2x 4-40 UNC-2B
 THREADED INSERT
 ∇.31 MAX ALLOWABLE
 SCREW PENETRATION
 ∇.15 FREE THREAD DEPTH



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THIRD ANGLE PROJECTION
 UNLESS OTHERWISE SPECIFIED:
 -ALL DIMENSIONS ARE IN INCHES
 -BREAK SHARP EDGES .015 MAX.
 -SURFACE ROUGHNESS √63
 -DIMENSIONS APPLY AFTER FINISH
 -MAX FILLET R .010

TOLERANCES:
 DECIMALS .X ± .03
 .XX ± .01
 .XXX ± .005
 DO NOT SCALE DRAWING

BEI KIMCO MAGNETICS DIVISION
 VISTA, CA 92081

DRAWN: WIEDENHAMMER DATE: 12/15/82 TITLE: ROTARY ACTUATOR

MECH CHECK: GUERRERO DATE: 01/18/07

APPD: J.K DATE: 12/17/82

FILE NO.: L:\TOP LEVEL\RA\...

SIZE: C FSCM NO.: 55789 DWG NO.: RA60-10-001A REV: P

SCALE: 2/1 SHEET: 1 OF 1

1. A POSITIVE (+) VOLTAGE APPLIED TO THE (+) TERMINAL WILL PRODUCE A TORQUE ON THE COIL ASSEMBLY IN THE CW DIRECTION WHEN VIEWED FROM THE TERMINAL SIDE.

NOTES: UNLESS OTHERWISE SPECIFIED



RA60-10-001A P

4

3

2

RA68-12-001(LTR)

S

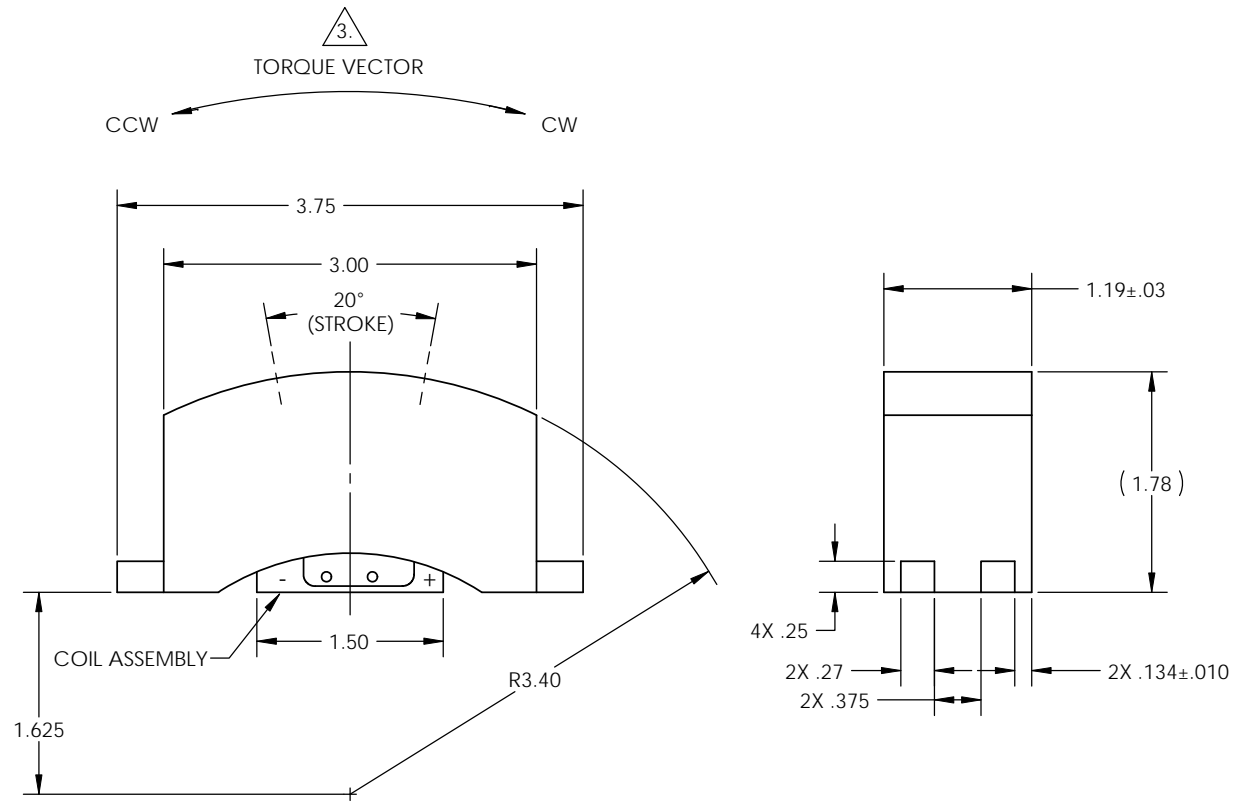
1

Winding Constants *	Units	Tol	Symbol	Wdg A	Wdg B
DC Resistance	Ohms	± 12.5%	R	5	.15
Voltage @ T _p	Volts	Nominal	V _p	15.2	2.6
Current @ T _p	Amps	Nominal	I _p	3.04	17.4
Toeque Sensitivity	Oz-in/Amp	± 10%	K _T	56	9.77
	Nm/Amp	± 10%		.395	.069
Back EMF Constant	V/Rad/Sec	± 10%	K _B	.395	.069
Inductance ****	milli-Henry	± 15%	L	4.2	.13

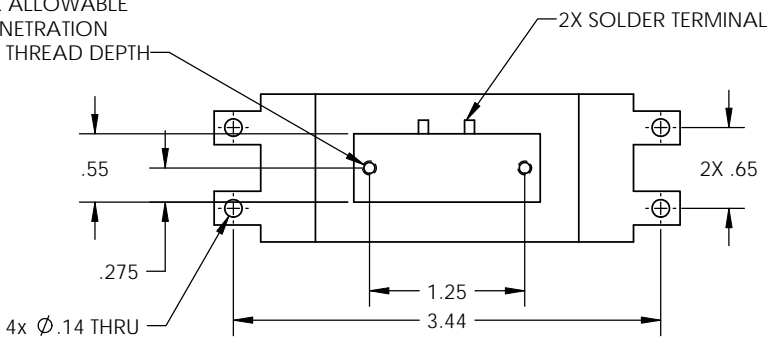
LTR	ECO NO.	DESCRIPTION	DRN	APP'D	DATE
S	100308	UPDATE PERFORMANCE TABLE	RG	MG	10/22/10

Rotary Actuator Parameters *	Units	Symbol	Value
Peak Torque **	Oz-in	T _P	170
	Nm		1.2
Continuos Stall Torque ***	Oz-in	F _{CS}	103
	Nm		.73
Actuator Constant	Oz-in/√Watt	K _A	25
	Nm/√Watt		.177
Electrical Time Constant	milli-sec	τ _E	.84
Mechanical Time Constant	milli-sec	τ _M	4.52
Theoretical Angular Acceleration	rad/sec ²	α _T	8510
Max Theoretical Frequency @ Full Stroke and Sinusoidal / Triangular Motion	Hz	f _{max}	35.1/39
Power I ² R @ F _p	Watts	P _P	46.2
Angular Stroke	+/- Degrees		10
Moving Coil Inertia	Oz-in-sec ²	J _{CA}	.02
	Kgm ²		1.41x10 ⁴
Thermal Resistance of Coil	°C/Watt	θ _{TH}	5.1
Maximum Allowable Coil Winding Temp	°C	Temp	155
Total Weight	Oz	Wt	18
	G		510

* AT MID-STROKE POSITION AND @ 25°C AMBIENT TEMPERATURE.
 ** 10 SECONDS @ 25°C AMBIENT & 155°C COIL TEMPERATURE.
 *** @25°C AMBIENT & 155°C COIL TEMPERATURE.
 **** MEASURED AT 1000 Hz.



2x 4-40 UNC -2B
 THREADED INSERT
 √.31 MAX ALLOWABLE
 SCREW PENETRATION
 √.15 FREE THREAD DEPTH



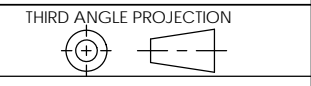
3. A POSITIVE (+) VOLTAGE APPLIED TO THE POSITIVE (+) TERMINAL WILL PRODUCE A TORQUE ON THE COIL ASSEMBLY IN THE CLOCKWISE (CW) DIRECTION, AS VIEWED FROM THE TERMINAL SIDE.

- 2. INTERPRET DRAWING IAW Y14.100.
- 1. INTERPRET DIMENSIONING AND TOLERANCING IAW ASME Y14.5M-1994.

NOTES: UNLESS OTHERWISE SPECIFIED

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UNLESS OTHERWISE SPECIFIED:
 -ALL DIMENSIONS ARE IN INCHES
 -BREAK SHARP EDGES .015 MAX
 -SURFACE ROUGHNESS 63 ✓
 -DIMENSIONS APPLY AFTER FINISH
 -MAX FILLET R.010
 -DIAMETERS SHALL NOT EXCEED A RUNOUT OF .005 FIM

TOLERANCES:
 DECIMALS ANGULAR
 .X ±.03 ±0°30'
 .XX ±.01
 .XXX ±.005
 DO NOT SCALE DRAWING

BEI KIMCO MAGNETICS DIVISION
 VISTA, CA 92081

DRAWN	DATE	TITLE
ELLOITT	09/09/88	ROTARY ACTUATOR
CHECK GUERRERO	12/13/04	
APPD HA PHAM	09/12/88	SIZE C
FILE NO. L\TOP LEVEL\RA\		FSCM NO. 55789
		DWG NO. RA68-12-001(LTR)
		REV S
		SCALE: NONE
		SHEET: 1 OF 1



4

3

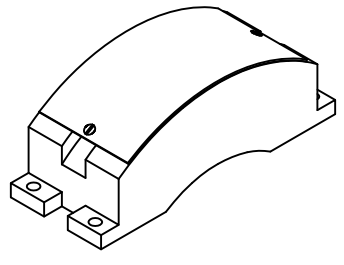
2

1

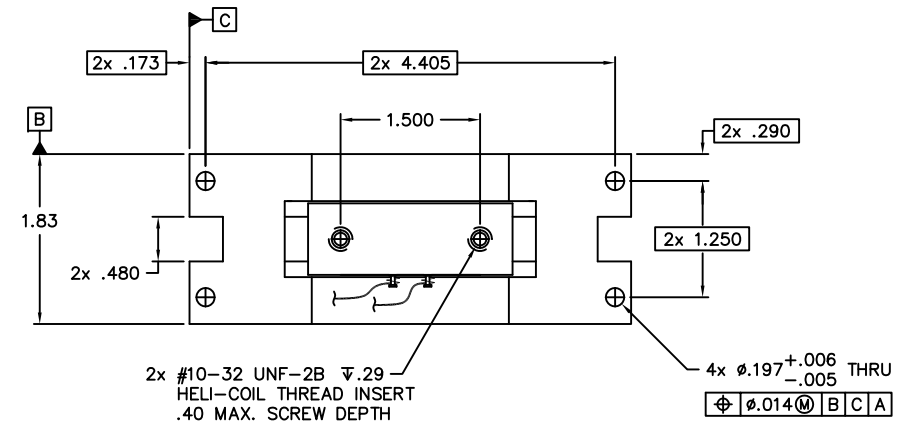
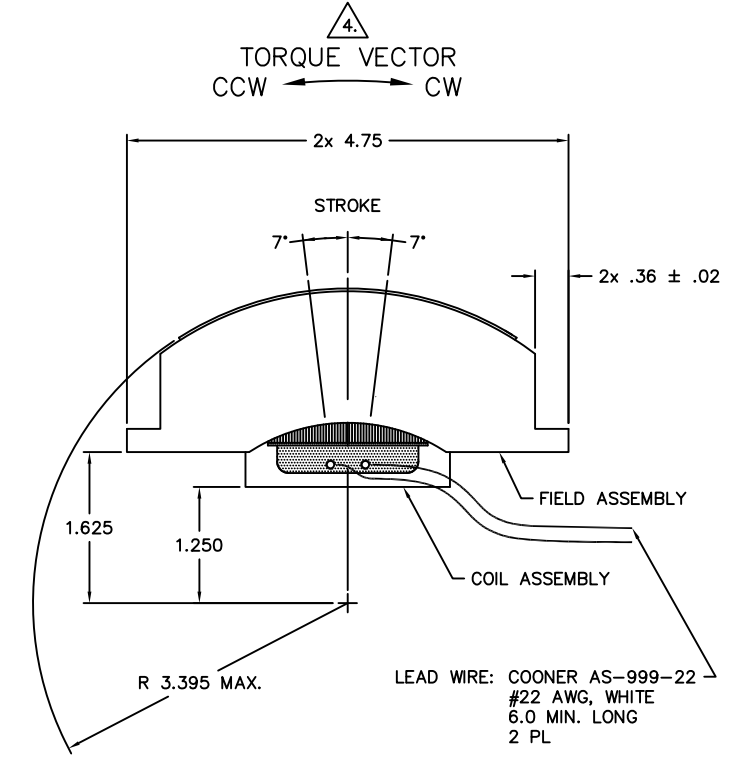
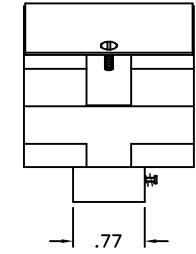
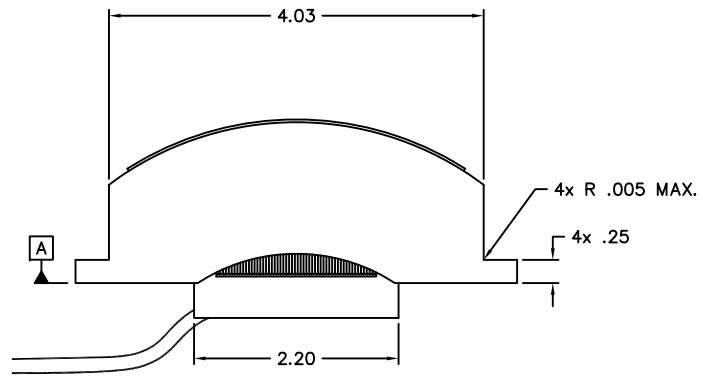
LTR	ECO NO.	DESCRIPTION	DRN	APP'D	DATE
B	130244	ADDED RoHS COMPLIANCY LOGO	RG	MG	08/08/13
C	140145	UPDATE NOTE #4	SLM	MG	05/23/14

WINDING CONSTANTS *	UNITS	TOL	SYM	WDG A
DC RESISTANCE	OHMS	±12.5%	R	5.5
VOLTAGE @ T _p	VOLTS	NOMINAL	V _c	44.0
CURRENT @ T _p	AMPERES	NOMINAL	I _c	8.0
TORQUE SENSITIVITY (AT MID STROKE)	OZ-IN/AMP	±10%	K _T	125
BACK EMF CONSTANT	VOLTS/RAD/SEC	±10%	K _B	0.88
INDUCTANCE ****	MILLI-HENRY	±30%	L	15.0

ROTARY ACTUATOR PARAMETERS *	UNITS	SYM	VALUE
PEAK TORQUE **	OZ-IN	T _p	1000
CONTINUOUS STALL TORQUE ***	OZ-IN	T _{cs}	250
ACTUATOR CONSTANT	OZ-IN/√WATT	K _A	53.3
ELECTRICAL TIME CONSTANT	MICRO-SEC	τ _E	2700
MECHANICAL TIME CONSTANT	MILLI-SEC	τ _M	3.5
POWER I ² R @ T _p	WATTS	P _p	352
STROKE (ANGULAR)	± DEGREES		7.0
COIL CLEARANCE	IN		0.015
THERMAL RESISTANCE OF COIL	°C/WATT	θ _{th}	4.0
MAX ALLOWABLE TEMP OF COIL	°C	TEMP	155
WEIGHT OF COIL ASSEMBLY	OZ	WT _c	4.0
TOTAL WEIGHT	OZ	WT _t	39.5



* AT MID-STROKE & 25° AMBIENT TEMPERATURE
 ** 10 SECONDS AT 25°C AMBIENT & 155°C COIL TEMPERATURE
 *** 25°C AMBIENT & 155°C WINDING TEMPERATURE
 **** MEASURED AT 1000 Hz



US PATENT NO.
5,677,963

4. A POSITIVE (+) VOLTAGE APPLIED TO MARKED (SHRINK TUBING) LEAD WIRE WILL PRODUCE A TORQUE ON THE COIL ASSEMBLY IN THE CCW DIRECTION WHEN VIEWED FROM THE LEAD WIRE SIDE.
- ALL ABBREVIATIONS IAW MIL-STD-12.
 - INTERPRET DRAWING IAW MIL-STD-100.
 - INTERPRET DIMENSIONING AND TOLERANCING IAW ASME Y14.5M-1994.

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THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED:
 -ALL DIMENSIONS ARE IN UNITS
 -BREAK SHARP EDGES .015 MAX.
 -SURFACE ROUGHNESS √63
 -DIMENSIONS APPLY AFTER FINISH
 -MAX FILLET R: FILLET

DECIMALS: .X ± .03, .XX ± .01, .XXX ± .005
 ANGULAR: 30° 30'
 DO NOT SCALE DRAWING

BEI KIMCO MAGNETICS DIVISION
VISTA, CA 92081

DRAWN R. ELLIOTT	DATE 5/24/00	TITLE ROTARY ACTUATOR
MECH CHECK PHIL STAHL	DATE 2/17/05	
APPD M. GODKIN	DATE 5/26/00	

SIZE D	FSCM NO. 55789	DWG NO. RA68-19-000A	REV C
FILE NO. L:\TOP LEVEL\RA\...	SCALE 1/1	SHEET 1 OF 1	

RA68-19-000A C