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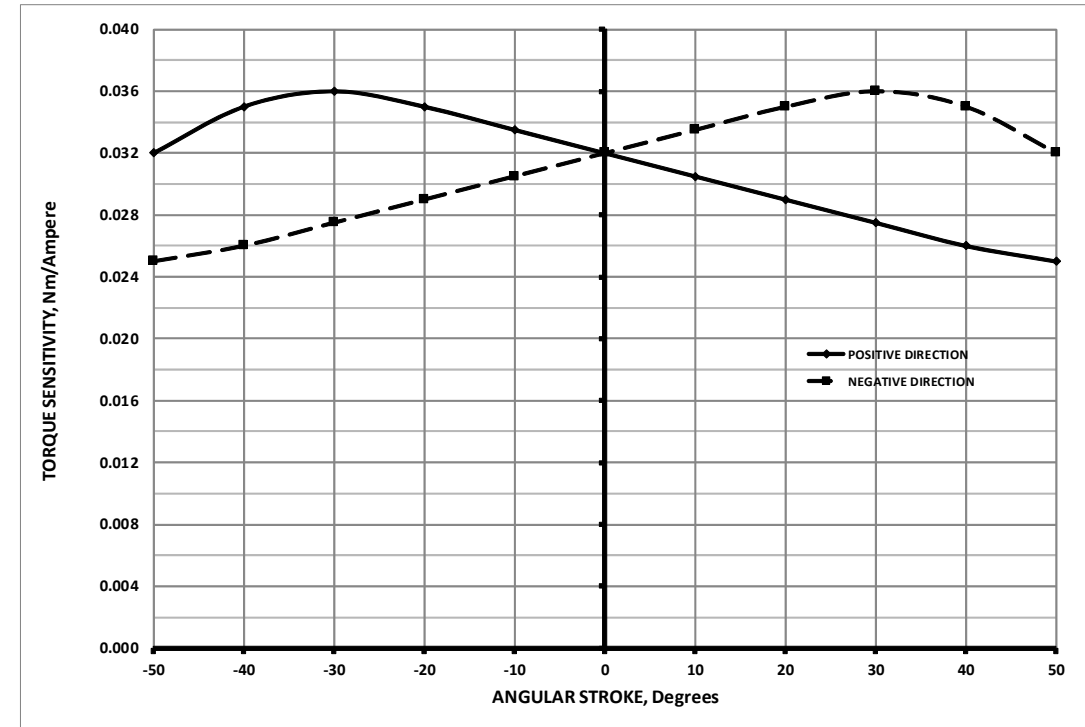
RA27-10-001A

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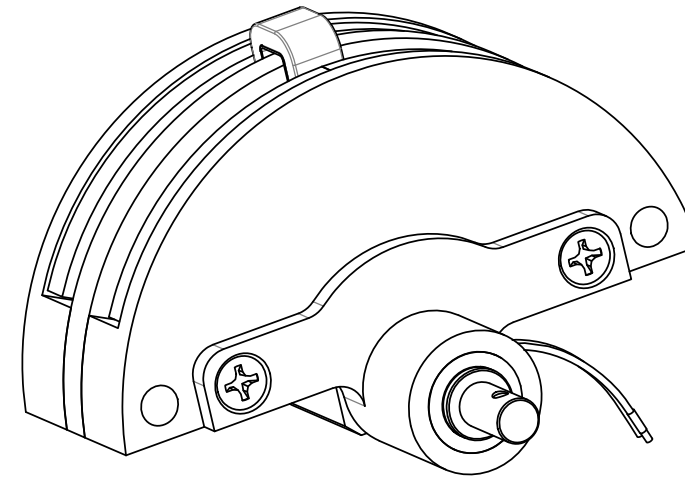
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LTR	ECO NO.	DESCRIPTION	DRN	APP'D	DATE
X1	170086	INITIAL RELEASE	RG	MG	03/23/17

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

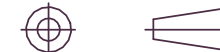
METRIC DRAWING



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

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RA27-10-001A

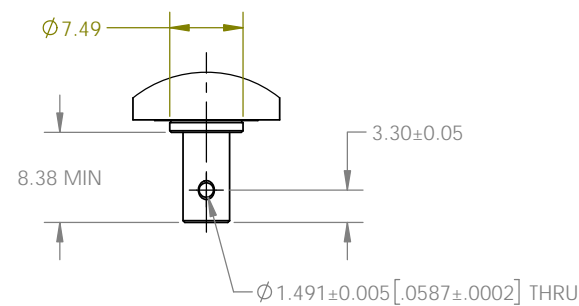
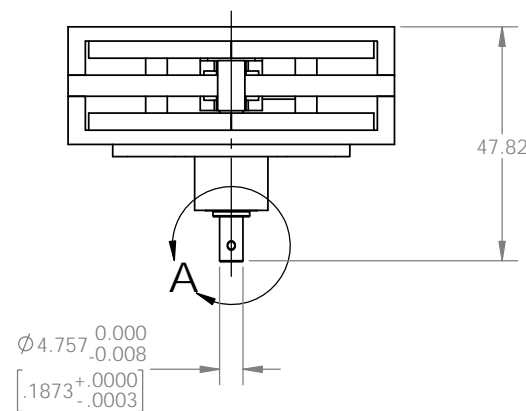
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REVISION HISTORY
SEE PAGE 1

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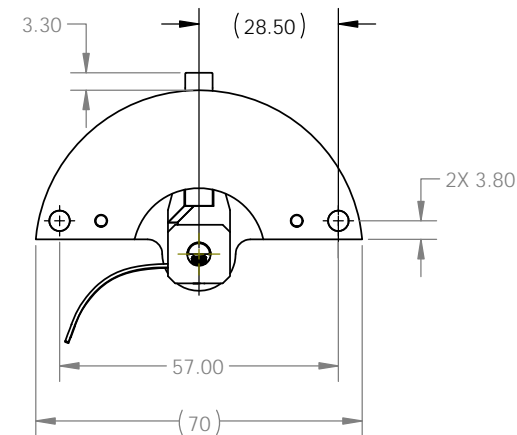
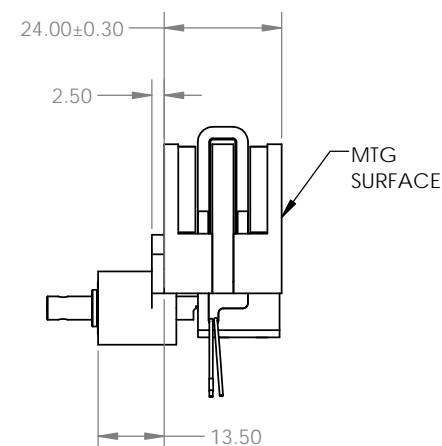
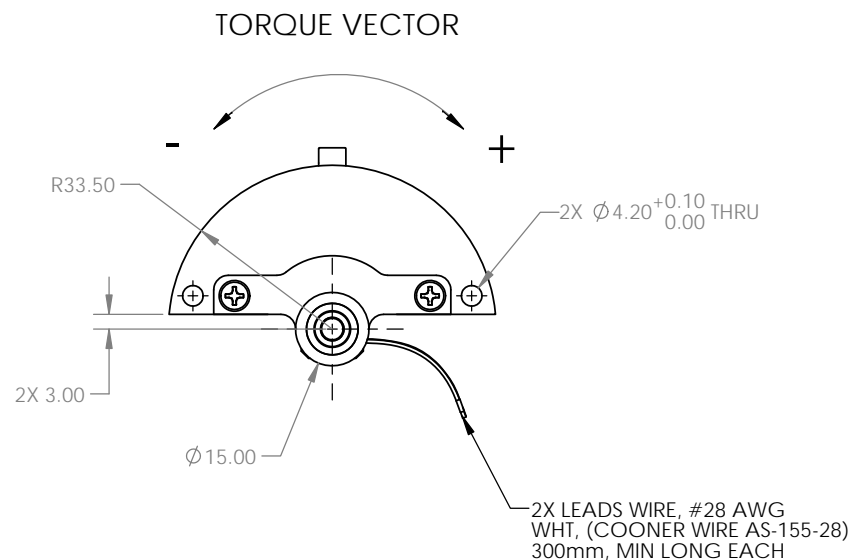
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DETAIL A

C

C



B

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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	

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