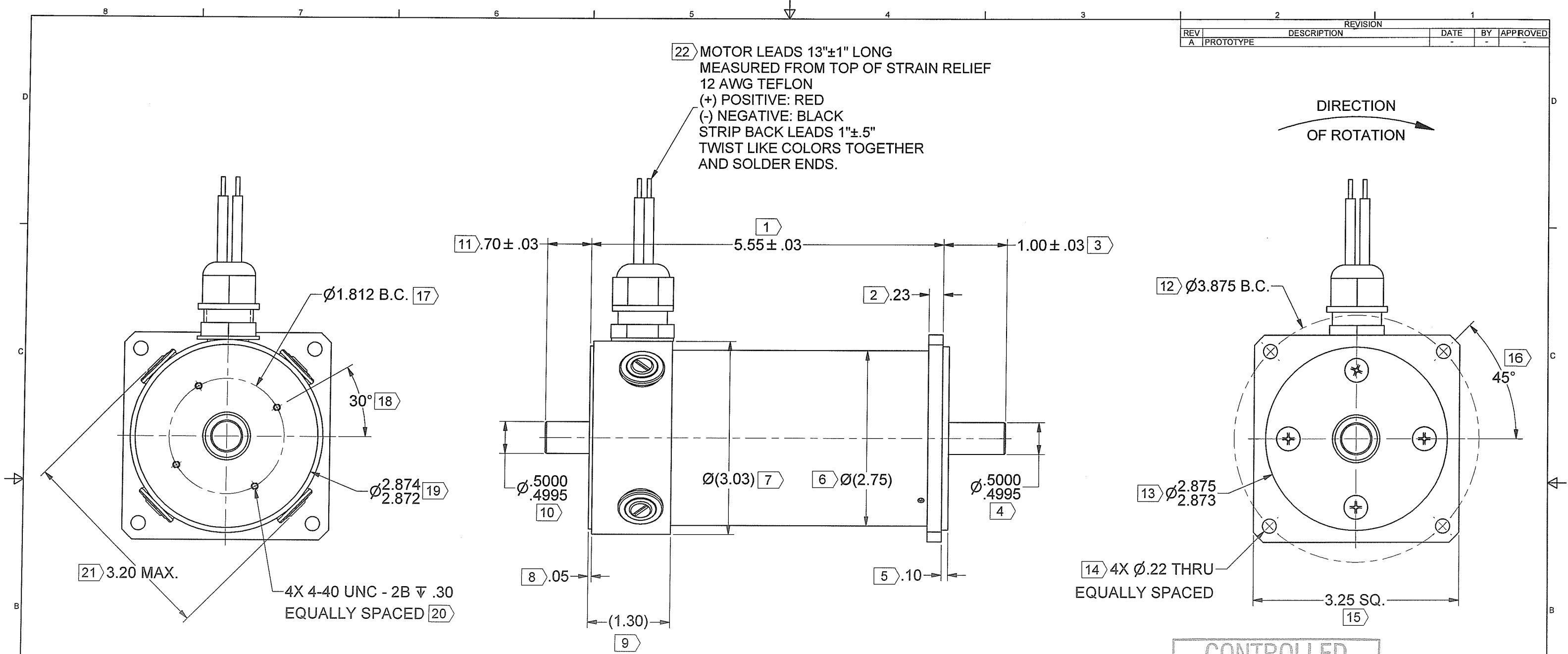


REVISION		DATE	BY	APPROVED
REV	DESCRIPTION			
A	PROTOTYPE			

22) MOTOR LEADS 13"±1" LONG  
 MEASURED FROM TOP OF STRAIN RELIEF  
 12 AWG TEFLON  
 (+) POSITIVE: RED  
 (-) NEGATIVE: BLACK  
 STRIP BACK LEADS 1"±.5"  
 TWIST LIKE COLORS TOGETHER  
 AND SOLDER ENDS.

DIRECTION  
 OF ROTATION



**MOTOR SPECIFICATIONS:**

TORQUE CONSTANT (Kt) = 15.6 ± 10% OZ-IN/AMP  
 VOLTAGE CONSTANT (Ke) = 11.5 ± 10% VOLTS/KRPM

**NOTES:**

- 1.) MOTOR ROTATION IS CLOCKWISE WHEN VIEWED FROM OUTPUT SHAFT WITH POSITIVE VOLTAGE APPLIED TO RED LEAD.
- 2.) RUNNING MOTOR WITH ONLY ONE BLACK AND ONE RED LEAD WILL DAMAGE MOTOR.
- 3.) SCREW PENETRATION NOT TO EXCEED SPECIFIED THREAD DEPTH.
- 4.) X IDENTIFIES INSPECTION DIMENSIONS.

CONTROLLED  
 OCT 25 2017  
 DOCUMENT

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES & [mm]		THIRD ANGLE PROJECTION DO NOT SCALE DRAWING		THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MAGMOTOR TECHNOLOGIES. ANY REPRODUCTION OR DISCLOSURE OF THE INFORMATION CONTAINED THEREIN IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION FROM MAGMOTOR TECHNOLOGIES IS PROHIBITED.		<b>Magmotor™</b>
TOLERANCES ON: ANGLES = ± 1/2° X.XX [X.X] = ± .01 [0.25] X.XXX [X.XX] = ± .005 [0.12]		SIGNATURES		DATE	TITLE	
MATERIAL	-	DRAWN SLC	8/14/2017	MOTOR ASSEMBLY, S28-F2-300FX		
SPEC	-	CHECKED <i>SLC</i>	10/25/17			
FINISH	NONE	ENG APPR.				
SPEC	-	MFG APPR. <i>SLC</i>	10/25/17	SIZE	NUMBER	REV
UNLESS OTHERWISE SPECIFIED REMOVE ALL BURRS & SHARP EDGES. COUNTERSINK TAPPED HOLES TO BODY SIZE. FILLETS: .03 MAX. / EXTERNAL CORNERS: .015 MAX.		Q.A.		D	500280454	A
		SCALE: -		WEIGHT: - LB.	SHEET 1 OF 3	



10 Coppage Drive  
Worcester, MA 01603  
1/19/2018

**MOTOR PERFORMANCE / SPECIFICATIONS**

**Attn.:**

Final Product No.: **S28 F2 300 FX**

Customer:

RFQ **500280454**

Phone/Fax:

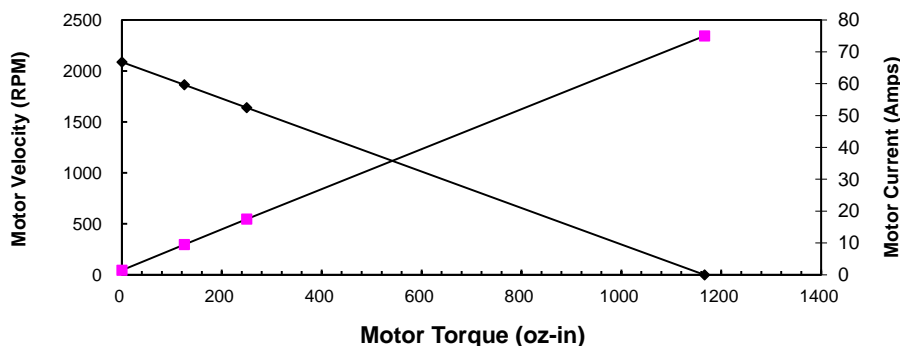
By: **JC**

Date: **8/14/2017**

This is a calculation data sheet

SPECS	C/S	Frame	PM	- Winding -	Stack	Options	Gear Ratio
MODEL #	<b>S</b>	<b>28</b>		<b>F2</b>	<b>300</b>	<b>FX</b>	<b>1.0</b>
$V_{in} = *$	<b>24</b>	Vdc			Input Voltage		<b>eff = 0.9</b>
$K_e = *$	<b>11.5</b>	V/krpm			Voltage Constant		
$K_t =$	15.6	oz-in/A			Torque Constant		
$R_t = *$	<b>0.32</b>	Ohms(@20° C)			Terminal Resistance+Amplifier		
$I_o = *$	<b>1.45</b>	Amps			No load current		
$I_{as} =$	75.0	Amps			Stall Current (reference only)		
$T_{gs} =$	1166	oz-in			Stall Torque (reference only @ $V_{in}$ )		
<b><math>I_1 =</math></b>	<b>9.5</b>	<b>Amps</b>			<b>Current @ Torque-1</b>		
<b><math>T_1 = *</math></b>	<b>125</b>	<b>oz-in</b>			<b>Torque-1</b>	112.5 oz-in	<b>149.5 Nm</b>
<b><math>T_2 = *</math></b>	<b>250</b>	<b>oz-in</b>			<b>Torque-2</b>	225.0 oz-in	<b>299 Nm</b>
$I_2 =$	17.5	Amps			Current @ Torque-2		
RPM nl =	<b>2087</b>	<b>RPM</b>			No Load Velocity		<b>2087.0 rpm</b>
<b>RPM r =</b>	<b>1863</b>	<b>RPM</b>			<b>RPM @ T1</b>		<b>1863.3 rpm</b>
RPM p =	<b>1640</b>	<b>RPM</b>			RPM @ T2		<b>1639.7 rpm</b>
$R_{ah} =$	0.42	Ohms(@105° C)			Term. Resistance Hot		
$T_{gsh} =$	892	oz-in			Stall Torque Hot		
$I_{ash} =$	57.3	Amps			Stall Current Hot		
<b><math>R_{th} = *</math></b>	<b>2.3</b>	<b>°C/W</b>			<b>Thermal Resistance</b>		
<b><math>T_r =</math></b>	<b>127</b>	<b>°C</b>	<b>Without cooling air</b>		<b>Temperature Rise (above ambient)</b>		
$N_{m/A} =$	0.11				Torque Constant		
$L_{b\ in/A} =$	0.97				Torque Constant		
$K_m =$	27.5	Kt/r			Motor Constant		

**Torque Curve**



**Calculation data**

Voltage	Torque	RPM	Amp	Efficiency	Watts out
24	0	2087	1.5	0	0
24	125	1863	9.5	0.7566	172.27363
24	250	1640	17.5	0.72088	303.19278
24	1166	0	75.0	0	0