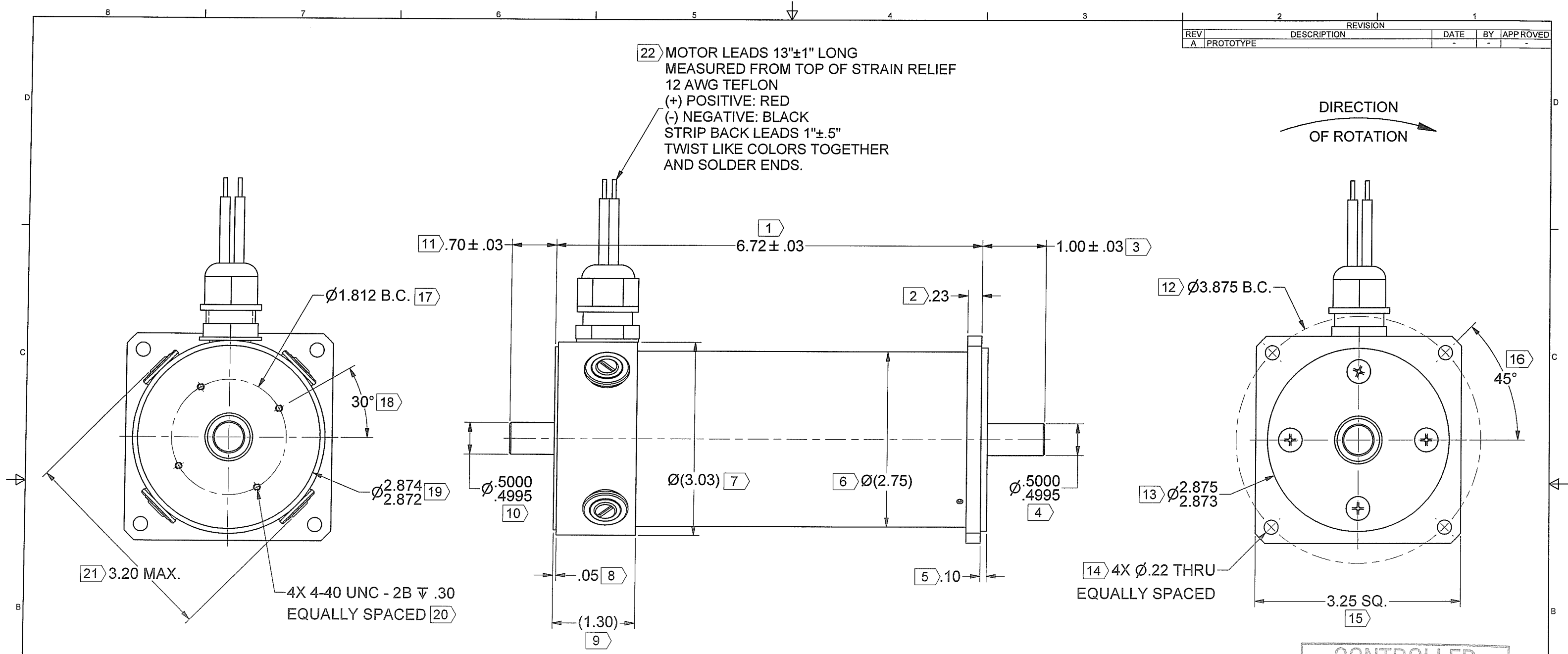


REV	DESCRIPTION	REVISION	DATE	BY	APPROVED
A	PROTOTYPE				



**MOTOR SPECIFICATIONS:**

TORQUE CONSTANT (Kt) = 17.1 ± 10% OZ-IN/AMP  
VOLTAGE CONSTANT (Ke) = 12.7 ± 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 26 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.		MAGMOTOR™	
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		8/7/2017		MOTOR ASSEMBLY, S28-D2-400FX	
SPEC		CHECKED <i>SLC</i>		10/26/17			
FINISH		ENG APPR.		MFG APPR. <i>BT</i>		SIZE NUMBER	
NONE		Q.A.		10/23/17		D 500280452	
SPEC		UNLESS OTHERWISE SPECIFIED REMOVE ALL BURRS & SHARP EDGES. COUNTERSINK TAPPED HOLES TO BODY SIZE FILLET: .03 MAX / EXTERNAL CORNERS: .015 MAX.		SCALE: -		WEIGHT: - LB.	
				SHEET 1 OF 3		REV A	



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

**MOTOR PERFORMANCE / SPECIFICATIONS**

**Attn.:**

Final Product No.: **S28 D2 400 FX**

Customer:

RFQ **500280452**

Phone/Fax:

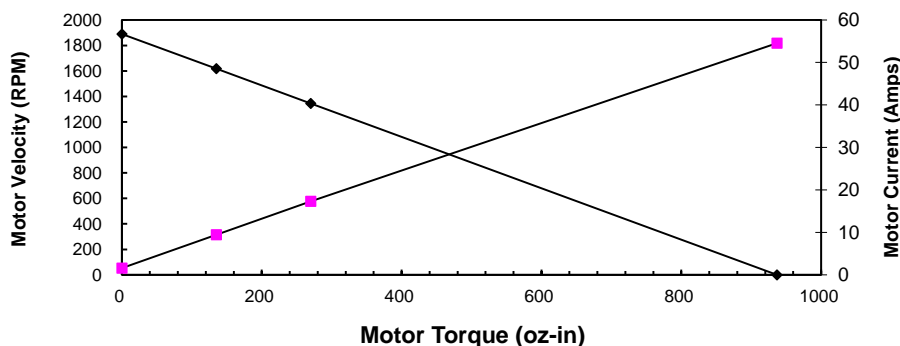
By: **JC**

Date: **8/7/2017**

This is a calculation data sheet

SPECS	C/S	Frame	PM	- Winding -	Stack	Options	Gear Ratio
MODEL #	<b>S</b>	<b>28</b>		<b>D2</b>	<b>400</b>	<b>FX</b>	<b>1.0</b>
$V_{in} = *$	<b>24</b>	Vdc			Input Voltage		<b>eff = 0.9</b>
$K_e = *$	<b>12.7</b>	V/krpm			Voltage Constant		
$K_t =$	17.2	oz-in/A			Torque Constant		
$R_t = *$	<b>0.44</b>	Ohms(@20° C)			Terminal Resistance+Amplifier		
$I_o = *$	<b>1.59</b>	Amps			No load current		
$I_{as} =$	54.5	Amps			Stall Current (reference only)		
$T_{gs} =$	937	oz-in			Stall Torque (reference only @ $V_{in}$ )		
$I_1 =$	<b>9.5</b>	Amps			<b>Current @ Torque-1</b>		
$T_1 = *$	<b>135</b>	oz-in			<b>Torque-1</b>	121.5 oz-in	<b>149.5 Nm</b>
$T_2 = *$	<b>270</b>	oz-in			<b>Torque-2</b>	243.0 oz-in	<b>299 Nm</b>
$I_2 =$	17.3	Amps			Current @ Torque-2		
RPM nl =	<b>1890</b>	RPM			No Load Velocity		<b>1889.8 rpm</b>
RPM r =	<b>1617</b>	RPM			<b>RPM @ T1</b>		<b>1617.4 rpm</b>
RPM p =	<b>1345</b>	RPM			RPM @ T2		<b>1345.1 rpm</b>
$R_{ah} =$	0.58	Ohms(@105° C)			Term. Resistance Hot		
$T_{gsh} =$	716	oz-in			Stall Torque Hot		
$I_{ash} =$	41.7	Amps			Stall Current Hot		
$R_{th} = *$	<b>1.8</b>	°C/W			Thermal Resistance		
$T_r =$	<b>118</b>	°C	Without cooling air		<b>Temperature Rise (above ambient)</b>		
Nm/A =	0.12				Torque Constant		
Lb in/A =	1.07				Torque Constant		
Km =	25.9	Kt/r			Motor Constant		

**Torque Curve**



**Calculation data**

Voltage	Torque	RPM	Amp	Efficiency	Watts out
24	0	1890	1.6	0	0
24	<b>135</b>	<b>1617</b>	<b>9.5</b>	<b>0.7121</b>	<b>161.50547</b>
24	270	1345	17.3	0.64661	268.62822
24	937	0	54.5	0	0