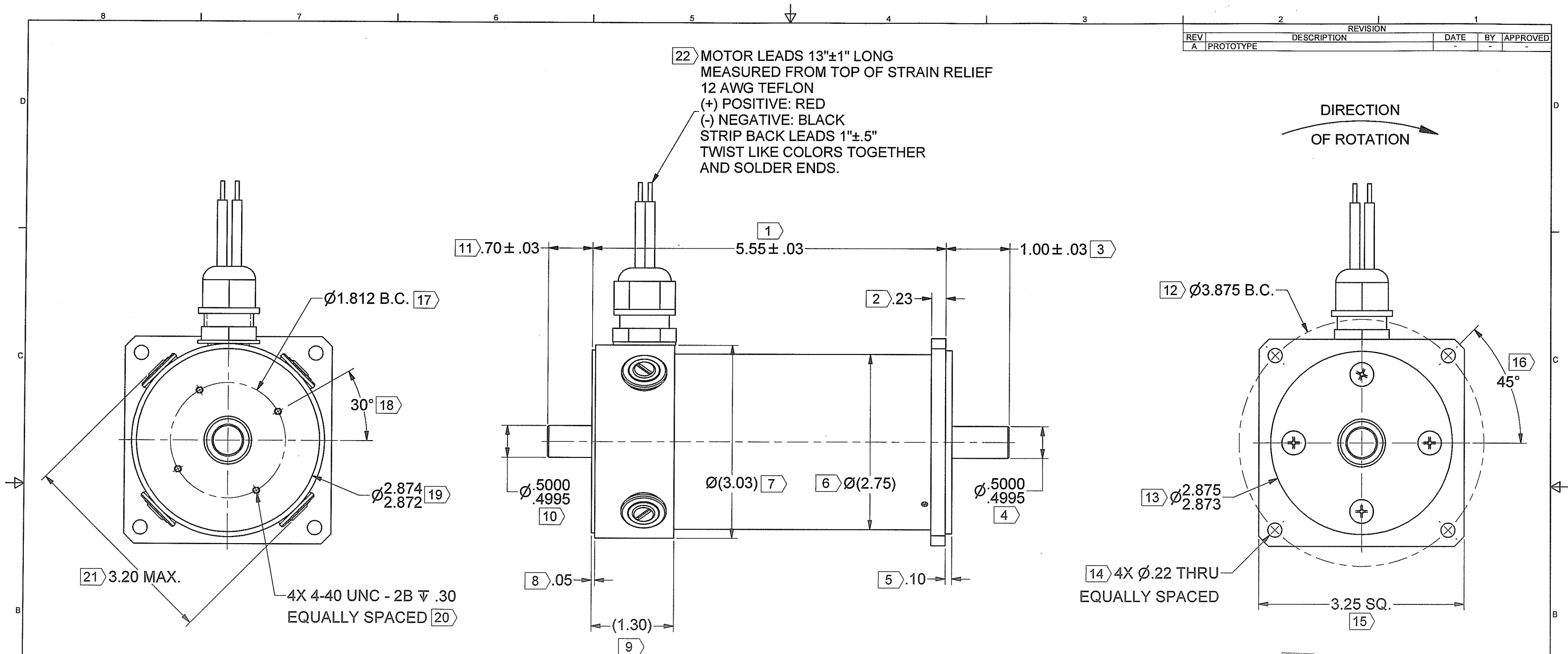


REV	DESCRIPTION	REVISION	DATE	BY	APPROVED
A	PROTOTYPE				

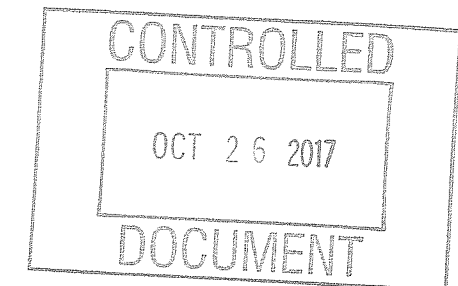


**MOTOR SPECIFICATIONS:**

TORQUE CONSTANT (Kt) = 7.8 ± 10% OZ-IN/AMP  
VOLTAGE CONSTANT (Ke) = 5.8 ± 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.



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.			
TOLERANCES ON: ANGLES = ± 1/2° X.XXX [X.X] = ± .01 [0.25] X.XXX [X.XX] = ± .005 [0.12]		125 ✓	SIGNATURES		DATE	TITLE	
MATERIAL	DRAWN SLC		8/10/2017		MOTOR ASSEMBLY, S28-E4-300FX		
SPEC	CHECKED <i>SL</i>		16/26/17				
FINISH	ENG APPR.		MFG APPR. <i>BT</i>		Q.A.		
SPEC	NONE		UNLESS OTHERWISE SPECIFIED REMOVE ALL BURRS & SHARP EDGES, COUNTERSINK TAPPED HOLES TO BODY SIZE FILLETS: .03 MAX. / EXTERNAL CORNERS: .015 MAX.		SIZE	NUMBER	REV
		D		500280453		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 E4 300 FX**

Customer:

RFQ **500280453**

Phone/Fax:

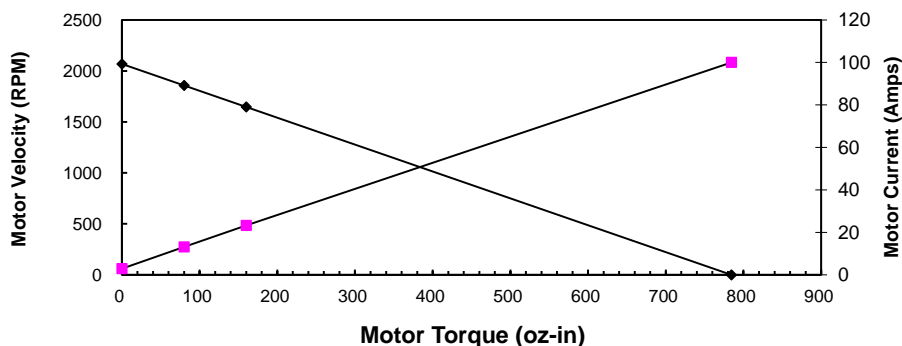
By: **JC**

Date: **8/11/2017**

This is a calculation data sheet

SPECS	C/S	Frame	PM	- Winding -	Stack	Options	Gear Ratio
MODEL #	<b>S</b>	<b>28</b>		<b>E4</b>	<b>300</b>	<b>FX</b>	<b>1.0</b>
$V_{in} = *$	<b>12</b>	Vdc			Input Voltage		<b>eff = 0.9</b>
$K_e = *$	<b>5.8</b>	V/krpm			Voltage Constant		
$K_t =$	7.8	oz-in/A			Torque Constant		
$R_t = *$	<b>0.12</b>	Ohms(@20° C)			Terminal Resistance+Amplifier		
$I_o = *$	<b>2.91</b>	Amps			No load current		
$I_{as} =$	100.0	Amps			Stall Current (reference only)		
$T_{gs} =$	784	oz-in			Stall Torque (reference only @ $V_{in}$ )		
$I_1 =$	<b>13.1</b>	Amps			<b>Current @ Torque-1</b>		
$T_1 = *$	<b>80</b>	oz-in			Torque-1	72.0 oz-in	<b>149.5 Nm</b>
$T_2 = *$	<b>160</b>	oz-in			Torque-2	144.0 oz-in	<b>299 Nm</b>
$I_2 =$	23.3	Amps			Current @ Torque-2		
RPM nl =	<b>2069</b>	RPM			No Load Velocity		<b>2069.0 rpm</b>
RPM r =	<b>1858</b>	RPM			<b>RPM @ T1</b>		<b>1858.0 rpm</b>
RPM p =	<b>1647</b>	RPM			RPM @ T2		<b>1646.9 rpm</b>
$R_{ah} =$	0.16	Ohms(@105° C)			Term. Resistance Hot		
$T_{gsh} =$	600	oz-in			Stall Torque Hot		
$I_{ash} =$	76.4	Amps			Stall Current Hot		
$R_{th} = *$	<b>2.3</b>	°C/W			Thermal Resistance		
$T_r =$	<b>109</b>	°C	<b>Without cooling air</b>		<b>Temperature Rise (above ambient)</b>		
Nm/A =	0.06				Torque Constant		
Lb in/A =	0.49				Torque Constant		
Km =	22.6	Kt/r			Motor Constant		

**Torque Curve**



**Calculation data**

Voltage	Torque	RPM	Amp	Efficiency	Watts out
12	0	2069	2.9	0	0
12	<b>80</b>	<b>1858</b>	<b>13.1</b>	<b>0.69887</b>	<b>109.93799</b>
12	160	1647	23.3	0.69684	194.90398
12	784	0	100.0	0	0