

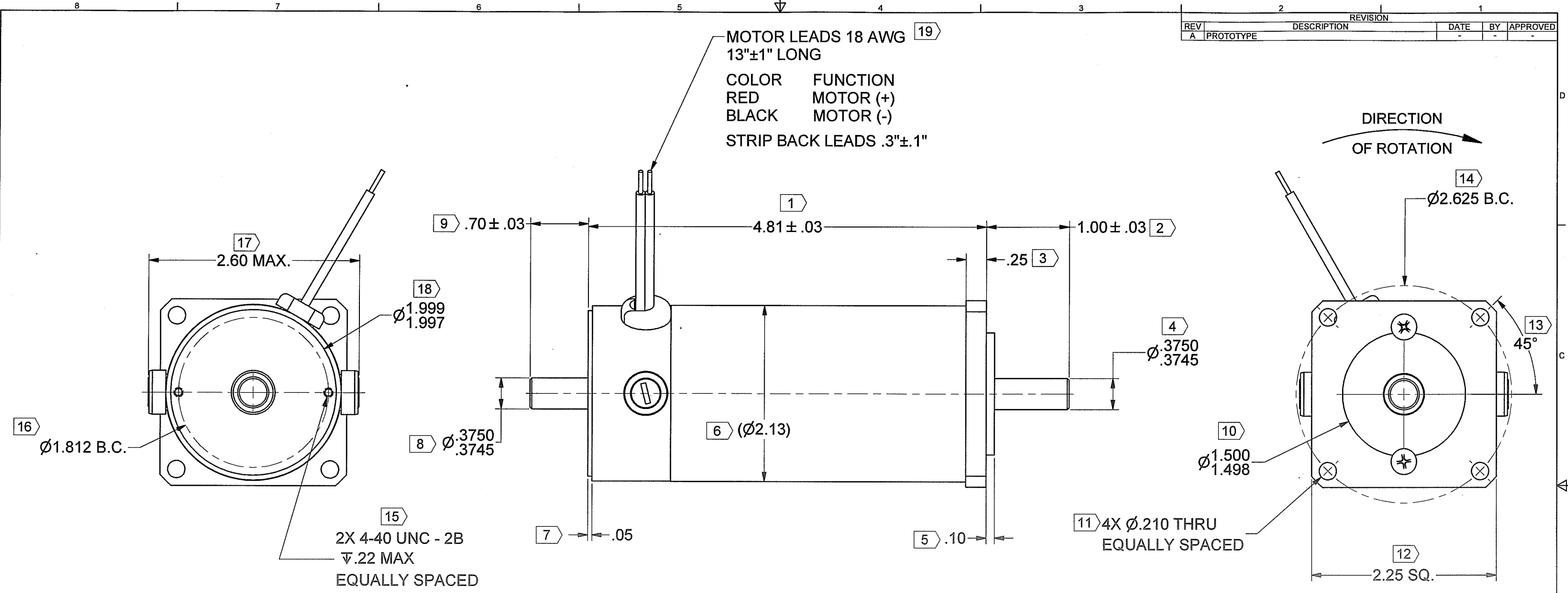
REV	DESCRIPTION	REVISION	DATE	BY	APPROVED
A	PROTOTYPE				

MOTOR LEADS 18 AWG  
13"±1" LONG

COLOR	FUNCTION
RED	MOTOR (+)
BLACK	MOTOR (-)

STRIP BACK LEADS .3"±.1"

DIRECTION OF ROTATION

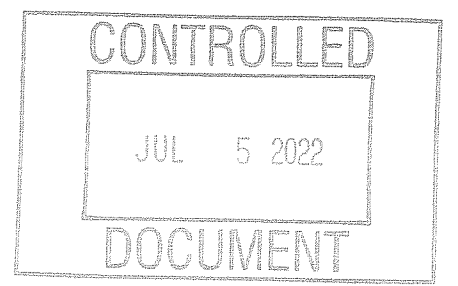


**MOTOR SPECIFICATIONS:**

TORQUE CONSTANT (Kt) =  $17.6 \pm 10\%$  OZ-IN/AMP  
 VOLTAGE CONSTANT (Ke) =  $13.0 \pm 10\%$  VOLTS/KRPM

**NOTES:**

- 1.) MOTOR ROTATION IS CLOCKWISE WHEN VIEWED FROM OUTPUT SHAFT WITH POSITIVE VOLTAGE APPLIED TO RED LEAD.
- 2.) SCREW PENETRATION NOT TO EXCEED SPECIFIED THREAD DEPTH.
- 3.) 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.		MagmaMotor™
		SIGNATURES	DATE	
TOLERANCES ON: ANGLES = $\pm 1/2^\circ$ X.XX [X.X] = $\pm .01$ [0.25] X.XXX [X.XX] = $\pm .005$ [0.12]	125 ✓	CGW	6/21/2022	MOTOR ASSEMBLY, C21-G-230FX
MATERIAL		CHECKED		
SPEC		ENG APPR. <i>McM</i>	7/5/22	
FINISH		MFG APPR. <i>37</i>	7/5/22	
NONE		Q.A.		
SPEC		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	500210358	A
		SCALE: -	WEIGHT: - LB.	SHEET 1 OF 3



10 Coppage Drive  
Worcester, MA 01603  
8/17/2022

**MOTOR PERFORMANCE / SPECIFICATIONS**

**Attn.:**

Final Product No.: **C21-G-230FX**

Customer:

RFQ 500210358

Phone/Fax:

By: MM

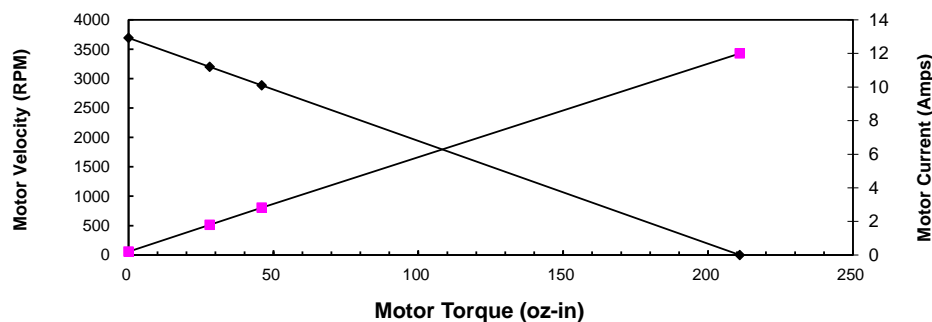
Date: 8/17/2022

This is a calculation data sheet

SPECS	C/S	Frame	PM	-	Winding	-	Stack	Options	Gear Ratio
MODEL #	<b>C</b>	<b>21</b>	-	-	<b>G</b>	-	<b>230</b>	<b>FX</b>	

V in =*	<b>48</b> Vdc		Input Voltage	Eff = 0.9
Ke =*	<b>13.00</b> V/krpm		Voltage Constant	
Kt =	17.6 oz-in/A		Torque Constant	
Rt =*	<b>4.00</b> Ohms(@20° C)		Terminal Resistance+Amplifier	
Io =*	<b>0.20</b> Amps		No load current	
I as =	12.0 Amps		Stall Current (reference only)	
T gs =	211 oz-in		Stall Torque (reference only @ V in)	
I 1 =	1.8 Amps		Current @ Torque-1	
I 2 =	2.8 Amps		Current @ Torque-2	
T 1 =*	<b>28</b> oz-in		Torque-1	0.0 oz-in 0.0 in-lb
T 2 =*	<b>46</b> oz-in		Torque-2	0.0 oz-in 0.0 in-lb
RPM nl =	3692 RPM		No Load Velocity	#DIV/0! rpm
RPM r =	3202 RPM		RPM @ T1	#DIV/0! rpm
RPM p =	2887 RPM		RPM @ T2	#DIV/0! rpm
R ah =	5.23 Ohms(@105° C)		Term. Resistance Hot	
T gsh =	161 oz-in		Stall Torque Hot	
I ash =	9.2 Amps		Stall Current Hot	
R th =*	<b>4.0</b> °C/W		Thermal Resistance	
Tr =	<b>79</b> °C	Without cooling air	Temperature Rise @ T1 (above ambient)	
Tr =	<b>148</b> °C	Without cooling air	Temperature Rise @ T2 (above ambient)	
Nm/A =	0.12		Torque Constant	
Lb in/A =	1.10		Torque Constant	
Km =	8.8 Kt/r		Motor Constant	

**Torque Curve**



**Calculation data**

Voltage	Torque	RPM	Amp	Efficiency	Watts out
48	0	3692	0.2	0	0
48	28	3202	1.8	0.770748475	66.319279
48	46	2887	2.8	0.726650271	98.234903
48	211	0	12.0	0	0