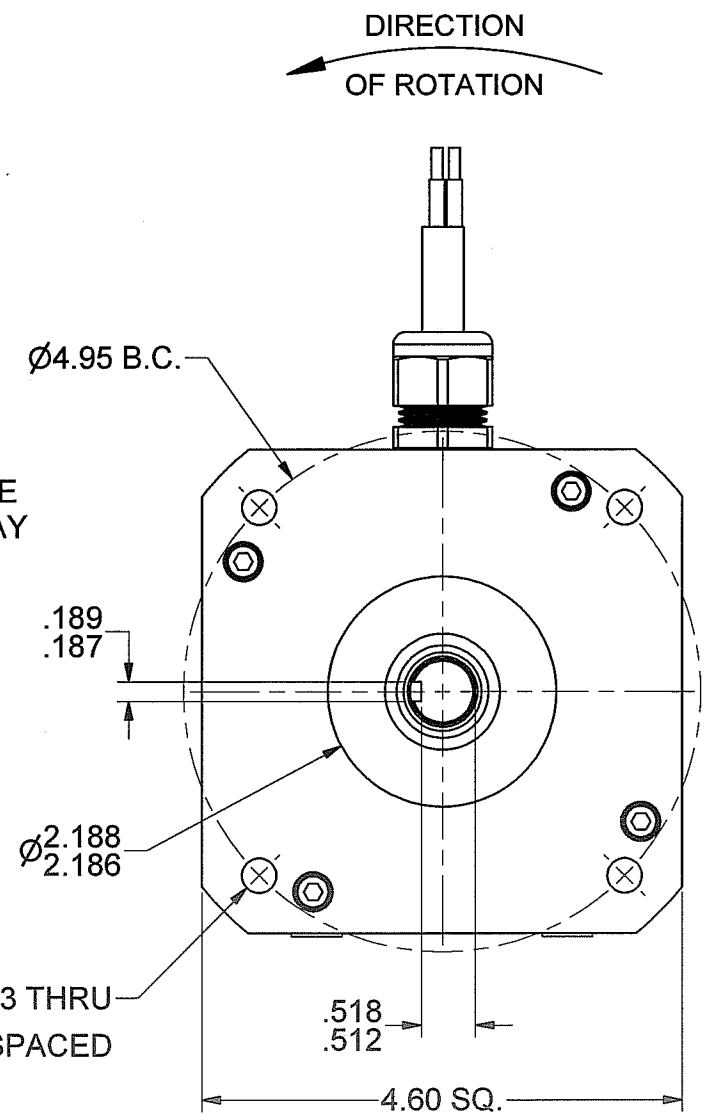
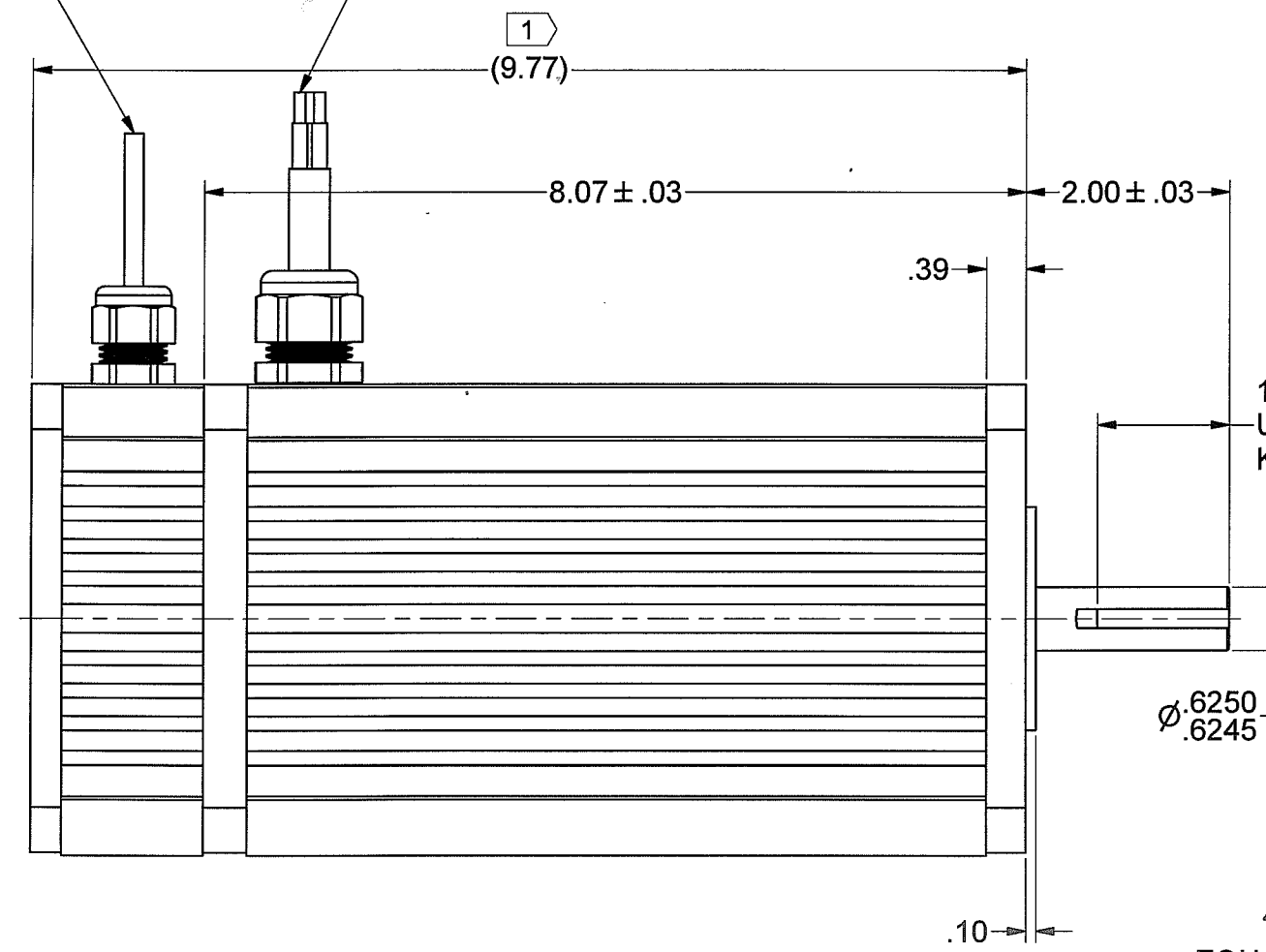
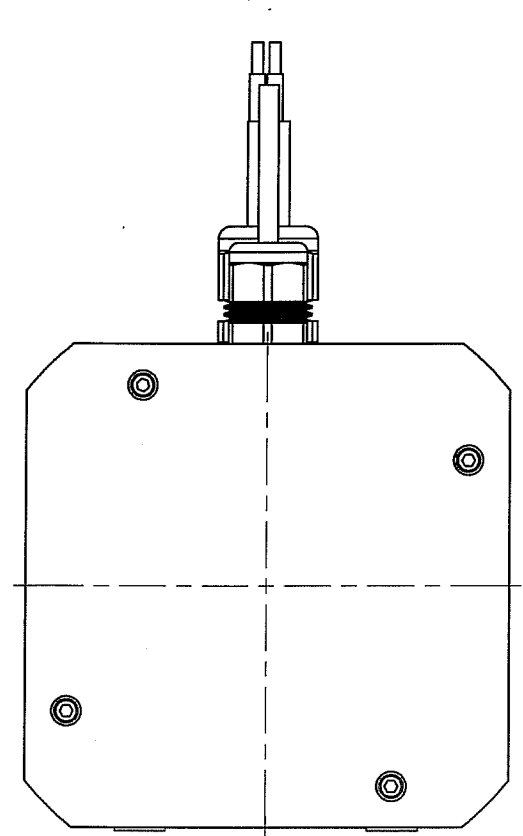


REV	DESCRIPTION	REVISION	DATE	BY	APPROVED
A	PROTOTYPE				

2) 2000 LINE INCREMENTAL / COMMUTATING ENCODER 21"±1" LONG SHIELDED CABLE MEASURED FROM TOP OF STRAIN RELIEF (SEE CHART FOR FUNCTIONS AND COLORS)

3) MOTOR LEAD WIRES, 18"±1" LONG (TEFLON) MEASURED FROM TOP OF STRAIN RELIEF COVERED WITH CLEAR HEAT SHRINK (SEE CHART FOR FUNCTIONS AND COLORS)



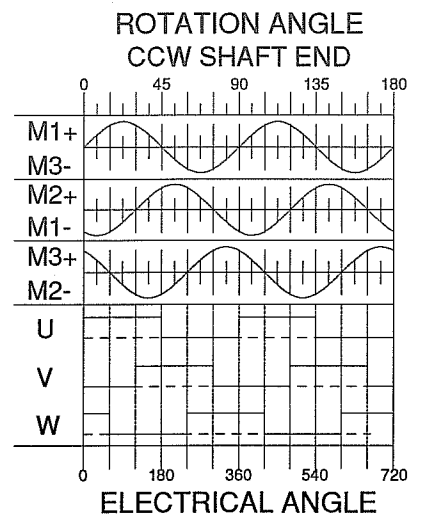
CONTROLLED
OCT 15 2019
DOCUMENT

MOTOR SPECIFICATIONS:

TORQUE CONSTANT (Kt) = 37.9 ± 10% OZ-IN/AMP
VOLTAGE CONSTANT (Ke) = 28.0 ± 10% VOLTS/KRPM

NOTES:

1.) (X) IDENTIFIES INSPECTION DIMENSIONS.



ENCODER WIRING - 28 AWG	
COLOR CODE	FUNCTION
RED	Vcc Inc +5V
BLACK	GND Inc
BLUE	A
BLUE / BLACK	A'
GREEN	B
GREEN / BLACK	B'
VIOLET	Z
VIOLET / BLACK	Z'
BROWN	U
BROWN / BLACK	U'
GRAY	V
GRAY / BLACK	V'
WHITE	W
WHITE / BLACK	W'
DRAIN	BARE

MOTOR LEADS - 10 AWG	
M1	RED
M2	BLACK
M3	WHITE

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.		Magnomotor	
TOLERANCES ON: ANGLES = ± 1/2° X.XX [X.X] = ± .01 [0.25] X.XXX [X.XX] = ± .005 [0.12]	125 ✓	SIGNATURES	DATE	TITLE			
MATERIAL		DRAWN SLC	9/23/2019	FINAL ASSEMBLY, BFA42-5G-500FE			
SPEC		CHECKED <i>ll</i>	10/15/19	SIZE NUMBER			
FINISH		ENG APPR.		D 730420102		REV	
SPEC		MFG APPR. <i>BT</i>	10/15/19	Q.A.		A	
UNLESS OTHERWISE SPECIFIED REMOVE ALL BURRS & SHARP EDGES, COUNTERSINK TAPPED HOLES TO BODY SIZE FILLETS: .03 MAX. / EXTERNAL CORNERS: .015 MAX.		SCALE: -		WEIGHT: -LB.		SHEET 1 OF 3	



10 Coppage Drive
Worcester, MA 01603
10/29/2019

MOTOR PERFORMANCE / SPECIFICATIONS

Attn.:

Final Product No.: **BFA 42 5G 500 FE**

Customer:

RFQ 730420102

Phone/Fax:

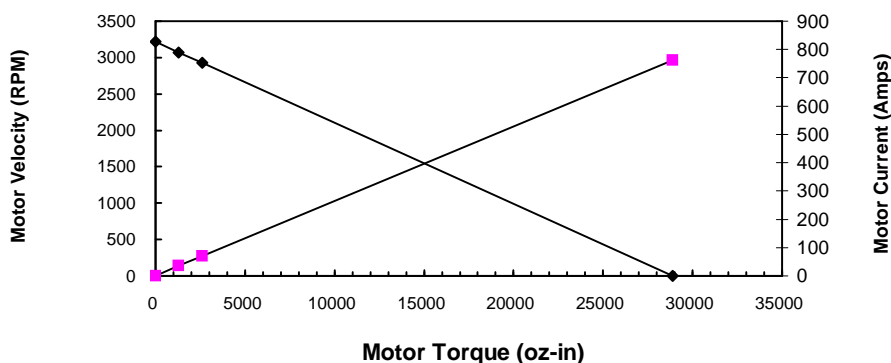
By: JC

Date: 10/15/2019

This is a calculation data sheet

SPECS	C/S	Frame	PM	- Winding -	Stack	Options	Gear Ratio
MODEL #	BFA	42		5G	500	FE	1.0
$V_{in} = *$	90	Vdc			Input Voltage		eff = 0.9
$K_e = *$	28.0	V/krpm			Voltage Constant		
$K_t =$	37.9	oz-in/A			Torque Constant		
$R_t = *$	0.118	Ohms(@20°C)			Terminal Resistance+Amplifier		
$I_o = *$	0.745	Amps			No load current		
$I_{as} =$	762.7	Amps			Stall Current (reference only)		
$T_{gs} =$	28882	oz-in			Stall Torque (reference only @ V_{in})		
$I_1 =$	35.1	Amps			Current @ Torque-1		
$T_1 = *$	1300	oz-in			Torque-1	1170.0 oz-in	73.1 in-lb
$T_2 = *$	2600	oz-in			Torque-2	2340.0 oz-in	146.3 in-lb
$I_2 =$	69.4	Amps			Current @ Torque-2		
RPM $n_l =$	3214	RPM			No Load Velocity		3214.3 rpm
RPM $r =$	3070	RPM			RPM @ T1		3069.6 rpm
RPM $p =$	2925	RPM			RPM @ T2		2924.9 rpm
$R_{ah} =$	0.15	Ohms(@105°C)			Term. Resistance Hot		
$T_{gsh} =$	22076	oz-in			Stall Torque Hot		
$I_{ash} =$	583.0	Amps			Stall Current Hot		
$R_{th} = *$	0.24	°C/W			Thermal Resistance		
$T_r =$	49	°C	Without cooling air		Temperature Rise (above ambient)		
Nm/A=	0.27				Torque Constant		
Lb in/A=	2.37				Torque Constant		
Km=	110.2	Kt//r			Motor Constant		

Torque Curve



Calculation data

Voltage	Torque	RPM	Amp	Efficiency	Watts out
90	0	3214	0.7	0	0
90	1300	3070	35.1	0.93498	2951.5454
90	2600	2925	69.4	0.90048	5624.8627
90	28882	0	762.7	0	0