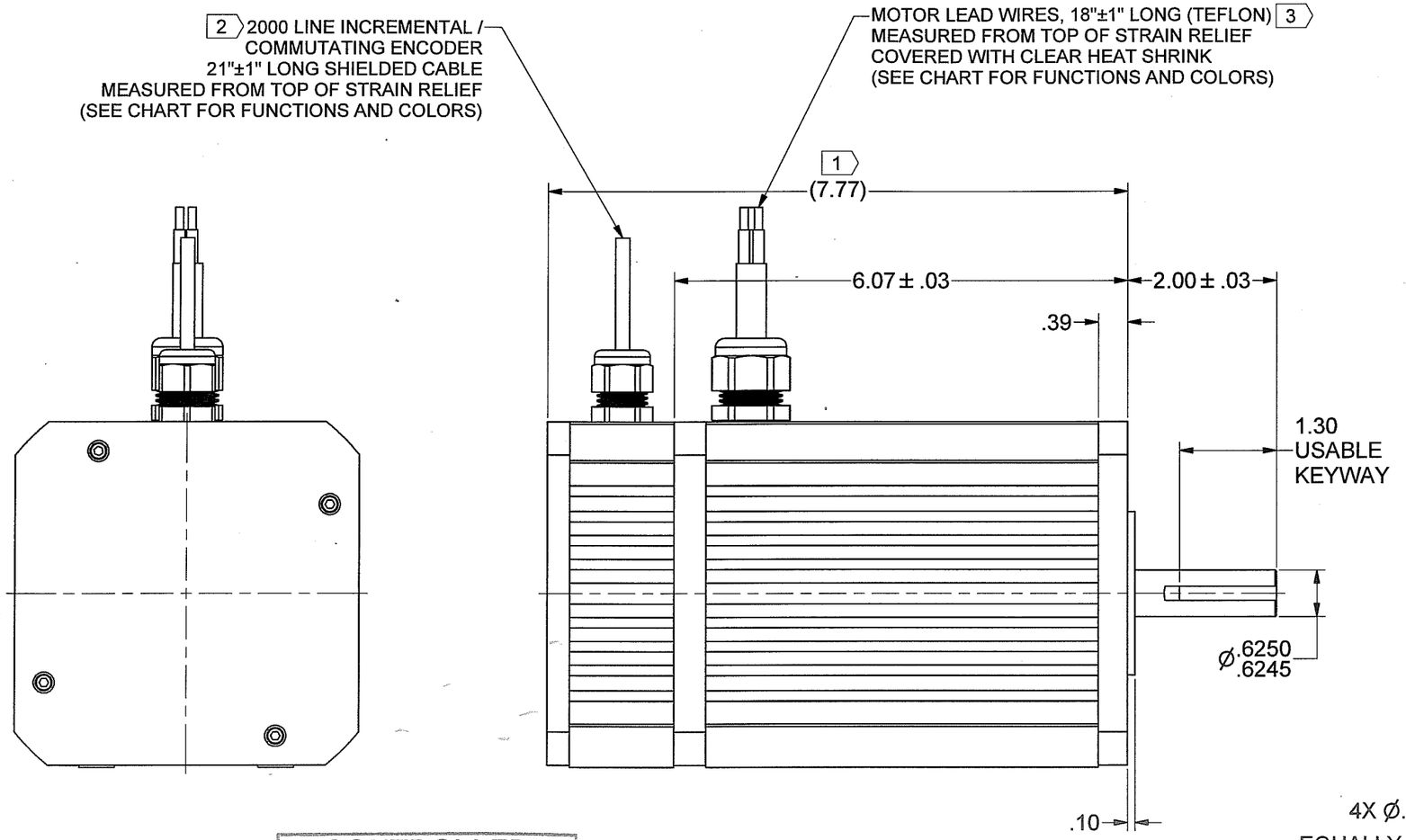
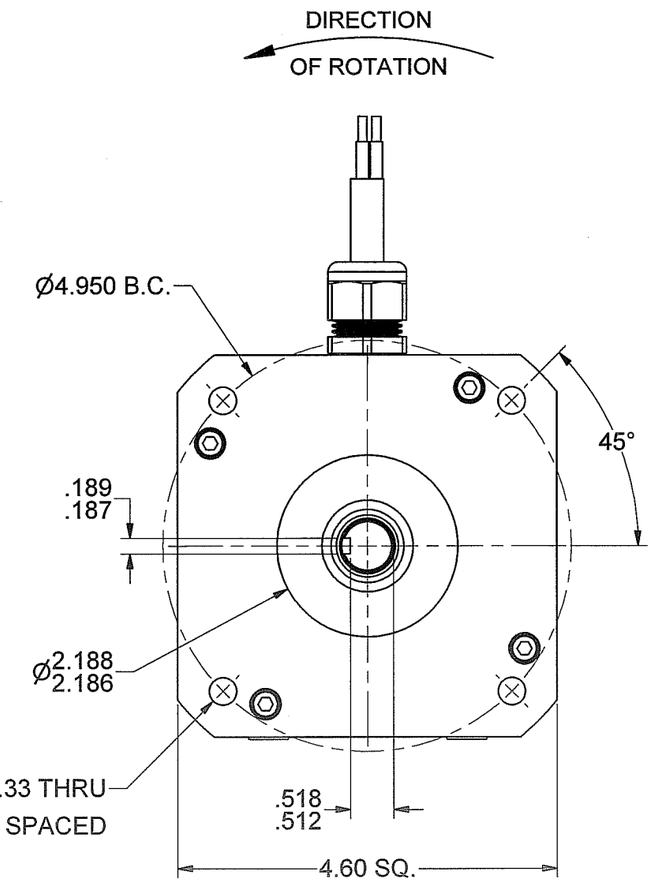
REVISION				
REV	DESCRIPTION	DATE	BY	APPROVED
A	PROTOTYPE	-	-	-





CONTROLLED DOCUMENT
AUG 22 2019

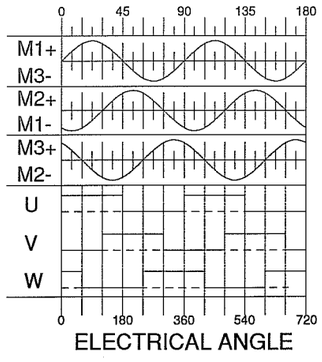
MOTOR SPECIFICATIONS:

TORQUE CONSTANT (Kt) = 18.3 ± 10% OZ-IN/AMP
VOLTAGE CONSTANT (Ke) = 13.5 ± 10% VOLTS/KRPM

NOTES:

1.) X IDENTIFIES INSPECTION DIMENSIONS.

ROTATION ANGLE
CCW SHAFT END



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]
TOLERANCES ON: ANGLES = ± 1/2° X.XX [X.X] = ± .01 [0.25] X.XXX [X.XX] = ± .005 [0.12]
125

THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING

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Magmotor

SIGNATURES		DATE
DRAWN	SLC	8/21/2019
CHECKED		8/22/19
ENG APPR.		
MFG APPR.	BT	8/22/19
Q.A.		

MATERIAL: -
SPEC:
FINISH: NONE
SPEC:

UNLESS OTHERWISE SPECIFIED REMOVE ALL BURRS & SHARP EDGES, COUNTERSINK TAPPED HOLES TO BODY SIZE FILLETS: .03 MAX. / EXTERNAL CORNERS: .015 MAX.

TITLE: FINAL ASSEMBLY, BFA42-5F-300FE

SIZE	NUMBER	REV
D	730420099	A

SCALE: - | WEIGHT: - LB. | SHEET 1 OF 3

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

MOTOR PERFORMANCE / SPECIFICATIONS

Attn.:

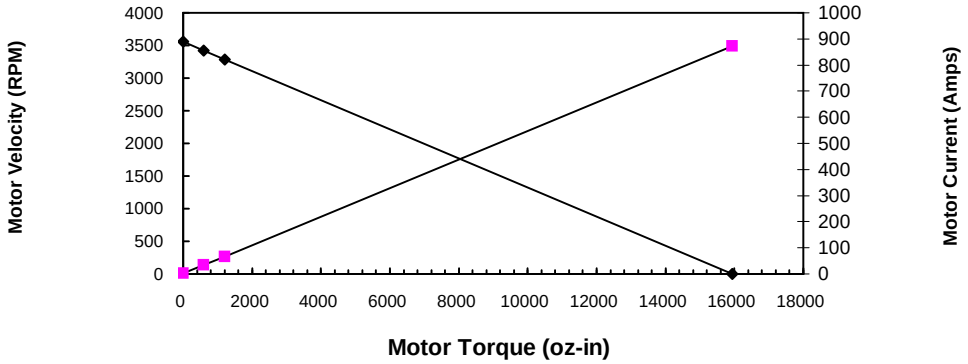
Final Product No.: **BFA42 5F 300 FE**
Customer:
RFQ 730420099
Phone/Fax:
By: JC
Date: 8/15/2019

This is a calculation data sheet X

SPECS	C/S	Frame	PM	- Winding -	Stack	Options	Gear Ratio
MODEL #	**BFA**	**42**		**5F**	**300**	**FE**	**1**

V in =*	**48**	Vdc	Input Voltage		**eff = 0.9**
Ke =*	**13.5**	V/krpm	Voltage Constant		
Kt =	18.3	oz-in/A	Torque Constant		
Rt =*	**0.055**	Ohms(@20°C)	Terminal Resistance+Amplifier		
Io=*	**1.55**	Amps	No load current		
I as =	872.7	Amps	Stall Current (reference only)		
T gs =	15934	oz-in	Stall Torque (reference only @ V in)		
I 1 =	**34.4**	**Amps**	**Current @ Torque-1**		
T 1 =*	**600**	**oz-in**	**Torque-1**	**540.0 oz-in**	**33.8 in-lb**
T 2 =*	**1200**	**oz-in**	**Torque-2**	**1080.0 oz-in**	**67.5 in-lb**
I 2 =	67.3	Amps	Current @ Torque-2		
RPM nl =	3556	RPM	No Load Velocity		3555.6 rpm
RPM r =	**3422**	**RPM**	**RPM @ T1**		**3421.7 rpm**
RPM p=	**3288**	**RPM**	**RPM @ T2**		**3287.8 rpm**
R ah =	0.07	Ohms(@105°C)	Term. Resistance Hot		
T gsh =	12179	oz-in	Stall Torque Hot		
I ash =	667.1	Amps	Stall Current Hot		
R th =*	**0.31**	℃/W	Thermal Resistance		
Tr =	**41**	**℃** **Without cooling air**	**Temperature Rise (above ambient)**		
Nm/A=	0.13		Torque Constant		
Lb in/A=	1.14		Torque Constant		
Km=	77.8	Kt//r	Motor Constant		

Torque Curve



Calculation data

Voltage	Torque	RPM	Amp	Efficiency	Watts out
48	0	3556	1.6	0	0
48	**600**	**3422**	**34.4**	**0.91927**	**1518.4916**
48	1200	3288	67.3	0.90365	2918.1478
48	15934	0	872.7	0	0