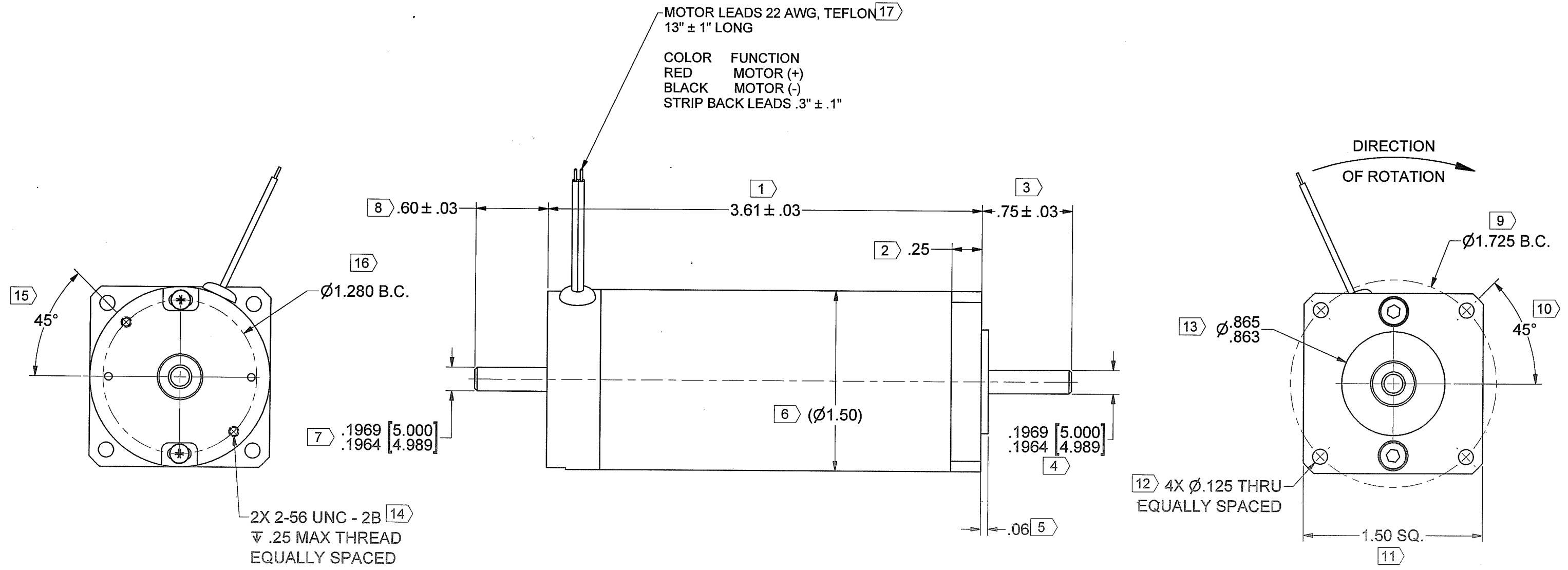


| REV | DESCRIPTION | DATE | BY | APPROVED |
|-----|-------------|------|----|----------|
| A   | PROTOTYPE   |      |    |          |

MOTOR LEADS 22 AWG, TEFLON 17  
 13" ± 1" LONG

COLOR FUNCTION  
 RED MOTOR (+)  
 BLACK MOTOR (-)  
 STRIP BACK LEADS .3" ± .1"

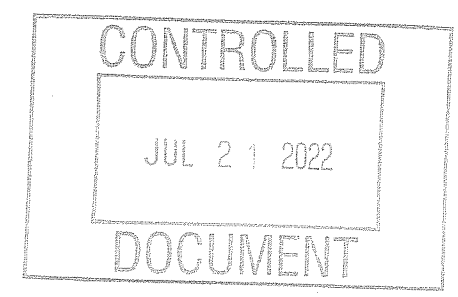


**MOTOR SPECIFICATIONS:**

TORQUE CONSTANT (Kt) = 3.8 ± 10% OZ-IN/AMP  
 VOLTAGE CONSTANT (Ke) = 2.8 ± 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<br>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:<br>ANGLES = ± 1/2°<br>X.XX [X.X] = ± .01 [0.25]<br>X.XXX [X.XX] = ± .005 [0.12]  |  | SIGNATURES                                     |      | DATE  |  |                               |
| MATERIAL  |  | DRAWN  | CGW  | 7/19/2022   |  | MOTOR ASSEMBLY, SR15-N2-200FX |
| SPEC  |  | CHECKED  | M    | 7/21/22   |  |                               |
| FINISH  |  | ENG APPR.                                      | M CM | 7/21/22   |  |                               |
| NONE  |  | MFG APPR.                                      | BT   | 7/21/22   |  | SIZE                          |
| SPEC  |  | Q.A.   |      |   |  | NUMBER                        |
| UNLESS OTHERWISE SPECIFIED REMOVE ALL BURRS & SHARP EDGES, COUNTERSINK TAPPED HOLES TO BODY SIZE, FILLETS: .03 MAX. / EXTERNAL CORNERS: .015 MAX. |  | SCALE: -                                       |      | WEIGHT: - LB.   |  | REV                           |
|   |  |  |      |   |  | D 500150096                   |
|   |  |  |      |   |  | A                             |
|   |  |  |      |   |  | SHEET 1 OF 3                  |



10 Coppage Drive  
Worcester, MA 01603  
8/22/2022

**MOTOR PERFORMANCE / SPECIFICATIONS**

**Attn.:**

Final Product No.: **SR15-N2-200FX**

Customer:

RFQ 500150096

Phone/Fax:

By: MM

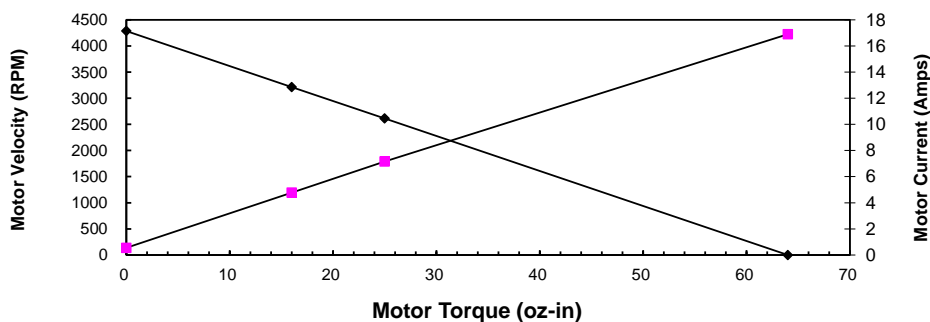
Date: 8/22/2022

This is a calculation data sheet

| SPECS   | C/S       | Frame     | PM | - | Winding   | - | Stack      | Options   | Gear Ratio |
|---------|-----------|-----------|----|---|-----------|---|------------|-----------|------------|
| MODEL # | <b>SR</b> | <b>15</b> |    |   | <b>N2</b> |   | <b>200</b> | <b>FX</b> |            |

|           |                          |                     |  |  |  |  |                                       |  |           |
|-----------|--------------------------|---------------------|--|--|--|--|---------------------------------------|--|-----------|
| V in =*   | <b>12</b> Vdc            |                     |  |  |  |  | Input Voltage                         |  | Eff = 0.9 |
| Ke =*     | <b>2.80</b> V/krpm       |                     |  |  |  |  | Voltage Constant                      |  |           |
| Kt =      | 3.8 oz-in/A              |                     |  |  |  |  | Torque Constant                       |  |           |
| Rt =*     | <b>0.71</b> Ohms(@20° C) |                     |  |  |  |  | Terminal Resistance+Amplifier         |  |           |
| Io =*     | <b>0.55</b> Amps         |                     |  |  |  |  | No load current                       |  |           |
| I as =    | 16.9 Amps                |                     |  |  |  |  | Stall Current (reference only)        |  |           |
| T gs =    | 64 oz-in                 |                     |  |  |  |  | Stall Torque (reference only @ V in)  |  |           |
| I 1 =     | 4.8 Amps                 |                     |  |  |  |  | Current @ Torque-1                    |  |           |
| I 2 =     | 7.2 Amps                 |                     |  |  |  |  | Current @ Torque-2                    |  |           |
| T 1 =*    | <b>16</b> oz-in          |                     |  |  |  |  | Torque-1                              |  |           |
| T 2 =*    | <b>25</b> oz-in          |                     |  |  |  |  | Torque-2                              |  |           |
| RPM nl =  | 4286 RPM                 |                     |  |  |  |  | No Load Velocity                      |  |           |
| RPM r =   | 3214 RPM                 |                     |  |  |  |  | RPM @ T1                              |  |           |
| RPM p =   | 2612 RPM                 |                     |  |  |  |  | RPM @ T2                              |  |           |
| R ah =    | 0.93 Ohms(@105° C)       |                     |  |  |  |  | Term. Resistance Hot                  |  |           |
| T gsh =   | 49 oz-in                 |                     |  |  |  |  | Stall Torque Hot                      |  |           |
| I ash =   | 12.9 Amps                |                     |  |  |  |  | Stall Current Hot                     |  |           |
| R th =*   | <b>4.0</b> °C/W          |                     |  |  |  |  | Thermal Resistance                    |  |           |
| Tr =      | <b>77</b> °C             | Without cooling air |  |  |  |  | Temperature Rise @ T1 (above ambient) |  |           |
| Tr =      | <b>150</b> °C            | Without cooling air |  |  |  |  | Temperature Rise @ T2 (above ambient) |  |           |
| Nm/A =    | 0.03                     |                     |  |  |  |  | Torque Constant                       |  |           |
| Lb in/A = | 0.24                     |                     |  |  |  |  | Torque Constant                       |  |           |
| Km =      | 4.5                      | Kt/r                |  |  |  |  | Motor Constant                        |  |           |

**Torque Curve**



**Calculation data**

| Voltage | Torque | RPM  | Amp  | Efficiency  | Watts out |
|---------|--------|------|------|-------------|-----------|
| 12      | 0      | 4286 | 0.6  |             | 0         |
| 12      | 16     | 3214 | 4.8  | 0.663817312 | 38.039063 |
| 12      | 25     | 2612 | 7.2  | 0.562684741 | 48.291988 |
| 12      | 64     | 0    | 16.9 |             | 0         |