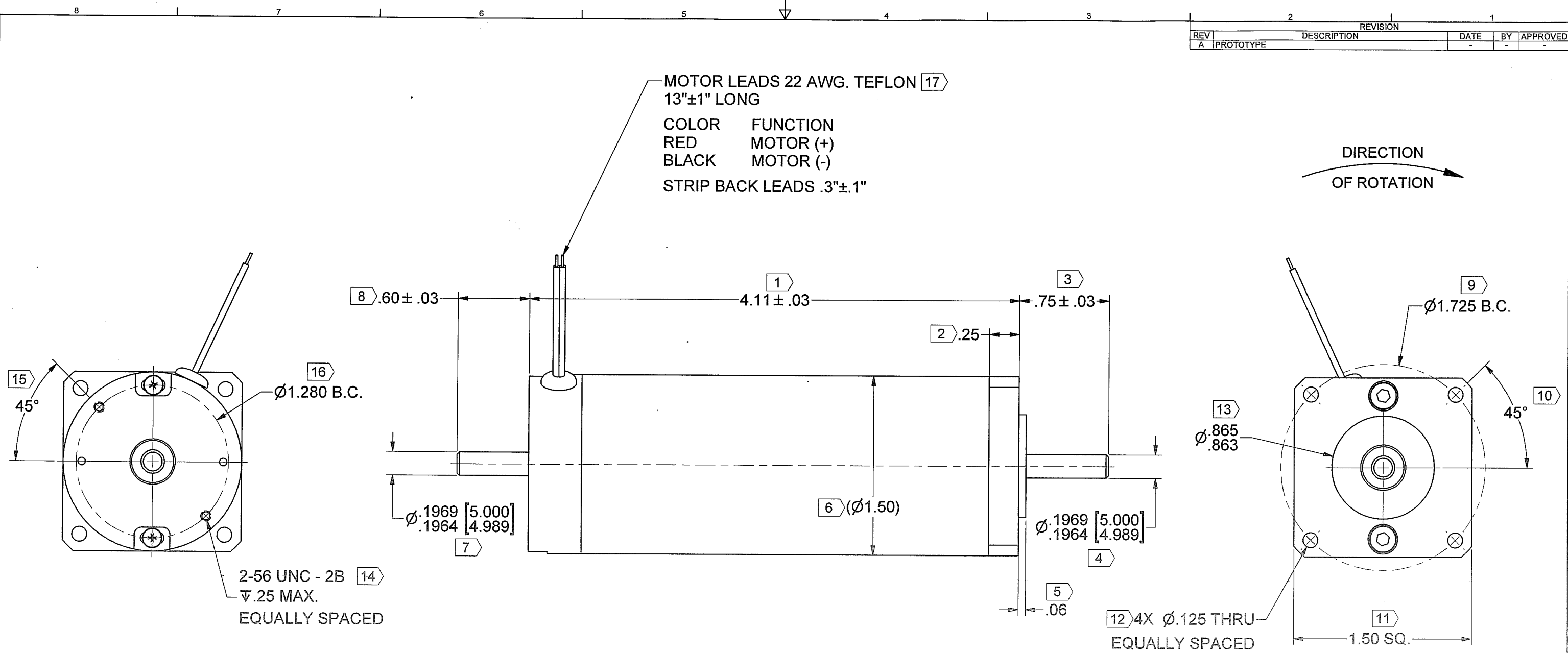


| REV | DESCRIPTION | DATE | BY | APPROVED |
|-----|-------------|------|----|----------|
| A   | PROTOTYPE   | -    | -  | -        |



**MOTOR SPECIFICATIONS:**

TORQUE CONSTANT (Kt) = 5.4 ± 10% OZ-IN/AMP  
 VOLTAGE CONSTANT (Ke) = 4.0 ± 10% VOLTS/KRPM

**NOTES:**

- MOTOR ROTATION IS CLOCKWISE WHEN VIEWED FROM OUTPUT SHAFT WITH POSITIVE VOLTAGE APPLIED TO RED LEAD.
- SCREW PENETRATION NOT TO EXCEED SPECIFIED THREAD DEPTH.
- X IDENTIFIES INSPECTION DIMENSIONS.

CONTROLLED  
 JUL 21 2022  
 DOCUMENT

|   |  |  |  |   |  |                              |  |
|---|--|--|--|---|--|------------------------------|--|
| 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.XXX] = ± .005 [0.12]   |  | SIGNATURES                                     |  | DATE  |  | TITLE                        |  |
| MATERIAL  |  | DRAWN CGW                                      |  | 7/12/2022   |  | MOTOR ASSEMBLY, SR15-K-250FX |  |
| SPEC  |  | CHECKED <i>McA</i>                             |  | 7/21/22   |  |                              |  |
| FINISH  |  | ENG APPR. <i>McA</i>                           |  | 7/21/22   |  |                              |  |
| NONE  |  | MFG APPR. <i>ST</i>                            |  | 7/21/22   |  |                              |  |
| SPEC  |  | Q.A.   |  |   |  | SIZE 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 A                        |  |
|   |  | D 500150070                                    |  |   |  | SHEET 1 OF 3                 |  |



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

**MOTOR PERFORMANCE / SPECIFICATIONS**

**Attn.:**

Final Product No.: **SR15-K-250FX**

Customer:

RFQ 500150070

Phone/Fax:

By: MM

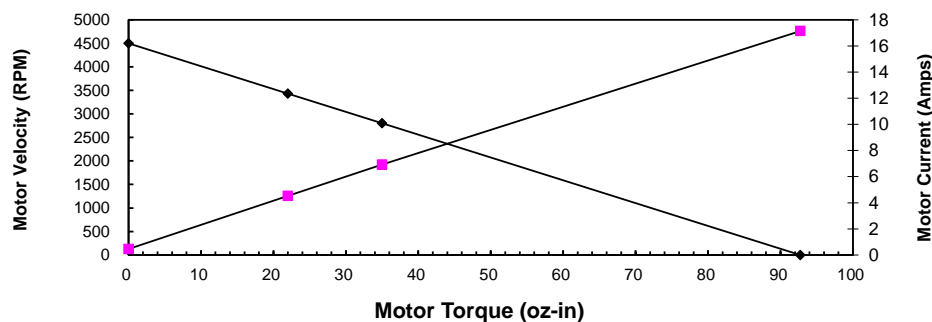
Date: 8/22/2022

This is a calculation data sheet

| SPECS   | C/S       | Frame     | PM | - | Winding  | - | Stack      | Options   | Gear Ratio |
|---------|-----------|-----------|----|---|----------|---|------------|-----------|------------|
| MODEL # | <b>SR</b> | <b>15</b> | -  | - | <b>K</b> | - | <b>250</b> | <b>FX</b> |            |

|           |                          |                     |                                       |                     |
|-----------|--------------------------|---------------------|---------------------------------------|---------------------|
| V in =*   | <b>18</b> Vdc            |                     | Input Voltage                         | Eff = 0.9           |
| Ke =*     | <b>4.00</b> V/krpm       |                     | Voltage Constant                      |                     |
| Kt =      | 5.4 oz-in/A              |                     | Torque Constant                       |                     |
| Rt =*     | <b>1.05</b> Ohms(@20° C) |                     | Terminal Resistance+Amplifier         |                     |
| Io =*     | <b>0.46</b> Amps         |                     | No load current                       |                     |
| I as =    | 17.1 Amps                |                     | Stall Current (reference only)        |                     |
| T gs =    | 93 oz-in                 |                     | Stall Torque (reference only @ V in)  |                     |
| I 1 =     | 4.5 Amps                 |                     | Current @ Torque-1                    |                     |
| I 2 =     | 6.9 Amps                 |                     | Current @ Torque-2                    |                     |
| T 1 =*    | <b>22</b> oz-in          |                     | Torque-1                              | 0.0 oz-in 0.0 in-lb |
| T 2 =*    | <b>35</b> oz-in          |                     | Torque-2                              | 0.0 oz-in 0.0 in-lb |
| RPM nl =  | 4500 RPM                 |                     | No Load Velocity                      | #DIV/0! rpm         |
| RPM r =   | 3432 RPM                 |                     | RPM @ T1                              | #DIV/0! rpm         |
| RPM p =   | 2802 RPM                 |                     | RPM @ T2                              | #DIV/0! rpm         |
| R ah =    | 1.37 Ohms(@105° C)       |                     | Term. Resistance Hot                  |                     |
| T gsh =   | 71 oz-in                 |                     | Stall Torque Hot                      |                     |
| I ash =   | 13.1 Amps                |                     | Stall Current Hot                     |                     |
| R th =*   | <b>3.0</b> °C/W          |                     | Thermal Resistance                    |                     |
| Tr =      | <b>77</b> °C             | Without cooling air | Temperature Rise @ T1 (above ambient) |                     |
| Tr =      | <b>157</b> °C            | Without cooling air | Temperature Rise @ T2 (above ambient) |                     |
| Nm/A =    | 0.04                     |                     | Torque Constant                       |                     |
| Lb in/A = | 0.34                     |                     | Torque Constant                       |                     |
| Km =      | 5.3 Kt/r                 |                     | Motor Constant                        |                     |

**Torque Curve**



**Calculation data**

| Voltage | Torque | RPM  | Amp  | Efficiency  | Watts out |
|---------|--------|------|------|-------------|-----------|
| 18      | 0      | 4500 | 0.5  |             | 0         |
| 18      | 22     | 3432 | 4.5  | 0.685460755 | 55.853532 |
| 18      | 35     | 2802 | 6.9  | 0.58143043  | 72.527415 |
| 18      | 93     | 0    | 17.1 |             | 0         |