

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



|  |   |  |                     |          |
|--|---|--|---------------------|----------|
| Customer :   |   |  |                     |          |
| Product line   | : Standard Efficiency Three-Phase         | Product code :   | 14796994            |          |
|  |   | Catalog # :  | .5018ES3E56C-S      |          |
| Frame  | : 56C                                     | Cooling method   | : IC411 - TEFC      |          |
| Insulation class   | : F                                       | Mounting   | : F-1               |          |
| Duty cycle   | : Cont.(S1)                               | Rotation <sup>1</sup>  | : Both (CW and CCW) |          |
| Ambient temperature  | : -20°C to +40°C                          | Starting method  | : Direct On Line    |          |
| Altitude   | : 1000 m.a.s.l.                           | Approx. weight <sup>2</sup>  | : 22.2 lb           |          |
| Protection degree  | : IP55                                    | Moment of inertia (J)  | : 0.0584 sq.ft.lb   |          |
| Output [HP]  | 0.5                                       | 0.5  | 0.5                 |          |
| Poles  | 4   | 4  | 4                   |          |
| Frequency [Hz]   | 60  | 50   | 50                  |          |
| Rated voltage [V]  | 208-230/460                               | 190/380  | 220/415             |          |
| Rated current [A]  | 1.91-1.72/0.862                           | 1.90/0.950   | 1.80/0.952          |          |
| L. R. Amperes [A]  | 13.3-12.1/6.03                            | 11.0/5.51  | 11.1/5.90           |          |
| LRC [A]  | 7.0x(Code L)                              | 5.8x(Code J)   | 6.2x(Code K)        |          |
| No load current [A]  | 1.03-1.20/0.600                           | 1.24/0.618   | 1.29/0.683          |          |
| Rated speed [RPM]  | 1760                                      | 1445   | 1455                |          |
| Slip [%]   | 2.22                                      | 3.67   | 3.00                |          |
| Rated torque [ft.lb]   | 1.49                                      | 1.82   | 1.80                |          |
| Locked rotor torque [%]  | 240                                       | 180  | 200                 |          |
| Breakdown torque [%]   | 300                                       | 250  | 290                 |          |
| Service factor   |   | 1.15   | 1.15                |          |
| Temperature rise   | 80 K                                      | 80 K   | 80 K                |          |
| Locked rotor time  | 36s (cold) 20s (hot)                      | 0s (cold) 0s (hot)   | 0s (cold) 0s (hot)  |          |
| Noise level <sup>2</sup>   | 52.0 dB(A)                                | 49.0 dB(A)   | 49.0 dB(A)          |          |
| Efficiency (%)   | 25%                                       | 65.4   | 69.5                | 67.2     |
|  | 50%                                       | 68.0   | 70.7                | 68.9     |
|  | 75%                                       | 74.0   | 75.0                | 74.2     |
|  | 100%                                      | 77.0   | 75.9                | 75.8     |
| Power Factor   | 25%                                       | 0.28   | 0.32                | 0.29     |
|  | 50%                                       | 0.48   | 0.56                | 0.52     |
|  | 75%                                       | 0.61   | 0.69                | 0.65     |
|  | 100%                                      | 0.70   | 0.78                | 0.74     |
| Bearing type   | : Drive end 6203 ZZ Non drive end 6202 ZZ | Foundation loads   |                     |          |
| Sealing  | : V'Ring Without Bearing Seal             | Max. traction  | : 40 lb             |          |
|  |   | Max. compression   | : 62 lb             |          |
| Lubrication interval   | : - -                                     |  |                     |          |
| Lubricant amount   | : - -                                     |  |                     |          |
| Lubricant type   | : Mobil Polyrex EM                        |  |                     |          |
| Notes<br>USABLE @208V SF 1.00  |   |  |                     |          |
| This revision replaces and cancel the previous one, which must be eliminated.<br>(1) Looking the motor from the shaft end.<br>(2) Measured at 1m and with tolerance of +3dB(A).<br>(3) Approximate weight subject to changes after manufacturing process.<br>(4) At 100% of full load. |   | These are average values based on tests with sinusoidal power supply, subject to the tolerances stipulated in NEMA MG-1. |                     |          |
| Rev.   | Changes Summary                           | Performed  | Checked             | Date     |
| Performed by   |   |  |                     |          |
| Checked by   |   |  | Page                | Revision |
| Date   | 11/04/2022                                |  | 1 / 13              |          |

# TORQUE AND CURRENT VS SPEED CURVE

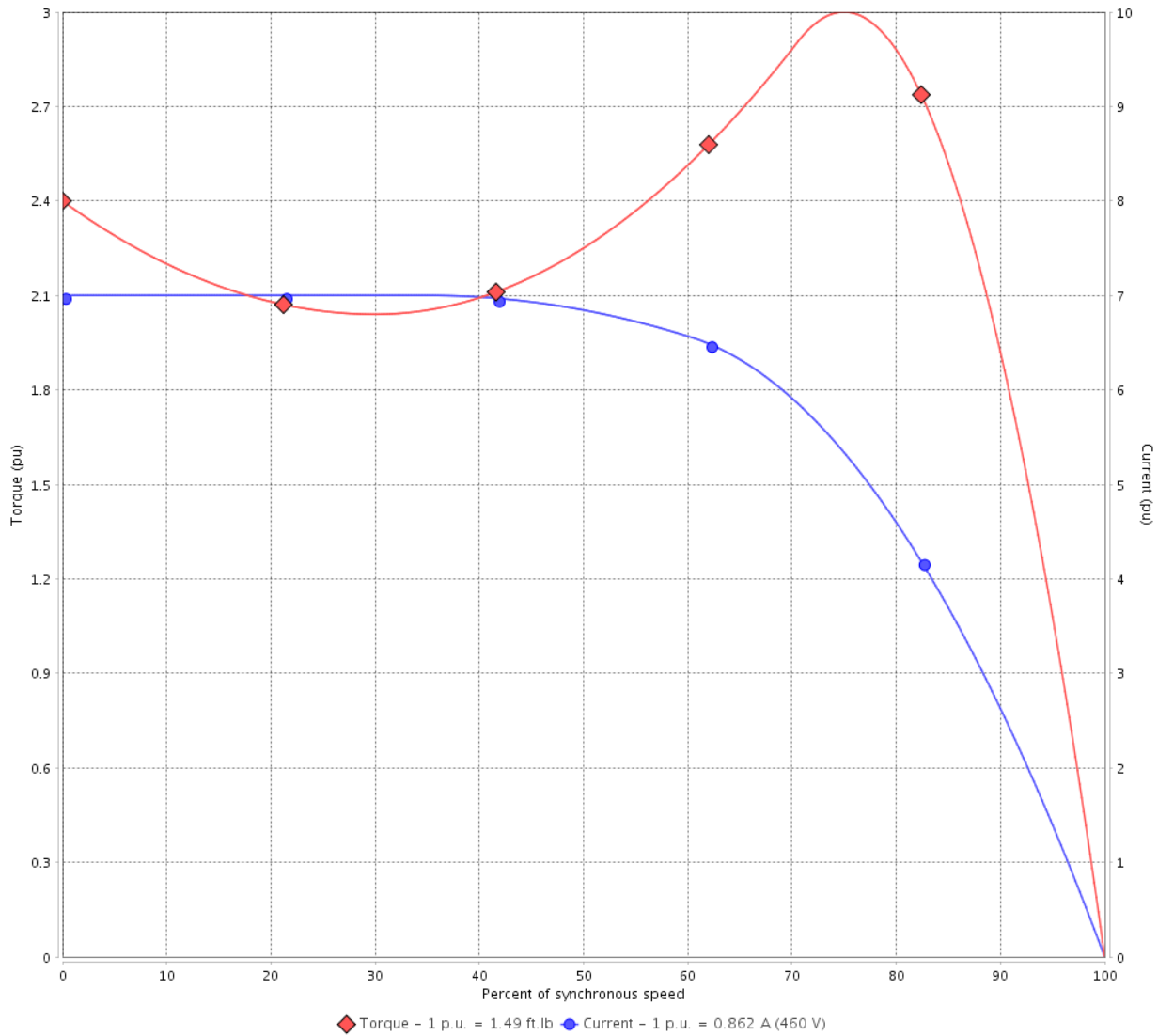
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : Standard Efficiency Three-Phase      Product code : 14796994  
 Catalog # : .5018ES3E56C-S

TORQUE AND CURRENT VS SPEED CURVE



Performance : 208-230/460 V 60 Hz 4P

|                     |                     |                       |                   |
|---------------------|---------------------|-----------------------|-------------------|
| Rated current       | : 1.91-1.72/0.862 A | Moment of inertia (J) | : 0.0584 sq.ft.lb |
| LRC                 | : 7.0               | Duty cycle            | : Cont.(S1)       |
| Rated torque        | : 1.49 ft.lb        | Insulation class      | : F               |
| Locked rotor torque | : 240 %             | Service factor        | :                 |
| Breakdown torque    | : 300 %             | Temperature rise      | : 80 K            |
| Rated speed         | : 1760 rpm          |                       |                   |

Locked rotor time : 36s (cold) 20s (hot)

| Rev.         | Changes Summary | Performed | Checked        | Date     |
|--------------|-----------------|-----------|----------------|----------|
|              |                 |           |                |          |
| Performed by |                 |           | Page<br>2 / 13 | Revision |
| Checked by   |                 |           |                |          |
| Date         | 11/04/2022      |           |                |          |

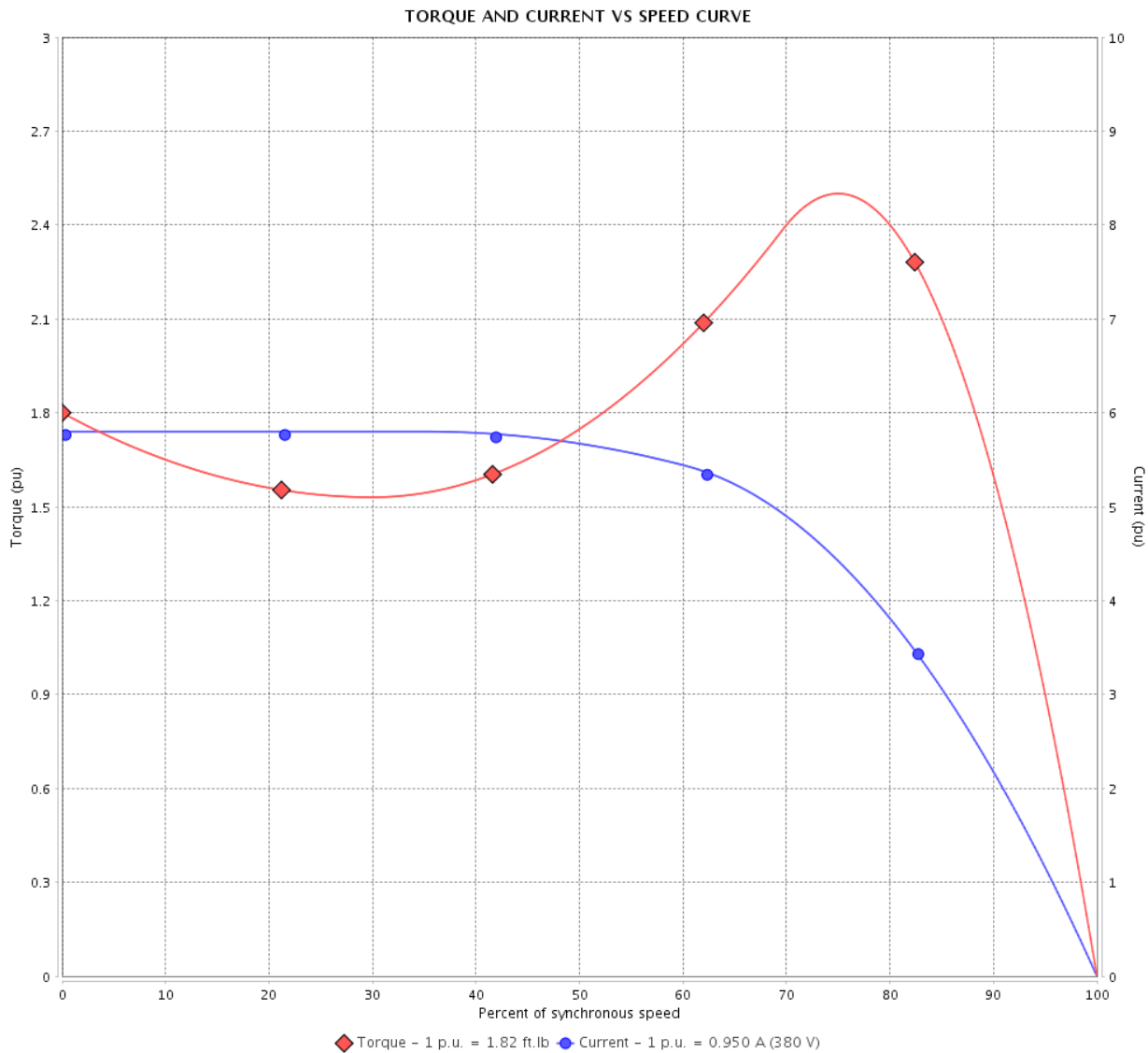
# TORQUE AND CURRENT VS SPEED CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : Standard Efficiency Three-Phase      Product code : 14796994  
 Catalog # : .5018ES3E56C-S



Performance : 190/380 V 50 Hz 4P

|                     |                |                       |                   |
|---------------------|----------------|-----------------------|-------------------|
| Rated current       | : 1.90/0.950 A | Moment of inertia (J) | : 0.0584 sq.ft.lb |
| LRC                 | : 5.8          | Duty cycle            | : Cont.(S1)       |
| Rated torque        | : 1.82 ft.lb   | Insulation class      | : F               |
| Locked rotor torque | : 180 %        | Service factor        | : 1.15            |
| Breakdown torque    | : 250 %        | Temperature rise      | : 80 K            |
| Rated speed         | : 1445 rpm     |                       |                   |

Locked rotor time : 0s (cold) 0s (hot)

| Rev.         | Changes Summary | Performed | Checked        | Date     |
|--------------|-----------------|-----------|----------------|----------|
|              |                 |           |                |          |
| Performed by |                 |           | Page<br>3 / 13 | Revision |
| Checked by   |                 |           |                |          |
| Date         | 11/04/2022      |           |                |          |

# TORQUE AND CURRENT VS SPEED CURVE

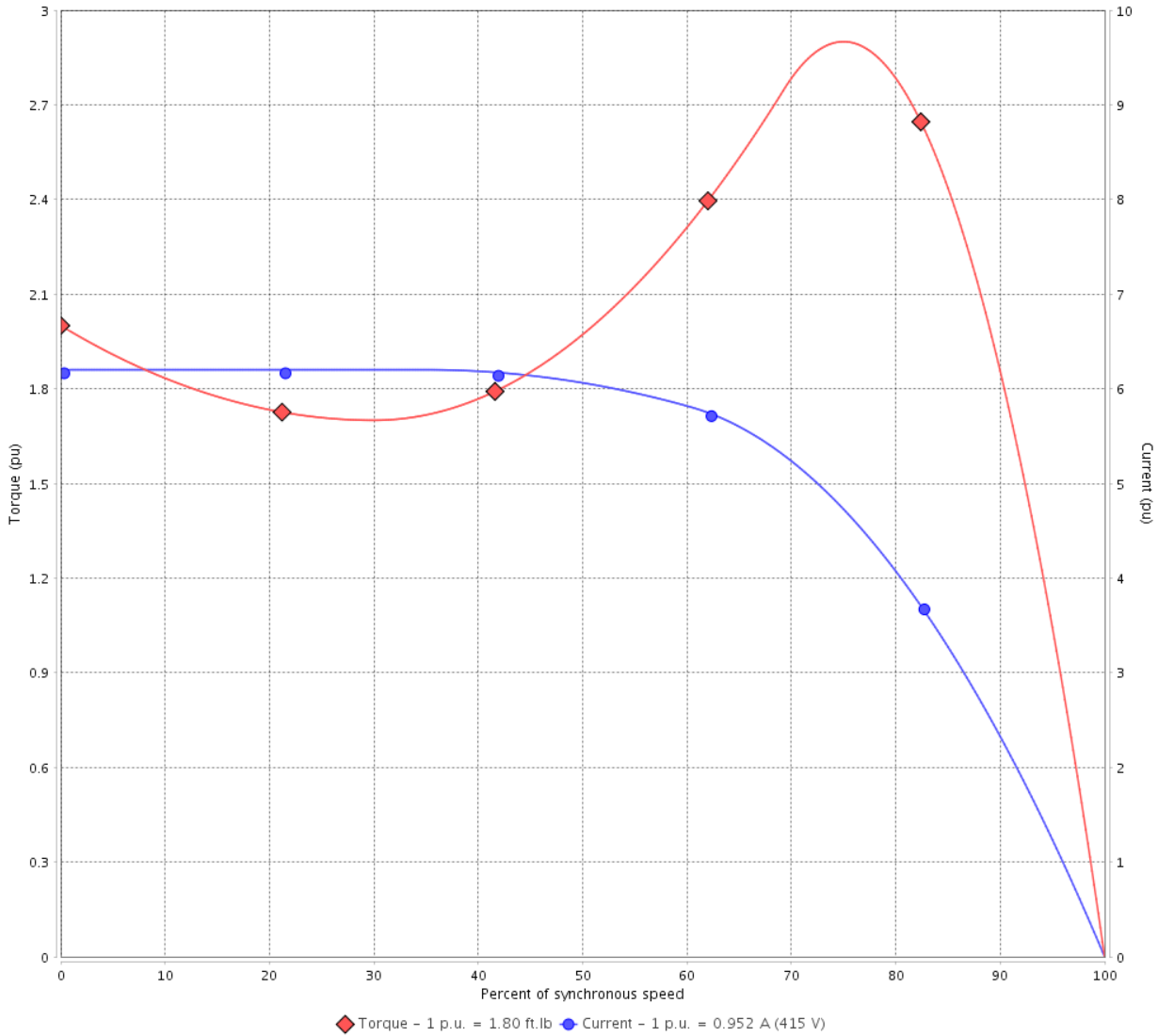
Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : Standard Efficiency Three-Phase      Product code : 14796994  
 Catalog # : .5018ES3E56C-S

TORQUE AND CURRENT VS SPEED CURVE



Performance : 220/415 V 50 Hz 4P

|                     |                |                       |                   |
|---------------------|----------------|-----------------------|-------------------|
| Rated current       | : 1.80/0.952 A | Moment of inertia (J) | : 0.0584 sq.ft.lb |
| LRC                 | : 6.2          | Duty cycle            | : Cont.(S1)       |
| Rated torque        | : 1.80 ft.lb   | Insulation class      | : F               |
| Locked rotor torque | : 200 %        | Service factor        | : 1.15            |
| Breakdown torque    | : 290 %        | Temperature rise      | : 80 K            |
| Rated speed         | : 1455 rpm     |                       |                   |

Locked rotor time : 0s (cold) 0s (hot)

| Rev.         | Changes Summary | Performed | Checked        | Date     |
|--------------|-----------------|-----------|----------------|----------|
|              |                 |           |                |          |
| Performed by |                 |           | Page<br>4 / 13 | Revision |
| Checked by   |                 |           |                |          |
| Date         | 11/04/2022      |           |                |          |

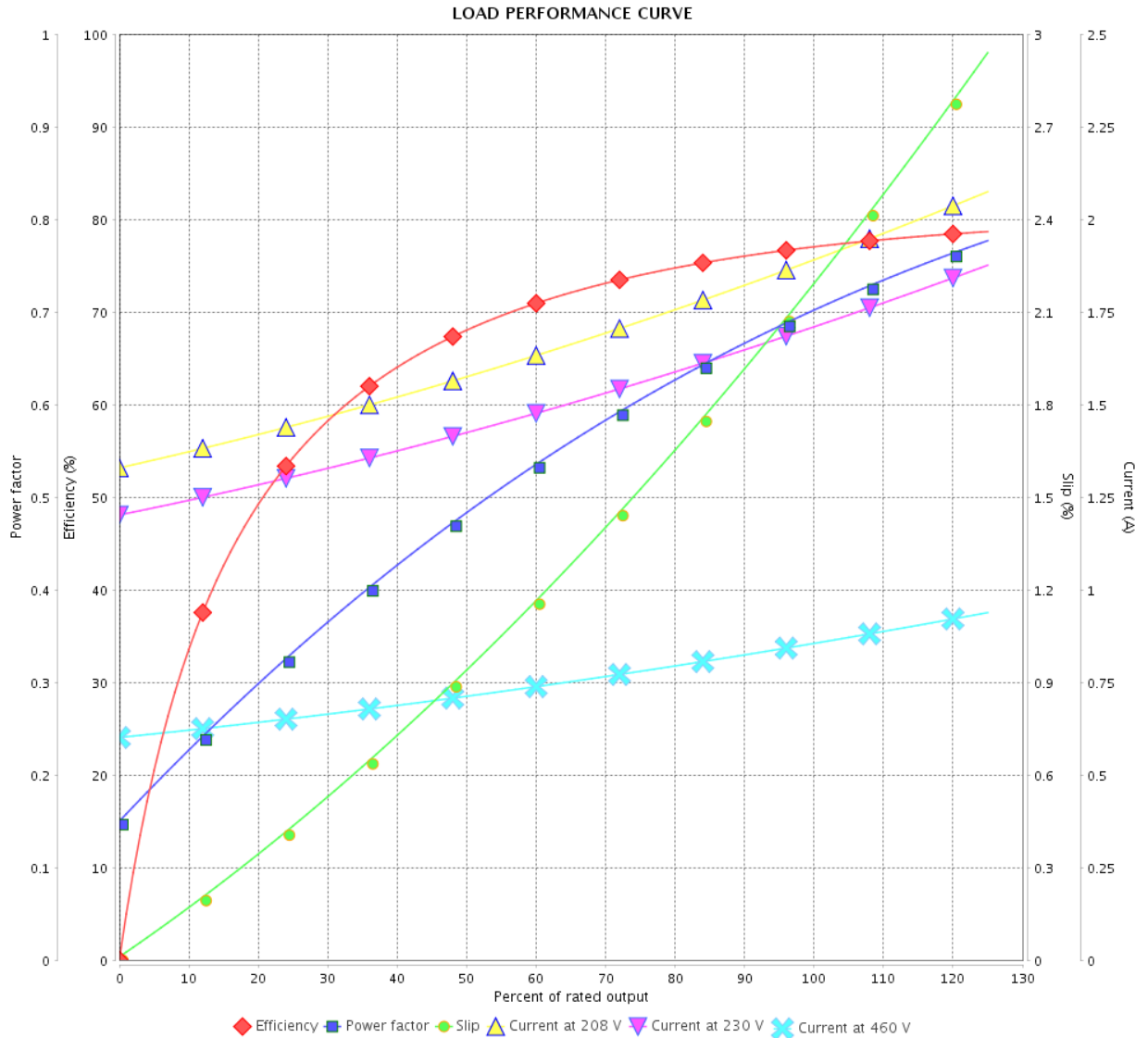
# LOAD PERFORMANCE CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : \_\_\_\_\_

Product line : Standard Efficiency Three-Phase      Product code : 14796994  
 Catalog # : .5018ES3E56C-S



Performance : 208-230/460 V 60 Hz 4P

Rated current : 1.91-1.72/0.862 A  
 LRC : 7.0  
 Rated torque : 1.49 ft.lb  
 Locked rotor torque : 240 %  
 Breakdown torque : 300 %  
 Rated speed : 1760 rpm

Moment of inertia (J) : 0.0584 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor :  
 Temperature rise : 80 K

| Rev.         | Changes Summary | Performed  | Checked | Date     |
|--------------|-----------------|------------|---------|----------|
|              |                 |            |         |          |
| Performed by |                 | Page       |         | Revision |
| Checked by   |                 | 5 / 13     |         |          |
| Date         |                 | 11/04/2022 |         |          |

# LOAD PERFORMANCE CURVE

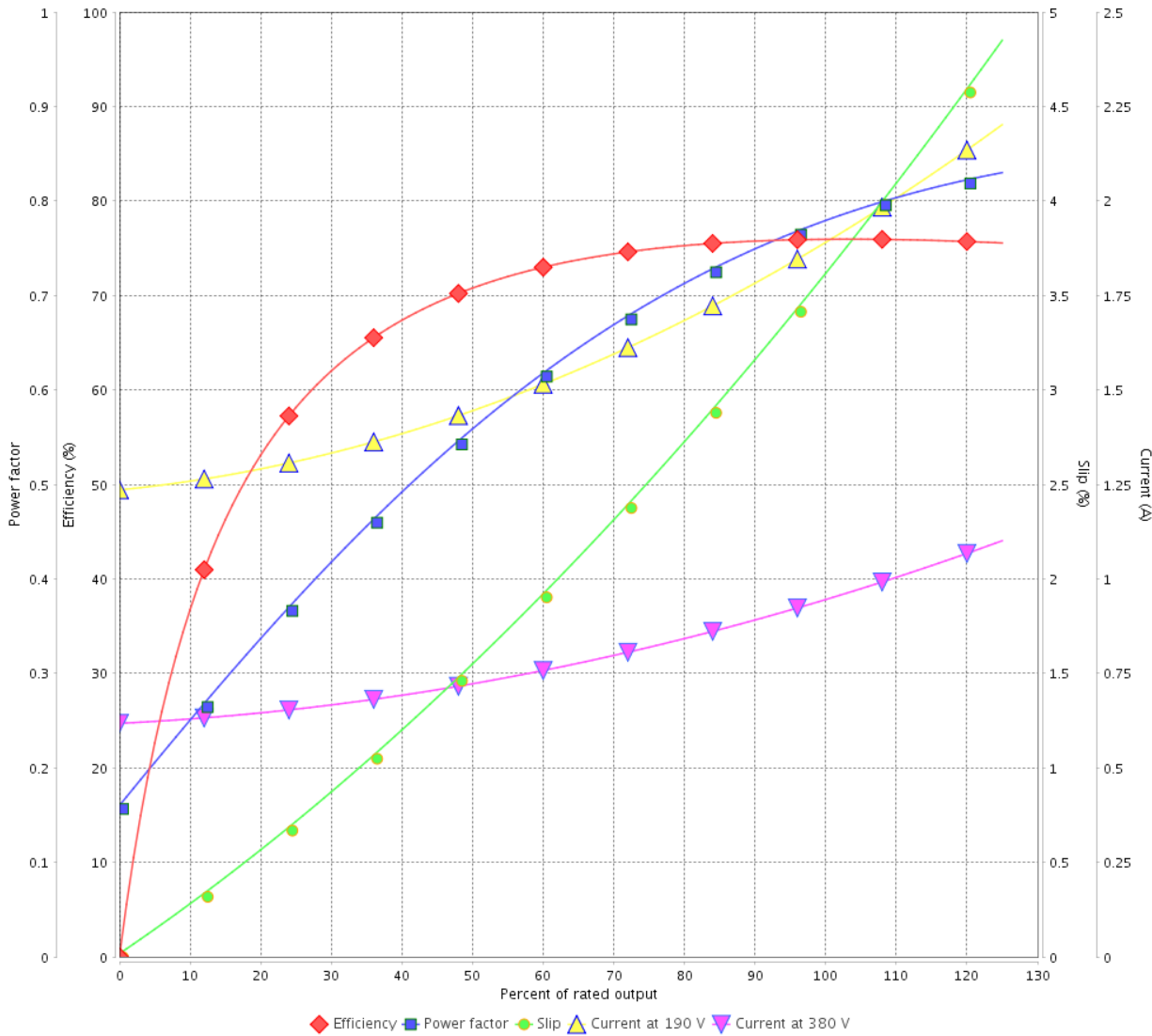
Three Phase Induction Motor - Squirrel Cage



Customer : \_\_\_\_\_

Product line : Standard Efficiency Three-Phase      Product code : 14796994  
 Catalog # : .5018ES3E56C-S

LOAD PERFORMANCE CURVE



Performance : 190/380 V 50 Hz 4P

Rated current : 1.90/0.950 A  
 LRC : 5.8  
 Rated torque : 1.82 ft.lb  
 Locked rotor torque : 180 %  
 Breakdown torque : 250 %  
 Rated speed : 1445 rpm

Moment of inertia (J) : 0.0584 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K

| Rev.         | Changes Summary | Performed | Checked        | Date     |
|--------------|-----------------|-----------|----------------|----------|
|              |                 |           |                |          |
| Performed by |                 |           | Page<br>6 / 13 | Revision |
| Checked by   |                 |           |                |          |
| Date         | 11/04/2022      |           |                |          |

# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer : \_\_\_\_\_

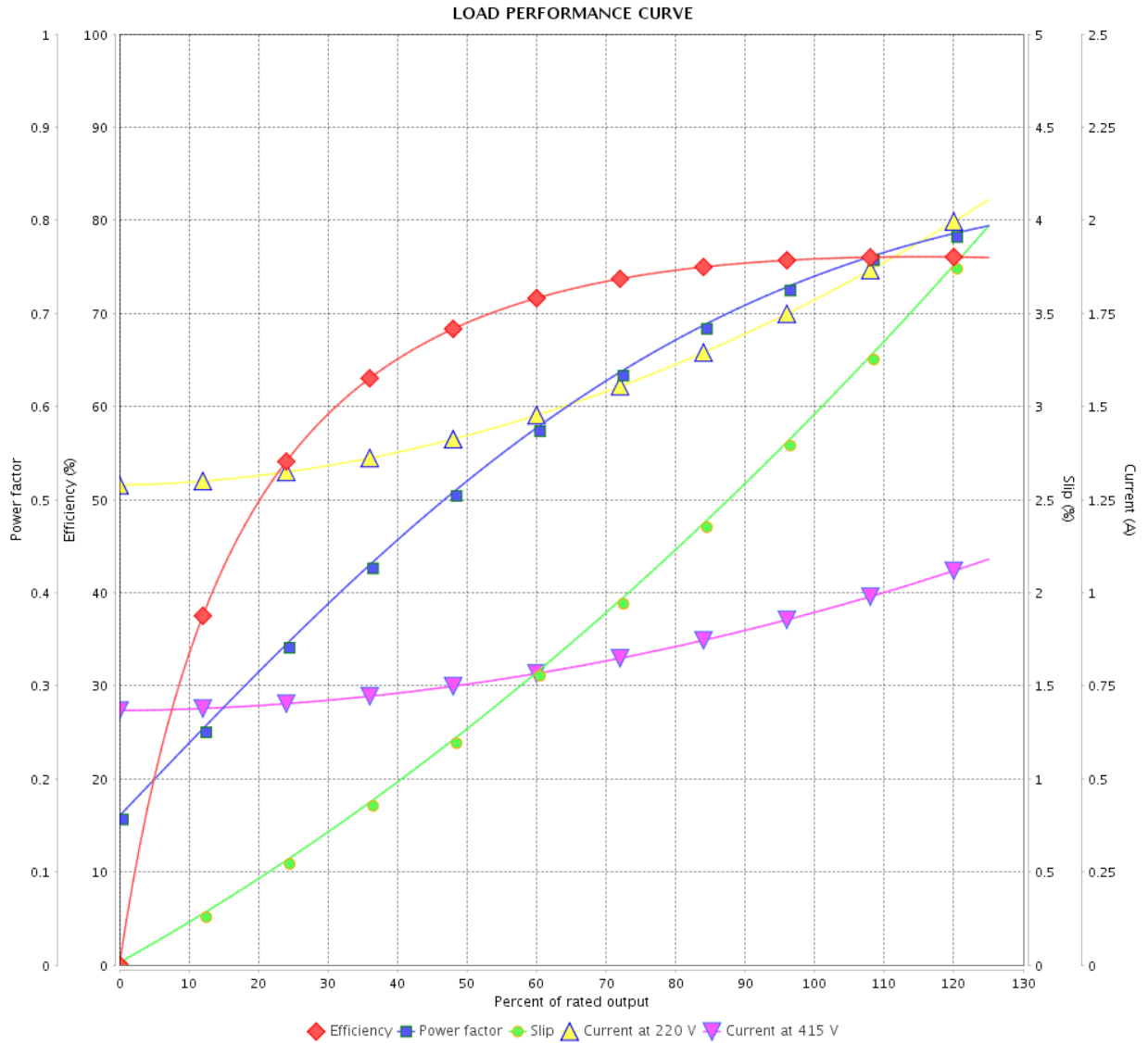
Product line : Standard Efficiency Three-Phase

Product code :

14796994

Catalog # :

.5018ES3E56C-S



Performance : 220/415 V 50 Hz 4P

Rated current : 1.80/0.952 A  
 LRC : 6.2  
 Rated torque : 1.80 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 290 %  
 Rated speed : 1455 rpm

Moment of inertia (J) : 0.0584 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K

| Rev.         | Changes Summary | Performed  | Checked | Date     |
|--------------|-----------------|------------|---------|----------|
|              |                 |            |         |          |
| Performed by |                 | Page       |         | Revision |
| Checked by   |                 | 7 / 13     |         |          |
| Date         |                 | 11/04/2022 |         |          |

# THERMAL LIMIT CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

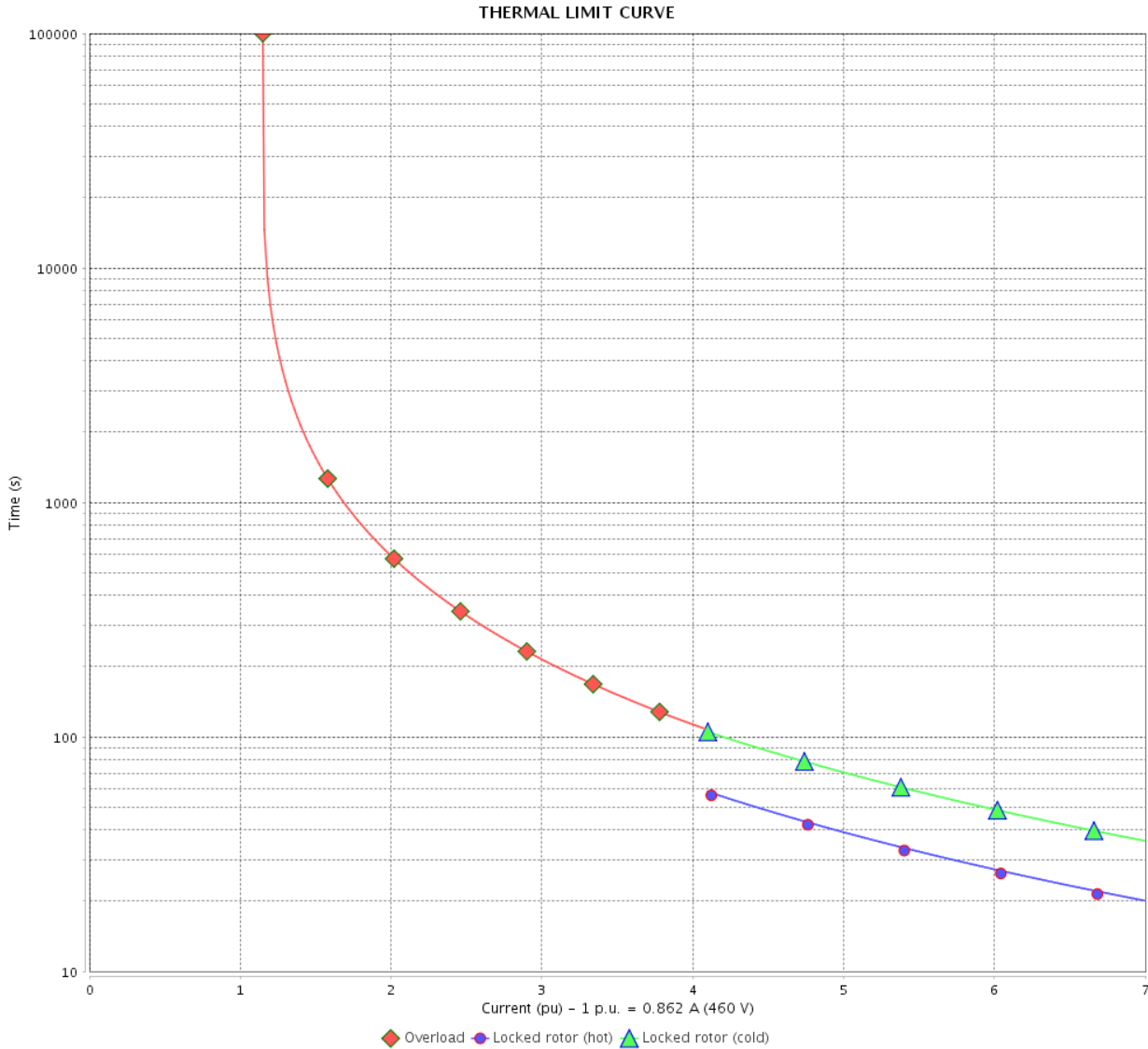
Product line : Standard Efficiency Three-Phase

Product code :

14796994

Catalog # :

.5018ES3E56C-S



Performance : 208-230/460 V 60 Hz 4P

Rated current : 1.91-1.72/0.862 A  
 LRC : 7.0  
 Rated torque : 1.49 ft.lb  
 Locked rotor torque : 240 %  
 Breakdown torque : 300 %  
 Rated speed : 1760 rpm

Moment of inertia (J) : 0.0584 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor :  
 Temperature rise : 80 K

Heating constant

Cooling constant

| Rev.         | Changes Summary | Performed  | Checked | Date     |
|--------------|-----------------|------------|---------|----------|
|              |                 |            |         |          |
| Performed by |                 | Page       |         | Revision |
| Checked by   |                 | 8 / 13     |         |          |
| Date         |                 | 11/04/2022 |         |          |



# THERMAL LIMIT CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer : \_\_\_\_\_

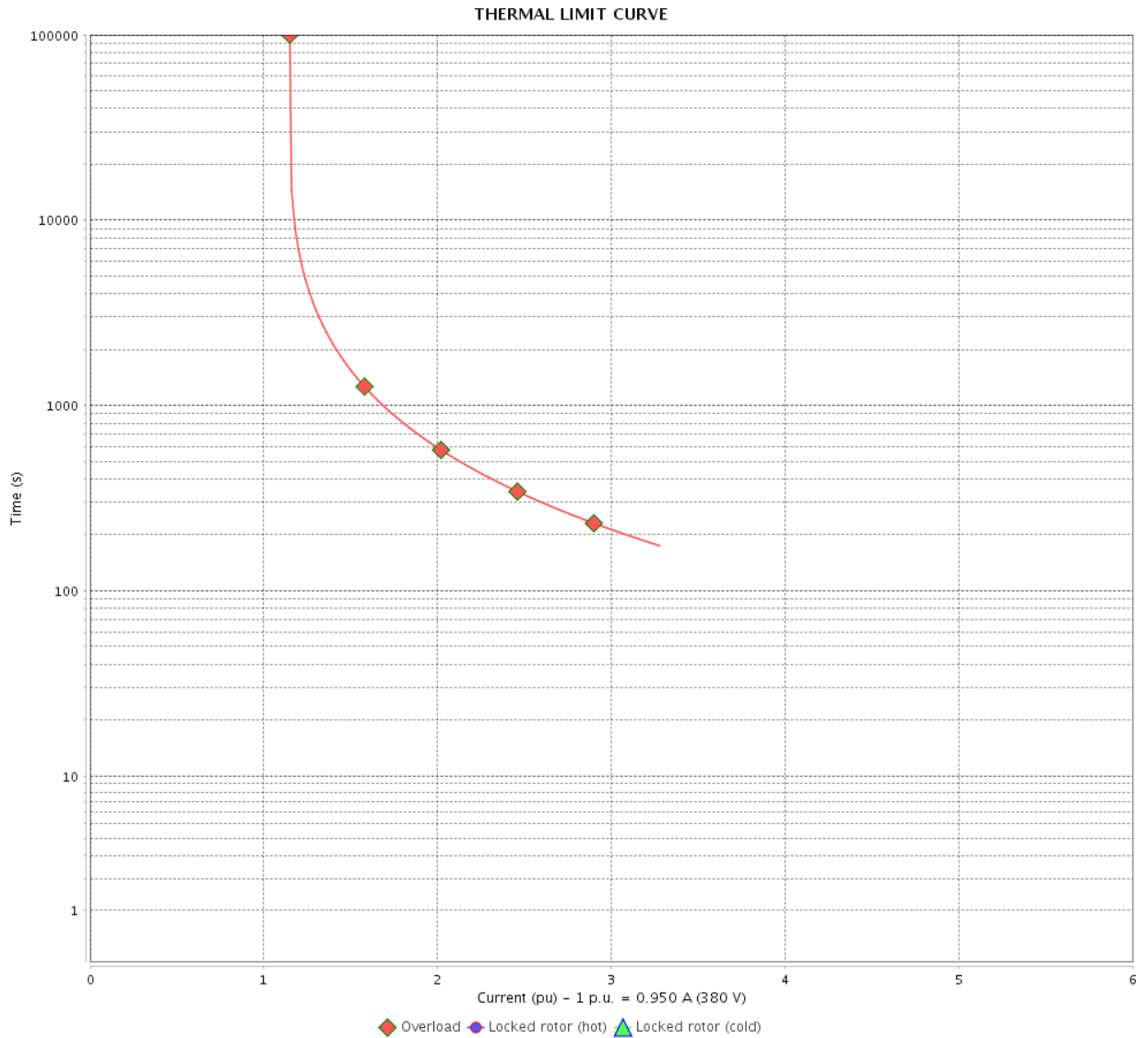
Product line : Standard Efficiency Three-Phase

Product code :

14796994

Catalog # :

.5018ES3E56C-S



Performance : 190/380 V 50 Hz 4P

Rated current : 1.90/0.950 A  
 LRC : 5.8  
 Rated torque : 1.82 ft.lb  
 Locked rotor torque : 180 %  
 Breakdown torque : 250 %  
 Rated speed : 1445 rpm

Moment of inertia (J) : 0.0584 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K

Heating constant

Cooling constant

| Rev.         | Changes Summary | Performed | Checked  | Date |
|--------------|-----------------|-----------|----------|------|
|              |                 |           |          |      |
| Performed by |                 |           |          |      |
| Checked by   |                 |           |          |      |
| Date         |                 |           |          |      |
|              |                 | Page      | Revision |      |
|              |                 | 9 / 13    |          |      |

# THERMAL LIMIT CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer : \_\_\_\_\_

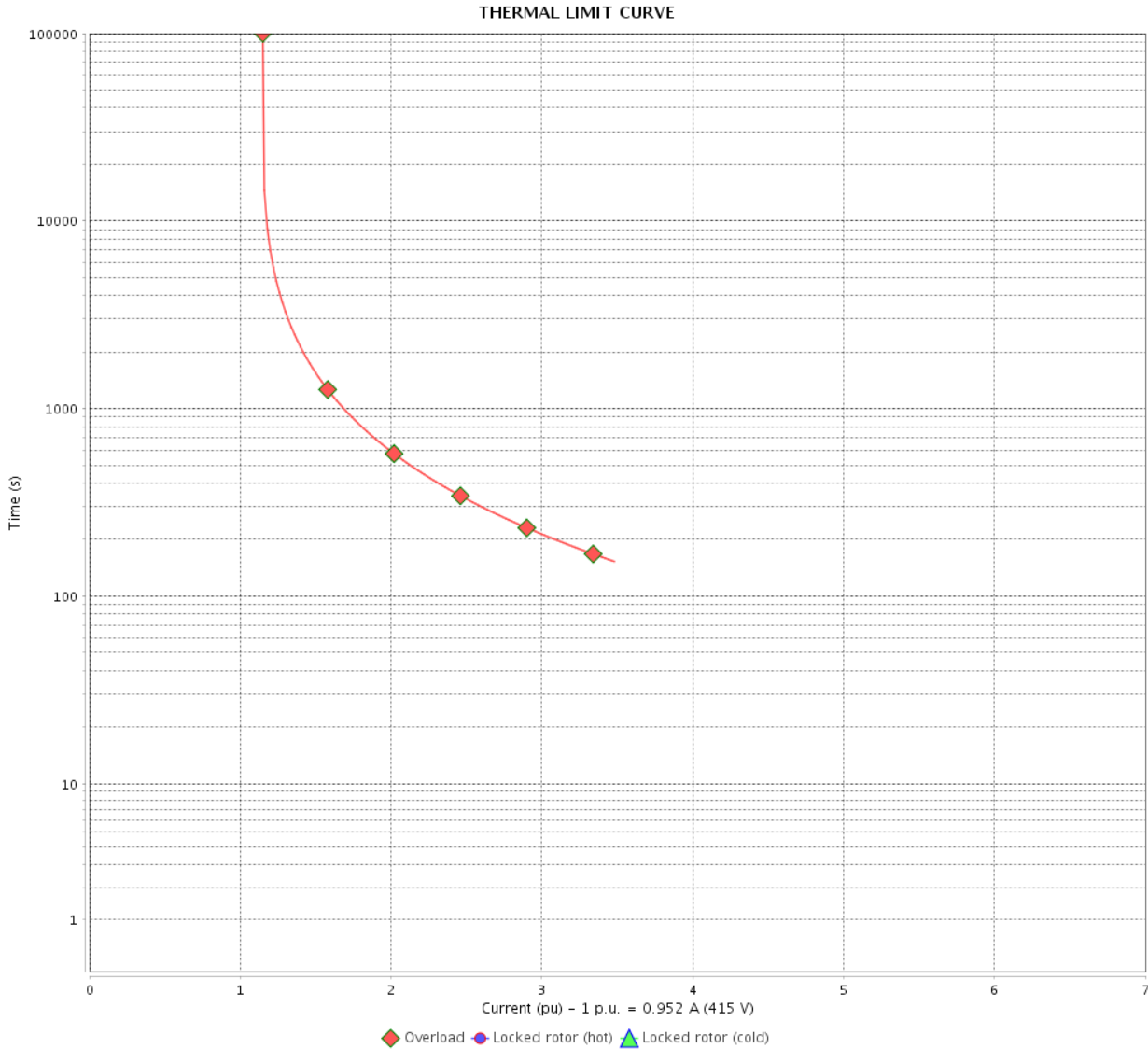
Product line : Standard Efficiency Three-Phase

Product code :

14796994

Catalog # :

.5018ES3E56C-S



Performance : 220/415 V 50 Hz 4P

Rated current : 1.80/0.952 A  
 LRC : 6.2  
 Rated torque : 1.80 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 290 %  
 Rated speed : 1455 rpm

Moment of inertia (J) : 0.0584 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K

Heating constant

Cooling constant

| Rev.         | Changes Summary | Performed  | Checked | Date     |
|--------------|-----------------|------------|---------|----------|
|              |                 |            |         |          |
| Performed by |                 | Page       |         | Revision |
| Checked by   |                 | 10 / 13    |         |          |
| Date         |                 | 11/04/2022 |         |          |

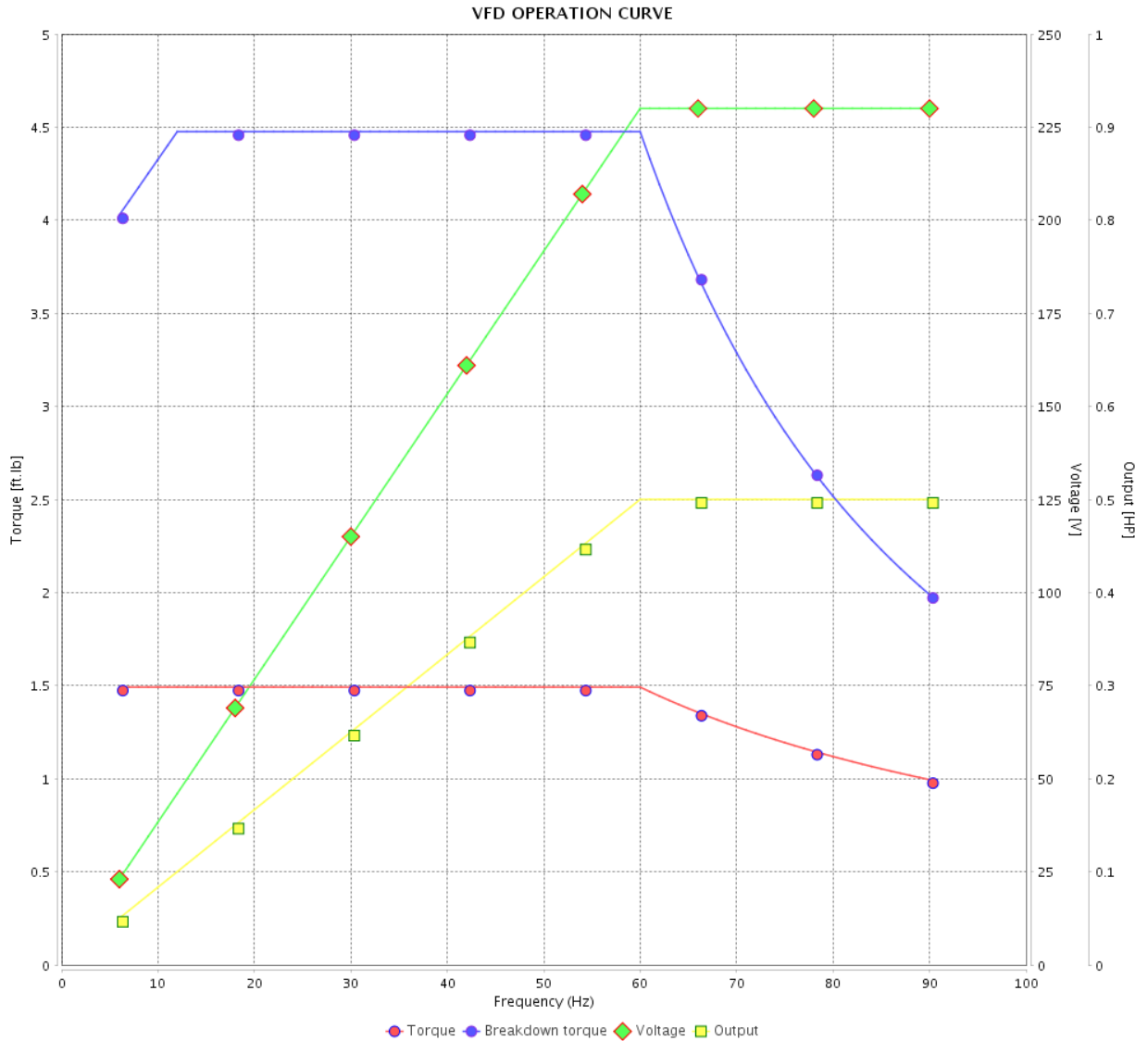
# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : Standard Efficiency Three-Phase      Product code : 14796994  
 Catalog # : .5018ES3E56C-S



Performance : 208-230/460 V 60 Hz 4P

Rated current : 1.91-1.72/0.862 A  
 LRC : 7.0  
 Rated torque : 1.49 ft.lb  
 Locked rotor torque : 240 %  
 Breakdown torque : 300 %  
 Rated speed : 1760 rpm

Moment of inertia (J) : 0.0584 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor :  
 Temperature rise : 80 K

| Rev.         | Changes Summary | Performed  | Checked | Date     |
|--------------|-----------------|------------|---------|----------|
|              |                 |            |         |          |
| Performed by |                 | Page       |         | Revision |
| Checked by   |                 | 11 / 13    |         |          |
| Date         |                 | 11/04/2022 |         |          |

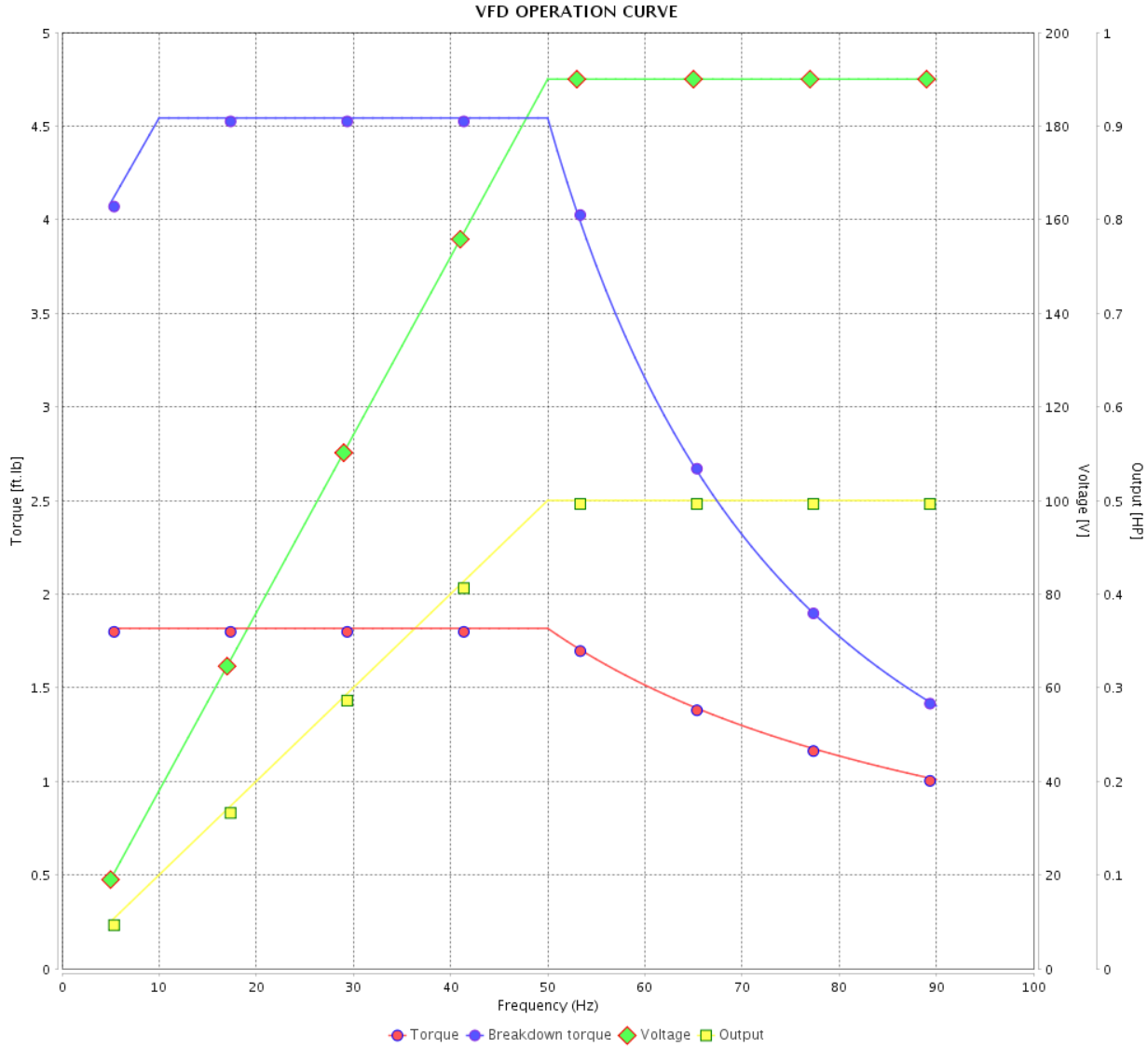
# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : \_\_\_\_\_

Product line : Standard Efficiency Three-Phase      Product code : 14796994  
 Catalog # : .5018ES3E56C-S



Performance : 190/380 V 50 Hz 4P

|                     |                |                       |                   |
|---------------------|----------------|-----------------------|-------------------|
| Rated current       | : 1.90/0.950 A | Moment of inertia (J) | : 0.0584 sq.ft.lb |
| LRC                 | : 5.8          | Duty cycle            | : Cont.(S1)       |
| Rated torque        | : 1.82 ft.lb   | Insulation class      | : F               |
| Locked rotor torque | : 180 %        | Service factor        | : 1.15            |
| Breakdown torque    | : 250 %        | Temperature rise      | : 80 K            |
| Rated speed         | : 1445 rpm     |                       |                   |

| Rev.         | Changes Summary | Performed | Checked         | Date     |
|--------------|-----------------|-----------|-----------------|----------|
|              |                 |           |                 |          |
| Performed by |                 |           | Page<br>12 / 13 | Revision |
| Checked by   |                 |           |                 |          |
| Date         | 11/04/2022      |           |                 |          |

# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



Customer : \_\_\_\_\_

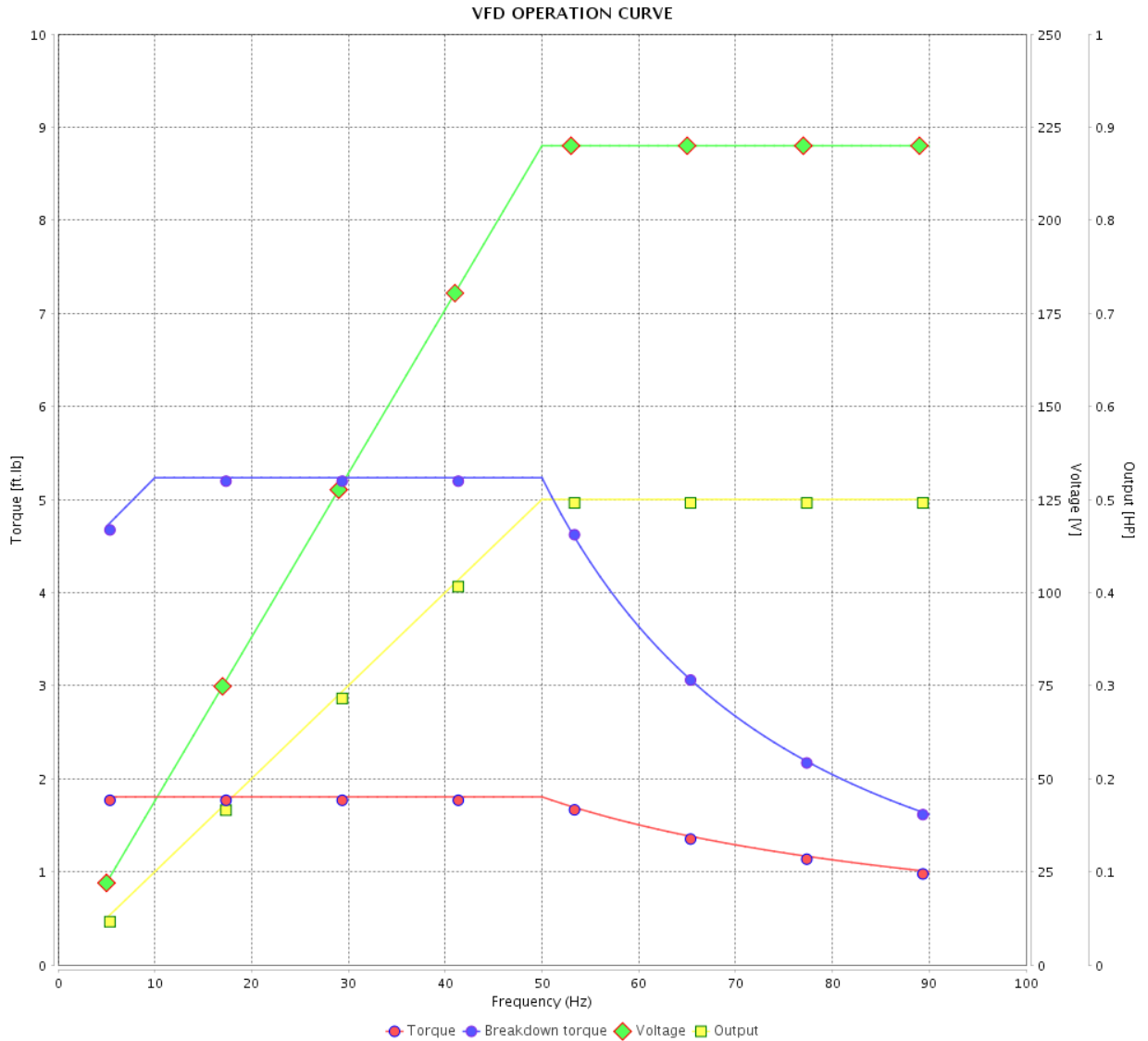
Product line : Standard Efficiency Three-Phase

Product code :

14796994

Catalog # :

.5018ES3E56C-S

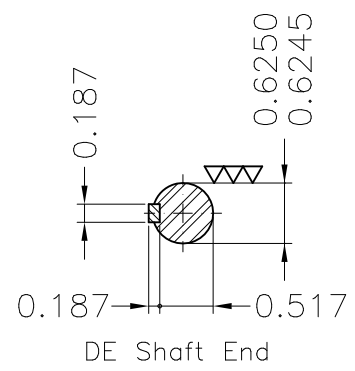
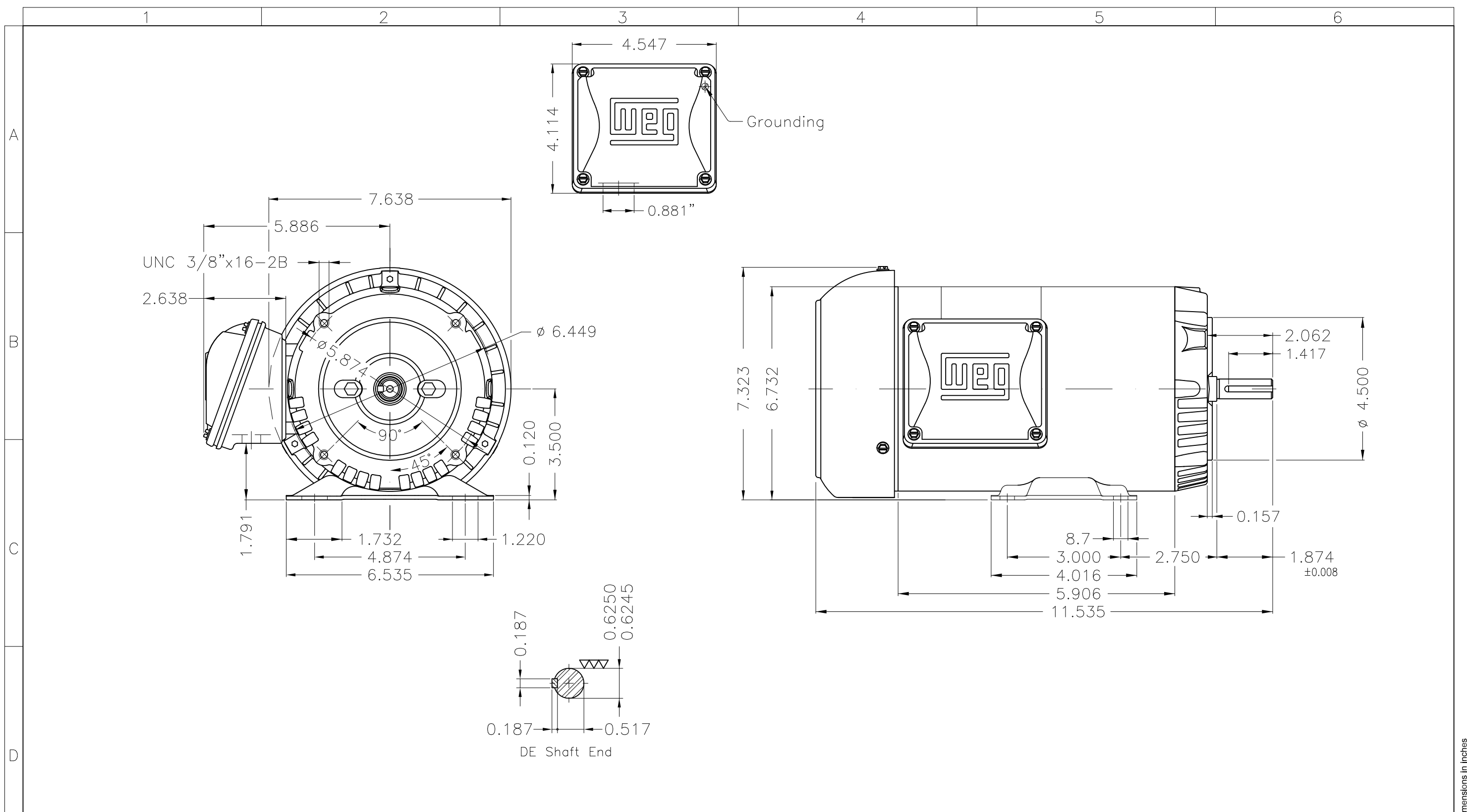


Performance : 220/415 V 50 Hz 4P

Rated current : 1.80/0.952 A  
 LRC : 6.2  
 Rated torque : 1.80 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 290 %  
 Rated speed : 1455 rpm

Moment of inertia (J) : 0.0584 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.15  
 Temperature rise : 80 K

| Rev.         | Changes Summary | Performed  | Checked | Date     |
|--------------|-----------------|------------|---------|----------|
|              |                 |            |         |          |
| Performed by |                 | Page       |         | Revision |
| Checked by   |                 | 13 / 13    |         |          |
| Date         |                 | 11/04/2022 |         |          |



Fan cover - steel plate  
 Color Munsell N 1 matte black  
 Painting plan 207N  
 Mounting F-1/B34R(D)

| ECM      | LOC       | SUMMARY OF MODIFICATIONS     | EXECUTED | CHECKED | RELEASED | DATE | VER |
|----------|-----------|------------------------------|----------|---------|----------|------|-----|
| EXECUTED | PIRWBUSER | THREE PH. MOTOR ROLLED STEEL |          |         |          |      |     |
| CHECKED  |           | FRAME 56C IP55 TEFC          |          |         |          |      |     |
| RELEASED |           |                              |          |         |          |      |     |

PREVIEW  
 WDD



0.5 HP 04 Poles 60 Hz

REL DT. WMO Jaragua do Sul Product Engineering SHEET 1 / 1



MADE IN BRAZIL

**MAT: 14796994**

**W01.TE0IC0X0X**

**MODEL .5018ES3E56C-S**

**13APR2022 B/N:**

**For 60Hz: Class I, Zone 2, IIC  
Class I, Div.2, Gr. A,B,C,D - T3  
Div 2 Inverter Duty (SF1.00)**

**CT 2:1/VT 1000:1**

|                      |        |                        |
|----------------------|--------|------------------------|
| PH 3                 | Hz 60  | HP 0.50                |
| FR 56C               |        | KW 0.37                |
| DUTY CONT.           |        | V 208-230/460          |
| ALT 1000 m.a.s.l.    |        | A 1.91-1.72/0.862      |
| INS CL F AT 80K      | IP55   | SFA 1.91-1.98/0.991    |
| AMB 40°C             | DES -  | SF 1.15                |
| ENCL TEFC            | CODE L | PF 0.70                |
| USABLE @ 208V SF1.00 |        | RPM 1760               |
|                      |        | NEMA<br>NOM. EFF 77.0% |

|  |
|--|
| ALTERNATE RATING: 0.50HP 50Hz 190-220/380-415V SF1.15      |
| 1.90-1.81/0.950-0.962A 1445RPM EFF 75.4% (IE2) IEC 60034-1 |

For safe area-Inverter duty motor For 60Hz use on VPWM 1000:1 VT, 10:1 CT

|            |             |                  |
|------------|-------------|------------------|
| DE 6203-ZZ | ODE 6202-ZZ | MOBIL POLYREX EM |
|------------|-------------|------------------|



T1-BLU T2-WHT  
T3-ORG T4-YEL  
T5-BLK T6-GRY  
T7-PNK T8-RED  
T9-BRK RED

INTERCHANGE ANY TWO LINE WIRES TO REVERSE THE ROTATION



**WARNING:** Motor must be grounded in accordance with local and national electrical codes to prevent serious electrical shocks. Disconnect power source before servicing unit.

**AVERTISSEMENT:** Le moteur doit être mis à la terre

conformément aux codes électriques locaux et nationaux afin d'éviter tout choc électrique grave. Déconnectez l'alimentation avant l'entretien de la machine.

