

# DATA SHEET



## Three Phase Induction Motor - Squirrel Cage

|  |  |                      |                  |                      |              |           |         |         |          |        |                      |           |         |                  |        |      |                |                  |  |
|--|--|----------------------|------------------|----------------------|--------------|-----------|---------|---------|----------|--------|----------------------|-----------|---------|------------------|--------|------|----------------|------------------|--|
| Customer :   |  |                      |                  |                      |              |           |         |         |          |        |                      |           |         |                  |        |      |                |                  |  |
| Product line   | : NEMA Premium Efficiency Three-Phase  |                      |                  |                      |              |           |         |         |          |        |                      |           |         |                  |        |      |                |                  |  |
| Product code :   | 12604614   |                      |                  |                      |              |           |         |         |          |        |                      |           |         |                  |        |      |                |                  |  |
| Catalog # :  | 04018ET3H324T-W22  |                      |                  |                      |              |           |         |         |          |        |                      |           |         |                  |        |      |                |                  |  |
| Frame : 324/6T<br>Output : 40 HP (30 kW)<br>Poles : 4<br>Frequency : 60 Hz<br>Rated voltage : 575 V<br>Rated current : 37.7 A<br>L. R. Amperes : 230 A<br>LRC : 6.1x(Code G)<br>No load current : 13.6 A<br>Rated speed : 1770 rpm<br>Slip : 1.67 %<br>Rated torque : 119 ft.lb<br>Locked rotor torque : 229 %<br>Breakdown torque : 240 %<br>Insulation class : F<br>Service factor : 1.25<br>Moment of inertia (J) : 9.16 sq.ft.lb<br>Design : B | Locked rotor time : 36s (cold) 20s (hot)<br>Temperature rise : 80 K<br>Duty cycle : Cont.(S1)<br>Ambient temperature : -20°C to +40°C<br>Altitude : 1000 m.a.s.l.<br>Protection degree : IP55<br>Cooling method : IC411 - TEFC<br>Mounting : F-1<br>Rotation <sup>1</sup> : Both (CW and CCW)<br>Noise level <sup>2</sup> : 66.0 dB(A)<br>Starting method : Direct On Line<br>Approx. weight <sup>3</sup> : 570 lb   |                      |                  |                      |              |           |         |         |          |        |                      |           |         |                  |        |      |                |                  |  |
| Output   | 25% 50% 75% 100%   |                      |                  |                      |              |           |         |         |          |        |                      |           |         |                  |        |      |                |                  |  |
| Efficiency (%)   | 93.4 93.6 94.1 94.1  |                      |                  |                      |              |           |         |         |          |        |                      |           |         |                  |        |      |                |                  |  |
| Power Factor   | 0.46 0.72 0.80 0.85  |                      |                  |                      |              |           |         |         |          |        |                      |           |         |                  |        |      |                |                  |  |
| Foundation loads   |  |                      |                  |                      |              |           |         |         |          |        |                      |           |         |                  |        |      |                |                  |  |
| Max. traction  | : 808 lb   |                      |                  |                      |              |           |         |         |          |        |                      |           |         |                  |        |      |                |                  |  |
| Max. compression   | : 1378 lb  |                      |                  |                      |              |           |         |         |          |        |                      |           |         |                  |        |      |                |                  |  |
|  | <table border="0"> <tr> <td></td> <td style="text-align: center;"><u>Drive end</u></td> <td style="text-align: center;"><u>Non drive end</u></td> </tr> <tr> <td>Bearing type</td> <td>: 6312 C3</td> <td>6212 C3</td> </tr> <tr> <td>Sealing</td> <td>: V'Ring</td> <td>V'Ring</td> </tr> <tr> <td>Lubrication interval</td> <td>: 20000 h</td> <td>20000 h</td> </tr> <tr> <td>Lubricant amount</td> <td>: 21 g</td> <td>13 g</td> </tr> <tr> <td>Lubricant type</td> <td colspan="2" style="text-align: center;">Mobil Polyrex EM</td> </tr> </table> |                      | <u>Drive end</u> | <u>Non drive end</u> | Bearing type | : 6312 C3 | 6212 C3 | Sealing | : V'Ring | V'Ring | Lubrication interval | : 20000 h | 20000 h | Lubricant amount | : 21 g | 13 g | Lubricant type | Mobil Polyrex EM |  |
|  | <u>Drive end</u>   | <u>Non drive end</u> |                  |                      |              |           |         |         |          |        |                      |           |         |                  |        |      |                |                  |  |
| Bearing type   | : 6312 C3  | 6212 C3              |                  |                      |              |           |         |         |          |        |                      |           |         |                  |        |      |                |                  |  |
| Sealing  | : V'Ring   | V'Ring               |                  |                      |              |           |         |         |          |        |                      |           |         |                  |        |      |                |                  |  |
| Lubrication interval   | : 20000 h  | 20000 h              |                  |                      |              |           |         |         |          |        |                      |           |         |                  |        |      |                |                  |  |
| Lubricant amount   | : 21 g   | 13 g                 |                  |                      |              |           |         |         |          |        |                      |           |         |                  |        |      |                |                  |  |
| Lubricant type   | Mobil Polyrex EM   |                      |                  |                      |              |           |         |         |          |        |                      |           |         |                  |        |      |                |                  |  |
| Notes  |  |                      |                  |                      |              |           |         |         |          |        |                      |           |         |                  |        |      |                |                  |  |
| 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   | 12/04/2022   |                      | 1 / 6            |                      |              |           |         |         |          |        |                      |           |         |                  |        |      |                |                  |  |

# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage

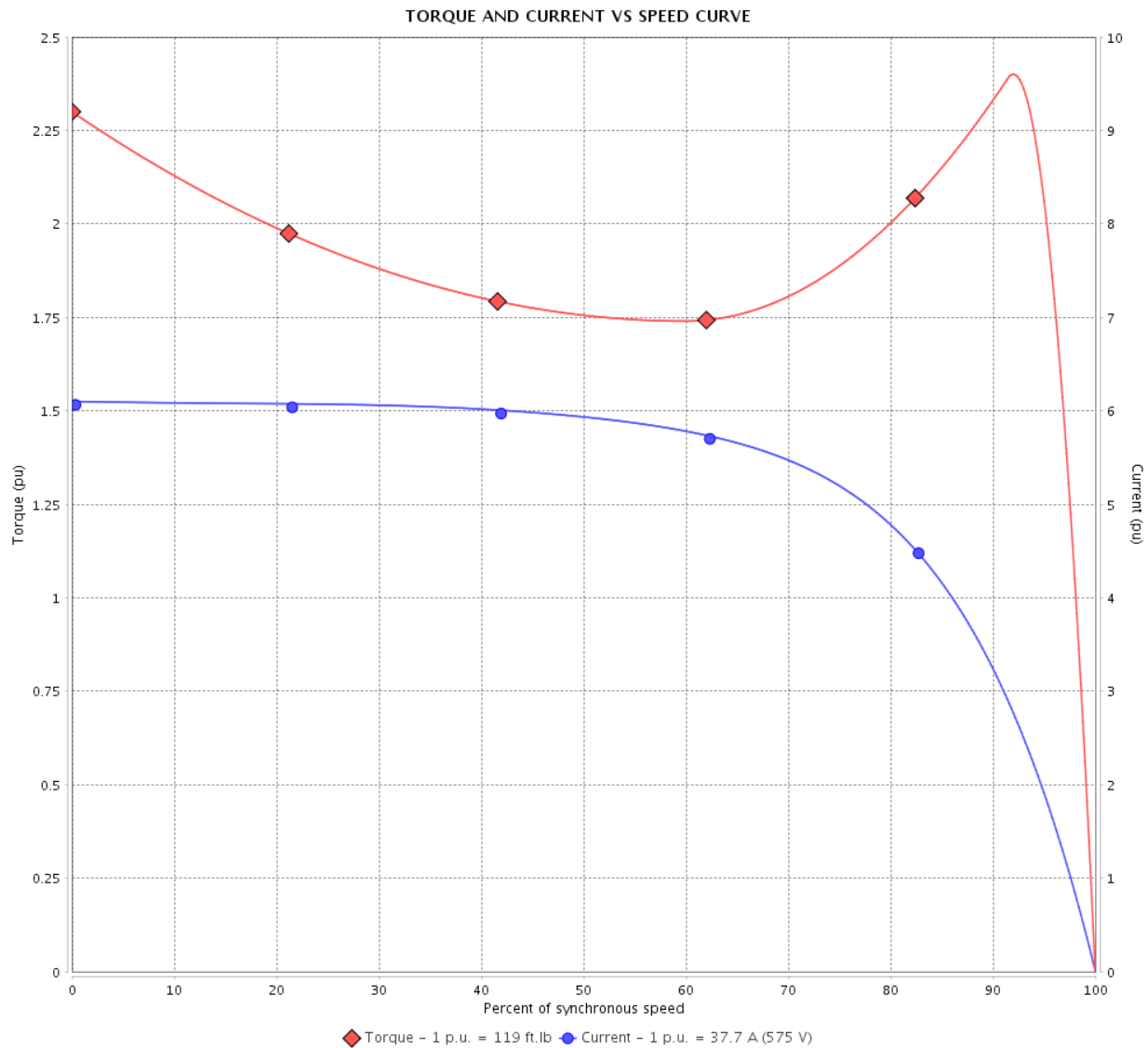


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12604614

Catalog # : 04018ET3H324T-W22



Performance : 575 V 60 Hz 4P

|                     |             |                       |                 |
|---------------------|-------------|-----------------------|-----------------|
| Rated current       | : 37.7 A    | Moment of inertia (J) | : 9.16 sq.ft.lb |
| LRC                 | : 6.1       | Duty cycle            | : Cont.(S1)     |
| Rated torque        | : 119 ft.lb | Insulation class      | : F             |
| Locked rotor torque | : 229 %     | Service factor        | : 1.25          |
| Breakdown torque    | : 240 %     | Temperature rise      | : 80 K          |
| Rated speed         | : 1770 rpm  | Design                | : B             |

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

| Rev.         | Changes Summary | Performed | Checked       | Date     |
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| Checked by   |                 |           |               |          |
| Date         | 12/04/2022      |           |               |          |

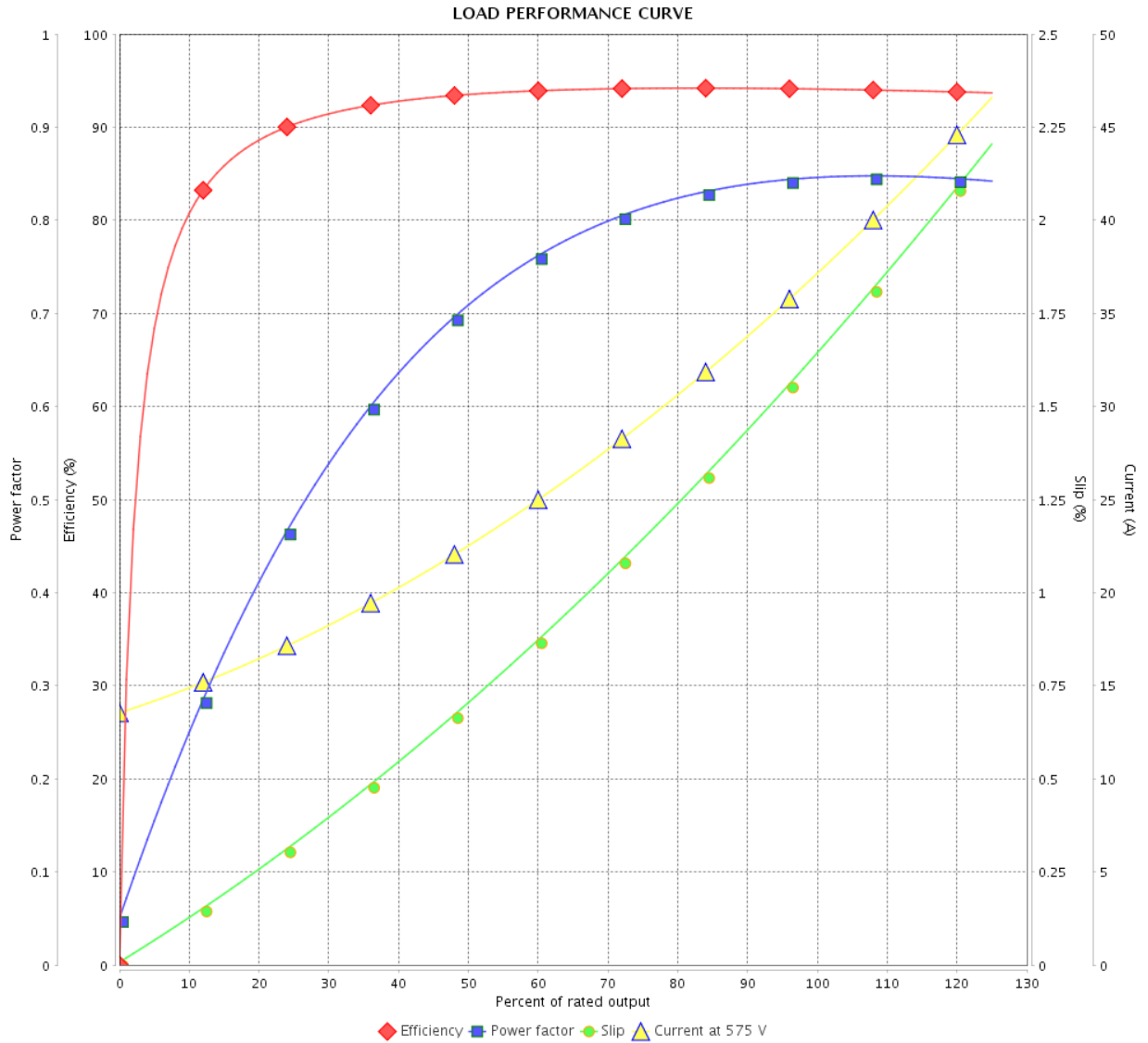
# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : NEMA Premium Efficiency Three-Phase  
 Product code : 12604614  
 Catalog # : 04018ET3H324T-W22



Performance : 575 V 60 Hz 4P

Rated current : 37.7 A  
 LRC : 6.1  
 Rated torque : 119 ft.lb  
 Locked rotor torque : 229 %  
 Breakdown torque : 240 %  
 Rated speed : 1770 rpm

Moment of inertia (J) : 9.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

| Rev.         | Changes Summary | Performed | Checked | Date     |
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| Checked by   |                 |           |         |          |
| Date         |                 |           |         |          |
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# THERMAL LIMIT CURVE



## Three Phase Induction Motor - Squirrel Cage

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|                             |                                       |
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| Locked rotor torque : 229 % | Service factor : 1.25                 |
| Breakdown torque : 240 %    | Temperature rise : 80 K               |
| Rated speed : 1770 rpm      | Design : B                            |

Heating constant

Cooling constant

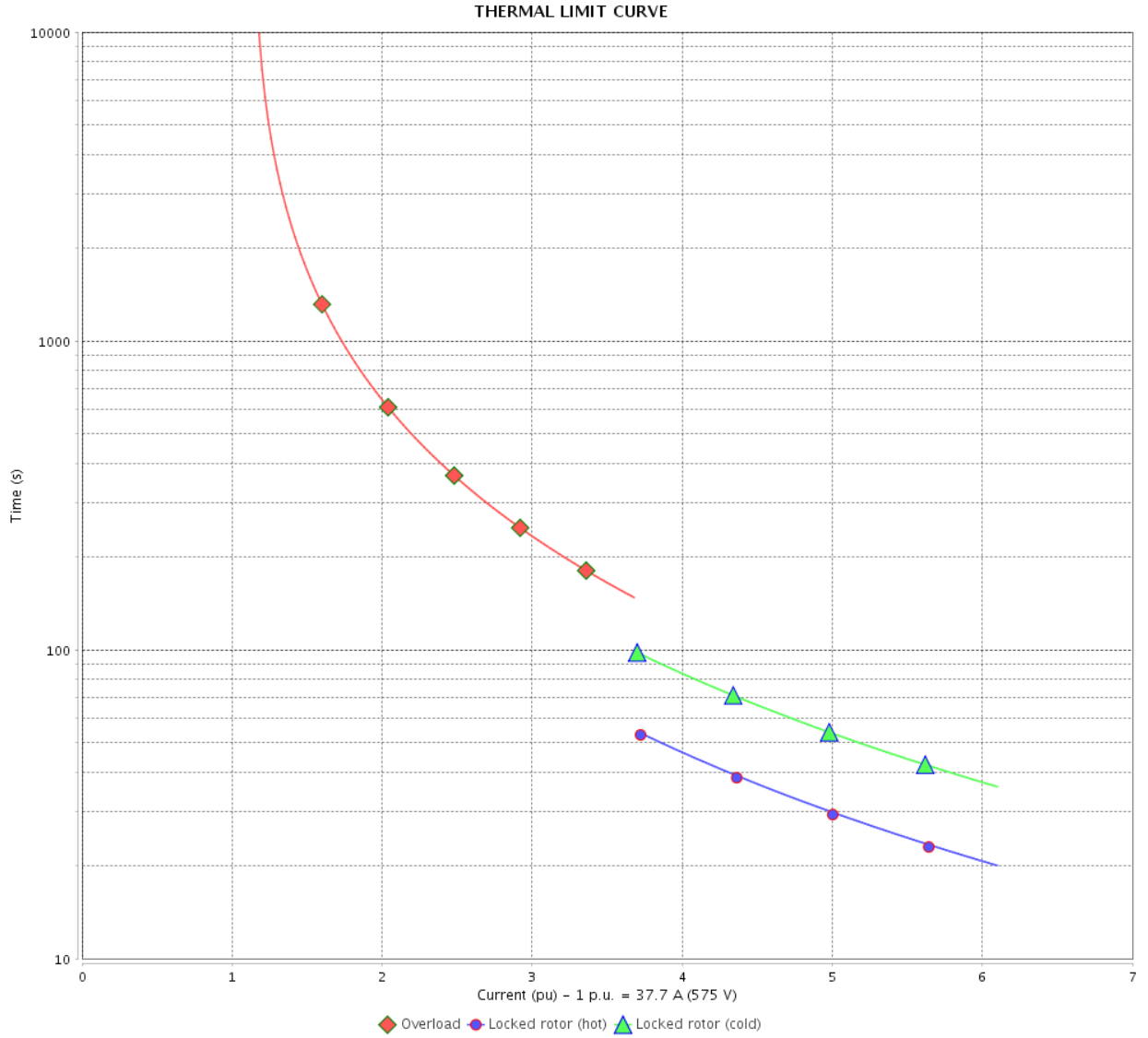
| Rev.         | Changes Summary | Performed | Checked | Date     |
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| Performed by |                 |           | Page    | Revision |
| Checked by   |                 |           |         |          |
| Date         | 12/04/2022      |           |         |          |

# THERMAL LIMIT CURVE

Three Phase Induction Motor - Squirrel Cage



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



| Rev.         | Changes Summary | Performed | Checked       | Date     |
|--------------|-----------------|-----------|---------------|----------|
|              |                 |           |               |          |
| Performed by |                 |           |               |          |
| Checked by   |                 |           |               |          |
| Date         |                 |           |               |          |
|              |                 |           | Page<br>5 / 6 | Revision |

# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage

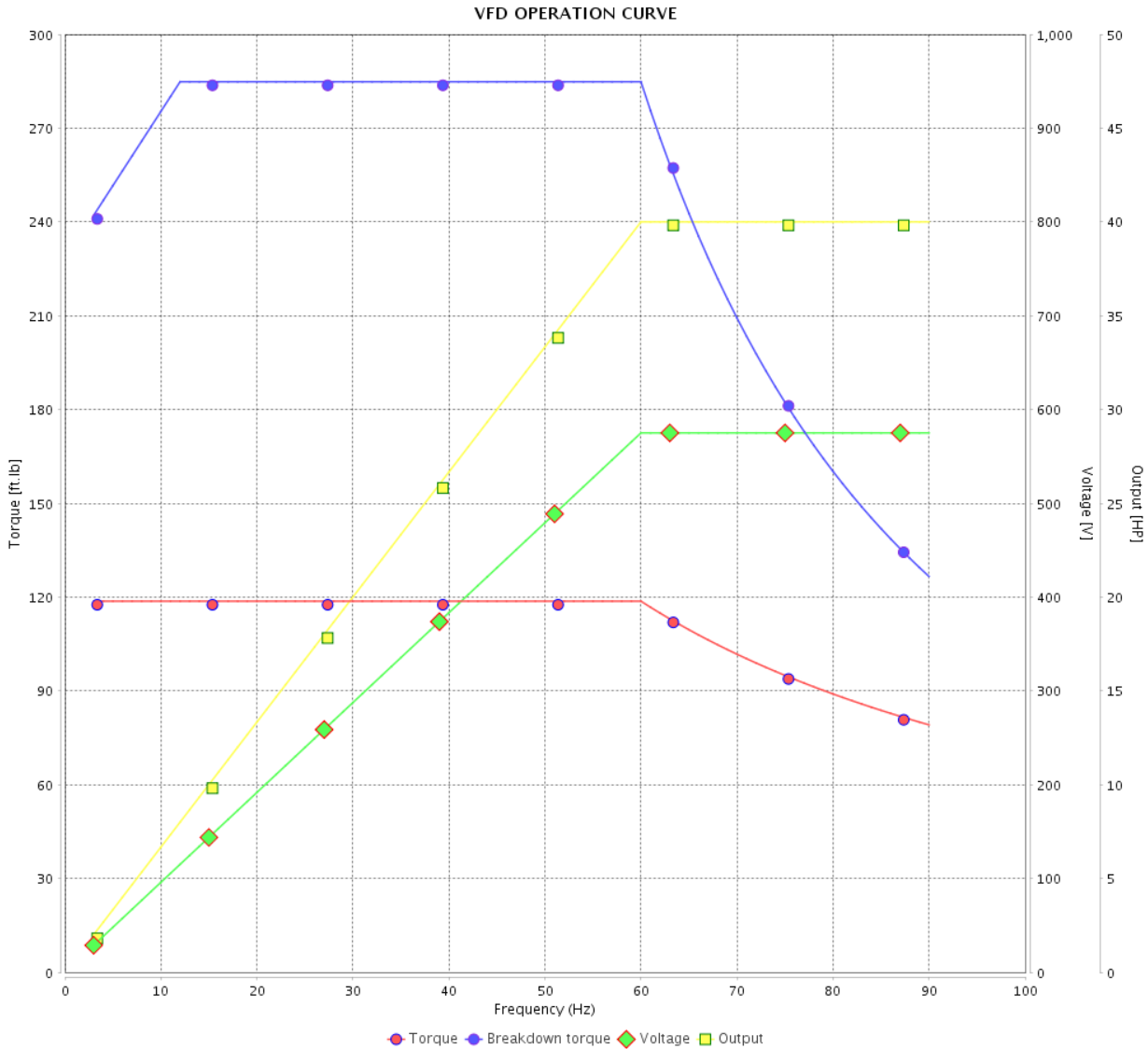


Customer :

Product line : NEMA Premium Efficiency Three-Phase

Product code : 12604614

Catalog # : 04018ET3H324T-W22



Performance : 575 V 60 Hz 4P

Rated current : 37.7 A  
 LRC : 6.1  
 Rated torque : 119 ft.lb  
 Locked rotor torque : 229 %  
 Breakdown torque : 240 %  
 Rated speed : 1770 rpm

Moment of inertia (J) : 9.16 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K  
 Design : B

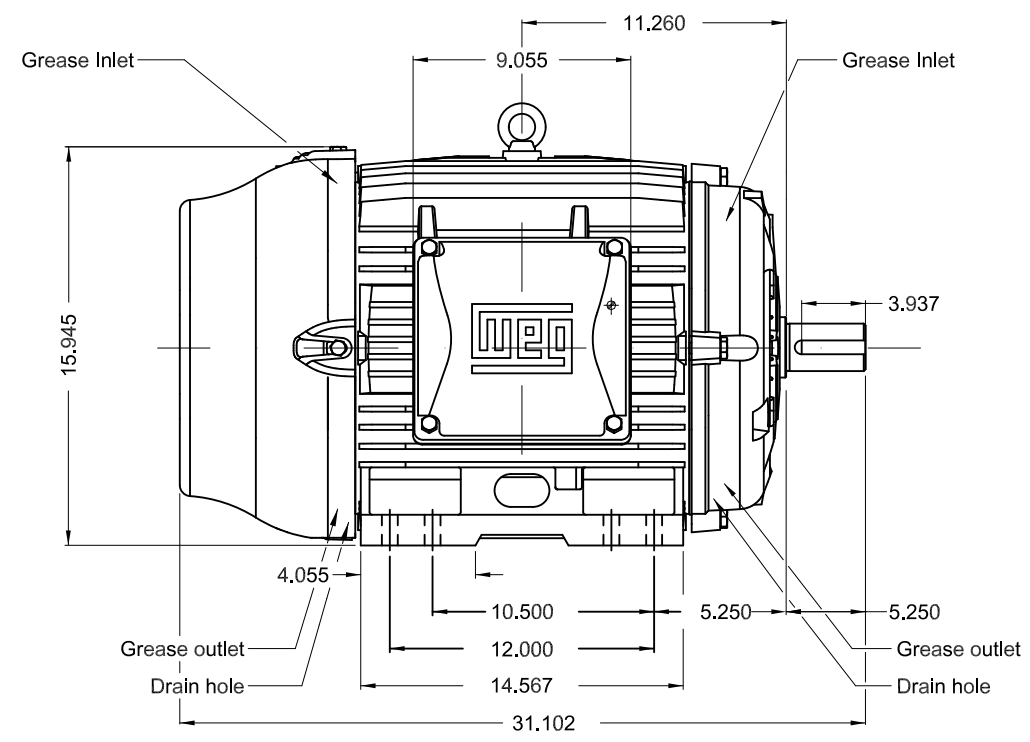
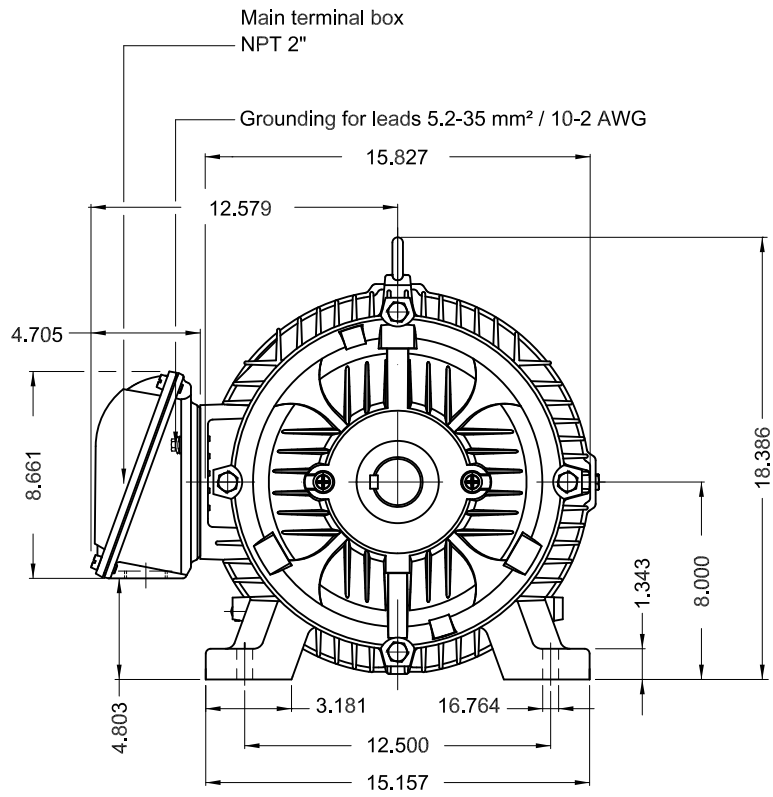
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| Performed by |                 |           | Page<br>6 / 6 | Revision |
| Checked by   |                 |           |               |          |
| Date         | 12/04/2022      |           |               |          |

1 2 3 4 5 6

A

B

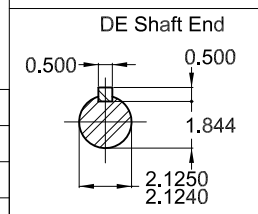
C



D

E

Color RAL 5009  
 Painting plan 203A  
 Mounting NEMA F-1  
 Mounting B3R(D)



40 HP 04 Poles 60 Hz A

| ECM      | LOC       | SUMMARY OF MODIFICATIONS                                 | EXECUTED            | CHECKED     | RELEASED | DATE | VER |
|----------|-----------|--|---------------------|-------------|----------|------|-----|
| EXECUTED | PIRWBUSER | THREE PH. MOTOR W22 PREM. EFF.<br>FRAME 324/6T IP55 TEFC |                     |             |          |      |     |
| CHECKED  |           |  |                     |             |          |      |     |
| RELEASED |           |  |                     |             |          |      |     |
| REL DT.  | WMO       | Jaragua do Sul   | Product Engineering | SHEET 1 / 1 |          |      |     |

**PREVIEW**  
 WDD





**NEMA**  
Premium  
W22



FOR SAFE AREA  
Mod.TE1BFOXON  
CC029A



Class I, Div 2, Gr A, B, C and D - T3  
Class I, Zone 2, IIC - T3  
Class II, Div 2, Gr F and G - T4  
For use on PWM: Gr. A, B, C, D and F,  
VT 1000:1, CT 20:1, 1.00SF - T3A

MODEL 04018ET3H324T-W22

Inverter Duty Motor  
Severe Duty

PH3 60Hz Fr. 324/6T 1000m.a.s.l. IP55 TEFC 570lb

V 575

A 37.7

HP 40

kW 30

SF 1.25

SFA 47.1

RPM 1770

PF 0.85

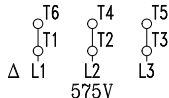
AMB 40°C

INS cl. F DT80K

NEMA NOM EFF 94.1%

DUTY CONT.

DES B Code G



→ 6312-C3 (21g)

→ 6212-C3 (13g)



MOBIL POLYREX EM (20000h)



MADE IN MEXICO  
12604614