

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : W22 IEEE 841 NEMA Premium Efficiency  
Three-Phase

Product code : 12447724

Catalog # : 02009ST3QIE324T-W22

Frame : 324/6T  
Output : 20 HP (15 kW)  
Poles : 8  
Frequency : 60 Hz  
Rated voltage : 460 V  
Rated current : 28.3 A  
L. R. Amperes : 142 A  
LRC : 5.0x(Code G)  
No load current : 16.0 A  
Rated speed : 880 rpm  
Slip : 2.22 %  
Rated torque : 119 ft.lb  
Locked rotor torque : 190 %  
Breakdown torque : 220 %  
Insulation class : F  
Service factor : 1.25  
Moment of inertia (J) : 9.37 sq.ft.lb  
Design : B

Locked rotor time : 48s (cold) 27s (hot)  
Temperature rise : 80 K  
Duty cycle : Cont.(S1)  
Ambient temperature : -20°C to +40°C  
Altitude : 1000 m.a.s.l.  
Protection degree : IP56  
Cooling method : IC411 - TEFC  
Mounting : F-1  
Rotation<sup>1</sup> : Both (CW and CCW)  
Noise level<sup>2</sup> : 56.0 dB(A)  
Starting method : Direct On Line  
Approx. weight<sup>3</sup> : 520 lb

| Output         | 25%  |      | 50%  |      | 75%  |      | 100% |      |
|----------------|------|------|------|------|------|------|------|------|
| Efficiency (%) | 89.2 | 88.3 | 89.5 | 88.5 | 91.0 | 89.6 | 91.0 | 89.5 |
|                | 86.8 | 85.6 | 87.4 | 86.3 | 89.0 | 88.5 | 89.3 | 89.0 |
|                | 90.2 | 89.1 | 89.5 | 88.5 | 89.5 | 89.5 | 88.5 | 88.5 |
|                | 88.0 |      | 87.5 |      | 89.5 |      | 88.5 |      |
| Power Factor   | 0.31 | 0.29 | 0.54 | 0.51 | 0.66 | 0.64 | 0.73 | 0.72 |
|                | 0.25 | 0.23 | 0.46 | 0.42 | 0.60 | 0.56 | 0.69 | 0.65 |
|                | 0.36 | 0.32 | 0.61 | 0.56 | 0.72 | 0.68 | 0.77 | 0.75 |
|                | 0.29 |      | 0.52 |      | 0.65 |      | 0.72 |      |

Foundation loads  
Max. traction : 899 lb  
Max. compression : 1420 lb

Losses at normative operating points (speed;torque), in percentage of rated output power

| Losses (%) | P1 (0,9;1,0)   | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 |
|------------|----------------|-----|-----|-----|-----|-----|-----|-----|
|            | P2 (0,5;1,0)   | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
|            | P3 (0,25;1,0)  | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 |
|            | P4 (0,9;0,5)   | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 |
|            | P5 (0,5;0,5)   | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 |
|            | P6 (0,5;0,25)  | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 |
|            | P7 (0,25;0,25) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |

|                        |                  |                      |
|------------------------|------------------|----------------------|
|                        | <u>Drive end</u> | <u>Non drive end</u> |
| Bearing type :         | 6312 C3          | 6212 C3              |
| Sealing :              | Inpro/Seal       | Inpro/Seal           |
| 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.

- (1) Looking the motor from the shaft end.
- (2) Measured at 1m and with tolerance of +3dB(A).
- (3) Approximate weight subject to changes after manufacturing process.
- (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   |                 |           |               |          |
| Date         | 25/03/2024      |           | Page<br>1 / 1 | Revision |