

# PRODUCT INFORMATION PACKET

**marathon®**  
Motors

Model No: SCA0224A3111GAAD01

Catalog No: SCA0224A3111GAAD01

TerraMAX® Cast Iron Motor, 30 HP, 3 Ph, 50 Hz, 415 V, 750 RPM, 225M Frame, TEFC



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**RegalRexnord**

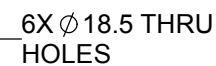
### Nameplate Specifications

|                        |               |                            |                             |
|------------------------|---------------|----------------------------|-----------------------------|
| Output HP              | 30 Hp         | Output KW                  | 22.0 kW                     |
| Frequency              | 50 Hz         | Voltage                    | 415 V                       |
| Current                | 47.1 A        | Speed                      | 736 rpm                     |
| Service Factor         | 1             | Phase                      | 3                           |
| Efficiency             | 89.1 %        | Power Factor               | 0.7294                      |
| Duty                   | S1            | Insulation Class           | F                           |
| Frame                  | 225M          | Enclosure                  | Totally Enclosed Fan Cooled |
| Thermal Protection     | No Protection | Ambient Temperature        | 50 °C                       |
| Drive End Bearing Size | 6313          | Opp Drive End Bearing Size | 6213                        |
| UL                     | No            | CSA                        | No                          |
| CE                     | Yes           | IP Code                    | 55                          |
| Number of Speeds       | 1             | Efficiency Class           | IE2                         |

### Technical Specifications

|                       |               |                       |                |
|-----------------------|---------------|-----------------------|----------------|
| Electrical Type       | Squirrel Cage | Starting Method       | Direct On Line |
| Poles                 | 8             | Rotation              | Bi-Directional |
| Mounting              | B3            | Motor Orientation     | Horizontal     |
| Drive End Bearing     | C3            | Opp Drive End Bearing | C3             |
| Frame Material        | Cast Iron     | Shaft Type            | Keyed          |
| Overall Length        | 862 mm        | Frame Length          | 425 mm         |
| Shaft Diameter        | 60 mm         | Shaft Extension       | 140 mm         |
| Assembly/Box Mounting | TOP           |                       |                |
| Outline Drawing       | 0222500894    | Connection Drawing    | 8442000085     |

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|   |                           |                           |
|---|---------------------------|---------------------------|
| DRAWING REVISION<br><b>A</b>                  | REVISION BY<br><b>SN</b>  | DATE<br><b>13/01/2017</b> |
| ECO<br><b>ECO-0116390</b>                     | APPROVED BY<br><b>SBD</b> | DATE<br><b>13/01/2017</b> |
| ECO DESCRIPTION<br><b>NEW DRAWING RELEASE</b> |                           |                           |

| GEOMETRIC TOLERANCE |         |      |
|---------------------|---------|------|
| LINEAR DIM          | >0~6    | ±0.1 |
|                     | >6~30   | ±0.2 |
|                     | >30~120 | ±0.3 |



**NOTES:**

1. PRESSURE-SENSITIVE ADHESIVE COATED PAPER ON THE BACK OF SELF-ADHESIVE.
2. AT THE END OF YELLOW, WORDS, SYMBOLS, LETTERS ARE BLACK, BORDER IS BLACK.
3. THE TOLERANCE OF THE LINEAR SIZE OF THE TOLERANCE WITHOUT THE TOLERANCE BY THE TABLE.

8WD.442.2017

|  |                           |   |                                     |                        |
|--|---------------------------|---|-------------------------------------|------------------------|
|  | DRAWN BY<br><b>SN</b>     | <b>Regal Beloit America, Inc.</b>                   |                                     |                        |
|  | DATE<br><b>16/12/2016</b> |   |                                     |                        |
|  | APPROVED BY<br><b>SBD</b> | <b>DESCRIPTION</b><br><b>CONN DIAGRAM-NAMEPLATE</b> |                                     |                        |
|  | DATE<br><b>16/12/2016</b> |   |                                     |                        |
|  | REFERENCE                 | MATERIAL  | PROCESS/FINISH                      |                        |
|  | THIRD ANGLE PROJECTION    | SIZE<br><b>A</b>                                    | DRAWING NUMBER<br><b>8442000085</b> | SHEET<br><b>1 OF 1</b> |

**Model No.** SCA0224A3111GAAD01

| U   | Δ / Y | f    | P    | P    | I    | n     | T      | IE    | % EFF at __ load |      |       |       | PF at __ load |       |       | I <sub>A</sub> /I <sub>N</sub> | T <sub>A</sub> /T <sub>N</sub> | T <sub>K</sub> /T <sub>N</sub> |
|-----|-------|------|------|------|------|-------|--------|-------|------------------|------|-------|-------|---------------|-------|-------|--------------------------------|--------------------------------|--------------------------------|
| (V) | Conn  | [Hz] | [kW] | [hp] | [A]  | [RPM] | [Nm]   | Class | 5/4FL            | FL   | 3/4FL | 1/2FL | FL            | 3/4FL | 1/2FL | [pu]                           | [pu]                           | [pu]                           |
| 415 | Δ     | 50   | 22   | 30   | 47.1 | 736   | 290.61 | IE2   | -                | 89.1 | 89.1  | 89.5  | 0.73          | 0.67  | 0.54  | 4.4                            | 1.7                            | 2.2                            |
|     |       |      |      |      |      |       |        |       |                  |      |       |       |               |       |       |                                |                                |                                |

|                                  |                                   |   |  |
|----------------------------------|-----------------------------------|---|--|
| Motor type                       | SCA                               | Degree of protection                      | IP 55                                      |
| Enclosure                        | TEFC                              | Mounting type                             | IM B3                                      |
| Frame Material                   | Cast Iron                         | Cooling method                            | IC 411                                     |
| Frame size                       | 225M                              | Motor weight - approx.                    | 426 kg                                     |
| Duty                             | S1                                | Gross weight - approx.                    | 456 kg                                     |
| Voltage variation *              | ± 10%                             | Motor inertia                             | 1.1908 kgm <sup>2</sup>                    |
| Frequency variation *            | ± 5%                              | Load inertia                              | Customer to Provide                        |
| Combined variation *             | 10%                               | Vibration level                           | 2.2 mm/s                                   |
| Design                           | N                                 | Noise level ( 1meter distance from motor) | 61 dB(A)                                   |
| Service factor                   | 1.0                               | No. of starts hot/cold/Equally spread     | 2/3/4                                      |
| Insulation class                 | F                                 | Starting method                           | DOL  |
| Ambient temperature              | -20 to +50 °C                     | Type of coupling                          | Direct                                     |
| Temperature rise (by resistance) | 70 [ Class B ] K                  | LR withstand time (hot/cold)              | 15/30 s                                    |
| Altitude above sea level         | 1000 meter                        | Direction of rotation                     | Bi-directional                             |
| Hazardous area classification    | NA                                | Standard rotation                         | Clockwise form DE                          |
| Zone classification              | NA                                | Paint shade                               | RAL 5014                                   |
| Gas group                        | NA                                | Accessories                               |  |
| Temperature class                | NA                                | Accessory - 1                             | -  |
| Rotor type                       | Aluminum Die cast                 | Accessory - 2                             | -  |
| Bearing type                     | Anti-friction ball                | Accessory - 3                             | -  |
| DE / NDE bearing                 | 6313 C3 / 6213 C3                 | Terminal box position                     | TOP  |
| Lubrication method               | Regreaseable                      | Maximum cable size/conduit size           | 1R x 3C x 50mm <sup>2</sup> /2 x M40 x 1.5 |
| Type of grease                   | Shell Gadus S5 V100 or Equivalent | Auxiliary terminal box                    | NA   |

I<sub>A</sub>/I<sub>N</sub> - Locked Rotor Current / Rated Current

T<sub>K</sub>/T<sub>N</sub> - Breakdown Torque / Rated Torque

T<sub>A</sub>/T<sub>N</sub> - Locked Rotor Torque / Rated Torque

**NOTE**

All performance values at rated voltage and frequency.

All performance parameters are subjected to standard tolerance as per IEC 60034-1

\* Voltage, Frequency and combined variation are as per IEC60034-1

Technical data are subject to change. There may be discrepancies between calculated and name plate values.

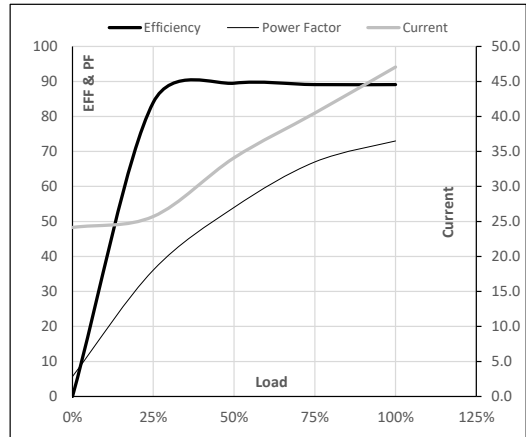
| Efficiency | Europe | China | India           | Aus/Nz | Brazil | Global IEC |
|------------|--------|-------|-----------------|--------|--------|------------|
| Standards  | -      | -     | IS 12615 : 2018 | -      | -      | -          |

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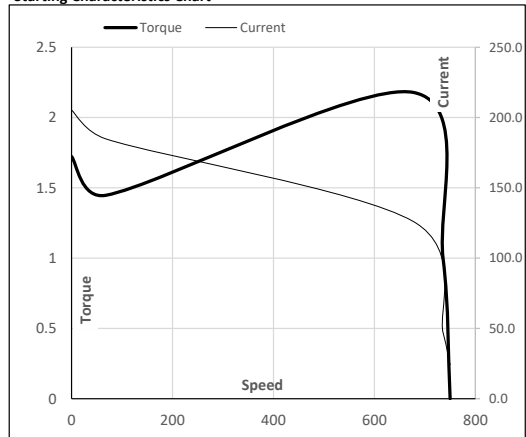
| Enclosure | U<br>(V) | Δ / Y<br>Conn | f<br>[Hz] | P<br>[kW] | P<br>[hp] | I<br>[A] | n<br>[RPM] | T<br>[kgm] | T<br>[Nm] | IE<br>Class | Amb<br>[°C] | Duty | Elevation<br>[m] | Inertia<br>[kg-m <sup>2</sup> ] | Weight<br>[kg] |
|-----------|----------|---------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC      | 415      | Δ             | 50        | 22        | 30        | 47.1     | 736        | 29.63      | 290.61    | IE2         | 50          | S1   | 1000             | 1.1908                          | 426            |

**Motor Load Data**

| Load Point   |       | NL   | 1/4FL | 1/2FL | 3/4FL | FL    | 5/4FL |
|--------------|-------|------|-------|-------|-------|-------|-------|
| Current      | A     | 24.1 | 25.7  | 34.1  | 40.5  | 47.1  |       |
| Torque       | Nm    | 0.0  | 71.6  | 143.9 | 216.8 | 290.6 |       |
| Speed        | r/min | 750  | 747   | 743   | 740   | 736   |       |
| Efficiency   | %     | 0.0  | 84.0  | 89.5  | 89.1  | 89.1  |       |
| Power Factor | %     | 5.7  | 36.1  | 54.0  | 67.0  | 73.0  |       |

**Performance vs Load Chart**

**Motor Speed Torque Data**

| Load Point |       | LR    | P-Up  | BD    | Rated | NL   |
|------------|-------|-------|-------|-------|-------|------|
| Speed      | r/min | 0     | 68    | 677   | 736   | 750  |
| Current    | A     | 205.3 | 184.8 | 126.1 | 47.1  | 24.1 |
| Torque     | pu    | 1.7   | 1.4   | 2.2   | 1     | 0    |

**Starting Characteristics Chart**

**NOTE** Refer data sheet for applicable standard and tolerances on performance parameters

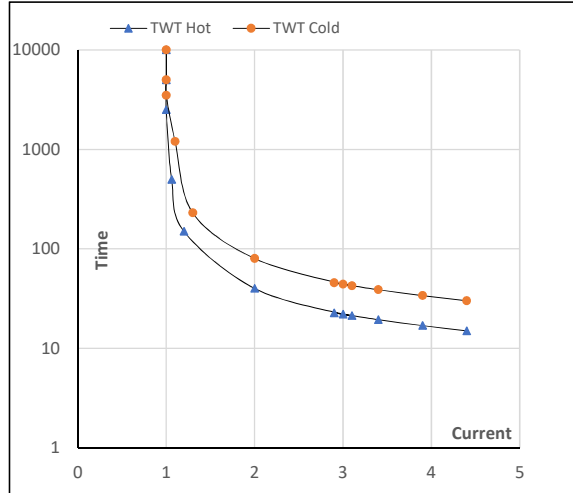
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| Enclosure | U<br>(V) | $\Delta$ / Y<br>Conn | f<br>[Hz] | P<br>[kW] | P<br>[hp] | I<br>[A] | n<br>[rpm] | T<br>[kgm] | T<br>[Nm] | IE<br>Class | Amb<br>[°C] | Duty | Elevation<br>[m] | Inertia<br>[kg-m <sup>2</sup> ] | Weight<br>[kg] |
|-----------|----------|----------------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC      | 415      | $\Delta$             | 50        | 22        | 30        | 47.1     | 736        | 29.63      | 290.61    | IE2         | 50          | S1   | 1000             | 1.1908                          | 426            |

**Motor Speed Torque Data**

| Load     | FL      | $I_1$ | $I_2$ | $I_3$ | $I_4$ | $I_5$ | LR  |
|----------|---------|-------|-------|-------|-------|-------|-----|
| TWT Hot  | s 10000 | 40    | 30    | 22    | 19    | 16    | 15  |
| TWT Cold | s 10000 | 80    | 65    | 44    | 38    | 32    | 30  |
| Current  | pu      | 1     | 2     | 3     | 3.5   | 4     | 4.4 |

**Thermal Characteristics Chart**

**NOTE** Refer data sheet for applicable standard and tolerances on performance parameters

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