

# PRODUCT INFORMATION PACKET

**marathon®**  
Motors

Model No: SCA1601A3133GAAD01

Catalog No: SCA1601A3133GAAD01

160kW, General Purpose Low Voltage IEC Motor, 3 phase, 2 Pole, 415V, B35, 50Hz, 94.8%, 315L Frame, TEFC  
Cast Iron IE2 Efficiency Motors



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**REGAL**

### Nameplate Specifications

|                            |         |                        |                             |
|----------------------------|---------|------------------------|-----------------------------|
| Output HP                  | 215 Hp  | Output KW              | 160.0 kW                    |
| Frequency                  | 50 Hz   | Voltage                | 415 V                       |
| Current                    | 257.5 A | Speed                  | 2981 rpm                    |
| Service Factor             | 1       | Phase                  | 3                           |
| Efficiency                 | 94.8 %  | Power Factor           | 0.91                        |
| Duty                       | S1      | Insulation Class       | F                           |
| Frame                      | 315L    | Enclosure              | Totally Enclosed Fan Cooled |
| Ambient Temperature        | 50 °C   | Drive End Bearing Size | 6316                        |
| Opp Drive End Bearing Size | 6316    | UL                     | No                          |
| CSA                        | No      | CE                     | Yes                         |
| IP Code                    | 55      |                        |                             |

### Technical Specifications

|                       |               |                       |                |
|-----------------------|---------------|-----------------------|----------------|
| Electrical Type       | Squirrel Cage | Starting Method       | Direct On Line |
| Poles                 | 2             | Rotation              | Bi-Directional |
| Mounting              | B35           | Motor Orientation     | Horizontal     |
| Drive End Bearing     | C3            | Opp Drive End Bearing | C3             |
| Frame Material        | Cast Iron     | Shaft Type            | Keyed          |
| Overall Length        | 1287 mm       | Frame Length          | 840 mm         |
| Shaft Diameter        | 65 mm         | Shaft Extension       | 140 mm         |
| Assembly/Box Mounting | SIDE          |                       |                |
| Outline Drawing       | 0231501399    | Connection Drawing    | 8442000085     |

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

| 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.

|                        |  |                |            |
|------------------------|--|----------------|------------|
|                        |  | DRAWN BY       | SN         |
|                        |  | DATE           | 16/12/2016 |
|                        |  | APPROVED BY    | SBD        |
|                        |  | DATE           | 16/12/2016 |
| REFERENCE              |  | MATERIAL       |            |
| THIRD ANGLE PROJECTION |  | SIZE           |            |
| DRAWING NUMBER         |  | PROCESS/FINISH |            |
| 8442000085             |  | SHEET          |            |
| 1 OF 1                 |  |                |            |

8WD.442.2017

Regal Beloit America, Inc.

CONN DIAGRAM-NAMEPLATE

**Model No.** SCA1601A3133GAAD01

| U<br>(V) | Δ / Y<br>Conn | f<br>[Hz] | P<br>[kW] | P<br>[hp] | I<br>[A] | n<br>[RPM] | T<br>[Nm] | IE<br>Class | % EFF at __ load |      |       |       | PF at __ load |       |       | I <sub>a</sub> /I <sub>N</sub><br>[pu] | T <sub>a</sub> /T <sub>N</sub><br>[pu] | T <sub>d</sub> /T <sub>N</sub><br>[pu] |
|----------|---------------|-----------|-----------|-----------|----------|------------|-----------|-------------|------------------|------|-------|-------|---------------|-------|-------|----------------------------------------|----------------------------------------|----------------------------------------|
| 415      | Δ             | 50        | 160       | 215       | 257.5    | 2981       | 513.67    | IE2         | 5/4FL            | FL   | 3/4FL | 1/2FL | FL            | 3/4FL | 1/2FL | 5.7                                    | 1.9                                    | 3.0                                    |
|          |               |           |           |           |          |            |           |             | -                | 94.8 | 94.8  | 93.8  | 0.91          | 0.90  | 0.86  |                                        |                                        |                                        |
|          |               |           |           |           |          |            |           |             |                  |      |       |       |               |       |       |                                        |                                        |                                        |

|                                  |                                   |                                           |                                             |
|----------------------------------|-----------------------------------|-------------------------------------------|---------------------------------------------|
| Motor type                       | SCA                               | Degree of protection                      | IP 55                                       |
| Enclosure                        | TEFC                              | Mounting type                             | IM B35                                      |
| Frame Material                   | Cast Iron                         | Cooling method                            | IC 411                                      |
| Frame size                       | 315L                              | Motor weight - approx.                    | 1127 kg                                     |
| Duty                             | S1                                | Gross weight - approx.                    | 1172 kg                                     |
| Voltage variation *              | ± 10%                             | Motor inertia                             | 2.5678 kgm <sup>2</sup>                     |
| Frequency variation *            | ± 5%                              | Load inertia                              | Customer to Provide                         |
| Combined variation *             | 10%                               | Vibration level                           | 2.8 mm/s                                    |
| Design                           | N                                 | Noise level ( 1meter distance from motor) | 83 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                 | 6316 C3 / 6316 C3                 | Terminal box position                     | RHS                                         |
| Lubrication method               | Regreaseable                      | Maximum cable size/conduit size           | 1R x 3C x 240mm <sup>2</sup> /2 x M63 x 1.5 |
| Type of grease                   | Shell Gadus S5 V100 or Equivalent | Auxiliary terminal box                    | Available on Request                        |

I<sub>a</sub>/I<sub>N</sub> - Locked Rotor Current / Rated CurrentT<sub>d</sub>/T<sub>N</sub> - Breakdown Torque / Rated TorqueT<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 combine variation are as per IEC60034-1

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

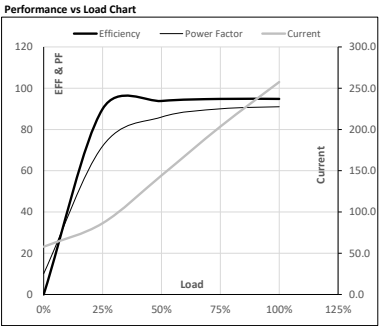
| Efficiency | Europe | China | India           | Aus/Nz | Brazil | Global IEC |
|------------|--------|-------|-----------------|--------|--------|------------|
| Standards  | -      | -     | IS 12615 : 2018 | -      | -      | -          |

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| Enclosure | U<br>(V) | $\Delta$ / 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        | 160       | 215       | 257.5    | 2981       | 52.38      | 513.67    | IE2         | 50          | S1   | 1000             | 2.5678                          | 1127           |

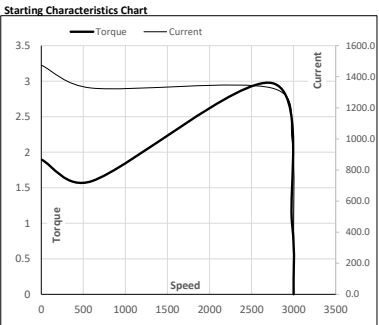
Motor Load Data

| Load Point   |       | NL   | 1/4FL | 1/2FL | 3/4FL | FL    | 5/4FL |
|--------------|-------|------|-------|-------|-------|-------|-------|
| Current      | A     | 57.9 | 86.3  | 144.2 | 203.4 | 257.5 |       |
| Torque       | Nm    | 0.0  | 127.8 | 256.0 | 384.6 | 513.7 |       |
| Speed        | r/min | 3000 | 2995  | 2991  | 2986  | 2981  |       |
| Efficiency   | %     | 0.0  | 89.9  | 93.8  | 94.8  | 94.8  |       |
| Power Factor | %     | 10.1 | 71.9  | 86.0  | 90.0  | 91.0  |       |



Motor Speed Torque Data

| Load Point |       | LR     | P-Up   | BD    | Rated | NL   |
|------------|-------|--------|--------|-------|-------|------|
| Speed      | r/min | 0      | 600    | 2743  | 2981  | 3000 |
| Current    | A     | 1474.5 | 1327.1 | 997.0 | 257.5 | 57.9 |
| Torque     | pu    | 1.9    | 1.6    | 3.0   | 1     | 0    |



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

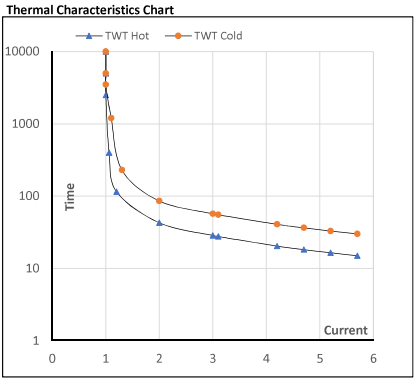
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| Enclosure | U<br>(V) | $\Delta$ / Y<br>Conn | f<br>[Hz] | P<br>[kW] | P<br>[hp] | I<br>[A] | n<br>[rpm] | T<br>[kgm] | T<br>[Nm] | IE<br>Class | Amb<br>[°C] | Duty | Elevation<br>[m] | Inertia<br>[kg·m <sup>2</sup> ] | Weight<br>[kg] |
|-----------|----------|----------------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC      | 415      | $\Delta$             | 50        | 160       | 215       | 257.5    | 2981       | 52.38      | 513.67    | IE2         | 50          | S1   | 1000             | 2.5678                          | 1127           |

| Motor Speed Torque Data |         |                |                |                |                |                |     |     |
|-------------------------|---------|----------------|----------------|----------------|----------------|----------------|-----|-----|
| Load                    | FL      | I <sub>1</sub> | I <sub>2</sub> | I <sub>3</sub> | I <sub>4</sub> | I <sub>5</sub> | LR  |     |
| TWT Hot                 | s 10000 | 43             | 29             | 25             | 17             | 16             | 15  |     |
| TWT Cold                | s 10000 | 86             | 57             | 45             | 35             | 31             | 30  |     |
| Current                 | pu      | 1              | 2              | 3              | 4              | 5              | 5.5 | 5.7 |



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

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