# PRODUCT INFORMATION PACKET

Model No: SCA2001A3131GAAD01
Catalog No: SCA2001A3131GAAD01
TerraMAX® Cast Iron Motor, 270 HP, 3 Ph, 50 Hz, 415 V, 3000 RPM, 315L Frame, TEFC

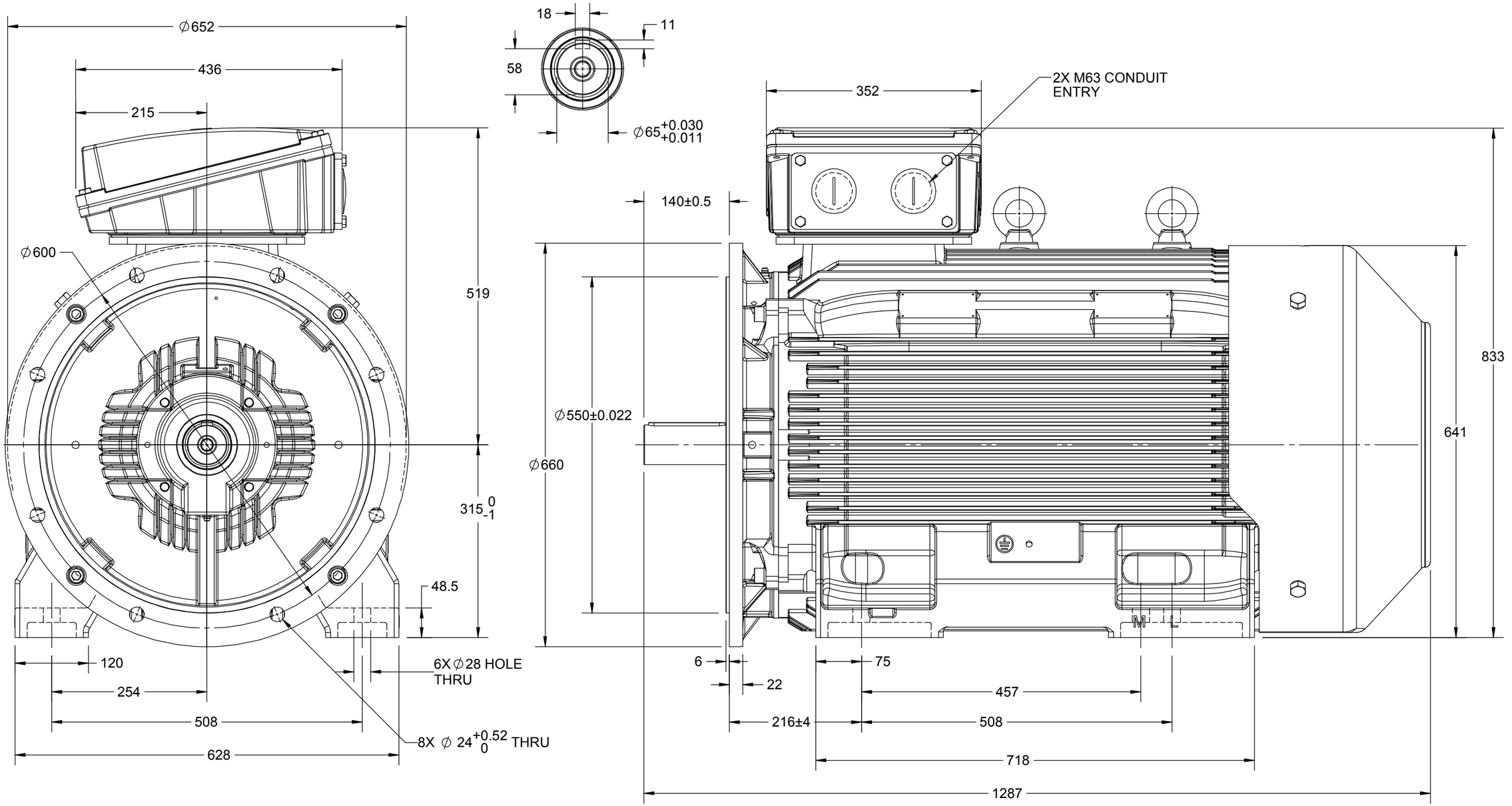
## Nameplate Specifications

| | | | |
|---|---|---|---|
| Output HP | 270 Hp | Output KW | 200.0 kW |
| Frequency | 50 Hz | Voltage | 415 V |
| Current | 319.2 A | Speed | 2979 rpm |
| Service Factor | 1 | Phase | 3 |
| Efficiency | 95 % | Power Factor | 0.92 |
| Duty | S1 | Insulation Class | F |
| Frame | 315L | Enclosure | Totally Enclosed Fan Cooled |
| Thermal Protection | No Protection | Ambient Temperature | 50 °C |
| Drive End Bearing Size | 6316 | Opp Drive End Bearing Size | 6316 |
| 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 | 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 | TOP | | |
| Connection Drawing | 8442000085 | Outline Drawing | 0231500882 |

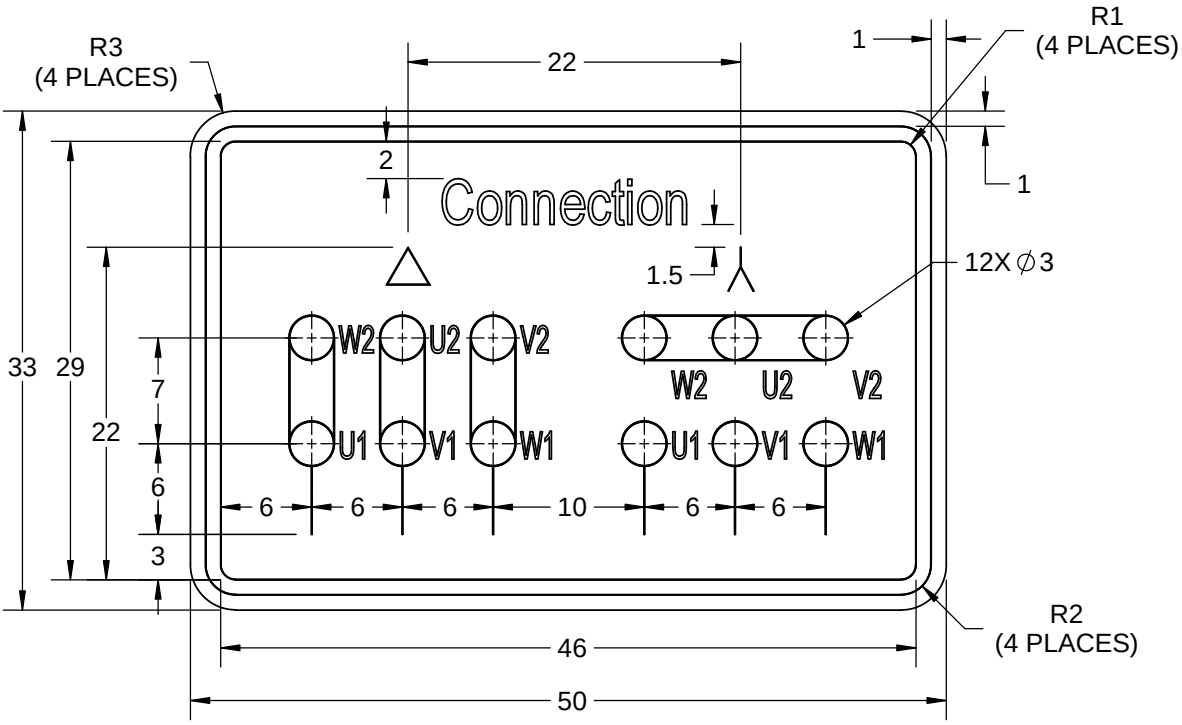
# OUTLINE




| | | | | | |
|---|---|---|---|---|---|
| DRAWING REVISION B | REVISION BY NIV | DATE 13/05/2019 | | DRAWN BY JOY | marathon™ Motors |
| ECO ECO-0165600 | APPROVED BY SR | DATE 13/05/2019 | | DATE 18/07/2014 | |
| ECO DESCRIPTION MODEL UPDATED | | | | APPROVED BY SBD | DESCRIPTION OUTLINE 315L FR-2P-B35 MTG. MOTOR TYPE: TCA |
| | | | | DATE 18/07/2014 | |
| | | | | REFERENCE | MATERIAL / PROCESS/FINISH |
| | | | | THIRD ANGLE PROJECTION | SIZE B / DRAWING NUMBER 0231500882 / SHEET 1 OF 1 |

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

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

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**Model No.** SCA2001A3131GAAD01

| U | Δ / Y | f | P | P | I | n | T | IE | % EFF at __ load | | | | PF at __ load | | | $I_A/I_N$ | $T_A/T_N$ | $T_K/T_N$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (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 | 200 | 270 | 318.4 | 2979 | 645.36 | IE2 | - | 95 | 95 | 94.6 | 0.91 | 0.90 | 0.84 | 6.0 | 1.8 | 2.7 |

| | | | | | |
|---|---|---|---|---|---|
| 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. | 1247 | kg |
| Duty | S1 | | Gross weight - approx. | 1292 | kg |
| Voltage variation * | ± 10% | | Motor inertia | 3.0257 | $kgm^2$ |
| 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) | 18/36 | 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 | TOP | |
| Lubrication method | Regreasable | | Maximum cable size/conduit size | 1R x 3C x 240mm²/2 x M63 x 1.5 | |
| Type of grease | Shell Gadus S5 V100 or Equivalent | | Auxiliary terminal box | Available on Request | |

$I_A/I_N$ - Locked Rotor Current / Rated Current

$T_A/T_N$ - Locked Rotor Torque / Rated Torque

$T_K/T_N$ - Breakdown 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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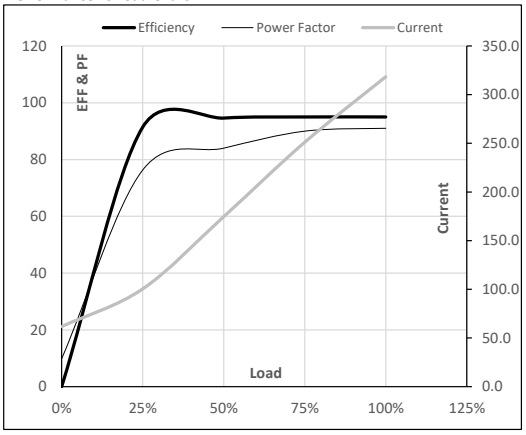
| Enclosure | U (V) | Δ / Y Conn | f [Hz] | P [kW] | P [hp] | I [A] | n [RPM] | T [kgm] | T [Nm] | IE Class | Amb [°C] | Duty | Elevation [m] | Inertia [kg-m$^2$] | Weight [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TEFC | 415 | Δ | 50 | 200 | 270 | 318.4 | 2979 | 65.81 | 645.36 | IE2 | 50 | S1 | 1000 | 3.0257 | 1247 |

**Motor Load Data**

| Load Point | | NL | 1/4FL | 1/2FL | 3/4FL | FL | 5/4FL |
|---|---|---|---|---|---|---|---|
| Current | A | 61.7 | 100.4 | 174.6 | 251.1 | 318.4 | |
| Torque | Nm | 0.0 | 160.5 | 321.5 | 483.1 | 645.4 | |
| Speed | r/min | 3000 | 2995 | 2990 | 2985 | 2979 | |
| Efficiency | % | 0.0 | 91.4 | 94.6 | 95.0 | 95.0 | |
| Power Factor | % | 9.8 | 76.3 | 84.0 | 90.0 | 91.0 | |

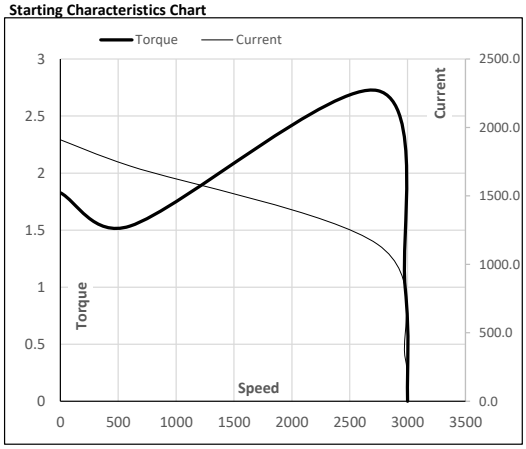
**Performance vs Load Chart**




**Motor Speed Torque Data**

| Load Point | | LR | P-Up | BD | Rated | NL |
|---|---|---|---|---|---|---|
| Speed | r/min | 0 | 600 | 2741 | 2979 | 3000 |
| Current | A | 1910.1 | 1719.1 | 1146.4 | 318.4 | 61.7 |
| Torque | pu | 1.8 | 1.5 | 2.7 | 1 | 0 |

**Starting Characteristics Chart**




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

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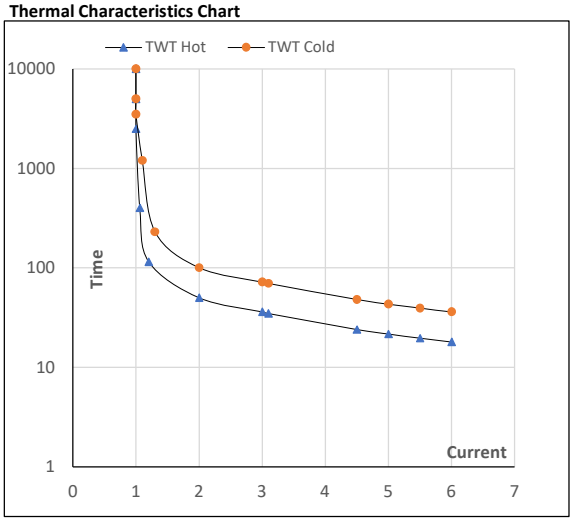
| Enclosure | U (V) | Δ / Y Conn | f [Hz] | P [kW] | P [hp] | I [A] | n [rpm] | T [kgm] | T [Nm] | IE Class | Amb [°C] | Duty | Elevation [m] | Inertia [kg-m$^2$] | Weight [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TEFC | 415 | Δ | 50 | 200 | 270 | 318.4 | 2979 | 65.80 | 645.30 | IE2 | 50 | S1 | 1000 | 3.0257 | 1247 |

**Motor Speed Torque Data**

| Load | | FL | $I_1$ | $I_2$ | $I_3$ | $I_4$ | $I_5$ | LR |
|---|---|---|---|---|---|---|---|---|
| TWT Hot | s | 10000 | 50 | 36 | 30 | 22 | 20 | 18 |
| TWT Cold | s | 10000 | 100 | 72 | 60 | 43 | 39 | 36 |
| Current | pu | 1 | 2 | 3 | 4 | 5 | 5.5 | 6 |

**Thermal Characteristics Chart**

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