# PRODUCT INFORMATION PACKET

Model No: TCA0111A3133GACD01
Catalog No: TCA0111A3133GACD01
Cast Iron Motor, 15 HP, 3 Ph, 50 Hz, 415 V, 3000 RPM, 160M Frame, TEFC

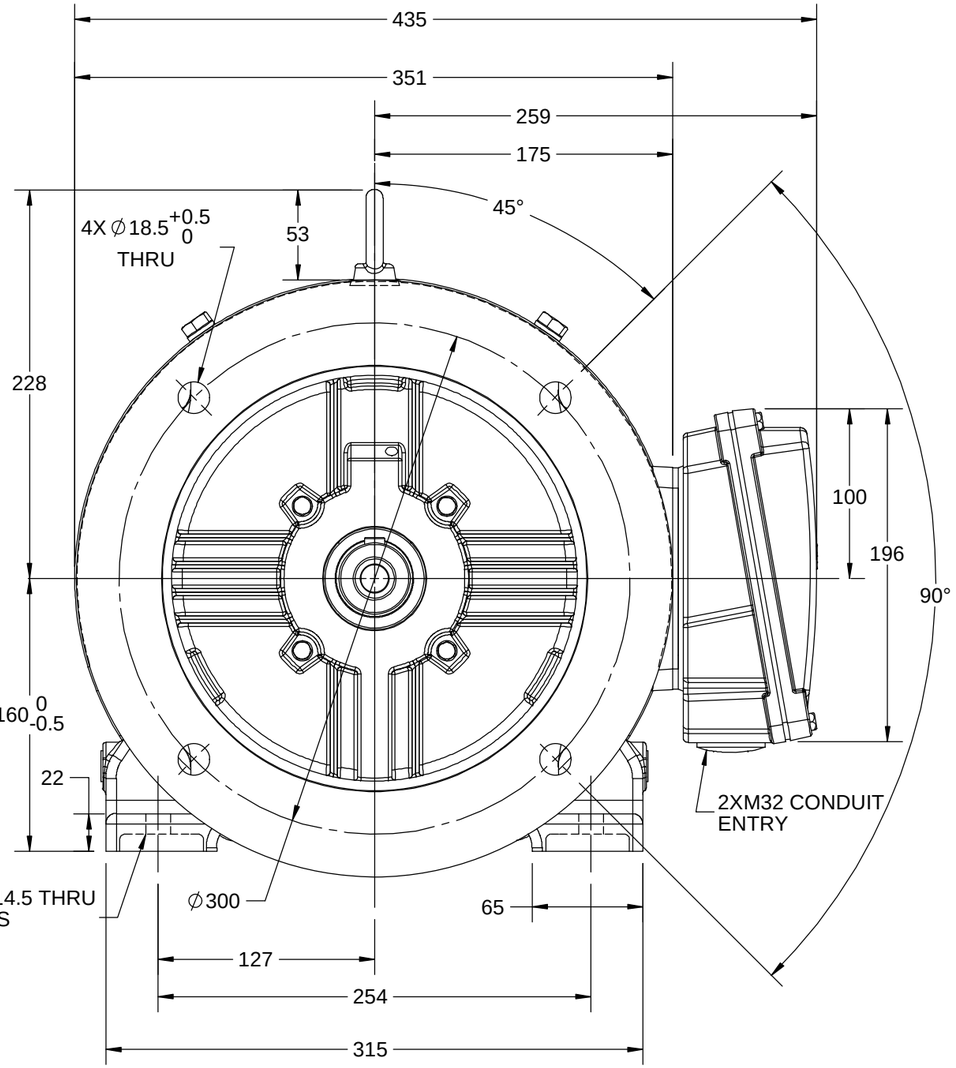
## Nameplate Specifications

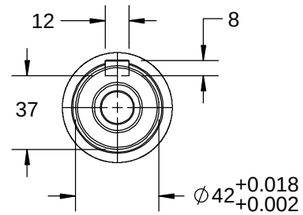
| | | | |
|---|---|---|---|
| Output HP | 15 Hp | Output KW | 11.0 kW |
| Frequency | 50 Hz | Voltage | 415 V |
| Current | 18.9 A | Speed | 2953 rpm |
| Service Factor | 1 | Phase | 3 |
| Efficiency | 91.2 % | Power Factor | 0.89 |
| Duty | S1 | Insulation Class | F |
| Frame | 160M | Enclosure | Totally Enclosed Fan Cooled |
| Thermal Protection | No Protection | Ambient Temperature | 50 °C |
| Drive End Bearing Size | 6309 | Opp Drive End Bearing Size | 6209 |
| UL | No | CSA | No |
| CE | Yes | IP Code | 55 |
| Number of Speeds | 1 | Efficiency Class | IE3 |

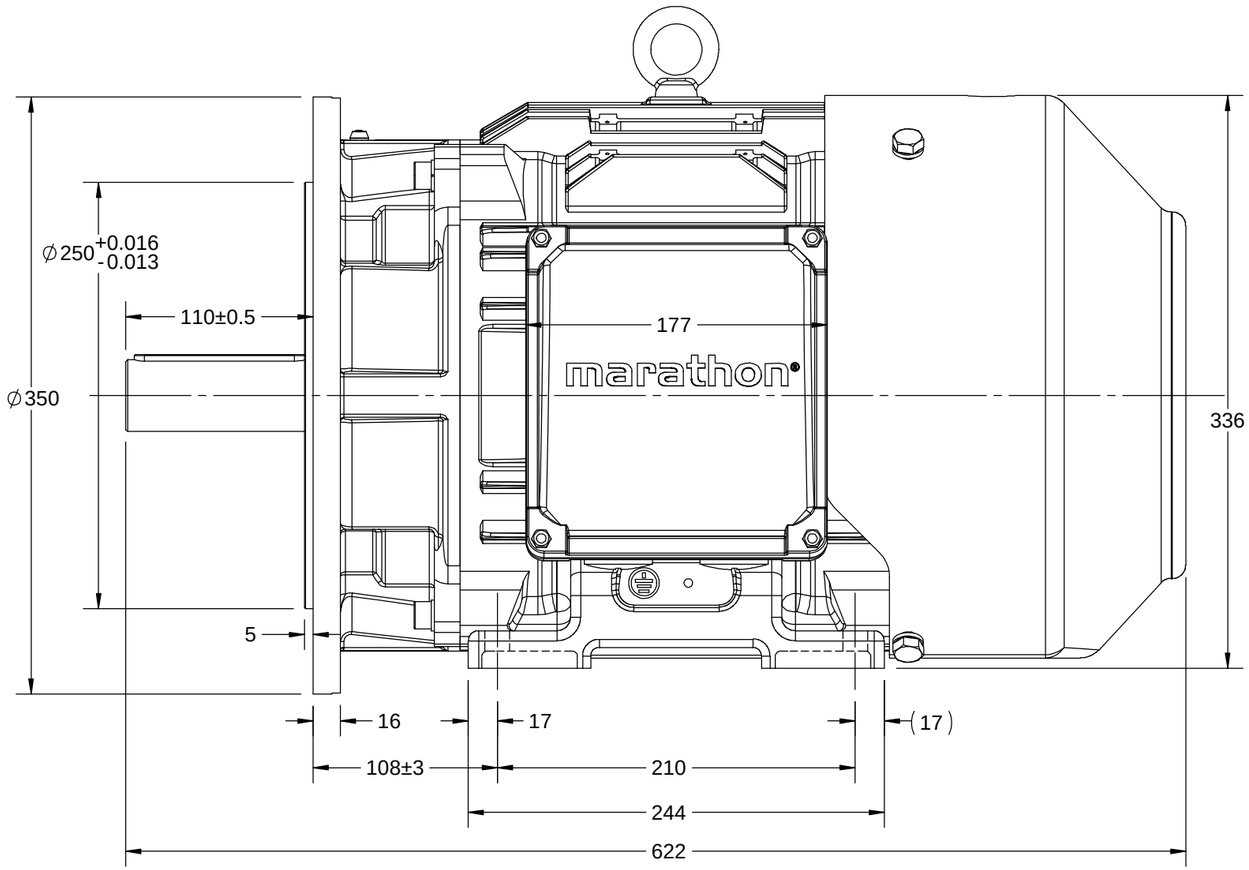
## Technical Specifications

| | | | |
|---|---|---|---|
| Electrical Type | Squirrel Cage | Starting Method | Direct On Line |
| Poles | 2 | Rotation | Bi-Directional |
| Mounting | B35 | Motor Orientation | Horizontal |
| Drive End Bearing | 2z-C3 | Opp Drive End Bearing | 2z-C3 |
| Frame Material | Cast Iron | Shaft Type | Keyed |
| Overall Length | 622 mm | Frame Length | 254 mm |
| Shaft Diameter | 42 mm | Shaft Extension | 110 mm |
| Assembly/Box Mounting | R Side | | |
| Connection Drawing | 8442000085 | Outline Drawing | 0216000811 |

# OUTLINE



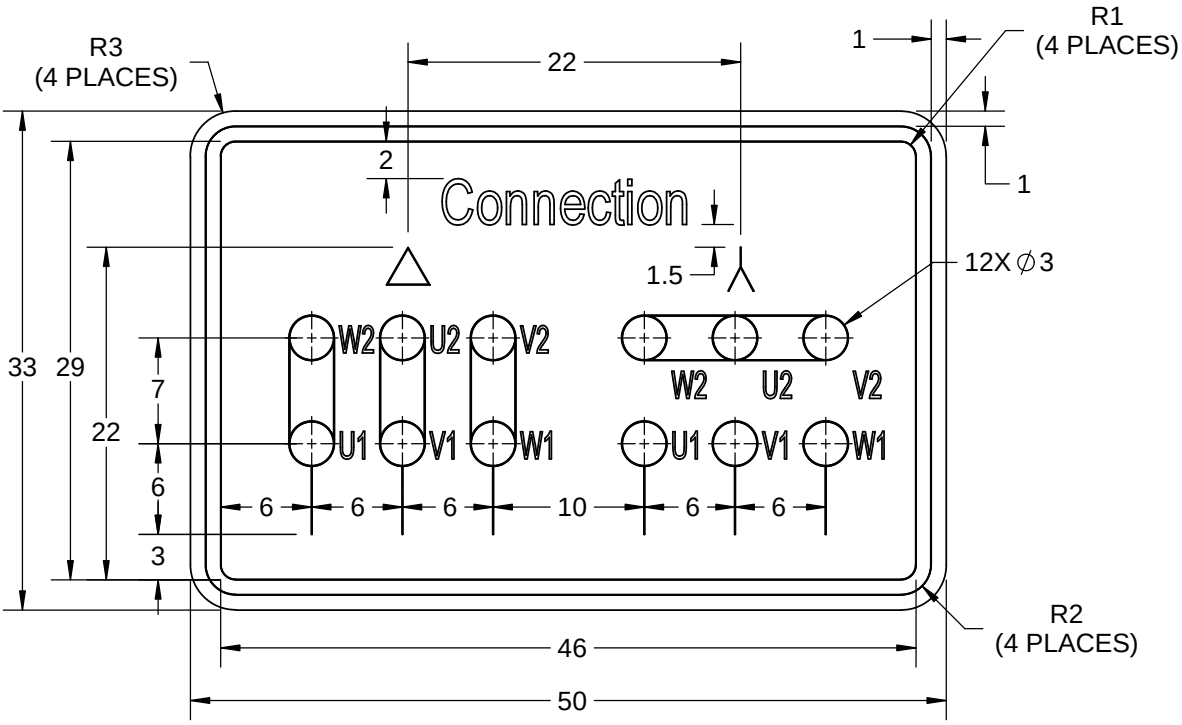

| DRAWING REVISION | REVISION BY | DATE |
|---|---|---|
| B | BISWA | 27/07/2018 |
| ECO | APPROVED BY | DATE |
| ECO-0148344 | SBD | 27/07/2018 |
| ECO DESCRIPTION | | |
| DRAWING UPDATED | | |



| | | |
|---|---|---|
| DRAWN BY | SN | marathon™ Motors |
| DATE | 19/08/2016 | |
| APPROVED BY | SBD | DESCRIPTION: OUTLINE |
| DATE | 19/08/2016 | 160M FR B35-MTG.TYPE: TCA/QCA-RHS TB |
| REFERENCE | MATERIAL | PROCESS/FINISH |
| THIRD ANGLE PROJECTION | SIZE: B | DRAWING NUMBER: 0216000811 — 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 |

marathon® Motors

TerraMAX®

**Model No.** TCA0111A3133GACD01

| U (V) | Δ / Y Conn | f [Hz] | P [kW] | P [hp] | I [A] | n [RPM] | T [Nm] | IE Class | % EFF at __ load 5/4FL | FL | 3/4FL | 1/2FL | PF at __ load FL | 3/4FL | 1/2FL | $I_A/I_N$ [pu] | $T_A/T_N$ [pu] | $T_K/T_N$ [pu] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 415 | Δ | 50 | 11 | 15 | 18.9 | 2953 | 36.17 | IE3 | - | 91.2 | 91.2 | 89.7 | 0.89 | 0.85 | 0.76 | 7.6 | 2.2 | 3.5 |

| | | |
|---|---|---|
| Motor type | TCA | |
| Enclosure | TEFC | |
| Frame Material | Cast Iron | |
| Frame size | 160M | |
| Duty | S1 | |
| Voltage variation * | ± 10% | |
| Frequency variation * | ± 5% | |
| Combined variation * | 10% | |
| Design | N | |
| Service factor | 1.0 | |
| Insulation class | F | |
| Ambient temperature | -20 to +50 | °C |
| Temperature rise (by resistance) | 70 [ Class B ] | K |
| Altitude above sea level | 1000 | meter |
| Hazardous area classification | NA | |
| Zone classification | NA | |
| Gas group | NA | |
| Temperature class | NA | |
| Rotor type | Aluminum Die cast | |
| Bearing type | Anti-friction ball bearing | |
| DE / NDE bearing | 6309-2Z / 6209-2Z | |
| Lubrication method | Greased for life | |
| Type of grease | NA | |

| | |
|---|---|
| Degree of protection | IP 55 |
| Mounting type | IM B35 |
| Cooling method | IC 411 |
| Motor weight - approx. | 141 kg |
| Gross weight - approx. | 161 kg |
| Motor inertia | 0.0626 $kgm^2$ |
| Load inertia | Customer to Provide |
| Vibration level | 2.2 mm/s |
| Noise level ( 1meter distance from motor) | 71 dB(A) |
| No. of starts hot/cold/Equally spread | 2/3/4 |
| Starting method | DOL |
| Type of coupling | Direct |
| LR withstand time (hot/cold) | 10/20 s |
| Direction of rotation | Bi-directional |
| Standard rotation | Clockwise form DE |
| Paint shade | RAL 5014 |
| Accessories | |
| Accessory - 1 | - |
| Accessory - 2 | - |
| Accessory - 3 | - |
| Terminal box position | RHS |
| Maximum cable size/conduit size | 1R x 3C x 35mm²/2 X M32 x 1.5 |
| Auxiliary terminal box | NA |

$I_A/I_N$ - 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 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 | - | - | - |

REGAL®

marathon® Motors

TerraMAX®

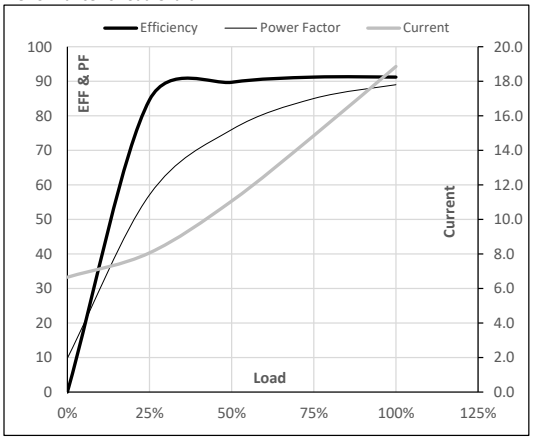
**Model No.** TCA0111A3133GACD01

| 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 | 11 | 15.0 | 18.9 | 2953 | 3.69 | 36.17 | IE3 | 50 | S1 | 1000 | 0.0626 | 141 |

**Motor Load Data**

| Load Point | | NL | 1/4FL | 1/2FL | 3/4FL | FL | 5/4FL |
|---|---|---|---|---|---|---|---|
| Current | A | 6.7 | 8.1 | 11.1 | 14.9 | 18.9 | |
| Torque | Nm | 0.0 | 8.9 | 17.9 | 27.0 | 36.2 | |
| Speed | r/min | 3000 | 2988 | 2977 | 2965 | 2953 | |
| Efficiency | % | 0.0 | 84.6 | 89.7 | 91.2 | 91.2 | |
| Power Factor | % | 9.8 | 57.1 | 76.0 | 85.0 | 89.0 | |

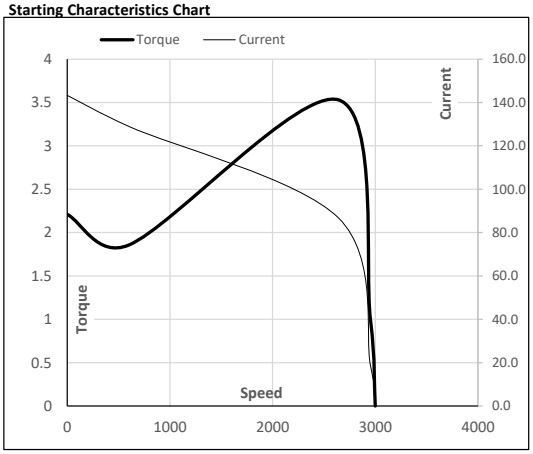
**Performance vs Load Chart**




**Motor Speed Torque Data**

| Load Point | | LR | P-Up | BD | Rated | NL |
|---|---|---|---|---|---|---|
| Speed | r/min | 0 | 600 | 2643 | 2953 | 3000 |
| Current | A | 143.3 | 129.0 | 86.7 | 18.9 | 6.7 |
| Torque | pu | 2.2 | 1.9 | 3.5 | 1 | 0 |

**Starting Characteristics Chart**




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

Issued By
Issued Date

REGAL®

marathon® Motors

TerraMAX®

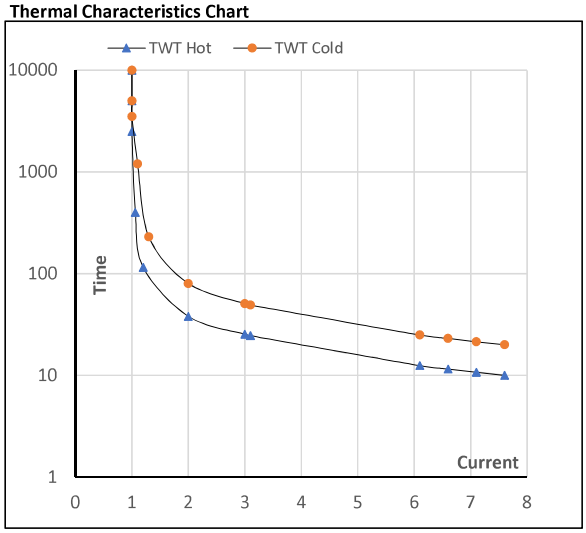
**Model No.** TCA0111A3133GACD01

| 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 | 11 | 15 | 18.9 | 2953 | 3.69 | 36.17 | IE3 | 50 | S1 | 1000 | 0.0626 | 141 |

**Motor Speed Torque Data**

| Load | | FL | $I_1$ | $I_2$ | $I_3$ | $I_4$ | $I_5$ | LR |
|---|---|---|---|---|---|---|---|---|
| TWT Hot | s | 10000 | 38 | 25 | 20 | 16 | 13 | 10 |
| TWT Cold | s | 10000 | 80 | 51 | 44 | 36 | 29 | 20 |
| Current | pu | 1 | 2 | 3 | 4 | 5 | 5.5 | 7.6 |

**Thermal Characteristics Chart**




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

Issued By
Issued Date

REGAL