

PRODUCT INFORMATION PACKET

marathon®
Motors

Model No: TCE0152A2111GAA001

Catalog No: TCE0152A2111GAA001

TerraMAX® Increased Safety Motors Ex eb, Totally Enclosed Fan Cooled, 20 HP, 3 Ph, 50 Hz, 400 V,
1476 RPM, 160L Frame



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RegalRexnord

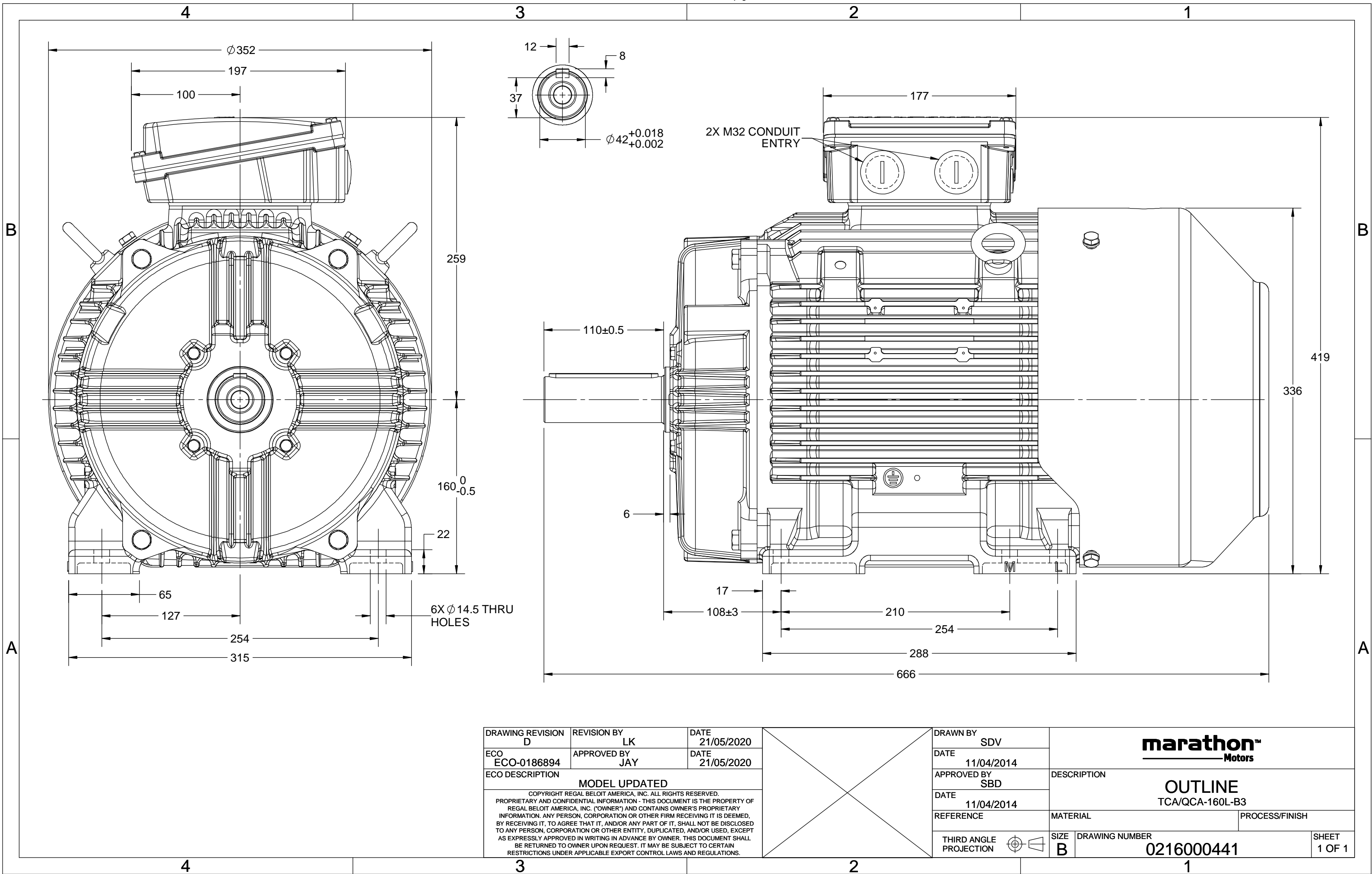
Nameplate Specifications

| | | | |
|------------------------|---------------|----------------------------|-----------------------------|
| Output HP | 20 Hp | Output KW | 15.0 kW |
| Frequency | 50 Hz | Voltage | 400 V |
| Current | 28.0 A | Speed | 1476 rpm |
| Service Factor | 1 | Phase | 3 |
| Efficiency | 92.1 % | Power Factor | 0.84 |
| Duty | S1 | Insulation Class | F |
| Frame | 160L | Enclosure | Totally Enclosed Fan Cooled |
| Thermal Protection | No Protection | Ambient Temperature | 40 °C |
| Drive End Bearing Size | 6309 | Opp Drive End Bearing Size | 6209 |
| UL | No | CSA | No |
| CE | Yes | IP Code | IP55 |
| Number of Speeds | 3 | | |

Technical Specifications

| | | | |
|-----------------------|---------------|-----------------------|----------------|
| Electrical Type | Squirrel Cage | Starting Method | Direct On Line |
| Poles | 4 | Rotation | Bi-Directional |
| Mounting | B3 | Motor Orientation | Horizontal |
| Drive End Bearing | 2z-C3 | Opp Drive End Bearing | 2z-C3 |
| Frame Material | Cast Iron | Shaft Type | Keyed |
| Overall Length | 666 mm | Frame Length | 298 mm |
| Shaft Diameter | 42.000 mm | Shaft Extension | 110 mm |
| Assembly/Box Mounting | Top | | |
| Outline Drawing | 0216000441 | Connection Drawing | 8442000085 |

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| | | |
|--|--------------------|--------------------|
| DRAWING REVISION D | REVISION BY LK | DATE 21/05/2020 |
| ECO ECO-0186894 | APPROVED BY JAY | DATE 21/05/2020 |
| ECO DESCRIPTION MODEL UPDATED | | |
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| | | | |
|---------------------------|---|------------------------------|-----------------|
| DRAWN BY SDV | marathon™ Motors | | |
| DATE 11/04/2014 | | | |
| APPROVED BY SBD | DESCRIPTION OUTLINE TCA/QCA-160L-B3 | | |
| DATE 11/04/2014 | | | |
| REFERENCE | MATERIAL | PROCESS/FINISH | |
| THIRD ANGLE PROJECTION | SIZE B | DRAWING NUMBER 0216000441 | SHEET 1 OF 1 |

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

8WD.442.2017



| | | | |
|-----------------------|--|-------------------------------------|------------------------|
| DRAWN BY SN |  Regal Beloit America, Inc. | | |
| | | | |
| | DESCRIPTION CONN DIAGRAM-NAMEPLATE | | |
| | MATERIAL | | PROCESS/FINISH |
| | SIZE A | DRAWING NUMBER 8442000085 | SHEET 1 OF 1 |

Model No. TCE0152A2111GAA001

| U (V) | Δ / Y Conn | f [Hz] | P [kW] | P [hp] | I [A] | n [RPM] | T [Nm] | IE Class | % EFF at __ load | | | | PF at __ load | | | I_A/I_N [pu] | T_A/T_N [pu] | T_K/T_N [pu] |
|----------|----------------------|-----------|-----------|-----------|----------|------------|-----------|-------------|------------------|----|-------|-------|---------------|-------|-------|-------------------|-------------------|-------------------|
| 400 | Δ | 50 | 15 | 20.0 | 28.0 | 1476 | 96.52 | IE3 | 5/4FL | FL | 3/4FL | 1/2FL | FL | 3/4FL | 1/2FL | 7.6 | 2.8 | 3.5 |
| | | | | | | | | | | | | | | | | | | |

| | | | |
|----------------------------------|--------------------|---|--|
| Motor type | TCE | Degree of protection | IP 55 |
| Enclosure | TEFC | Mounting type | IM B3 |
| Frame Material | Cast Iron | Cooling method | IC 411 |
| Frame size | 160L | Motor weight - approx. | 185 kg |
| Duty | S1 | Gross weight - approx. | 205 kg |
| Voltage variation * | ± 10% | Motor inertia | 0.1662 kgm ² |
| 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) | 64 dB(A) |
| Service factor | 1.0 | No. of starts hot/cold/Equally spread | 2/3/4 |
| Insulation class | F | Starting method | DOL |
| Ambient temperature | -15 to +40 °C | Type of coupling | Direct |
| Temperature rise (by resistance) | 70 [Class B] K | tE time | 20 s |
| Altitude above sea level | 1000 meter | Direction of rotation | Bi-directional |
| Hazardous area classification | Ex eb | Standard rotation | Clockwise form DE |
| Zone classification | Zone 1 | Paint shade | RAL 7016 |
| Gas group | IIC | Accessories | |
| Temperature class | T3 | Accessory - 1 | PTC 150°C |
| Rotor type | Aluminum Die cast | Accessory - 2 | - |
| Bearing type | Anti-friction ball | Accessory - 3 | - |
| DE / NDE bearing | 6309-2Z / 6209-2Z | Terminal box position | TOP |
| Lubrication method | Greased for life | Maximum cable size/conduit size | 1R x 3C x 35mm ² /2 X M32 x 1.5 |
| Type of grease | NA | Auxiliary terminal box | NA |

 I_A/I_N - Locked Rotor Current / Rated Current

 T_K/T_N - Breakdown Torque / Rated Torque

 T_A/T_N - Locked Rotor Torque / Rated Torque

NOTE

ATEX/IEC Ex certified as per IEC/EN 60079-0; IEC/EN 60079-7

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 slight variations between calculated values in this datasheet and the motor nameplate figures.

| Efficiency Standards | Europe IEC:60034-30-1 | China | India - | Aus/Nz - | Brazil - | Global IEC IEC:60034-30-1 |
|----------------------|--------------------------|-------|------------|-------------|-------------|------------------------------|
|----------------------|--------------------------|-------|------------|-------------|-------------|------------------------------|

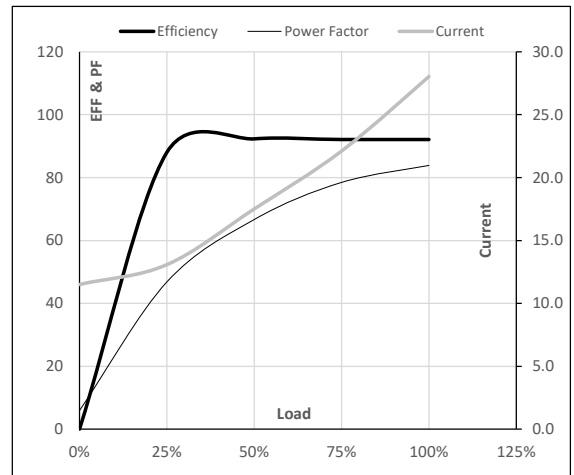
Model No. TCE0152A2111GAA001

| 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 | 400 | Δ | 50 | 15 | 20 | 28.0 | 1476 | 9.84 | 96.52 | IE3 | 40 | S1 | 1000 | 0.1662 | 185 |

Motor Load Data

| Load Point | | NL | 1/4FL | 1/2FL | 3/4FL | FL | 5/4FL |
|--------------|-------|------|-------|-------|-------|------|-------|
| Current | A | 11.5 | 13.1 | 17.5 | 22.1 | 28.0 | |
| Torque | Nm | 0.0 | 32.3 | 64.9 | 97.7 | 96.5 | |
| Speed | r/min | 1500 | 1494 | 1488 | 1482 | 1476 | |
| Efficiency | % | 0.0 | 88.0 | 92.3 | 92.1 | 92.1 | |
| Power Factor | % | 5.9 | 46.8 | 66.7 | 78.4 | 83.8 | |

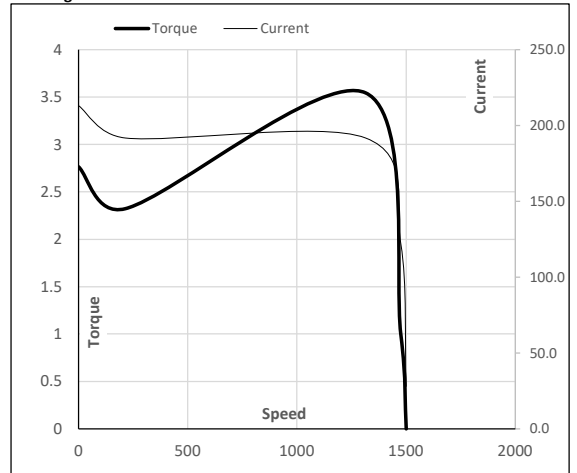
Performance vs Load Chart



Motor Speed Torque Data

| Load Point | | LR | P-Up | BD | Rated | NL |
|------------|-------|-------|-------|-------|-------|------|
| Speed | r/min | 0 | 214 | 1315 | 1476 | 1500 |
| Current | A | 213.1 | 191.8 | 122.2 | 28.0 | 11.5 |
| Torque | pu | 2.8 | 2.3 | 3.5 | 1 | 0 |

Starting Characteristics Chart



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

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