

# PRODUCT INFORMATION PACKET

**marathon®**  
Motors

Model No: TCE5P54A2111GAA001

Catalog No: TCE5P54A2111GAA001

TerraMAX® Increased Safety Motors Ex eb, Totally Enclosed Fan Cooled, 7.5 HP, 3 Ph, 50 Hz, 400 V,  
729 RPM, 160M Frame



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**RegalRexnord**

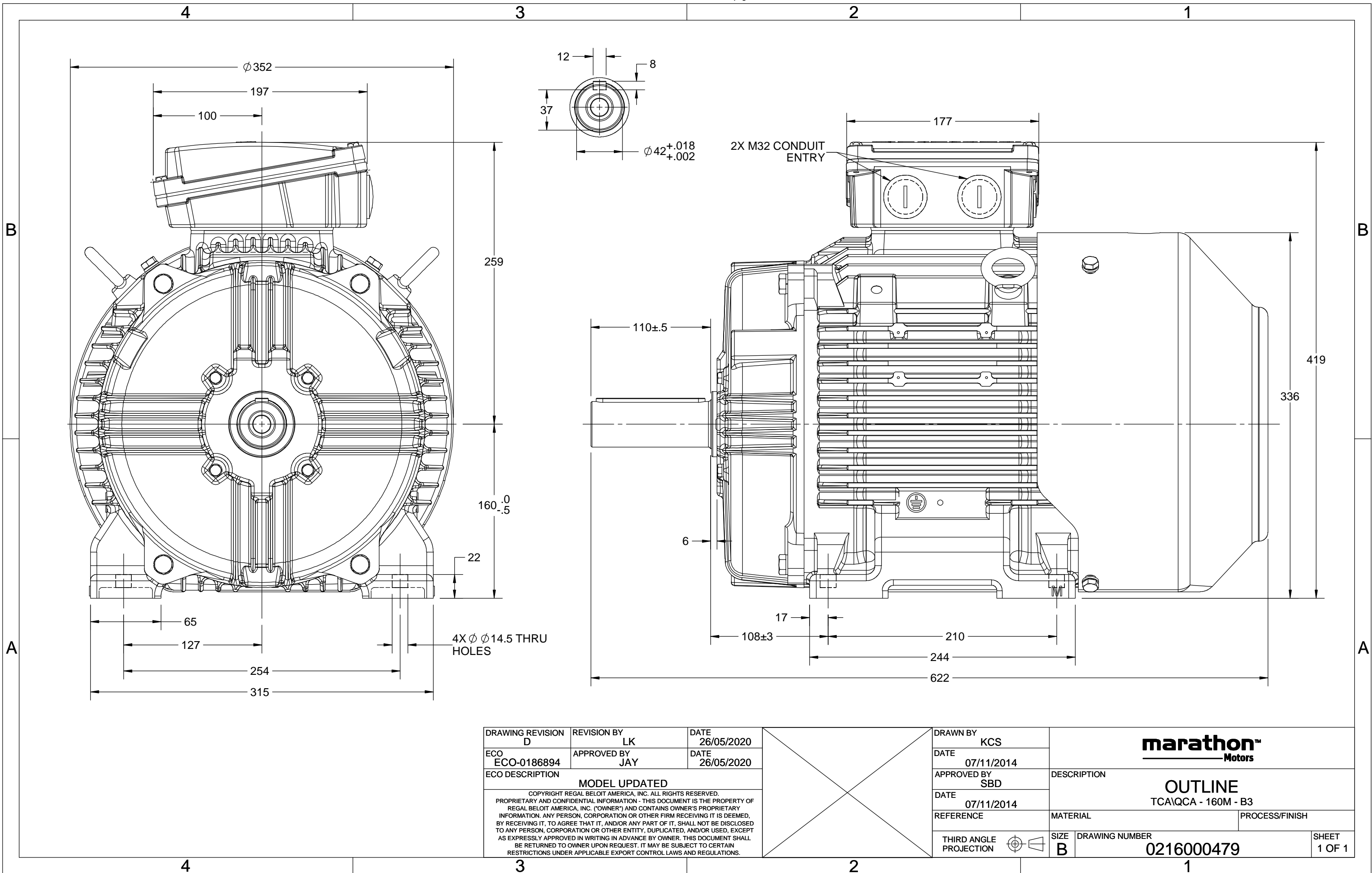
### Nameplate Specifications

|                        |               |                            |                             |
|------------------------|---------------|----------------------------|-----------------------------|
| Output HP              | 7.50 Hp       | Output KW                  | 5.5 kW                      |
| Frequency              | 50 Hz         | Voltage                    | 400 V                       |
| Current                | 12.8 A        | Speed                      | 729 rpm                     |
| Service Factor         | 1             | Phase                      | 3                           |
| Efficiency             | 86.2 %        | Power Factor               | 0.7                         |
| Duty                   | S1            | Insulation Class           | F                           |
| Frame                  | 160M          | 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                 | 8             | 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        | 622 mm        | Frame Length          | 254 mm         |
| Shaft Diameter        | 42.000 mm     | Shaft Extension       | 110 mm         |
| Assembly/Box Mounting | Top           |                       |                |
| Connection Drawing    | 8442000085    | Outline Drawing       | 0216000479     |

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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.** TCE5P54A2111GAA001

| U<br>(V) | $\Delta$ / 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 |       |       | $I_A/I_N$<br>[pu] | $T_A/T_N$<br>[pu] | $T_K/T_N$<br>[pu] |
|----------|----------------------|-----------|-----------|-----------|----------|------------|-----------|-------------|------------------|----|-------|-------|---------------|-------|-------|-------------------|-------------------|-------------------|
| 400      | $\Delta$             | 50        | 5.5       | 7.5       | 12.8     | 729        | 73.40     | IE3         | 5/4FL            | FL | 3/4FL | 1/2FL | FL            | 3/4FL | 1/2FL | 5.3               | 2.4               | 2.6               |
|          |                      |           |           |           |          |            |           |             |                  |    |       |       |               |       |       |                   |                   |                   |

|                                  |                            |  |  |
|----------------------------------|----------------------------|--|--|
| Motor type                       | TCE                        | Degree of protection                       | IP 55                                      |
| Enclosure                        | TEFC                       | Mounting type                              | IM B3                                      |
| Frame Material                   | Cast Iron                  | Cooling method                             | IC 411                                     |
| Frame size                       | 160M                       | Motor weight - approx.                     | 87 kg                                      |
| Duty                             | S1                         | Gross weight - approx.                     | 107 kg                                     |
| Voltage variation *              | ± 10%                      | Motor inertia                              | 0.1674 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 ( 1 meter distance from motor) | 59 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                                    | 30 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 bearing | 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 <sup>2</sup> /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<br>IEC:60034-30-1 | China | India<br>- | Aus/Nz<br>- | Brazil<br>- | Global IEC<br>IEC:60034-30-1 |
|----------------------|--------------------------|-------|------------|-------------|-------------|------------------------------|
|----------------------|--------------------------|-------|------------|-------------|-------------|------------------------------|

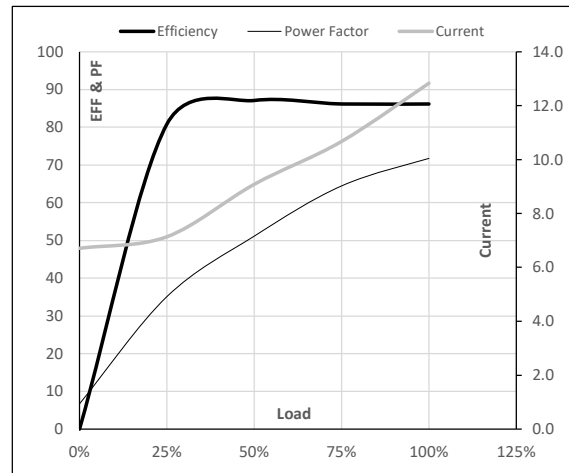
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| Enclosure | U<br>(V) | $\Delta$ / Y<br>Conn | f<br>[Hz] | P<br>[kW] | P<br>[hp] | I<br>[A] | n<br>[RPM] | T<br>[kgm] | T<br>[Nm] | IE<br>Class | Amb<br>[°C] | Duty | Elevation<br>[m] | Inertia<br>[kg-m <sup>2</sup> ] | Weight<br>[kg] |
|-----------|----------|----------------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC      | 400      | $\Delta$             | 50        | 5.5       | 8         | 12.8     | 729        | 7.49       | 73.40     | IE3         | 40          | S1   | 1000             | 0.1674                          | 87             |

**Motor Load Data**

| Load Point   |       | NL  | 1/4FL | 1/2FL | 3/4FL | FL   | 5/4FL |
|--------------|-------|-----|-------|-------|-------|------|-------|
| Current      | A     | 6.7 | 7.1   | 9.1   | 10.7  | 12.8 |       |
| Torque       | Nm    | 0.0 | 24.4  | 49.0  | 74.0  | 73.4 |       |
| Speed        | r/min | 750 | 745   | 740   | 735   | 729  |       |
| Efficiency   | %     | 0.0 | 80.8  | 87.1  | 86.2  | 86.2 |       |
| Power Factor | %     | 6.7 | 35.1  | 51.2  | 64.5  | 71.7 |       |

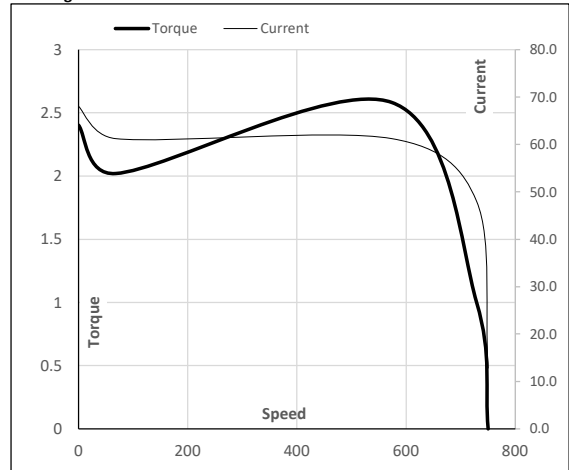
**Performance vs Load Chart**



**Motor Speed Torque Data**

| Load Point |       | LR   | P-Up | BD   | Rated | NL  |
|------------|-------|------|------|------|-------|-----|
| Speed      | r/min | 0    | 68   | 574  | 729   | 750 |
| Current    | A     | 68.0 | 61.2 | 48.0 | 12.8  | 6.7 |
| Torque     | pu    | 2.4  | 2.0  | 2.6  | 1     | 0   |

**Starting Characteristics Chart**



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

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