# PRODUCT INFORMATION PACKET

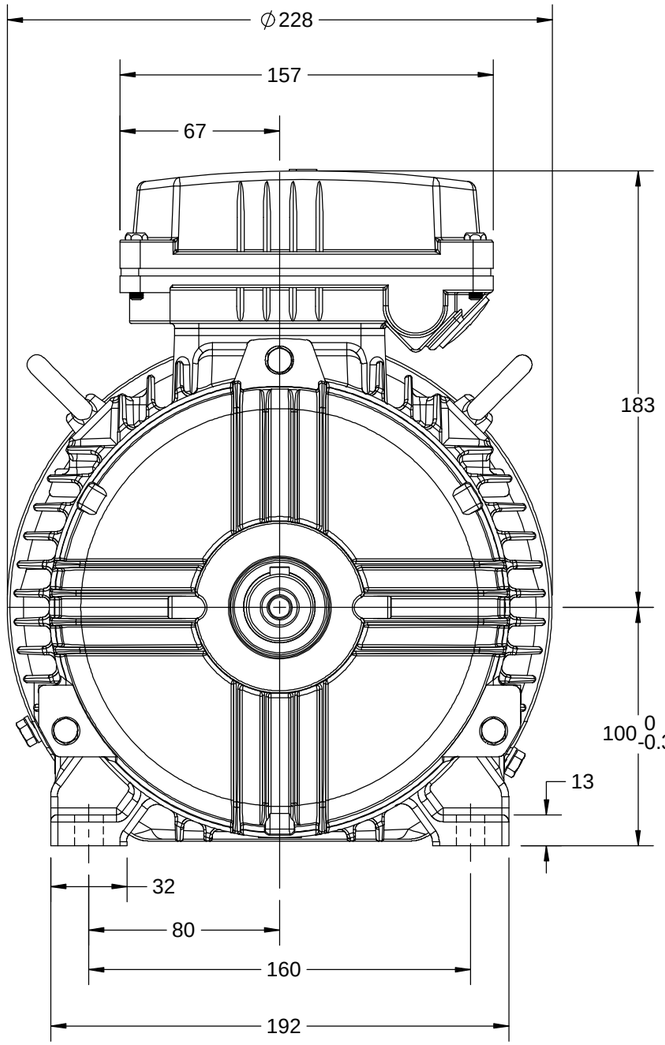
Model No: TCE1P53A5111GAA001
Catalog No: TCE1P53A5111GAA001
TerraMAX® Increased Safety Motors Ex eb, Totally Enclosed Fan Cooled, 2 HP, 3 Ph, 50 Hz, 400 V, 972 RPM, 100L Frame

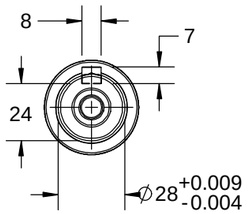
## Nameplate Specifications

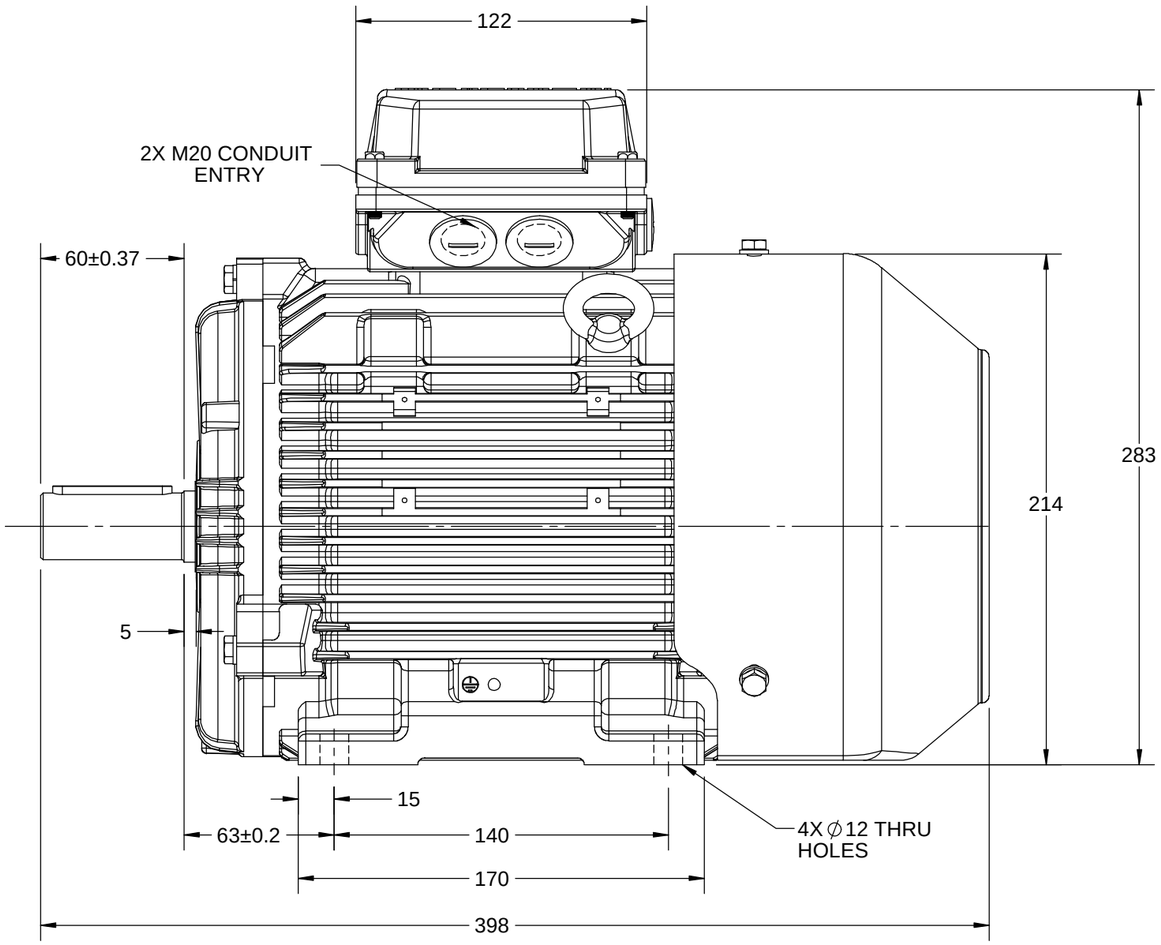
| | | | |
|---|---|---|---|
| Output HP | 2 Hp | Output KW | 1.5 kW |
| Frequency | 50 Hz | Voltage | 400 V |
| Current | 3.7 A | Speed | 972 rpm |
| Service Factor | 1 | Phase | 3 |
| Efficiency | 82.5 % | Power Factor | 0.7 |
| Duty | S1 | Insulation Class | F |
| Frame | 100L | Enclosure | Totally Enclosed Fan Cooled |
| Thermal Protection | No Protection | Ambient Temperature | 40 °C |
| Drive End Bearing Size | 6206 | Opp Drive End Bearing Size | 6206 |
| 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 | 6 | 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 | 398 mm | Frame Length | 200 mm |
| Shaft Diameter | 28.000 mm | Shaft Extension | 60 mm |
| Assembly/Box Mounting | Top | | |
| Outline Drawing | 0210000271 | Connection Drawing | 8442000085 |




| | | | | |
|---|---|---|---|---|
| DRAWING REVISION D | REVISION BY S.MUDDA | DATE 22/06/2018 | | DRAWN BY SMAR |
| ECO ECO-0147359 | APPROVED BY JAY | DATE 22/06/2018 | | DATE 01/09/13 |
| ECO DESCRIPTION OUTLINE UPDATED AS PER NEW 3D STRUCTURE | | | | APPROVED BY JAY |
| | | | | DATE 01/09/13 |
| | | | | REFERENCE |
| | | | | THIRD ANGLE PROJECTION |



marathon™ Motors

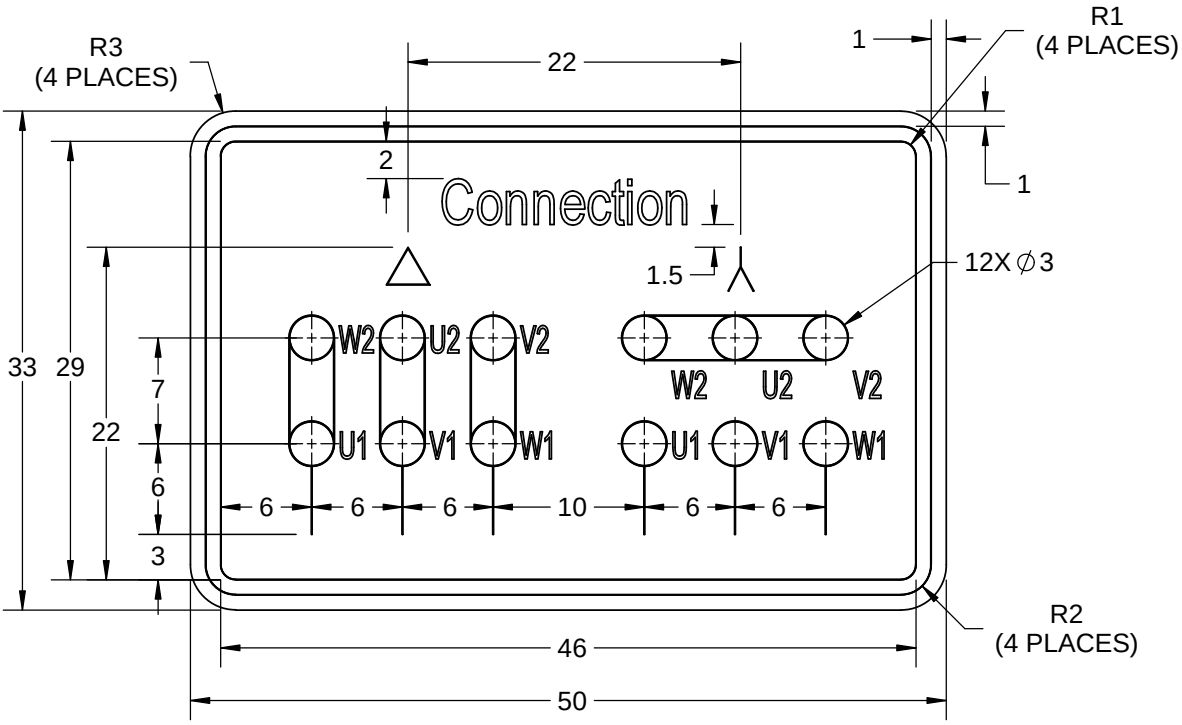
DESCRIPTION
# OUTLINE
100 FR.- B3 MTG. MOTOR TYPE: TCA/QCA

| MATERIAL | PROCESS/FINISH |
|---|---|
| | |

| SIZE | DRAWING NUMBER | SHEET |
|---|---|---|
| B | 0210000271 | 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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TerraMAX®

**Model No.** TCE1P53A5111GAA001

| 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] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | Y | 50 | 1.5 | 2.0 | 3.7 | 972 | 14.66 | IE3 | - | 82.5 | 82.5 | 79.1 | 0.71 | 0.61 | 0.46 | 6.9 | 2.8 | 3.2 |

| | | | | | |
|---|---|---|---|---|---|
| Motor type | TCE | | Degree of protection | IP 55 | |
| Enclosure | TEFC | | Mounting type | IM B3 | |
| Frame Material | Cast Iron | | Cooling method | IC 411 | |
| Frame size | 100L | | Motor weight - approx. | 39 | kg |
| Duty | S1 | | Gross weight - approx. | 42 | kg |
| Voltage variation * | ± 10% | | Motor inertia | 0.0173 | $kgm^2$ |
| Frequency variation * | ± 5% | | Load inertia | Customer to Provide | |
| Combined variation * | 10% | | Vibration level | 1.6 | mm/s |
| Design | N | | Noise level ( 1meter distance from motor) | 55 | 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 | 25 | 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 2 | | 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 | 6206-2Z / 6206-2Z | | Terminal box position | TOP | |
| Lubrication method | Greased for life | | Maximum cable size/conduit size | 1R x 3C x 10mm²/2 x M20 x 1.5 | |
| Type of grease | NA | | 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**

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

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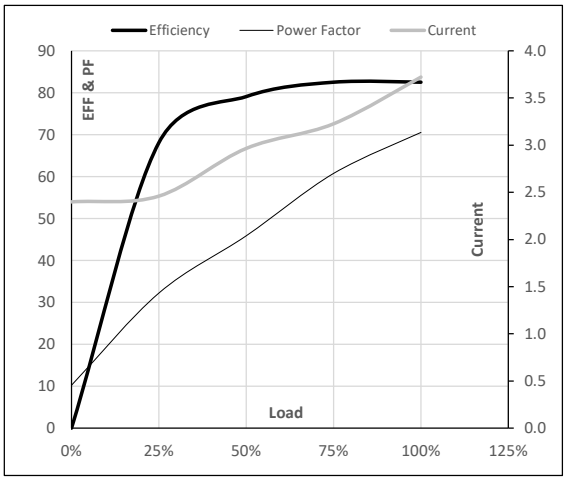
**Model No.** TCE1P53A5111GAA001

| 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 | Y | 50 | 1.5 | 2 | 3.7 | 972 | 1.49 | 14.66 | IE3 | 40 | S1 | 1000 | 0.0173 | 39 |

**Motor Load Data**

| Load Point | | NL | 1/4FL | 1/2FL | 3/4FL | FL | 5/4FL |
|---|---|---|---|---|---|---|---|
| Current | A | 2.4 | 2.5 | 3.0 | 3.2 | 3.7 | |
| Torque | Nm | 0.0 | 4.9 | 9.8 | 14.8 | 14.7 | |
| Speed | r/min | 1000 | 993 | 986 | 979 | 972 | |
| Efficiency | % | 0.0 | 68.1 | 79.1 | 82.5 | 82.5 | |
| Power Factor | % | 10.2 | 32.2 | 45.9 | 60.7 | 70.5 | |

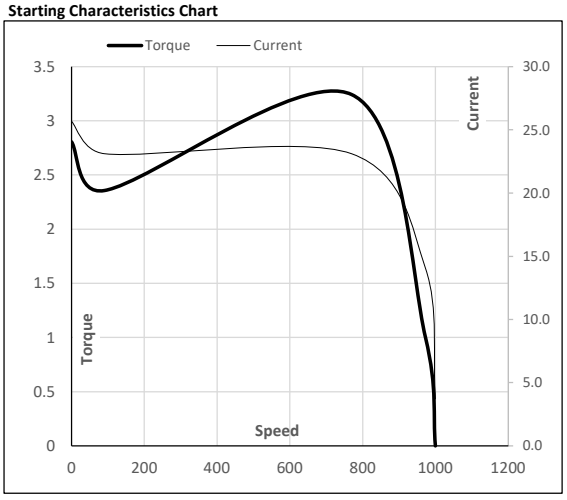
**Performance vs Load Chart**




**Motor Speed Torque Data**

| Load Point | | LR | P-Up | BD | Rated | NL |
|---|---|---|---|---|---|---|
| Speed | r/min | 0 | 91 | 769 | 972 | 1000 |
| Current | A | 25.7 | 23.1 | 14.1 | 3.7 | 2.4 |
| Torque | pu | 2.8 | 2.4 | 3.2 | 1 | 0 |

**Starting Characteristics Chart**




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

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