

# PRODUCT INFORMATION PACKET

**marathon®**  
Motors

Model No: TCT2P23A1111GAA001

Catalog No: TCT2P23A1111GAA001

IE3, 2.2kW, DUST IGNITION PROOF MOTORS, 3 phase, 6 Pole, 400V, 958RPM, 50Hz, 84.3%, 112M Frame, TEFC



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**RegalRexnord**

### Nameplate Specifications

|                        |               |                            |                             |
|------------------------|---------------|----------------------------|-----------------------------|
| Output HP              | 3 Hp          | Output KW                  | 2.2 kW                      |
| Frequency              | 50 Hz         | Voltage                    | 400 V                       |
| Current                | 5.2 A         | Speed                      | 958 rpm                     |
| Service Factor         | 1             | Phase                      | 3                           |
| Efficiency             | 84.3 %        | Power Factor               | 0.73                        |
| Duty                   | S1            | Insulation Class           | F                           |
| Frame                  | 112M          | Enclosure                  | Totally Enclosed Fan Cooled |
| Thermal Protection     | No Protection | Ambient Temperature        | 40 °C                       |
| Drive End Bearing Size | 6306          | Opp Drive End Bearing Size | 6206                        |
| UL                     | No            | CSA                        | No                          |
| CE                     | Yes           | IP Code                    | 66                          |
| Number of Speeds       | 1             | Efficiency Class           | IE3                         |

### 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        | 399 mm        | Frame Length          | 174 mm         |
| Shaft Diameter        | 28 mm         | Shaft Extension       | 60 mm          |
| Assembly/Box Mounting | Top           |                       |                |
| Connection Drawing    | 8442000085    | Outline Drawing       | 0211200262     |

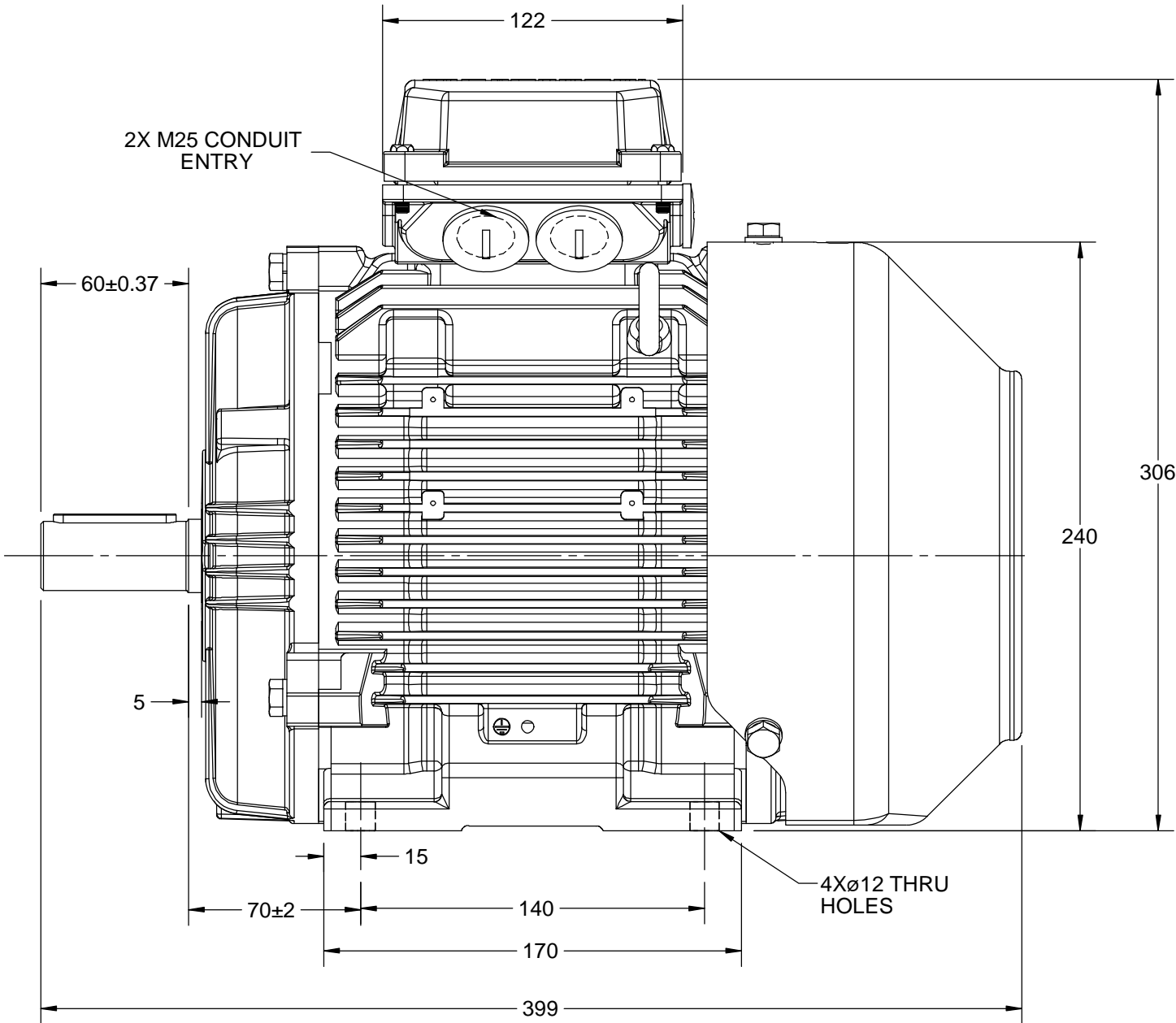
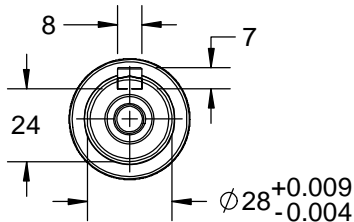
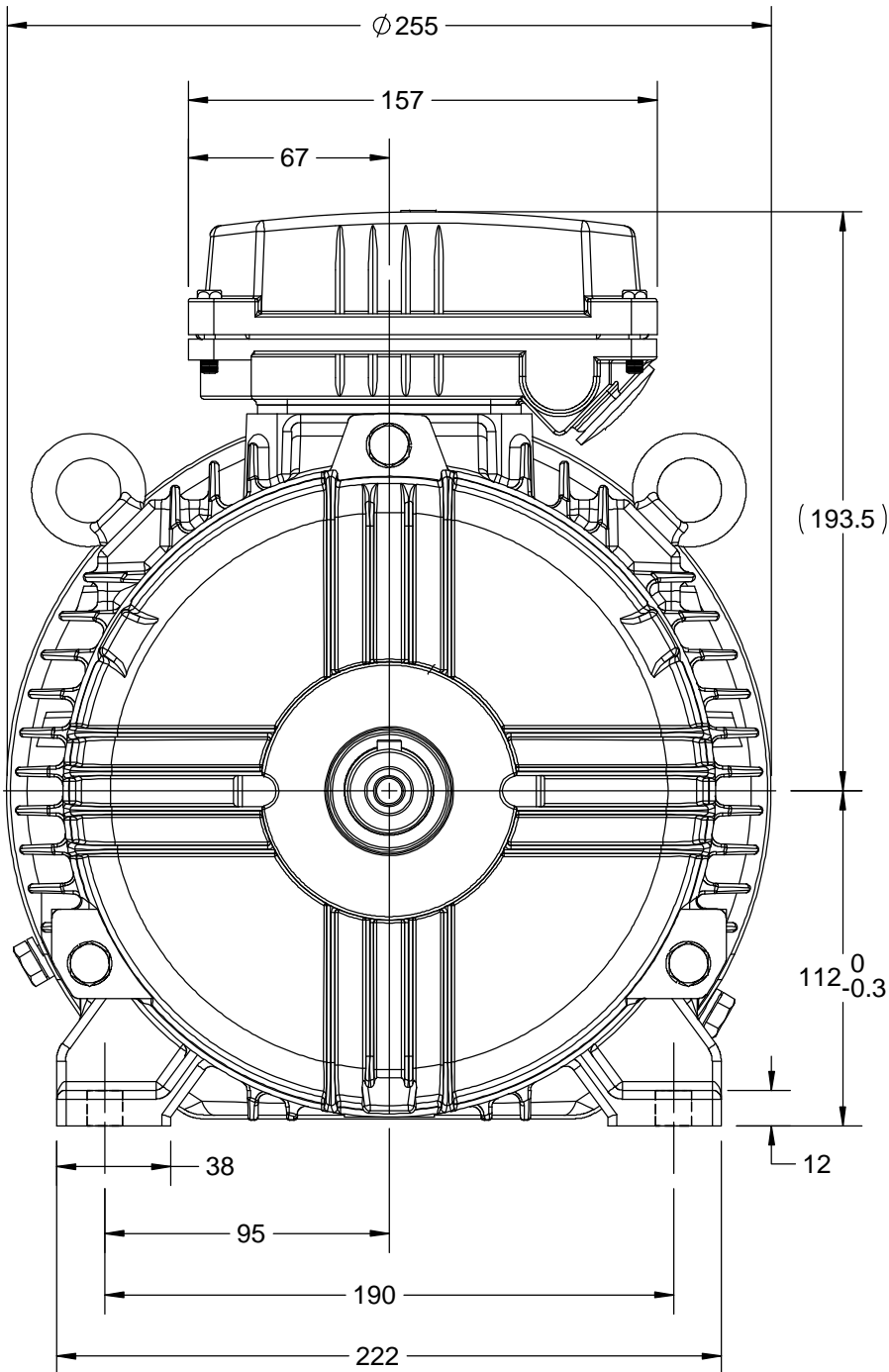
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B

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A

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|  |                        |                    |
|--|------------------------|--------------------|
| DRAWING REVISION<br>D  | REVISION BY<br>S.MUDDA | DATE<br>29/06/2018 |
| ECO<br>ECO-0147359   | APPROVED BY<br>JAY     | DATE<br>29/06/2018 |
| ECO DESCRIPTION<br>OUTLINE UPDATED AS PER NEW 3D STRUCTURING   |                        |                    |
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|                           |                                      |                              |                 |
|---------------------------|--------------------------------------|------------------------------|-----------------|
| DRAWN BY<br>SMAR          | <b>marathon™</b><br>Motors           |                              |                 |
| DATE<br>02/09/13          |                                      |                              |                 |
| APPROVED BY<br>JAY        | DESCRIPTION<br><b>OUTLINE</b>        |                              |                 |
| DATE<br>02/09/13          | 112 FR.- B3 MTG. MOTOR TYPE: TCA/QCA |                              |                 |
| REFERENCE                 | MATERIAL                             | PROCESS/FINISH               |                 |
| THIRD ANGLE<br>PROJECTION | SIZE<br>B                            | DRAWING NUMBER<br>0211200262 | SHEET<br>1 OF 1 |

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

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

Model No. TCT2P23A1111GAA001

| U<br>(V) | Δ / 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 <sub>A</sub> /I <sub>N</sub><br>[pu] | T <sub>A</sub> /T <sub>N</sub><br>[pu] | T <sub>K</sub> /T <sub>N</sub><br>[pu] |
|----------|---------------|-----------|-----------|-----------|----------|------------|-----------|-------------|------------------|------|-------|-------|---------------|-------|-------|--|--|--|
|          |               |           |           |           |          |            |           |             | 5/4FL            | FL   | 3/4FL | 1/2FL | FL            | 3/4FL | 1/2FL |  |  |  |
| 400      | Y             | 50        | 2.2       | 3         | 5.2      | 958        | 22.34     | IE3         | -                | 84.3 | 84.3  | 82.4  | 0.73          | 0.65  | 0.5   | 5.9                                    | 2.5                                    | 2.8                                    |
|          |               |           |           |           |          |            |           |             |                  |      |       |       |               |       |       |  |  |  |

|                                  |                    |   |  |
|----------------------------------|--------------------|---|--|
| Motor type                       | TCT                | Degree of protection                      | IP 66                                      |
| Enclosure                        | TEFC               | Mounting type                             | IM B3                                      |
| Frame Material                   | Cast Iron          | Cooling method                            | IC 411                                     |
| Frame size                       | 112M               | Motor weight - approx.                    | 47 kg                                      |
| Duty                             | S1                 | Gross weight - approx.                    | 50 kg                                      |
| Voltage variation *              | ± 10%              | Motor inertia                             | 0.0158 kgm <sup>2</sup>                    |
| 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) | 58 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 +40 °C      | Type of coupling                          | Direct                                     |
| Temperature rise (by resistance) | 80 [ Class B ] K   | LR withstand time (hot/cold)              | 15/30 s                                    |
| Altitude above sea level         | 1000 meter         | Direction of rotation                     | Bi-directional                             |
| Hazardous area classification    | Ex tb              | Standard rotation                         | Clockwise form DE                          |
| Zone classification              | Zone 21            | Paint shade                               | RAL 5014                                   |
| Gas group                        | Group III          | Accessories                               |  |
| Temperature class                | T135               | Accessory - 1                             | PTC 150°C                                  |
| Rotor type                       | Aluminum Die cast  | Accessory - 2                             | -  |
| Bearing type                     | Anti-friction ball | Accessory - 3                             | -  |
| DE / NDE bearing                 | 6306-2Z / 6206-2Z  | Terminal box position                     | TOP  |
| Lubrication method               | Greased for life   | Maximum cable size/conduit size           | 1R x 3C x 16mm <sup>2</sup> /2 x M25 x 1.5 |
| Type of grease                   | NA                 | Auxiliary terminal box                    | NA   |

I<sub>A</sub>/I<sub>N</sub> - Locked Rotor Current / Rated Current

T<sub>K</sub>/T<sub>N</sub> - Breakdown Torque / Rated Torque

T<sub>A</sub>/T<sub>N</sub> - Locked Rotor Torque / Rated Torque

#### NOTE

ATEX/IEC Ex certified as per IEC/EN 60079-0; IEC/EN 60079-31

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  | -      | GB 18613-2012 Grade 2 | -     | -      | -      | IEC: 60034-30 |

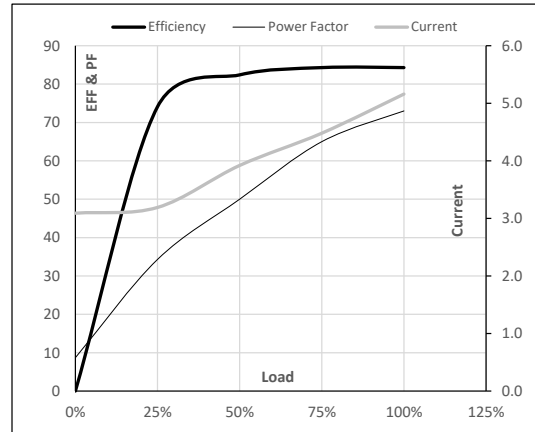
Model No. TCT2P23A1111GAA001

| Enclosure | U<br>(V) | Δ / 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      | Y             | 50        | 2.2       | 3.0       | 5.2      | 958        | 2.28       | 22.34     | IE3         | 40          | S1   | 1000             | 0.0158                          | 47             |

**Motor Load Data**

| Load Point   |       | NL   | 1/4FL | 1/2FL | 3/4FL | FL   | 5/4FL |
|--------------|-------|------|-------|-------|-------|------|-------|
| Current      | A     | 3.1  | 3.2   | 3.9   | 4.5   | 5.2  |       |
| Torque       | Nm    | 0.0  | 5.4   | 10.9  | 16.6  | 22.3 |       |
| Speed        | r/min | 1000 | 990   | 981   | 970   | 958  |       |
| Efficiency   | %     | 0.0  | 74.1  | 82.4  | 84.3  | 84.3 |       |
| Power Factor | %     | 8.7  | 34.3  | 50.0  | 65.0  | 73.0 |       |

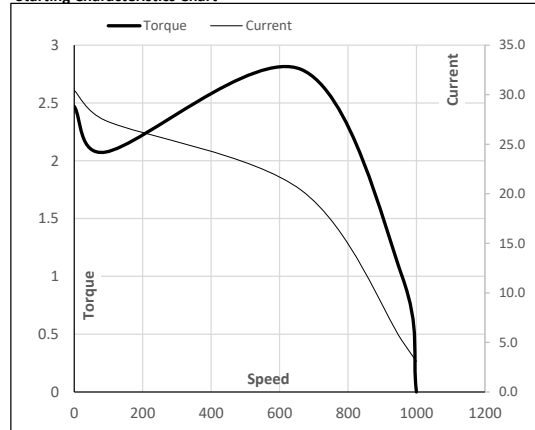
**Performance vs Load Chart**



**Motor Speed Torque Data**

| Load Point |       | LR   | P-Up | BD   | Rated | NL   |
|------------|-------|------|------|------|-------|------|
| Speed      | r/min | 0    | 91   | 663  | 958   | 1000 |
| Current    | A     | 30.4 | 27.4 | 20.4 | 5.2   | 3.1  |
| Torque     | pu    | 2.5  | 2.1  | 2.8  | 1     | 0    |

**Starting Characteristics Chart**



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

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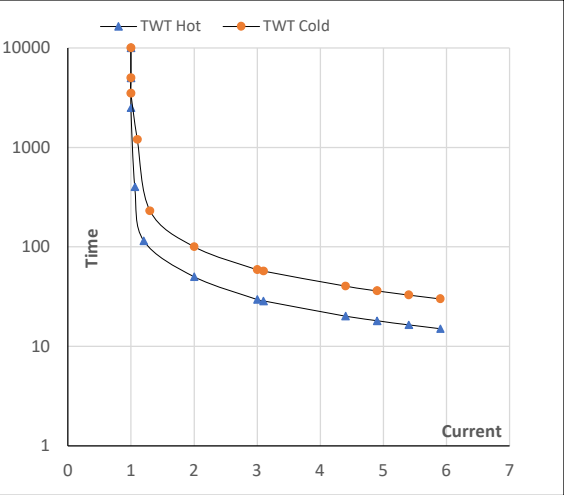
Model No. TCT2P23A1111GAA001

| Enclosure | U<br>(V) | Δ / 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      | Y             | 50        | 2.2       | 3.0       | 5.2      | 958        | 2.28       | 22.34     | IE3         | 40          | S1   | 1000             | 0.0158                          | 47             |

Motor Speed Torque Data

| Load     |    | FL    | I <sub>1</sub> | I <sub>2</sub> | I <sub>3</sub> | I <sub>4</sub> | I <sub>5</sub> | LR  |
|----------|----|-------|----------------|----------------|----------------|----------------|----------------|-----|
| TWT Hot  | s  | 10000 | 50             | 30             | 25             | 17             | 16             | 15  |
| TWT Cold | s  | 10000 | 100            | 59             | 50             | 35             | 32             | 30  |
| Current  | pu | 1     | 2              | 3              | 4              | 5              | 5.5            | 5.9 |

Thermal Characteristics Chart



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

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