

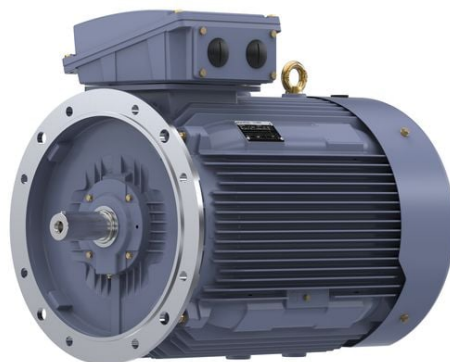
# PRODUCT INFORMATION PACKET

**marathon®**  
Motors

Model No: TCA1602A3121GACD01

Catalog No: TCA1602A3121GACD01

Cast Iron Motor, 215 HP, 3 Ph, 50 Hz, 415 V, 1500 RPM, 315L Frame, TEFC



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**RegalRexnord**

### Nameplate Specifications

|                        |               |                            |                             |
|------------------------|---------------|----------------------------|-----------------------------|
| Output HP              | 215 Hp        | Output KW                  | 160.0 kW                    |
| Frequency              | 50 Hz         | Voltage                    | 415 V                       |
| Current                | 261.1 A       | Speed                      | 1487 rpm                    |
| Service Factor         | 1             | Phase                      | 3                           |
| Efficiency             | 95.8 %        | Power Factor               | 0.89                        |
| Duty                   | S1            | Insulation Class           | F                           |
| Frame                  | 315L          | Enclosure                  | Totally Enclosed Fan Cooled |
| Thermal Protection     | No Protection | Ambient Temperature        | 50 °C                       |
| Drive End Bearing Size | 6319          | Opp Drive End Bearing Size | 6319                        |
| 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                 | 4             | Rotation              | Bi-Directional |
| Mounting              | B5            | Motor Orientation     | Horizontal     |
| Drive End Bearing     | C3            | Opp Drive End Bearing | C3             |
| Frame Material        | Cast Iron     | Shaft Type            | Keyed          |
| Overall Length        | 1317 mm       | Frame Length          | 840 mm         |
| Shaft Diameter        | 80 mm         | Shaft Extension       | 170 mm         |
| Assembly/Box Mounting | Top           |                       |                |
| Outline Drawing       | 0231500897    | Connection Drawing    | 8442000085     |

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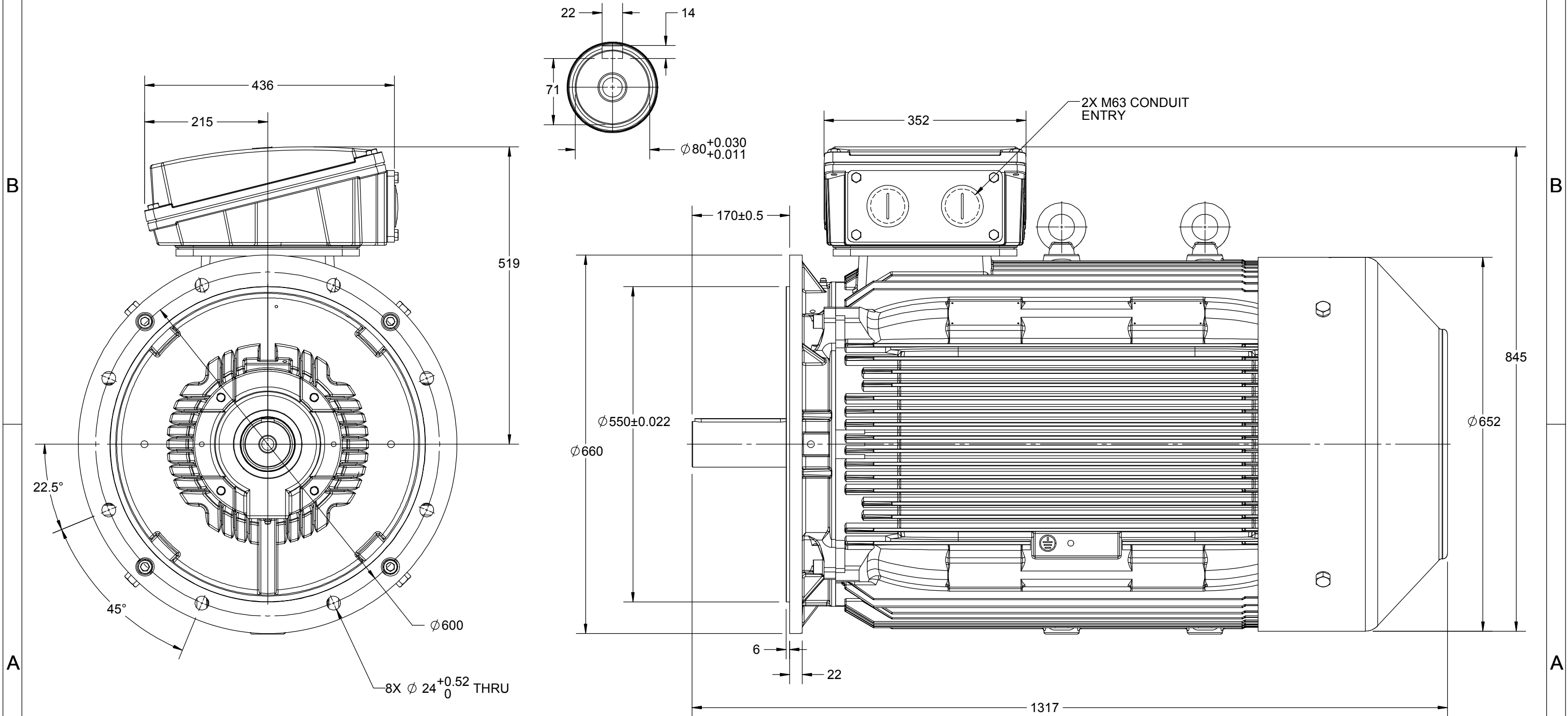
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# OUTLINE



|  |  |                    |  |                    |  |                              |                    |                 |                                 |  |                |  |
|--|--|--------------------|--|--------------------|--|------------------------------|--------------------|-----------------|---------------------------------|--|----------------|--|
| DRAWING REVISION<br>B  |  | REVISION BY<br>NIV |  | DATE<br>14/05/2019 |  |                              | DRAWN BY<br>JOY    |                 | <div>marathon™<br/>Motors</div> |  |                |  |
| ECO<br>ECO-0165600   |  | APPROVED BY<br>SR  |  | DATE<br>14/05/2019 |  |                              | DATE<br>18/07/2014 |                 |                                 |  |                |  |
| ECO DESCRIPTION  |  |                    |  |                    |  |                              | APPROVED BY<br>SBD |                 | DESCRIPTION                     |  |                |  |
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|  |  |                    |  |                    |  |                              |                    |                 | FR-315L-B5 MTG. MOTOR TYPE: TCA |  |                |  |
|  |  |                    |  |                    |  |                              | REFERENCE          |                 | MATERIAL                        |  | PROCESS/FINISH |  |
| THIRD ANGLE<br>PROJECTION  |  |                    |  | SIZE<br>B          |  | DRAWING NUMBER<br>0231500897 |                    | SHEET<br>1 OF 1 |                                 |  |                |  |

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

**Model No.** TCA1602A3121GACD01

| 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] |
|----------|---------------|-----------|-----------|-----------|----------|------------|-----------|-------------|------------------|------|-------|-------|---------------|-------|-------|--|--|--|
| 415      | Δ             | 50        | 160       | 215       | 261.1    | 1487       | 1029.75   | IE3         | 5/4FL            | FL   | 3/4FL | 1/2FL | FL            | 3/4FL | 1/2FL | 6.3                                    | 2.0                                    | 2.8                                    |
|          |               |           |           |           |          |            |           |             | -                | 95.8 | 95.8  | 95.7  | 0.89          | 0.87  | 0.81  |  |  |  |
|          |               |           |           |           |          |            |           |             |                  |      |       |       |               |       |       |  |  |  |

|                                  |                                   |
|----------------------------------|-----------------------------------|
| Motor type                       | TCA                               |
| Enclosure                        | TEFC                              |
| Frame Material                   | Cast Iron                         |
| Frame size                       | 315L                              |
| 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                 | 6319 C3 / 6319 C3                 |
| Lubrication method               | Regreasable                       |
| Type of grease                   | Shell Gadus S5 V100 or Equivalent |

|   |   |
|---|---|
| Degree of protection                      | IP 55                                       |
| Mounting type                             | IM B5                                       |
| Cooling method                            | IC 411                                      |
| Motor weight - approx.                    | 1148 kg                                     |
| Gross weight - approx.                    | 1193 kg                                     |
| Motor inertia                             | 4.4423 kgm <sup>2</sup>                     |
| Load inertia                              | Customer to Provide                         |
| Vibration level                           | 2.8 mm/s                                    |
| Noise level ( 1meter distance from motor) | 69 dB(A)                                    |
| No. of starts hot/cold/Equally spread     | 2/3/4                                       |
| Starting method                           | DOL   |
| Type of coupling                          | Direct                                      |
| LR withstand time (hot/cold)              | 15/30 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                     | TOP   |
| Maximum cable size/conduit size           | 1R x 3C x 240mm <sup>2</sup> /2 x M63 x 1.5 |
| 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**

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.

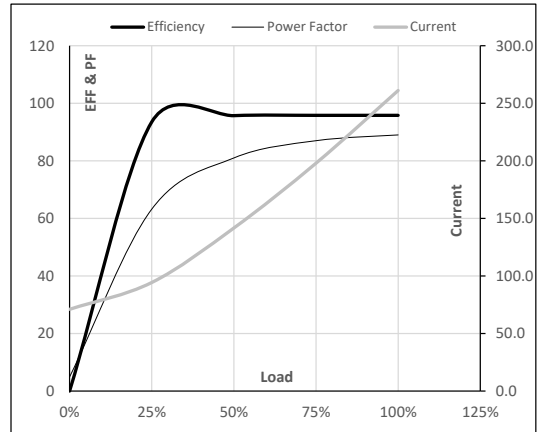
| Efficiency | Europe | China | India           | Aus/Nz | Brazil | Global IEC |
|------------|--------|-------|-----------------|--------|--------|------------|
| Standards  | -      | -     | IS 12615 : 2018 | -      | -      | -          |

**Model No.** TCA1602A3121GACD01

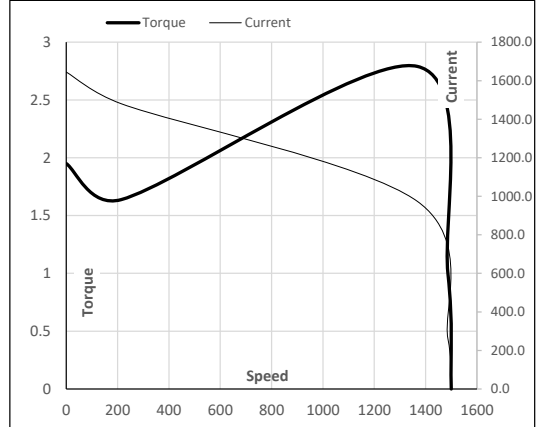
| Enclosure | U<br>(V) | Δ / Y<br>Conn | f<br>[Hz] | P<br>[kW] | P<br>[hp] | I<br>[A] | n<br>[RPM] | T<br>[kgm] | T<br>[Nm] | IE<br>Class | Amb<br>[°C] | Duty | Elevation<br>[m] | Inertia<br>[kg-m <sup>2</sup> ] | Weight<br>[kg] |
|-----------|----------|---------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC      | 415      | Δ             | 50        | 160       | 215.0     | 261.1    | 1487       | 105.00     | 1029.75   | IE3         | 50          | S1   | 1000             | 4.4423                          | 1148           |

**Motor Load Data**

| Load Point   |       | NL   | 1/4FL | 1/2FL | 3/4FL | FL     | 5/4FL |
|--------------|-------|------|-------|-------|-------|--------|-------|
| Current      | A     | 71.0 | 94.3  | 141.7 | 197.9 | 261.1  |       |
| Torque       | Nm    | 0.0  | 255.7 | 512.5 | 770.5 | 1029.7 |       |
| Speed        | r/min | 1500 | 1497  | 1494  | 1490  | 1487   |       |
| Efficiency   | %     | 0.0  | 93.5  | 95.7  | 95.8  | 95.8   |       |
| Power Factor | %     | 4.9  | 63.2  | 81.0  | 87.0  | 89.0   |       |

**Performance vs Load Chart**

**Motor Speed Torque Data**

| Load Point |       | LR     | P-Up   | BD    | Rated | NL   |
|------------|-------|--------|--------|-------|-------|------|
| Speed      | r/min | 0      | 214    | 1368  | 1487  | 1500 |
| Current    | A     | 1644.8 | 1480.3 | 973.7 | 261.1 | 71.0 |
| Torque     | pu    | 2.0    | 1.6    | 2.8   | 1     | 0    |

**Starting Characteristics Chart**

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

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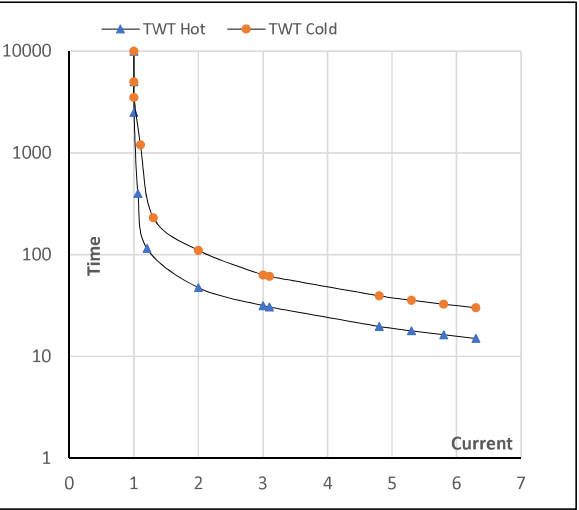
Model No. TCA1602A3121GACD01

|           |     |       |      |      |      |       |       |        |         |       |      |      |           |                      |        |
|-----------|-----|-------|------|------|------|-------|-------|--------|---------|-------|------|------|-----------|----------------------|--------|
| Enclosure | U   | Δ / Y | f    | P    | P    | I     | n     | T      | T       | IE    | Amb  | Duty | Elevation | Inertia              | Weight |
|           | (V) | Conn  | [Hz] | [kW] | [hp] | [A]   | [rpm] | [kgm]  | [Nm]    | Class | [°C] |      | [m]       | [kg·m <sup>2</sup> ] | [kg]   |
| TEFC      | 415 | Δ     | 50   | 160  | 215  | 261.1 | 1487  | 104.93 | 1029.75 | IE3   | 50   | S1   | 1000      | 4.4423               | 1148   |

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 | 47             | 32             | 25             | 20             | 18             | 15  |
| TWT Cold | s 10000 | 110            | 63             | 50             | 38             | 36             | 30  |
| Current  | pu      | 1              | 2              | 3              | 4              | 5              | 6.3 |

Thermal Characteristics Chart



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

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