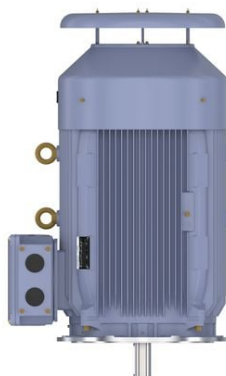


# PRODUCT INFORMATION PACKET

Model No: TCA2001A1141GAC010

Catalog No: TCA2001A1141GAC010

TerraMAX® Cast Iron Motor, 270 HP, 3 Ph, 50 Hz, 400 V, 3000 RPM, 315L Frame, TEFC



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### Nameplate Specifications

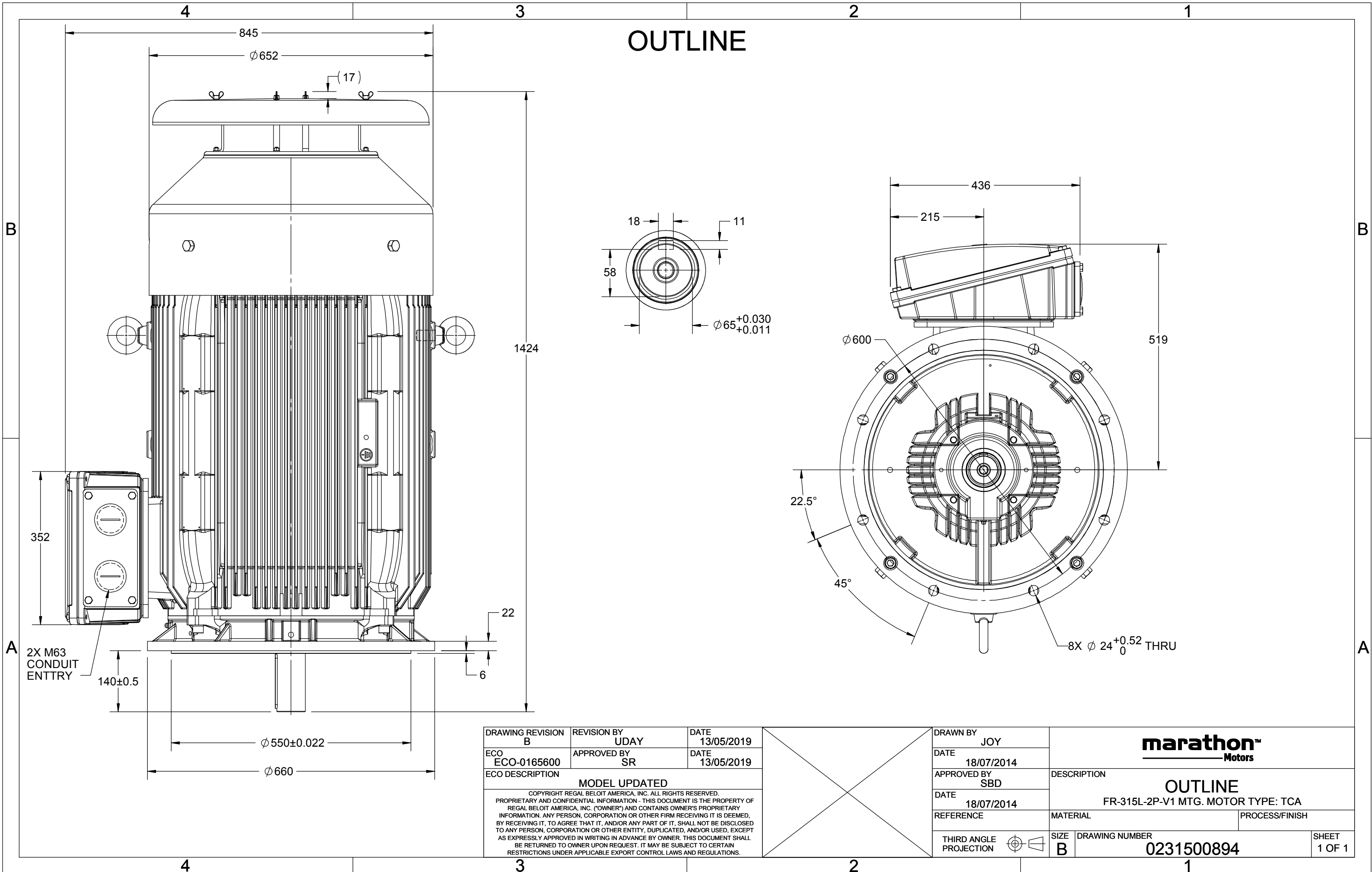
|                        |                      |                            |                                    |
|------------------------|----------------------|----------------------------|------------------------------------|
| Output HP              | <b>270 Hp</b>        | Output KW                  | <b>200.0 kW</b>                    |
| Frequency              | <b>50 Hz</b>         | Voltage                    | <b>400 V</b>                       |
| Current                | <b>338.6 A</b>       | Speed                      | <b>2984 rpm</b>                    |
| Service Factor         | <b>1</b>             | Phase                      | <b>3</b>                           |
| Efficiency             | <b>95.8 %</b>        | Power Factor               | <b>0.89</b>                        |
| Duty                   | <b>S1</b>            | Insulation Class           | <b>F</b>                           |
| Frame                  | <b>315L</b>          | Enclosure                  | <b>Totally Enclosed Fan Cooled</b> |
| Thermal Protection     | <b>No Protection</b> | Ambient Temperature        | <b>40 °C</b>                       |
| Drive End Bearing Size | <b>6316</b>          | Opp Drive End Bearing Size | <b>6316</b>                        |
| UL                     | <b>No</b>            | CSA                        | <b>No</b>                          |
| CE                     | <b>Yes</b>           | IP Code                    | <b>55</b>                          |
| Efficiency Class       | <b>IE3</b>           |                            |                                    |

### Technical Specifications

|                       |                      |                       |                       |
|-----------------------|----------------------|-----------------------|-----------------------|
| Electrical Type       | <b>Squirrel Cage</b> | Starting Method       | <b>Direct On Line</b> |
| Poles                 | <b>2</b>             | Rotation              | <b>Bi-Directional</b> |
| Mounting              | <b>V1</b>            | Motor Orientation     | <b>Shaftdown</b>      |
| Drive End Bearing     | <b>C3</b>            | Opp Drive End Bearing | <b>C3</b>             |
| Frame Material        | <b>Cast Iron</b>     | Shaft Type            | <b>Keyed</b>          |
| Overall Length        | <b>1423 mm</b>       | Frame Length          | <b>840 mm</b>         |
| Shaft Diameter        | <b>65 mm</b>         | Shaft Extension       | <b>140 mm</b>         |
| Assembly/Box Mounting | <b>Top</b>           |                       |                       |
| Outline Drawing       | <b>0231500894</b>    | Connection Drawing    | <b>8442000085</b>     |

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# OUTLINE



|   |                     |                    |
|---|---------------------|--------------------|
| DRAWING REVISION<br>B   | REVISION BY<br>UDAY | DATE<br>13/05/2019 |
| ECO<br>ECO-0165600  | APPROVED BY<br>SR   | DATE<br>13/05/2019 |
| ECO DESCRIPTION<br><b>MODEL UPDATED</b>   |                     |                    |
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|                        |   |                              |
|------------------------|---|------------------------------|
| DRAWN BY<br>JOY        |   |                              |
| DATE<br>18/07/2014     |   |                              |
| APPROVED BY<br>SBD     | DESCRIPTION<br><b>OUTLINE</b><br>FR-315L-2P-V1 MTG. MOTOR TYPE: TCA |                              |
| DATE<br>18/07/2014     | MATERIAL  | PROCESS/FINISH               |
| REFERENCE              | SIZE<br>B   | DRAWING NUMBER<br>0231500894 |
| THIRD ANGLE PROJECTION |   | 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><b>SN</b>  |  Regal Beloit America, Inc. |  |                           |
|  |   |  | DATE<br><b>16/12/2016</b> |
|  | APPROVED BY<br><b>SBD</b>   | DESCRIPTION<br><b>CONN DIAGRAM-NAMEPLATE</b> |                           |
|  | DATE<br><b>16/12/2016</b>   |  |                           |
|  | REFERENCE   |  | MATERIAL                  |
| THIRD ANGLE PROJECTION  | SIZE<br><b>A</b>  | DRAWING NUMBER<br><b>8442000085</b>          | SHEET<br><b>1 OF 1</b>    |



Model No. TCA2001A1141GAC010

| U<br>(V) | Δ / Y<br>Conn | f<br>[Hz] | P    |      | 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] |
|----------|---------------|-----------|------|------|----------|------------|-----------|-------------|------------------|------|-------|-------|---------------|-------|-------|--|--|--|
|          |               |           | [kW] | [hp] |          |            |           |             | 5/4FL            | FL   | 3/4FL | 1/2FL | FL            | 3/4FL | 1/2FL |  |  |  |
| 400      | Δ             | 50        | 200  | 270  | 338.6    | 2984       | 644.39    | IE3         | -                | 95.8 | 95.8  | 94.6  | 0.89          | 0.87  | 0.8   | 7.3                                    | 2.3                                    | 3.6                                    |
|          |               |           |      |      |          |            |           |             |                  |      |       |       |               |       |       |  |  |  |

|                                  |                             |   |   |
|----------------------------------|-----------------------------|---|---|
| Motor type                       | TCA                         | Degree of protection                      | IP 55                                       |
| Enclosure                        | TEFC                        | Mounting type                             | IM V1                                       |
| Frame Material                   | Cast Iron                   | Cooling method                            | IC 411                                      |
| Frame size                       | 315L                        | Motor weight - approx.                    | 1226 kg                                     |
| Duty                             | S1                          | Gross weight - approx.                    | 1271 kg                                     |
| Voltage variation *              | ± 10%                       | Motor inertia                             | 3.0911 kgm <sup>2</sup>                     |
| Frequency variation *            | ± 5%                        | Load inertia                              | Customer to Provide                         |
| Combined variation *             | 10%                         | Vibration level                           | 2.8 mm/s                                    |
| Design                           | N                           | Noise level ( 1meter distance from motor) | 83 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    | NA                          | Standard rotation                         | Clockwise form DE                           |
| Zone classification              | NA                          | Paint shade                               | RAL 5014                                    |
| Gas group                        | NA                          | Accessories                               |   |
| Temperature class                | NA                          | Accessory - 1                             | PTC 150°C                                   |
| Rotor type                       | Aluminum Die cast           | Accessory - 2                             | -   |
| Bearing type                     | Anti-friction ball          | Accessory - 3                             | -   |
| DE / NDE bearing                 | 6316 C3 / 6316 C3           | Terminal box position                     | TOP   |
| Lubrication method               | Regreasable                 | Maximum cable size/conduit size           | 1R x 3C x 240mm <sup>2</sup> /2 x M63 x 1.5 |
| Type of grease                   | CHEVRON SRI-2 or Equivalent | 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 Standards | Europe | China                 | India | Aus/Nz | Brazil | Global IEC    |
|----------------------|--------|-----------------------|-------|--------|--------|---------------|
|                      | -      | GB 18613-2012 Grade 2 | -     | -      | -      | IEC: 60034-30 |



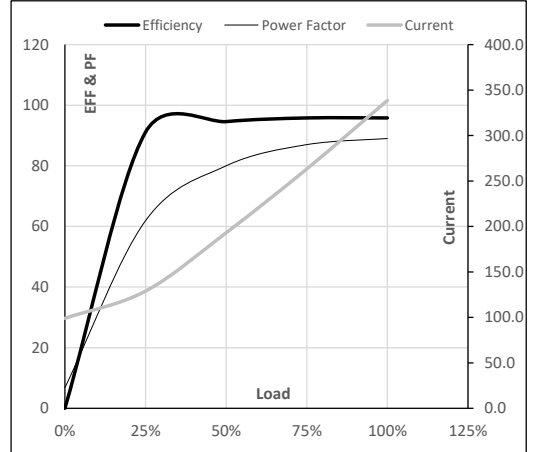
**Model No.** TCA2001A1141GAC010

| 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        | 200       | 270.0     | 338.6    | 2984       | 65.71      | 644.39    | IE3         | 40          | S1   | 1000             | 3.0911                          | 1226           |

**Motor Load Data**

| Load Point   |       | NL   | 1/4FL | 1/2FL | 3/4FL | FL    | 5/4FL |
|--------------|-------|------|-------|-------|-------|-------|-------|
| Current      | A     | 98.9 | 128.9 | 193.1 | 263.2 | 338.6 |       |
| Torque       | Nm    | 0.0  | 160.4 | 321.3 | 482.6 | 644.4 |       |
| Speed        | r/min | 3000 | 2996  | 2992  | 2988  | 2984  |       |
| Efficiency   | %     | 0.0  | 91.1  | 94.6  | 95.8  | 95.8  |       |
| Power Factor | %     | 6.8  | 61.9  | 80.0  | 87.0  | 89.0  |       |

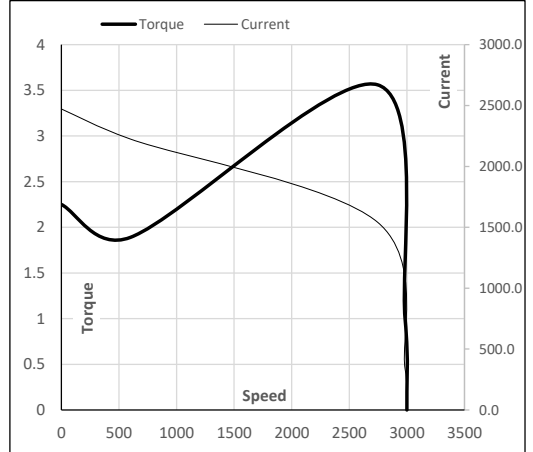
**Performance vs Load Chart**



**Motor Speed Torque Data**

| Load Point |       | LR     | P-Up   | BD     | Rated | NL   |
|------------|-------|--------|--------|--------|-------|------|
| Speed      | r/min | 0      | 600    | 2745   | 2984  | 3000 |
| Current    | A     | 2471.6 | 2224.4 | 1541.9 | 338.6 | 98.9 |
| Torque     | pu    | 2.3    | 1.9    | 3.6    | 1     | 0    |

**Starting Characteristics Chart**



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

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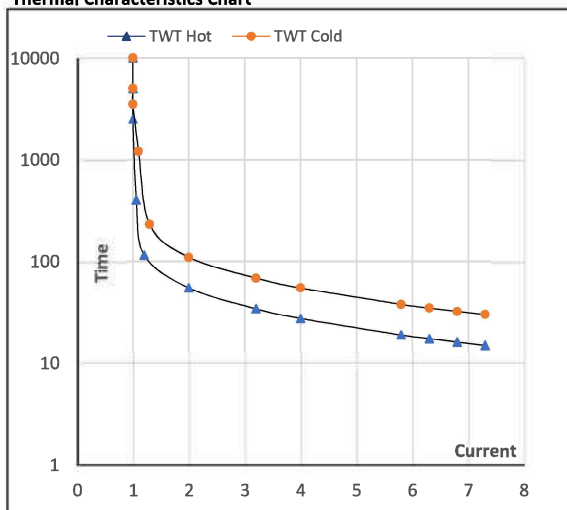
Model No. TCA2001A1141GAC010

| 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 <sup>2</sup> ] | Weight [kg] |
|-----------|-------|----------|--------|--------|--------|-------|---------|---------|--------|----------|----------|------|---------------|------------------------------|-------------|
| TEFC      | 400   | Δ        | 50     | 200    | 270.0  | 338.6 | 2984    | 65.71   | 644.39 | IE3      | 40       | S1   | 1000          | 3.0911                       | 1226        |

**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 | 55             | 39             | 28             | 24             | 22             | 15  |     |
| TWT Cold | s 10000 | 110            | 80             | 55             | 50             | 40             | 30  |     |
| Current  | pu      | 1              | 2              | 3              | 4              | 5              | 5.5 | 7.3 |

**Thermal Characteristics Chart**



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

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