

# PRODUCT INFORMATION PACKET

**marathon®**  
Motors

Model No: TCA18P1A3113GACD01

Catalog No: TCA18P1A3113GACD01

Cast Iron Motor, 25 HP, 3 Ph, 50 Hz, 415 V, 3000 RPM, 160L Frame, TEFC



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**RegalRexnord**

### Nameplate Specifications

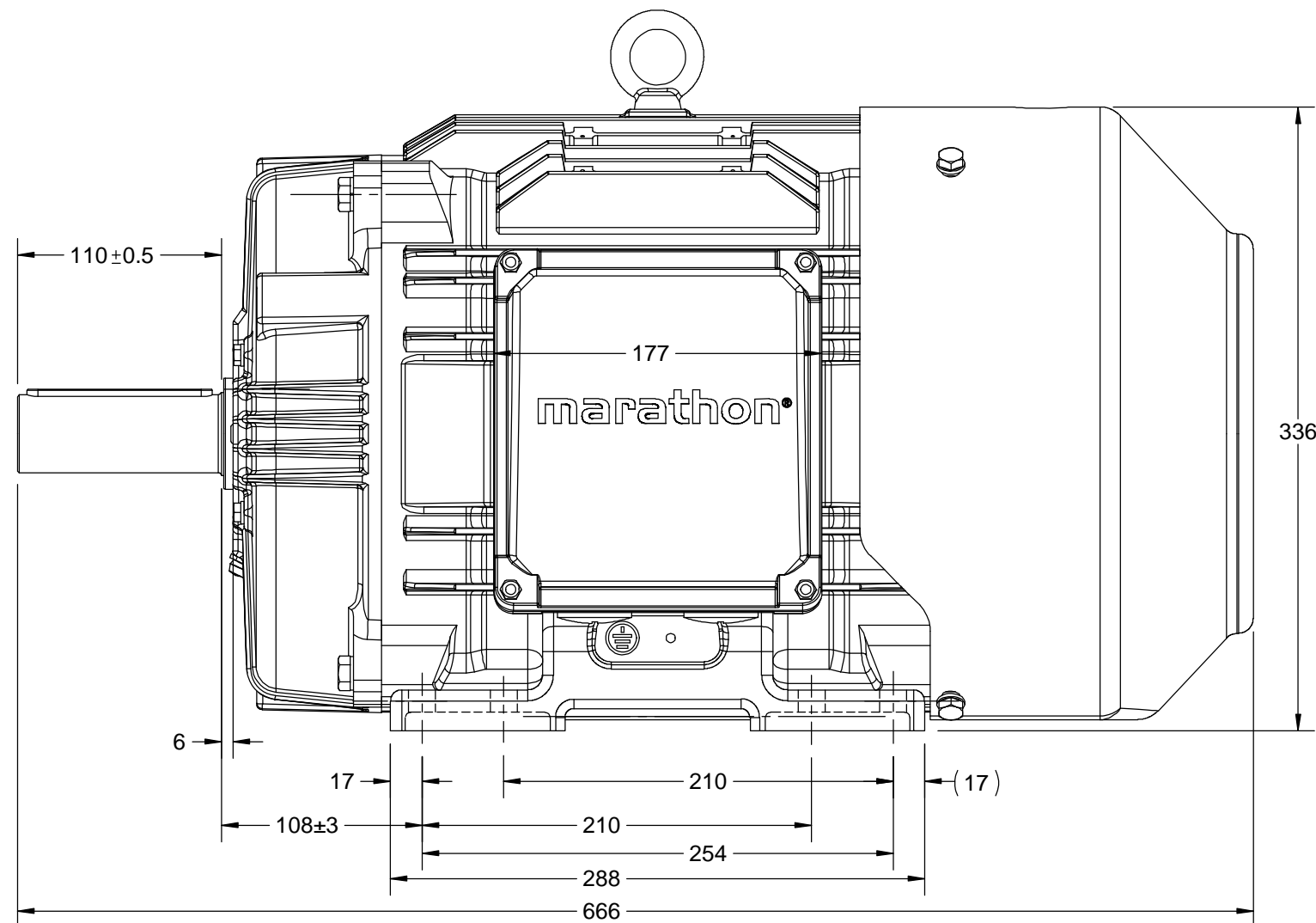
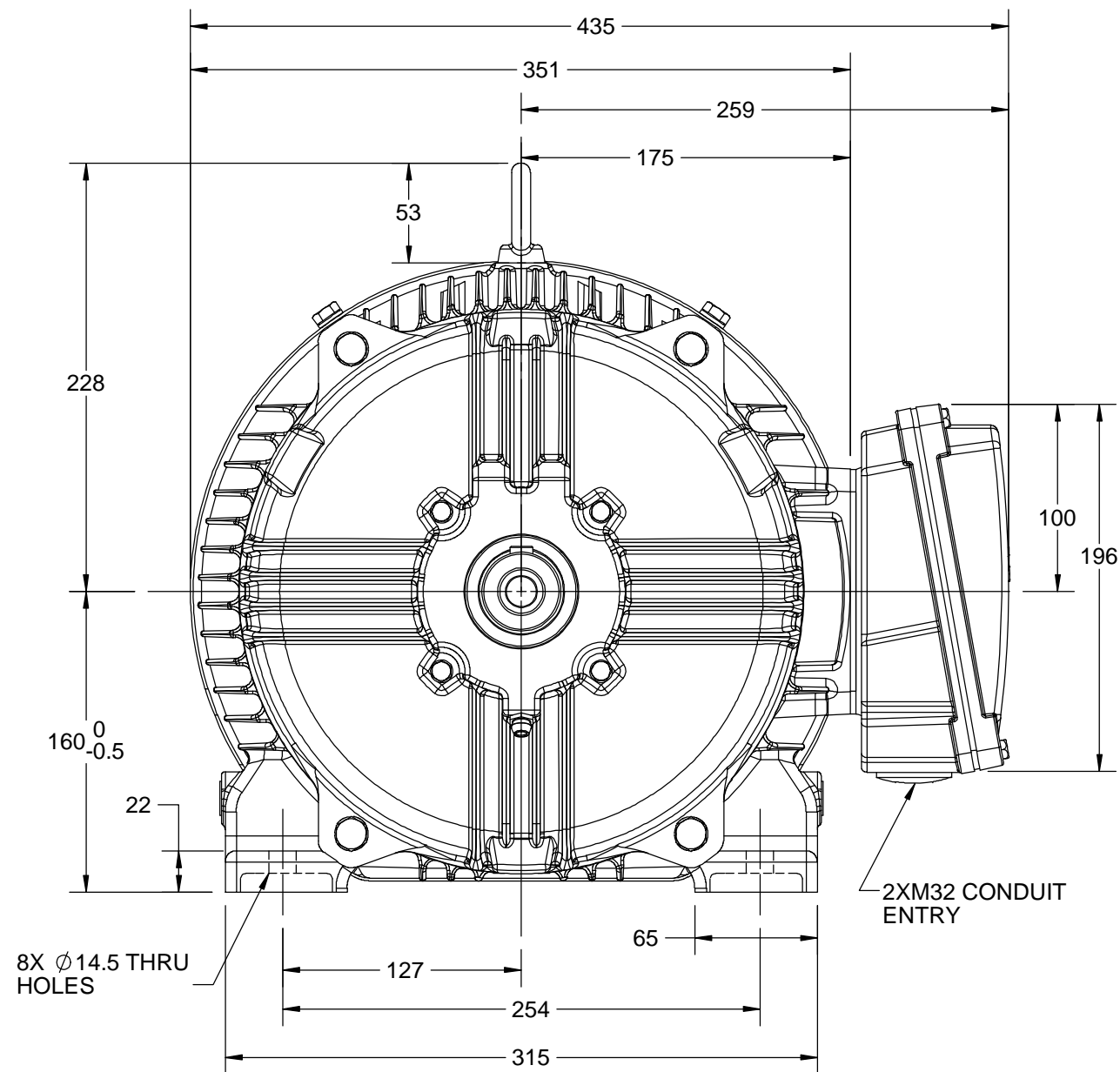
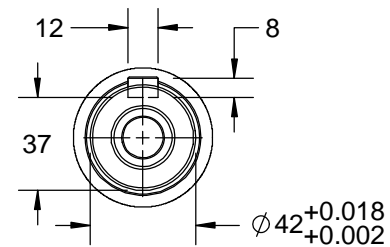
|                        |                      |                            |                                    |
|------------------------|----------------------|----------------------------|------------------------------------|
| Output HP              | <b>25 Hp</b>         | Output KW                  | <b>18.5 kW</b>                     |
| Frequency              | <b>50 Hz</b>         | Voltage                    | <b>415 V</b>                       |
| Current                | <b>30.3 A</b>        | Speed                      | <b>2948 rpm</b>                    |
| Service Factor         | <b>1</b>             | Phase                      | <b>3</b>                           |
| Efficiency             | <b>92.4 %</b>        | Power Factor               | <b>0.92</b>                        |
| Duty                   | <b>S1</b>            | Insulation Class           | <b>F</b>                           |
| Frame                  | <b>160L</b>          | Enclosure                  | <b>Totally Enclosed Fan Cooled</b> |
| Thermal Protection     | <b>No Protection</b> | Ambient Temperature        | <b>50 °C</b>                       |
| Drive End Bearing Size | <b>6309</b>          | Opp Drive End Bearing Size | <b>6209</b>                        |
| UL                     | <b>No</b>            | CSA                        | <b>No</b>                          |
| CE                     | <b>Yes</b>           | IP Code                    | <b>55</b>                          |
| Number of Speeds       | <b>1</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>B3</b>            | Motor Orientation     | <b>Horizontal</b>     |
| Drive End Bearing     | <b>2z-C3</b>         | Opp Drive End Bearing | <b>2z-C3</b>          |
| Frame Material        | <b>Cast Iron</b>     | Shaft Type            | <b>Keyed</b>          |
| Overall Length        | <b>666 mm</b>        | Frame Length          | <b>298 mm</b>         |
| Shaft Diameter        | <b>42 mm</b>         | Shaft Extension       | <b>110 mm</b>         |
| Assembly/Box Mounting | <b>R Side</b>        |                       |                       |
| Connection Drawing    | <b>8442000085</b>    | Outline Drawing       | <b>0216000813</b>     |

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# OUTLINE



|   |                      |                    |
|---|----------------------|--------------------|
| DRAWING REVISION<br>B   | REVISION BY<br>BISWA | DATE<br>27/07/2018 |
| ECO<br>ECO-0148344  | APPROVED BY<br>SBD   | DATE<br>27/07/2018 |
| ECO DESCRIPTION   |                      |                    |
| DRAWING UPDATED   |                      |                    |
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|                        |                                    |                              |
|------------------------|------------------------------------|------------------------------|
| DRAWN BY<br>SN         | <b>marathon™<br/>Motors</b>        |                              |
| DATE<br>19/08/2016     |                                    |                              |
| APPROVED BY<br>SBD     | DESCRIPTION<br><b>OUTLINE</b>      |                              |
| DATE<br>19/08/2016     | 160LFR B3-MTG.TYPE: TCA/QCA-RHS TB |                              |
| REFERENCE              | MATERIAL                           | PROCESS/FINISH               |
| THIRD ANGLE PROJECTION | SIZE<br>B                          | DRAWING NUMBER<br>0216000813 |
|                        |                                    | 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>     |                                     | <b>Regal Beloit America, Inc.</b>            |
|                        | 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                  |                                     | 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. TCA18P1A3113GACD01

| 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>R</sub> /T <sub>N</sub><br>[pu] |
|----------|---------------|-----------|-----------|-----------|----------|------------|-----------|-------------|------------------|------|-------|-------|---------------|-------|-------|--|--|--|
|          |               |           |           |           |          |            |           |             | 5/4FL            | FL   | 3/4FL | 1/2FL | FL            | 3/4FL | 1/2FL |  |  |  |
| 415      | Δ             | 50        | 18.5      | 25        | 30.3     | 2948       | 60.39     | IE3         | -                | 92.4 | 92.4  | 92.2  | 0.92          | 0.9   | 0.84  | 7.4                                    | 2.4                                    | 3.3                                    |
|          |               |           |           |           |          |            |           |             |                  |      |       |       |               |       |       |  |  |  |

|                                  |                            |
|----------------------------------|----------------------------|
| Motor type                       | TCA                        |
| Enclosure                        | TEFC                       |
| Frame Material                   | Cast Iron                  |
| Frame size                       | 160L                       |
| 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                 | 6309-2Z / 6209-2Z          |
| Lubrication method               | Greased for life           |
| Type of grease                   | NA                         |

|   |  |
|---|--|
| Degree of protection                      | IP 55                                      |
| Mounting type                             | IM B3                                      |
| Cooling method                            | IC 411                                     |
| Motor weight - approx.                    | 185 kg                                     |
| Gross weight - approx.                    | 205 kg                                     |
| Motor inertia                             | 0.1055 kgm <sup>2</sup>                    |
| Load inertia                              | Customer to Provide                        |
| Vibration level                           | 2.2 mm/s                                   |
| Noise level ( 1meter distance from motor) | 71 dB(A)                                   |
| No. of starts hot/cold/Equally spread     | 2/3/4                                      |
| Starting method                           | DOL  |
| Type of coupling                          | Direct                                     |
| LR withstand time (hot/cold)              | 10/20 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                     | RHS  |
| Maximum cable size/conduit size           | 1R x 3C x 35mm <sup>2</sup> /2 X M32 x 1.5 |
| Auxiliary terminal box                    | NA   |

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

T<sub>R</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 |
|----------------------|--------|-------|-----------------|--------|--------|------------|
|                      | -      | -     | IS 12615 : 2018 | -      | -      | -          |

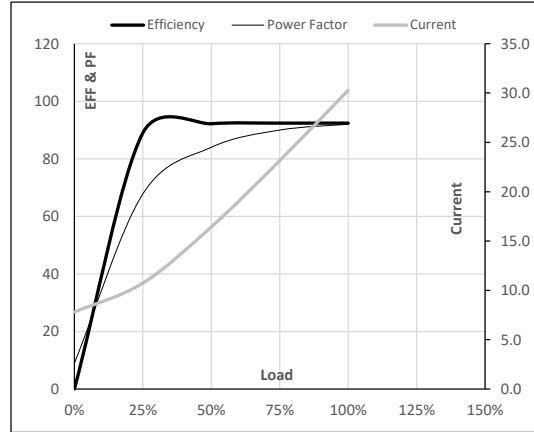
**Model No.** TCA18P1A3113GACD01

| 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      | 415   | Δ          | 50     | 18.5   | 25.0   | 30.3  | 2948    | 6.16    | 60.39  | IE3      | 50       | S1   | 1000          | 0.1055                       | 185         |

**Motor Load Data**

| Load Point   |       | NL   | 1/4FL | 1/2FL | 3/4FL | FL   | 5/4FL |
|--------------|-------|------|-------|-------|-------|------|-------|
| Current      | A     | 7.8  | 10.7  | 16.4  | 23.2  | 30.3 |       |
| Torque       | Nm    | 0.0  | 14.9  | 29.9  | 45.1  | 60.4 |       |
| Speed        | r/min | 3000 | 2987  | 2975  | 2962  | 2948 |       |
| Efficiency   | %     | 0.0  | 89.0  | 92.2  | 92.4  | 92.4 |       |
| Power Factor | %     | 9.0  | 67.8  | 84.0  | 90.0  | 92.0 |       |

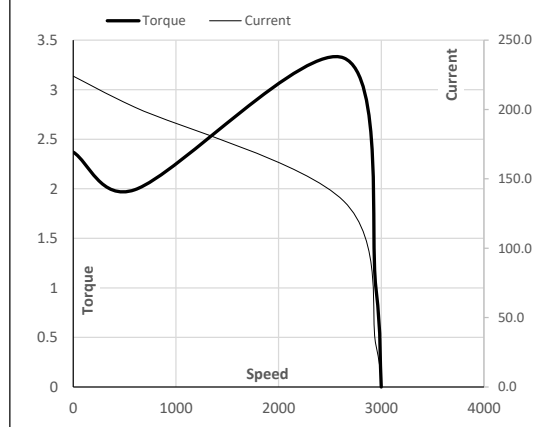
**Performance vs Load Chart**



**Motor Speed Torque Data**

| Load Point |       | LR    | P-Up  | BD    | Rated | NL   |
|------------|-------|-------|-------|-------|-------|------|
| Speed      | r/min | 0     | 600   | 2635  | 2948  | 3000 |
| Current    | A     | 224.1 | 201.6 | 133.9 | 30.3  | 7.8  |
| Torque     | pu    | 2.4   | 2.0   | 3.3   | 1     | 0    |

**Starting Characteristics Chart**



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

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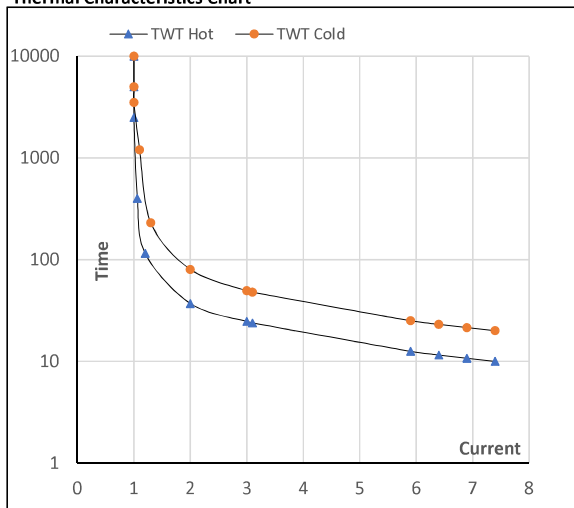
**Model No.** TCA18P1A3113GACD01

| 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      | 415   | Δ          | 50     | 18.5   | 25     | 30.3  | 2948    | 6.15    | 60.39  | IE3      | 50       | S1   | 1000          | 0.1055                       | 185         |

**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 | 37             | 25             | 21             | 17             | 14             | 10  |     |
| TWT Cold | s 10000 | 80             | 50             | 45             | 30             | 28             | 20  |     |
| Current  | pu      | 1              | 2              | 3              | 4              | 5              | 5.5 | 7.4 |

**Thermal Characteristics Chart**



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

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