

# PRODUCT INFORMATION PACKET

**marathon®**  
Motors

Model No: TCA3152A3133GACD01  
Catalog No: TCA3152A3133GACD01  
TerraMAX® Cast Iron Motor, 425 HP, 3 Ph, 50 Hz, 415 V, 355L Frame



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**RegalRexnord**

### Nameplate Specifications

|                        |               |                            |                             |
|------------------------|---------------|----------------------------|-----------------------------|
| Phase                  | 3             | Output HP                  | 425 Hp                      |
| Output KW              | 315.0 kW      | Voltage                    | 415 V                       |
| Speed                  | 1490 r/min    | Service Factor             | 1                           |
| Frame                  | 355L          | Enclosure                  | Totally Enclosed Fan Cooled |
| Thermal Protection     | No Protection | Efficiency                 | 96 %                        |
| Ambient Temperature    | 50 °C         | Frequency                  | 50 Hz                       |
| Current                | 507.2 A       | Power Factor               | 0.9                         |
| Duty                   | S1            | Insulation Class           | F                           |
| Drive End Bearing Size | 6322          | Opp Drive End Bearing Size | 6322                        |
| 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              | B35           | Motor Orientation     | Horizontal     |
| Drive End Bearing     | C3            | Opp Drive End Bearing | C3             |
| Frame Material        | Cast Iron     | Shaft Type            | Keyed          |
| Overall Length        | 1542 mm       | Frame Length          | 1010 mm        |
| Shaft Diameter        | 95 mm         | Shaft Extension       | 170 mm         |
| Assembly/Box Mounting | R Side        |                       |                |
| Connection Drawing    | 8442000085    | Outline Drawing       | 0235502333     |

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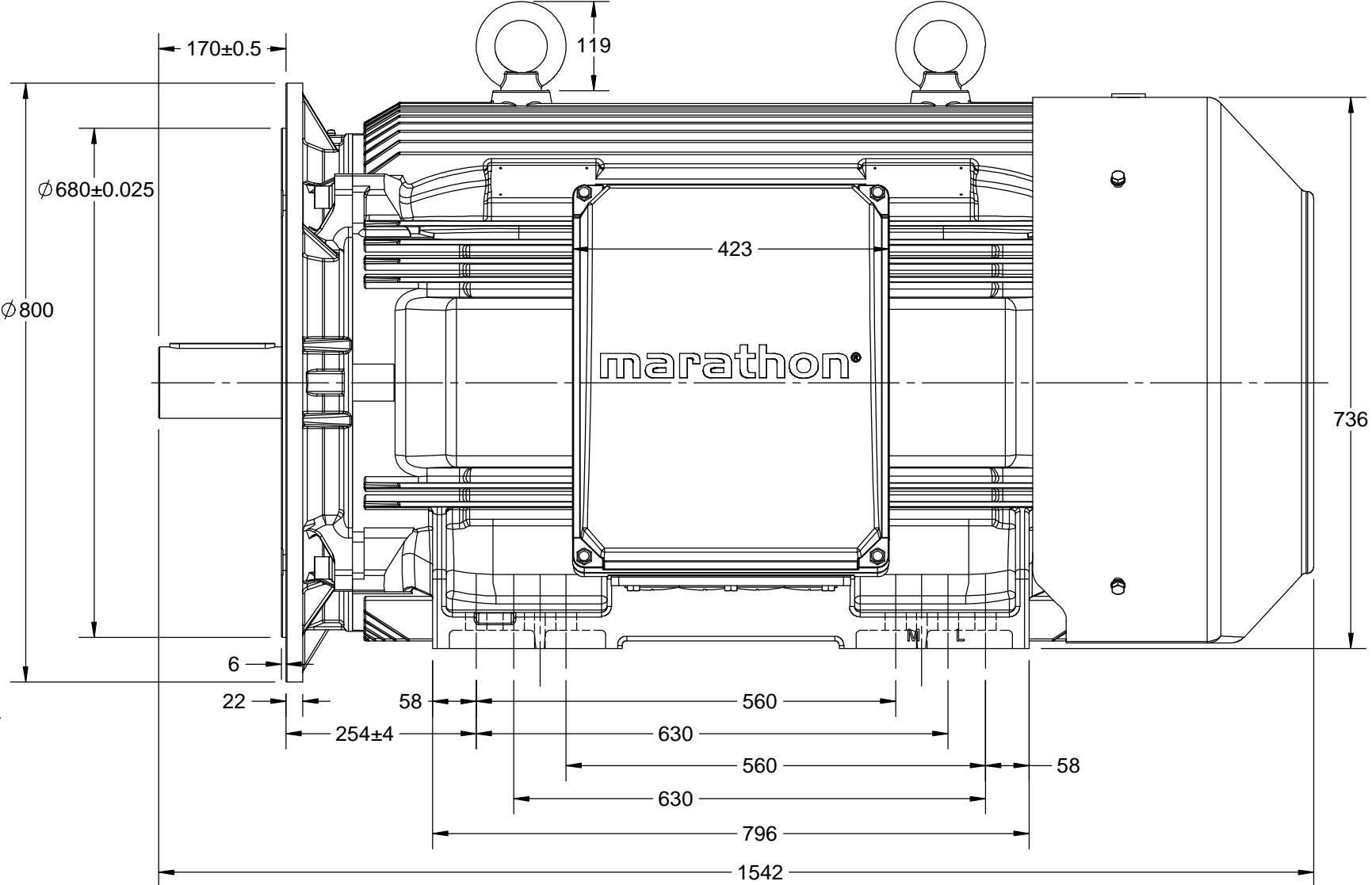
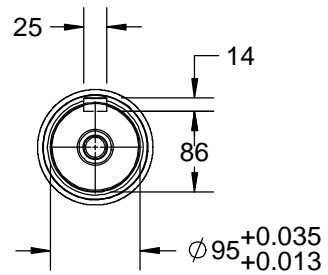
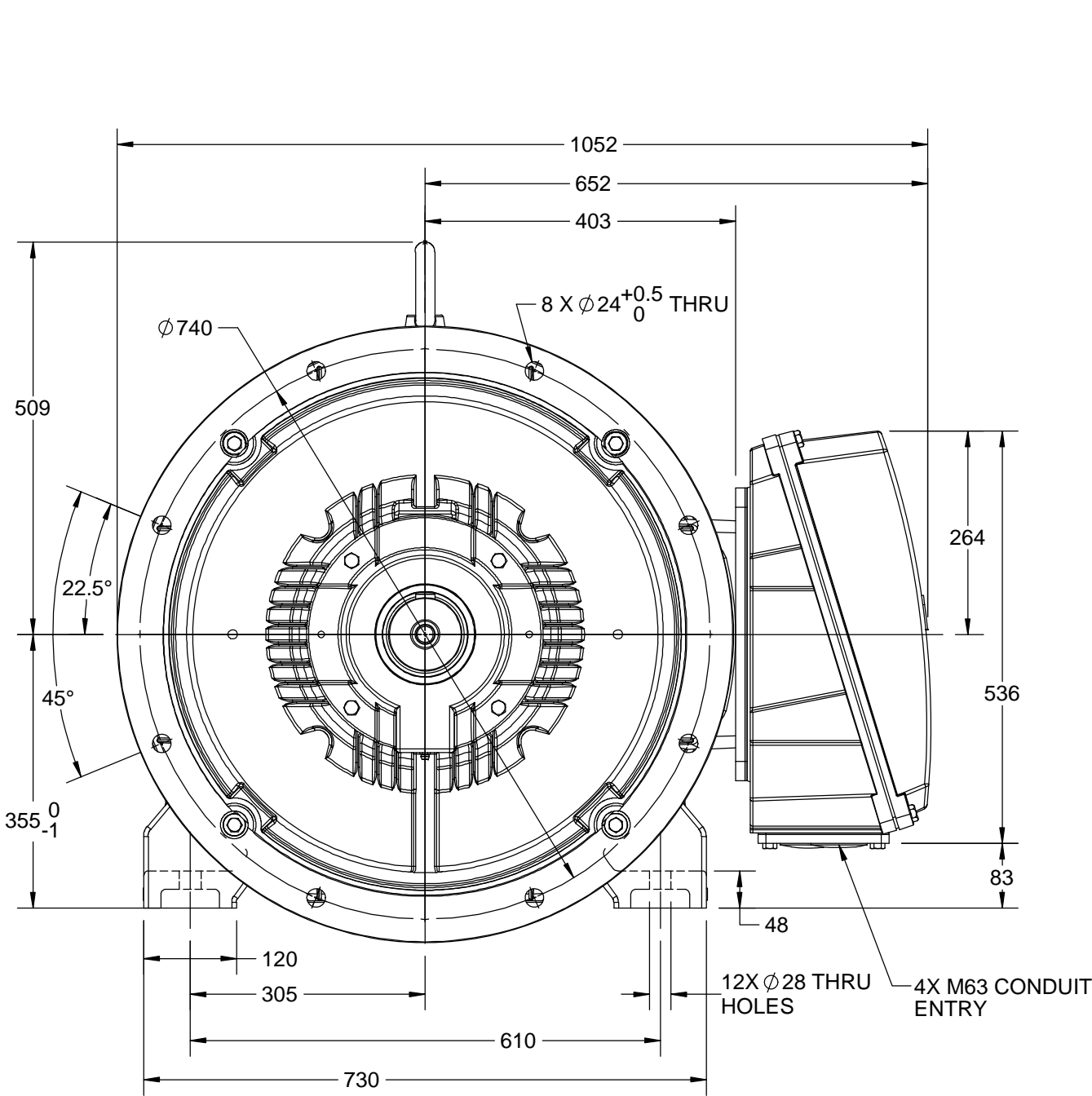
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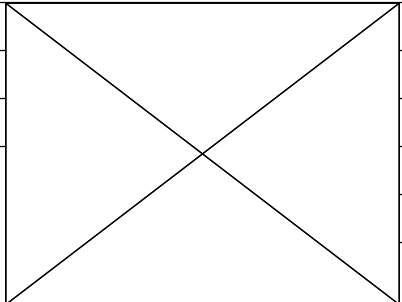
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|  |                    |                    |
|--|--------------------|--------------------|
| DRAWING REVISION<br>B  | REVISION BY<br>VS  | DATE<br>05/07/2018 |
| ECO<br>ECO-0148344   | APPROVED BY<br>SBD | DATE<br>05/07/2018 |
| ECO DESCRIPTION<br>MODEL UPDATED   |                    |                    |
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|                           |                                      |                              |                 |
|---------------------------|--------------------------------------|------------------------------|-----------------|
| DRAWN BY<br>GSR           | <b>marathon™</b><br>Motors           |                              |                 |
| DATE<br>15/011/2017       |                                      |                              |                 |
| APPROVED BY<br>JAY        | DESCRIPTION<br>OUTLINE               |                              |                 |
| DATE<br>15/011/2017       | 355L FR-4~8P-B35 MTG. TCA/QCA-RHS TB |                              |                 |
| REFERENCE                 | MATERIAL                             | PROCESS/FINISH               |                 |
| THIRD ANGLE<br>PROJECTION | SIZE<br>B                            | DRAWING NUMBER<br>0235502333 | 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> |                                     |                        |
|                       |  |                                     |                        |
|                       | DESCRIPTION<br><b>CONN DIAGRAM-NAMEPLATE</b>   |                                     |                        |
|                       | MATERIAL   |                                     | PROCESS/FINISH         |
|                       | SIZE<br><b>A</b>   | DRAWING NUMBER<br><b>8442000085</b> | SHEET<br><b>1 OF 1</b> |

Model No. TCA3152A3133GACD01

| 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        | 315       | 425       | 507.2    | 1490       | 2031.21   | IE3         | 5/4FL            | FL   | 3/4FL | 1/2FL | FL            | 3/4FL | 1/2FL | 7                                      | 2.0                                    | 2.5                                    |
|          |               |           |           |           |          |            |           |             | -                | 96.0 | 96.0  | 96.1  | 0.90          | 0.88  | 0.84  |  |  |  |
|          |               |           |           |           |          |            |           |             |                  |      |       |       |               |       |       |  |  |  |

|                                  |                                   |
|----------------------------------|-----------------------------------|
| Motor type                       | TCA                               |
| Enclosure                        | TEFC                              |
| Frame Material                   | Cast Iron                         |
| Frame size                       | 355L                              |
| 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                 | 6322 C3 / 6322 C3                 |
| Lubrication method               | Regreasable                       |
| Type of grease                   | Shell Gadus S5 V100 or Equivalent |

|   |   |
|---|---|
| Degree of protection                      | IP 55                                       |
| Mounting type                             | IM B35                                      |
| Cooling method                            | IC 411                                      |
| Motor weight - approx.                    | 1947 kg                                     |
| Gross weight - approx.                    | 1992 kg                                     |
| Motor inertia                             | 10.1755 kgm <sup>2</sup>                    |
| Load inertia                              | Customer to Provide                         |
| Vibration level                           | 2.8 mm/s                                    |
| Noise level ( 1meter distance from motor) | 82 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                     | RHS   |
| Maximum cable size/conduit size           | 1R x 3C x 300mm <sup>2</sup> /4 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 combined 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 | -      | -      | -          |

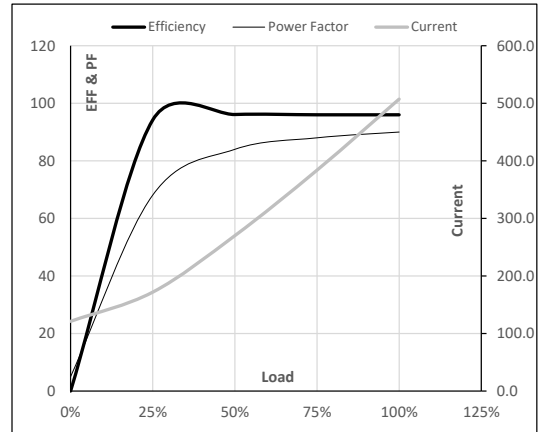
**Model No.** TCA3152A3133GACD01

| 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        | 315       | 425       | 507.2    | 1490       | 207.13     | 2031.21   | IE3         | 50          | S1   | 1000             | 10.1755                         | 1947           |

**Motor Load Data**

| Load Point   |       | NL    | 1/4FL | 1/2FL  | 3/4FL  | FL     | 5/4FL |
|--------------|-------|-------|-------|--------|--------|--------|-------|
| Current      | A     | 121.1 | 171.9 | 270.0  | 383.8  | 507.2  |       |
| Torque       | Nm    | 0.0   | 505.2 | 1012.0 | 1520.6 | 2031.2 |       |
| Speed        | r/min | 1500  | 1498  | 1495   | 1493   | 1490   |       |
| Efficiency   | %     | 0.0   | 94.2  | 96.1   | 96.0   | 96.0   |       |
| Power Factor | %     | 5.0   | 68.1  | 84.0   | 88.0   | 90.0   |       |

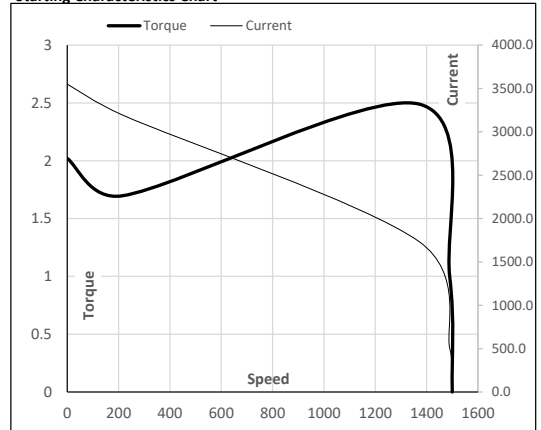
**Performance vs Load Chart**



**Motor Speed Torque Data**

| Load Point |       | LR     | P-Up   | BD     | Rated | NL    |
|------------|-------|--------|--------|--------|-------|-------|
| Speed      | r/min | 0      | 214    | 1371   | 1490  | 1500  |
| Current    | A     | 3550.6 | 3195.5 | 1734.5 | 507.2 | 121.1 |
| Torque     | pu    | 2.0    | 1.7    | 2.5    | 1     | 0     |

**Starting Characteristics Chart**



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

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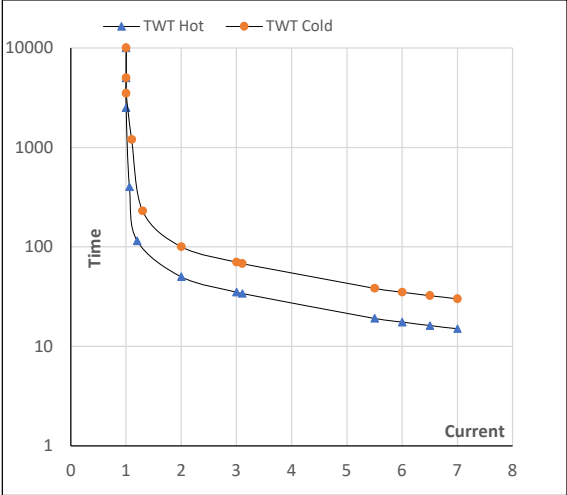
Model No. TCA3152A3133GACD01

| 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        | 315       | 425       | 507.2    | 1490       | 207.13     | 2031.21   | IE3         | 50          | S1   | 1000             | 10.1755                         | 1947           |

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             | 35             | 29             | 23             | 18             | 15 |
| TWT Cold | s  | 10000 | 100            | 70             | 55             | 45             | 35             | 30 |
| Current  | pu | 1     | 2              | 3              | 4              | 5              | 6              | 7  |

Thermal Characteristics Chart



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

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