

# PRODUCT INFORMATION PACKET

**marathon®**  
Motors

Model No: QCA0901A1111GAA001

Catalog No: QCA0901A1111GAA001

TerraMAX® Cast Iron Motor, 120 HP, 3 Ph, 50 Hz, 400 V, 3000 RPM, 280M Frame, TEFC



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**RegalRexnord**

### Nameplate Specifications

|                        |               |                            |                             |
|------------------------|---------------|----------------------------|-----------------------------|
| Output HP              | 120 Hp        | Output KW                  | 90.0 kW                     |
| Frequency              | 50 Hz         | Voltage                    | 400 V                       |
| Current                | 150.3 A       | Speed                      | 2982 rpm                    |
| Service Factor         | 1             | Phase                      | 3                           |
| Efficiency             | 95.8 %        | Power Factor               | 0.91                        |
| Duty                   | S1            | Insulation Class           | F                           |
| Frame                  | 280M          | Enclosure                  | Totally Enclosed Fan Cooled |
| Thermal Protection     | No Protection | Ambient Temperature        | 40 °C                       |
| Drive End Bearing Size | 6314          | Opp Drive End Bearing Size | 6314                        |
| UL                     | No            | CSA                        | No                          |
| CE                     | Yes           | IP Code                    | 55                          |
| Number of Speeds       | 1             | Efficiency Class           | IE4                         |

### Technical Specifications

|                       |               |                       |                |
|-----------------------|---------------|-----------------------|----------------|
| Electrical Type       | Squirrel Cage | Starting Method       | Direct On Line |
| Poles                 | 2             | Rotation              | Bi-Directional |
| Mounting              | B3            | Motor Orientation     | Horizontal     |
| Drive End Bearing     | C3            | Opp Drive End Bearing | C3             |
| Frame Material        | Cast Iron     | Shaft Type            | Keyed          |
| Overall Length        | 1111 mm       | Frame Length          | 600 mm         |
| Shaft Diameter        | 65 mm         | Shaft Extension       | 140 mm         |
| Assembly/Box Mounting | Top           |                       |                |
| Outline Drawing       | 0228000585    | Connection Drawing    | 8442000085     |

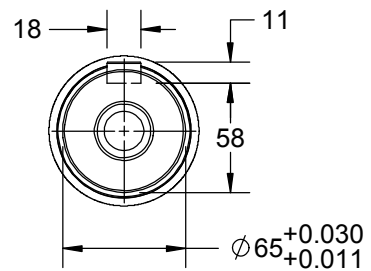
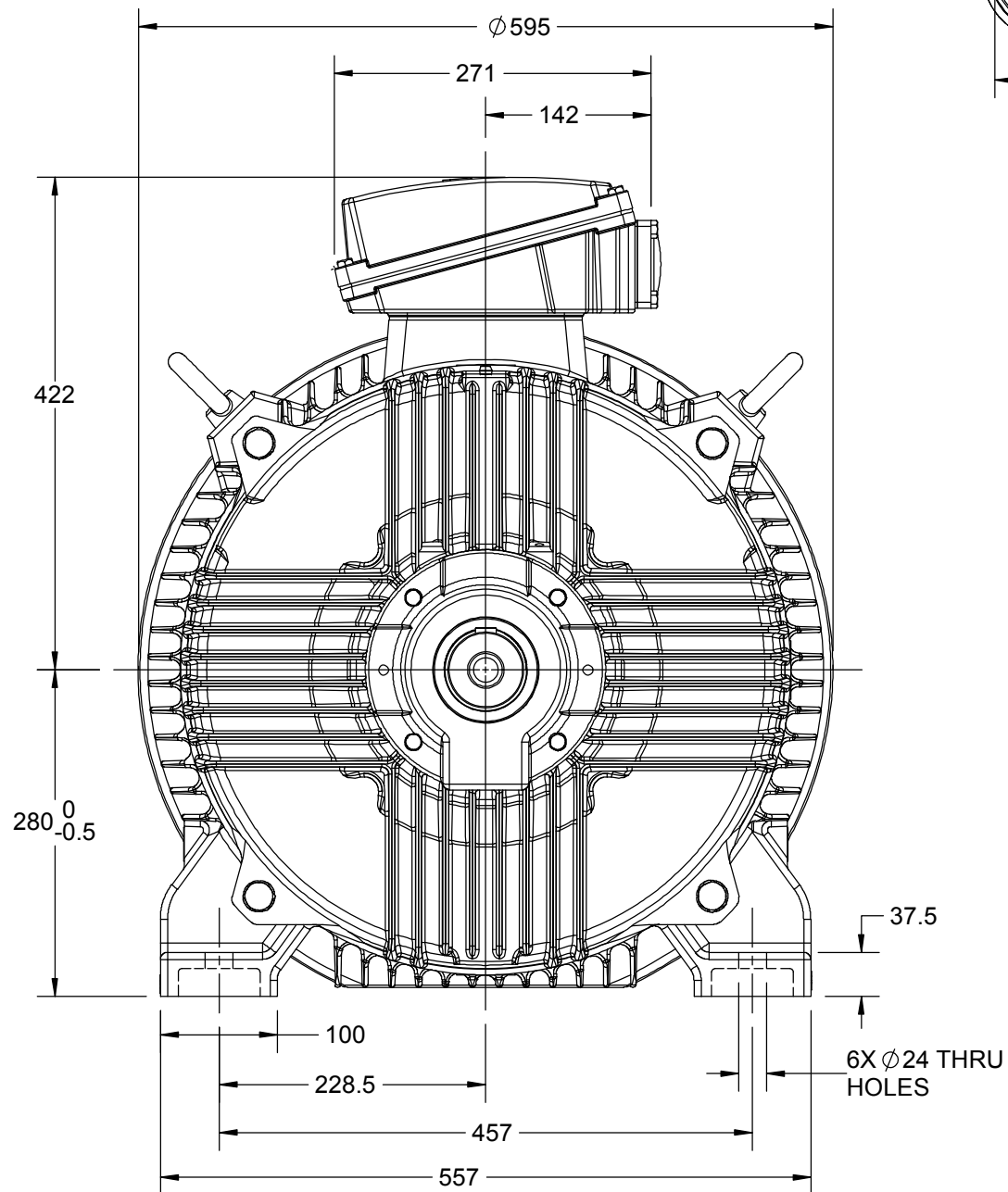
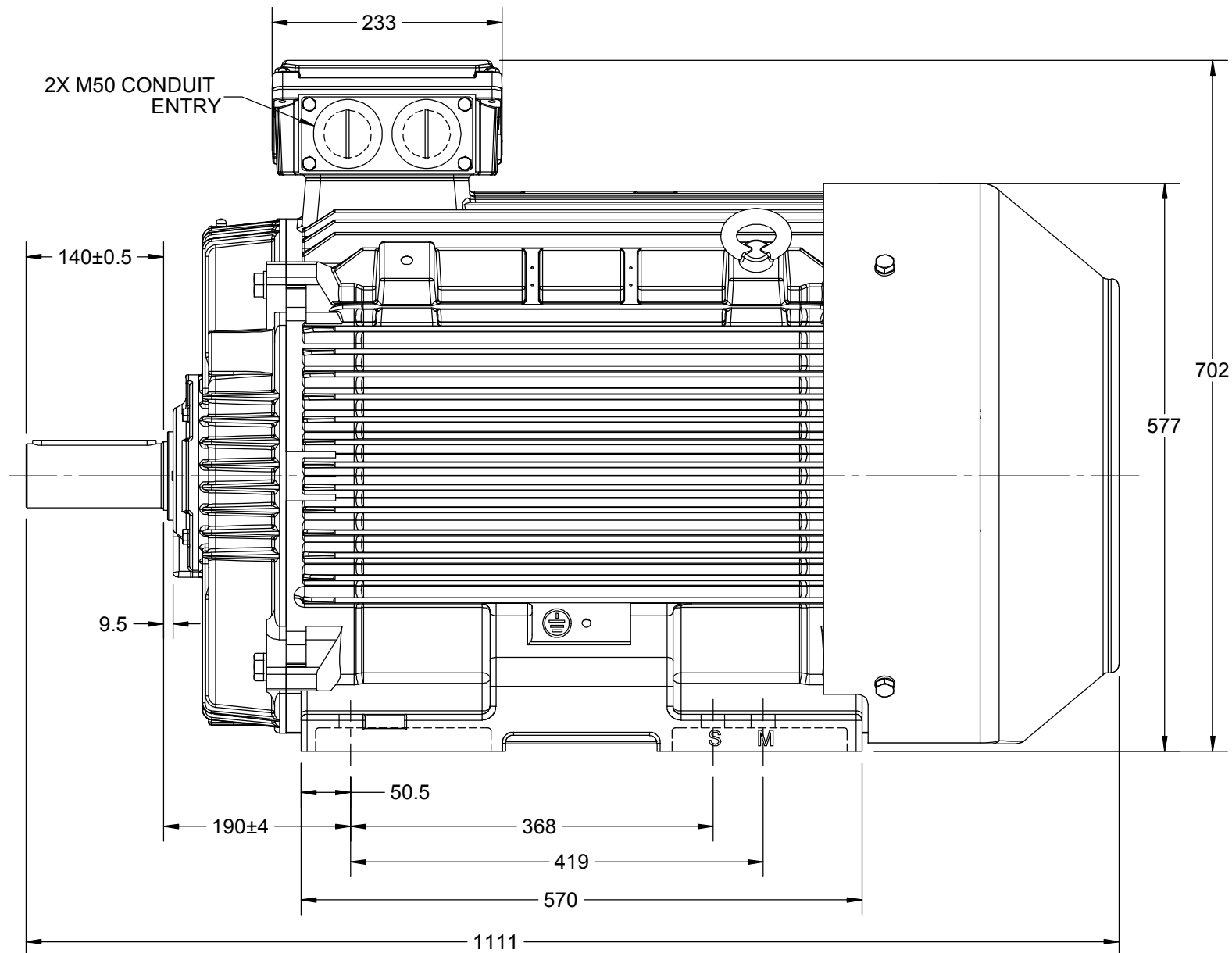
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4

3

2

1

2X M50 CONDUIT  
ENTRY

|  |                   |                    |
|--|-------------------|--------------------|
| DRAWING REVISION<br>D  | REVISION BY<br>LK | DATE<br>17/04/2019 |
| ECO<br>ECO-0165600   | APPROVED BY<br>SR | DATE<br>17/04/2019 |
| ECO DESCRIPTION<br>UPDATED MODEL AS PER NEW 3D STRUCTURE   |                   |                    |
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|                           |  |
|---------------------------|--|
| DRAWN BY<br>JOY           | DESCRIPTION<br><b>marathon™<br/>Motors</b><br><br><b>OUTLINE</b><br><b>280M-2P-B3 MTG. MOTOR TYPE: TCA/QCA</b> |
| DATE<br>18/07/2014        |  |
| APPROVED BY<br>SBD        | MATERIAL<br><br>PROCESS/FINISH   |
| DATE<br>18/07/2014        |  |
| REFERENCE                 | SIZE<br><b>B</b>   |
| THIRD ANGLE<br>PROJECTION |  |

|  |                |                |
|--|----------------|----------------|
| <div><div>marathon™</div><div>Motors</div></div> |                |                |
| DESCRIPTION                                      |                |                |
| OUTLINE  |                |                |
| 280M-2P-B3 MTG. MOTOR TYPE: TCA/QCA              |                |                |
| MATERIAL   |                | PROCESS/FINISH |
| SIZE   | DRAWING NUMBER | SHEET          |
| B  | 0228000585     | 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> |                           |                           |

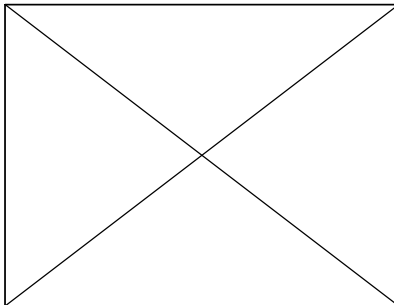
| GEOMETRIC TOLERANCE |         |      |
|---------------------|---------|------|
| LINEAR DIM          | >0~6    | ±0.1 |
|                     | >6~30   | ±0.2 |
|                     | >30~120 | ±0.3 |




**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.** QCA0901A1111GAA001

| 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] |
|----------|---------------|-----------|-----------|-----------|----------|------------|-----------|-------------|------------------|----|-------|-------|---------------|-------|-------|--|--|--|
| 400      | Δ             | 50        | 90        | 120       | 149.0    | 2982       | 286.53    | IE4         | 5/4FL            | FL | 3/4FL | 1/2FL | FL            | 3/4FL | 1/2FL | 7.5                                    | 2.2                                    | 3.6                                    |
|          |               |           |           |           |          |            |           |             |                  |    |       |       |               |       |       |  |  |  |

|                                  |                             |   |  |
|----------------------------------|-----------------------------|---|--|
| Motor type                       | QCA                         | Degree of protection                      | IP 55                                      |
| Enclosure                        | TEFC                        | Mounting type                             | IM B3                                      |
| Frame Material                   | Cast Iron                   | Cooling method                            | IC 411                                     |
| Frame size                       | 280M                        | Motor weight - approx.                    | 856 kg                                     |
| Duty                             | S1                          | Gross weight - approx.                    | 891 kg                                     |
| Voltage variation *              | ± 10%                       | Motor inertia                             | 1.5530 kgm <sup>2</sup>                    |
| Frequency variation *            | ± 5%                        | Load inertia                              | Customer to Provide                        |
| Combined variation *             | 10%                         | Vibration level                           | 2.2 mm/s                                   |
| Design                           | N                           | Noise level ( 1meter distance from motor) | 76 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                 | 6314 C3 / 6314 C3           | Terminal box position                     | TOP  |
| Lubrication method               | Regreasable                 | Maximum cable size/conduit size           | 1R x 3C x 95mm <sup>2</sup> /2 x M50 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 combined variation are as per IEC60034-1

Technical data are subject to change. There may be slight variations between calculated values in this datasheet and the motor nameplate figures.

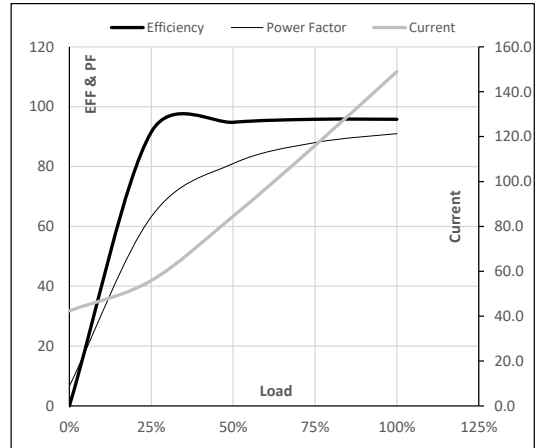
| Efficiency Standards | Europe<br>IEC 60034-30-1 | China<br>- | India<br>- | Aus/Nz<br>AS/NZ 1359:5:2004 | Brazil<br>- | Global IEC<br>IEC:60034-30-1 |
|----------------------|--------------------------|------------|------------|-----------------------------|-------------|------------------------------|
|----------------------|--------------------------|------------|------------|-----------------------------|-------------|------------------------------|

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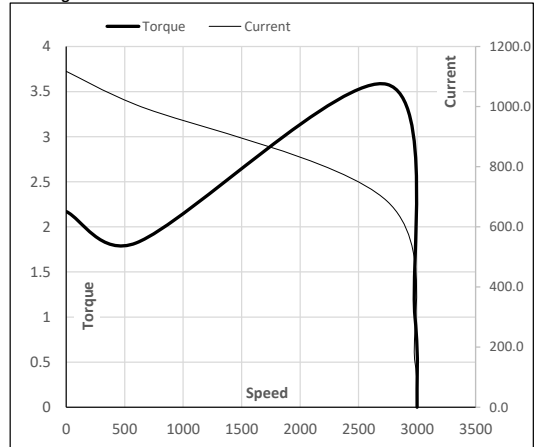
| Enclosure | U<br>(V) | Δ / Y<br>Conn | f<br>[Hz] | P<br>[kW] | P<br>[hp] | I<br>[A] | n<br>[RPM] | T<br>[kgm] | T<br>[Nm] | IE<br>Class | Amb<br>[°C] | Duty | Elevation<br>[m] | Inertia<br>[kg-m <sup>2</sup> ] | Weight<br>[kg] |
|-----------|----------|---------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC      | 400      | Δ             | 50        | 90        | 120       | 149.0    | 2982       | 29.22      | 286.53    | IE4         | 40          | S1   | 1000             | 1.5530                          | 856            |

**Motor Load Data**

| Load Point   |       | NL   | 1/4FL | 1/2FL | 3/4FL | FL    | 5/4FL |
|--------------|-------|------|-------|-------|-------|-------|-------|
| Current      | A     | 42.4 | 55.9  | 84.5  | 116.0 | 149.0 |       |
| Torque       | Nm    | 0.0  | 71.3  | 142.8 | 214.6 | 286.5 |       |
| Speed        | r/min | 3000 | 2996  | 2991  | 2987  | 2982  |       |
| Efficiency   | %     | 0.0  | 91.5  | 94.8  | 95.8  | 95.8  |       |
| Power Factor | %     | 6.6  | 63.2  | 81.0  | 88.0  | 91.0  |       |

**Performance vs Load Chart**

**Motor Speed Torque Data**

| Load Point |       | LR     | P-Up   | BD    | Rated | NL   |
|------------|-------|--------|--------|-------|-------|------|
| Speed      | r/min | 0      | 600    | 2743  | 2982  | 3000 |
| Current    | A     | 1117.6 | 1005.8 | 685.4 | 149.0 | 42.4 |
| Torque     | pu    | 2.2    | 1.8    | 3.6   | 1     | 0    |

**Starting Characteristics Chart**

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

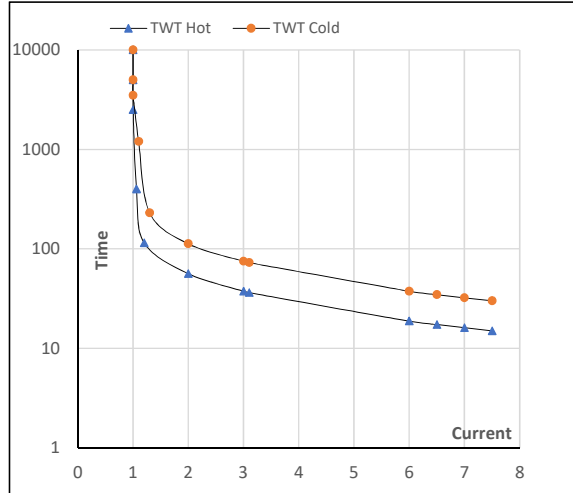
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| Enclosure | U<br>(V) | $\Delta$ / Y<br>Conn | f<br>[Hz] | P<br>[kW] | P<br>[hp] | I<br>[A] | n<br>[rpm] | T<br>[kgm] | T<br>[Nm] | IE<br>Class | Amb<br>[°C] | Duty | Elevation<br>[m] | Inertia<br>[kg-m <sup>2</sup> ] | Weight<br>[kg] |
|-----------|----------|----------------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC      | 400      | $\Delta$             | 50        | 90        | 120       | 149.0    | 2982       | 29.22      | 286.53    | IE4         | 40          | S1   | 1000             | 1.5530                          | 856            |

**Motor Speed Torque Data**

| Load     | FL      | $I_1$ | $I_2$ | $I_3$ | $I_4$ | $I_5$ | LR  |
|----------|---------|-------|-------|-------|-------|-------|-----|
| TWT Hot  | s 10000 | 56    | 38    | 30    | 25    | 20    | 15  |
| TWT Cold | s 10000 | 113   | 75    | 65    | 50    | 45    | 30  |
| Current  | pu      | 1     | 2     | 4     | 5     | 5.5   | 7.5 |

**Thermal Characteristics Chart**

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

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