

# PRODUCT INFORMATION PACKET

**marathon®**  
Motors

Model No: QCA0902A1133GAA001

Catalog No: QCA0902A1133GAA001

TerraMAX® Cast Iron Motor, 120 HP, 3 Ph, 50 Hz, 400 V, 1500 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                | 156.5 A       | Speed                      | 1490 rpm                    |
| Service Factor         | 1             | Phase                      | 3                           |
| Efficiency             | 96.1 %        | Power Factor               | 0.87                        |
| Duty                   | S1            | Insulation Class           | F                           |
| Frame                  | 280M          | Enclosure                  | Totally Enclosed Fan Cooled |
| Thermal Protection     | No Protection | Ambient Temperature        | 40 °C                       |
| Drive End Bearing Size | 6317          | Opp Drive End Bearing Size | 6317                        |
| 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                 | 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        | 1111 mm       | Frame Length          | 600 mm         |
| Shaft Diameter        | 75 mm         | Shaft Extension       | 140 mm         |
| Assembly/Box Mounting | R Side        |                       |                |
| Outline Drawing       | 0228000973    | Connection Drawing    | 8442000085     |

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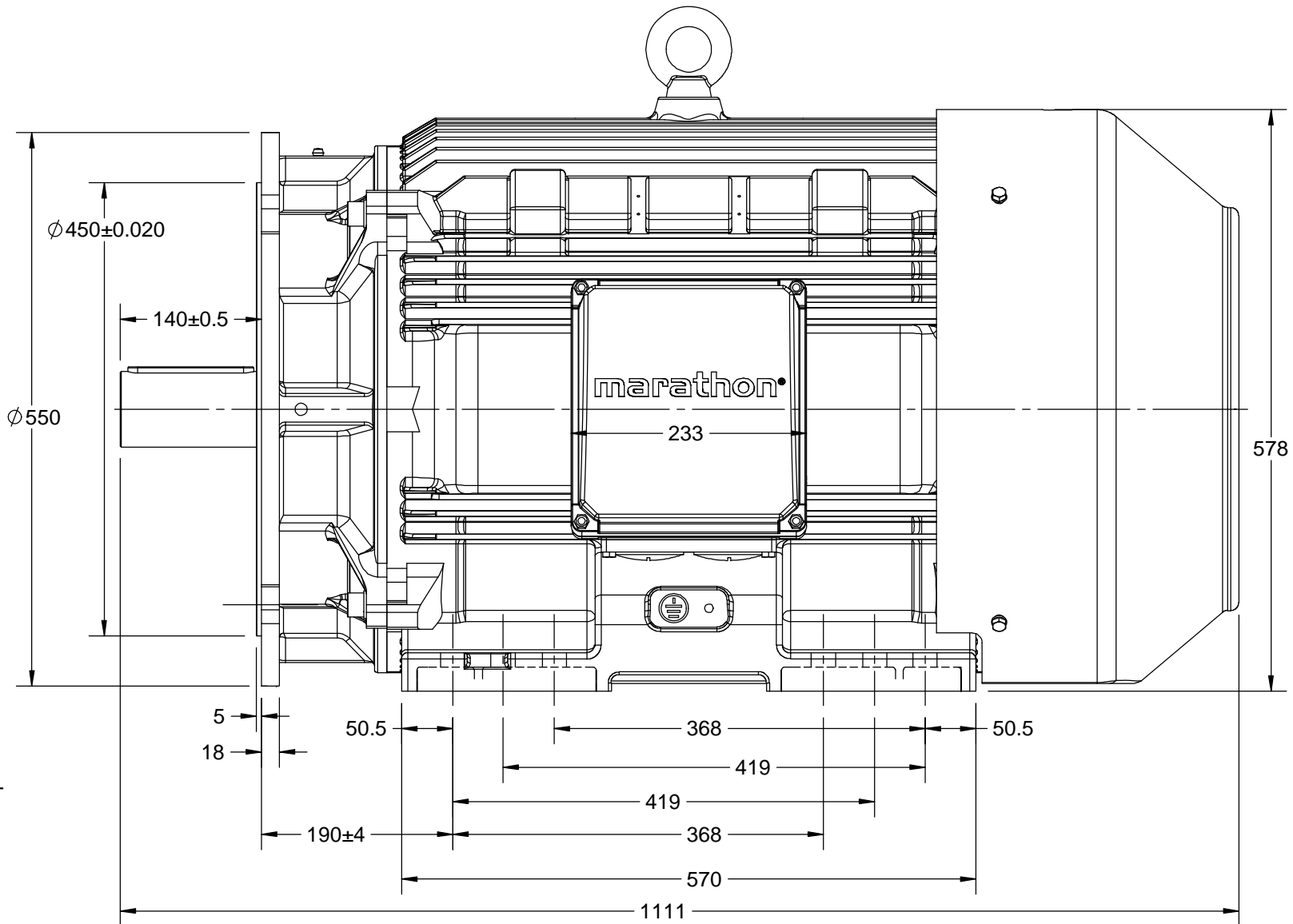
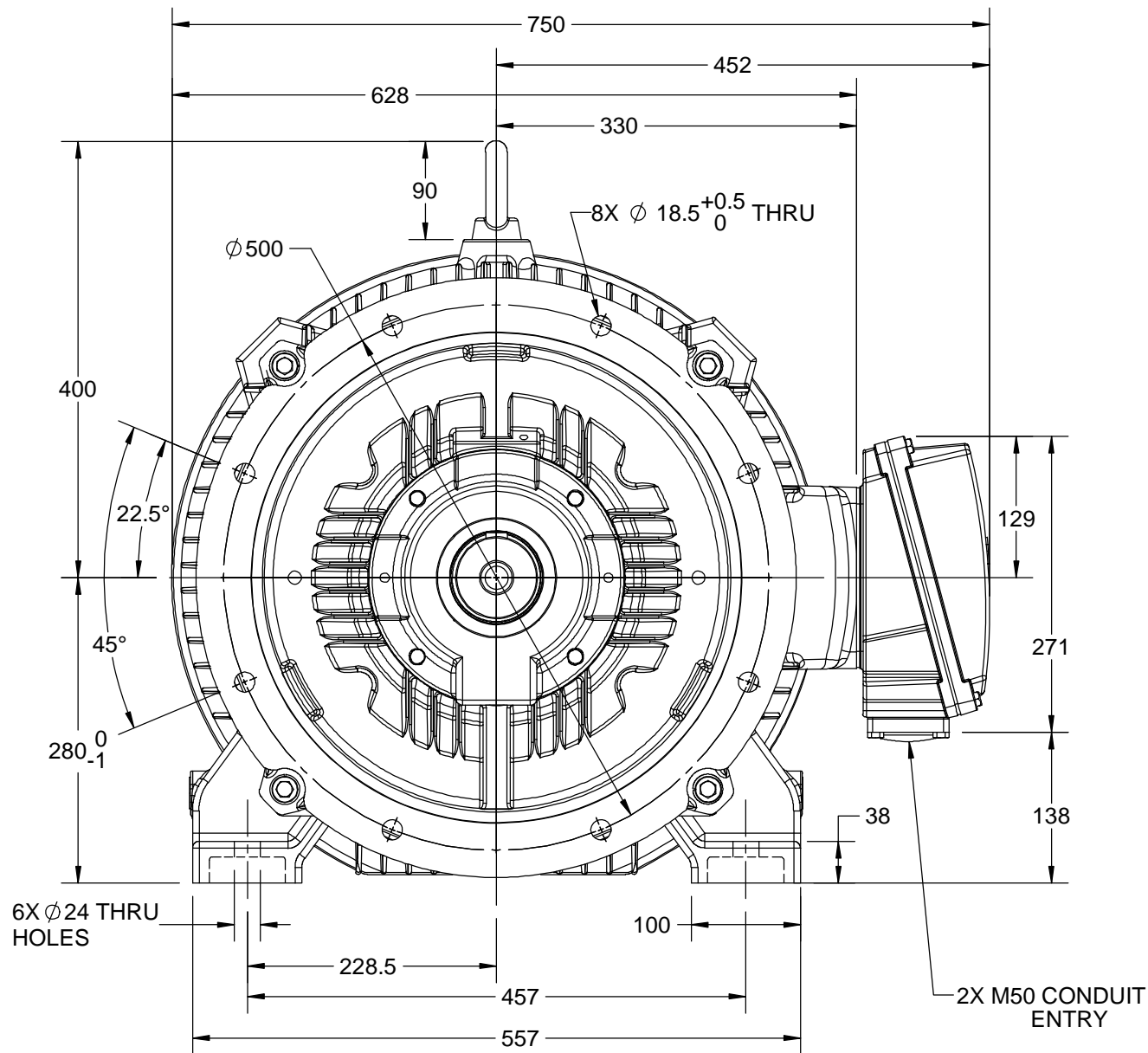
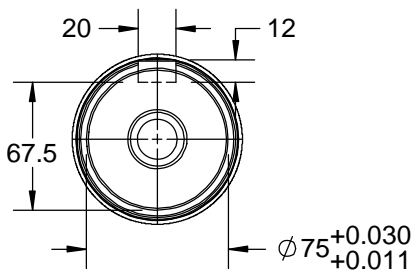
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A

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|  |                    |                    |
|--|--------------------|--------------------|
| DRAWING REVISION<br>C  | REVISION BY<br>VS  | DATE<br>20/07/2018 |
| ECO<br>ECO-0148344   | APPROVED BY<br>SBD | DATE<br>20/07/2018 |
| ECO DESCRIPTION<br>MODEL UPDATED   |                    |                    |
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|                           |   |                              |                 |
|---------------------------|---|------------------------------|-----------------|
| DRAWN BY<br>UDAY          |  |                              |                 |
| DATE<br>17/08/2016        |   |                              |                 |
| APPROVED BY<br>SBD        | DESCRIPTION<br>OUTLINE  |                              |                 |
| DATE<br>17/08/2016        | 280M FR-B35- 4~8P MTG. TYPE: TCA/QCA-RHS TB   |                              |                 |
| REFERENCE                 | MATERIAL  | PROCESS/FINISH               |                 |
| THIRD ANGLE<br>PROJECTION | SIZE<br>B   | DRAWING NUMBER<br>0228000973 | 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.

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|  |                           |  |  |                                     |                        |
|--|---------------------------|--|--|-------------------------------------|------------------------|
|  | 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.** QCA0902A1133GAA001

| 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       | 155.4    | 1490       | 573.48    | IE4         | 5/4FL            | FL | 3/4FL | 1/2FL | FL            | 3/4FL | 1/2FL | 6.6                                    | 2.5                                    | 2.8                                    |
|          |               |           |           |           |          |            |           |             |                  |    |       |       |               |       |       |  |  |  |

|                                  |                             |   |  |
|----------------------------------|-----------------------------|---|--|
| Motor type                       | QCA                         | Degree of protection                      | IP 55                                      |
| Enclosure                        | TEFC                        | Mounting type                             | IM B35                                     |
| Frame Material                   | Cast Iron                   | Cooling method                            | IC 411                                     |
| Frame size                       | 280M                        | Motor weight - approx.                    | 858 kg                                     |
| Duty                             | S1                          | Gross weight - approx.                    | 893 kg                                     |
| Voltage variation *              | ± 10%                       | Motor inertia                             | 2.8284 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) | 68 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                 | 6317 C3 / 6317 C3           | Terminal box position                     | RHS  |
| 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.

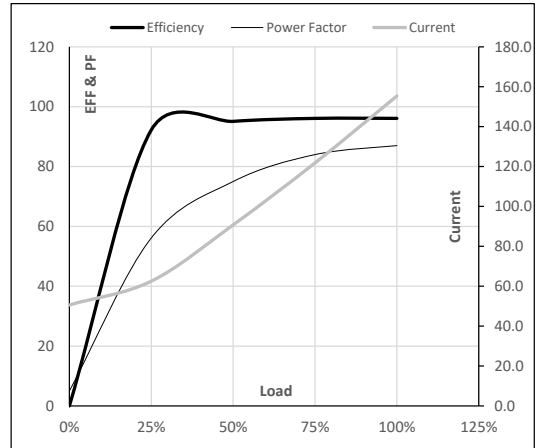
| Efficiency | Europe         | China | India | Aus/Nz            | Brazil | Global IEC     |
|------------|----------------|-------|-------|-------------------|--------|----------------|
| Standards  | IEC 60034-30-1 | -     | -     | AS/NZ 1359:5:2004 | -      | IEC 60034-30-1 |

**Model No.** QCA0902A1133GAA001

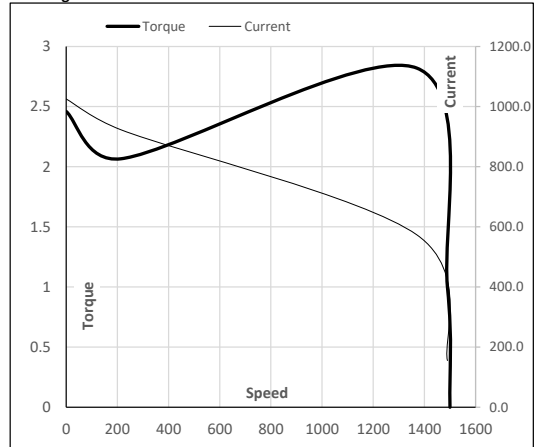
| Enclosure | U<br>(V) | Δ / Y<br>Conn | f<br>[Hz] | P<br>[kW] | P<br>[hp] | I<br>[A] | n<br>[RPM] | T<br>[kgm] | T<br>[Nm] | IE<br>Class | Amb<br>[°C] | Duty | Elevation<br>[m] | Inertia<br>[kg-m <sup>2</sup> ] | Weight<br>[kg] |
|-----------|----------|---------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC      | 400      | Δ             | 50        | 90        | 120       | 155.4    | 1490       | 58.48      | 573.48    | IE4         | 40          | S1   | 1000             | 2.8284                          | 858            |

**Motor Load Data**

| Load Point   |       | NL   | 1/4FL | 1/2FL | 3/4FL | FL    | 5/4FL |
|--------------|-------|------|-------|-------|-------|-------|-------|
| Current      | A     | 50.6 | 62.5  | 90.8  | 121.8 | 155.4 |       |
| Torque       | Nm    | 0.0  | 142.7 | 285.8 | 429.4 | 573.5 |       |
| Speed        | r/min | 1500 | 1498  | 1495  | 1493  | 1490  |       |
| Efficiency   | %     | 0.0  | 92.2  | 95.1  | 96.1  | 96.1  |       |
| Power Factor | %     | 5.0  | 56.1  | 75.0  | 84.0  | 87.0  |       |

**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     | 1025.5 | 922.9 | 573.3 | 155.4 | 50.6 |
| Torque     | pu    | 2.5    | 2.1   | 2.8   | 1     | 0    |

**Starting Characteristics Chart**

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

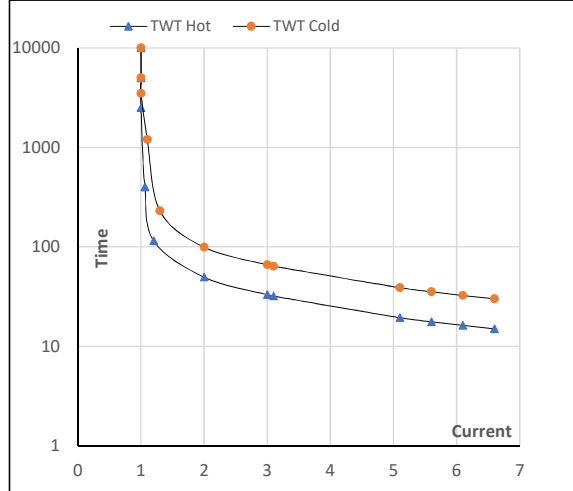
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| Enclosure | U<br>(V) | $\Delta$ / Y<br>Conn | f<br>[Hz] | P<br>[kW] | P<br>[hp] | I<br>[A] | n<br>[rpm] | T<br>[kgm] | T<br>[Nm] | IE<br>Class | Amb<br>[°C] | Duty | Elevation<br>[m] | Inertia<br>[kg-m <sup>2</sup> ] | Weight<br>[kg] |
|-----------|----------|----------------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC      | 400      | $\Delta$             | 50        | 90        | 120       | 155.4    | 1490       | 58.48      | 573.48    | IE4         | 40          | S1   | 1000             | 2.8284                          | 858            |

**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             | 33             | 25             | 20             | 18             | 15  |     |
| TWT Cold | s 10000 | 99             | 66             | 60             | 40             | 36             | 30  |     |
| Current  | pu      | 1              | 2              | 3              | 4              | 5              | 5.5 | 6.6 |

**Thermal Characteristics Chart**

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

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