

# PRODUCT INFORMATION PACKET

**marathon®**  
Motors

Model No: QCA0753AF133GAA001

Catalog No: QCA0753AF133GAA001

TerraMAX® Cast Iron Motor, 100 HP, 3 Ph, 50 Hz, 380 V, 1000 RPM, 315S Frame, TEFC



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**RegalRexnord**

### Nameplate Specifications

|                        |               |                            |                             |
|------------------------|---------------|----------------------------|-----------------------------|
| Output HP              | 100 Hp        | Output KW                  | 75.0 kW                     |
| Frequency              | 50 Hz         | Voltage                    | 380 V                       |
| Current                | 148.5 A       | Speed                      | 991 rpm                     |
| Service Factor         | 1             | Phase                      | 3                           |
| Efficiency             | 95.4 %        | Power Factor               | 0.81                        |
| Duty                   | S1            | Insulation Class           | F                           |
| Frame                  | 315S          | Enclosure                  | Totally Enclosed Fan Cooled |
| Thermal Protection     | No Protection | Ambient Temperature        | 40 °C                       |
| Drive End Bearing Size | 6319          | Opp Drive End Bearing Size | 6319                        |
| 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                 | 6             | 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        | 1206 mm       | Frame Length          | 729 mm         |
| Shaft Diameter        | 80 mm         | Shaft Extension       | 170 mm         |
| Assembly/Box Mounting | R Side        |                       |                |
| Connection Drawing    | 8442000085    | Outline Drawing       | 0231501398     |

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3 of 7

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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> | <b>DESCRIPTION</b><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.** QCA0753AF133GAA001

| U   | Δ / Y | f    | P    | P    | I     | n     | T      | IE    | % EFF at __ load |      |       |       | PF at __ load |       |       | I <sub>A</sub> /I <sub>N</sub> | T <sub>A</sub> /T <sub>N</sub> | T <sub>K</sub> /T <sub>N</sub> |
|-----|-------|------|------|------|-------|-------|--------|-------|------------------|------|-------|-------|---------------|-------|-------|--------------------------------|--------------------------------|--------------------------------|
| (V) | Conn  | [Hz] | [kW] | [hp] | [A]   | [RPM] | [Nm]   | Class | 5/4FL            | FL   | 3/4FL | 1/2FL | FL            | 3/4FL | 1/2FL | [pu]                           | [pu]                           | [pu]                           |
| 380 | Δ     | 50   | 75   | 100  | 147.5 | 991   | 718.58 | IE4   | -                | 95.4 | 95.4  | 94.5  | 0.81          | 0.76  | 0.65  | 5.9                            | 1.9                            | 2.5                            |
|     |       |      |      |      |       |       |        |       |                  |      |       |       |               |       |       |                                |                                |                                |

|                                  |                             |   |   |
|----------------------------------|-----------------------------|---|---|
| Motor type                       | QCA                         | Degree of protection                      | IP 55                                       |
| Enclosure                        | TEFC                        | Mounting type                             | IM B35                                      |
| Frame Material                   | Cast Iron                   | Cooling method                            | IC 411                                      |
| Frame size                       | 315S                        | Motor weight - approx.                    | 913 kg                                      |
| Duty                             | S1                          | Gross weight - approx.                    | 958 kg                                      |
| Voltage variation *              | ± 10%                       | Motor inertia                             | 3.9975 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) | 66 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                 | 6319 C3 / 6319 C3           | Terminal box position                     | RHS   |
| 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.

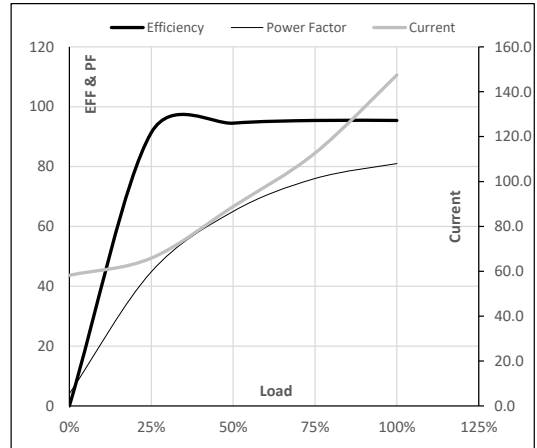
| Efficiency | Europe | China                 | India | Aus/Nz | Brazil | Global IEC    |
|------------|--------|-----------------------|-------|--------|--------|---------------|
| Standards  | -      | GB 18613-2012 Grade 2 | -     | -      | -      | IEC: 60034-30 |

**Model No.** QCA0753AF133GAA001

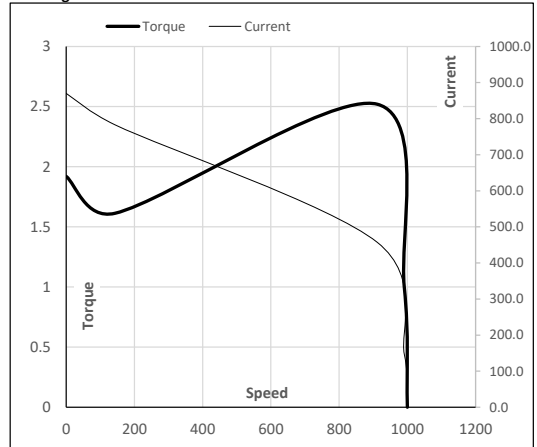
| Enclosure | U<br>(V) | Δ / Y<br>Conn | f<br>[Hz] | P<br>[kW] | P<br>[hp] | I<br>[A] | n<br>[RPM] | T<br>[kgm] | T<br>[Nm] | IE<br>Class | Amb<br>[°C] | Duty | Elevation<br>[m] | Inertia<br>[kg-m <sup>2</sup> ] | Weight<br>[kg] |
|-----------|----------|---------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC      | 380      | Δ             | 50        | 75        | 100       | 147.5    | 991        | 73.28      | 718.58    | IE4         | 40          | S1   | 1000             | 3.9975                          | 913            |

**Motor Load Data**

| Load Point   |       | NL   | 1/4FL | 1/2FL | 3/4FL | FL    | 5/4FL |
|--------------|-------|------|-------|-------|-------|-------|-------|
| Current      | A     | 58.2 | 65.9  | 88.8  | 112.7 | 147.5 |       |
| Torque       | Nm    | 0.0  | 178.5 | 357.7 | 537.7 | 718.6 |       |
| Speed        | r/min | 1000 | 998   | 996   | 994   | 991   |       |
| Efficiency   | %     | 0.0  | 91.3  | 94.5  | 95.4  | 95.4  |       |
| Power Factor | %     | 4.1  | 44.8  | 65.0  | 76.0  | 81.0  |       |

**Performance vs Load Chart**

**Motor Speed Torque Data**

| Load Point |       | LR    | P-Up  | BD    | Rated | NL   |
|------------|-------|-------|-------|-------|-------|------|
| Speed      | r/min | 0     | 143   | 912   | 991   | 1000 |
| Current    | A     | 870.0 | 783.0 | 457.2 | 147.5 | 58.2 |
| Torque     | pu    | 1.9   | 1.6   | 2.5   | 1     | 0    |

**Starting Characteristics Chart**

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

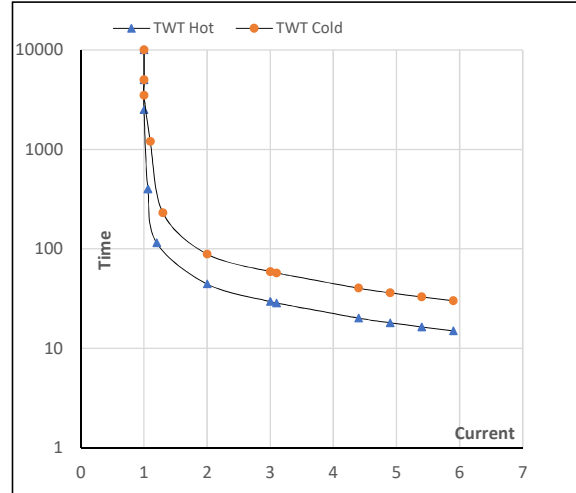
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| Enclosure | U<br>(V) | $\Delta$ / Y<br>Conn | f<br>[Hz] | P<br>[kW] | P<br>[hp] | I<br>[A] | n<br>[rpm] | T<br>[kgm] | T<br>[Nm] | IE<br>Class | Amb<br>[°C] | Duty | Elevation<br>[m] | Inertia<br>[kg-m <sup>2</sup> ] | Weight<br>[kg] |
|-----------|----------|----------------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC      | 380      | $\Delta$             | 50        | 75        | 100       | 147.5    | 991        | 73.28      | 718.58    | IE4         | 40          | S1   | 1000             | 3.9975                          | 913            |

**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 | 44             | 30             | 25             | 18             | 16             | 15  |
| TWT Cold | s 10000 | 89             | 59             | 45             | 35             | 32             | 30  |
| Current  | pu      | 1              | 2              | 4              | 5              | 5.5            | 5.9 |

**Thermal Characteristics Chart**

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

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