

PRODUCT INFORMATION PACKET

Model No: TCA0153AP211GAA009

Catalog No: R438

Cast Iron Motor, 20 HP, 3 Ph, 60 Hz, 575 V, 1200 RPM, 180L Frame, TEFC



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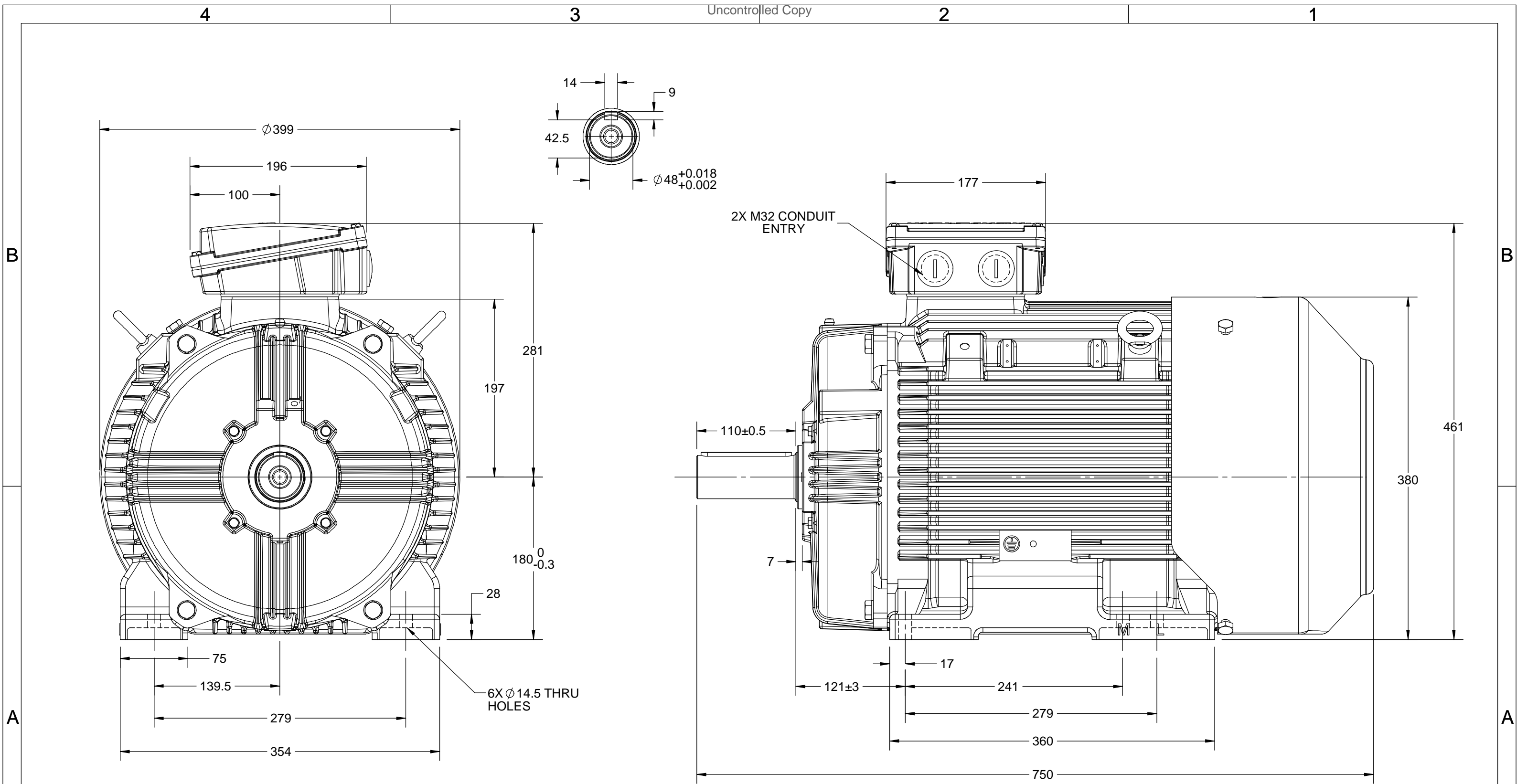
Nameplate Specifications

| | | | |
|------------------------|----------------------|----------------------------|------------------------------------|
| Output HP | 20 Hp | Output KW | 15.0 kW |
| Frequency | 60 Hz | Voltage | 575 V |
| Current | 21.4 A | Speed | 1180 rpm |
| Service Factor | 1.15 | Phase | 3 |
| Efficiency | 91.7 % | Power Factor | 77 |
| Duty | Continuous | Insulation Class | F |
| Design Code | N (IEC) | KVA Code | F |
| Frame | 180L | Enclosure | Totally Enclosed Fan Cooled |
| Thermal Protection | No Protection | Ambient Temperature | 40 °C |
| Drive End Bearing Size | 6309 | Opp Drive End Bearing Size | 6209 |
| UL | Recognized | CSA | N |
| CE | Y | IP Code | 55 |
| Number of Speeds | 1 | Efficiency Class | IE3 |

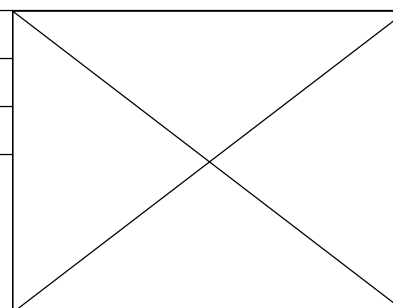
Technical Specifications

| | | | |
|-----------------------|-------------------------------------|-----------------------|-------------------------|
| Electrical Type | Squirrel Cage Inverter Rated | Starting Method | Line Or Inverter |
| Poles | 6 | Rotation | Reversible |
| Resistance Main | .56 Ohms | Mounting | B3 |
| Motor Orientation | Horizontal | Drive End Bearing | Ball |
| Opp Drive End Bearing | Ball | Frame Material | Cast Iron |
| Shaft Type | IEC | Overall Length | 29.53 in |
| Frame Length | 14.41 in | Shaft Diameter | 1.890 in |
| Shaft Extension | 4.33 in | Assembly/Box Mounting | F3 |
| Inverter Load | CONSTANT 2:1/VARIABLE 10:1 | | |
| Connection Drawing | 8442000685 | Outline Drawing | SS312998 |

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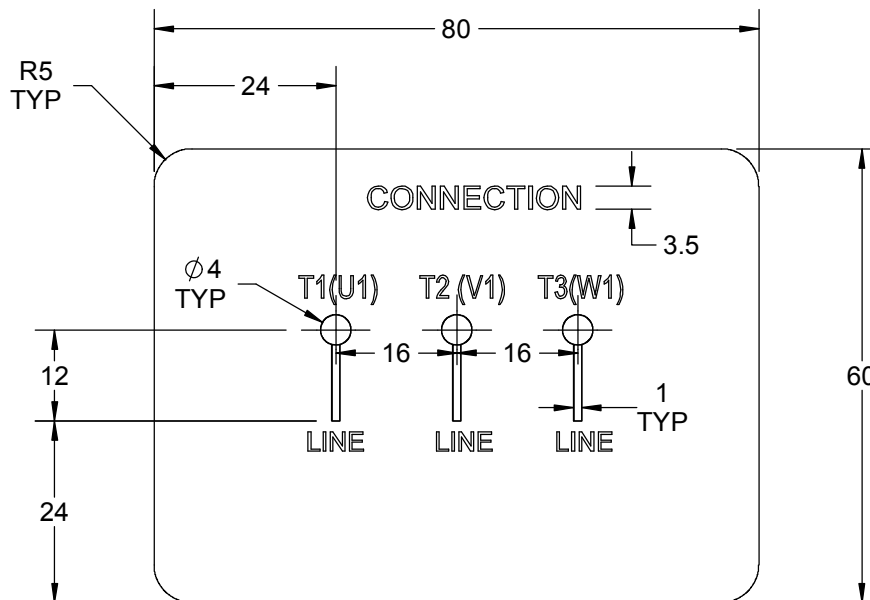


| | | |
|---|--------------------|--------------------|
| DRAWING REVISION A | REVISION BY LK | DATE 05/12/2018 |
| ECO ECO-0157830 | APPROVED BY JAY | DATE 05/12/2018 |
| ECO DESCRIPTION NEW DRAWING RELEASE COPYRIGHT REGAL BELOIT AMERICA, INC. ALL RIGHTS RESERVED. PROPRIETARY AND CONFIDENTIAL INFORMATION - THIS DOCUMENT IS THE PROPERTY OF REGAL BELOIT AMERICA, INC. ("OWNER") AND CONTAINS OWNER'S PROPRIETARY INFORMATION. ANY PERSON, CORPORATION OR OTHER FIRM RECEIVING IT IS DEEMED, BY RECEIVING IT, TO AGREE THAT IT, AND/OR ANY PART OF IT, SHALL NOT BE DISCLOSED TO ANY PERSON, CORPORATION OR OTHER ENTITY, DUPLICATED, AND/OR USED, EXCEPT AS EXPRESSLY APPROVED IN WRITING IN ADVANCE BY OWNER. THIS DOCUMENT SHALL BE RETURNED TO OWNER UPON REQUEST. IT MAY BE SUBJECT TO CERTAIN RESTRICTIONS UNDER APPLICABLE EXPORT CONTROL LAWS AND REGULATIONS. | | |



| | | |
|------------------------|---|-----------------------------------|
| DRAWN BY LK | marathon™ Motors | |
| DATE 05/12/2018 | | |
| APPROVED BY JAY | DESCRIPTION OUTLINE IEC-180L-B3 MOTOR TYPE: TEFC-CAST IRON | |
| DATE 05/12/2018 | MATERIAL | PROCESS/FINISH |
| REFERENCE | SIZE B | DRAWING NUMBER SS312998 |
| THIRD ANGLE PROJECTION | SHEET 1 OF 1 | |

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



NOTES:

1. PRESSURE-SENSITIVE ADHESIVE TAPE COATED WITH ANTI-ADHESIVE.
2. YELLOW COLOR BACK GROUND LETTERS WILL BE BLACK.
3. THE TOLERANCE OF THE LINEAR SIZE OF THE TOLERANCE WITHOUT THE TOLERANCE BY THE TABLE.
4. LEAD TERMINAL MARKINGS FONT SIZE : T1-T2 - T3 & U1-V1-W1 OF ARIAL WITH 3mm SIZE
5. OTHER LETTER FONT SIZE SHOULD BE 3.5mm.

| | | | | | | |
|--|--------------------------|--------------------|------------------------|-----------------------|--|-----------------|
| DRAWING REVISION A | REVISION BY A. KEETHA | DATE 25/07/2019 | | DRAWN BY A. KEETHA | Regal Beloit America, Inc. | |
| ECO ECO-0171114 | APPROVED BY SN | DATE 25/07/2019 | | DATE 24/07/2019 | | |
| ECO DESCRIPTION NEW DRAWING RELEASE | | | | APPROVED BY SN | DESCRIPTION CONNECTION DIAGRAM 3 LEAD CONNECTION | |
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| | | | REFERENCE | MATERIAL | PROCESS/FINISH | |
| | | | THIRD ANGLE PROJECTION | SIZE A | DRAWING NUMBER 8442000685 | SHEET 1 OF 1 |



DATA VOLTS: 575

CERTIFICATION DATA SHEET

CONN. DIAGRAM: 8442000677
 OUTLINE: SS312998
 WINDING: IE3L1806201 NONE 3

REFERENCE MODEL #: TCA0153AP211GAA009
 CAT #: R438

MOUNTING: F3

TYPICAL MOTOR PERFORMANCE DATA

| HP | KW | SYNC RPM | FL RPM | FRAME | ENCLOSURE | TYPE | KVA CODE | DESIGN |
|----|------|----------|--------|-------|-----------|------|----------|--------|
| 20 | 15.0 | 1200 | 1180 | 180L | TEFC | TFN | F | N |

| PH | HZ | VOLTS | AMPS | START TYPE | DUTY | INSL | S.F. | AMB (° C) | ELEV. (Ft) |
|----|----|-------|------|------------------|------|------|------|-----------|------------|
| 3 | 60 | 575 | 21.4 | LINE OR INVERTER | CONT | F | 1.15 | 40 | 3300 |

| F.L. EFF | 91.7 | 3/4 LD EFF | 91.7 | 1/2 LD EFF | 91.9 | GTD EFF | ELECT. TYPE |
|----------|------|------------|------|------------|------|---------|-------------------|
| F.L. PF | 77.0 | 3/4 LD PF | 70.0 | 1/2 LD PF | 59.0 | 90.5 | SQ CAGE INV RATED |

| F.L. TORQUE | LR AMPS | L.R. TORQUE | B.D. TORQUE | F.L. RISE (° C) |
|-------------|---------|----------------|----------------|-----------------|
| 89.0 LB-FT | 111 | 152 LB-FT 171% | 207 LB-FT 233% | 80 |

| SOUND PRESSURE | SOUND | ROTOR WK² | MAX. LOAD WK² | SAFE STALL TIME | STARTS/HOUR | APROX. MOTOR |
|----------------|--------|------------|---------------|-----------------|-------------|--------------|
| 56 dBA | 65 dBA | 6.2 LB-FT² | 6.2 LB-FT² | 15 SEC. | 2 | 216 KG. |

***** SUPPLEMENTAL INFORMATION *****

| DE BRACKET TYPE | ODE BRACKET TYPE | MOUNT TYPE | MOTOR ORIENTATION | SEVERE DUTY | HAZARDOUS LOCATION | DRIP COVER | SCREENS | PAINT |
|-----------------|------------------|------------|-------------------|-------------|--------------------|------------|---------|---------------|
| STANDARD | STANDARD | B3 | HORIZONTAL | NO | NONE | NO | NONE | BLUE (ENAMEL) |

| BEARINGS | | GREASE | SHAFT TYPE | SPECIAL DE | SPECIAL ODE | SHAFT MATERIAL | FRAME MATERIAL |
|----------|------|------------|--------------|------------|-------------|-------------------------|----------------|
| DE | ODE | POLYREX EM | STANDARD IEC | NONE | NONE | 1045 HOT ROLLED (C-204) | CAST IRON |
| BALL | BALL | | | | | | |
| 6309 | 6209 | | | | | | |

| THERMOSTATS | PROTECTORS | WDG RTD's | BRG RTD's | THERMISTORS | CONTROL | SPACE HEATERS |
|-------------|------------|-----------|-----------|-------------|---------|---------------|
| NONE | NOT | NONE | NONE | NONE | FALSE | NA |

| R1 (ohms/ph) | R2 (ohms/ph) | X1 (ohms/ph) | X2 (ohms/ph) | Xm (ohms/ph) | VIBRATION (in/sec) |
|--------------|--------------|--------------|--------------|--------------|--------------------|
| 0.865625 | 0.45 | 2.4234375 | 3.6015625 | 49.8234375 | 0.150 |

| | | | | | | |
|---------------------------------|--|--|--|--|--|--|
| * N O T E S * | If Inverter equals NONE, contact factory for further information | | | | | |
| | INVERTER TORQUE: CONSTANT 2:1/VARIABLE 10:1 | | | | | |
| | INV. HP SPEED RANGE: NONE | | | | | |
| | ENCODER: NONE | | | | | |
| | NONE NONE NONE PPR | | | | | |

| | | | | | |
|-----------------|-------------------|--|--|--|--|
| PREPARED BY: | BRAKE: NONE | | | | |
| DATE: 9/22/2021 | NONE NONE | | | | |
| | FT-LB: NA | | | | |
| | VOLTAGE: NONE HZ: | | | | |

FORM: 3531 REV_4 2/27/06
 ** Subject to change without notice.

Data Sheet

Date: 7/19/2019
Customer: _____
Attention: _____
Submitted by: SHERYL KUEHMICHEL

TCA0153AP211GAA009

Submittal

Data @ 575 V

Motor Load Data

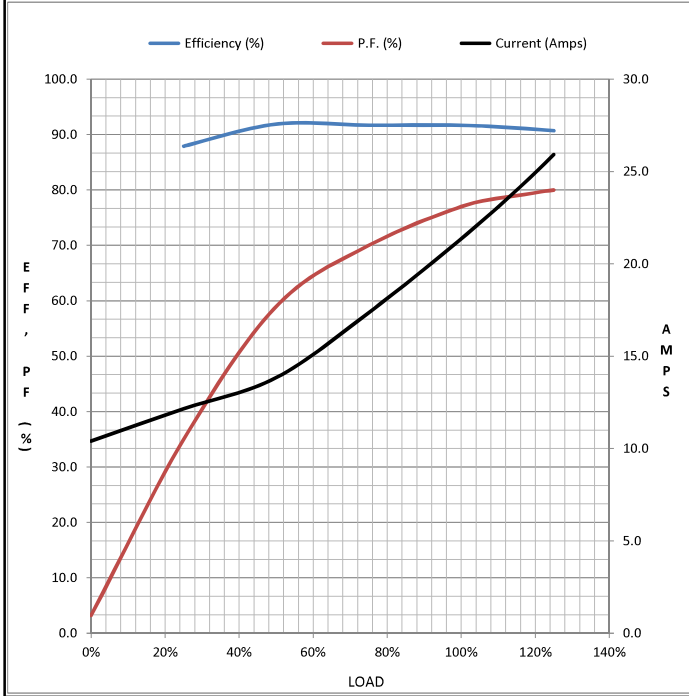
| Load | 0% | 25% | 50% | 75% | 100% | 115% | 125% | LR | |
|----------------|------|------|------|------|------|-------|------|------|--|
| Current (Amps) | 10.4 | 12.2 | 13.8 | 17.4 | 21.4 | 24.0 | 25.9 | 111 | |
| Torque(ft-lb) | 0.00 | 22.0 | 44.1 | 66.5 | 89.0 | 102 | 112 | 152 | |
| RPM | 1200 | 1195 | 1191 | 1186 | 1180 | 1,177 | 1174 | 0 | |
| Efficiency (%) | | 87.9 | 91.9 | 91.7 | 91.7 | 91.2 | 90.7 | | |
| P.F. (%) | 3.2 | 35.0 | 59.0 | 70.0 | 77.0 | 79.0 | 80.0 | 63.4 | |

Motor Speed Data

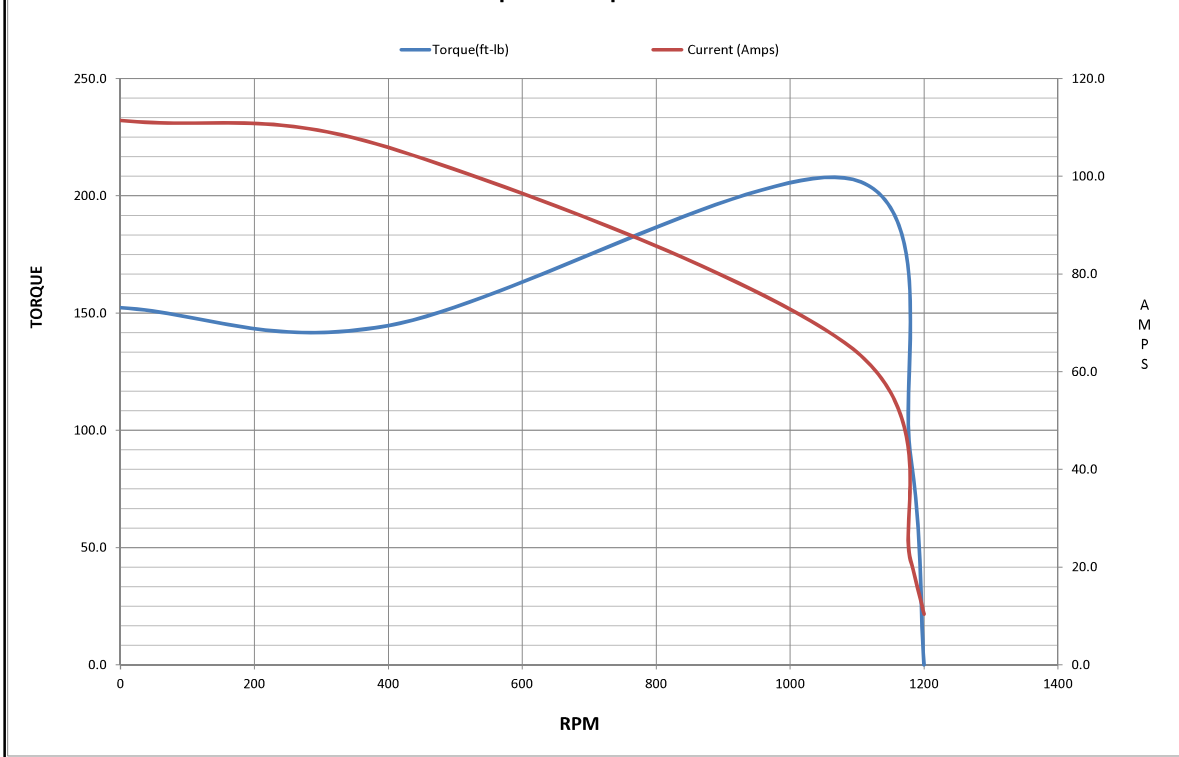
| | LR | Pull-Up | BD | Rated | Idle |
|----------------|-----|---------|------|-------|------|
| Speed (RPM) | 0 | 400 | 1094 | 1180 | 1200 |
| Current (Amps) | 111 | 106 | 64.6 | 21.4 | 10.4 |
| Torque(ft-lb) | 152 | 145 | 207 | 89.0 | 0.00 |

Information Block

| | | | | |
|--|------------------------|--------|--------|---------|
| HP | 20.0 | | | |
| Sync. RPM | 1200 | | | |
| Frame | 180L | | | |
| Enclosure | TEFC | | | |
| Construction | TFN | | | |
| Voltage | 575 V | | | |
| Frequency | 60 Hz | | | |
| Design | N | | | |
| LR Code letter | F | | | |
| Service Factor | 1.15 | | | |
| Temp Rise @ FL | 80 °C | | | |
| Duty | CONT | | | |
| Ambient | 40 °C | | | |
| Elevation | 3,300 feet | | | |
| Rotor/Shaft wk ² | 6.2 Lb-Ft ² | | | |
| Ref Wdg | IE3L1806201 | | | |
| Sound Pressure @ 1M | 66 dBA | | | |
| VFD Rating | NA | | | |
| Outline Dwg | SS312998 | | | |
| Conn. Diag | 8442000677 | | | |
| Additional Specifications: | | | | |
| RATED FOR CONSTANT 2:1/VARIABLE 10:1 ON VFD POWER(1.0SF) | | | | |
| EQUIV CKT (OHMS / PHASE) | | | | |
| R1 | R2 | X1 | X2 | Xm |
| 0.5540 | 0.2881 | 1.5512 | 2.3046 | 31.8873 |



Speed - Torque Curve



EC Declaration of Conformity

The undersigned representing
the manufacturer:

Regal Beloit America
100 East Randolph St.
Wausau, WI 54401

and the authorized representative
established within the Community:

Marathon Electric UK
6F Thistleton Road Ind. Estate
Market Overton
Oakham, Rutland LE15 7PP UK

are committed to providing customers with products that comply with applicable regulations and international protocols to which they are subject, including the requirements of the European Parliament Directive on the Harmonization of the laws relating to electrical equipment designed for use within certain voltage limits (2014/35/EU).

Regal Beloit America declares that the following product(s), to which this declaration relates, are in conformity with the relevant sections of the EC standards listed below.

This statement supersedes any statements previously issued pertaining to the product(s) listed below and is subject to change without notice.

Model No : TCA0153AP211GAA009

(Model No. may contain prefix and/or suffix characters)

Catalog No : R438

Rework No : N/A

Directives :

Low Voltage Directive 2014/35/EU

Harmonized Standards Used :

EN 60034-1: 2010 (IEC 60034-1: 2010)

EN 60034-5: 2001/A1:2007 (IEC 60034-5: 2000/A1:2006)

Authorized Representative:



Michael A. Logsdon
Vice President, Technology

Authorized Representative in the Community:



Julian Clark
Marketing Engineer

Created on 09/01/2022

CE 22