

PRODUCT INFORMATION PACKET

marathon®
Motors

Model No: SCA9P33A3121GAAD01

Catalog No: SCA9P33A3121GAAD01

TerraMAX® Cast Iron Motor, 12.50 HP, 3 Ph, 50 Hz, 415 V, 1000 RPM, 160M Frame, TEFC



Regal and Marathon are trademarks of Regal Rexnord Corporation or one of its affiliated companies.
©2022 Regal Rexnord Corporation, All Rights Reserved. MC017097E

RegalRexnord

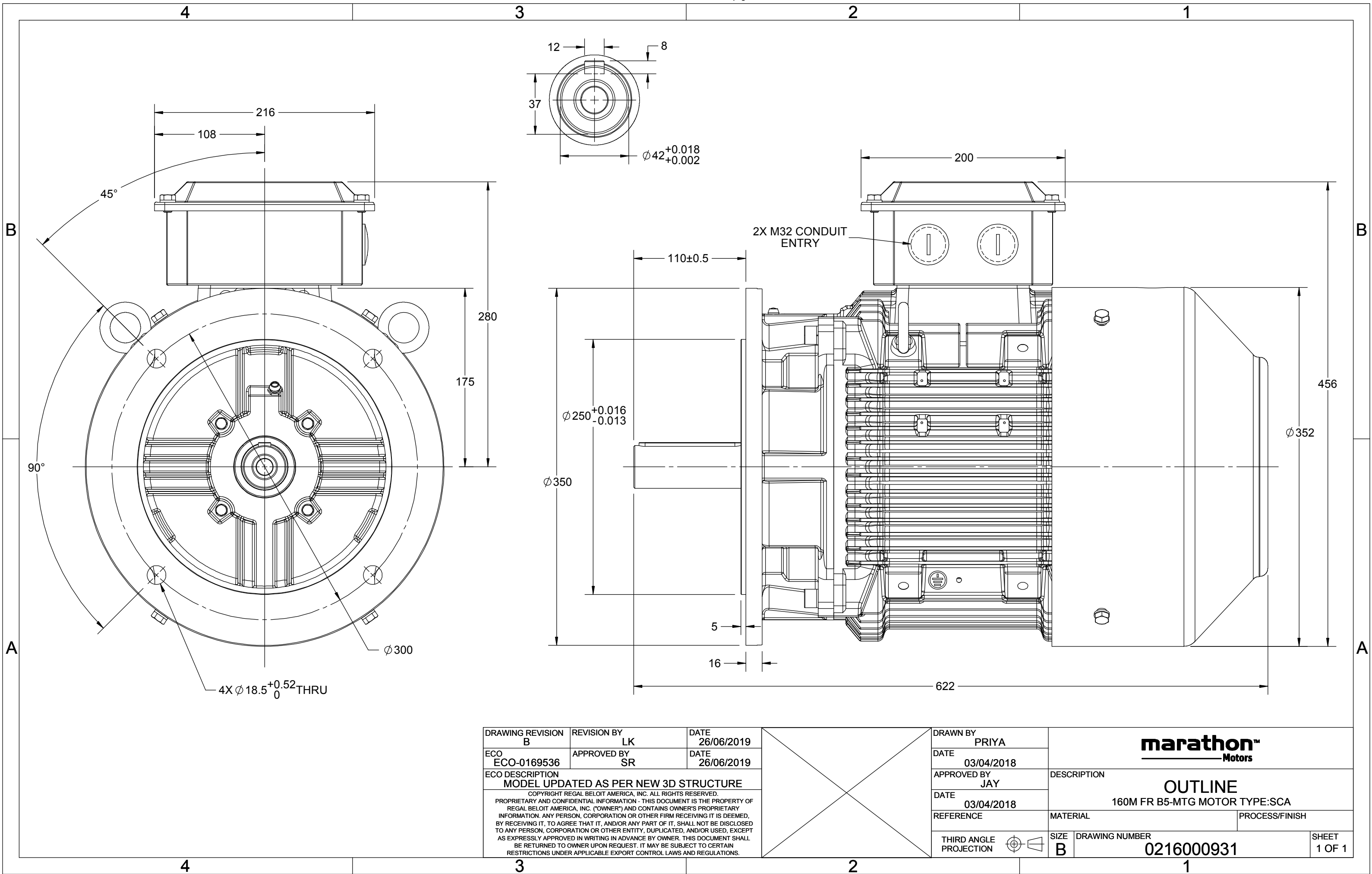
Nameplate Specifications

| | | | |
|------------------------|---------------|----------------------------|-----------------------------|
| Output HP | 12.50 Hp | Output KW | 9.3 kW |
| Frequency | 50 Hz | Voltage | 415 V |
| Current | 20.7 A | Speed | 974 rpm |
| Service Factor | 1 | Phase | 3 |
| Efficiency | 88.1 % | Power Factor | 0.71 |
| Duty | S1 | Insulation Class | F |
| Frame | 160M | Enclosure | Totally Enclosed Fan Cooled |
| Thermal Protection | No Protection | Ambient Temperature | 50 °C |
| Drive End Bearing Size | 6309 | Opp Drive End Bearing Size | 6209 |
| UL | No | CSA | No |
| CE | Yes | IP Code | 55 |
| Number of Speeds | 1 | Efficiency Class | IE2 |

Technical Specifications

| | | | |
|-----------------------|---------------|-----------------------|----------------|
| Electrical Type | Squirrel Cage | Starting Method | Direct On Line |
| Poles | 6 | Rotation | Bi-Directional |
| Mounting | B5 | Motor Orientation | Horizontal |
| Drive End Bearing | 2z-C3 | Opp Drive End Bearing | 2z-C3 |
| Frame Material | Cast Iron | Shaft Type | Keyed |
| Overall Length | 622 mm | Frame Length | 254 mm |
| Shaft Diameter | 42 mm | Shaft Extension | 110 mm |
| Assembly/Box Mounting | TOP | | |
| Outline Drawing | 0216000931 | Connection Drawing | 8442000085 |

This is an uncontrolled document once printed or downloaded and is subject to change without notice. Date Created:12/02/2022



| | | |
|--|-------------------|--------------------|
| DRAWING REVISION B | REVISION BY LK | DATE 26/06/2019 |
| ECO ECO-0169536 | APPROVED BY SR | DATE 26/06/2019 |
| ECO DESCRIPTION MODEL UPDATED AS PER NEW 3D STRUCTURE | | |
| 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 PRIYA | marathon™ Motors | | |
| DATE 03/04/2018 | | | |
| APPROVED BY JAY | DESCRIPTION OUTLINE 160M FR B5-MTG MOTOR TYPE:SCA | | |
| DATE 03/04/2018 | | | |
| REFERENCE | MATERIAL | PROCESS/FINISH | |
| THIRD ANGLE PROJECTION | SIZE B | DRAWING NUMBER 0216000931 | SHEET 1 OF 1 |

COPYRIGHT REGAL BELOIT AMERICA, INC. ALL RIGHTS RESERVED. UNCONTROLLED COPY
 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.

| | | |
|---|---------------------------|---------------------------|
| DRAWING REVISION A | REVISION BY SN | DATE 13/01/2017 |
| ECO ECO-0116390 | APPROVED BY SBD | DATE 13/01/2017 |
| ECO DESCRIPTION NEW DRAWING RELEASE | | |

| 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 SN | | Regal Beloit America, Inc. | | |
| | DATE 16/12/2016 | | | | |
| | APPROVED BY SBD | | DESCRIPTION CONN DIAGRAM-NAMEPLATE | | |
| | DATE 16/12/2016 | | | | |
| | REFERENCE | | MATERIAL | | PROCESS/FINISH |
| | THIRD ANGLE PROJECTION | | SIZE A | DRAWING NUMBER 8442000085 | SHEET 1 OF 1 |

Model No. SCA9P33A3121GAAD01

| U (V) | Δ / Y Conn | f [Hz] | P [kW] | P [hp] | I [A] | n [RPM] | T [Nm] | IE Class | % EFF at __ load | | | | PF at __ load | | | I _A /I _N [pu] | T _A /T _N [pu] | T _K /T _N [pu] |
|----------|---------------|-----------|-----------|-----------|----------|------------|-----------|-------------|------------------|------|------|------|---------------|------|------|--|--|--|
| 415 | Δ | 50 | 9.3 | 12.5 | 19.3 | 974 | 91.50 | IE2 | - | 88.1 | 88.1 | 85.9 | 0.76 | 0.62 | 0.47 | 6.0 | 2.4 | 3.2 |
| | | | | | | | | | | | | | | | | | | |

| | | | |
|----------------------------------|--------------------|---|--|
| Motor type | SCA | Degree of protection | IP 55 |
| Enclosure | TEFC | Mounting type | IM B5 |
| Frame Material | Cast Iron | Cooling method | IC 411 |
| Frame size | 160L | Motor weight - approx. | 152 kg |
| Duty | S1 | Gross weight - approx. | 172 kg |
| Voltage variation * | ± 10% | Motor inertia | 0.0848 kgm ² |
| 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) | 65 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 +50 °C | Type of coupling | Direct |
| Temperature rise (by resistance) | 70 [Class B] K | LR withstand time (hot/cold) | 12/25 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 | |
| Rotor type | Aluminum Die cast | Accessory - 2 | - |
| Bearing type | Anti-friction ball | Accessory - 3 | - |
| DE / NDE bearing | 6309-2Z / 6209-2Z | Terminal box position | TOP |
| Lubrication method | Greased for life | Maximum cable size/conduit size | 1R x 3C x 35mm ² /2 X M32 x 1.5 |
| Type of grease | NA | Auxiliary terminal box | NA |

I_A/I_N - Locked Rotor Current / Rated Current

T_K/T_N - Breakdown Torque / Rated Torque

T_A/T_N - 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 | - | - | - |

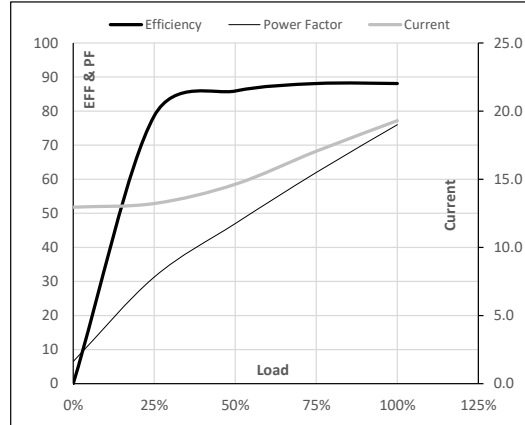
Model No. SCA9P33A3121GAAD01

| Enclosure | U (V) | Δ / Y Conn | f [Hz] | P [kW] | P [hp] | I [A] | n [RPM] | T [kgm] | T [Nm] | IE Class | Amb [°C] | Duty | Elevation [m] | Inertia [kg-m ²] | Weight [kg] |
|-----------|----------|---------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC | 415 | Δ | 50 | 9.3 | 12.5 | 19.3 | 974 | 9.33 | 91.50 | IE2 | 50 | S1 | 1000 | 0.0848 | 152 |

Motor Load Data

| Load Point | | NL | 1/4FL | 1/2FL | 3/4FL | FL | 5/4FL |
|--------------|-------|------|-------|-------|-------|------|-------|
| Current | A | 13.0 | 13.2 | 14.6 | 17.1 | 19.3 | |
| Torque | Nm | 0.0 | 22.4 | 45.1 | 68.1 | 91.5 | |
| Speed | r/min | 1000 | 994 | 988 | 981 | 974 | |
| Efficiency | % | 0.0 | 78.6 | 85.9 | 88.1 | 88.1 | |
| Power Factor | % | 6.5 | 31.3 | 47.0 | 62.0 | 76.0 | |

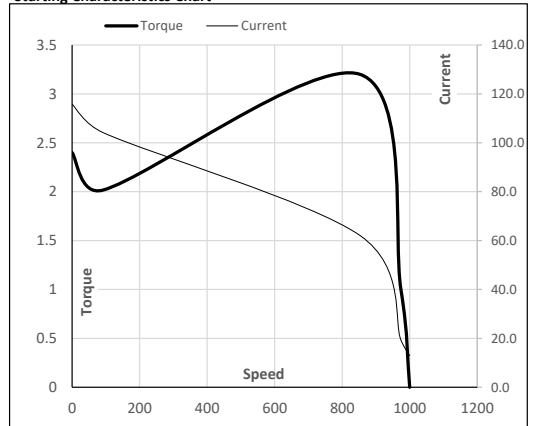
Performance vs Load Chart



Motor Speed Torque Data

| Load Point | | LR | P-Up | BD | Rated | NL |
|------------|-------|-------|-------|------|-------|------|
| Speed | r/min | 0 | 91 | 853 | 974 | 1000 |
| Current | A | 115.8 | 104.2 | 62.1 | 19.3 | 13.0 |
| Torque | pu | 2.4 | 2.0 | 3.2 | 1 | 0 |

Starting Characteristics Chart



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

Issued By

Issued Date

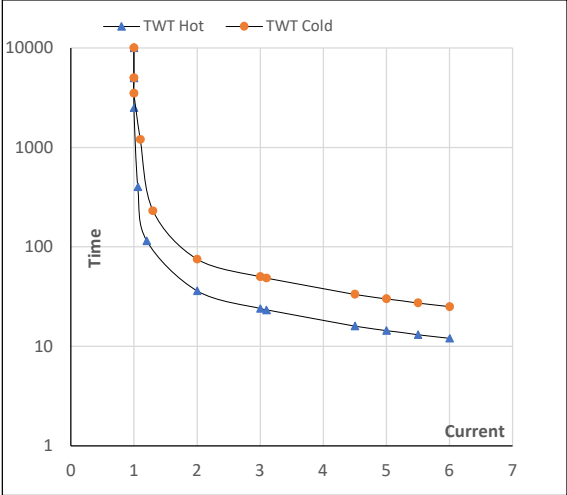
Model No. SCA9P33A3121GAAD01

| Enclosure | U (V) | Δ / Y Conn | f [Hz] | P [kW] | P [hp] | I [A] | n [rpm] | T [kgm] | T [Nm] | IE Class | Amb [°C] | Duty | Elevation [m] | Inertia [kg·m ²] | Weight [kg] |
|-----------|----------|---------------|-----------|-----------|-----------|----------|------------|------------|-----------|-------------|-------------|------|------------------|---------------------------------|----------------|
| TEFC | 415 | Δ | 50 | 9.3 | 12.5 | 19.3 | 974 | 9.33 | 91.50 | IE2 | 50 | S1 | 1000 | 0.0848 | 152 |

Motor Speed Torque Data

| Load | | FL | I ₁ | I ₂ | I ₃ | I ₄ | I ₅ | LR |
|----------|----|-------|----------------|----------------|----------------|----------------|----------------|----|
| TWT Hot | s | 10000 | 36 | 24 | 20 | 14 | 13 | 12 |
| TWT Cold | s | 10000 | 75 | 50 | 40 | 30 | 27 | 25 |
| Current | pu | 1 | 2 | 3 | 4 | 5 | 5.5 | 6 |

Thermal Characteristics Chart



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

Issued By
Issued Date



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 : SCA9P33A3121GAAD01

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

Catalog No : SCA9P33A3121GAAD01

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