

# PRODUCT INFORMATION PACKET

**marathon®**  
Motors

Model No: TCA0031AE231GAA009

Catalog No: R851

TerraMAX® Cast Iron Motor, 4 & 3 HP, 3 Ph, 60 & 50 Hz, 230/460 & 200/400 V, 3600 & 3000 RPM,  
100L Frame, TEFC



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**RegalRexnord**

### Nameplate Specifications

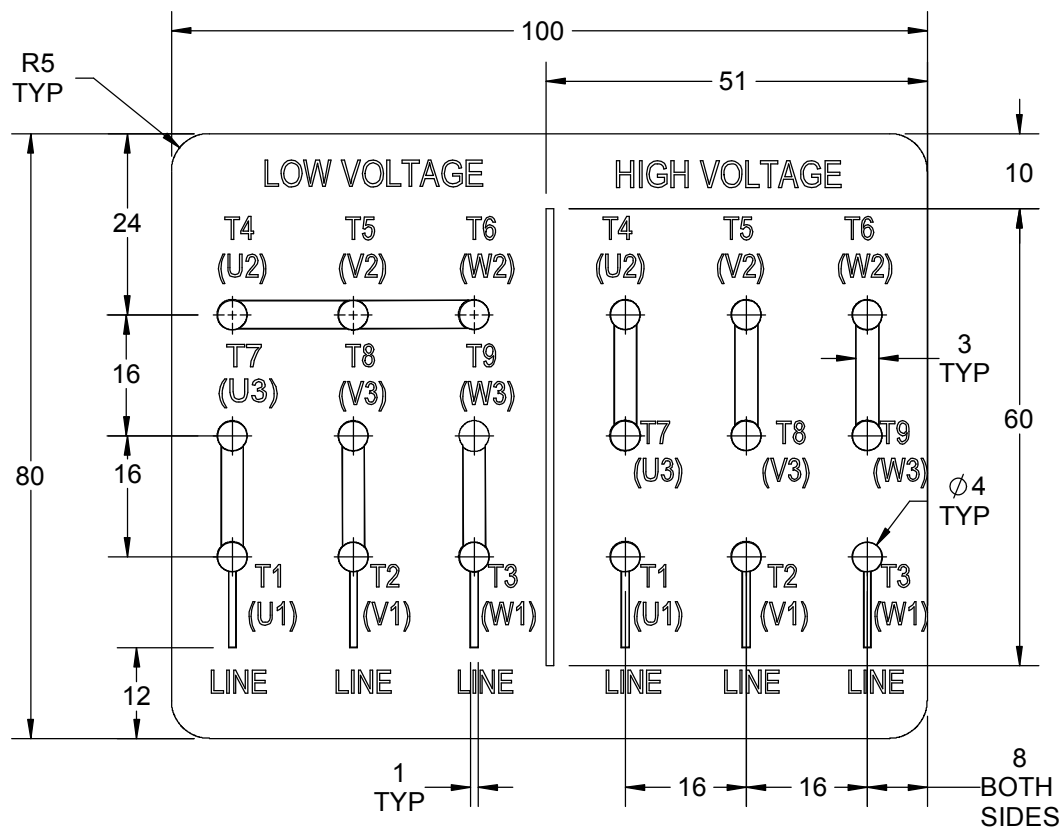
Phase	3	Output HP	4 & 3 Hp
Output KW	3.0 & 2.2 kW	Voltage	230/460 & 200/400 V
Speed	3499 & 2816 rpm	Service Factor	1.15 & 1.15
Frame	100L	Enclosure	Totally Enclosed Fan Cooled
Thermal Protection	No Protection	Efficiency	88.5 & 85.9 %
Ambient Temperature	40 °C	Frequency	60 & 50 Hz
Current	9.75/4.85 & 8.5/4.25 A	Power Factor	89.3
Duty	Continuous	Insulation Class	F
Design Code	N (IEC)	KVA Code	K
Drive End Bearing Size	6206	Opp Drive End Bearing Size	6206
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	2	Rotation	Reversible
Resistance Main	3.74 Ohms	Mounting	B3
Motor Orientation	Horizontal	Drive End Bearing	Ball
Opp Drive End Bearing	Ball	Frame Material	Cast Iron
Shaft Type	IEC	Shaft Diameter	28.000 in
Assembly/Box Mounting	F3	Inverter Load	CONSTANT 2:1/VARIABLE 10:1
Connection Drawing	8442000675	Outline Drawing	SS620872

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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-T12 & U1-U4,V1-V4& W1-W4 OF ARIAL WITH 3mm SIZE.
5. OTHER LETTER FONT SIZE SHOULD BE 3.5mm.

DRAWING REVISION B		REVISION BY NIV		DATE 05/03/2019		<div></div>	DRAWN BY NIV		<div><div>REGAL™</div><div>Regal Beloit America, Inc.</div></div>						
ECO ECO-0162986		APPROVED BY JAY		DATE 05/03/2019			DATE 29/01/2019		<div>DESCRIPTION</div> <div>CONNECTION DIAGRAM</div> <div>9 LEADS- STAR CONNECTON</div>						
ECO DESCRIPTION							APPROVED BY JAY								
UPDATED DRAWING							DATE 29/01/2019								
<div>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.</div>							REFERENCE		MATERIAL		PROCESS/FINISH				
							THIRD ANGLE PROJECTION		<div></div>		SIZE A		DRAWING NUMBER 8442000675		SHEET 1 OF 1



P.O. BOX 8003  
WAUSAU, WI 54401-8003  
PH. 715-675-3311

DATA VOLTS: 460

### CERTIFICATION DATA SHEET

CUSTOMER: \_\_\_\_\_  
ORDER #: \_\_\_\_\_  
CONN. DIAGRAM: 8442000675  
OUTLINE: SS620872  
WINDING: IE3L1002201 R1 1  
SPEED: \_\_\_\_\_

CUSTOMER P.O. #: \_\_\_\_\_  
REFERENCE MODEL #: TCA0031AE231GAA009  
CAT #: R851  
CUSTOMER PART #: \_\_\_\_\_  
MOUNTING: F3

### TYPICAL MOTOR PERFORMANCE DATA

HP	KW	SYNC RPM	FL RPM	FRAME	ENCLOSURE	TYPE	KVA CODE	DESIGN
4	3.0	3600	3499	100L	TEFC	TCA 100LA02	K	N

PH	HZ	VOLTS	AMPS	START TYPE	DUTY	INSL	S.F.	AMB (* C)	ELEV.(Ft.)
3	60/50	230/460#200/400	9.75/4.85&8.5/4.25	LINE OR INVERTER	CONT	F	1.15	40	3300

F.L. EFF	88.5	3/4 LD EFF	86.5	1/2 LD EFF	86.0	GTD EFF	ELECT. TYPE
F.L. PF	89.3	3/4 LD PF	84.5	1/2 LD PF	75.2	84.5	SQ CAGE INV RATED

F.L. TORQUE	LR AMPS @ 460 V	L.R. TORQUE	B.D. TORQUE	F.L. RISE (* C)
6.0 LB-FT	45.0	19.1 LB-FT 318%	22.1 LB-FT 368%	0

SOUND PRESSURE @ 3 FT.	SOUND	POWER	ROTOR WK <sup>2</sup>	MAX. LOAD WK <sup>2</sup>	SAFE STALL TIME	STARTS/HOUR	APROX.	MOTOR WGT
63 dBA	72 dBA		0.11 LB-FT <sup>2</sup>	0.11 LB-FT <sup>2</sup>	7 SEC.	2	43	KG.

### \*\*\* SUPPLEMENTAL INFORMATION \*\*\*

DE BRACKET TYPE	ODE BRACKET TYPE	MOUNT TYPE	MOTOR ORIENTATION	SEVERE DUTY	HAZARDOUS LOCATION	DRIP COVER	SCREENS	PAINT
FF-FLANGE-215	STANDARD	B3	HORIZONTAL	NO	NONE	NO	NONE	BLUE (ENAMEL)

BEARINGS	GREASE	SHAFT TYPE	SPECIAL DE	SPECIAL ODE	SHAFT	MATERIAL	FRAME MATERIAL
DE ODE							
BALL BALL	POLYREX EM	STANDARD IEC	NONE	NONE	1045 HOT ROLLED (C-204)		CAST IRON
6206 6206							

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)	FLOAT
2.340	1.560	3.971	1.347	143.455	0.150	ODE

* N O T E S *					INVERTER TORQUE: CONSTANT 2:1/VARIABLE 10:1 INV. HP SPEED RANGE: NONE			
					ENCODER: NONE			
					NONE			
					NONE PPR			

PREPARED BY: _____	BRAKE: NONE	
DATE: 11/27/2020	NONE	NONE
	FT-LB: NA	
	VOLTAGE: NONE	HZ:
FORM: 3531 REV_4 2/27/06	UL: V - LI,ME-INS,CONST UL REC	

REGAL®

Data Sheet																			
Date: <u>4/8/2020</u>		TCA0031AE231GAA009																	
Customer: _____		Submittal																	
Attention: _____		Data @ <u>460</u> V																	
Submitted by: _____																			
Motor Load Data																			
Load	0%	25%	50%	75%	100%	115%	125%	LR											
Current (Amps)	1.83	2.26	2.90	3.8	4.9	5.5	5.9	45.0											
Torque (ft-lb)	0.00	1.47	2.96	4.5	6.0	6.9	7.6	19.1											
RPM	3600	3574	3551	3526	3499	3482	3470	0											
Efficiency (%)		79.0	86.0	86.5	86.5	86.6	86.1												
P.F. (%)	12.5	52.5	75.2	84.5	89.3	91.0	91.8	63.4											
Motor Speed Data																			
	LR	Pull-Up	BD	Rated	Idle	Information Block													
Speed (RPM)	0	1200	2623	3499	3600	<div style="display: flex; justify-content: space-between;"> <div> <p>HP 4.0</p> <p>Sync. RPM 3600</p> <p>Frame 100</p> <p>Enclosure TEFC</p> <p>Construction TCA 100LA02</p> <p>Voltage 230/460#200/400 V</p> <p>Frequency 60 Hz</p> <p>Design N (IEC)</p> <p>LR Code letter K</p> <p>Service Factor 1.15</p> <p>Temp Rise @ FL 0 °C</p> <p>Duty CONT</p> <p>Ambient 40 °C</p> <p>Elevation 3,300 feet</p> <p>Rotor/Shaft wk² 0.11 Lb-Ft²</p> <p>Ref Wdg IE3L1002201 R1</p> <p>Sound Pressure @ 1M 50 dBA</p> <p>VFD Rating CONSTANT 2:1/VARIABLE 10:1</p> <p>Outline Dwg SS620872</p> <p>Conn. Diag 8442000675</p> <p>Additional Specifications:</p> <p>0</p> <p>0</p> <p>EQUIV CKT (OHMS / PHASE)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>R1</th> <th>R2</th> <th>X1</th> <th>X2</th> <th>Xm</th> </tr> </thead> <tbody> <tr> <td>2.3400</td> <td>1.5600</td> <td>3.9710</td> <td>1.3470</td> <td>143.4550</td> </tr> </tbody> </table> </div> <div style="text-align: right;">IEC</div> </div>				R1	R2	X1	X2	Xm	2.3400	1.5600	3.9710	1.3470	143.4550
R1	R2	X1	X2	Xm															
2.3400	1.5600	3.9710	1.3470	143.4550															
Current (Amps)	45.0	42.8	27.1	4.9	1.83														
Torque (ft-lb)	19.1	18.1	22.1	6.0	0.00														
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 : TCA0031AE231GAA009

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

Catalog No : R851

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**