

# PRODUCT INFORMATION PACKET

**marathon®**  
Motors

Model No: TCA0222AE231GAA009

Catalog No: R843

TerraMAX® Cast Iron Motor, 30 & 25 HP, 3 Ph, 60 & 50 Hz, 230/460 & 200/400 V, 1800 & 1500 RPM,  
180L Frame, TEFC



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**RegalRexnord**

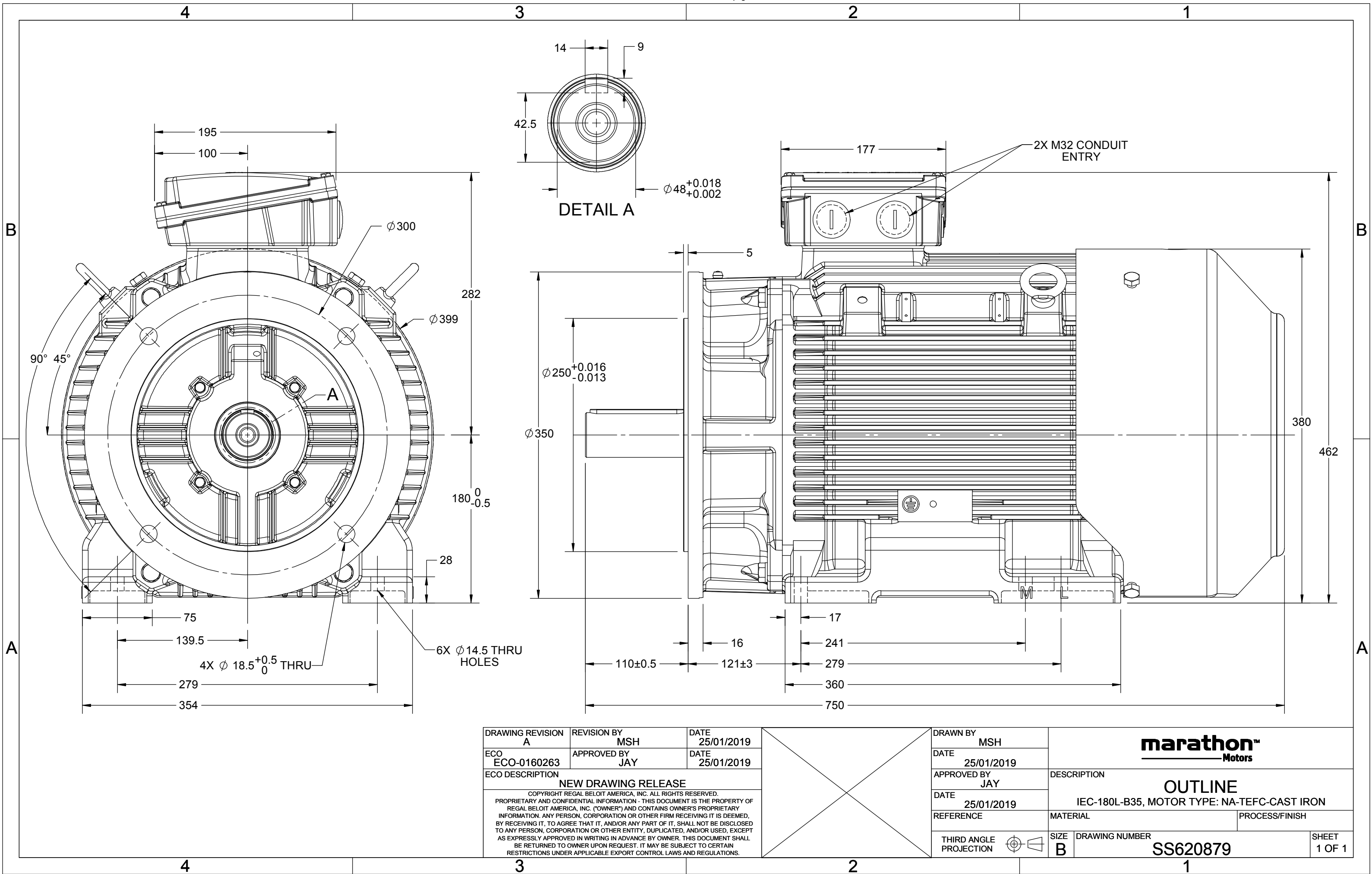
### Nameplate Specifications

Phase	3	Output HP	30 & 25 Hp
Output KW	22.4 & 18.7 kW	Voltage	230/460 & 200/400 V
Speed	1780 & 1480 rpm	Service Factor	1.15 & 1.15
Frame	180L	Enclosure	Totally Enclosed Fan Cooled
Thermal Protection	No Protection	Efficiency	93.6 & 92.6 %
Ambient Temperature	40 °C	Frequency	60 & 50 Hz
Current	72/36 & 70/35 A	Power Factor	83
Duty	Continuous	Insulation Class	F
Design Code	N (IEC)	KVA Code	H
Drive End Bearing Size	6311	Opp Drive End Bearing Size	6211
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	4	Rotation	Reversible
Resistance Main	.3 Ohms	Mounting	B5
Motor Orientation	Horizontal	Drive End Bearing	Ball
Opp Drive End Bearing	Ball	Frame Material	Cast Iron
Shaft Type	IEC	Shaft Diameter	48.000 in
Assembly/Box Mounting	F3	Inverter Load	CONSTANT 2:1/VARIABLE 10:1
Connection Drawing	8442000715	Outline Drawing	SS620879

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DRAWING REVISION A	REVISION BY MSH	DATE 25/01/2019
ECO ECO-0160263	APPROVED BY JAY	DATE 25/01/2019
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DRAWN BY MSH	<b>marathon™</b> Motors		
DATE 25/01/2019			
APPROVED BY JAY	DESCRIPTION OUTLINE		
DATE 25/01/2019	IEC-180L-B35, MOTOR TYPE: NA-TEFC-CAST IRON		
REFERENCE	MATERIAL	PROCESS/FINISH	
THIRD ANGLE PROJECTION	SIZE B	DRAWING NUMBER SS620879	SHEET 1 OF 1

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DRAWING REVISION  
**A**  
 ECO  
 ECO-0194685  
 ECO DESCRIPTION

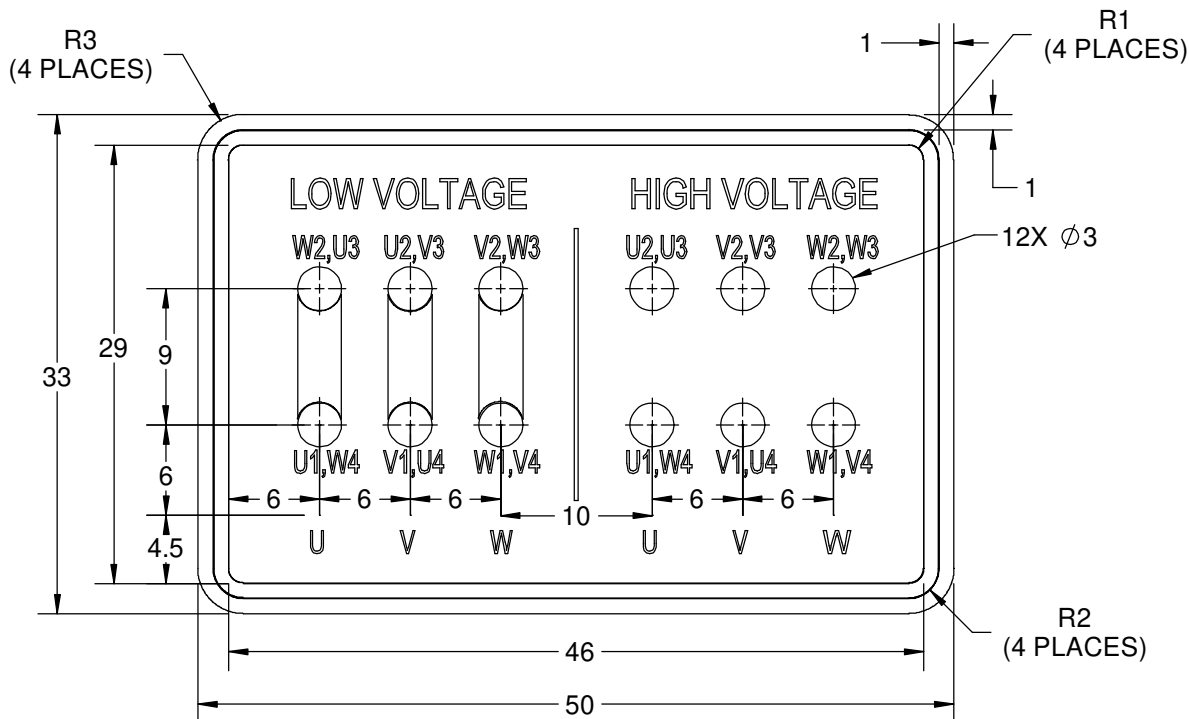
REVISION BY  
**S.MUDDA**  
 APPROVED BY  
**SUMANTA**

DATE  
**16/11/2020**  
 DATE  
**16/11/2020**

NEW DRAWING

GEOMETRIC TOLERANCE

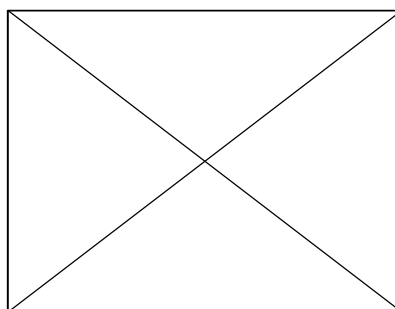
LINEAR DIM	>0~6	±0.1
	>6~30	±0.2
	>30~120	±0.3



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.
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.

8WD.442.2017



DRAWN BY  
**S.MUDDA**  
 DATE  
**16/11/2020**  
 APPROVED BY  
**SUMANTA**  
 DATE  
**16/11/2020**  
 REFERENCE

THIRD ANGLE  
 PROJECTION



Regal Beloit America, Inc.

DESCRIPTION

**CONN DIAGRAM-NAMEPLATE**

MATERIAL

PROCESS/FINISH

SIZE  
**A**

DRAWING NUMBER

**8442000715**

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: 8442000677  
OUTLINE: SS620879  
WINDING: IE3L1804202 NONE 1  
SPEED: \_\_\_\_\_

CUSTOMER P.O. #: \_\_\_\_\_  
REFERENCE MODEL #: TCA0222AE231GAA009  
CAT #: R843  
CUSTOMER PART #: \_\_\_\_\_  
MOUNTING: F3

### TYPICAL MOTOR PERFORMANCE DATA

HP	KW	SYNC RPM	FL RPM	FRAME	ENCLOSURE	TYPE	KVA CODE	DESIGN
30	22.00	1800	1780	180L	TEFC	TCA 180LA04	H	N

PH	HZ	VOLTS	AMPS	START TYPE	DUTY	INSL	S.F.	AMB (° C)	ELEV.(Ft.)
3	60/50	230/460#200/400	72/36&70/35	LINE OR INVERTER	CONT	F	1.15	40	3300

F.L. EFF	93.6	3/4 LD EFF	93.6	1/2 LD EFF	93.0	GTD EFF	ELECT. TYPE
F.L. PF	83.0	3/4 LD PF	77.0	1/2 LD PF	66.0	92.6	SQ CAGE INV RATED

F.L. TORQUE	LR AMPS @ 460 V	L.R. TORQUE	B.D. TORQUE	F.L. RISE (° C)
88.6 LB-FT	262	201 LB-FT	227%	269 LB-FT 304%

SOUND PRESSURE @ 3 FT.	SOUND	POWER	ROTOR WK²	MAX. LOAD WK²	SAFE STALL TIME	STARTS/HOUR	APROX.	MOTOR WGT
68 dBA	77 dBA		5.9 LB-FT²	5.9 LB-FT²	12 SEC.	2	260	KG.

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

DE BRACKET TYPE	ODE BRACKET TYPE	MOUNT TYPE	MOTOR ORIENTATION	SEVERE DUTY	HAZARDOUS LOCATION	DRIP COVER	SCREENS	PAINT
FF-FLANGE-300	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
6311	6211						

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
0.189	0.095	0.501	0.756	16.584	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:	DATE:	BRAKE: NONE	FT-LB: NONE	VOLTAGE: NA	HZ: NONE
	11/27/2020				

FORM: 3531 REV\_4 2/27/06

UL: V - LI,ME-INS,CONST UL REC



Data Sheet										
Date: 4/8/2020		TCA0222AE231GAA009								
Customer: _____		Submittal								
Attention: _____		Data @ 460 V								
Submitted by: _____										
Motor Load Data										
Load	0%	25%	50%	75%	100%	115%	125%	LR		
Current (Amps)	15.7	18.8	22.8	29.3	36.0	41.2	44.5	262		
Torque (ft-lb)	0.00	22.0	44.0	66.2	88.6	102	111	201		
RPM	1800	1795	1790	1784	1780	1,775	1772	0		
Efficiency (%)		89.5	93.0	93.6	93.6	92.9	92.6			
P.F. (%)	5.0	42.0	66.0	77.0	83.0	84.0	85.0	63.4		
Motor Speed Data										
	LR	Pull-Up	BD	Rated	Idle					
Speed (RPM)	0	600	1642	1780	1800					
Current (Amps)	262	248	152	36.0	15.7					
Torque (ft-lb)	201	191	269	88.6	0.00					
						Information Block				
						HP	30.0			
						Sync. RPM	1800			
						Frame	180			
						Enclosure	TEFC			
						Construction	TCA 180LA04			
						Voltage	230/460#200/400 V			
						Frequency	60 Hz			
						Design	N			
						LR Code letter	H			
						Service Factor	1.15			
						Temp Rise @ FL	80 °C			
						Duty	CONT			
						Ambient	40 °C			
						Elevation	3,300 feet			
						Rotor/Shaft wk <sup>2</sup>	5.9 Lb-Ft <sup>2</sup>			
						Ref Wdg	IE3L1804202 NONE			
						Sound Pressure @ 1M	68 dBA			
						VFD Rating	CONSTANT 2:1/VARIABLE 10:1			
						Outline Dwg	SS620879			
						Conn. Diag	8442000677			
						Additional Specifications:				
						0				
						0				
						EQUIV CKT (OHMS / PHASE)				
						R1	R2	X1	X2	Xm
						0.1890	0.0950	0.5010	0.7560	16.5840

**Efficiency, P.F., and Current vs Load**

This graph plots Efficiency (%), Power Factor (P.F. %), and Current (Amps) against Load (%). The left Y-axis represents Efficiency and P.F. (30.0 to 100.0), and the right Y-axis represents Current (0.0 to 50.0). The X-axis represents Load (0% to 140%). Efficiency (blue line) peaks at approximately 94% around 60% load. P.F. (red line) increases from about 42% at 25% load to 85% at 125% load. Current (black line) increases linearly from 15.7A at 0% load to 262A at 125% load.

**Speed-Torque Curve**

This graph plots Torque (ft-lb) and Amps against RPM. The left Y-axis represents Torque (0.0 to 300.0), and the right Y-axis represents Amps (0.0 to 300.0). The X-axis represents RPM (0 to 2000). Torque (blue line) starts at 201 ft-lb at 0 RPM, remains relatively constant until 400 RPM, then increases to a peak of about 270 ft-lb at 1600 RPM before dropping sharply. Amps (red line) starts at 262A at 0 RPM, remains relatively constant until 400 RPM, then decreases steadily to about 15.7A at 1800 RPM.

## 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 : TCA0222AE231GAA009

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

Catalog No : R843

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**