

# PRODUCT INFORMATION PACKET

marathon®  
Motors

Model No: TCA0153AE221GAA009

Catalog No: R238

Cast Iron Motor, 20 & 15 HP, 3 Ph, 60 & 50 Hz, 230/460 & 200/400 V, 1200 & 1000 RPM, 180L Frame,  
TEFC



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RegalRexnord

### Nameplate Specifications

Phase	<b>3</b>	Output HP	<b>20 &amp; 15 Hp</b>
Output KW	<b>15.0 &amp; 11.0 kW</b>	Voltage	<b>230/460 &amp; 200/400 V</b>
Speed	<b>1180 &amp; 985 rpm</b>	Service Factor	<b>1.15 &amp; 1.15</b>
Frame	<b>180L</b>	Enclosure	<b>Totally Enclosed Fan Cooled</b>
Thermal Protection	<b>No Protection</b>	Efficiency	<b>91.7 &amp; 90.3 %</b>
Ambient Temperature	<b>40 °C</b>	Frequency	<b>60 &amp; 50 Hz</b>
Current	<b>53.5/26.7 &amp; 48/24.1 A</b>	Power Factor	<b>77</b>
Duty	<b>Continuous</b>	Insulation Class	<b>F</b>
Design Code	<b>N (IEC)</b>	KVA Code	<b>F</b>
Drive End Bearing Size	<b>6311</b>	Opp Drive End Bearing Size	<b>6211</b>
UL	<b>Recognized</b>	CSA	<b>N</b>
CE	<b>Y</b>	IP Code	<b>55</b>
Number of Speeds	<b>1</b>	Efficiency Class	<b>IE3</b>

### Technical Specifications

Electrical Type	<b>Squirrel Cage Inverter Rated</b>	Starting Method	<b>Line Or Inverter</b>
Poles	<b>6</b>	Rotation	<b>Reversible</b>
Resistance Main	<b>.56 Ohms</b>	Mounting	<b>Round</b>
Motor Orientation	<b>Horizontal</b>	Drive End Bearing	<b>Ball</b>
Opp Drive End Bearing	<b>Ball</b>	Frame Material	<b>Cast Iron</b>
Shaft Type	<b>IEC</b>	Overall Length	<b>29.53 in</b>
Frame Length	<b>14.41 in</b>	Shaft Diameter	<b>1.890 in</b>
Shaft Extension	<b>4.33 in</b>	Assembly/Box Mounting	<b>F3</b>
Inverter Load	<b>CONSTANT 2:1/VARIABLE 10:1</b>		
Connection Drawing	<b>8442000715</b>	Outline Drawing	<b>SS312998A</b>



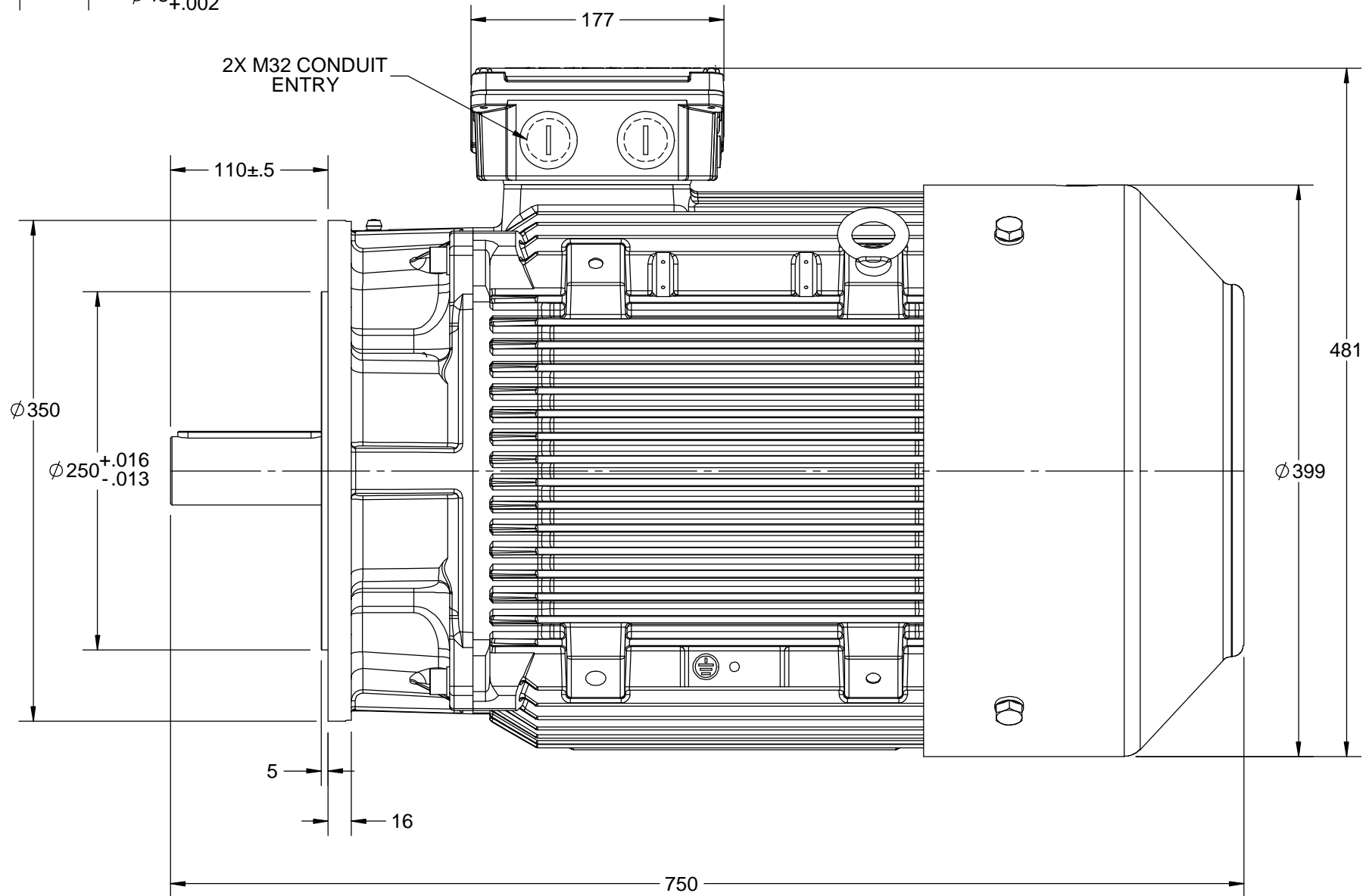
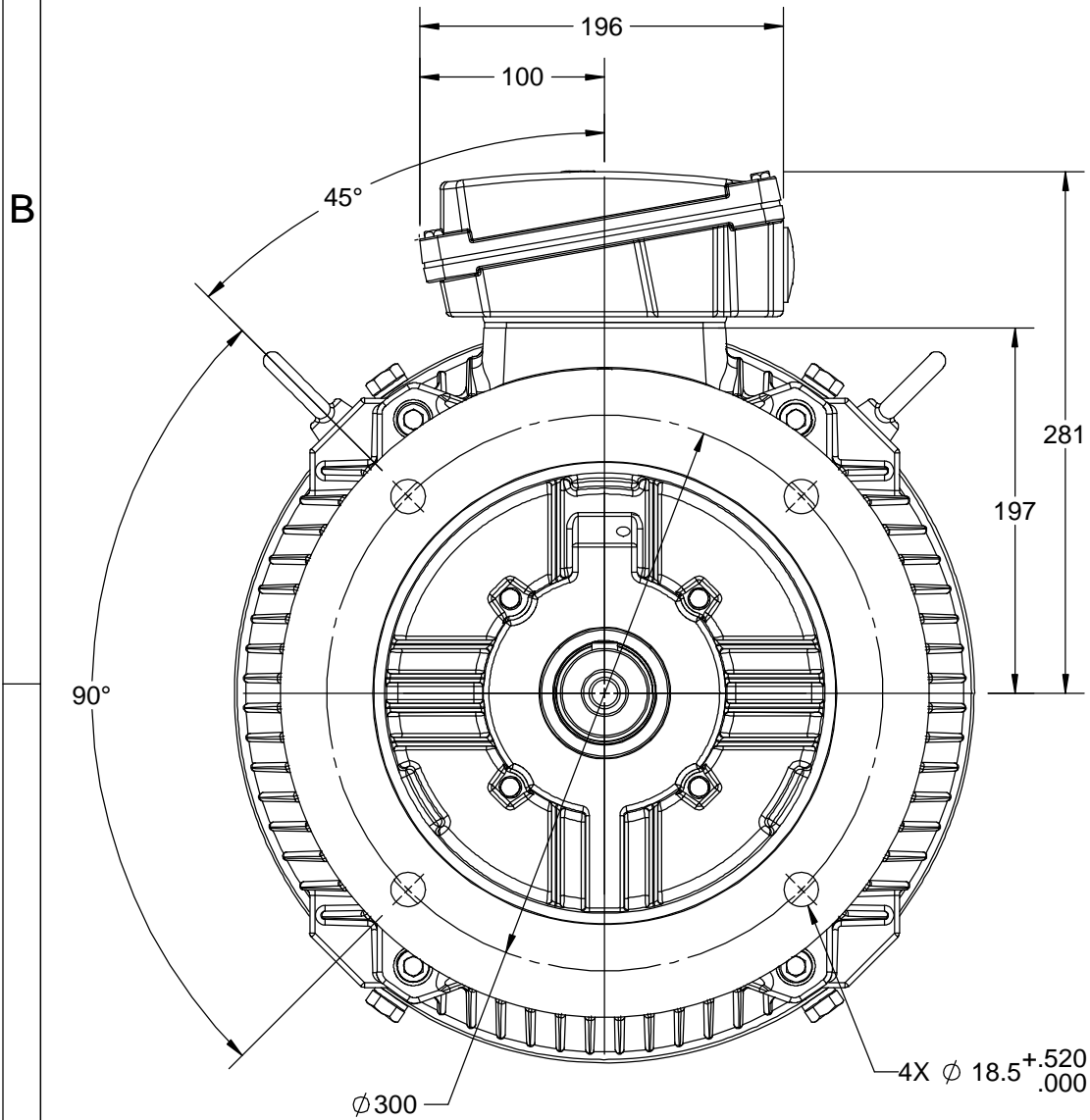
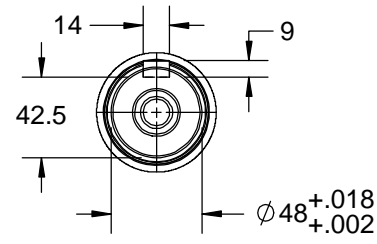
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Uncontrolled Copy

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DRAWING REVISION B	REVISION BY LK	DATE 11/12/2018
ECO ECO-0157171	APPROVED BY JAY	DATE 11/12/2018
ECO DESCRIPTION UPDATED TEMPLATE		
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DRAWN BY LK
DATE 10/12/2018
APPROVED BY JAY
DATE 10/12/2018
REFERENCE
THIRD ANGLE PROJECTION

<b>marathon™ Motors</b>	
<b>OUTLINE</b>	
IEC-180L-B5 MOTOR TYPE: TEFC-CAST IRON	
MATERIAL	PROCESS/FINISH
SIZE <b>B</b>	DRAWING NUMBER <b>SS312998A</b>
SHEET 1 OF 1	

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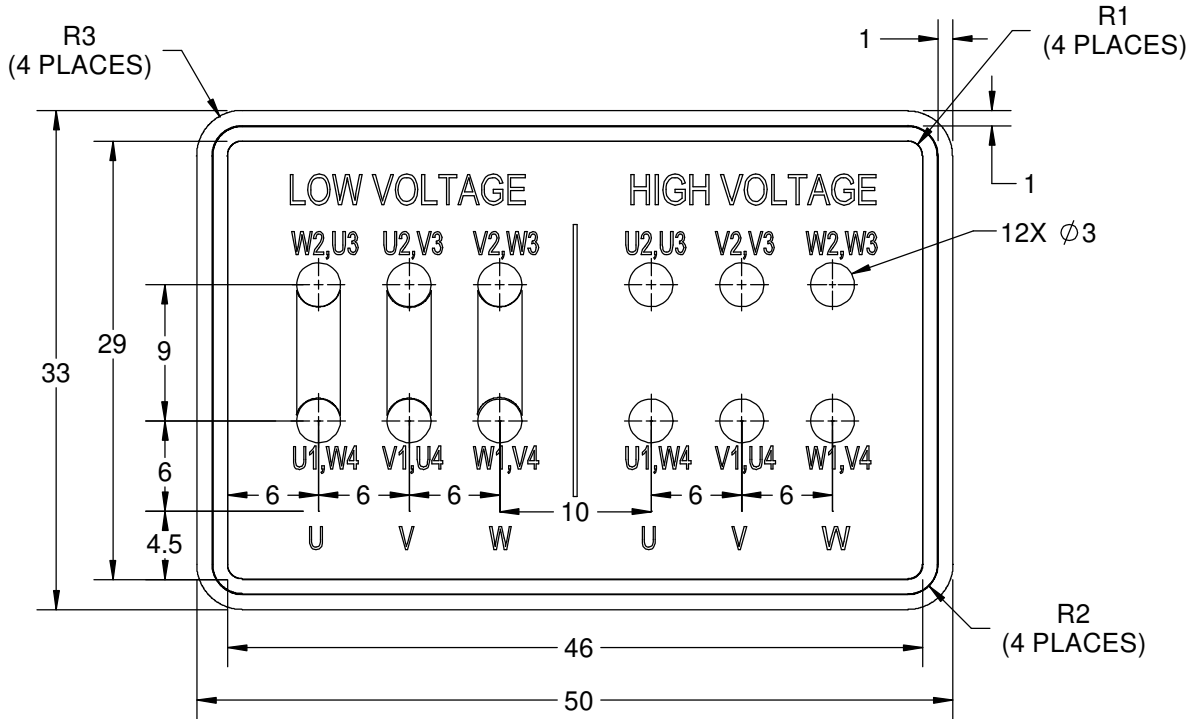
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DRAWING REVISION <b>A</b>	REVISION BY <b>S.MUDDA</b>	DATE <b>16/11/2020</b>
ECO <b>ECO-0194685</b>	APPROVED BY <b>SUMANTA</b>	DATE <b>16/11/2020</b>
ECO DESCRIPTION <b>NEW DRAWING</b>		

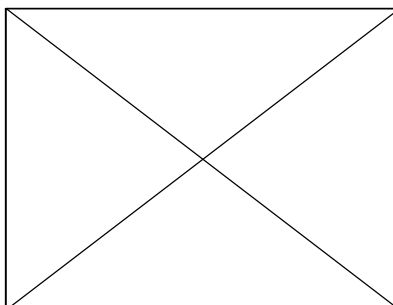
GEOMETRIC TOLERANCE		
LINEAR DIM	>0~6	±0.1
	>6~30	±0.2
	>30~120	±0.3





**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.
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 <b>S.MUDDA</b>	DATE <b>16/11/2020</b>		 <b>Regal Beloit America, Inc.</b>
	APPROVED BY <b>SUMANTA</b>		
	DATE <b>16/11/2020</b>		DESCRIPTION <b>CONN DIAGRAM-NAMEPLATE</b>
	REFERENCE	MATERIAL	PROCESS/FINISH
	THIRD ANGLE PROJECTION 	SIZE <b>A</b>	DRAWING NUMBER <b>8442000715</b>



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

DATA VOLTS: 460

**CERTIFICATION DATA SHEET**

CUSTOMER: \_\_\_\_\_  
ORDER #: \_\_\_\_\_  
CONN. DIAGRAM: 8442000677  
OUTLINE: SS312998A  
WINDING: IE3L1806201 NONE 1  
SPEED: \_\_\_\_\_

CUSTOMER P.O. #: \_\_\_\_\_  
REFERENCE MODEL #: TCA0153AE221GAA009  
CAT #: R238  
CUSTOMER PART #: \_\_\_\_\_  
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	TCA 180LA06	F	N

PH	HZ	VOLTS	AMPS	START TYPE	DUTY	INSL	S.F.	AMB (° C)	ELEV.(Ft.)
3	60/50	230/460#200/400	53.5/26.7&48/24.1	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 @ 460 V	L.R. TORQUE	B.D. TORQUE	F.L. RISE (° C)
89.0 LB-FT	139	152 LB-FT 171%	207 LB-FT 233%	80

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
56 dBA	65 dBA	6.2 LB-FT <sup>2</sup>	6.2 LB-FT <sup>2</sup>	15 SEC.	2	226 KG.

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

DE BRACKET TYPE	ODE BRACKET TYPE	MOUNT TYPE	MOTOR ORIENTATION	SEVERE DUTY	HAZARDOUS LOCATION	DRIP COVER	SCREENS	PAIN
FF-FLANGE-300	STANDARD	ROUND	HORIZONTAL	NO	NONE	NO	NONE	BLUE (ENAMEL)

BEARINGS		GREASE	SHAFT TYPE	SPECIAL DE	SPECIAL ODE	SHAFT MATERIAL	FRAME MATERIAL
DE BALL	ODE 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
0.355	0.184	0.993	1.475	20.408	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					
	BRAKE: NONE					

PREPARED BY: _____	BRAKE: NONE
DATE: 11/16/2020	NONE NONE
	FT-LB: NA
	VOLTAGE: NONE
FORM: 3531 REV_4 2/27/06	HZ: _____
	UL: V - LI,ME-INS,CONST UL REC



Data Sheet

TCA0153AE221GAA009

Date: 5/30/2019  
Customer:  
Attention:

Submittal

Submitted by: Fareeda Dudekula

Data @ 460 V

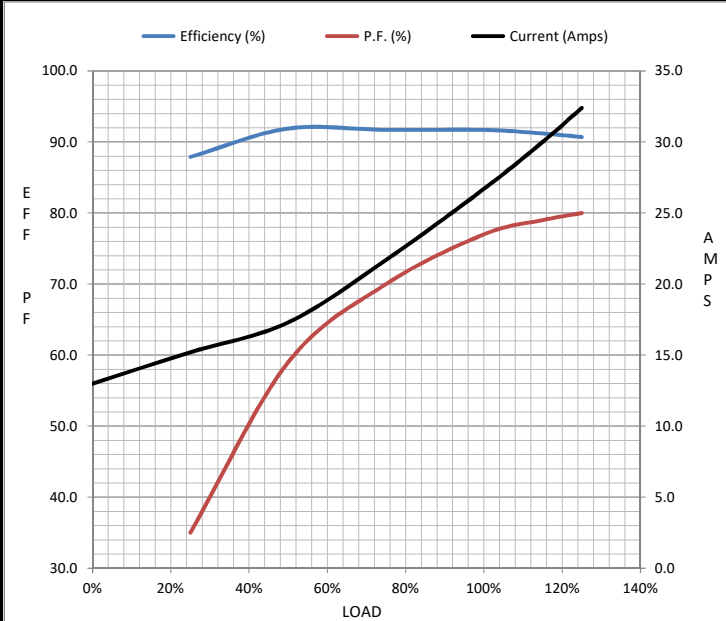
Motor Load Data

Load	0%	25%	50%	75%	100%	115%	125%	LR
Current (Amps)	13.0	15.2	17.3	21.7	26.7	30.0	32.4	139
Torque (ft-lb)	0.00	22.0	44.1	66.5	89.0	103	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. (%)	4.0	35.0	59.0	70.0	77.0	79.0	80.0	63.4

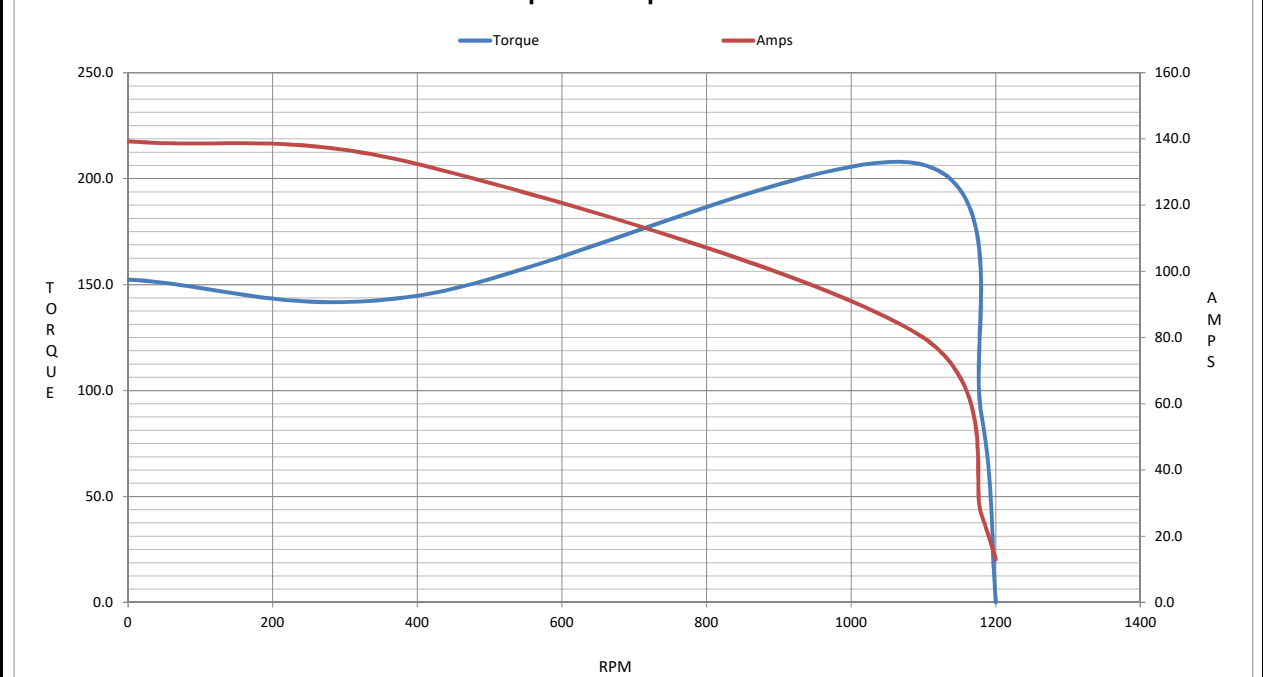
Motor Speed Data

	LR	Pull-Up	BD	Rated	Idle
Speed (RPM)	0	400	1094	1180	1200
Current (Amps)	139	132	80.8	26.7	13.0
Torque (ft-lb)	152	145	207	89.0	0.00

Information Block				
HP	20.0			
Sync. RPM	1200			
Frame	180			
Enclosure	TEFC			
Construction	TCA 180LA06			
Voltage	230/460#200/400 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 <sup>2</sup>	6.2 Lb-FT <sup>2</sup>			
Ref Wdg	IE3L1806201 NONE			
Sound Pressure @ 1M	66 dBA			
VFD Rating	CONSTANT 2:1/VARIABLE 10:1			
Outline Dwg	SS312998A			
Conn. Diag	8442000677			
Additional Specifications:				
0				
0				
EQUIV CKT (OHMS / PHASE)				
R1	R2	X1	X2	Xm
0.3550	0.1840	0.9930	1.4750	20.4080



Speed -Torque Curve



IEC

IEC

IEC

## 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 : TCA0153AE221GAA009

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

Catalog No : R238

Rework No : N/A

Directives :

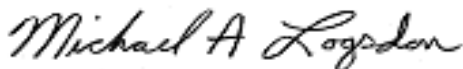
Low Voltage Directive 2014/35/EU

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**