

# PRODUCT INFORMATION PACKET

Model No: TCA0222A3113GACD01

Catalog No: TCA0222A3113GACD01

Cast Iron Motor, 30 HP, 3 Ph, 50 Hz, 415 V, 1500 RPM, 180L Frame, TEFC



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### Nameplate Specifications

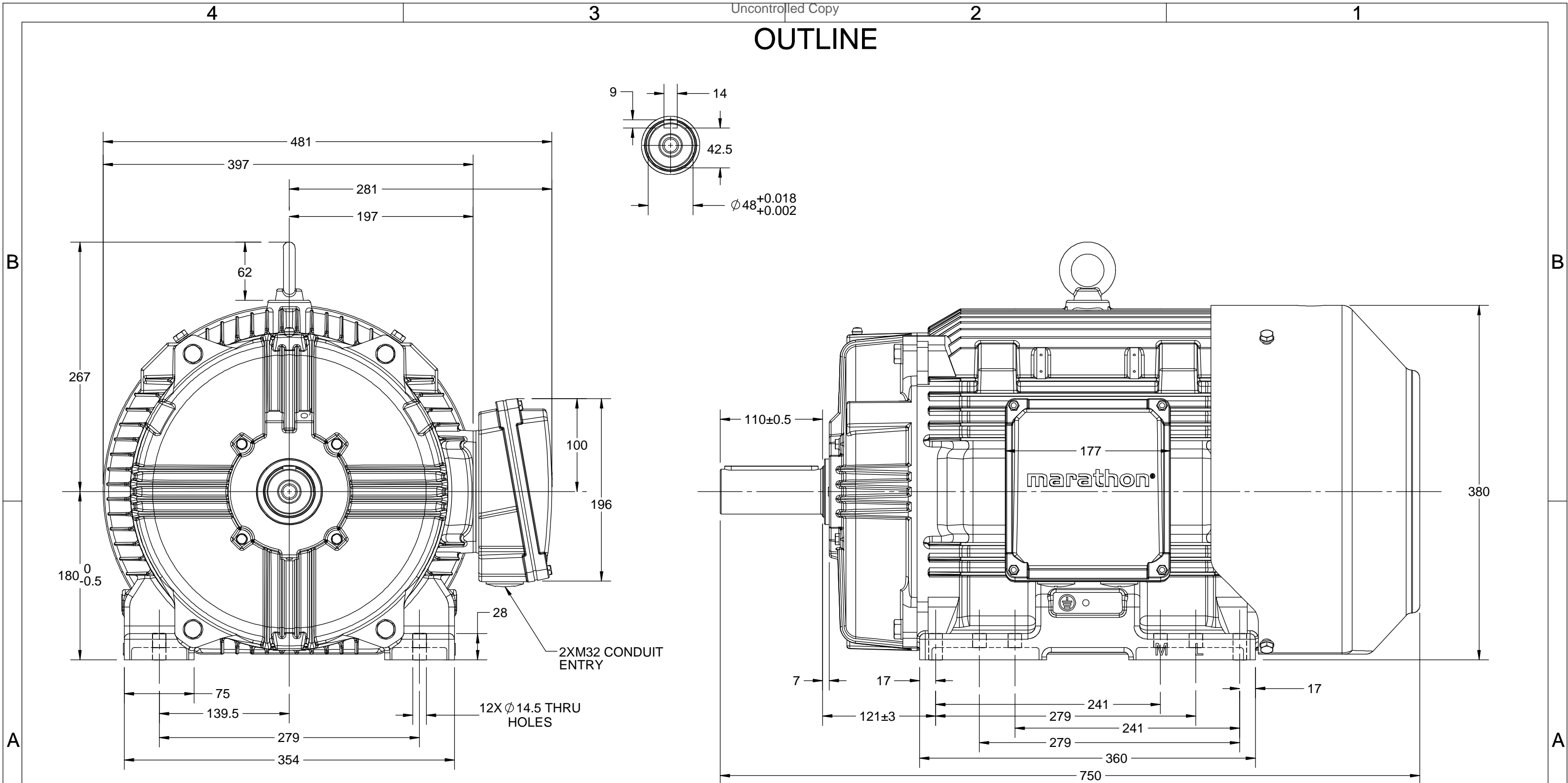
Output HP	<b>30 Hp</b>	Output KW	<b>22.0 kW</b>
Frequency	<b>50 Hz</b>	Voltage	<b>415 V</b>
Current	<b>38.7 A</b>	Speed	<b>1478 rpm</b>
Service Factor	<b>1</b>	Phase	<b>3</b>
Efficiency	<b>93 %</b>	Power Factor	<b>0.85</b>
Duty	<b>S1</b>	Insulation Class	<b>F</b>
Frame	<b>180L</b>	Enclosure	<b>Totally Enclosed Fan Cooled</b>
Thermal Protection	<b>No Protection</b>	Ambient Temperature	<b>50 °C</b>
Drive End Bearing Size	<b>6311</b>	Opp Drive End Bearing Size	<b>6211</b>
UL	<b>No</b>	CSA	<b>No</b>
CE	<b>Yes</b>	IP Code	<b>55</b>
Number of Speeds	<b>1</b>	Efficiency Class	<b>IE3</b>

### Technical Specifications

Electrical Type	<b>Squirrel Cage</b>	Starting Method	<b>Direct On Line</b>
Poles	<b>4</b>	Rotation	<b>Bi-Directional</b>
Mounting	<b>B3</b>	Motor Orientation	<b>Horizontal</b>
Drive End Bearing	<b>2z-C3</b>	Opp Drive End Bearing	<b>2z-C3</b>
Frame Material	<b>Cast Iron</b>	Shaft Type	<b>Keyed</b>
Overall Length	<b>750 mm</b>	Frame Length	<b>366 mm</b>
Shaft Diameter	<b>48 mm</b>	Shaft Extension	<b>110 mm</b>
Assembly/Box Mounting	<b>R Side</b>		
Outline Drawing	<b>0218000764</b>	Connection Drawing	<b>8442000085</b>

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# OUTLINE



DRAWING REVISION A	REVISION BY BISWA	DATE 05/07/2018
ECO ECO-0148344	APPROVED BY SBD	DATE 05/07/2018
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DRAWN BY BISWA	<b>marathon™</b> Motors	
DATE 05/07/2018		
APPROVED BY SBD	DESCRIPTION <b>OUTLINE</b> 180L FR-B3 MTG. MOTOR TYPE: TCA/QCA-RHS TB	
DATE 05/07/2018	MATERIAL	PROCESS/FINISH
REFERENCE	SIZE B	DRAWING NUMBER 0218000764
THIRD ANGLE PROJECTION	SHEET 1 OF 1	

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DRAWING REVISION <b>A</b>	REVISION BY <b>SN</b>	DATE <b>13/01/2017</b>
ECO <b>ECO-0116390</b>	APPROVED BY <b>SBD</b>	DATE <b>13/01/2017</b>
ECO DESCRIPTION <b>NEW DRAWING RELEASE</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.

8WD.442.2017

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

**Model No.** TCA0222A3113GACD01

U (V)	$\Delta$ / 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]	$T_R/T_N$ [pu]
									5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL			
415	$\Delta$	50	22	30	38.7	1478	144.67	IE3	-	93	93	92.2	0.85	0.77	0.64	7.3	2.5	3.3

Motor type	TCA
Enclosure	TEFC
Frame Material	Cast Iron
Frame size	180L
Duty	S1
Voltage variation *	$\pm 10\%$
Frequency variation *	$\pm 5\%$
Combined variation *	10%
Design	N
Service factor	1.0
Insulation class	F
Ambient temperature	-20 to +50 °C
Temperature rise (by resistance)	70 [ Class B ] K
Altitude above sea level	1000 meter
Hazardous area classification	NA
Zone classification	NA
Gas group	NA
Temperature class	NA
Rotor type	Aluminum Die cast
Bearing type	Anti-friction ball bearing
DE / NDE bearing	6311-2Z / 6211-2Z
Lubrication method	Greased for life
Type of grease	NA

Degree of protection	IP 55
Mounting type	IM B3
Cooling method	IC 411
Motor weight - approx.	248 kg
Gross weight - approx.	268 kg
Motor inertia	0.2616 kgm <sup>2</sup>
Load inertia	Customer to Provide
Vibration level	2.2 mm/s
Noise level ( 1meter distance from motor)	64 dB(A)
No. of starts hot/cold/Equally spread	2/3/4
Starting method	DOL
Type of coupling	Direct
LR withstand time (hot/cold)	12/25 s
Direction of rotation	Bi-directional
Standard rotation	Clockwise form DE
Paint shade	RAL 5014
Accessories	
Accessory - 1	-
Accessory - 2	-
Accessory - 3	-
Terminal box position	RHS
Maximum cable size/conduit size	1R x 3C x 35mm <sup>2</sup> /2 X M32 x 1.5
Auxiliary terminal box	NA

 $I_A/I_N$  - Locked Rotor Current / Rated Current

 $T_R/T_N$  - 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 combine variation are as per IEC60034-1

Technical data are subject to change. There may be discrepancies between calculated and name plate values.

Efficiency Standards	Europe	China	India	Aus/Nz	Brazil	Global IEC
	-	-	IS 12615 : 2018	-	-	-

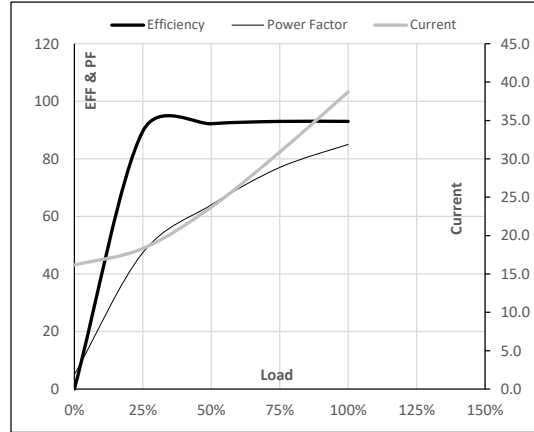
**Model No.** TCA0222A3113GACD01

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 <sup>2</sup> ]	Weight [kg]
TEFC	415	Δ	50	22	30.0	38.7	1478	14.75	144.67	IE3	50	S1	1000	0.2616	248

**Motor Load Data**

Load Point		NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	16.2	18.3	23.7	30.9	38.7	
Torque	Nm	0.0	35.7	71.7	108.0	144.7	
Speed	r/min	1500	1494	1489	1483	1478	
Efficiency	%	0.0	89.6	92.2	93.0	93.0	
Power Factor	%	5.0	47.4	64.0	77.0	85.0	

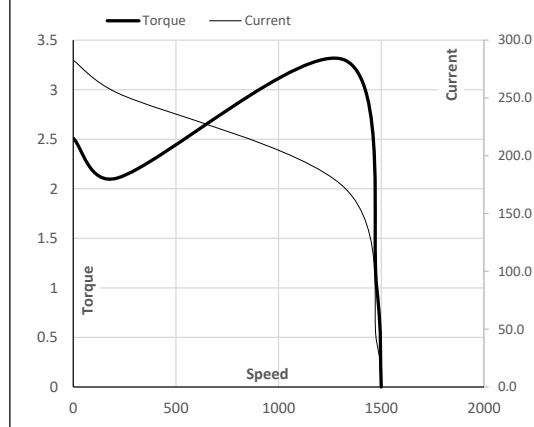
**Performance vs Load Chart**



**Motor Speed Torque Data**

Load Point		LR	P-Up	BD	Rated	NL
Speed	r/min	0	214	1321	1478	1500
Current	A	282.6	254.4	172.4	38.7	16.2
Torque	pu	2.5	2.1	3.3	1	0

**Starting Characteristics Chart**



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

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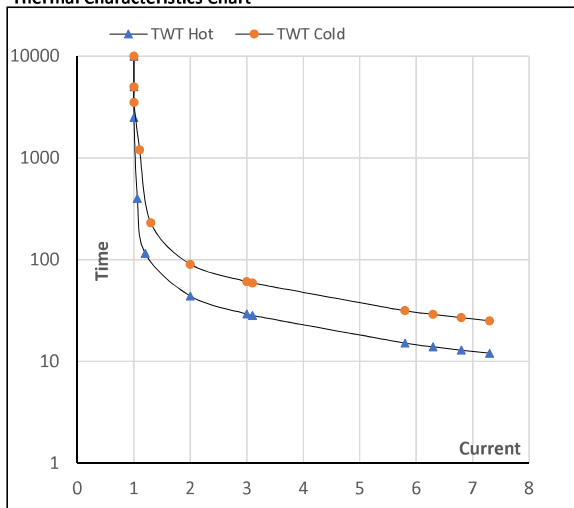
**Model No.** TCA0222A3113GACD01

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 <sup>2</sup> ]	Weight [kg]
TEFC	415	Δ	50	22	30	38.7	1478	14.74	144.67	IE3	50	S1	1000	0.2616	248

**Motor Speed Torque Data**

Load	FL	I <sub>1</sub>	I <sub>2</sub>	I <sub>3</sub>	I <sub>4</sub>	I <sub>5</sub>	LR	
TWT Hot	s 10000	44	29	25	20	16	12	
TWT Cold	s 10000	90	61	50	40	33	25	
Current	pu	1	2	3	4	5	5.5	7.3

**Thermal Characteristics Chart**



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

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