

# PRODUCT INFORMATION PACKET



Model No: TCA0451AF121GAC010

Catalog No: TCA0451AF121GAC010

TerraMAX® Cast Iron Motor, 60 HP, 3 Ph, 50 Hz, 380 V, 3000 RPM, 225M Frame, TEFC





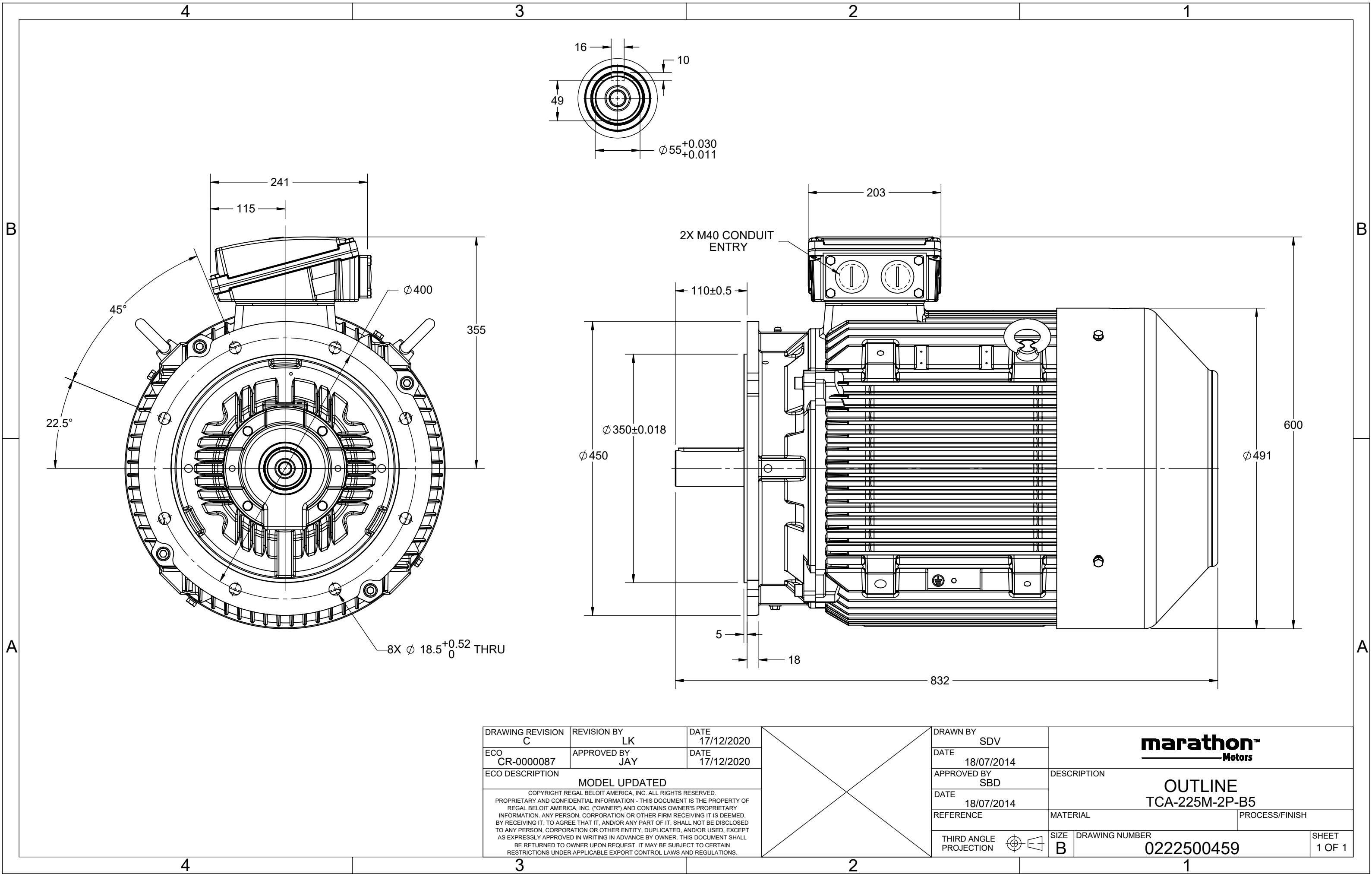
### Nameplate Specifications

Phase	3	Output HP	60 Hp
Output KW	45.0 kW	Voltage	380 V
Speed	2978 r/min	Service Factor	1
Frame	225M	Enclosure	Totally Enclosed Fan Cooled
Thermal Protection	No Protection	Efficiency	94 %
Ambient Temperature	40 °C	Frequency	50 Hz
Current	83.6 A	Power Factor	0.87
Duty	S1	Insulation Class	F
Drive End Bearing Size	6313	Opp Drive End Bearing Size	6213
UL	No	CSA	No
CE	Yes	IP Code	55
Number of Speeds	1	Efficiency Class	IE3

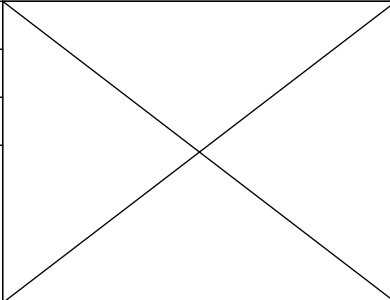

### Technical Specifications

Electrical Type	Squirrel Cage	Starting Method	Direct On Line
Poles	2	Rotation	Bi-Directional
Mounting	B5	Motor Orientation	Horizontal
Drive End Bearing	C3	Opp Drive End Bearing	C3
Frame Material	Cast Iron	Shaft Type	Keyed
Overall Length	832 mm	Frame Length	425 mm
Shaft Diameter	55 mm	Shaft Extension	110 mm
Assembly/Box Mounting	Top		
Outline Drawing	0222500459	Connection Drawing	8442000085

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DRAWING REVISION C	REVISION BY LK	DATE 17/12/2020
ECO CR-0000087	APPROVED BY JAY	DATE 17/12/2020
ECO DESCRIPTION MODEL UPDATED		
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	DRAWN BY SDV		<b>marathon™</b> <b>Motors</b>		
	DATE 18/07/2014				
	APPROVED BY SBD		DESCRIPTION  OUTLINE TCA-225M-2P-B5		
	DATE 18/07/2014				
	REFERENCE		MATERIAL		PROCESS/FINISH
	THIRD ANGLE PROJECTION		SIZE B	DRAWING NUMBER 0222500459	

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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>	Regal Beloit America, Inc.		
	DATE <b>16/12/2016</b>			
	APPROVED BY <b>SBD</b>	<b>DESCRIPTION</b> <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.** TCA0451AF121GAC010

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 <sub>A</sub> /I <sub>N</sub> [pu]	T <sub>A</sub> /T <sub>N</sub> [pu]	T <sub>K</sub> /T <sub>N</sub> [pu]
380	Δ	50	45	60	83.6	2978	143.47	IE3	5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL	8	2.2	3.9

Motor type	TCA	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM B5
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	225M	Motor weight - approx.	414 kg
Duty	S1	Gross weight - approx.	444 kg
Voltage variation *	± 10%	Motor inertia	0.4264 kgm <sup>2</sup>
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)	75 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 +40 °C	Type of coupling	Direct
Temperature rise (by resistance)	80 [ Class B ] K	LR withstand time (hot/cold)	15/30 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	PTC 150°C
Rotor type	Aluminum Die cast	Accessory - 2	-
Bearing type	Anti-friction ball	Accessory - 3	-
DE / NDE bearing	6313 C3 / 6213 C3	Terminal box position	TOP
Lubrication method	Regreasable	Maximum cable size/conduit size	1R x 3C x 50mm <sup>2</sup> /2 x M40 x 1.5
Type of grease	CHEVRON SRI-2 or Equivalent	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 combine variation are as per IEC60034-1

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

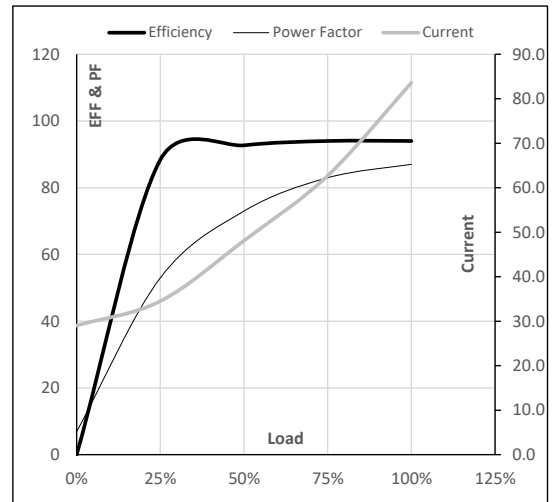
Efficiency	Europe	China	India	Aus/Nz	Brazil	Global IEC
Standards	-	GB 18613-2012 Grade 2	-	-	-	IEC: 60034-30

**Model No.** TCA0451AF121GAC010

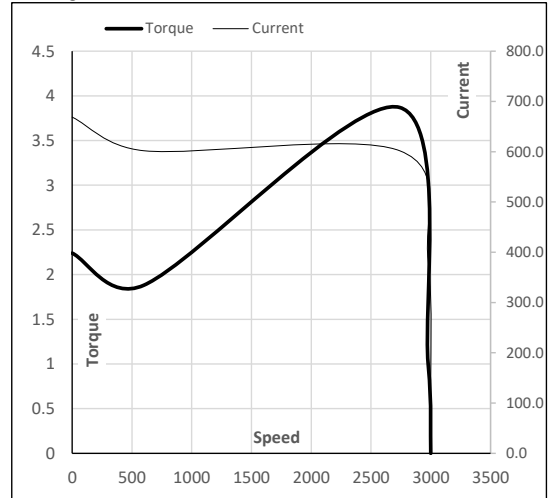
Enclosure	U (V)	$\Delta$ / Y Conn	f (Hz)	P [kW]	P [hp]	I [A]	n [RPM]	T [kgm]	T [Nm]	IE Class	Amb [°C]	Duty	Elevation [m]	Inertia [kg-m <sup>2</sup> ]	Weight [kg]
TEFC	380	$\Delta$	50	45	60.0	83.6	2978	14.63	143.47	IE3	40	S1	1000	0.4264	414

**Motor Load Data**

Load Point		NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	29.0	34.5	48.1	62.7	83.6	
Torque	Nm	0.0	35.7	71.5	107.4	143.5	
Speed	r/min	3000	2995	2989	2984	2978	
Efficiency	%	0.0	88.4	92.7	94.0	94.0	
Power Factor	%	6.9	53.0	73.0	83.0	87.0	

**Performance vs Load Chart**

**Motor Speed Torque Data**

Load Point		LR	P-Up	BD	Rated	NL
Speed	r/min	0	600	2740	2978	3000
Current	A	668.8	601.9	382.9	83.6	29.0
Torque	pu	2.2	1.9	3.9	1	0

**Starting Characteristics Chart**

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

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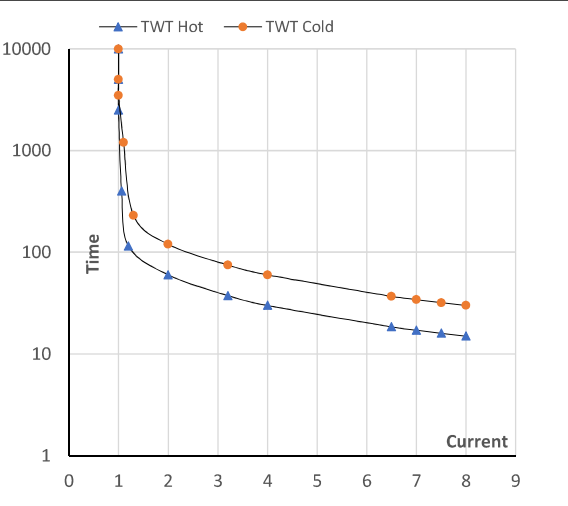
Model No. TCA0451AF121GAC010

Enclosure	U	Δ / Y	f	P	P	I	n	T	T	IE	Amb	Duty	Elevation	Inertia	Weight
	(V)	Conn	[Hz]	[kW]	[hp]	[A]	[rpm]	[kgm]	[Nm]	Class	[°C]		[m]	[kg-m <sup>2</sup> ]	[kg]
TEFC	380	Δ	50	45	60.0	83.6	2978	14.63	143.47	IE3	40	S1	1000	0.4264	414

Motor Speed Torque Data

Load		FL	$I_1$	$I_2$	$I_3$	$I_4$	$I_5$	LR
TWT Hot	s	10000	60	40	30	25	20	15
TWT Cold	s	10000	120	80	60	50	40	30
Current	pu	1	2	3	4	5	5.5	8

Thermal Characteristics Chart



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

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