

# PRODUCT INFORMATION PACKET

**marathon®**  
Motors

Model No: TCA3151AF113GAC010

Catalog No: TCA3151AF113GAC010

TerraMAX® Cast Iron Motor, 425 HP, 3 Ph, 50 Hz, 380 V, 3000 RPM, 355L Frame, TEFC



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**RegalRexnord**

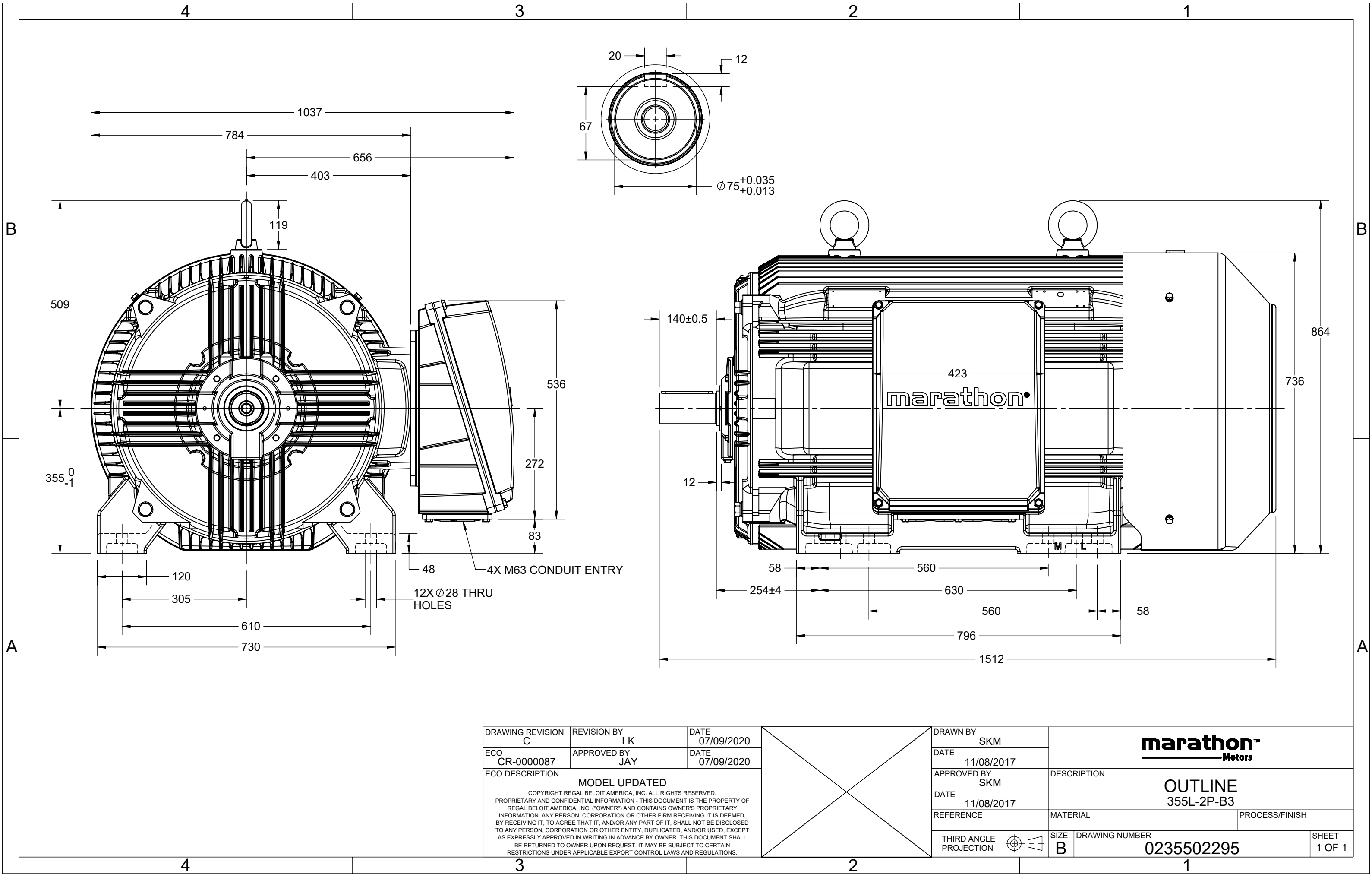
### Nameplate Specifications

Output HP	<b>425 Hp</b>	Output KW	<b>315.0 kW</b>
Frequency	<b>50 Hz</b>	Voltage	<b>380 V</b>
Current	<b>555.1 A</b>	Speed	<b>2984 rpm</b>
Service Factor	<b>1</b>	Phase	<b>3</b>
Efficiency	<b>95.8 %</b>	Power Factor	<b>0.9</b>
Duty	<b>S1</b>	Insulation Class	<b>F</b>
Frame	<b>355L</b>	Enclosure	<b>Totally Enclosed Fan Cooled</b>
Thermal Protection	<b>No Protection</b>	Ambient Temperature	<b>40 °C</b>
Drive End Bearing Size	<b>6317</b>	Opp Drive End Bearing Size	<b>6317</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>2</b>	Rotation	<b>Bi-Directional</b>
Mounting	<b>B3</b>	Motor Orientation	<b>Horizontal</b>
Drive End Bearing	<b>C3</b>	Opp Drive End Bearing	<b>C3</b>
Frame Material	<b>Cast Iron</b>	Shaft Type	<b>Keyed</b>
Overall Length	<b>1512 mm</b>	Frame Length	<b>1010 mm</b>
Shaft Diameter	<b>75 mm</b>	Shaft Extension	<b>140 mm</b>
Assembly/Box Mounting	<b>R Side</b>		
Connection Drawing	<b>8442000085</b>	Outline Drawing	<b>0235502295</b>

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DRAWING REVISION C	REVISION BY LK	DATE 07/09/2020
ECO CR-0000087	APPROVED BY JAY	DATE 07/09/2020
ECO DESCRIPTION MODEL UPDATED		
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DRAWN BY SKM	<b>marathon™</b> Motors	
DATE 11/08/2017		
APPROVED BY SKM	DESCRIPTION OUTLINE 355L-2P-B3	
DATE 11/08/2017	MATERIAL PROCESS/FINISH	
REFERENCE	SIZE B	
THIRD ANGLE PROJECTION	DRAWING NUMBER 0235502295	
	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 SN		 Regal Beloit America, Inc.			
	DATE 16/12/2016					
	APPROVED BY SBD		DESCRIPTION CONN DIAGRAM-NAMEPLATE			
	DATE 16/12/2016					
	REFERENCE		MATERIAL		PROCESS/FINISH	
	THIRD ANGLE PROJECTION				SIZE A	DRAWING NUMBER 8442000085

**Model No.** TCA3151AF113GAC010

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	315	425	555.08	2984	1014.4	IE3	5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL	7	2.1	3.3

Motor type	TCA	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM B3
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	355L	Motor weight - approx.	1855 kg
Duty	S1	Gross weight - approx.	1901 kg
Voltage variation *	± 10%	Motor inertia	4.7428 kgm <sup>2</sup>
Frequency variation *	± 5%	Load inertia	Customer to Provide
Combined variation *	10%	Vibration level	2.8 mm/s
Design	N	Noise level ( 1meter distance from motor)	90 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	6317 C3 / 6317 C3	Terminal box position	RHS
Lubrication method	Regreasable	Maximum cable size/conduit size	1R x 3C x 300mm <sup>2</sup> /4 x M63 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.

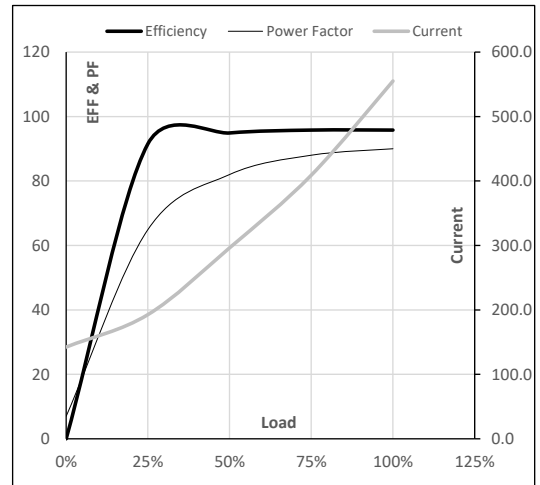
Efficiency	Europe	China	India	Aus/Nz	Brazil	Global IEC
Standards	-	GB 18613-2012 Grade 2	-	-	-	IEC: 60034-30

**Model No.** TCA3151AF113GAC010

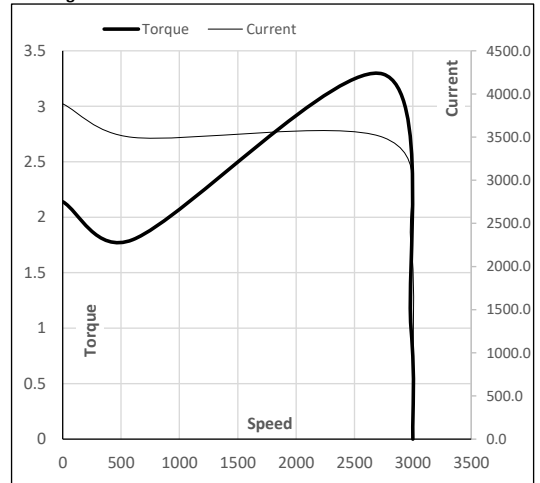
Enclosure	U (V)	$\Delta$ / Y Conn	f [Hz]	P [kW]	P [hp]	I [A]	n [RPM]	T [kgm]	T [Nm]	IE Class	Amb [°C]	Duty	Elevation [m]	Inertia [kg-m <sup>2</sup> ]	Weight [kg]
TEFC	380	$\Delta$	50	315	425.0	555.1	2984	103.44	1014.37	IE3	40	S1	1000	4.7428	1855

**Motor Load Data**

Load Point		NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	142.4	192.6	296.3	409.0	555.1	
Torque	Nm	0.0	252.5	505.8	759.7	1014.4	
Speed	r/min	3000	2996	2992	2988	2984	
Efficiency	%	0.0	91.5	94.9	95.8	95.8	
Power Factor	%	7.0	64.9	82.0	88.0	90.0	

**Performance vs Load Chart**

**Motor Speed Torque Data**

Load Point		LR	P-Up	BD	Rated	NL
Speed	r/min	0	600	2745	2984	3000
Current	A	3885.6	3497.0	2258.1	555.1	142.4
Torque	pu	2.1	1.8	3.3	1	0

**Starting Characteristics Chart**

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

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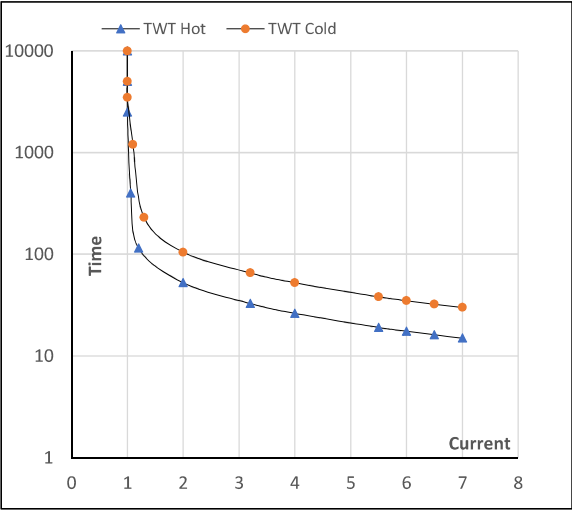
Model No. TCA3151AF113GAC010

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	380	Δ	50	315	425.0	555.1	2984	103.44	1014.37	IE3	40	S1	1000	4.7428	1855

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	53	35	26	23	18	15
TWT Cold	s	10000	105	80	53	40	36	30
Current	pu	1	2	3	4	5	5.5	7

Thermal Characteristics Chart



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

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