

# PRODUCT INFORMATION PACKET

Model No: TCM5P54A2113GAC011

Catalog No: TCM5P54A2113GAC011

TerraMAX® IE3, Mining Duty Motors, 5.5 kW, 3Ph, 8 Pole, 230/400V, B3, 50Hz, 160M Frame, TEFC



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### Nameplate Specifications

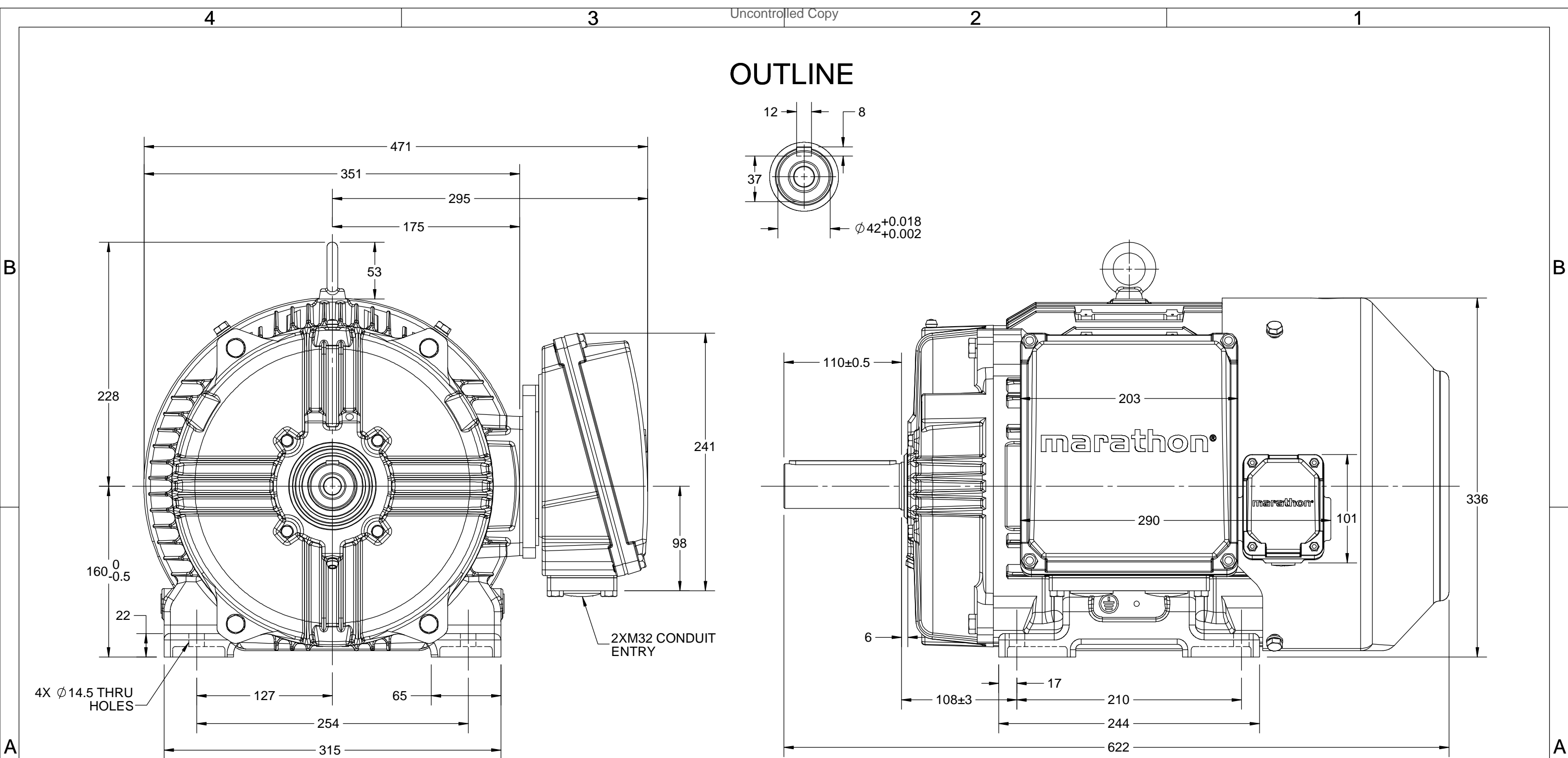
Output HP	<b>7.50 Hp</b>	Output KW	<b>5.5 kW</b>
Frequency	<b>50 Hz</b>	Voltage	<b>230/400 V</b>
Current	<b>12.8 A</b>	Speed	<b>729 rpm</b>
Service Factor	<b>1</b>	Phase	<b>3</b>
Efficiency	<b>86.2 %</b>	Power Factor	<b>0.72</b>
Duty	<b>S1</b>	Insulation Class	<b>H</b>
Frame	<b>160M</b>	Enclosure	<b>Totally Enclosed Fan Cooled</b>
Thermal Protection	<b>No Protection</b>	Ambient Temperature	<b>40 °C</b>
Drive End Bearing Size	<b>6309</b>	Opp Drive End Bearing Size	<b>6209</b>
UL	<b>NO</b>	CSA	<b>NO</b>
CE	<b>YES</b>	IP Code	<b>66</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>8</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>622 mm</b>	Frame Length	<b>254 mm</b>
Shaft Diameter	<b>42 mm</b>	Shaft Extension	<b>110 mm</b>
Assembly/Box Mounting	<b>RHS</b>		
Connection Drawing	<b>8442000085</b>	Outline Drawing	<b>0216000921</b>

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# OUTLINE



DRAWING REVISION B	REVISION BY BISWA	DATE 23/08/2018
ECO ECO-0150058	APPROVED BY SBD	DATE 23/08/2018
ECO DESCRIPTION MODEL UPDATED WITH NEW STRUCTURE		
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DRAWN BY LK
DATE 15/12/2017
APPROVED BY SBD
DATE 15/12/2017
REFERENCE
THIRD ANGLE PROJECTION

<b>marathon™ Motors</b>	
DESCRIPTION <b>OUTLINE</b> 160M FR B3-MTG.TYPE: TCM	
MATERIAL	PROCESS/FINISH
SIZE <b>B</b>	DRAWING NUMBER <b>0216000921</b>
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>	DATE <b>16/12/2016</b>		 <b>Regal Beloit America, Inc.</b>	
	APPROVED BY <b>SBD</b>	DESCRIPTION <b>CONN DIAGRAM-NAMEPLATE</b>		
	DATE <b>16/12/2016</b>	MATERIAL	PROCESS/FINISH	
	REFERENCE	SIZE <b>A</b>	DRAWING NUMBER <b>8442000085</b>	SHEET <b>1 OF 1</b>
	THIRD ANGLE PROJECTION 			

Model No. TCM5P54A2113GAC011

U (V)	8 Conn	# [Hz]	P		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]
			[kW]	[hp]					5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL			
400		50	5.5	7.5	12.8	729	73.42	IE3	-	86.2	86.2	87	0.72	0.64	0.51	5.3	1.7	2.3

Motor type	TCM	Degree of protection	IP 66
Enclosure	TEFC	Mounting type	IM B3
Frame Material	Cast Iron	Cooling method	IC 411
Frame siz	160M	Motor weight - approx.	151 kg
Duty	S1	Gross weight - approx.	171 kg
Voltage variation *	± 10%	Motor inertia	0.1674 kgm <sup>2</sup>
Frequency variation *	± 5%	Load inertia	Customer to Provide
Combined variation *	10%	Vibration lev	2.2 mm/s
Desigr	N	Noise level ( 1meter distance from motor)	59 dB(A)
Service factor	1.15	No. of starts hot/cold/Equally spread	2/3/4
Insulation class	H	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)	25/50 s
Altitude above sea level	1000 meter	Direction of rotation	Bi-directional
Hazardous area classification	NA	Standard rotation	Clockwise form DE
Zone classificat	NA	Paint shade	RAL 2008
Gas group	NA	Accessories	
Temperature class	NA	Accessory - 1	PTC 150°C
Rotor typ	Aluminum die cast	Accessory - 2	-
Bearing type	Anti-friction ball	Accessory - 3	-
DE / NDE bearing	6309-C3 / 6209-C3	Terminal box position	RHS
Lubrication method	Greased for life	Maximum cable size/conduit size1R x 3C x 35mm <sup>2</sup> /2 X M32 x 1.5	
Type of grease	NA	Auxiliary terminal box	YES

I<sub>A</sub>/I<sub>N</sub> - Locked Rotor Current / Rated Current

T<sub>K</sub>/T<sub>N</sub> - Breakdown Torque / Rated Torque

T<sub>A</sub>/T<sub>N</sub> - 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 slight variations between calculated values in this datasheet and the motor nameplate figure

Efficiency Standards	Europe IEC:60034-30-1	China -	India -	Aus/Nz AS/NZ 1359:5:2004	Brazil -	Global IEC:60034-30-1

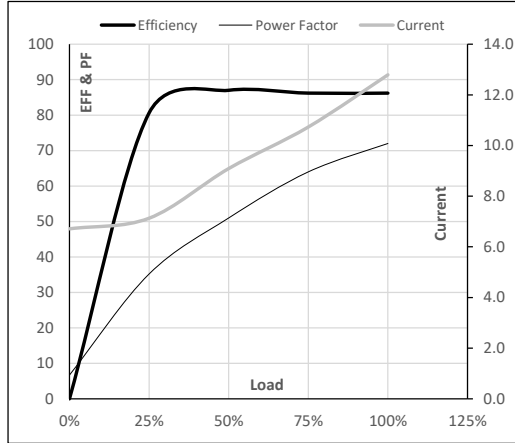
**Model No.** TCM5P54A2113GAC011

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	400	Δ	50	5.5	7.5	12.8	729	7.49	73.42	IE3	40	S1	1000	0.1674	151

**Motor Load Data**

Load Point		NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	6.7	7.1	9.1	10.7	12.8	
Torque	Nm	0.0	18.0	36.1	54.6	73.4	
Speed	r/min	750	745	740	735	729	
Efficiency	%	0.0	80.6	87.0	86.2	86.2	
Power Factor	%	6.7	35.2	51.0	64.0	72.0	

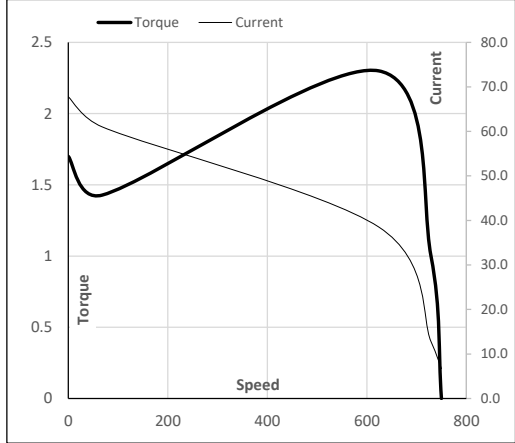
**Performance vs Load Chart**



**Motor Speed Torque Data**

Load Point		LR	P-Up	BD	Rated	NL
Speed	r/min	0	68	624	729	750
Current	A	67.8	61.0	38.5	12.8	6.7
Torque	pu	1.7	1.4	2.3	1	0

**Starting Characteristics Chart**



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

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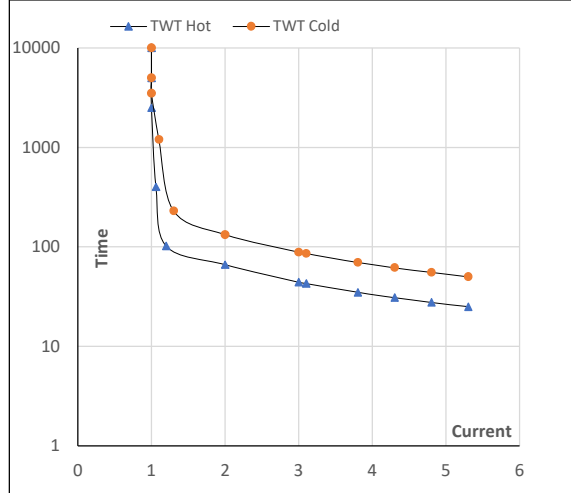
**Model No.** TCM5P54A2113GAC011

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	400	Δ	50	5.5	7.5	12.8	729	7.49	73.42	IE3	40	S1	1000	0.1674	151

**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	66	44	33	29	26	25
TWT Cold	s 10000	133	88	67	58	53	50
Current	pu	1	2	3	4	4.5	5

**Thermal Characteristics Chart**



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

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