

# PRODUCT INFORMATION PACKET

marathon®  
Motors

Model No: TCM18P4A2121GAC011

Catalog No: TCM18P4A2121GAC011

TerraMAX® IE3, Mining Duty Motors, 18.5 kW, 3Ph, 8 Pole, 400/690V, B5, 50Hz, 225S Frame, TEFC



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RegalRexnord

### Nameplate Specifications

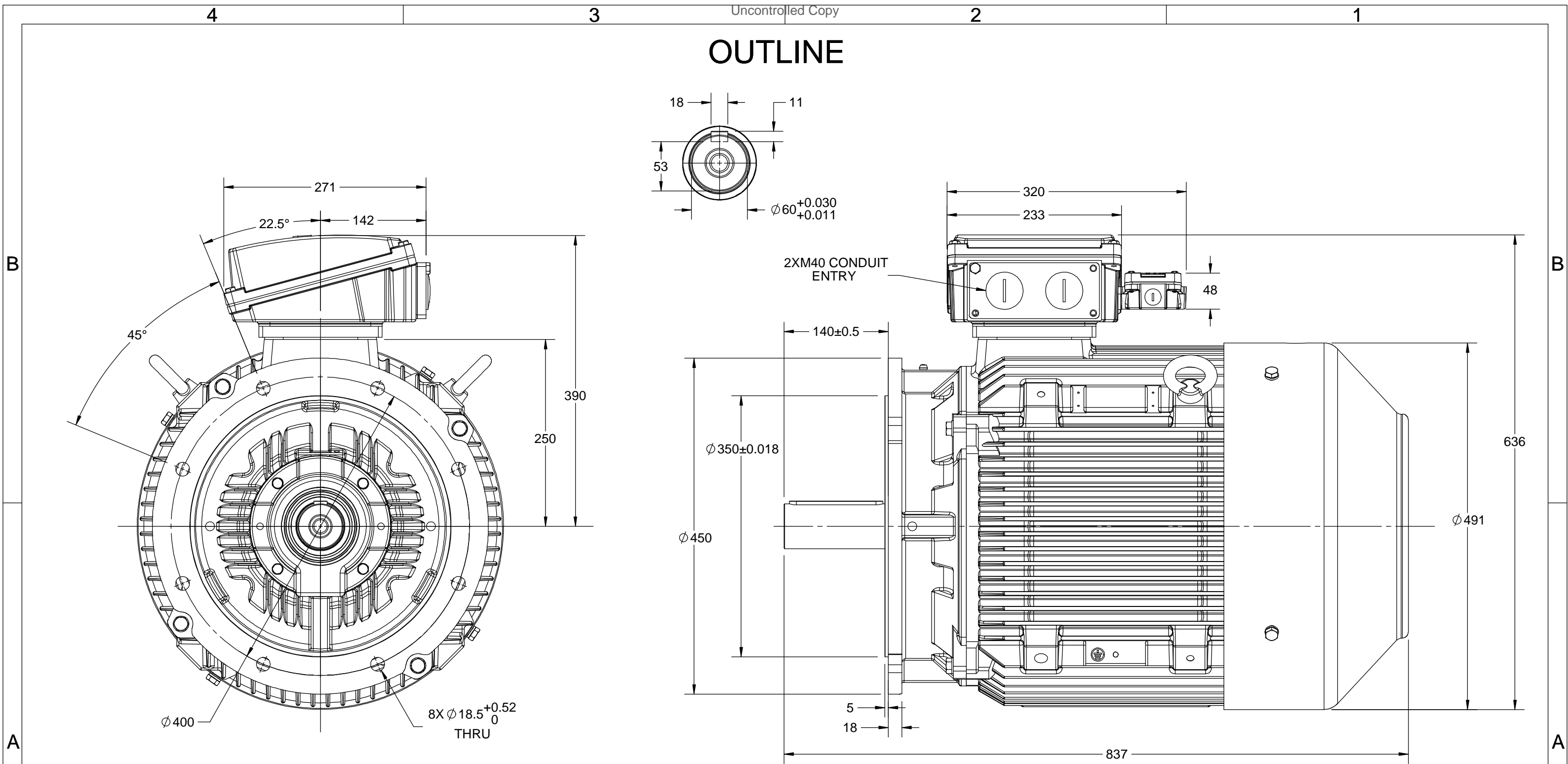
Output HP	<b>25 Hp</b>	Output KW	<b>18.5 kW</b>
Frequency	<b>50 Hz</b>	Voltage	<b>400/690 V</b>
Current	<b>38.5 A</b>	Speed	<b>738 rpm</b>
Service Factor	<b>1</b>	Phase	<b>3</b>
Efficiency	<b>90.1 %</b>	Power Factor	<b>0.77</b>
Duty	<b>S1</b>	Insulation Class	<b>H</b>
Frame	<b>225S</b>	Enclosure	<b>Totally Enclosed Fan Cooled</b>
Thermal Protection	<b>No Protection</b>	Ambient Temperature	<b>40 °C</b>
Drive End Bearing Size	<b>6313</b>	Opp Drive End Bearing Size	<b>6213</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>B5</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>837 mm</b>	Frame Length	<b>400 mm</b>
Shaft Diameter	<b>60 mm</b>	Shaft Extension	<b>140 mm</b>
Assembly/Box Mounting	<b>TOP</b>		
Connection Drawing	<b>8442000086</b>	Outline Drawing	<b>0222500883</b>

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# OUTLINE



DRAWING REVISION A	REVISION BY BISWA	DATE 13/08/2018
ECO ECO-0150057	APPROVED BY SBD	DATE 13/08/2018
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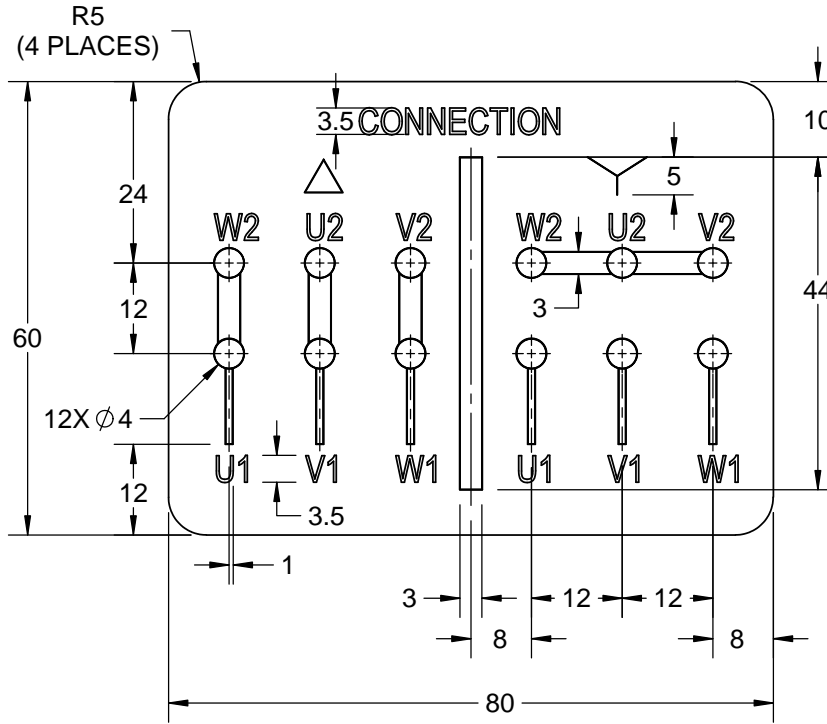


DRAWN BY BISWA	<b>marathon™</b> Motors	
DATE 13/08/2018		
APPROVED BY SBD	DESCRIPTION <b>OUTLINE</b>	
DATE 13/08/2018	225S FR-B5 MTG 4-8P MOTOR TYPE: TCM	
REFERENCE	MATERIAL	PROCESS/FINISH
THIRD ANGLE PROJECTION	SIZE B	DRAWING NUMBER 0222500883
		SHEET 1 OF 1

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DRAWING REVISION <b>A</b>	REVISION BY <b>SN</b>	DATE <b>13/01/2016</b>
ECO <b>ECO-0116390</b>	APPROVED BY <b>SBD</b>	DATE <b>13/01/2016</b>
ECO DESCRIPTION <b>NEW DRAWING RELEASE</b>		

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



**NOTES:**

1. PRESSURE-SENSITIVE ADHESIVE TAPE COATED WITH ANTI-ADHESIVE.
2. AT THE END OF YELLOW, WORDS, SYMBOLS, LETTERS ARE BLACK.
3. THE TOLERANCE OF THE LINEAR SIZE OF THE TOLERANCE WITHOUT THE TOLERANCE BY THE TABLE.

8WD.864.1008

	DRAWN BY <b>SN</b>		<b>Regal Beloit America, Inc.</b>
	DATE <b>16/12/2016</b>		
	APPROVED BY <b>SBD</b>		
	DATE <b>16/12/2016</b>		
	REFERENCE		
DESCRIPTION <b>CONN DIAGRAM-NAMEPLATE</b>			
MATERIAL		PROCESS/FINISH	
THIRD ANGLE PROJECTION	SIZE <b>A</b>	DRAWING NUMBER <b>8442000086</b>	SHEET <b>1 OF 1</b>

**Model No.** TCM18P4A2121GAC011

U (V)	Δ / Y Conn	f [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	Δ	50	18.5	25	38.5	738	241.24	IE3	-	90.1	90.1	90.5	0.77	0.72	0.59	5.2	1.7	2.3

Motor type	TCM	Degree of protection	IP 66
Enclosure	TEFC	Mounting type	IM B5
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	225S	Motor weight - approx.	387 kg
Duty	S1	Gross weight - approx.	417 kg
Voltage variation *	± 10%	Motor inertia	0.8781 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)	61 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 classification	NA	Paint shade	RAL 2008
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 95mm <sup>2</sup> /2 x M50 x 1.5
Type of grease	CHEVRON SRI-2 or Equivalent	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 combined 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 figures.

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

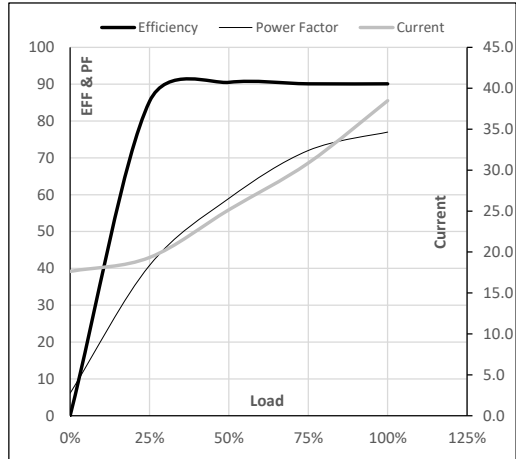
**Model No.** TCM18P4A2121GAC011

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	400	$\Delta$	50	18.5	25	38.5	738	24.60	241.24	IE3	40	S1	1000	0.8781	387

**Motor Load Data**

Load Point		NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	17.6	19.3	25.2	30.9	38.5	
Torque	Nm	0.0	59.6	119.6	180.1	241.2	
Speed	r/min	750	747	744	742	738	
Efficiency	%	0.0	85.3	90.5	90.1	90.1	
Power Factor	%	6.1	40.8	59.0	72.0	77.0	

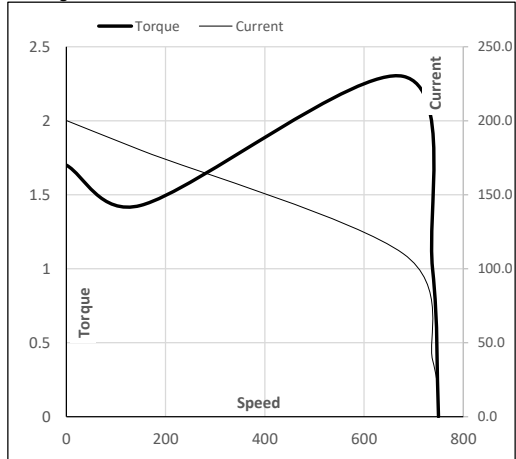
**Performance vs Load Chart**



**Motor Speed Torque Data**

Load Point		LR	P-Up	BD	Rated	NL
Speed	r/min	0	150	679	738	750
Current	A	200.1	180.1	110.2	38.5	17.6
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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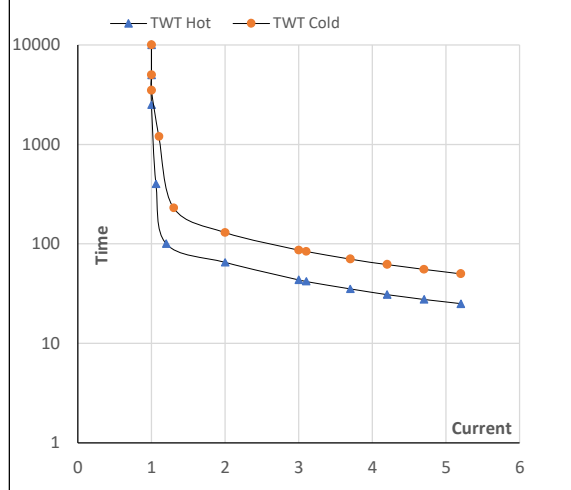
**Model No.** TCM18P4A2121GAC011

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	18.5	25	38.5	738	24.60	241.24	IE3	40	S1	1000	0.8781	387

**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	65	43	33	29	26	25
TWT Cold	s 10000	130	87	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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