

PRODUCT INFORMATION PACKET

marathon®
Motors

Model No: TCM0221A2121GAC011

Catalog No: TCM0221A2121GAC011

TerraMAX® IE3, Mining Duty Motors, 22 kW, 3Ph, 2 Pole, 400/690V, B5, 50Hz, 180M Frame, TEFC



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RegalRexnord



Nameplate Specifications

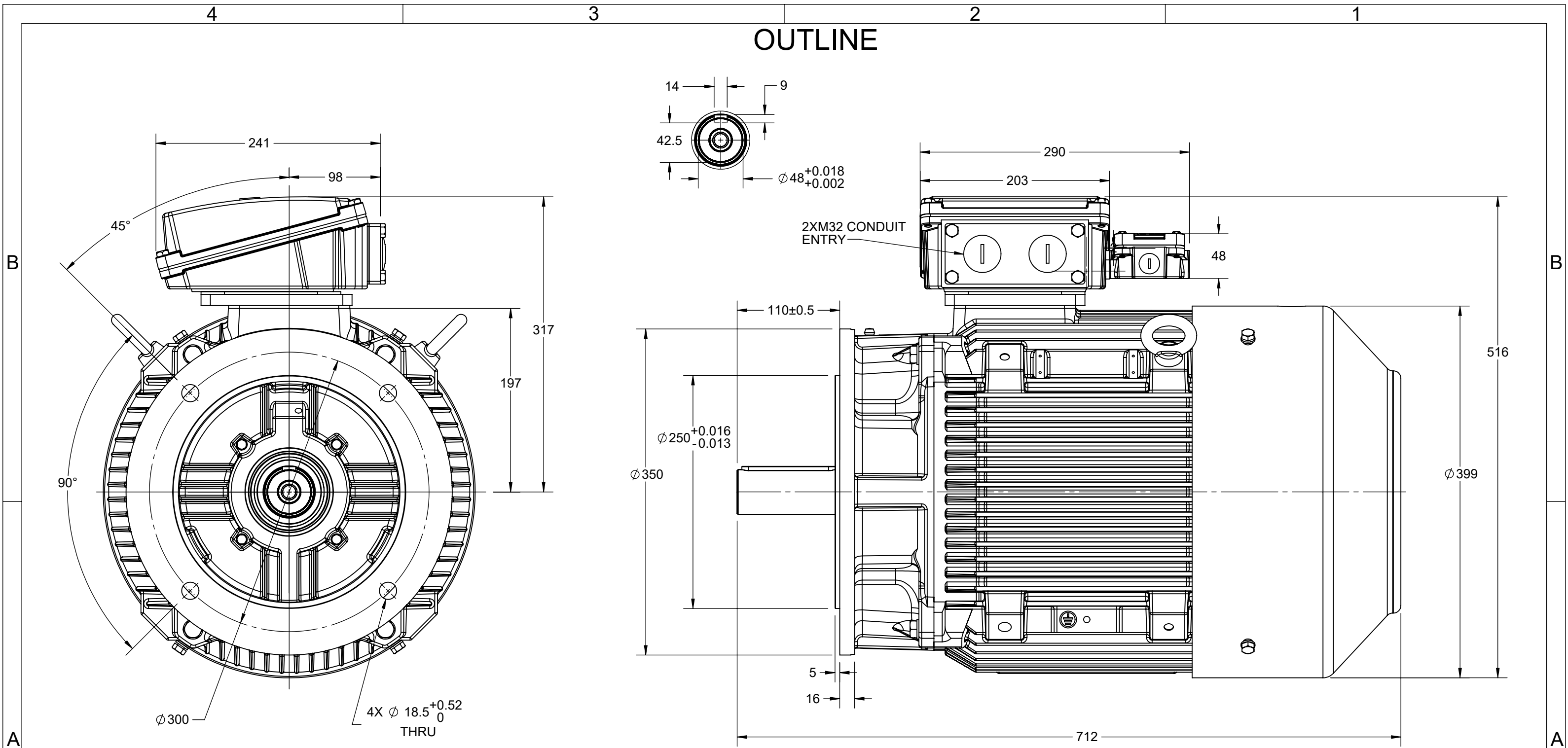
Output HP	30 Hp	Output KW	22.0 kW
Frequency	50 Hz	Voltage	400/690 V
Current	39.4 A	Speed	2961 rpm
Service Factor	1	Phase	3
Efficiency	92.7 %	Power Factor	0.87
Duty	S1	Insulation Class	H
Frame	180M	Enclosure	Totally Enclosed Fan Cooled
Thermal Protection	No Protection	Ambient Temperature	40 °C
Drive End Bearing Size	6311	Opp Drive End Bearing Size	6211
UL	NO	CSA	NO
CE	YES	IP Code	66
Number of Speeds	1	Efficiency Class	IE3

Technical Specifications

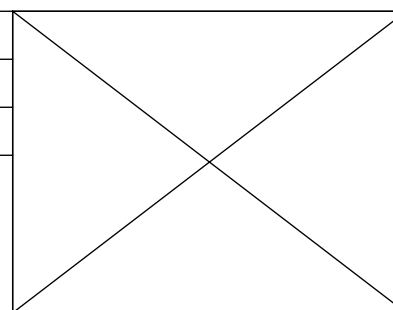
Electrical Type	Squirrel Cage	Starting Method	Direct On Line
Poles	2	Rotation	Bi-Directional
Mounting	B5	Motor Orientation	Horizontal
Drive End Bearing	C3	Opp Drive End Bearing	C3
Frame Material	Cast Iron	Shaft Type	Keyed
Overall Length	712 mm	Frame Length	328 mm
Shaft Diameter	48 mm	Shaft Extension	110 mm
Assembly/Box Mounting	TOP		
Outline Drawing	0218000821	Connection Drawing	8442000085

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OUTLINE



DRAWING REVISION B	REVISION BY BS	DATE 25/07/2022
ECO CR-0010375	APPROVED BY BISWA	DATE 25/07/2022
ECO DESCRIPTION UPDATED DRAWING		
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DRAWN BY LK		
DATE 15/12/2017		
APPROVED BY SBD	DESCRIPTION OUTLINE	
DATE 15/12/2017	180M FR-B5 MTG. MOTOR TYPE: TCM	
REFERENCE	MATERIAL	PROCESS/FINISH
THIRD ANGLE PROJECTION	SIZE B	DRAWING NUMBER 0218000821
		SHEET 1 OF 1

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

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.		
			DESCRIPTION CONN DIAGRAM-NAMEPLATE
	DATE 16/12/2016	MATERIAL	
	APPROVED BY SBD	PROCESS/FINISH	
	DATE 16/12/2016	SIZE A	DRAWING NUMBER 8442000085
REFERENCE			
THIRD ANGLE PROJECTION 			

Model No. TCM0221A2121GAC011

U (V)	Δ / Y Conn	f [Hz]	P		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_K/T_N [pu]
			[kW]	[hp]					5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL			
400	Δ	50	22	30	39.4	2961	72.16	IE3	-	92.7	92.7	91.3	0.87	0.83	0.72	7.4	2.2	3.6

Motor type	TCM	Degree of protection	IP 66
Enclosure	TEFC	Mounting type	IM B5
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	180M	Motor weight - approx.	219 kg
Duty	S1	Gross weight - approx.	239 kg
Voltage variation *	$\pm 10\%$	Motor inertia	0.1399 kgm ²
Frequency variation *	$\pm 5\%$	Load inertia	Customer to Provide
Combined variation *	10%	Vibration level	2.2 mm/s
Design	N	Noise level (1meter distance from motor)	72 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)	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 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	6311-C3 / 6211-C3	Terminal box position	TOP
Lubrication method	Greased for life	Maximum cable size/conduit size	1R x 3C x 50mm ² /2 X M40 x 1.5
Type of grease	NA	Auxiliary terminal box	YES

 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 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

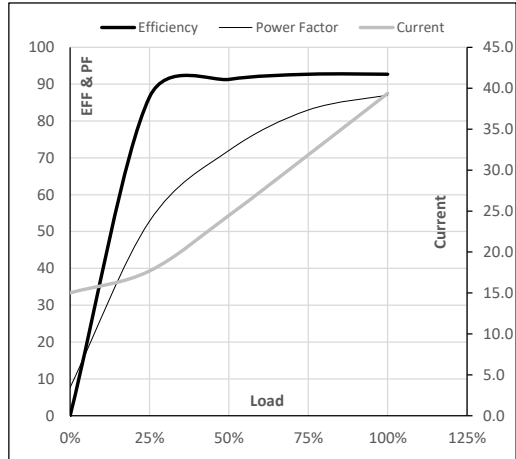
Model No. TCM0221A2121GAC011

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 ²]	Weight [kg]
TEFC	400	Δ	50	22	30	39.4	2961	7.36	72.16	IE3	40	S1	1000	0.1399	219

Motor Load Data

Load Point		NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	15.0	17.7	24.5	31.9	39.4	
Torque	Nm	0.0	17.9	35.8	53.9	72.2	
Speed	r/min	3000	2990	2981	2971	2961	
Efficiency	%	0.0	86.5	91.3	92.7	92.7	
Power Factor	%	7.7	52.8	72.0	83.0	87.0	

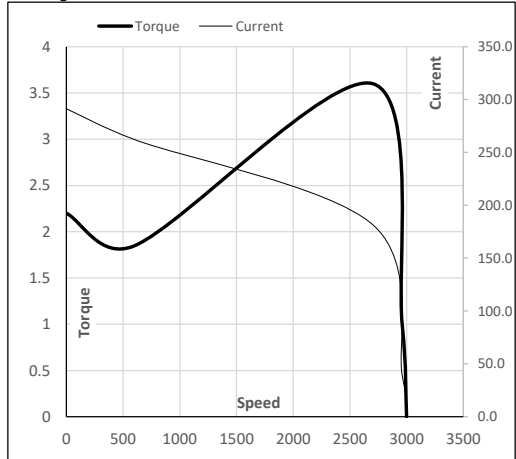
Performance vs Load Chart



Motor Speed Torque Data

Load Point		LR	P-Up	BD	Rated	NL
Speed	r/min	0	600	2703	2961	3000
Current	A	291.4	262.2	181.6	39.4	15.0
Torque	pu	2.2	1.8	3.6	1	0

Starting Characteristics Chart



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

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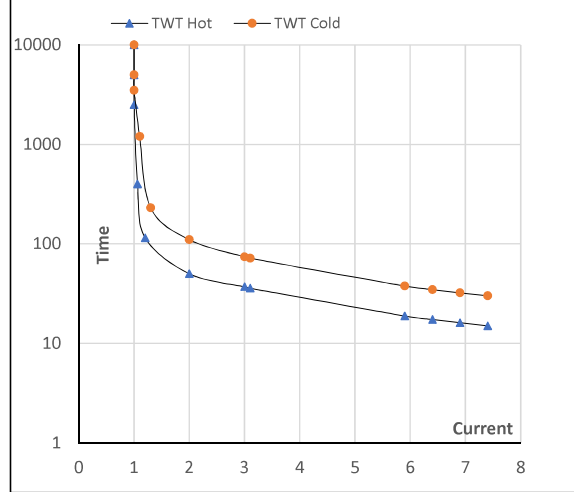
Model No. TCM0221A2121GAC011

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 ²]	Weight [kg]
TEFC	400	Δ	50	22	30	39.4	2961	7.36	72.16	IE3	40	S1	1000	0.1399	219

Motor Speed Torque Data

Load	FL	I ₁	I ₂	I ₃	I ₄	I ₅	LR
TWT Hot	s 10000	50	37	30	25	17	15
TWT Cold	s 10000	110	74	60	45	39	30
Current	pu	1	2	3	4	5	5.5 7.4

Thermal Characteristics Chart



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

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