PRODUCT INFORMATION PACKET

Model No: TCM0451A2121GAC011
Catalog No: TCM0451A2121GAC011
TerraMAX® IE3, Mining Duty Motors, 45 kW, 3Ph, 2 Pole, 400/690V, B5, 50Hz, 225M Frame, TEFC

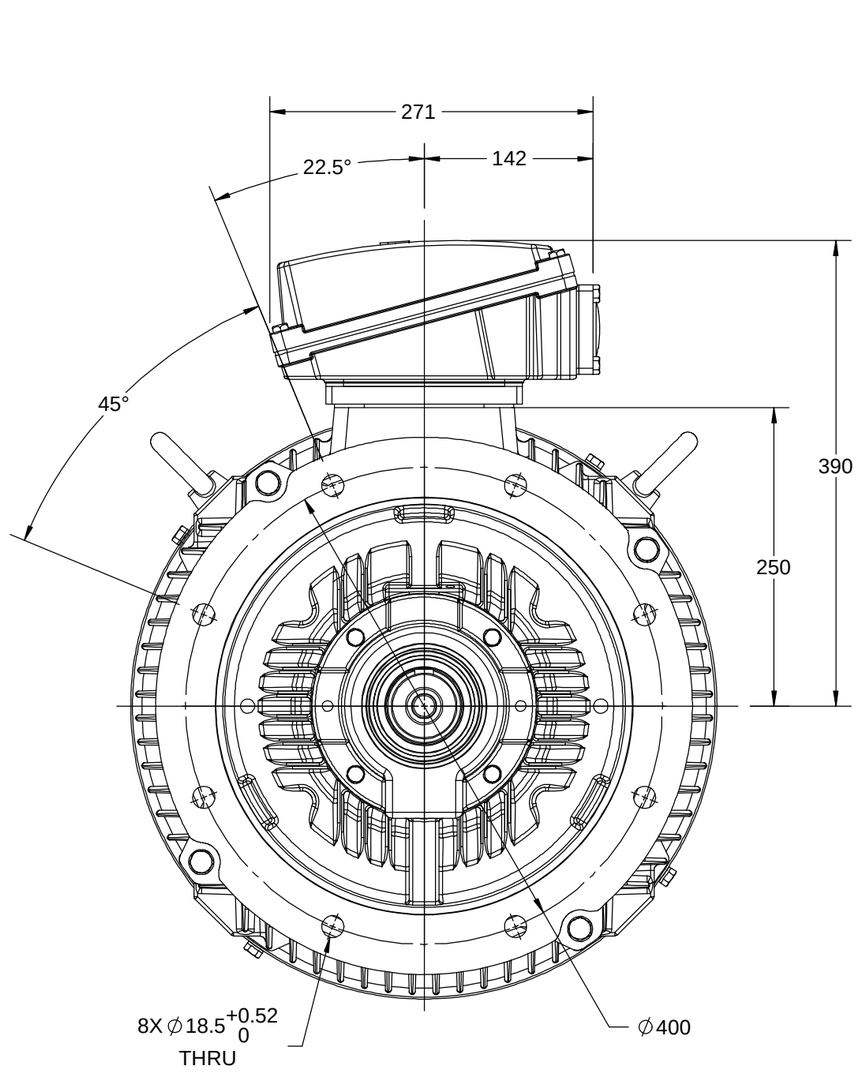
Nameplate Specifications

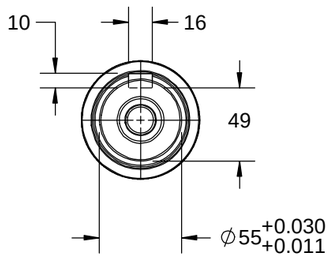
Output HP	60 Hp	Output KW	45.0 kW
Frequency	50 Hz	Voltage	400/690 V
Current	79.4 A	Speed	2978 rpm
Service Factor	1	Phase	3
Efficiency	94 %	Power Factor	0.87
Duty	S1	Insulation Class	H
Frame	225M	Enclosure	Totally Enclosed Fan Cooled
Thermal Protection	No Protection	Ambient Temperature	40 °C
Drive End Bearing Size	6313	Opp Drive End Bearing Size	6213
UL	NO	CSA	NO
CE	YES	IP Code	66
Number of Speeds	1	Efficiency Class	IE3

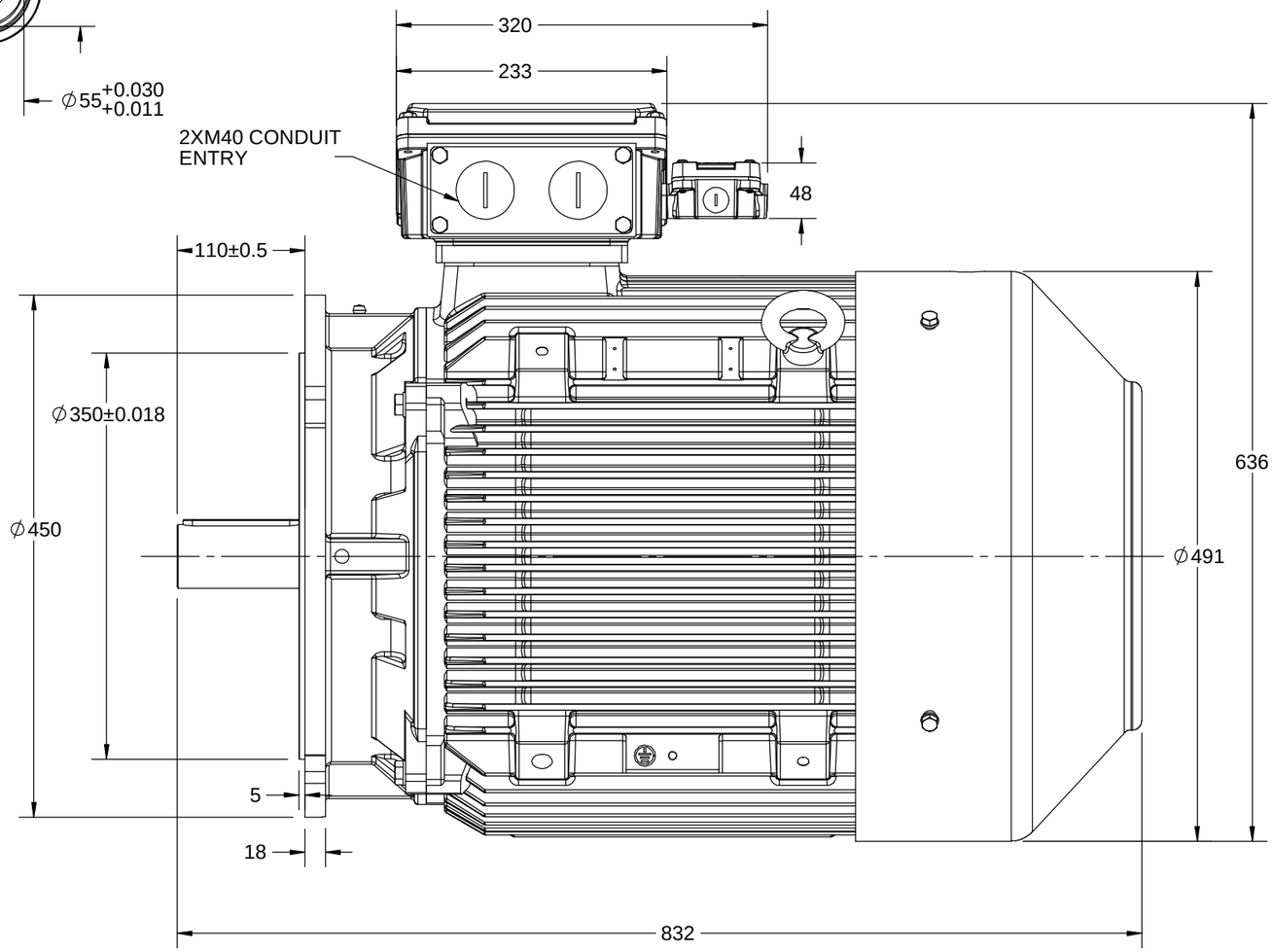
Technical Specifications

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	832 mm	Frame Length	425 mm
Shaft Diameter	55 mm	Shaft Extension	110 mm
Assembly/Box Mounting	TOP		
Outline Drawing	0222500944	Connection Drawing	8442000085

OUTLINE



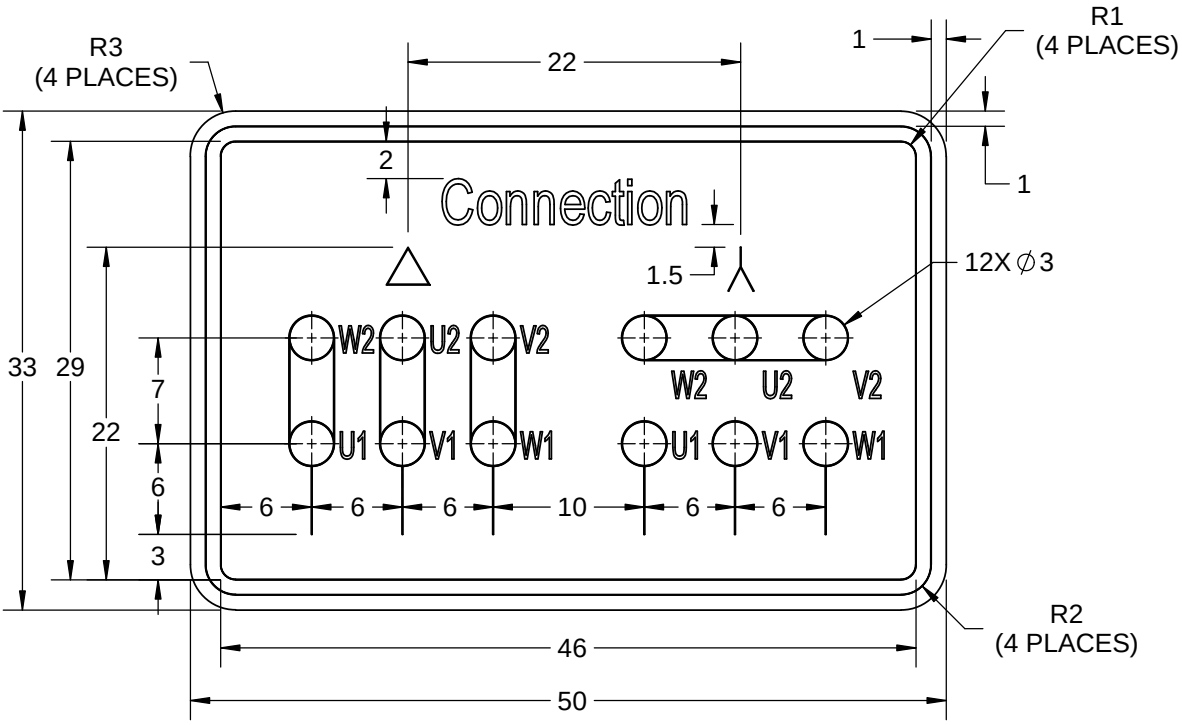




DRAWING REVISION A	REVISION BY BISWA	DATE 16/08/2018	DRAWN BY BISWA	marathon™ Motors
ECO ECO-0150057	APPROVED BY SBD	DATE 16/08/2018	DATE 16/08/2018	
ECO DESCRIPTION NEW DRAWING RELEASE			APPROVED BY SBD	DESCRIPTION OUTLINE 225M-2P-B5 MTG. MOTOR TYPE: TCM
			DATE 16/08/2018	
			REFERENCE	MATERIAL / PROCESS/FINISH
			THIRD ANGLE PROJECTION	SIZE B / DRAWING NUMBER 0222500944 / SHEET 1 OF 1

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

GEOMENTRIC 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™ 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	SHEET: 1 OF 1

marathon® Motors

TerraMAX®

Model No. TCM0451A2121GAC011

U (V)	Δ / Y Conn	f [Hz]	P [kW]	P [hp]	I [A]	n [RPM]	T [Nm]	IE Class	% EFF at __ load 5/4FL	FL	3/4FL	1/2FL	PF at __ load FL	3/4FL	1/2FL	I_A/I_N [pu]	T_A/T_N [pu]	T_K/T_N [pu]
400	Δ	50	45	60	79.4	2978	143.47	IE3	-	94	94	92.7	0.87	0.83	0.73	8	2.2	3.9

Motor type	TCM	
Enclosure	TEFC	
Frame Material	Cast Iron	
Frame size	225M	
Duty	S1	
Voltage variation *	± 10%	
Frequency variation *	± 5%	
Combined variation *	10%	
Design	N	
Service factor	1.15	
Insulation class	H	
Ambient temperature	-20 to +40	°C
Temperature rise (by resistance)	80 [Class B]	K
Altitude above sea level	1000	meter
Hazardous area classification	NA	
Zone classification	NA	
Gas group	NA	
Temperature class	NA	
Rotor type	Aluminum Die cast	
Bearing type	Anti-friction ball	
DE / NDE bearing	6313-C3 / 6213-C3	
Lubrication method	Regreasable	
Type of grease	CHEVRON SRI-2 or Equivalent	

Degree of protection	IP 66	
Mounting type	IM B5	
Cooling method	IC 411	
Motor weight - approx.	419	kg
Gross weight - approx.	449	kg
Motor inertia	0.4264	kgm^2
Load inertia	Customer to Provide	
Vibration level	2.2	mm/s
Noise level (1meter distance from motor)	75	dB(A)
No. of starts hot/cold/Equally spread	2/3/4	
Starting method	DOL	
Type of coupling	Direct	
LR withstand time (hot/cold)	18/36	s
Direction of rotation	Bi-directional	
Standard rotation	Clockwise form DE	
Paint shade	RAL 2008	
Accessories		
Accessory - 1	PTC 150°C	
Accessory - 2	-	
Accessory - 3	-	
Terminal box position	TOP	
Maximum cable size/conduit size	1R x 3C x 95mm²/2 x M50 x 1.5	
Auxiliary terminal box	YES	

I_A/I_N - Locked Rotor Current / Rated Current

T_A/T_N - Locked Rotor Torque / Rated Torque

T_K/T_N - Breakdown 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	China	India	Aus/Nz	Brazil	Global IEC
	IEC:60034-30-1	-	-	AS/NZ 1359:5:2004	-	IEC:60034-30-1

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marathon® Motors

TerraMAX®

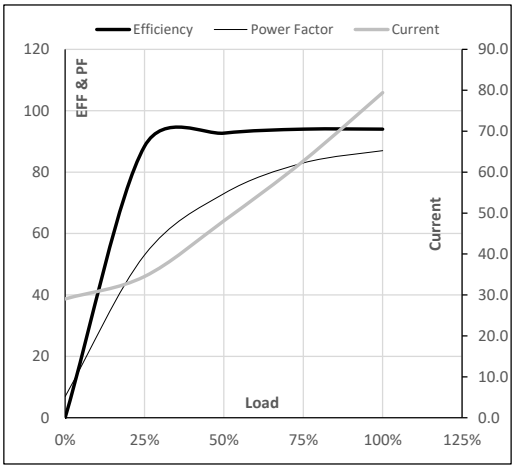
Model No. TCM0451A2121GAC011

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	45	60	79.4	2978	14.63	143.47	IE3	40	S1	1000	0.4264	419

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	79.4	
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	

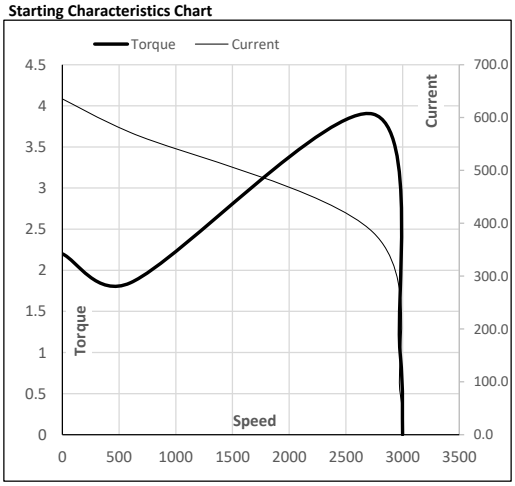
Performance vs Load Chart



Motor Speed Torque Data

Load Point		LR	P-Up	BD	Rated	NL
Speed	r/min	0	600	2740	2978	3000
Current	A	635.4	571.8	382.9	79.4	29.0
Torque	pu	2.2	1.8	3.9	1	0

Starting Characteristics Chart



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

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TerraMAX®

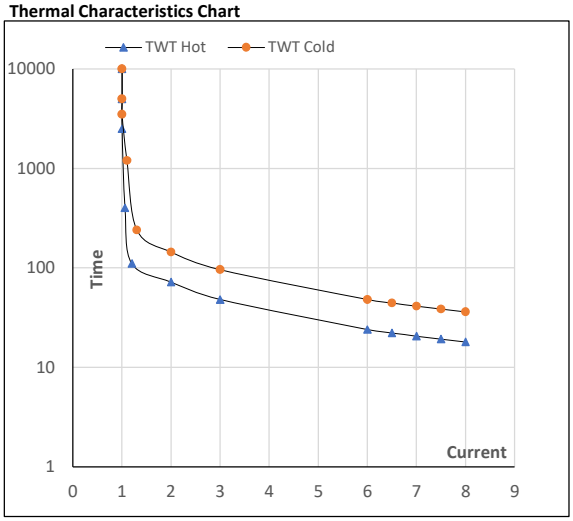
Model No. TCM0451A2121GAC011

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	45	60	79.4	2978	14.63	143.47	IE3	40	S1	1000	0.4264	419

Motor Speed Torque Data

Load		FL	I_1	I_2	I_3	I_4	I_5	LR
TWT Hot	s	10000	72	48	40	30	24	18
TWT Cold	s	10000	144	96	80	65	48	36
Current	pu	1	2	3	4	5	6	8

Thermal Characteristics Chart



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