

PRODUCT INFORMATION PACKET

marathon®
Motors

Model No: TCM0902A2113GAC011

Catalog No: TCM0902A2113GAC011

TerraMAX® IE3, Mining Duty Motors, 90 kW, 3Ph, 4 Pole, 400/690V, B3, 50Hz, 280M Frame, TEFC



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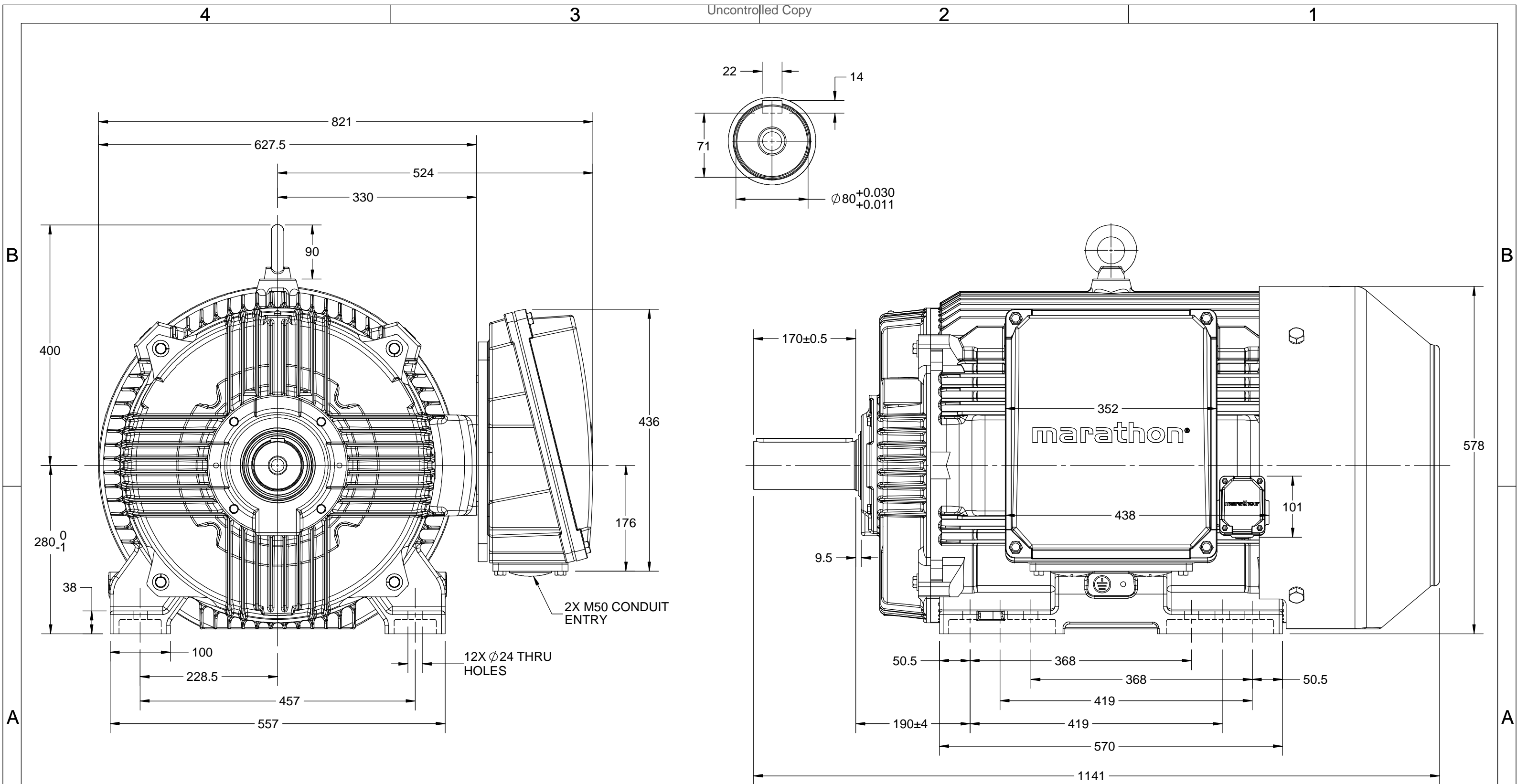
Nameplate Specifications

Output HP	120 Hp	Output KW	90.0 kW
Frequency	50 Hz	Voltage	400/690 V
Current	157.0 A	Speed	1489 rpm
Service Factor	1	Phase	3
Efficiency	95.2 %	Power Factor	0.87
Duty	S1	Insulation Class	H
Frame	280M	Enclosure	Totally Enclosed Fan Cooled
Thermal Protection	No Protection	Ambient Temperature	40 °C
Drive End Bearing Size	NU317	Opp Drive End Bearing Size	6317
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	4	Rotation	Bi-Directional
Mounting	B3	Motor Orientation	Horizontal
Drive End Bearing	C3	Opp Drive End Bearing	C3
Frame Material	Cast Iron	Shaft Type	Keyed
Overall Length	1141 mm	Frame Length	549 mm
Shaft Diameter	80 mm	Shaft Extension	170 mm
Assembly/Box Mounting	RHS		
Outline Drawing	0228001118	Connection Drawing	8442000086

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DRAWING REVISION C	REVISION BY LK	DATE 02/08/2018
ECO ECO-0149394	APPROVED BY SBD	DATE 02/08/2018
ECO DESCRIPTION MODEL UPDATED WITH NEW STRUCTURE		
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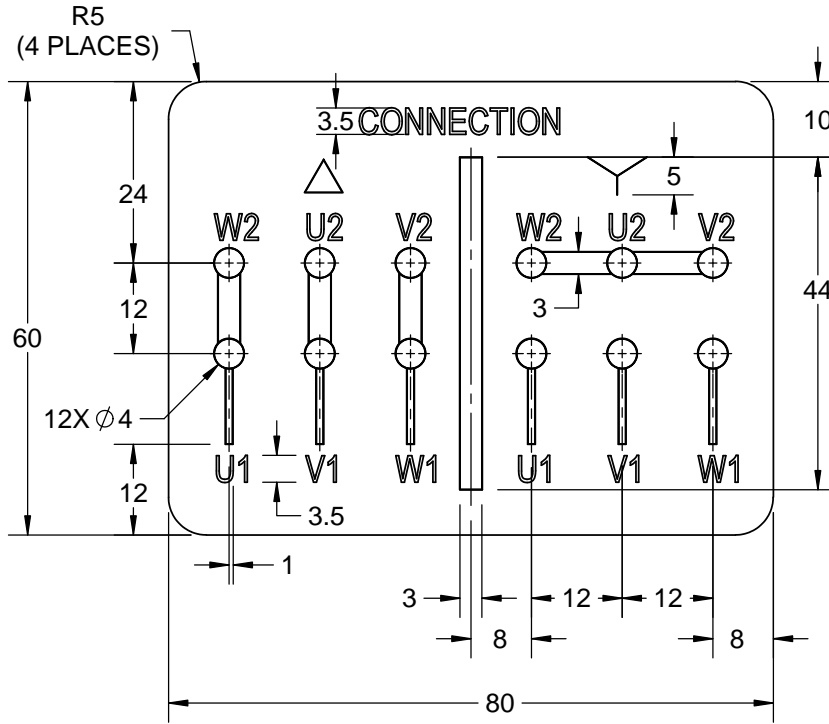
DRAWN BY LK
DATE 22/12/2017
APPROVED BY SBD
DATE 22/12/2017
REFERENCE
THIRD ANGLE PROJECTION

marathon™ Motors	
DESCRIPTION OUTLINE	
280M FR-4-8P-B3 MTG. MOTOR TYPE: TCM	
MATERIAL	PROCESS/FINISH
SIZE B	DRAWING NUMBER 0228001118
SHEET 1 OF 1	

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

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

Model No. TCM0902A2113GAC011

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	90	120	157.0	1489	573.92	IE3	-	95.2	95.2	94.5	0.87	0.84	0.75	6.4	2.4	2.7

Motor type	TCM	Degree of protection	IP 66
Enclosure	TEFC	Mounting type	IM B3
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	280M	Motor weight - approx.	764 kg
Duty	S1	Gross weight - approx.	799 kg
Voltage variation *	± 10%	Motor inertia	2.3841 kgm ²
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)	68 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)	22/45 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	NU317-C3 / 6317-C3	Terminal box position	RHS
Lubrication method	Regreasable	Maximum cable size/conduit size	1R x 3C x 240mm ² /2 x M63 x 1.5
Type of grease	CHEVRON SRI-2 or Equivalent	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 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 figures.

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

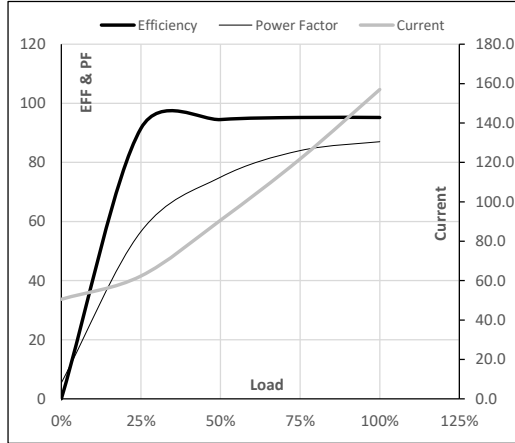
Model No. TCM0902A2113GAC011

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	90	120.0	157.0	1489	58.52	573.92	IE3	40	S1	1000	2.3841	764

Motor Load Data

Load Point		NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	50.5	62.3	90.7	121.8	157.0	
Torque	Nm	0.0	142.7	285.9	429.6	573.9	
Speed	r/min	1500	1497	1495	1492	1489	
Efficiency	%	0.0	91.5	94.5	95.2	95.2	
Power Factor	%	5.4	56.6	75.0	84.0	87.0	

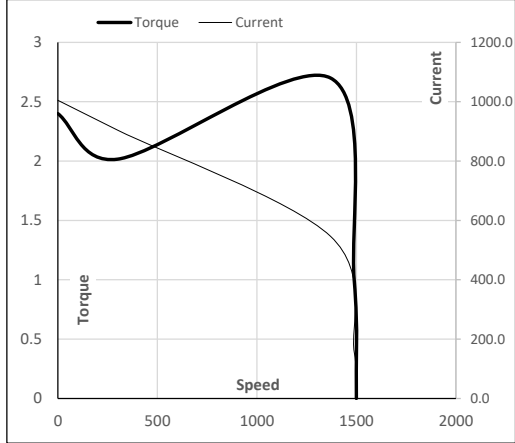
Performance vs Load Chart



Motor Speed Torque Data

Load Point		LR	P-Up	BD	Rated	NL
Speed	r/min	0	300	1370	1489	1500
Current	A	1004.8	904.3	546.7	157.0	50.5
Torque	pu	2.4	2.0	2.7	1	0

Starting Characteristics Chart



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

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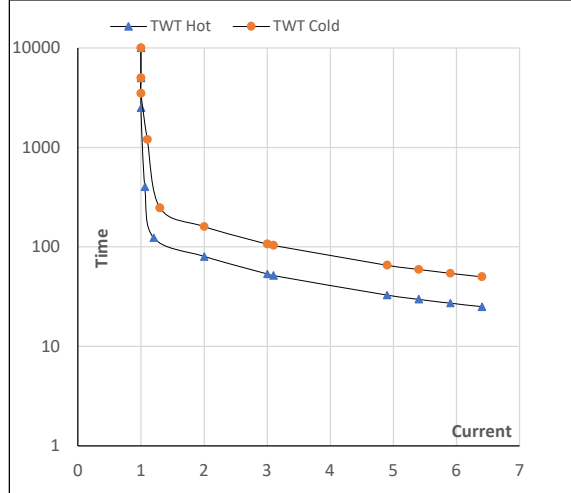
Model No. TCM0902A2113GAC011

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	90	120	157.0	1489	58.52	573.92	IE3	40	S1	1000	2.3841	764

Motor Speed Torque Data

Load	FL	I ₁	I ₂	I ₃	I ₄	I ₅	LR	
TWT Hot	s 10000	80	53	40	32	27	25	
TWT Cold	s 10000	160	107	82	65	54	50	
Current	pu	1	2	3	4	5	6	6.4

Thermal Characteristics Chart



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

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