PRODUCT INFORMATION PACKET

Model No: TCA1321A3141GACD01
Catalog No: TCA1321A3141GACD01
TerraMAX® Cast Iron Motor, 175 HP, 3 Ph, 50 Hz, 415 V, 315M Frame

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Nameplate Specifications

Phase	3	Output HP	175 Hp
Output KW	132.0 kW	Voltage	415 V
Speed	2984 r/min	Service Factor	1
Frame	315M	Enclosure	Totally Enclosed Fan Cooled
Thermal Protection	No Protection	Efficiency	95.4 %
Ambient Temperature	50 °C	Frequency	50 Hz
Current	216.3 A	Power Factor	0.89
Duty	S1	Insulation Class	F
Drive End Bearing Size	6316	Opp Drive End Bearing Size	6316
UL	No	CSA	No
CE	Yes	IP Code	55
Number of Speeds	1	Efficiency Class	IE3

Technical Specifications

Electrical Type	Squirrel Cage	Starting Method	Direct On Line
Poles	2	Rotation	Bi-Directional
Mounting	V1	Motor Orientation	Shaftdown
Drive End Bearing	C3	Opp Drive End Bearing	C3
Frame Material	Cast Iron	Shaft Type	Keyed
Overall Length	1311 mm	Frame Length	729 mm
Shaft Diameter	65 mm	Shaft Extension	140 mm
Assembly/Box Mounting	Top		
Connection Drawing	8442000085	Outline Drawing	0231500889

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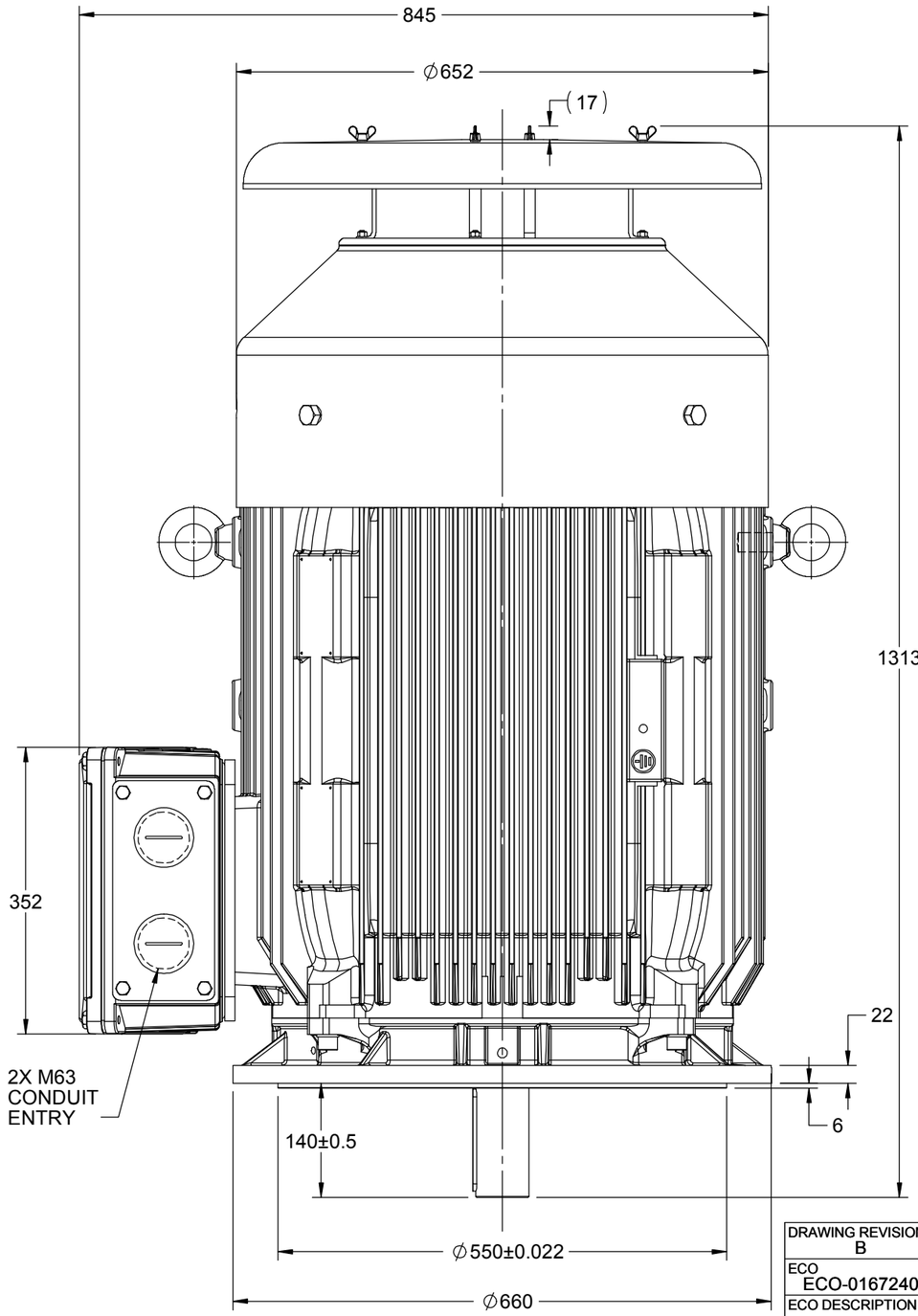
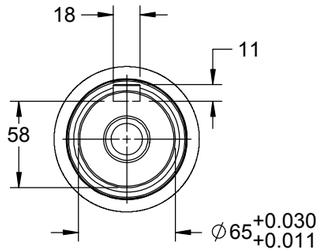
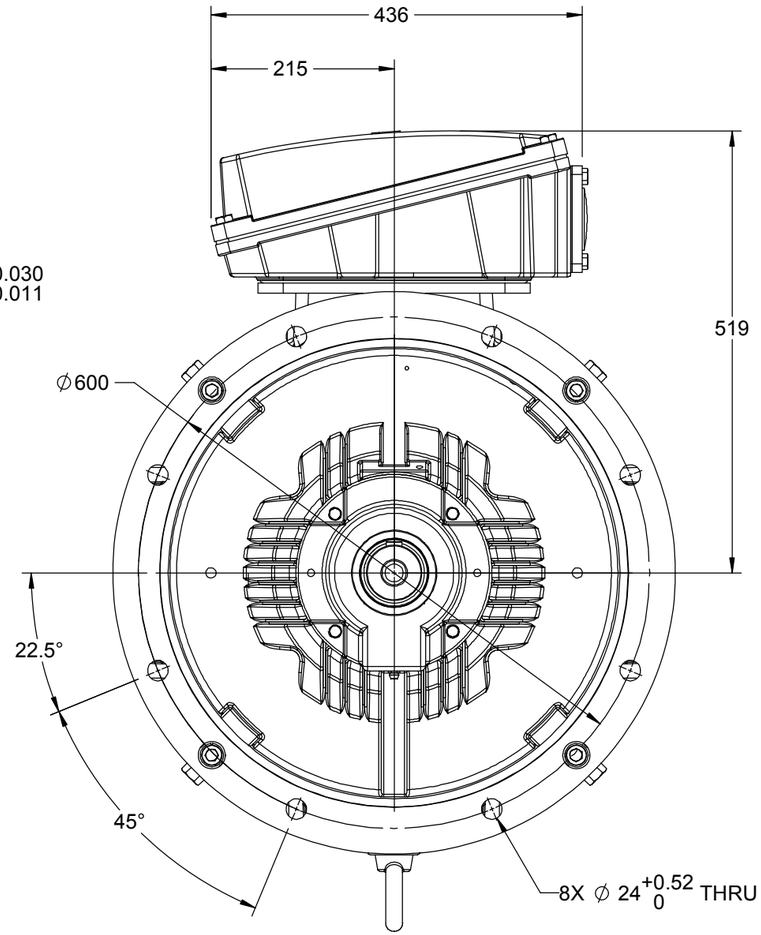
OUTLINE







DRAWING REVISION B	REVISION BY NIV	DATE 09/05/2019
ECO ECO-0167240	APPROVED BY SR	DATE 09/05/2019
ECO DESCRIPTION MODEL UPDATED		

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DRAWN BY JOY	marathon™ Motors	
DATE 18/07/2014		
APPROVED BY SBD	DESCRIPTION OUTLINE	
DATE 18/07/2014	315-S/M FR-2P- V1 MTG. MOTOR TYPE: TCA	
REFERENCE	MATERIAL	PROCESS/FINISH
THIRD ANGLE PROJECTION	SIZE B / DRAWING NUMBER 0231500889	SHEET 1 OF 1

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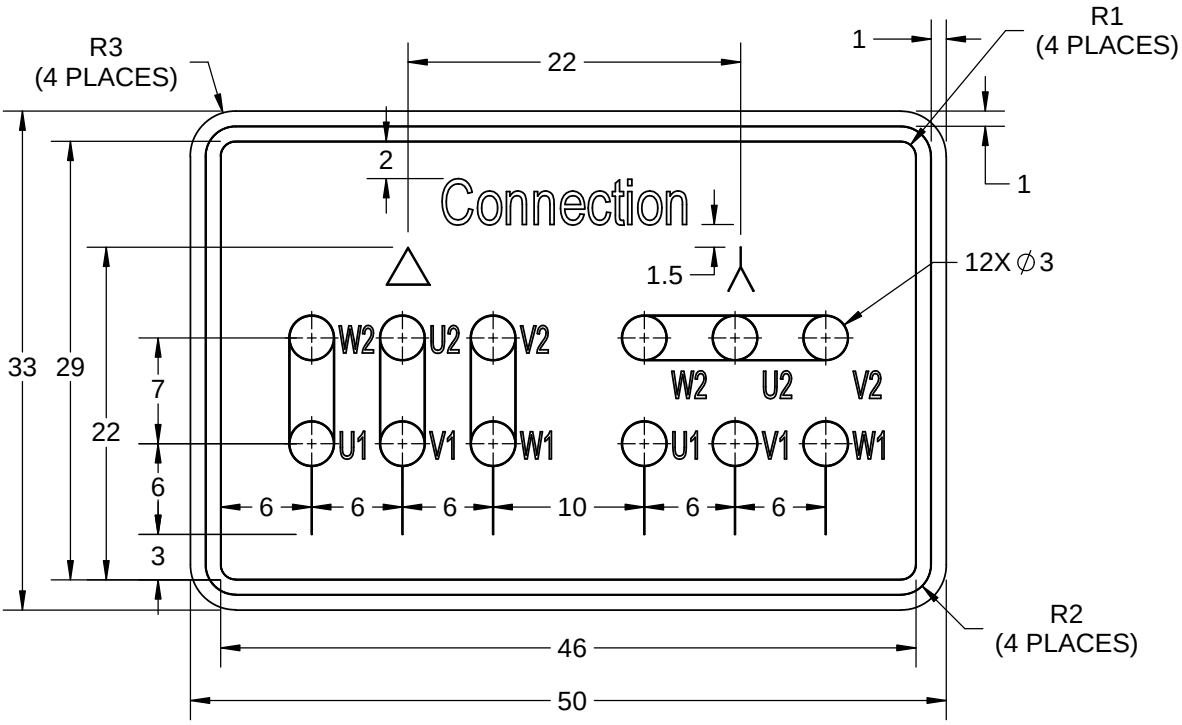
DRAWING REVISION	REVISION BY	DATE
A	SN	13/01/2017
ECO	APPROVED BY	DATE
ECO-0116390	SBD	13/01/2017
ECO DESCRIPTION		
NEW DRAWING RELEASE		

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

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marathon® Motors

TerraMAX®

Model No. TCA1321A3141GACD01

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]
415	Δ	50	132	175	216.3	2984	417.55	IE3	-	95.4	95.4	93.3	0.89	0.85	0.77	7.7	2.3	3.9

Motor type	TCA	
Enclosure	TEFC	
Frame Material	Cast Iron	
Frame size	315M	
Duty	S1	
Voltage variation *	± 10%	
Frequency variation *	± 5%	
Combined variation *	10%	
Design	N	
Service factor	1.0	
Insulation class	F	
Ambient temperature	-20 to +50	°C
Temperature rise (by resistance)	70 [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 bearing	
DE / NDE bearing	6316 C3 / 6316 C3	
Lubrication method	Regreasable	
Type of grease	Shell Gadus S5 V100 or Equivalent	

Degree of protection	IP 55	
Mounting type	IM V1	
Cooling method	IC 411	
Motor weight - approx.	1072	kg
Gross weight - approx.	1117	kg
Motor inertia	2.5544	kgm^2
Load inertia	Customer to Provide	
Vibration level	2.8	mm/s
Noise level (1meter distance from motor)	83	dB(A)
No. of starts hot/cold/Equally spread	2/3/4	
Starting method	DOL	
Type of coupling	Direct	
LR withstand time (hot/cold)	15/30	s
Direction of rotation	Bi-directional	
Standard rotation	Clockwise form DE	
Paint shade	RAL 5014	
Accessories		
Accessory - 1	-	
Accessory - 2	-	
Accessory - 3	-	
Terminal box position	TOP	
Maximum cable size/conduit size	1R x 3C x 240mm²/2 x M63 x 1.5	
Auxiliary terminal box	NA	

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 combine variation are as per IEC60034-1

Technical data are subject to change. There may be discrepancies between calculated and name plate values.

Efficiency	Europe	China	India	Aus/Nz	Brazil	Global IEC
Standards	-	-	IS 12615 : 2018	-	-	-

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marathon® Motors

TerraMAX®

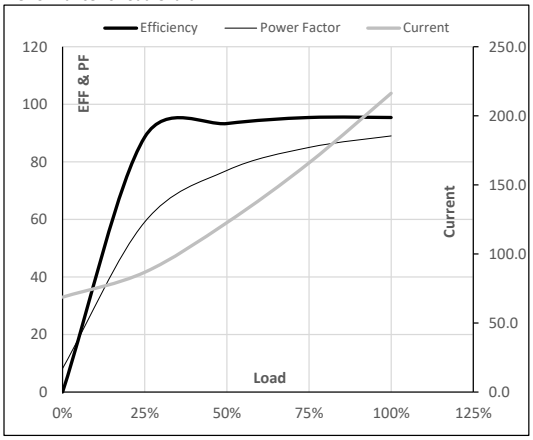
Model No. TCA1321A3141GACD01

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	415	Δ	50	132	175.0	216.3	2984	42.58	417.55	IE3	50	S1	1000	2.5544	1072

Motor Load Data

Load Point		NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	68.7	86.7	122.7	165.9	216.3	
Torque	Nm	0.0	104.0	208.2	312.7	417.6	
Speed	r/min	3000	2996	2992	2988	2984	
Efficiency	%	0.0	88.6	93.3	95.4	95.4	
Power Factor	%	8.2	59.1	77.0	85.0	89.0	

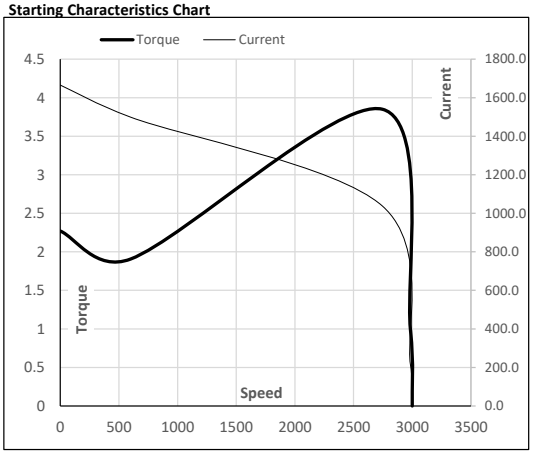
Performance vs Load Chart



Motor Speed Torque Data

Load Point		LR	P-Up	BD	Rated	NL
Speed	r/min	0	600	2745	2984	3000
Current	A	1665.4	1498.9	1037.9	216.3	68.7
Torque	pu	2.3	1.9	3.9	1	0

Starting Characteristics Chart



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

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TerraMAX®

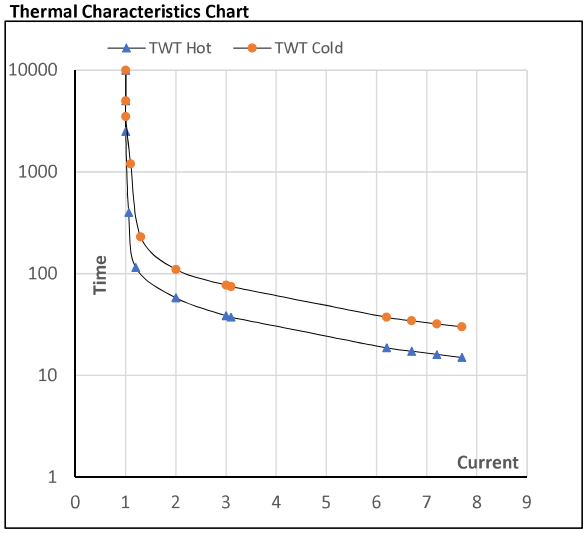
Model No. TCA1321A3141GACD01

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	415	Δ	50	132	175	216.3	2984	42.55	417.55	IE3	50	S1	1000	2.5544	1072

Motor Speed Torque Data

Load		FL	I_1	I_2	I_3	I_4	I_5	LR
TWT Hot	s	10000	58	39	35	25	20	15
TWT Cold	s	10000	110	77	60	45	40	30
Current	pu	1	2	3	4	5	5.5	7.7

Thermal Characteristics Chart



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