

PRODUCT INFORMATION PACKET

marathon®
Motors

Model No: TCA2P21A3131GACD01

Catalog No: TCA2P21A3131GACD01

2.2 kW General Purpose Low Voltage IEC Motor, 3 phase, 3000 RPM, 415 V, 90L Frame, TEFC
Cast Iron IE3 Efficiency Motors



Regal and Marathon are trademarks of Regal Beloit Corporation or one of its affiliated companies.

©2020 Regal Beloit Corporation, All Rights Reserved. MC017097E

REGAL

Nameplate Specifications

Output HP	3 Hp	Output KW	2.2 kW
Frequency	50 Hz	Voltage	415 V
Current	4.0 A	Speed	2883 rpm
Service Factor	1	Phase	3
Efficiency	85.9 %	Power Factor	0.89
Duty	S1	Insulation Class	F
Frame	90L	Enclosure	Totally Enclosed Fan Cooled
Ambient Temperature	50 °C	Drive End Bearing Size	6205
Opp Drive End Bearing Size	6205	UL	No
CSA	No	CE	Yes
IP Code	55		

Technical Specifications

Electrical Type	Squirrel Cage	Starting Method	Direct On Line
Poles	2	Rotation	Bi-Directional
Mounting	B35	Motor Orientation	Horizontal
Drive End Bearing	2z-C3	Opp Drive End Bearing	2z-C3
Frame Material	Cast Iron	Shaft Type	Keyed
Overall Length	332 mm	Frame Length	153 mm
Shaft Diameter	24 mm	Shaft Extension	50 mm
Assembly/Box Mounting	Top		
Outline Drawing	0209000396	Connection Drawing	8442000085

This is an uncontrolled document once printed or downloaded and is subject to change without notice. Date Created:06/01/2020

4

3

Uncontrolled Copy

2

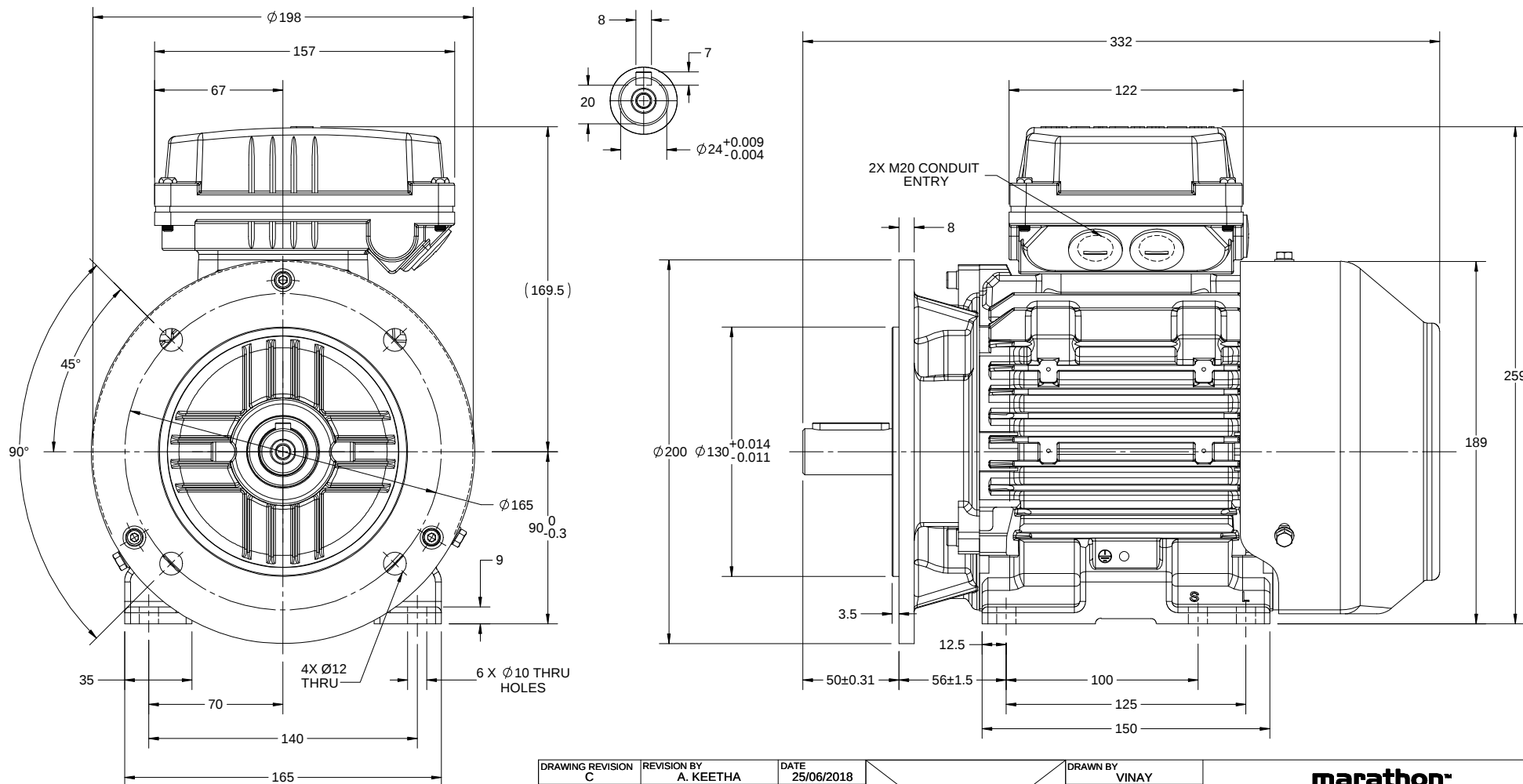
1

B

B

A

A



DRAWING REVISION C	REVISION BY A. KEETHA	DATE 25/06/2018
ECO ECO-0147359	APPROVED BY SBD	DATE 25/06/2018
ECO DESCRIPTION OUTLINE UPDATED AS PER NEW 3D STRUCTURING		
COPYRIGHT REGAL BELOIT AMERICA, INC. ALL RIGHTS RESERVED. PROPRIETARY AND CONFIDENTIAL INFORMATION - THIS DOCUMENT IS THE PROPERTY OF REGAL BELOIT AMERICA, INC. (OWNER) AND CONTAINS OWNER'S PROPRIETARY INFORMATION. ANY PERSON, CORPORATION OR OTHER FIRM RECEIVING IT IS DEEMED, BY RECEIVING IT, TO AGREE THAT IT, AND/OR ANY PART OF IT, SHALL NOT BE DISCLOSED TO ANY PERSON, CORPORATION OR OTHER ENTITY, DUPLICATED, AND/OR USED, EXCEPT AS EXPRESSLY APPROVED IN WRITING IN ADVANCE BY OWNER. THIS DOCUMENT SHALL BE RETURNED TO OWNER UPON REQUEST. IT MAY BE SUBJECT TO CERTAIN RESTRICTIONS UNDER APPLICABLE EXPORT CONTROL LAWS AND REGULATIONS.		

DRAWN BY VINAY		
DATE 01/07/14		
APPROVED BY SBD	DESCRIPTION OUTLINE 90 FR.- B35 MTG. MOTOR TYPE: TCA	
DATE 01/07/14		
REFERENCE	MATERIAL	PROCESS/FINISH
THIRD ANGLE PROJECTION	SIZE B	DRAWING NUMBER 0209000396
		SHEET 1 OF 1

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.

DRAWN BY		SN	Regal Beloit America, Inc.	
DATE		16/12/2016	DESCRIPTION	
APPROVED BY		SBD	CONN DIAGRAM-NAMEPLATE	
DATE		16/12/2016	MATERIAL	
REFERENCE			PROCESS/FINISH	
THIRD ANGLE PROJECTION		A	SIZE	
			DRAWING NUMBER	
			8442000085	
			SHEET	
			1 OF 1	

Model No. TCA2P21A3131GACD01

U (V)	Δ / Y Conn	f (Hz)	P [kW]	P [hp]	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 _b /T _N [pu]
415	Y	50	2.2	3.0	4.0	2883	7.42	IE3	5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL	7.7	3.5	3.4

Motor type	TCA	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM B35
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	90L	Motor weight - approx.	29.5 kg
Duty	S1	Gross weight - approx.	30.5 kg
Voltage variation *	± 10%	Motor inertia	0.0030 kgm ²
Frequency variation *	± 5%	Load inertia	Customer to Provide
Combined variation *	10%	Vibration level	1.6 mm/s
Design	N	Noise level (1meter distance from motor)	63 dB(A)
Service factor	1.0	No. of starts hot/cold/Equally spread	2/3/4
Insulation class	F	Starting method	DOL
Ambient temperature	-20 to +50 °C	Type of coupling	Direct
Temperature rise (by resistance)	70 [Class B] K	LR withstand time (hot/cold)	6/10 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 5014
Gas group	NA	Accessories	
Temperature class	NA	Accessory - 1	-
Rotor type	Aluminum Die cast	Accessory - 2	-
Bearing type	Anti-friction ball bearing	Accessory - 3	-
DE / NDE bearing	6205-2Z / 6205-2Z	Terminal box position	TOP
Lubrication method	Greased for life	Maximum cable size/conduit size	1R x 3C x 10mm ² /2 x M20 x 1.5
Type of grease	NA	Auxiliary terminal box	NA

I_a/I_N - Locked Rotor Current / Rated CurrentT_b/T_N - Breakdown Torque / Rated TorqueT_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 discrepancies between calculated and name plate values.

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



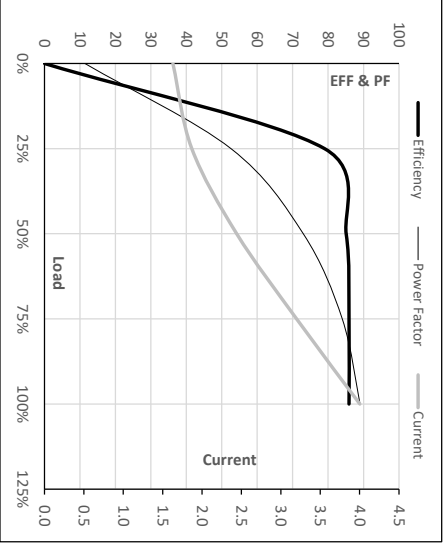
Model No. TCA2P21A3131GACD01

Enclosure	U	Δ / Y	f	P	P	I	n	T	T	IE	Amb	Duty	Elevation	Inertia	Weight
(V)	Com	[Hz]	[kW]	[hp]	[A]	[RPM]	[kgm]	[Nm]	Class	[°C]	S1	1000	[m]	[kg·m ²]	[kg]
TFC	415	Y	50	2.2	3.0	4.0	2883	0.76	7.42	IE3	50	S1	1000	0.003	29.5

Motor Speed Data

Load Point	NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	1.6	1.9	2.4	3.2	4.0
Torque	Nm	0.0	1.8	3.6	5.5	7.4
Speed	r/min	3000	2972	2946	2916	2883
Efficiency	%	0.0	79.0	85.1	85.9	85.9
Power Factor	%	11.4	52.6	73.0	84.0	89.0

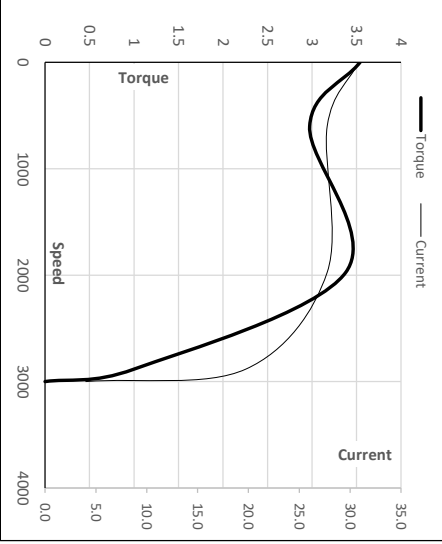
Performance vs Load Chart



Motor Speed Torque Data

Load Point	LR	P-Up	BD	Rated	NL	
Speed	r/min	0	600	1973	2883	3000
Current	A	30.8	27.7	19.7	4.0	1.6
Torque	pu	3.5	3.0	3.4	1	0

Starting Characteristics Chart



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

Issued By
Issued Date



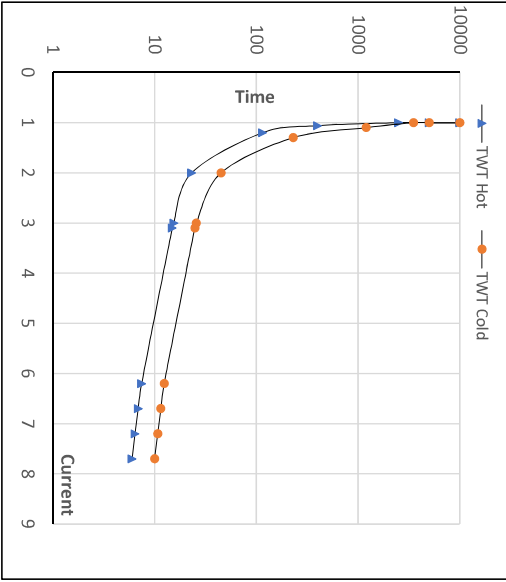
Model No. TCA2P21A313IGACD01

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	Y	50	2.2	3.0	4.0	2883	0.76	7.42	IE3	50	S1	1000	0.0030	29.5

Motor Speed Torque Data

Load	FL	I ₁	I ₂	I ₃	I ₄	I ₅	LR	
TWT Hot	s	10000	23	15	14	11	9	6
TWT Cold	s	10000	45	26	24	21	15	10
Current	pu	1	2	3	4	5	5.5	7.7

Thermal Characteristics Chart



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

Issued By
Issued Date